

**ADDENDUM NO. 4**

**BRANDYWINE SCHOOL DISTRICT  
CLAYMONT ELEMENTARY SCHOOL RENOVATION  
BID PAC B  
3401 Green Street, Claymont, DE 19703**

**THE WHITING-TURNER CONTRACTING COMPANY  
CONSTRUCTION MANAGER  
131 Continental Drive – Suite 404  
Newark, DE 19713  
302-292-0676**

**BIDS DUE: JANUARY 10, 2019 at 2:00 PM**

**LOCATION: Claymont Elementary School, Cafeteria  
3401 Green Street  
Claymont, DE 19703**

**NOTICE TO ALL BIDDERS**

**1.0 GENERAL NOTES:**

- 1.1 Bidders are hereby notified that this Addendum shall be and hereby becomes part of their Contract Documents, and shall be attached to the Project Manual for this project. All bidders shall acknowledge this addendum on the Bid Form.
- 1.2 The following items are intended to revise and clarify the Drawings and Project Manual, and shall be included by the Bidder in their proposal.
- 1.3 Bidders shall verify that their Sub-bidders are in full receipt of the information contained herein.
- 1.4 Deadline for questions has passed.

**2.0 CHANGES TO THE PROJECT MANUAL and DRAWINGS**

- 2.1 See ABHA Architects Addendum #4 attachment detailing changes to specifications and drawings.
- 2.2 Section 00 40 00-09D Painting Bid Form
  - 2.2.1 Bid Form has been revised to include alternate # 10 and is attached to this addendum.

- 2.3 Section 00 40 00-22A Plumbing Bid Form
  - 2.3.1 Bid Form has been revised to include alternate # 22 and is attached to this addendum.
- 2.4 Section 01 20 00-07A Roofing Specific Scope of Work
  - 2.4.1 Specific Scope of Work has been revised and is attached to this addendum
- 2.5 Section 01 12 00-07B Exterior Panels Specific Scope of Work
  - 2.5.1 Specific Scope of Work has been revised and is attached to this addendum
- 2.6 Section 01 12 00-07D Caulking Specific Scope of Work
  - 2.6.1 Specific Scope of Work has been revised and is attached to this addendum.
- 2.7 Section 01 12 00-10A Specialties Specific Scope of Work
  - 2.7.1 Specific Scope of Work has been revised and is attached to this addendum.
- 2.8 Section 01 12 00-22A Plumbing Specific Scope of Work
  - 2.8.1 Specific Scope of Work has been revised and is attached to this addendum.

### 3.0 ATTACHMENTS

- 3.1.1 ABHA Architects Addendum #4 dated 1/8/19
  - 3.1.1.1 Drawings and Specifications as listed
- 3.1.2 Section 00 40 00-22A Plumbing Bid Form
- 3.1.3 Section 00 40 00-09D Painting Bid Form
- 3.1.4 Section 01 20 00-07A Roofing Specific Scope of Work
- 3.1.5 Section 01 12 00-07B Exterior Panels Specific Scope of Work
- 3.1.6 Section 01 12 00-07D Caulking Specific Scope of Work
- 3.1.7 Section 01 12 00-10A Specialties Specific Scope of Work
- 3.1.8 Section 01 12 00-22A Plumbing Specific Scope of Work
- 3.1.9 Bid Questions Log dated 1/8/19
- 3.1.10 Alternate lighting package

**END OF ADDENDUM NO. 04**

**ADDENDUM ISSUED BY**

ABHA Architects, Inc.  
1621 N. Lincoln Street  
Wilmington, Delaware 19806

NOTICE: Attach this Addendum to the Project Manual for this project. It modifies and becomes a part of the Contract documents. Work or materials not specifically mentioned herein are to be as described in the main body of the Specifications and as shown on the Drawings.

Acknowledge receipt of the Addendum in the space provided on the Bid Form. This Addendum is being transmitted to all pre-qualified contractors who have received Contract Documents. If there are any problems with legibility or content, please contact ABHA Architects, Inc. (302) 658-6426.

**LIST OF ATTACHMENTS:**

DRAWINGS – VOLUME 1

- S-111 SECOND FLOOR FRAMING PLAN – AREA E
- S-112 SECOND FLOOR FRAMING PLAN – AREA F
- S-203 SECTIONS AND DETAILS

DRAWINGS – VOLUME 2

- A-101.4 DEMOLITION – FIRST FLOOR PLAN – AREA D
- A-101.5 DEMOLITION – FIRST FLOOR PLAN – AREA E
- A-101.6 DEMOLITION – FIRST FLOOR PLAN – AREA F
- A-111.3 FIRST FLOOR PLAN – AREA C
- A-111.4 FIRST FLOOR PLAN – AREA D
- A-111.5 FIRST FLOOR PLAN – AREA E
- A-121.4 REFLECTED CEILING PLAN – AREA D
- A-508 SECTION DETAILS
- I-001 FINISH SCHEDULE & GENERAL NOTES
- I-111.4 FINISH PLAN – FIRST FLOOR – AREA D

DRAWINGS – VOLUME 3

- P-101.3 FIRST FLOOR PLUMBING PLAN DEMOLITION AREA A/B/C
- P-101.4 FIRST FLOOR PLUMBING PLAN DEMOLITION AREA D
- P-110.4 FIRST FLOOR PLUMBING PLAN AREA D BELOW SLAB
- P-111.4 FIRST FLOOR PLUMBING PLAN AREA D
- P-114.1 ENLARGED FOOD SERVICE PLAN BELOW SLAB PLUMBING
- P-114.2 ENLARGED FOOD SERVICE PLAN ABOVE SLAB PLUMBING
- M-500 DETAILS MECHANICAL
- M-602 SCHEDULES MECHANICAL
- E-101.1 FIRST FLOOR ELECTRICAL PLANS DEMOLITION AREAS A & C

- E-111.1 FIRST FLOOR LIGHTING PLANS AREAS A & C
- E-111.3 FIRST FLOOR LIGHTING PLANS AREA D
  
- E-111.4 FIRST FLOOR LIGHTING PLAN AREA E
- E-111.5 FIRST FLOOR LIGHTING PLAN AREA F
- E-112.1 SECOND FLOOR LIGHTING PLAN AREA E
- E-112.2 SECOND FLOOR LIGHTING PLAN AREA F
- E-113.1 FIRST FLOOR POWER PLANS AREA A, C, & G
- E-113.2 FIRST FLOOR POWER PLANS AREAS B & G
- E-113.3 FIRST FLOOR POWER PLAN AREAS C & D
- E-113.4 FIRST FLOOR POWER PLAN AREA E LOWER LEVEL AREA H
- E-114.1 SECOND FLOOR POWER PLAN AREA E
- E-115.1 ROOF POWER PLANS AREA A, B, C, D & G
- E-501 SINGLE LINE DIAGRAM ELECTRICAL
- E-600 SCHEDULES ELECTRICAL
- E-601 SCHEDULES ELECTRICAL
- E-602 SCHEDULES ELECTRICAL
- E-603 SCHEDULES ELECTRICAL
- E-604 SCHEDULES ELECTRICAL

SPECIFICATION – VOLUME 2

SPECIFICATION SECTION 06 20 00 – FINISH CARPENTRY

SPECIFICATION SECTION 32 15 00 – AGGREGATE SURFACING

MISCELLANEOUS ATTACHMENTS

- Markup of CS-103
- Terrazzo Formula

**GENERAL INFORMATION:**

1. AWI Quality Certification will not be required on this project.
2. The following substitution requests have been accepted:
  - a. Laminate Clad Casework – 3D Fabrications

**QUESTIONS AND ANSWERS:**

(see attached questions and answers log)

**CHANGES TO PROJECT MANUAL:**

SECTION 06 20 00 – FINISH CARPENTRY

Page 06 20 00 – 2, Article 1.05, Paragraph C, Subparagraph 1 & 2.  
DELETE Subparagraph 1 & 2 in their entirety.

SECTION 06 20 00 – FINISH CARPENTRY

Page 06 20 00 – 2, Article 1.05, Paragraph E.  
DELETE paragraph E in its entirety.

SECTION 06 20 00 – FINISH CARPENTRY

Page 06 20 00 – 2, Article 1.06, Paragraph A, Subparagraph 1.  
DELETE subparagraph 1 in its entirety.

SECTION 06 20 00 – FINISH CARPENTRY

Page 06 20 00 – 2, Article 1.06, Paragraph B.  
DELETE paragraph B and its subparagraphs in its entirety.

SECTION 08 70 00 – DOOR HARDWARE SCHEDULE

Page 08 70 00 – 15, Set #28  
Existing Hardware to Remain.

SECTION 12 34 00 – LAMINATE CLAD CASEWORK

Page 12 34 00 - 1, Article 1.05, Paragraph B.  
DELETE paragraph B in its entirety.

SECTION 12 34 00 – LAMINATE CLAD CASEWORK

Page 12 34 00 - 3, Article 2.01, Paragraph B, Subparagraph 2.  
ADD Subparagraph 2b & 2c.  
b. 3d Fabrications

**CHANGES TO DRAWINGS:**

DRAWING S-111

DELETE Drawing S-111 and REPLACE with Drawing S-111, dated 1/8/2019, attached to this Addendum.

DRAWING S-112

DELETE Drawing S-112 and REPLACE with Drawing S-112, dated 1/8/2019, attached to this Addendum.

DRAWING S-203

DELETE Drawing S-203 and REPLACE with Drawing S-203, dated 1/8/2019, attached to this Addendum.

DRAWING A-101.4

DELETE Drawing A-101.4 and REPLACE with Drawing A-101.4, dated 1/8/2019, attached to this Addendum.

DRAWING A-101.5

DELETE Drawing A-101.5 and REPLACE with Drawing A-101.5, dated 1/8/2019, attached to this Addendum.

DRAWING A-101.6

DELETE Drawing A-101.6 and REPLACE with Drawing A-101.6, dated 1/8/2019, attached to this Addendum.

DRAWING A-111.3

DELETE Drawing A-111.3 and REPLACE with Drawing A-111.3, dated 1/8/2019, attached to this Addendum.

DRAWING A-111.4

DELETE Drawing A-111.4 and REPLACE with Drawing A-111.4, dated 1/8/2019, attached to this Addendum.

DRAWING A-111.5

DELETE Drawing A-111.5 and REPLACE with Drawing A-111.5, dated 1/8/2019, attached to this Addendum.

DRAWING A-121.4

DELETE Drawing A-121.4 and REPLACE with Drawing A-121.4, dated 1/8/2019, attached to this Addendum.

DRAWING A-508

DELETE Drawing A-508 and REPLACE with Drawing A-508, dated 1/8/2019, attached to this Addendum.

DRAWING I-001

DELETE Drawing I-001 and REPLACE with Drawing I-001, dated 1/8/2019, attached to this Addendum.

DRAWING I-111.4

DELETE Drawing I-111.4 and REPLACE with Drawing I-111.4, dated 1/8/2019, attached to this Addendum.

## PLUMBING

### **PLUMBING**

1. Drawing P-101.3, 1ST FLOOR PLUMBING PLAN DEMOLITION AREA A/B/C:
  - a. REMOVE existing gas piping that was to be demolished off of drawing. Refer to attached drawing P-101.3.
2. Drawing P-101.4, 1ST FLOOR PLUMBING PLAN DEMOLITION AREA D:
  - a. REVISE plumbing layout for background changes. Refer to attached drawing P-101.4.
3. Drawing P-110.4, 1ST FLOOR PLUMBING PLAN AREA D BELOW SLAB:
  - a. REVISE plumbing layout for background changes. Refer to attached drawing P-110.4.
4. Drawing P-111.4, 1ST FLOOR PLUMBING PLAN AREA D:
  - a. REVISE plumbing layout for background changes. Refer to attached drawing P-111.4.
5. Drawing P-114.1, ENLARGED FOOD SERVICE PLAN BELOW SLAB PLUMBING:
  - a. REVISE plumbing layout for background changes. Refer to attached drawing P-114.1.
6. Drawing P-114.2, ENLARGED FOOD SERVICE PLAN ABOVE SLAB PLUMBING:
  - a. REVISE plumbing layout for background changes. Refer to attached drawing P-114.2.

### **MECHANICAL**

1. Drawing M-500, DETAILS MECHANICAL
  - a. REVISE Roof Duct Support Rails Detail. Refer to attached drawing M-500.
  - b. DELETE Roof Mounted Unit Isolator Detail (RTU and ERU). Refer to attached drawing M-500.
2. Drawing M-602, SCHEDULES MECHANICAL
  - a. REVISE Electric Cabinet Unit Heater Schedule. Refer to attached drawing M-602.

### **ELECTRICAL**

1. Drawing E-101.1, FIRST FLOOR ELECTRICAL PLAN DEMOLITION AREA A & C:
  - a. ADD data rack for demo. Refer to attached drawing E-101.1.
  - b. ADD data rack to legend. Refer to attached drawing E-101.1.
2. Drawing E-111.1 FIRST FLOOR LIGHTING PLAN AREA A & C:
  - a. CHANGE classroom switches to dimmer switch. Refer to attached drawing E-111.1.
  - b. REVISE sheet note #1. Refer to attached drawing E-111.1.
3. Drawing E-111.3 FIRST FLOOR LIGHTING PLAN AREA D:
  - a. CHANGE classroom switches to dimmer switch. Refer to attached drawing E-111.3.
  - b. REVISE sheet note #1. Refer to attached drawing E-111.3.
  - c. REVISE kitchen storage area. Refer to attached drawing E-111.3.
  - d. ADD dimmer board at Stage C119 for alternate #9. Refer to attached drawing E-111.3.
  - e. ADD theatrical lighting. Refer to attached drawing E-111.3.
4. Drawing E-111.4 FIRST FLOOR LIGHTING PLAN AREA E:
  - a. CHANGE classroom and common learning switches to dimmer switch. Refer to attached drawing E-111.4.

- b. REVISE sheet note #1. Refer to attached drawing E-111.4.
5. Drawing E-111.5 FIRST FLOOR LIGHTING PLAN AREA F:
  - a. CHANGE classroom and common learning switches to dimmer switch. Refer to attached drawing E-111.5.
  - b. REVISE sheet note #1. Refer to attached drawing E-111.5.
  - c. CHANGE lighting type “A” to type “A2” and CHANGE switches type in BSAP classroom. Refer to attached drawing E-111.5.
6. Drawing E-112.1 SECOND FLOOR LIGHTING PLAN AREA E:
  - a. CHANGE classroom switches to dimmer switch. Refer to attached drawing E-112.1.
  - b. ADD are of rescue signs. Refer to attached drawing E-112.1.
  - c. REVISE sheet note #1. Refer to attached drawing E-112.1.
7. Drawing E-112.2 SECOND FLOOR LIGHTING PLAN AREA F:
  - a. CHANGE classroom switches to dimmer switch. Refer to attached drawing E-112.2.
  - b. REVISE sheet note #1. Refer to attached drawing E-112.2.
  - c. CHANGE lighting type “A” to type “A2” and CHANGE switches type in BSAP classroom. Refer to attached drawing E-111.5.
8. Drawing E-113.1 SECOND FLOOR LIGHTING PLAN AREA A & C:
  - a. REVISE panel name in Stor A113. Refer to attached drawing E-113.1.
9. Drawing E-113.2 FIRST FLOOR POWER PLAN AREA B:
  - a. ADD data rack in Data C102. Refer to attached drawing E-113.2.
10. Drawing E-113.3 FIRST FLOOR POWER PLAN AREA D:
  - a. REVISE panel Jan D162. Refer to attached drawing E-113.3.
11. Drawing E-113.4 FIRST FLOOR POWER PLAN AREA E:
  - a. REVISE Workroom E110 receptacle and ADD type “C” data. Refer to attached drawing E-113.4.
12. Drawing E-114.1 SECOND FLOOR POWER PLAN AREA E:
  - a. REVISE data type in learning labs. Refer to attached drawing E-114.1.
13. Drawing E-115.1, ROOF POWER PLAN AREAS A, B, C, D & G:
  - a. REMOVE HV-3, roof receptacle and light. Refer to attached drawing E-115.1.
14. Drawing E-501, DETAILS – ELECTRICAL:
  - a. REVISE single line distribution diagram. Refer to attached drawing E-501.
15. Drawing E-600, SCHEDULES – ELECTRICAL:
  - a. ADD type “A2” to light fixture schedule. Refer to attached drawing E-600.
  - b. ADD type “X1” to light fixture schedule. Refer to attached drawing E-600.
  - c. ADD data rack to legend. Refer to attached drawing E-600.
  - d. ADD entry station, panic station and stage master to legend.
16. Drawing E-601, SCHEDULES – ELECTRICAL:
  - a. REVISE mechanical equipment electrical requirements schedule. Refer to attached drawing E-601.

17. Drawing E-602, SCHEDULES – ELECTRICAL:
  - a. REVISE panel schedule. Refer to attached drawing E-602.
18. Drawing E-603, SCHEDULES – ELECTRICAL:
  - a. REVISE panel schedule. Refer to attached drawing E-603.
19. Drawing E-604, SCHEDULES – ELECTRICAL:
  - a. REVISE panel schedule. Refer to attached drawing E-604.

CLARIFICATIONS

**MECHANICAL**

1. Electrical contractor shall provide two (2) duct smoke detectors to mechanical contractor. Mechanical contractor shall install one duct smoke detector shall be installed in each SA and RA for HRV-1.
2. Electrical contractor shall provide two (2) duct smoke detectors to mechanical contractor. Mechanical contractor shall install one duct smoke detector shall be installed in each SA and RA for ERU-1.
3. Electrical contractor shall provide two (2) duct smoke detectors to mechanical contractor. Mechanical contractor shall install one duct smoke detector shall be installed in each SA and RA for ERU-2.
4. Electrical contractor shall provide two (2) duct smoke detectors to mechanical contractor. Mechanical contractor shall install one duct smoke detector shall be installed in each SA and RA for ERU-3.
5. Electrical contractor shall provide two (2) duct smoke detectors to mechanical contractor. Mechanical contractor shall install one duct smoke detector shall be installed in each SA and RA for ERU-5.
6. Electrical contractor shall provide three (3) duct smoke detectors to mechanical contractor. Mechanical contractor shall install one duct smoke detector in SA and two in RA one for each branch HV-1.
7. Electrical contractor shall provide three (3) duct smoke detectors to mechanical contractor. Mechanical contractor shall install one duct smoke detector in SA and two in RA one for each branch HV-2.

**END OF ADDENDUM #4**

**SECTION 00 40 00**  
**BID FORM**

**For Bids Due:** 1/10/2019

**To:** Brandywine School District  
1311 Brandywine Boulevard  
Wilmington, DE 19809

**Bid Package:** 22A – Plumbing

**Name of Bidder:** \_\_\_\_\_

**Delaware Business License No.:** \_\_\_\_\_ **Taxpayer ID No.:** \_\_\_\_\_

**(Other License Nos.):** \_\_\_\_\_

**Phone No.:** \_\_\_\_\_

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized themselves with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

**BASE BID: \$** \_\_\_\_\_ **Dollars**  
(\$ \_\_\_\_\_ )

**ALTERNATES – See Specific Scope of Work for complete descriptions of alternate pricing :**

Refer to the specifications and specific scope of work for alternates. Not all of the blanks spaces may be required. Alternate prices are to conform to applicable project specification sections or drawing details. An “ADD” or “DEDUCT” amount is indicated by the crossed out part that does not apply. If alternate does not apply to a specific bid package, insert: “Not Applicable”

1. Alternate No. 1: Replace pool pak  
Add / Deduct: \_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_ )

2. Alternate No. 2: Replace Pool Lighting  
Add / Deduct: NOT APPLICABLE \_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_ )

3. Alternate No. 3: Add telescoping bleachers at gymnasium.  
Add / Deduct: NOT APPLICABLE \_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_ )

4. Alternate No. 4: NOT USED

5. Alternate No. 5: Replace gymnasium lighting.  
Add / Deduct: NOT APPLICABLE \_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_ )

- 6. Alternate No. 6: Replace gymnasium HVAC  
Add / Deduct: \_\_\_\_\_ Dollars  
(\$ )
- 7. Alternate No. 7: Refurbish, refinish, and restripe gymnasium floor. Paint Gymnasium.  
Add / Deduct: \_\_\_\_\_ NOT APPLICABLE Dollars  
(\$ )
- 8. Alternate No. 8: New backboards and wall pads at gymnasium.  
Add / Deduct: \_\_\_\_\_ NOT APPLICABLE Dollars  
(\$ )
- 9. Alternate No. 9: Replace auditorium house lighting.  
Add / Deduct: \_\_\_\_\_ NOT APPLICABLE Dollars  
(\$ )
- 10. Alternate No. 10: Refurbish auditorium stage.  
Add / Deduct: \_\_\_\_\_ NOT APPLICABLE Dollars  
(\$ )
- 11. Alternate No. 11: Replace Auditorium Seating.  
Add / Deduct: \_\_\_\_\_ NOT APPLICABLE Dollars  
(\$ )
- 12. Alternate No. 12: Curtain wall at Area D South facade.  
Add / Deduct: \_\_\_\_\_ NOT APPLICABLE Dollars  
(\$ )
- 13. Alternate No. 13: HPL Screen Wall at Area D North facade.  
Add / Deduct: \_\_\_\_\_ NOT APPLICABLE Dollars  
(\$ )
- 14. Alternate No. 14: Replace Pool Roof  
Add / Deduct: \_\_\_\_\_ Dollars  
(\$ )
- 15. Alternate No. 15: Replace Gymnasium Roof  
Add / Deduct: \_\_\_\_\_ Dollars  
(\$ )
- 16. Alternate No. 16: Replace Auditorium Roof  
Add / Deduct: \_\_\_\_\_ Dollars  
(\$ )
- 17. Alternate No. 17: Not Used
- 18. Alternate No. 18: Replacement flush valves and wash sinks  
Add / Deduct: \_\_\_\_\_ Dollars  
(\$ )

19. Alternate No. 19: Bookshelves at Classrooms  
 Add / Deduct: \_\_\_\_\_ NOT APPLICABLE \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )
20. Alternate No. 20: Tubular Skylights  
 Add / Deduct: \_\_\_\_\_ NOT APPLICABLE \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )
21. Alternate No. 21: Replace existing windows at Areas D, E, & F  
 Add / Deduct: \_\_\_\_\_ NOT APPLICABLE \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )
22. Alternate No. 22: New floors at group toilet rooms. Accent tile at walls.  
 Add / Deduct: \_\_\_\_\_ \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )
23. Alternate No. 23: New windows at Area E  
 Add / Deduct: \_\_\_\_\_ NOT APPLICABLE \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )
24. Alternate No. 24: New windows at Area F  
 Add / Deduct: \_\_\_\_\_ NOT APPLICABLE \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )
25. Alternate No. 25: Data Infrastructure  
 Add / Deduct: \_\_\_\_\_ NOT APPLICABLE \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )

**UNIT PRICES – See specific Scope of Work for unit pricing description:**

Unit prices conform to applicable project specification section. Refer to the specifications and/or specific scope of work for a complete description of required unit prices for this bid package.

	ADD	DEDUCT
UNIT PRICE No. 1 _____	\$ _____	\$ _____
UNIT PRICE No. 2 _____	\$ _____	\$ _____

I/We acknowledge the receipt of addenda as listed below and the price(s) submitted include any cost/schedule impact they may have.

Addendum Number	Date of Addendum
_____	_____
_____	_____
_____	_____
_____	_____

This bid shall remain valid and cannot be withdrawn for **Sixty (60)** days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid (REQUIRED).

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid. Should I/We be awarded this contract, I/We pledge to complete all the work required in accordance with the project schedule include in specification section 013210.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By \_\_\_\_\_ Trading as \_\_\_\_\_  
(Individual's / General Partner's / Corporate Name)

\_\_\_\_\_  
(State of Corporation)

Business Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Witness:** \_\_\_\_\_

**By:** \_\_\_\_\_  
(Authorized Signature)

\_\_\_\_\_  
(Printed Name and Title)

**Date:** \_\_\_\_\_

**ATTACHMENTS**

- Sub-Contractor List (See Section 00435 and any updates by addenda)
- Non-Collusion Statement
- Affidavit of Employee Drug Testing Program
- Bid Security (Deposit or Bid Bond)

**BID FORM**

**Bid Package # BSD19001-22A**

**SUBCONTRACTOR LIST**

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor **must be listed for each category** where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the *Owner*, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.** This form must be filled out completely with no additions or deletions.

**NOTE: Subcontractor categories specific to each bid package are listed in specification section 00435 and will be updated at the pre-bid meeting and via addendum. If no categories are requested for a bid package, then none are required to be submitted. Refer to specification section 00435 and any addenda that may modify the required listing.**

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City &amp; State) &amp; License #</u>
Plumbing _____	_____	City _____ State _____ License # _____
_____	_____	City _____ State _____ License # _____

**BID FORM**

**NON-COLLUSION STATEMENT**

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date to the Brandywine School District.

All the terms and conditions of **Bid #BSD19001-CLAYMONT-BID\_PAC\_B** have been thoroughly examined and are understood.

**NAME OF BIDDER:** \_\_\_\_\_

**AUTHORIZED REPRESENTATIVE (TYPED):** \_\_\_\_\_

**AUTHORIZED REPRESENTATIVE (SIGNATURE):** \_\_\_\_\_

**TITLE:** \_\_\_\_\_

**ADDRESS OF BIDDER:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**E-MAIL:** \_\_\_\_\_

**PHONE NUMBER:** \_\_\_\_\_

Sworn to and Subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

My Commission expires \_\_\_\_\_ . NOTARY PUBLIC \_\_\_\_\_.

**THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.**

**AFFIDAVIT  
OF  
EMPLOYEE DRUG TESTING PROGRAM**

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

**Contractor/Subcontractor Name:** \_\_\_\_\_

**Contractor/Subcontractor Address:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Authorized Representative (typed or printed):** \_\_\_\_\_

**Authorized Representative (signature):** \_\_\_\_\_

**Title:** \_\_\_\_\_

Sworn to and Subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

My Commission expires \_\_\_\_\_. NOTARY PUBLIC \_\_\_\_\_.

**THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.**

**END OF SECTION**

**SECTION 00 40 00**  
**BID FORM**

**For Bids Due:** 1/10/2019

**To:** Brandywine School District  
1311 Brandywine Boulevard  
Wilmington, DE 19809

**Bid Package:** 09D Painting

**Name of Bidder:** \_\_\_\_\_

**Delaware Business License No.:** \_\_\_\_\_ **Taxpayer ID No.:** \_\_\_\_\_

**(Other License Nos.):** \_\_\_\_\_

**Phone No.:** \_\_\_\_\_

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized themselves with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

**BASE BID: \$** \_\_\_\_\_ **Dollars**  
(\$ \_\_\_\_\_ )

**ALTERNATES – See Specific Scope of Work for complete descriptions of alternate pricing :**

Refer to the specifications and specific scope of work for alternates. Not all of the blanks spaces may be required. Alternate prices are to conform to applicable project specification sections or drawing details. An “ADD” or “DEDUCT” amount is indicated by the crossed out part that does not apply. If alternate does not apply to a specific bid package, insert: “Not Applicable”

1. Alternate No. 1: Replace pool pak  
Add / Deduct: \_\_\_\_\_ NOT APPLICABLE \_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_ )

2. Alternate No. 2: Replace Pool Lighting  
Add / Deduct: \_\_\_\_\_ NOT APPLICABLE \_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_ )

3. Alternate No. 3: Add telescoping bleachers at gymnasium.  
Add / Deduct: \_\_\_\_\_ NOT APPLICABLE \_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_ )

4. Alternate No. 4: Not Used

5. Alternate No. 5: Replace gymnasium lighting.  
Add / Deduct: NOT APPLICABLE Dollars  
(\$ )
6. Alternate No. 6: Replace gymnasium HVAC  
Add / Deduct: NOT APPLICABLE Dollars  
(\$ )
7. Alternate No. 7: Refurbish, refinish, and restripe gymnasium floor  
Add / Deduct: \_\_\_\_\_ Dollars  
(\$ )
8. Alternate No. 8: New backboards and wall pads at gymnasium.  
Add / Deduct: NOT APPLICABLE Dollars  
(\$ )
9. Alternate No. 9: Replace auditorium house lighting.  
Add / Deduct: NOT APPLICABLE Dollars  
(\$ )
10. Alternate No. 10: Refurbish auditorium stage. **(Painting)** Addendum #4  
Add / Deduct: \_\_\_\_\_ Dollars  
(\$ )
11. Alternate No. 11: Replace Auditorium Seating.  
Add / Deduct: NOT APPLICABLE Dollars  
(\$ )
12. Alternate No. 12: Curtain wall at Area D South facade.  
Add / Deduct: \_\_\_\_\_ Dollars  
(\$ )
13. Alternate No. 13: HPL Screen Wall at Area D North facade.  
Add / Deduct: NOT APPLICABLE Dollars  
(\$ )
14. Alternate No. 14: Replace Pool Roof  
Add / Deduct: NOT APPLICABLE Dollars  
(\$ )
15. Alternate No. 15: Replace Gymnasium Roof  
Add / Deduct: NOT APPLICABLE Dollars  
(\$ )
16. Alternate No. 16: Replace Auditorium Roof  
Add / Deduct: NOT APPLICABLE Dollars  
(\$ )
17. Alternate No. 17: Not USED
18. Alternate No. 18: Replacement flush valves and wash sinks  
Add / Deduct: NOT APPLICABLE Dollars  
(\$ )

- 19. Alternate No. 19: Bookshelves at Classrooms  
 Add / Deduct: \_\_\_\_\_ NOT APPLICABLE \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )
- 20. Alternate No. 20: Tubular Skylights  
 Add / Deduct: \_\_\_\_\_ NOT APPLICABLE \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )
- 21. Alternate No. 21: Replace existing windows at Areas D, E, & F  
 Add / Deduct: \_\_\_\_\_ NOT APPLICABLE \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )
- 22. Alternate No. 22: New floors at group toilet rooms. Accent tile at walls.  
 Add / Deduct: \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )
- 23. Alternate No. 23: New windows at Area E  
 Add / Deduct: \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )
- 24. Alternate No. 24: New windows at Area F  
 Add / Deduct: \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )
- 25. Alternate No. 25: Data Infrastructure  
 Add / Deduct: \_\_\_\_\_ NOT APPLICABLE \_\_\_\_\_ Dollars  
 (\$ \_\_\_\_\_ )

**UNIT PRICES – See specific Scope of Work for unit pricing description:**

Unit prices conform to applicable project specification section. Refer to the specifications and/or specific scope of work for a complete description of required unit prices for this bid package.

	ADD	DEDUCT
UNIT PRICE No. 1 _____	\$ _____	\$ _____
UNIT PRICE No. 2 _____	\$ _____	\$ _____

I/We acknowledge the receipt of addenda as listed below and the price(s) submitted include any cost/schedule impact they may have.

Addendum Number	Date of Addendum
_____	_____
_____	_____
_____	_____
_____	_____

This bid shall remain valid and cannot be withdrawn for **Sixty (60)** days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid (REQUIRED).

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid. Should I/We be awarded this contract, I/We pledge to complete all the work required in accordance with the project schedule include in specification section 013210.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By \_\_\_\_\_ Trading as \_\_\_\_\_  
(Individual's / General Partner's / Corporate Name)

\_\_\_\_\_  
(State of Corporation)

Business Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Witness:** \_\_\_\_\_

**By:** \_\_\_\_\_  
(Authorized Signature)

\_\_\_\_\_  
(Printed Name and Title)

**Date:** \_\_\_\_\_

**ATTACHMENTS**

- Sub-Contractor List (See Section 00435 and any updates by addenda)
- Non-Collusion Statement
- Affidavit of Employee Drug Testing Program
- Bid Security (Deposit or Bid Bond)

**BID FORM**

**Bid Package # BSD19001-09D**

**SUBCONTRACTOR LIST**

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor **must be listed for each category** where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the *Owner*, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.** This form must be filled out completely with no additions or deletions.

**NOTE: Subcontractor categories specific to each bid package are listed in specification section 00435 and will be updated at the pre-bid meeting and via addendum. If no categories are requested for a bid package, then none are required to be submitted. Refer to specification section 00435 and any addenda that may modify the required listing.**

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City &amp; State) &amp; License #</u>
<u>Painting</u>	_____	City _____ State _____ License # _____

**BID FORM**

**NON-COLLUSION STATEMENT**

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date to the Brandywine School District.

All the terms and conditions of **Bid #BSD19001-CLAYMONT-BID\_PAC\_B** have been thoroughly examined and are understood.

**NAME OF BIDDER:** \_\_\_\_\_

**AUTHORIZED REPRESENTATIVE (TYPED):** \_\_\_\_\_

**AUTHORIZED REPRESENTATIVE (SIGNATURE):** \_\_\_\_\_

**TITLE:** \_\_\_\_\_

**ADDRESS OF BIDDER:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**E-MAIL:** \_\_\_\_\_

**PHONE NUMBER:** \_\_\_\_\_

Sworn to and Subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

My Commission expires \_\_\_\_\_ . NOTARY PUBLIC \_\_\_\_\_ .

**THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.**

**AFFIDAVIT  
OF  
EMPLOYEE DRUG TESTING PROGRAM**

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite, including subcontractors that complies with this regulation:

**Contractor/Subcontractor Name:** \_\_\_\_\_

**Contractor/Subcontractor Address:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Authorized Representative (typed or printed):** \_\_\_\_\_

**Authorized Representative (signature):** \_\_\_\_\_

**Title:** \_\_\_\_\_

Sworn to and Subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

My Commission expires \_\_\_\_\_. NOTARY PUBLIC \_\_\_\_\_.

**THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.**

**END OF SECTION**

SECTION 011200-07A – SPECIFIC SCOPE OF WORK – ROOFING

**SPECIFIC SCOPE – ROOFING:**

- A. The provisions outlined in the General Scope of Work shall apply to all items of this section. All work shall be in accordance with the schedule.
- B. This work shall include all labor, supervision, material, tools, equipment, shop drawings, submittals, layout, unloading, scaffolding, ladders, hoisting, transportation, taxes, permits, engineering, support functions, insurance, bonds, and any other items or services necessary for and reasonably incidental to the proper execution and completion of the work, whether temporary or permanent, in accordance with all drawings, specifications, addenda, general conditions, requirements, and other related documents as indicated herein. All work shall be furnished and installed unless noted otherwise herein. The scope of work shall include but not be limited to the following specific scope of work:

**SPECIFICATION SECTIONS**

Prepared by ABHA Architects, dated November 7, 2018:

Volume 1: Divisions 00 – 01

Volume 2: Divisions 02 – 33

The contractor is fully responsible for the technical specification sections as listed below for this Unit of Work. The exception to this is when the note “As Applicable” follows a technical specification section. In that case, other units of work, as defined by the Scope, may also have some responsibility for that particular section. General Conditions, Supplementary Conditions, General Requirements and General Scope Items apply to each and all of the Individual Units of Work.

Section	Description	Responsibility
Division 00	Bidding and Contract Requirements	In Its Entirety
Division 01	General Requirements	In Its Entirety
06 10 00	Rough Carpentry	As Applicable
07 21 00	Thermal Insulation	As Applicable
07 25 00	Weather Barriers	In Its Entirety
07 53 00	Elastomeric Membrane Roofing	In Its Entirety
07 54 19	PVC Thermoplastic single-ply roofing	In Its Entirety
07 62 00	Sheet Metal Flashing and Trim	In Its Entirety
07 71 00	Roof Specialties	In Its Entirety
07 81 00	Roof Accessories	In Its Entirety
07 92 00	Joint sealants	In Its Entirety
Division 22	Plumbing	As Applicable
Division 23	HVAC	As Applicable
Division 26	Electrical	As Applicable

**NARRATIVE:**

1. Include the cost of performance and payment bonds in the base bid.
2. Roof demo and replacement to take place during summer break 2019 and 2020 only. Misc roof work and flashing of new penetrations to take place per construction schedule.
3. This contractor shall provide all design, engineering and certifications as required for this work.

4. This contractor is required to review all drawings including Structural, Architectural Mechanical, Electrical, Plumbing, Fire Protection, and Food service prior to mobilization to site to identify all items that need to be embedded-in, penetrate or generally coordinated with roofing work.
5. Daily Cleanup of debris. If this contractor does not clean the site to the satisfaction of Whiting Turner, Whiting Turner reserves the right to clean the site with their own forces at the expense of this contractor. Site must be maintained and cleaned daily.
6. This contractor shall be required to provide dumpsters and waste removal for their work during the execution of their work.
7. This contractor is responsible for all fall protection and safety requirements associated with roof work. When working from either lifts and harnesses, or tie-offs provided by this Contractor, OSHA and Whiting-Turner standards must be met and followed at all times.
8. Provide demolition of all existing roof assemblies complete, down to existing structural roof deck. Include demolition of canopy roofs. Include removal of unused blocking, pockets, abandoned vents and curbs.
9. Any areas of existing roof that are removed on a given workday, must be made water-tight at the end of the same workday. The use of tarps does not constitute water-tight.
10. Contractor shall NOT remove sections of roof that are identified to have asbestos-containing-materials. These areas of roofing will be removed down to the deck by others. This contractor will be responsible to coordinate their work with the asbestos abatement contractor. Any areas of existing roof that are removed on a given workday by the asbestos abatement contractor, must be made water-tight at the end of the same workday by the roofing contractor.
11. Furnish and install the Ethylene-propylene-diene-monomer (EPDM) roof system. Obtain manufacturer's warranty for system.
12. Furnish and install, complete, entire roofing system including all accessories, but not limited to: insulation, cover board, membrane, flashing, termination bars, battens, miscellaneous fasteners, copings, gravel stops, walkpads, etc. Include new roof at canopies. The system is to be installed to meet the requirements of the Contract Documents and/or manufacturer's details; whichever is more stringent.
13. Provide new pads and pedestals for new and existing gas piping on the roof.
14. Coordinate your work with structural deck replacement at locations noted on drawings.
15. At locations, where existing thru-wall flashings will be buried by new roofing AND new roofing membrane will be adhered to existing building wall, this contractor shall remove existing thru-wall flashing as necessary to ensure smooth and proper adherence of new roof membrane to existing building wall.
16. This contractor shall demo, remove and dispose of existing roof drains shown to be replaced. The plumbing contractor shall disconnect old drains below deck. Roofing contractor to provide and install new roof drain fixtures. ~~Plumber to tie in new fixtures below deck.~~ Include connection to existing roof drain piping. **Contractor to confirm with local jurisdiction if this work must be completed by a licensed plumber and comply with local jurisdiction requirements. Plumber will only install new storm piping as indicated on P Drawings, all other piping between existing and new drains is by Roofer.** *Addendum #4* - Plumber will not supply roof drain fixtures.
17. This contractor shall prepare all required information and materials and attend the required pre-installation conference, as per the Contract Documents.
18. This contractor shall provide all required inspections and warranties.
19. Furnish and install mock-up(s) as required by the Contract Documents. Mock-up(s) will not only be used to approve materials but to establish the quality for the entire project. Any area not conforming to the mock-up will be re-worked. In addition, the architect will inspect the first sections of completed work to develop a standard for the rest of the work. An exterior wall mock-up will be needed; review the Contract Documents for all other mock-ups required.

20. Field verify steel framing, curbs, and other conditions effecting this work and notify WT of any conflicts at least two (2) weeks prior to the start of this work. Commencement of this work will constitute acceptance of the condition by this contractor.
21. Furnish and install all sealants, mastics, and splicing cement associated with the work installed herein.
22. This contractor shall provide all sealants, caulking, etc. between the roof system and all adjacent building materials. Install as per the manufacturer's specifications and directions.
23. Furnish and install all roof blocking including but not limited to all top and bottom of the parapet, roof edge roof area divider, expansion joints, and rooftop equipment curb blocking for all Mechanical/Electrical/Plumping/Fire Protection equipment, etc. Include wood blocking as necessary to make the mechanical equipment level. See LEED Requirements for wood.
24. Furnish and install any blocking necessary for all roof accessories such as ladders, roof hatches, fall arrest, etc.
25. This contractor shall provide all roofing cant strips – including wood cant strips and any necessary brackets or installation hardware.
26. Furnish and install all flat and tapered roofing insulation. Provide shop drawings 3 weeks after award.
27. Provide appropriate perimeter blocking thickness as determined by the tapered insulation thickness, regardless of contract drawings. Fascia height should be sized to cover blocking and provide appreciate reveal at brick regardless of height shown on contract drawings
28. Furnish and install all required vapor barriers as required within the roofing systems.
29. Furnish and install all metal fascia's as indicated on the Contract Documents.
30. This contractor shall furnish and install all roof fascia plywood and/or blocking and roof edge blocking.
31. Furnish and install all flashing, both metal and membrane, associated with the roof installation. This includes but is not limited to, parapet coping and flashing, reglets, roof edge, counter-flashing (including those on curbs provided by others), gravel stops, etc. This Contractor is required to perform all required caulking of copings and flashings where called out on the Contract Documents.
32. Furnish and install all flashing, both metal and membrane and patching, associated with the penetrations of existing roofing systems for new and removed mechanical, plumbing and electrical items. Include this work in base bid, extent of "existing" to be dictated by which roofing alternates will be accepted.
33. This contractor shall coordinate with all architectural, mechanical, and electrical drawings and with related Contractors to determine the amount of roof penetrations and provide the proper flashing.
34. Furnish and install all pipe enclosure details including all flashings, sealants, fasteners, sheet metal enclosures, etc. for a complete system.
35. This contractor shall flash, seal, etc. all steel/mechanical/plumbing/electrical/accessory penetrations in the roof. Provide boots, pre-molded pipe seals and pitch pockets as necessary for each penetration.
36. Furnish and install the roof expansion joint system and area dividers including but not limited to, blocking, plates, angles, tension bars, flashing, caps, fasteners, etc.
37. This contractor shall furnish and install all gutters, downspouts, and scuppers, complete.
38. Furnish and install all required splash blocks.
39. This contractor shall furnish and install all required roof treads and walkway pads as indicated in the Contract Documents, including any required 'slip sheeting' or other type of wear pad between the roof and roof treads per the manufacturer's requirements. Coordinate locations and extent with the mechanical drawings.
40. This contractor will perform testing on the roof system as required by the Contract Documents and manufacturer's requirements.
41. This contractor shall insure that material and equipment loading do not exceed the allowable capacity. Verify loading requirements and limits with WT and the Contract Documents.
42. This contractor is responsible to protect all work in progress from rain or moisture on a daily basis.

43. This contractor shall protect all permanent roofing during execution of this work.

### **ALLOWANCES**

Include the following allowances in the base bid. They will be billed against on a time and material basis during the project with labor rates and unit prices that will include the allowable overhead and profit. Any unused portion will be credited from the contract. The allowances can be used for another purpose at the discretion of the CM at any time:

**Allowance #1** – Include \$20,000 for miscellaneous roofing as directed by the CM.

**Allowance #2** – Include 600 Laborer man hours for clean up as directed by the CM.

### **ALTERNATES**

Provide all roofing work, in accordance with above specific scope of work, as applicable, for the alternates listed below.

Insert the following alternate prices into the spaces provided on the bid form.

**ALTERNATE No. 1:** Replace pool pak

**ALTERNATE No. 2:** Replace Pool Lighting

**ALTERNATE No. 3:** Add telescoping bleachers at gymnasium.

**ALTERNATE No. 4:** NOT USED

**ALTERNATE No. 5:** Replace gymnasium lighting.

**ALTERNATE No. 6:** Replace gymnasium HVAC

**ALTERNATE No. 7:** Refurbish, refinish, and restripe gymnasium floor. Paint Gymnasium.

**ALTERNATE No. 8:** New backboards and wall pads at gymnasium.

**ALTERNATE No. 9:** Replace auditorium house lighting.

**ALTERNATE No. 10:** Refurbish auditorium stage.

**ALTERNATE No. 11:** Replace Auditorium Seating.

**ALTERNATE No. 12:** Curtain wall at Area D south facade.

**ALTERNATE No. 13:** HPL Screen Wall at Area D north facade.

**ALTERNATE No. 14:** Replace Pool Roof

**ALTERNATE No. 15:** Replace Gymnasium Roof

**ALTERNATE No. 16:** Replace Auditorium Roof

**ALTERNATE No. 17:** NOT USED

**ALTERNATE No. 18:** Replacing flush valves and wash sinks.

**ALTERNATE No. 19:** Bookshelves at Classrooms.

**ALTERNATE No. 20:** Tubular Skylights

**ALTERNATE No. 21:** Replace existing windows at Areas D, E, & F

**ALTERNATE No. 22:** New floors at group toilet rooms. Accent tile at walls.

**ALTERNATE No. 23:** New windows at Area E

**ALTERNATE No. 24:** New windows at Area F

**ALTERNATE No. 25: Data Infrastructure**

**UNIT PRICES**

Provide the following unit prices. Whiting-Turner reserves the right to request lump sum or T&M pricing for extra work in lieu of applying unit prices.

	<u>ADD</u>	<u>DEDUCT</u>
UNIT PRICE No. 1    Remove portions of existing, failed roof deck. Replace with tectum deck to match existing roof deck, for amounts up to 50 square feet, per s.f.	\$	\$
UNIT PRICE No. 2    Remove portions of existing, failed roof deck. Replace with tectum deck to match existing roof deck, for amounts 51 – 100 square feet, per s.f.	\$	\$
UNIT PRICE No. 3    Remove portions of existing, failed roof deck. Replace with tectum deck to match existing roof deck, for amounts over 100 square feet, per s.f.	\$	\$
UNIT PRICE No. 4    Remove portions of existing, failed roof deck. Replace with metal roof deck to match existing deck thickness, for amounts up to 50 square feet, per s.f.	\$	\$
UNIT PRICE No. 5    Remove portions of existing, failed roof deck. Replace with metal roof deck to match existing deck thickness, for amounts 51 – 100 square feet, per s.f.	\$	\$
UNIT PRICE No. 6    Remove portions of existing, failed roof deck. Replace with metal roof deck to match existing deck thickness, for amounts over 100 square feet, per s.f.	\$	\$

SECTION 011200-07B – SPECIFIC SCOPE OF WORK – EXTERIOR PANELS

**SPECIFIC SCOPE – EXTERIOR PANELS:**

- A. The provisions outlined in the General Scope of Work shall apply to all items of this section. All work shall be in accordance with the schedule.
- B. This work shall include all labor, supervision, material, tools, equipment, shop drawings, submittals, layout, unloading, scaffolding, ladders, hoisting, transportation, taxes, permits, engineering, support functions, insurance, bonds, and any other items or services necessary for and reasonably incidental to the proper execution and completion of the work, whether temporary or permanent, in accordance with all drawings, specifications, addenda, general conditions, requirements, and other related documents as indicated herein. All work shall be furnished and installed unless noted otherwise herein. The scope of work shall include but not be limited to the following specific scope of work:

**SPECIFICATION SECTIONS**

Prepared by ABHA Architects, dated November 7, 2018:

Volume 1: Divisions 00 – 01

Volume 2: Divisions 02 – 33

The contractor is fully responsible for the technical specification sections as listed below for this Unit of Work. The exception to this is when the note “As Applicable” follows a technical specification section. In that case, other units of work, as defined by the Scope, may also have some responsibility for that particular section. General Conditions, Supplementary Conditions, General Requirements and General Scope Items apply to each and all of the Individual Units of Work.

Section	Description	Responsibility
Division 00	Procurement and Contracting Requirements	In Its Entirety
Division 01	General Requirements	In Its Entirety
Division 02	Existing Conditions	As Applicable
Division 05	Metals	As Applicable
<b>05 75 00</b>	<b>Decorative Formed Metal</b>	<b>As Applicable – Addendum #4</b>
Division 07	Thermal and Moisture Protection	As Applicable
07 42 13	Metal Wall Panels	In Its Entirety
07 42 33	Phenolic Wall Panels	In Its Entirety
07 62 00	Sheet Metal Flashing and Trim	As Applicable
07 92 00	Joint Sealants	In Its Entirety
07 95 13	Expansion Joint Cover Assemblies	As Applicable
<b>Division 10</b>	<b>Specialties</b>	<b>As Applicable – Addendum #2</b>
<b>10 82 10</b>	<b>Aluminum Equipment Screen</b>	<b>In Its Entirety – Addendum #2</b>

**NARRATIVE:**

1. Include the cost of performance and payment bonds in the base bid.
2. Daily Cleanup of debris. If this contractor does not clean the site to the satisfaction of Whiting Turner, Whiting Turner reserves the right to clean the site with their own forces at the expense of this contractor. Site must be maintained and cleaned daily.
3. This contractor is responsible for all fall protection and safety requirements associated with this work. When working from either lifts and harnesses, or tie-offs provided by this Contractor, OSHA and Whiting-Turner standards must be met and followed at all times.

4. Furnish and install insulated metal panels typical as shown on A-434, including all required fasteners, clips, adhesives, sealants etc. as required for a complete system.
5. Furnish and install all HPL screen walls typical as shown on A-313 and A-614.
6. Aluminum cap at HPL screen walls as shown on A-313 shall be provided by this contractor.
7. Furnish and install HPL wall panels in the new vestibule as shown on A-316.
8. Furnish and install aluminum composite material at entrance typical as shown on A-614 and A-214.
9. Furnish and install all prefinished aluminum equipment screens as indicated on A311. Structural steel framing is by others.
10. Caulking integral to systems under this scope of work to be provided by this contractor. Caulking of wall panels to adjacent materials is by others.
11. Provide metal trim around windows and HPL panels, see examples in A3/A-611 and A4/A-611
12. Provide metal flashing as detailed on C4/A-421

### ALLOWANCES

Include the following allowances in the base bid. They will be billed against on a time and material basis during the project with labor rates and unit prices that will include the allowable overhead and profit. Any unused portion will be credited from the contract. The allowances can be used for another purpose at the discretion of the CM at any time:

NONE

### ALTERNATES

Provide all wall panel work, in accordance with above specific scope of work, as applicable, for the alternates listed below.

Insert the following alternate prices into the spaces provided on the bid form.

**ALTERNATE No. 1:** Replace pool pak

**ALTERNATE No. 2:** Replace Pool Lighting

**ALTERNATE No. 3:** Add telescoping bleachers at gymnasium.

**ALTERNATE No. 4:** NOT USED

**ALTERNATE No. 5:** Replace gymnasium lighting.

**ALTERNATE No. 6:** Replace gymnasium HVAC.

**ALTERNATE No. 7:** Refurbish, refinish, and restripe gymnasium floor. Paint gymnasium.

**ALTERNATE No. 8:** New backboards and wall pads at gymnasium.

**ALTERNATE No. 9:** Replace auditorium house lighting.

**ALTERNATE No. 10:** Refurbish auditorium stage.

**ALTERNATE No. 11:** Replace auditorium seating.

**ALTERNATE No. 12:** Curtain wall at Area D south facade.

**ALTERNATE No. 13:** HPL screen wall at Area D north facade.

**ALTERNATE No. 14:** Replace pool roof.

**ALTERNATE No. 15:** Replace gymnasium roof.

**ALTERNATE No. 16:** Replace auditorium roof.

**ALTERNATE No. 17:** NOT USED

**ALTERNATE No. 18:** Replacing flush valves and wash sinks.

**ALTERNATE No. 19:** Bookshelves at classrooms.

**ALTERNATE No. 20:** Tubular skylights.

**ALTERNATE No. 21:** Replace existing windows at Areas D, E, & F.

**ALTERNATE No. 22:** New floors at group toilet rooms. Accent tile at walls.

**ALTERNATE No. 23:** New windows at Area E.

**ALTERNATE No. 24:** New windows at Area F.

**ALTERNATE No. 25:** Data infrastructure.

**UNIT PRICES**

Provide the following unit prices. Whiting-Turner reserves the right to request lump sum or T&M pricing for extra work in lieu of applying unit prices.

None.

SECTION 011200-07D – SPECIFIC SCOPE OF WORK –CAULKING

**SPECIFIC SCOPE – CAULKING:**

- A. The provisions outlined in the General Scope of Work shall apply to all items of this section. All work shall be in accordance with the schedule.
- B. This work shall include all labor, supervision, material, tools, equipment, shop drawings, submittals, layout, unloading, scaffolding, ladders, hoisting, transportation, taxes, permits, engineering, support functions, insurance, bonds, and any other items or services necessary for and reasonably incidental to the proper execution and completion of the work, whether temporary or permanent, in accordance with all drawings, specifications, addenda, general conditions, requirements, and other related documents as indicated herein. All work shall be furnished and installed unless noted otherwise herein. The scope of work shall include but not be limited to the following specific scope of work:

**SPECIFICATION SECTIONS**

Prepared by ABHA Architects, dated November 7, 2018:

Volume 1: Divisions 00 – 01

Volume 2: Divisions 02 – 33

The contractor is fully responsible for the technical specification sections as listed below for this Unit of Work. The exception to this is when the note “As Applicable” follows a technical specification section. In that case, other units of work, as defined by the Scope, may also have some responsibility for that particular section. General Conditions, Supplementary Conditions, General Requirements and General Scope Items apply to each and all of the Individual Units of Work.

Section	Description	Responsibility
Division 00	Bidding and Contract Requirements	In Its Entirety
Division 01	General Requirements	In Its Entirety
02 41 00	Demolition	As Applicable
Division 04	Masonry	As Applicable
07 92 00	Joint Sealants	In Its Entirety
Division 08	Openings	As Applicable
Division 09	Finishes	As Applicable

**NARRATIVE:**

1. Include the cost of performance and payment bonds in the base bid.
2. Daily Cleanup of debris. If this contractor does not clean the site to the satisfaction of Whiting Turner, Whiting Turner reserves the right to clean the site with their own forces at the expense of this contractor. Site must be maintained and cleaned daily.
3. All trucks are required to clean their tires prior to leaving the project site.
4. This contractor is responsible for all fall protection and safety requirements associated with roof work. When working from either lifts and harnesses, or tie-offs provided by this Contractor, OSHA and Whiting-Turner standards must be met and followed at all times.
5. Furnish and install mock-up(s) as required by the Contract Documents. Mock-up(s) will not only be used to approve materials but to establish the quality for the entire project. Any area not conforming to the mock-up will be re-worked. In addition, the architect will inspect the first sections of completed work to develop a standard for the rest of the work. An exterior wall mock-up will be needed; review the Contract Documents for all other mock-ups required.

6. Furnish and install caulking or sealants at the following locations, both interior and exterior when applicable:
  - A. Door frames, exterior, to adjoining material.
  - B. New Elevator jambs
  - C. Interior door and window frames to adjoining material.
  - D. Overhead coiling doors, exterior, to adjoining material.
  - E. Plumbing fixtures to adjoining material.
  - F. Bathroom accessories to adjoining material (only if shown on drawings).
  - G. Windows/Aluminum to interior finish (drywall/masonry/etc.).
  - H. Interior/exterior masonry to masonry.
  - I. Drywall to masonry (**exposed**). *Addendum #4*
  - J. Drywall to Steel (**exposed**). *Addendum #4*
  - K. Masonry to concrete
  - L. Metal panel (including corrugated metal panel) to masonry or adjoining material.
  - M. Wall construction joints, interior or exterior.
  - N. Louvers.
  - ~~O. Casework and trim to adjoining materials. *Addendum #2*~~
  - P. Stone treads see A-313
  - Q. Head joints at cast stone cap, See examples E6/A-314 and A3/A-613
  - R. Lockers to solid surface enclosure, see typical detail on A-511
  - ~~S. In general, all sealants between dissimilar materials unless noted below. *Addendum #4*~~
  - T. In general, all exterior sealants **noted on drawings** unless noted below. *Addendum #4*
  - U. In general, all interior sealants **noted on drawings** unless noted below. *Addendum #4*
7. The following sealants are furnished and installed by others:
  - A. Window to window.
  - B. Exterior Windows and storefront to masonry.
  - C. Aluminum to aluminum.
  - D. Internal to the roofing system.
  - E. Metal panel to metal panel.
  - F. Kitchen equipment.
  - G. Fire and acoustical sealants associated with the partitions.
  - H. Fire caulking at mechanical and electrical penetrations.
  - I. **Casework and trim to adjoining materials** *Addendum #2*
  - J. **Tile to tile** *Addendum #4*
8. Provide warranty for this work as per the Contract Documents.
9. Furnish and install all backer rods or embeds associated with this work.
10. Submit shop drawings, instructions, certificates, and reports for all joint systems as specified.
11. Furnish and install all fill materials (**including backer rod and bond breaker**) as necessary to complete the work herein. ~~Materials include but are not limited to firestop devices, sealants, composite sheets, putties, wrap strips, mortars, pillows/bags, and silicone foams. *Addendum #4*~~
12. Rake out and remove sealant and backer rod of all existing exterior masonry control joints, provide new backer rod and sealant. See note B on Exterior Elevations

### **ALLOWANCES**

**Include the following allowances in the base bid. They will be billed against on a time and material basis during the project with labor rates and unit prices that will include the allowable overhead and profit. Any unused portion will be credited from the contract. The allowances can be used for another purpose at the discretion of the CM at any time:**

1. **Allowance No. 1:** Include the amount of \$5,000 for miscellaneous caulking

### **ALTERNATES**

**Insert the following alternate prices into the spaces provided on the bid form.**

**ALTERNATE No. 1:** Replace pool pak

**ALTERNATE No. 2:** Replace Pool Lighting

**ALTERNATE No. 3:** Add telescoping bleachers at gymnasium.

**ALTERNATE No. 4:** NOT USED

**ALTERNATE No. 5:** Replace gymnasium lighting.

**ALTERNATE No. 6:** Replace gymnasium HVAC

**ALTERNATE No. 7:** Refurbish, refinish, and restripe gymnasium floor. Paint Gymnasium.

**ALTERNATE No. 8:** New backboards and wall pads at gymnasium.

**ALTERNATE No. 9:** Replace auditorium house lighting.

**ALTERNATE No. 10:** Refurbish auditorium stage.

**ALTERNATE No. 11:** Replace Auditorium Seating.

**ALTERNATE No. 12:** Curtain wall at Area D south facade.

**ALTERNATE No. 13:** HPL Screen Wall at Area D north facade.

**ALTERNATE No. 14:** Replace Pool Roof

**ALTERNATE No. 15:** Replace Gymnasium Roof

**ALTERNATE No. 16:** Replace Auditorium Roof

**ALTERNATE No. 17:** NOT USED

**ALTERNATE No. 18:** Replacing flush valves and wash sinks.

**ALTERNATE No. 19:** Bookshelves at Classrooms.

**ALTERNATE No. 20:** Tubular Skylights

**ALTERNATE No. 21:** Replace existing windows at Areas D, E, & F

**ALTERNATE No. 22:** New floors at group toilet rooms. Accent tile at walls.

**ALTERNATE No. 23:** New windows at Area E

**ALTERNATE No. 24:** New windows at Area F

**ALTERNATE No. 25:** Data Infrastructure

### **UNIT PRICES**

None.

SECTION 011200-10A – SPECIFIC SCOPE OF WORK – SPECIALTIES

**SPECIFIC SCOPE – SPECIALTIES:**

- A. The provisions outlined in the General Scope of Work shall apply to all items of this section. All work shall be in accordance with the schedule.
- B. This work shall include all labor, supervision, material, tools, equipment, shop drawings, submittals, layout, unloading, scaffolding, ladders, hoisting, transportation, taxes, permits, engineering, support functions, insurance, bonds, and any other items or services necessary for and reasonably incidental to the proper execution and completion of the work, whether temporary or permanent, in accordance with all drawings, specifications, addenda, general conditions, requirements, and other related documents as indicated herein. All work shall be furnished and installed unless noted otherwise herein. The scope of work shall include but not be limited to the following specific scope of work:

**SPECIFICATION SECTIONS**

Prepared by ABHA Architects, dated November 7, 2018:

Volume 1: Divisions 00 – 01

Volume 2: Divisions 02 – 33

The contractor is fully responsible for the technical specification sections as listed below for this Unit of Work. The exception to this is when the note “As Applicable” follows a technical specification section. In that case, other units of work, as defined by the Scope, may also have some responsibility for that particular section. General Conditions, Supplementary Conditions, General Requirements and General Scope Items apply to each and all of the Individual Units of Work.

<b>Section</b>	<b>Description</b>	<b>Responsibility</b>
Division 00	Procurement and Contracting Requirements	In Its Entirety
Division 01	General Requirements	In Its Entirety
Division 02	Existing Conditions	As Applicable
Division 06	Woods, Plastics, and Composites	As Applicable
Division 07	Thermal and Moisture Protection	As Applicable
07 92 00	Joint Sealants	In Its Entirety
Division 08	Openings	As Applicable
08 36 13	Sectional Doors	In Its Entirety
Division 09	Finishes	As Applicable
<b>Division 10</b>	<b>Specialties</b>	<b>In Its Entirety, Excluding 10 82 00 – Addendum #2</b>
<b>10 82 10</b>	<b>Aluminum Equipment Screen</b>	<b>By Others – Addendum #2</b>
<b>11 52 13</b>	<b>Projection Screens</b>	<b>In Its Entirety – Addendum #2</b>

**NARRATIVE:**

1. Include the cost of performance and payment bonds in the base bid.
2. Daily Cleanup of debris. If this contractor does not clean the site to the satisfaction of Whiting Turner, Whiting Turner reserves the right to clean the site with their own forces at the expense of this contractor. Site must be maintained and cleaned daily.

3. This contractor is responsible for all fall protection and safety requirements associated with this work. When working from either lifts and harnesses, or tie-offs provided by this Contractor, OSHA and Whiting-Turner standards must be met and followed at all times.
4. A temporary power source will be provided, but it will be the responsibility of this contractor to have a backup power source in case the temporary service goes out. Temporary power will consist of 110V service. If a larger service is required to perform any work in the scope described herein, it will be the responsibility of this contractor.
5. This contractor is required to review all drawings including Structural, Architectural, Mechanical, Electrical, Plumbing, Fire Protection, Equipment and Telecommunications prior to mobilization to site to identify all items that need to be embedded-in, penetrate, or generally coordinated with this package.
6. Temporary lighting will be provided by others. It is the responsibility of this contractor to provide supplemental lighting for surface preparation and painting as required to accomplish the work described herein.
7. Furnish and install all toilet and bath accessories, including but not limited to mirrors, paper towel dispensers, toilet tissue dispenser, waster receptacles, grab bars, janitor accessories, sanitary napkin dispensers, shower curtain/rods with the exception of owner furnished items as noted below.
8. Install only toilet accessories supplied by the owner (10 28 00).
9. Install only toilet accessories at kitchen supplied by the owner (11 40 00)
10. Furnish all necessary mounting hardware for a complete installation of toilet and bath accessories.
11. Furnish and install all toilet compartments, hardware and installation accessories. This contractor is responsible to coordinate layout and installation of materials to meet all ADA requirements for size, layout and accessory locations. Provide wall/floor stops to protect adjacent finishes as required.
12. This contractor shall furnish and install all visual display boards, including marker boards, tack boards, and visual display rails.
13. ~~Furnish and install all interior building/room signage. Addendum #4~~
14. ~~This contractor is responsible for field verification of all dimensions at all sign locations. Addendum #4~~
15. ~~This contractor is responsible for all shop drawings, product data and engineering as required for fabrication and installation of all sign components. Addendum #4~~
16. ~~Provide samples of each different sign type to be installed in the building as defined in the specifications. Addendum #4~~
17. This project is pursuing a LEED certification, sustainability design requirements must be followed.
18. Plywood or agrifiber product and associated laminating adhesive must not contain urea-formaldehyde resin.
19. This contractor shall furnish and install all operable partition systems complete, including but not limited to partition panels, tracks, hardware, motors, control wiring, buttons, sound seals, sweeps, etc. Power for electric operated partitions will be provided by the Electrical Contractor, but it is the responsibility of this contractor to coordinate all electric requirements with the electrical contractor.
20. Steel framing for operable partitions as detailed on the contract drawings is by others. However, this contractor is responsible to coordinate layout of the operable partition with the steel contractor. Any additional support steel required for a complete operable partition system, not shown on the contract drawings is the responsibility of this contractor.
21. Furnish and install all fire extinguisher cabinets, fire extinguishers and accessories. Recessed cabinets are to be coordinated with the Masonry and Partition contractors as necessary.
22. Furnish and install all automatic external defibrillator cabinets (recessed and/or surface mounted), automatic external defibrillators, and accessories. Recessed cabinets are to be coordinated with the Masonry and Partition contractors as necessary.

23. Furnish and install all preassembled lockers as indicated, including but not limited to metal lockers, hardware, accessories, identification labels, hooks, etc. This shall include lockers shown in the kitchen. Blocking and/or strapping required for the installation of lockers is by others, however this contractor is responsible for coordination of all blocking/strapping with the Drywall Contractor prior to wall close-in.
24. Furnish and install the operable glass partition (E109A) as shown on A-111.5. Door type H on A-601.
25. Provide HDPE toilet partitions
26. Furnish and install all wall protection and corner guards, FRP, WV, CG and all WPM. See A-411 and A-508 for wood veneer. Provide termination Reglet and J molding as shown in A5 and A-508. ~~Backsplash wall protection integral to casework is by others.~~ **Provide WPM, including at casework sink locations as shown on A-402 – A-404. Addendum #2**
27. Provide alternate pricing for gym equipment Alt #3 and Alt #8. Include removal of back boards and pads for Alt #8.
28. **Provide projection screens and ceiling mounted projection mounts. See C1/A-512. Projectors by others. Addendum #2**

### ALLOWANCES

Include the following allowances in the base bid. They will be billed against on a time and material basis during the project with labor rates and unit prices that will include the allowable overhead and profit. Any unused portion will be credited from the contract. The allowances can be used for another purpose at the discretion of the CM at any time:

### ALTERNATES

Provide all specialties work, in accordance with above specific scope of work, as applicable, for the alternates listed below.

Insert the following alternate prices into the spaces provided on the bid form.

**ALTERNATE No. 1:** Replace pool pak

**ALTERNATE No. 2:** Replace Pool Lighting

**ALTERNATE No. 3:** Add telescoping bleachers at gymnasium.

**ALTERNATE No. 4:** NOT USED

**ALTERNATE No. 5:** Replace gymnasium lighting.

**ALTERNATE No. 6:** Replace gymnasium HVAC.

**ALTERNATE No. 7:** Refurbish, refinish, and restripe gymnasium floor. Paint gymnasium.

**ALTERNATE No. 8:** New backboards and wall pads at gymnasium.

**ALTERNATE No. 9:** Replace auditorium house lighting.

**ALTERNATE No. 10:** Refurbish auditorium stage.

**ALTERNATE No. 11:** Replace auditorium seating.

**ALTERNATE No. 12:** Curtain wall at Area D south facade.

**ALTERNATE No. 13:** HPL screen wall at Area D north facade.

**ALTERNATE No. 14:** Replace pool roof.

**ALTERNATE No. 15:** Replace gymnasium roof.

**ALTERNATE No. 16:** Replace auditorium roof.

**ALTERNATE No. 17:** NOT USED

**ALTERNATE No. 18:** Replacing flush valves and wash sinks.

**ALTERNATE No. 19:** Bookshelves at classrooms.

**ALTERNATE No. 20:** Tubular skylights.

**ALTERNATE No. 21:** Replace existing windows at Areas D, E, & F.

**ALTERNATE No. 22:** New floors at group toilet rooms. Accent tile at walls.

**ALTERNATE No. 23:** New windows at Area E.

**ALTERNATE No. 24:** New windows at Area F.

**ALTERNATE No. 25:** Data infrastructure.

**UNIT PRICES**

Provide the following unit prices. Whiting-Turner reserves the right to request lump sum or T&M pricing for extra work in lieu of applying unit prices.

SECTION 011200-22A – SPECIFIC SCOPE OF WORK – PLUMBING

**SPECIFIC SCOPE – Plumbing:**

- A. The provisions outlined in the General Scope of Work shall apply to all items of this section. All work shall be in accordance with the schedule.
- B. This work shall include all labor, supervision, material, tools, equipment, shop drawings, submittals, layout, unloading, scaffolding, ladders, hoisting, transportation, taxes, permits, engineering, support functions, insurance, bonds, and any other items or services necessary for and reasonably incidental to the proper execution and completion of the work, whether temporary or permanent, in accordance with all drawings, specifications, addenda, general conditions, requirements, and other related documents as indicated herein. All work shall be furnished and installed unless noted otherwise herein. The scope of work shall include but not be limited to the following specific scope of work:

**SPECIFICATION SECTIONS**

Prepared by ABHA Architects, dated November 7, 2018:

Volume 1: Divisions 00 – 01

Volume 2: Divisions 02 – 33

The contractor is fully responsible for the technical specification sections as listed below for this Unit of Work. The exception to this is when the note “As Applicable” follows a technical specification section. In that case, other units of work, as defined by the Scope, may also have some responsibility for that particular section. General Conditions, Supplementary Conditions, General Requirements and General Scope Items apply to each and all of the Individual Units of Work.

Section	Description	Responsibility
Division 00	Bidding and Contract Requirements	In Its Entirety
Division 01	General Requirements	In Its Entirety
Division 03	Concrete	As Applicable
Division 04	Masonry	As Applicable
Division 05	Metals	As Applicable
07 84 00	Firestopping	As Applicable
07 92 00	Joint Sealants	As Applicable
14 21 00	Electric Traction Elevator	As Applicable
Division 22 – All subsections	Plumbing	In Its Entirety
Division 23 – All subsections	HVAC	As Applicable
Division 26 – All subsections	Electrical	As Applicable

**NARRATIVE:**

1. Include the cost of performance and payment bonds in the base bid.
2. Provide all fall protection and safety measures required to complete this work.
3. Existing system is to be modified per contract drawings and in accordance with applicable local and national codes. This Contractor has fully informed him/herself as to all existing condition and limitation which are visible and readily accessible, i.e. above acoustical ceilings as well as indicated in the contractor documents under which

the work as set forth. No allowance will be made to any contractor because of lack of such examination or knowledge. The execution of this contract is construed as conclusive evidence that the contractor has made such examinations.

4. Provide all mock-ups as required by specifications. Mock-ups will be used to approve materials and establish level of quality for the work.
5. Review all drawings including civil, structural, architectural, mechanical, electrical, plumbing, fire protection and food service prior to mobilization to identify all items that need to be embedded, penetrate or generally coordinated with mechanical work.
6. Provide all warranties for material, equipment and labor as specified.
7. Disconnect and reconnect existing HVAC equipment piping as required for equipment that must be raised for new roofing installation. Review architectural drawings for full extent of this work.
8. Provide fire-stopping sealant for all penetrations at wall, floors and ceilings.
9. Field superintendent required on-site at all times contractor's forces or subcontractor's forces are working.
10. Furnish access panels as required for concealed valves or devices for installation by others. Access panel locations to be coordinated with construction manager.
11. Provide all permits and fees required. New Castle County building permit provided by Whiting-Turner.
12. Perform hydraulic tests for all systems. All tests to be witnessed by Whiting-Turner. Provide all testing documentation to Whiting-Turner.
13. Verify all required clearances for all equipment.
14. Provide all cutting, patching, core drilling, sleeves and penetrations as required. Sleeve all penetrations at all walls and floorings. Provide sleeves to the appropriate contractors as required.
15. Provide all piping insulation per specifications. **Including "Primary" Horizontal rainwater conductors including underside of roof drains. Addendum #4**
16. Perform flushing, testing and sterilizing of domestic water systems.
17. Provide complete plumbing system to include all domestic water piping, gas piping, valves, storm water piping, floor drains, vent piping, plumbing fixtures, plumbing equipment, hose bibs, hot water heaters, expansion tanks, circulator pumps, mixing valves, gas regulators, etc.
18. Provide all vents and drains at high and low points in piping.
19. Provide all water balancing.
20. Provide start-up, testing and commissioning of all new equipment and systems as specified. Coordinate with 3<sup>rd</sup> party commissioning agent to demonstrate proper system performance and resolve operational problems. See specific commissioning plan, section 01 19 10.
21. Verify electrical requirements for new plumbing equipment matches the electrical drawings. Coordinate all power requirements with electrical contractor.
22. Verify plumbing requirements for new kitchen equipment matches the plumbing drawings. Coordinate all plumbing requirements with kitchen contractor.
23. Provide scaffolding, rigging, hoisting, security and storage for this work.
24. Provide 5 days notice prior to shutdown of any system.
25. Provide all supports required for proper installation of this work.
26. Cut all metal decking as required for installation of piping thru the roof and elevated floor slab.
27. Layout and remove concrete slab, excavating, backfilling and placing of concrete at plumbing trenching for sanitary/storm piping, ready for flooring. This contractor is responsible for providing concrete for all trenching performed within this contract. Scan floors prior to cutting to secure utilities are not cut.
28. Plumbing fixtures, gas/water/storm/sanitary piping and equipment to be demolished, plumbing contractor is responsible to drain, safe-off, isolate, mark all items to be removed. Make the first break to isolate the phase of work. Demo and haul away by Demo contractor. Install any piping/valves to

maintain systems functional in occupied areas of the building. Demolition contractor has savage rights and right of first refusal.

29. Provide mop sinks and shower base.
  30. Excavation, install and backfill of new storm line to riser at new cafeteria entrance.
  31. Final connection of drains and water to equipment and fixtures provided by kitchen equipment supplier.
  32. Provide gas regulators, shock absorbers, water heaters, expansion tanks, eye wash stations.
  33. All condensate piping and insulation from HVAC equipment to storm or outside discharge is by this contractor, including final connection to unit. Condensate pumps if needed are provided and mounted by HVAC contractor, piped by Plumbing contractor.
  34. Include disconnection gas lines of roof top units, re-piping and reconnection as needed for new equipment.
  35. Painting of newly installed roof top gas line is by painter.
  36. Provide elevator sump pump and discharge piping.
  37. Provide kitchen equipment floor drains, sinks and troughs See Kitchen drawings.
  38. ~~Disconnect roof drains for removal by roofer.~~ Roofing contractor to **disconnect**, provide and install new roof drain fixtures. Plumber to tie in new fixture below deck. Roof drain fixtures by others.
- Addendum #4*
39. Cap unused and abandoned vents below roof deck as indicated.
  40. Provide electronic water cooler with bottle filling station. Install new water filter at time of substantial completion prior to system turnover.
  41. Modify water service in room E132.
  42. Remove and reinstall new hose bib on exterior for HPL panels see B1/A-211
  43. Provide roof penetration items as detailed on A-501 for this contract's work.

### ALLOWANCES

Include the following allowances in the base bid. They will be billed against on a time and material basis during the project with labor rates and unit prices that will include the allowable overhead and profit. Any unused portion will be credited from the contract. The allowances can be used for another purpose at the discretion of the CM at any time:

**Allowance #1** Include in the base bid a \$7,500 allowance for miscellaneous plumbing work. This allowance is for additional plumbing work above and beyond work that is shown on the bid documents. This allowance to be utilized at the sole discretion of Whiting-Turner.

### ALTERNATES

Provide all mechanical work, in accordance with above specific scope of work, as applicable, for the alternates listed below.

Insert the following alternate prices into the spaces provided on the bid form.

**ALTERNATE No. 1:** Replace pool pak

**ALTERNATE No. 2:** Replace Pool Lighting

**ALTERNATE No. 3:** Add telescoping bleachers at gymnasium.

**ALTERNATE No. 4:** NOT USED

**ALTERNATE No. 5:** Replace gymnasium lighting.

**ALTERNATE No. 6:** Replace gymnasium HVAC

**ALTERNATE No. 7:** Refurbish, refinish, and restripe gymnasium floor. Paint Gymnasium.

**ALTERNATE No. 8:** New backboards and wall pads at gymnasium.

- ALTERNATE No. 9:** Replace auditorium house lighting.
- ALTERNATE No. 10:** Refurbish auditorium stage.
- ALTERNATE No. 11:** Replace Auditorium Seating.
- ALTERNATE No. 12:** Curtain wall at Area D south facade.
- ALTERNATE No. 13:** HPL Screen Wall at Area D north facade.
- ALTERNATE No. 14:** Replace Pool Roof
- ALTERNATE No. 15:** Replace Gymnasium Roof
- ALTERNATE No. 16:** Replace Auditorium Roof
- ALTERNATE No. 17:** NOT USED
- ALTERNATE No. 18:** Replacing flush valves and wash sinks.
- ALTERNATE No. 19:** Bookshelves at Classrooms.
- ALTERNATE No. 20:** Tubular Skylights
- ALTERNATE No. 21:** Replace existing windows at Areas D, E, & F
- ALTERNATE No. 22:** New floors at group toilet rooms. Accent tile at walls.
- ALTERNATE No. 23:** New windows at Area E
- ALTERNATE No. 24:** New windows at Area F
- ALTERNATE No. 25:** Data Infrastructure

**UNIT PRICES**

Provide the following unit prices. Whiting-Turner reserves the right to request lump sum or T&M pricing for extra work in lieu of applying unit prices.

None.

BSD - CLAYMONT ES RENOVATIONS - Bid Pac B  
BID QUESTION LOG

Question	Contract		Date	Response	Date of Response	Addendum
2	12B	Can the AWI Certification be waived for this project. , but still adhering to all of the standards for the AWI?	12/13/2018	Yes, AWI certification not required for this project.	1/8/2019	4
6	26A	Existing Room C146 has an electrical floor pull box that will be covered by the installation of proposed Cooler in D135. What accommodations should be made for this box.	12/13/2018	See addendum 4 for relocation of cooler.	1/8/2019	4
11	26A	Electrical Panel in Storage Rm A113 is labeled as LP-P-1A, should it be labeled as LRP-1A?	12/13/2018	Yes, relabel it as LRP-1A.	1/8/2019	4
51	12A	Please verify that the wood base for lockers, which are owned by the 6A package, shall be part of the 6A package and not the 12A package. 12A package would own the blocking only on the exterior of the lockers for solid surface locker enclosures.	12/21/2018	"wood base" is referring to the locker base constructed of 2x wood and plywood. The applicable contractor will provide the specified wall base per the finish schedule.	1/8/2019	4
52	12A	Please verify that the 10A package, which owns wall protection, would own the rigid sheet vinyl wall protection WPM-1, WPM-2 & WPM-3.	12/21/2018	Contact 10A owns rigid sheet vinyl wall protection WPM-1, WPM-2 & WPM-3.	1/8/2019	4
64	02A/09E	Can you provide dimensions for removed Terrazzo in the Cafeteria and corridors. Also is the terrazzo to be removed back to the nearest divider strip?	12/21/2018	Dimension provided on drawings attached to addendum 4. Yes, terrazzo being removed should be demoed back to the nearest divider strip.	1/8/2019	4
68	26A	Do the panels HP-1B, PP-A1D, RHP-1, PP-1K, PP-1L, PP-1J and HVAC relay box in the main electrical, room E107 along the wall shared by the boy's restroom get removed in their entirety?	12/21/2018	yes, by 26A once abandoned	1/8/2019	4
69	26A	E-113.4 - Room E107 states "existing panel and 750KVA transformer to be removed in future." Is this to be removed by the Bid Pac B Electrician	12/21/2018	Yes.	1/8/2019	4
70	26A	Panels DHP and MP1 in Janitors room D233 is not shown on the drawings and need to be removed for the installation of the elevator shaft on the 2nd floor.	12/21/2018	26A to remove both DHP and MP1.	1/8/2019	4
71	26A	Panels RP-2A and RP -2B located on the 2nd floor adjacent to stair 4 is not shown on the drawings and will need to be removed to rebuild the stair well	12/21/2018	26A to remove both RP-2A and RP-2B.	1/8/2019	4

BSD - CLAYMONT ES RENOVATIONS - Bid Pac B  
BID QUESTION LOG



Question	Contract		Date	Response	Date of Response	Addendum
83	09C	Does the transformer under the stairs in the lower electrical room remain? It is marked as Kitchen Range.	12/21/2018	yes, by 26A once abandoned	1/8/2019	4
89	09A	Please provide a 2 hr rated fire stopping detail that could be used on the south wall of rm C101 where there is a 10" gap the beam and the roof decking.	12/28/2018	See detail B3/A-508 issued in Addendum 4.	1/8/2019	4
90	09A	Please provide dimensions or angles of TV/MB walls in band room C112, west elevation.	12/28/2018	Angle of wall is based on 1'-2" offset that is equally spaced 9'-6" apart. Dimensions provided on A111.3, It is an approximate angle of 5 degrees.	1/8/2019	4
120	26A	For Alternate #5, are all items in dashed areas (Fire alarm, speakers) on E-111.2 marked alternate #5 part of the alternate or just lighting and controls?	12/28/2018	Only lighting and controls.	1/8/2019	4
121	26A	On drawing E-111.3 is fixture type CC and D part of the alternate or only type U?	12/28/2018	Only type U.	1/8/2019	4
122	26A	On drawing E-112.1 there are fixture type G1 and G2. They are not on the fixture schedule. Please advise as to which fixture they should be. Are they G1(E), G2(E)?	12/28/2018	Yes, they are G1(E) and G2(E).	1/8/2019	4
123	26A	Referencing E-501 and E-602, Panel LP-1 has (2) 4inch conduits both with #500mcm going to a 125A MLO panelboard and 125A breaker in existing MDP. Is this correct?	12/28/2018	No. It should be label No.4, which is 4#1/0 + #6 GND IN A 2" CONDUIT, instead of No.17.	1/8/2019	4
124	26A	Referencing electrical single line drawing and schedule drawings, E-501, are the panel amperages and feeders correct? LP-1 is 225A MLO on E-500 but has bus size of 125A on E-602.	12/28/2018	E-501 is correct. Change panel LP-1 bus size to 225A MLO.	1/8/2019	4
125	26A	New Panel RP-2A is not on the single line drawing. Could you provide feeder conduit and wire size for New Panel RP-2A?	12/28/2018	4#4/0 + #4 GND IN A 2 1/2" CONDUIT. Terminate on a new 225A 3P circuit breaker in DP-1.	1/8/2019	4

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126	09B	Flooring scope #13: Flooring contractor is responsible for the removal of the black adhesive that is under the abated asbestos tile. -is it ok to encapsulate the adhesive or does it have to be bead blasted?	12/28/2018	The removal of cutback / black adhesive will be dependent on both the requirements of floor preparation for the new floor specified for that space, and the floor manufacturers recommendations for floor prep. This is an option, contractor must provide compatibility letter from floor preparation material manufacture.	1/8/2019	4
127	09B	Flooring scope #14: Flooring over existing terrazzo floor. - It does not appear that too much carpet or resilient is going over existing but more that the terrazzo is to be demoed instead (designation on prints A101.4 and 101.5). - Could you please verify (hard to really tell between the demo print and finish prints) - In the areas of terrazzo demo, do you know how thick it is since we will have to build up to it?	12/28/2018	Thickness of existing terrazzo is unknown and will need to be field verified. The terrazzo is believed to be cementitious as opposed to resinous. For bidding purposes figure 1 3/8" thick	1/8/2019	4
129	31A	It appears the 120 x 146 paved play area and the adjacent 5' asphalt path was completed in Bid Package A, and not part of this contract. Please Confirm this work is completely finished	12/28/2018	Completed in Bid Pac A. Not in Bid Pac B scope.	1/8/2019	4
143	23A	Referencing Alternate #6, E-601 and E115 show HV1-3. Alternate scope of work says to install 2 new H&V units. M-113.2 only shows 2 units. Which is correct?	12/28/2018	HV-1 & HV-2 will be a part of Alternate #6. HV-3 has been deleted from the project.	1/8/2019	4
146	26A	E-501 - The wire is not defined feeding HRU 1, item 25 on the Single line. Please clarify	1/2/2019	Refer to Mechanical Equipment Electrical Requirements Schedule on drawing E-601.	1/8/2019	4
151	09C	Per finish schedule sheet I-001. Rm # C118 Auditorium Acoustical wall panel is showed on the North & South wall, but not shown on the elevation per sheet A-413	1/2/2019	Acoustic wall panels on east and west walls only. Not required and north and south.	1/8/2019	4
155	09A	Please provide GWB-1 and GWB-2 details as indicated on the reflected ceiling plans. The details only show a single layer and don't indicate what the different between the two types of drywalls used on the ceilings.	1/2/2019	There is no difference in drywall material or assembly between GWB-1 and GWB-2. All notes should read "GWB"	1/8/2019	4

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156	23A/26A	Can you provide locations for ECH-1, 2, 7,8,9,10,11? They are not in the locations provided in Mechanical drawings.	1/2/2019	ECH-1: Removed ECH-2: Removed ECH-7: Removed ECH-8: Corridor C-114 ECH-9: Corridor C114 ECH-10: Removed ECH-11: Vestibule D155, Typo tagged as ECH-1.	1/8/2019	4
157	23A/26A	ECH-6 is on Mechanical schedule but not on E-600. Is it still part of this contract?	1/2/2019	ECH-6 is removed from the project.	1/8/2019	4
158	23A/26A	Specification section 01 23 00 - Alternate #4 says not used but Mechanical schedule has an alternate #4 for H&V unit Schedule. Is this Alternate still not used?	1/2/2019	Heating & Ventilating Unit Schedule is Alternate #6, per Addendum #1.	1/8/2019	4
159	26A	Is EC providing power to MCU's? They are not on E-601.	1/2/2019	Yes and connect to local heat pump circuit.	1/8/2019	4
160	26A	Referencing E-600, Light fixture M(E) is match existing. Is there a model # or picture available?	1/2/2019	include in bid \$400 per fixture	1/8/2019	4
161	26A	Referencing E-601, note 2 says EC is to furnish FA Duct Detectors. They are not on Electrical legend or drawings.	1/2/2019	RTU-1/2, HRU-1, EXISTING AUDITORIUM UNITS AND ERU-1/2/3/4/5: (1) SUPPLY, (1) RETURN MAU-1: (1) SUPPLY HV-1/2: (1) SUPPLY (2) RETURN	1/8/2019	4
163	26A	Do all Tele/comm contractors have to be on State of Delaware approved contractor list?	1/2/2019	yes, see contracts at delaware.gov for list	1/8/2019	4
165	09C	Music Room C-110 Sheet I-001 - Please provide wall elevation showing acoustical Panel	1/4/2019	Acoustic panels not required at Music Room C-110	1/8/2019	4

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Question	Contract		Date	Response	Date of Response	Addendum
166	31A	Please confirm that the existing parking lot along the north property line, with an entrance across from Seminole Ave does not get a mill and overlay, nor any restriping.	1/4/2019	The contract does not include milling, overlaying, or restriping the northern parking lot (across from Seminole Avenue).	1/8/2019	4
167	31A	Please clarify what erosion control is needed for Bid package B. Plans indicate filter logs and silt fence behind school as in our contract, but work in this area has been done in Bid package A	1/4/2019	See mark-up of Sheet CS-03 for clarification	1/8/2019	4
169	31A	Linear Drain along retaining wall in patio needs to be more clearly defined. Where does the trench drain send the collected water ?	1/4/2019	The trench drain sends the collected water through a 6-inch storm pipe (new provided by 031A), then ties into an existing 12-inch storm drain.	1/8/2019	4
170	02A/05A	Who is responsible for demoing existing joists?	1/4/2019	In areas where steel is to be modified. The steel contractor is to responsible for headering off and attaching the modified joist to the new header. Removing decking and joist at openings to be created is by 02A.	1/8/2019	4
171	05A	Alternate 24: please clarify what is to be included in alternate 24. For example are the new angles shown on sections 6/S-203 and 15/S-202 all part of alternate 24 or are they to be included in the base bid? We are assuming joist reinforcing is not part of alternate 24. Are the angles at these sections only required between the boxed stud reinforcing? Or are they required at every joist? Ref S-112	1/4/2019	New bracing and brick support angles shown in sections 14 & 15/S-202. New bracing angles and cold form stud reinforcing shown in sections 6 & 7/S-203. Cold form stud reinforcing is also indicated on sheets S-102,104, 111, and 112. Joist reinforcing is not part of alternate 24.	1/8/2019	4
172	07A	The Asbestos Location Survey indicates "asbestos-containing asphalt hot mix roofing (black), located as top layer, with stone". Is the abatement contractor only removing the top layer to perform his work and who removes the existing insulation beneath down to existing deck?	1/4/2019	Abatement contractor to remove existing insulation and down to existing deck at abatement area.	1/8/2019	4

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Question	Contract		Date	Response	Date of Response	Addendum
173	07A	There was a clarification made in Addendum # 1 indicating that the bulk of the roofing work will take place in the summer of 2019 & 2020 with MEP cut ins taking place throughout the year, does this mean that these cut ins may take place prior to roof replacement meaning special mobilizations to cut existing roof & decking and temporarily flash in prior to coordination with the roof replacement?	1/4/2019	Yes	1/8/2019	4
174	07A	How will we schedule the removal of old curbs? Should we figure at the time of roof replacement or prior to the roof replacement?	1/4/2019	The old curbs will need to be removed during the phase that the that is being worked on. Roof should assume multiple mobilizations for removal and patching.	1/8/2019	4
175	07A	There is a significant number of duct supports shown on the roof and the detail indicates or appears to indicate that they rest upon the roof and get flashed into the system, as I'm not aware of the exact duct support, I would believe that the existing roof gets cut out down to the deck and the duct supports get attached to the structural deck and then flashed in but the detail doesn't actually show this. Can you further clarify this detail?	1/4/2019	New duct support shall be attached to existing roof deck. Refer to revised detail, Addendum #3.	1/8/2019	4
176	05A	Do we need additional angle framing at new deck infills?	1/4/2019	Deck infill to span from joist to joist and overlap existing deck.	1/8/2019	4
178	Terrazzo	Ref. drawing I-001, Finish schedule. We note TER-2 Terrazzo floor finishes are scheduled in rooms D131, D139, E120.1, E121.1, E130 and F109, however the floor finish plans I-111.4, I-111.5 & I-111.6 depict only TER-1 Terrazzo and ETR finishes. a. Since there is a conflict between the finish plans and finish schedule please advise which is correct. b. With only one of the Terrazzo formulas noted on the plans and schedule where is the other Terrazzo finish being used?	1/4/2019	TER-1 is the only Terrazzo floor finish. All instances of TER-2 to be changed to TER-1.	1/8/2019	4

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Question	Contract		Date	Response	Date of Response	Addendum
179	Terrazzo	Ref. drawing I-111.4, Finish Plan – First Floor – Area D, Corridor D140. We note Corridor D140 depicts an area of TER-1 hatch, however the Finish Schedule on drawing I-001 does not indicate terrazzo finishes are required. Are Terrazzo finishes required in Corridor D140 as depicted?	1/4/2019	There are portions of corridor that will require new terrazzo as depicted on I-111.4. LR/KM	1/8/2019	4
180	Terrazzo	Ref. Drawing I-111.4, Finish Plan – First Floor – Area D, Finish Keynotes. Keynote #13 indicates patching of existing terrazzo as required however we find no indication of how much patching is required. Please quantify the amount of terrazzo patching that is to be included in the bid price.	1/4/2019	Contractor responsible for field verifying existing conditions and quantifying patching of cracks and/or holes in existing terrazzo to remain. Note that all existing terrazzo to be refinished as outlined in Specification 09 66 23.	1/8/2019	4
181	Terrazzo	Ref. specification section 096623, Epoxy-Resin Terrazzo Flooring, page 8, paragraph 2.03B.1, Mix. The specification indicates to match architects samples. In order to put an accurate price on the project please provide the sample formulas or indicate if you would like to include glass, mother of pearl or other special aggregates, and if so what percentage of the formula.	1/4/2019	See terrazzo formula attached to Addendum 4.	1/8/2019	4
182/14A	04A/05A	Question #14 Previously asked but more info is needed. Please define deck material and attachment detail at new elevator shaft.	1/3/2019	Elevator shaft roof deck is indicated on sheet S-131. Fasten roof deck per structural steel note 9 on sheet S-001. Mason will need to install 05A supplied bearing plates and pockets for joists.	1/8/2019	4
183/15A	22A	Question #15 previously asked but more info needed. At CL22 A1 P-101.3 there is an additional gas line shown that was not removed in addendum #2, does this work need to be preformed in Bid Pack B?	1/3/2019	This work does not need to be performed for Bid Pac B. See Addendum #3.	1/8/2019	4
185	07A	What is the area of removal at the abatement contractor will be able to remove in a given period and what are the time of work for both the abatement and roofer contractors?	1/3/2019	The roofer is to coordinate and layout the area of removal for abatement contractor, abatement contractor is to remove 1500 sq per day and the roof must reinstall the removed area the same day.	1/8/2019	4
186	07A	Is a vapor barrier required at proposed EDM roofing system?	1/3/2019	EPDM acts as vapor barrier.	1/8/2019	4

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Question	Contract		Date	Response	Date of Response	Addendum
187	09A	Will Alternate #2 for replacing pool light fixtures require painting of newly install conduit?	1/3/2019	Painter is not to include pricing for painting conduit, scope to be determined at a later date if alternate is accepted.	1/8/2019	4
188	10A	10A Specialties Specific Scope of Work Item #13, #14, #15 and #16 to furnish and install all interior building/room signage. Provide signage specifications, signage schedule, and signage types detail drawings for all required signage (dimensional letters, panel signage, exterior signage etc.).	1/4/2019	Omit notes 13, 14, 15, and 16. Signage not in contract.	1/8/2019	4
189	10A	Confirm Alternate #3 Add telescoping bleachers at gymnasium is owned by 12B Auditorium-Gym Seating, as specified in 12B Specific Scope of Work, and Bid Form. Alternate #3 is also listed under 10A Specialties Scope of Work Item #27, but not listed on the Bid Form.	1/4/2019	Both, 10A and 12B bidders shall provide pricing for Alternate #3.	1/8/2019	4
190	10A	10A Specialties Bid Form, Alternate #8 new backboards and wall pads at gymnasium. Is Section 116623, Part 2.04 floor-mounted equipment also to be included in Alternate #8 bid price?	1/4/2019	Yes, this will be part of Alternate #8	1/8/2019	4
191	10A	. Section 116623, Part 2.05 Wall Padding, provide drawing elevations showing all wall pad locations and dimensions.	1/4/2019	Contractor to provide 200 linear feet of wall padding, 6 foot tall pads.	1/8/2019	4
192	31A	1. Please confirm demo of maintenance building is not part of sitework contract 2. What will remain after that is done (i.e. will they remove that retaining wall and any footings?)	1/4/2019	Demo of maintenance building, as indicated by the dotted square box on C-103 is not part of sitework or demolition, (02A) contract. This building demolition is not being bid a this time. Building, slab on grade, footings and foundations are to be removed by building demo contractor. Building demo contractor grade/flatten site. Site contractor will need to compact and import fill to bring up to grade.	1/8/2019	4

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193	31A	How many benches are being installed and where are they going. The plans are not internally consistent.	1/4/2019	(8) benches total (4) At Courtyard behind school. (4) At Patio in front of auditorium.	1/8/2019	4
194	31A	I don't believe it will be possible to save the two trees by the new basin. If trees are removed, will credit trees need to be added?	1/4/2019	One of the trees is shown to be removed on Sheet C-103. The other tree must remain.	1/8/2019	4
195	31A	There is confusion about what if any milling is taking place please clarify? Per plans it looks like the whole front lot of ~5500 sy	1/4/2019	The entire front parking lot and the south side parking lot up to the new construction is to be milled and overlaid. Approximate area is 5,600 square yards.	1/8/2019	4
196	03A	Item 13 in the scope of work, please clarify that the concrete contractor is only responsible for infill related to concrete and not utilities, plumbing or mechanical.	1/4/2019	Correct, see modified 03A scope.	1/8/2019	4
197	03A	For the concrete patching areas, is there an existing vapor barrier to be tied into?	1/4/2019	Past demolition in select locations of building indicates no existing vapor barrier exists.	1/8/2019	4
198	03A	Can the requirement that footings must be poured the same day as excavated, item 19, be removed. Inspections and rebar placement in some cases do not allow this from happening.	1/4/2019	See modified 03A scope	1/8/2019	4
199	03A	4.Scope of work item 37, is the owner to provide the FF/FL testing or is the contractor to provide?	1/4/2019	Testing is by others	1/8/2019	4

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Question	Contract		Date	Response	Date of Response	Addendum
200	03A	On the bid form Item #5 Replace Gymnasium Lighting, is the contractor to write in Not Applicable or Not Used on the bid form?	1/4/2019	If an alternate doesn't apply to your trade, write "Not Applicable" conversely, if an alternate applies to your trade and it is marked "Not Applicable," write in amount.	1/8/2019	4
201	All	Under the Allowance section of the scope of work, it says to provide and allowance for XYZ. Is this amount to be included in our base bid?	1/4/2019	Yes, this amount is to be include in your bid that you submit on bid day.	1/8/2019	4
202	03A	Can you clarify number and sizes of MEP pads concrete contractor is responsible for in their bid?	1/4/2019	Contractor is responsible for any MEP pads specifically called out on the project, if none are called out and are needed, a change order will be issued for additional	1/8/2019	4
203	All	Please clarify on page 3 of the Whiting Turner Contracting Company Contractor/Subcontractor EH & S manual item number 17 regarding metal ladders. Are OSHA certified metal ladders allowed in excavations?	1/4/2019	No metal ladders are allowed onsite. All items in the safety manuals are to be following, even if they are above and beyond OSHA.	1/8/2019	4
204	31A	Please clarify if there will be any mill and overlay in the front parking lot.	1/4/2019	The entire front parking lot and the south side parking lot up to the new construction is to be milled and overlaid to the property line. Approximate area is	1/8/2019	4
205	31A	What is the existing hotmix section of the parking lot that is to be removed?	1/4/2019	Information regarding the existing paving section is not available.	1/8/2019	4
206	31A	What is the section of the hotmix walkway, where the pavers will be placed, that is to be removed?	1/4/2019	Information regarding the existing paving section is not available.	1/8/2019	4
207	31A	Two pavement sections are shown on the details, please clarify where each section shall be used.	1/4/2019	The "heavy duty" paving section on Sheet C113 is <u>not</u> applicable in Bid Package B.	1/8/2019	4
208	31A	Please provide a detail for the type of pavers required and the section of paver base under the pavers.	1/4/2019	See sheet A-501 issued in addendum 4 for typical details. Reference Specification section 32 14 13 issued in Addendum 1.	1/8/2019	4

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Question	Contract		Date	Response	Date of Response	Addendum
209	26A	Addendum 1 Drawing E-113.3 - Room D113 Conference Room – I see only one Telecom outlet shown in that Room – that being a “D” type outlet – should there also be another Telecom outlet in that room? Possibly an “A” type outlet?	1/4/2019	Added receptacle data type "A". Refer to addendum 4.	1/8/2019	4
210	06A	Paragraph 099300.3.04 lists two different levels of wood floor refinishing. The drawings don't show which level is to be applied to the gym floor (alternate #7) and the stage floor (alternate #10). Please clarify.	1/4/2019	Gym Floor = Level 2 Auditorium Stage Floor = Level 1	1/8/2019	4
211	06A	The Carpentry contractor owns temporary metal stud and drywall partition. Please confirm that wood studs and plywood are acceptable for the temporary partitions.	1/4/2019	Yes, wood and plywood are an acceptable framing and sheathing alternate for temporary walls.	1/8/2019	4
212	06A	Please provide a temporary partition layout.	1/4/2019	A temp partition layout is not going to be issued, include footages listed in the 06A scope of work, additional footages to be install on T&M basis.	1/8/2019	4
213	04A/06A	Please confirm that door openings D132C and D132D do not receive a frame.	1/4/2019	No frame, masonry opening to have finished ends.	1/8/2019	4
214	06A	The door schedule on A-601 does not show the frame type nor the hardware group for openings E130.1 and E234.1, please provide.	1/4/2019	Hardware Set #7, Frame Type 1.	1/8/2019	4
215	06A/09D	Please clarify which contract owns door schedule note #6 on A-601, patch and repair of existing door frames?	1/4/2019	Filler and repairs work is by 06A, priming and painting is by Painting contractor	1/8/2019	4

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Question	Contract		Date	Response	Date of Response	Addendum
216	06A	Door schedule note #16 on A-601 states "existing frame to remain". This note is only applied to door opening E101, which is shown to receive a new door frame. Please clarify.	1/4/2019	E-101, E-103, E-105 existing frame to remain.	1/8/2019	4
217	06A	Hardware set #28, see spec section 087000, states "All existing hardware to remain. Repair or replace any hardware that does not function properly." This is too vague for bidding purposes. Please provide some kind of allowance to be figured for these existing door openings.	1/4/2019	Existing hardware to remain. Hardware not required at doors listed under set #28.	1/8/2019	4
218	06A	The door schedule on A-601 shows door openings C106A and C105A as having a 90 minute fire rating. These openings are also shown to receive glazing type G3, which is not fire rated glass. Please confirm that these openings should receive glazing type G4 (Note that glazing type G4 only has a 60 minute fire rating.	1/4/2019	These doors are to be flush wood doors, no glazing. See addendum 1 for clarification.	1/8/2019	4
219	06A	I do not understand the intent of scope item #24 of the Carpentry contract 06A. Can you please revise the wording?	1/4/2019	The sliding recessed panel doors that we are showing at the cafeteria will likely require some field or shop welding to create. If the metal door manufacturer can't make a recessed panel door this wide, contractor can use (2) leaves and have them welded together, grind smooth, ready for paint. The doors must come with all	1/8/2019	4
220	06A	Please clarify which contract owns the 3/8" wood veneer panels at the seat walls. See sections A5 and A6 on A508.	1/4/2019	12A is responsible for the wood veneer panels and Solid surface seat with plywood substrate.	1/8/2019	4

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221	06A	Please confirm my understanding of which contracts own exterior door opening demolition: a.If it is an existing hollow metal opening to be replaced with a new hollow metal opening, the Carpentry contractor owns it. b.If it is an existing aluminum opening to be replaced with a new aluminum opening, the Glass and Glazing contractor owns it. c.If the door opening is new or an existing door opening to be enlarged, the Demolition contractor owns it. d.Which contractor owns the removal of the existing overhead door (opening C107C)?	1/4/2019	A: Yes B: Yes C: Yes D: 06A	1/8/2019	4
222	06A	Please confirm that the Masonry contract owns grouting the hollow metal door frames.	1/4/2019	Yes, Mason owns grouting of newly installed HM frames, see 04A scope note 42	1/8/2019	4
223	06A	Please confirm that the note on A-111.3 regarding the wood stage floor infill is required. It is unclear what is being patched.	1/4/2019	No patching required at auditorium stage floor. Omit this note on drawings.	1/8/2019	4
224	06A/09D	There is a note on drawing A-111.3 stating to refinish/refurbish the existing stage face. Looks to be unfinished plywood and wood. I would suggest that this be painted by contract 09D, and not in the Carpentry 06A scope. Please confirm.	1/4/2019	Existing stage face to be sanded, primed and painted. by 09D	1/8/2019	4
225	06A	Please confirm that the stage, steps, and apron in the gym is existing to remain, and not to be refinished in alternate #7.	1/4/2019	Correct. Gym stage, steps and apron are existing to remain (Not in contract).	1/8/2019	4

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Question	Contract		Date	Response	Date of Response	Addendum
226	26A	Drawing E-113.4 - Room E121 Kindergarten Learning Commons – Besides the two “B” type outlet for wireless access points I see only one Telecom outlet shown in that Area – that being a “D” type outlet – should there also be another Telecom outlet in that area? Possibly an “A” type outlet?	1/4/2019	Added receptacle data type "A". Refer to addendum 4.	1/8/2019	4
227	26A	Drawing E-113.4 - Room E110 – Workroom – This room shows no Telecom outlet – Is there to be one for possibly a phone, network printer or copier?	1/4/2019	Added data type "A" and revised receptacle. Refer to addendum 4.	1/8/2019	4
228	26A	Drawing E-114.1 - Rooms E221, E229, & E239 – All - Learning Labs – These rooms show a “B” Type outlet (except E239) for a Wireless Access Point and a “D” type telecom outlet. If there is to be a “D” type outlet is there also to be a correlating “A” type outlet in each of these three rooms also? Or should the “D” outlet shown be a “C” type outlet like the ones shown in Learning Lab Rooms E207 & E209?	1/4/2019	Changed data type to "A". Refer to addendum 4.	1/8/2019	4
229	06A/07B	In my 07B scope of work from Addendum #2, spec section 057500 Decorative Formed Metal (column covers) is listed as a requirement. Although, the narrative following the spec sections does not mention column covers. Please confirm that they are definitely in contract 06A.	1/4/2019	Section 057500 is not a requirement of the 07B contractor. 07B Scope of work has been corrected to reflect this and will be issued in Addendum #4.	1/8/2019	4
230	31A	Scope item 23 in addendum #2 states the contract for 31A owns retaining walls; however, item 38 states that retaining walls are by others. Please clarify.	1/4/2019	See modified 31A scope	1/8/2019	4
231	07A	Under Specific Scope of Work – Roofing, the plumbing contractor is to be responsible to disconnect existing and tie-in the new roof drains, under our scope of work will the plumbing contractor be able to keep up with our pace of work or will he dictate as to how many he can disconnect and hookup?	1/4/2019	See revised 07A/22A scopes. Additionally all work is to be completed as dictated by the project schedule. Contractors shall coordinate their work with other trades and provide sufficient manpower to keep up with the schedule.	1/8/2019	4
232	10A	10A Specialties Specific Scope of Work Item 27 to include removal of backboards and pads for Alternate #8. Confirm existing wall pad locations is the entirety of the wall as identified on Sheet A101-2, Demolition Keynote #D36.	1/4/2019	Bidders are responsible for examining existing site conditions prior to submitting their bid (ref. General Scope, Section 01 12 00 - 01A, Item #17).	1/8/2019	4

BSD - CLAYMONT ES RENOVATIONS - Bid Pac B  
BID QUESTION LOG

Question	Contract		Date	Response	Date of Response	Addendum
233	10A; 12B	What Phase is the Gymnasium (Alternate #8) work?	1/4/2019	Phase 5	1/8/2019	4
234	10A	Provide the Classroom location(s) on the floor plan(s) for Elevation B1/A403.	1/4/2019	Provide at Kindergarten E105	1/8/2019	4
235	10A	Finish schedule CG-1, CG-2, CG-3 and CG-4, specify corner guard lengths, and configuration (90-degree, 135-degree, etc.).	1/4/2019	Length: 72 inches Configuration: 90 degrees	1/8/2019	4
236	10A	Finish Schedule - WPM-1, WPM-2, and WPM-3, sink locations for SS-1, SS-3 and SS-4 can't be found on the plans. Please advise locations of these items.	1/4/2019	WPM is at casework. If plans do not indicate a sink in casework, wall protection is not required. WPM-3 needs to be provided behind free standing sinks in Art Room and Maker Space.	1/8/2019	4
237	10A	Previously answered bid question answer 106, states "break-away goals not required." Is the intent to have a non breakaway goal or no goal at all?	1/4/2019	Provide non breakaway goals with nets.	1/8/2019	4
238	22A	Plumbing bid form has alternate marked as NA. Drawing P-113.3 shows Alternate # 6 for the gas line to the new HV units. Please confirm Alternate # 6 is Applicable for bid Pack 22A Plumbing	1/4/2019	yes, it is applicable, see revised bid form	1/8/2019	4
239	22A/07D	Alternate 22 is Bid Pack 22A Plumbing required to remove the plumbing fixtures in the 6 Toilet Rooms and reinstall after the tile work has been completed?	1/4/2019	Yes, provide pricing to remove fixtures and reinstall when tile is complete.	1/8/2019	4
240	22A/07A	Please confirm that the roofer is supplying removing and installing all the Roof Drain. Do the drain bodies need to be insulated, if so who would own the insulation? Can drains be done prior to roof replacement?	1/4/2019	See revised 07A and 22A scopes. See section 22 07 00 Plumbing insulation, 1.2 - "Primary" Horizontal rainwater conductors including underside of roof drains. "Secondary" rainwater systems insulation is not required. Insulation of roof drains is by 22A. yes, roof drains can be installed prior to the roof replacement, roof must provide a watertight installation to existing.	1/8/2019	4
241	10A	Hufcor is an acceptable manufacture according to the specification for the glass wall partition. Hufcor does not manufacture a glass wall with STC of 37 with a floor track. We only manufacture glass wall products with ceiling tracks. Will this be acceptable?	1/4/2019	GF Series Acoustical Glass Wall is said to come in a 33/37/38 STC Rating. Ceiling track will be acceptable.	1/8/2019	4

BSD - CLAYMONT ES RENOVATIONS - Bid Pac B  
BID QUESTION LOG

Question	Contract		Date	Response	Date of Response	Addendum
242	07D	Please confirm there will be no caulking required from the HPL Wall Panels to the masonry?	1/4/2019	No caulking required.	1/8/2019	4
243	09C	Only the glazed block walls and the existing radiant heaters inside the gymnasium per wall section A1/A-313 are to be painted. No painting of the already painted standard block walls above the glazed block walls, no painting of the exposed ceiling deck material per note #5 A-121.2 and no painting of exposed structural steel inside the Gymnasium B101.	1/4/2019	All walls in gymnasium to be painted, radiant heaters to be painted, and exposed structural steel to be painted as part of Alternate #7. Base Bid: Painting not in scope	1/8/2019	4
244	09C	Drawing A-610 - General Note "C" - Calls for window lintels to be scraped, prep & painted. Can you please confirm is this for new windows only or do all exterior window lintels get painted?	1/4/2019	ALL new and existing windows lintels to be scraped, prep and painted.	1/8/2019	4
245	09C	Can you please confirm the extent of the painting in Gym B127 part of Alt #7? Are we painting existing glazed block in entirety?	1/4/2019	Painting all glazed block in its entirety.	1/8/2019	4
246	09C	Can you please confirm the extent of paint floor finishes on drawing I-111.3 & I-112.1. See below:  Rooms B102 and B103 finish key note #14 (paint only) the existing floor in these two rooms is existing epoxy flooring, are we painting over the existing epoxy flooring?  Boys Room E230 and E235, Girls Room E232 and E237, it says per finish note #11 (repaint to match existing) there is porcelain tile floor in each room, are we painting the existing tile floor?	1/4/2019	Keynotes are meant for painting walls and GWB ceilings only. Floors are not to receive paint.	1/8/2019	4
247	09C	Per drawing A121.4 and A121.5 Sheet note #8, please confirm the extent of the acoustical spray applied finished to the bottom of the deck. Are we painting the entire deck before the spray foam is applied? Or are is your intention to just apply spray foam to the entire deck and therefore no need for paint?	1/4/2019	Where spray foam is applied, painting will not be required.	1/8/2019	4
248	07D/12A	Who is responsible for caulking of Lockers to solid surface enclosures. Casework contract or Caulking contract?	1/4/2019	07D, Caulking	1/8/2019	4

BSD - CLAYMONT ES RENOVATIONS - Bid Pac B  
BID QUESTION LOG

Question	Contract		Date	Response	Date of Response	Addendum
249	31A	<p>1.What is required for the wash area?</p> <p>2.Rock /boulder excavation is usually done as a unit price per ton especially in an area such as this where it could be nothing at all or the entire site.</p> <p>3.It says we're responsible for sanitary sewer and fire hydrants I haven't seen any on this project was this just left in from phase A?</p> <p>4."" above for fencing</p> <p>5.Where can I find a detail for the section of the pavers and what is the basis of design manufacturer/product?</p> <p>6."" above for ornamental aggregate, planting beds etc. at front entrance.</p> <p>7.Per the contract documents it say we are responsible for fire protection, plumbing and electrical "as applicable" I can't find any of this that would reasonable belong to us. Is this correct?</p>	1/4/2019	<p>See modified scope for 1, 3, 4.</p> <p>#2 - Rock excavation above what is listed in scope item #9 to be handle via change order.</p> <p>#5 - See question #208</p> <p>#6 - See aggregate surfacing specification 32 15 00</p> <p>#7 MEP work is listed "as applicable" under specification section. This only applies to work within your scope.</p>	1/8/2019	4
250	31A	Concrete Dumpster pad ( sheet C-106 ) has a note to refer to architectural plan for enclosure detail. I can not find this detail.	1/4/2019	Enclosure to be provided at a later date by others	1/8/2019	4
251	26A	Void	1/4/2019	void	1/8/2019	4
252	26A	What is the approved installation method and/or raceway for new devices on existing block walls?	1/4/2019	Wiremold/surface raceway on existing masonry walls, concealed on new walls	1/8/2019	4
253	26A	Should theatrical lighting (spec section 265561) be included with alternate #9: Replace auditorium house lighting?	1/4/2019	Yes.	1/8/2019	4
254	26A	Theatrical lighting and device locations (per spec section 265561) are not shown on the electrical drawings, please advise.	1/4/2019	Refer to addendum 4.	1/8/2019	4
255	26A	Area of Rescue (spec section 289000) device locations are not shown on the electrical drawings, please advise.	1/4/2019	Refer to addendum 4.	1/8/2019	4
256	26A	Theatrical Lighting spec section 265561-1.3-A states there is an add or deduct for alternate equipment, but it is not shown on the bid form. Please advise.	1/4/2019	Delete in its entirety.	1/8/2019	4
257	26A	Symbol "G" on the lighting drawings is not designated, please clarify.	1/4/2019	No type "G" is used. If "G" is refer to "G1" and "G2", see response for question number 122.	1/8/2019	4

BSD - CLAYMONT ES RENOVATIONS - Bid Pac B  
BID QUESTION LOG

Question	Contract		Date	Response	Date of Response	Addendum
258	26A	For narrative #9 in electrical scope of work spec section 011200-26A, can an allowance be provided for refeeding circuits since the number of circuits are not known until the survey is complete?	1/4/2019	Carry an allowance in your bid for 2 mechanics for 3 days per phase, except for the last phase. Additionally carry \$400 per phase for materials. This amount is to be listed on your schedule of values.	1/8/2019	4
259	26A	Please clarify if the Advantech security and access control contract will be carried by the EC or by the owner.	1/4/2019	by contract 26A	1/8/2019	4
260	07A	Alt. 20 Tubular Skylights: Who is carrying the costs of purchasing and how long do the tubes need to be for the skylights?	1/4/2019	Alt 20 - Tubular skylights are to be provide by the roofer. Contractor to verify tube length in field. Sections are provided for reference.	1/8/2019	4
261	31A	There are two paving details ( Heavy and Light ) Which paving spec gets used for paving behind and around the school?	1/4/2019	The "heavy duty" paving section on Sheet C113 is <u>not</u> applicable in Bid Package B.	1/8/2019	4
262	07B	A-113.1 Please confirm that roof section D is to be PVC membrane roof as listed in the key, and all other sections are EPDM. Or are all roofs EPDM?	1/4/2019	Area D to be PVC. All other roofs are EPDM	1/8/2019	4
263	07B	Is the roof decking allowance (patch) in our package or under a different package?	1/4/2019	There is no decking allowance, provide decking unit cost on bid form. Changes will be handle via a change order.	1/8/2019	4
264	07B	If the roofing alternates are accepted when will they be expected to be completed? Will they during school year or added to summer work in 2019 or 2020?	1/4/2019	It is the contractors choice, could be 2019 or 2020. the following must be taken into account: Alternate work must not delay base bid work. Newly completed roofs may not be used for access, unless they are protected by 2" rigids foam and plywood.	1/8/2019	4
265	04A	The existing CMU walls have glazed block base as the first coarse, do any new CMU walls require glazed block base?	1/4/2019	Glazed block base not required at new CMU walls	1/8/2019	4
266	22A	On drawing P-111.4 are the fixtures in Bathrooms D152 and D153 part of the base bid or Alternate # 18 or are we just replacing the valves and faucets? Need clarification.	1/4/2019	The fixtures are part of Base Bid, all fixtures are being replaced.	1/8/2019	4
267	07D,10A	E1/A-514 - who owns caulking at head of glass operable partition?	1/4/2019	07D, Caulking	1/8/2019	4
268	09D/31A	Are the bollards shown on D1 and C1/A-212 by 31A?	1/4/2019	31A to provide pipe bollards, 09D to paint	1/8/2019	4

BSD - CLAYMONT ES RENOVATIONS - Bid Pac B  
BID QUESTION LOG

Question	Contract		Date	Response	Date of Response	Addendum
269	07A/22A/31A	In which packages are the drains as shown on P-111.4 in	1/4/2019	Roof drain fixtures are by 07A. Above grade SD pipe is by 22A. Subgrade SD pipe, clean out and linear drain is by 31A	1/8/2019	4
270	26A	For alternate #9 - Replacement of auditorium lighting, who is responsible for cutting and patching the existing ceiling for new fixture install? The architectural reflected ceiling plan, drawing A-121.3, shows existing ceiling to remain (not in scope of work).	1/4/2019	Cutting for the installation of the lights is by 26A, it is this contact's responsibly to keep cutting to a minimum. If patching and painting are required, it will be handle via change order to the finish contractors. Contractors should not include patching and painting of the auditorium ceiling in Alternate #9	1/8/2019	4
271	07D	Is the caulking contractor responsible for acoustical sealants at sound-rated walls?	1/4/2019	No, 09A is resilient for acoustical sealants at drywall partitions	1/8/2019	4
272	07D/09D	Section 07 92 00 2.02 2d - who is responsible for caulking hollow metal door frames to resilient flooring?	1/4/2019	07D, Caulking	1/8/2019	4
273	07B	Is the 20 day duration for the HPL panels as listed in phase 2 in the addendum # 2 project schedule for all the panels on the entire job?	1/4/2019	The 20 day schedule duration is for the installation of panels shown in elevations B1 and C1/A-211. It does not include any alternates or D1/A-212. All other panels	1/8/2019	4
274	26A	Is the attached alternate light fixture package acceptable?		See attachment in Addendum #4, The entire package is not approved, the crossed out ones are not approved substitutes. The remain are approved.	1/8/2019	4
275	07B	Is the 20 day duration for the HPL panels as listed in phase 2 in the addendum # 2 project schedule for all the panels on the entire job?	1/4/2019	The 20 day schedule duration is for the installation of panels shown in elevations B1 and C1/A-211. It does not include any alternates or D1/A-212. All other panels get installed during the phase that the interior work takes place. Durations for work not listed on the schedule will be mutually agreed upon.	1/8/2019	4

**SECTION 32 15 00**  
**AGGREGATE SURFACING**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Section includes:
  - 1. Ornamental aggregate surface at perimeter of building.

1.02 RELATED SECTIONS

- A. Section 033000 - Cast in Place Concrete
- B. Section 323119 - Architectural Fences
- C. Section 329100 - Planting Preparation

1.03 REFERENCES

- A. The following apply to work in this Section:
  - 1. ASTM: Specifications of the American Society for Testing and Materials latest editions. Modifications specified herein shall govern where conflicts with ASTM standards occur.
  - 2. AASHTO: American Association of State Highway and Transportation Officials, current published standards.

1.04 SUBMITTALS

- A. Certifications: Submit with names of materials and manufacturer.
  - 1. Submit sieve analysis for all aggregates.
- B. Product data: Submit product literature or tear sheets giving name of product and manufacturer for all components.
- C. Samples: Submit loose material in sealed bag labeled with name of material and manufacturer.
  - 1. Ornamental stone: 1/2 lb.bag.
  - 2. Geotextile: 12” square.
  - 3. Metal edging: provide color chart of standard color options for final selection.

1.05 DELIVERY STORAGE AND HANDLING

- A. Deliver, store, handle and protect all materials from damage.

**PART 2 - PRODUCTS**

2.01 MATERIALS

- A. Aggregate for base course: crusher run; natural stone, free of shale, clay, friable material, sand, and debris; graded in accordance with ASTM C136.
- B. Ornamental aggregate building perimeter: flat river jacks, 2-4” size, gray only selection of colors. A range of grays, blue-grays and dark-blues are acceptable.
- C. Separation Geotextile, used between subgrade and aggregate setting bed: Woven geotextile fabric, manufactured for separation applications; made from polyolefins or polyesters, with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
  - 1. Survivability: Class 2, AASHTO M 288.
  - 2. Requirements in three subparagraphs below are default values in AASHTO M 288 for Class 2 separation geotextiles.

3. Apparent Opening Size: No. 60 (0.250-mm) sieve, maximum; ASTM D 4751.
  4. Permittivity: 0.02 per second, minimum; ASTM D 4491.
  5. UV Stability: 50 percent after 500 hours' exposure, ASTM D 4355.
- D. Metal edge restraint: 1/8" thick x 4" height, maximum lengths, 10-foot length minimum, Color: Black.
1. Stakes: 3/16" thick x 15" long minimum, spaced 4-feet on-center, Color: Black.
  2. Corners: use prefabricated 90 degree corners.

### **PART 3 - EXECUTION**

#### **3.01 PREPARATION**

- A. Do not place base aggregate on soft, muddy or frozen areas. Correct irregularities or soft areas before placing aggregate.

#### **3.02 ORNAMENTAL AGGREGATE AT BUILDING PERIMETER**

- A. Install base aggregate as specified above.
- B. Install geotextile over aggregate base as shown on Drawings and per manufacturer's specifications.
1. Place fabric with sufficient slack so that the fabric does not tear when adding the ornamental stone.
- C. Install metal edge restraint in accordance with manufacturer's recommendations and as shown on Drawings. Drive stakes through aggregate base in order to ensure minimal frost heave. Return edge to face of building cleanly and tightly in order to fully contain ornamental stone.
- D. Spread ornamental stone on top of filter fabric and compact to depth and in locations as shown on Drawings.

**END OF SECTION**

**SECTION 06 20 00**  
**FINISH CARPENTRY**

**PART 1 GENERAL**

1.01 SECTION INCLUDES

- A. Finish carpentry items.
  - 1. Custom plastic laminate and solid surfacing reception desk.
  - 2. Solid surfacing window stools.
  - 3. Standing and running wood trim.
  - 4. Wood veneer paneling
  - 5. Plastic laminate veneer paneling
  - 6. Hang doors, install hardware.
- B. Hardware and attachment accessories.

1.02 RELATED REQUIREMENTS

- A. Section 01 74 19 – Construction Waste Management.
- B. Section 01 81 13 – Sustainable Design Requirements.
- C. Section 01 81 14 – Volatile Organic Compound (VOC) Limits For Adhesives, Sealants, Paints & Coatings.
- D. Section 01 81 19 – Indoor Air Quality Requirements.
- E. Section 06 10 00 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- F. Section 08 14 16 - Flush Wood Doors.
- G. Section 08 80 00 - Glazing:
- H. Section 09 91 23 - Interior Painting: Painting and finishing of finish carpentry items.
- I. Section 12 36 01 - Countertops, Backsplashes, and Window Stools: Solid surface material.

1.03 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2016.
- B. AWI (QCP) - Quality Certification Program; current edition at [www.awiqcp.org](http://www.awiqcp.org).
- C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.
- D. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.0; 2016.
- E. AWPA U1 - Use Category System: User Specification for Treated Wood; 2016.
- F. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2016.
- G. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
- H. NHLA G-101 - Rules for the Measurement & Inspection of Hardwood & Cypress; 2011.
- I. PS 1 - Structural Plywood; 2009.
- J. PS 20 - American Softwood Lumber Standard; 2015.
- K. WDMA I.S. 4 - Industry Specification for Preservative Treatment for Millwork; 2013.

## 1.04 LEED REQUIREMENTS

- A. LEED Focus Materials (LFMs) For This Section:
1. Targeted products containing Recycled Content (MRc4)
  2. Targeted products containing Regional Material (MRc5)
  3. Targeted products to meet Composite Wood & Agrifiber requirements (EQc4.4)

## 1.05 SUBMITTALS

- A. See Section 01 31 00 - Project Management and Coordination for submittal procedures.
- B. Product Data:
1. Provide data on fire retardant treatment materials and application instructions.
- C. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
1. ~~Provide the information required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).~~
  2. ~~Include certification program label.~~
- D. Samples: Submit two samples of finish plywood, 6 by 6 inch in size illustrating wood grain and specified finish.
- E. ~~Certificate: Submit labels and certificates required by quality assurance and quality control programs.~~
- F. LEED Product and Material Data Summary Form: For all installed products and materials of this Section, complete the "LEED Product and Material Data Summary Form" (attached to end of Section 01 81 13 - Sustainable Design Requirements)
1. Product Material Cost: Provide the cost for material, or an assembled product, including taxes and delivery but excluding any cost for labor and equipment required for installation after the material is delivered to the site.
  2. Product Data for Credit MRc4, Recycled Content: For products having recycled content, documentation indicating percentages by weight of postconsumer and pre-consumer recycled content. Include statement indicating cost for each product having recycled content.
  3. Product Data for Credit MRc5, Regional Material: For products having regional materials, documentation indicating location of raw material extraction, harvest or recovery, as well as, manufacture (location of final assembly) within 500 miles of project site. Include statement indicating cost for each material or component of the assembled product.
  4. Product Data for Credit EQc4.4, Composite Wood & Agrifiber Products: Product data sheets, MSDS, certificates or letter from product manufacture highlighting that the composite wood or agrifiber product and/or associated laminating adhesive do not contain urea-formaldehyde resin.

## 1.06 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
1. ~~Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.~~
  2. Single Source Responsibility: Provide and install this work from single fabricator.

B. ~~Quality Certification:~~

1. ~~Comply with AWI (QCP) woodwork association quality certification service/program in accordance with requirements for work specified in this section: [www.awiqcp.org/#sle](http://www.awiqcp.org/#sle).~~
2. ~~Provide labels or certificates indicating that the work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.~~
3. ~~Provide designated labels on shop drawings as required by certification program.~~
4. ~~Provide designated labels on installed products as required by certification program.~~
5. ~~Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.~~

C. Sustainability and LEED Standards Certification:

1. Regional manufactured products with percentage by weight.
2. Recycled content calculated as 1/2 preconsumer + postconsumer.
3. VOC content limitations defined in Section 018114, "Volatile Organic Compound (VOC) Limits For Adhesives, Sealants, Paints, and Coatings."
4. No Added Urea Formaldehyde in product.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect work from moisture damage.

**PART 2 PRODUCTS**

2.01 FINISH CARPENTRY ITEMS

- A. Quality Standard: Premium Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Interior Woodwork Items:
1. Moldings, Bases, Casings, and Miscellaneous Trim: Clear white pine; prepare for paint finish.
  2. Wall panels: White maple veneer plywood; prepare for transparent finish.
  3. Custom Reception desks, plastic laminate finish.

2.02 WOOD-BASED COMPONENTS

- A. Wood fabricated from old growth timber is not permitted.

2.03 LUMBER MATERIALS

- A. Softwood Lumber: White Pine species, quarter sawn, maximum moisture content of 6 percent; with vertical grain, of quality suitable for paint finish.
- B. Hardwood Lumber: White Maple species, quarter sawn, maximum moisture content of 6 percent; with vertical grain, of quality suitable for transparent finish.

2.04 SHEET MATERIALS

- A. Hardwood Plywood: Face species White Maple, quarter cut, book matched, medium density fiberboard core; HPVA HP-1, Front Face Grade AA, Back Face Grade 1, glue type as recommended for application.

2.05 PLASTIC LAMINATE MATERIALS

- A. Plastic Laminate: NEMA LD 3, HGS; color as selected by Architect.
- B. Laminate Backing Sheet: NEMA LD 3, BKL; undecorated plastic laminate.
- C. Laminate Adhesive: Type recommended by laminate manufacturer to suit application; not containing formaldehyde or other volatile organic compounds.

## 2.06 FASTENINGS

- A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; not containing formaldehyde or other volatile organic compounds.
- B. Concealed Joint Fasteners: Threaded steel.

## 2.07 ACCESSORIES

- A. Aluminum Millwork Trims: Extruded shape; smooth surface finish.
  - 1. Finish: Clear anodized
  - 2. Shapes: As indicated on drawings
  - 3. Manufacturers:
    - a. Fry Reglet Corp.; Millwork Trims: [www.fryreglet.com](http://www.fryreglet.com)
    - b. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Primer: As specified in Section 09 90 00.
- C. Wood Filler: Solvent base, tinted to match surface finish color.

## 2.08 WOOD TREATMENT

- A. Fire Retardant Treatment (FR-S Type): Chemically treated and pressure impregnated; capable of providing flame spread index of 25, maximum, and smoke developed index of 450, maximum, when tested in accordance with ASTM E84.
- B. Wood Preservative by Pressure Treatment (PT Type): Provide AWWPA U1 treatment using waterborne preservative with 0.25 percent retainage.
- C. Shop pressure treat wood materials requiring fire rating to concealed wood blocking.
- D. Provide identification on fire retardant treated material.
- E. Redry wood after pressure treatment to maximum 10 percent moisture content.

## 2.09 FABRICATION

- A. Shop assemble work for delivery to site, permitting passage through building openings.
- B. Cap exposed plastic laminate finish edges with material of same finish and pattern.
- C. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.
- D. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.
- E. Apply laminate backing sheet to reverse face of plastic laminate finished surfaces.

## 2.10 SHOP FINISHING

- A. Apply wood filler in exposed nail and screw indentations.
- B. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.
- C. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
  - 1. Transparent:
    - a. System - 11, Polyurethane, Catalyzed.
    - b. Sheen: Satin.
- D. Back prime woodwork items to be field finished, prior to installation.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify adequacy of backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

#### **3.02 INSTALLATION**

- A. Hang doors and install hardware
- B. Install work in accordance with AWI/AWMAC/WI (AWS) requirements for grade indicated.
- C. Set and secure materials and components in place, plumb and level.
- D. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.
- E. Install interior wood trim with finish nails or finish screws, set for filler.
- F. Install solid surface window stools.

#### **3.03 SITE APPLIED WOOD TREATMENT**

- A. Apply preservative treatment in accordance with manufacturer's instructions.
- B. Brush apply one coats of preservative treatment on wood in contact with cementitious materials. Treat site-sawn cuts.
- C. Allow preservative to dry prior to erecting members.

#### **3.04 PREPARATION FOR SITE FINISHING**

- A. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.
- B. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

#### **3.05 TOLERANCES**

- A. Maximum Variation from True Position: 1/16 inch.
- B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

**END OF SECTION**

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1621 N. Lincoln Street  
Wilmington, DE 19806  
(P)302-658-6426  
(F)302-658-8431  
abhagen@ABHA.com  
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CONSULTANTS

Vandemark & Lynch, Inc.  
Civil Engineers

4305 Miller Road  
Wilmington, DE 19809

PROJECT

BSD - CLAYMONT  
ELEM. SCHOOL  
RENOVATIONS

3301 GREEN STREET  
WILMINGTON, DELAWARE 19803

OWNER  
CLAYMONT ELEMENTARY SCHOOL

1311 BRANDYWINE BLVD.  
WILMINGTON, DE 19809

3	11/7/2018	BPB - ISSUED FOR BID
2	5/14/2018	BPA - CONFORMANCE SET
1	4/5/2018	BPA - ISSUED FOR BID

MARK	DATE	DESCRIPTION

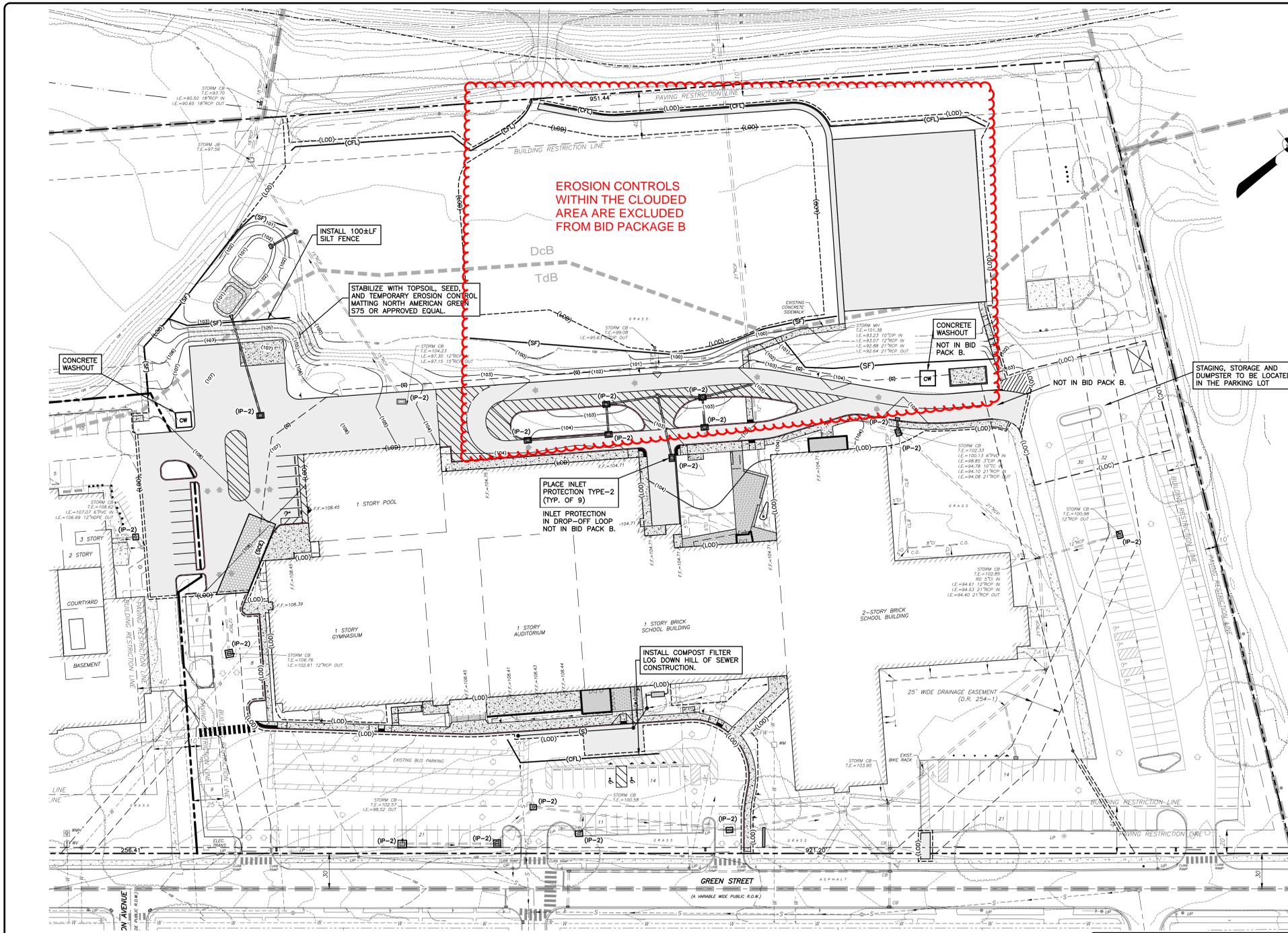
PROJECT NO: 24365.00  
FILE NAME: V&L NO. 24365.00-EROS-01  
DRAWN BY: C. HALEY  
CHECKED BY: S. ROSENFELD

SHEET TITLE  
CONSTRUCTION SITE  
STORMWATER MANAGEMENT  
PLAN

SCALE: 1" = 40'

**CS-103**

24365.00-EROS-01



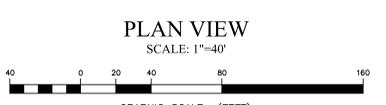
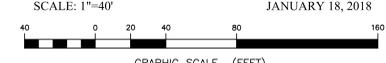
**LEGEND**

EXISTING	PROPOSED	PROPERTY LINE
---	N/A	ADJACENT PROPERTY LINE
---	N/A	ZONING LINE
---	N/A	EASEMENTS
---	N/A	100-YEAR FLOODPLAIN
---	---	LIMITS OF DISTURBANCE
---	---	BUILDINGS
---	---	PAVEMENT
---	---	CURB
---	---	STRIPED ISLAND
---	---	CONCRETE FENCE
---	---	FENCE
---	---	STORMWATER MANAGEMENT AREA
---	---	STORM SEWER
---	---	SANITARY SEWER
---	---	STORM DRAIN MANHOLE
---	---	FIRE WATER
---	---	DOMESTIC WATER LINE
---	---	UNDERGROUND ELECTRIC
---	---	GAS LINE
---	---	CONTOUR LINES
---	---	SPOT GRADE (100.10)±
---	---	BOLLARD
---	---	WALL
---	---	CATCH BASIN
---	---	SANITARY SEWER MANHOLE
---	---	WATER METER
---	---	CLEANOUT
---	---	FIRE DEPARTMENT CONNECTION
---	---	FIRE HYDRANT
---	---	WATER VALVE
---	---	POWER POLE W/ GUY WIRE
---	---	LIGHT POLE
---	---	TREES/SHRUBS

**ES LEGEND:**

---	(SF)	SILT FENCE
---	(CFL)	COMPOST FILTER LOG
---	(OCF)	ORANGE CONSTRUCTION FENCE
---	(IP-2)	INLET PROTECTION (TYPE 2)
---	(SCE)	STABILIZED CONSTRUCTION ENTRANCE
---	(LOD)	LIMIT OF DISTURBANCE
---	(ECM)	EROSION CONTROL MATTING
---	(CW)	CONCRETE WASHOUT AREA
---	(LOC)	LIMIT OF CONSTRUCTION

**JANUARY 7, 2019**  
CONSTRUCTION SITE STORMWATER  
MANAGEMENT PLAN  
**CLAYMONT ELEMENTARY SCHOOL**  
3301 GREEN STREET  
BRANDYWINE HUNDRED NEW CASTLE COUNTY  
DELAWARE



LIMITS OF DISTURBANCE: 4.1± ACS.



NO. DATE		REVISION	BY	APPROVED
1	03/22/18	PER DWG COMMENTS	CH	SR

VANDEMARK & LYNCH, INC. IS NOT RESPONSIBLE FOR ANY MODIFICATION MADE TO THIS PLAN AND/OR CADD FILE WITHOUT ITS WRITTEN AUTHORIZATION.

**VANDEMARK & LYNCH, INC.**  
ENGINEERS - PLANNERS - SURVEYORS  
4305 MILLER ROAD  
WILMINGTON, DE 19802 (302) 764-7635  
WWW.VANDEMARKLYNCH.COM

SURVEYED BY: R. PIPHER/CHAMBERS	FILE NAME: 24365.00-EROS-01	REVISION: 1	SHEET: 3 OF 11
COMPUTED BY: K. GOLDSTONE	PERMANENT FILE: 112/362	QA REVIEW: L	SIZE: L
PROJECT MANAGER: S. ROSENFELD	APPROVED BY: CS03		
DRAWN BY: D. SNEEY	SEAL IS NOT VALID UNLESS RED OR EMBOSSED		

E  
D  
C  
B  
A

1 2 3 4 5 6

1 2 3 4 5 6

TERRAZZO FORMULA  
 CLAYMONT ELEMENTARY SCHOOL

Sample No.	# Each	Sample Size	Resin Color No.	Chip Blend - Aggregate	Size	%
81103	2	6x6	MTT 6420	Dolphin Gray	1	25
			Silver Plate	Yellow Verona	1	5
			SW 7649	GA White	1	15
				GA White	2	15
			ATF-20	Deep Green	1	5
				Raven Black	1	10
				Raven Black	2	5
				Royal Red	1	5
				Royal Red	2	5
				Dolphin Gray	2	10

**DESCRIPTION**

The CFP offers edge-lit LED technology in a sleek, modern, flat panel design. Light classrooms, offices, medical facilities, cleanrooms and general public spaces using edge-to-edge illumination, without pixelation or bright spots.

**CONSTRUCTION**

Extruded aluminum frame has a matte white finish and smooth frame-to-lens transition.

**FEATURES**

- 1x4, 2x2, and 2x4 sizes
- 80 CRI
- 0-10V dimming
- Recessed, Surface, or Cable Mount
- T-bar clips for secure mounting
- Universal voltage (120-277V)
- IC rated
- 60,000 hour LEDs at L70 (up to 180,000 projected life) for reduced maintenance
- Unique curved 1 1/8" frame
- Suitable for ISO Class 5-9 positive pressure cleanrooms



tradeSELECT®



**STANDARDS, CERTIFICATION AND COMPLIANCE**

All luminaires are built to UL1598 standards and bear appropriate ETL labels. Damp location label standard. Tested in accordance with ISO 14644-1; suitable for ISO Class 5-9 positive pressure cleanrooms. DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations. Please refer to the DLC website for specific product qualifications at [www.designlights.org](http://www.designlights.org).

**WARRANTY**

Five year warranty. Terms and conditions apply.

**ORDERING GUIDE**

Catalog Number	Description	Lumens	Watts	LPW	Qty on Pallet
CFP14-4035 <sup>1</sup>	1x4 Edge-Lit Flat Panel, 4000lm, 3500K	3951	39	101	48
CFP14-4040 <sup>1</sup>	1x4 Edge-Lit Flat Panel, 4000lm, 4000K	4102	39	105	48
CFP22-3335 <sup>1</sup>	2x2 Edge-Lit Flat Panel, 3300lm, 3500K	3382	32	106	36
CFP22-3335-HE <sup>2</sup>	2x2 Edge-Lit Flat Panel, 3300lm, 3500K, High Efficacy	3299	26	125	36
CFP22-3340 <sup>1</sup>	2x2 Edge-Lit Flat Panel, 3300lm, 4000K	3475	32	109	36
CFP22-3340-HE <sup>2</sup>	2x2 Edge-Lit Flat Panel, 3300lm, 4000K, High Efficacy	3430	27	127	36
CFP22-4035 <sup>1</sup>	2x2 Edge-Lit Flat Panel, 4000lm, 3500K	4302	41	105	36
CFP22-4040 <sup>1</sup>	2x2 Edge-Lit Flat Panel, 4000lm, 4000K	4074	40	102	36
CFP24-4135 <sup>1</sup>	2x4 Edge-Lit Flat Panel, 4100lm, 3500K	4307	40	107	24
CFP24-4135-HE <sup>2</sup>	2x4 Edge-Lit Flat Panel, 4100lm, 3500K, High Efficacy	4229	34	124	24
CFP24-4140 <sup>1</sup>	2x4 Edge-Lit Flat Panel, 4100lm, 4000K	4123	40	103	24
CFP24-4140-HE <sup>2</sup>	2x4 Edge-Lit Flat Panel, 4100lm, 4000K, High Efficacy	4334	34	127	24
CFP24-5535 <sup>1</sup>	2x4 Edge-Lit Flat Panel, 5500lm, 3500K	5447	49	110	24
CFP24-5540 <sup>1</sup>	2x4 Edge-Lit Flat Panel, 5500lm, 4000K	5608	50	112	24

**Accessories (Order Separately)**

PLD10M	Dual-Lite® Emergency LED Battery Pack, field installed
FK14	1' x 4' Single Flange Kit
FK22	2' x 2' Single Flange Kit
FK24	2' x 4' Single Flange Kit
CFPSMK-14	1' x 4' CFP Surface Mount Kit
CFPSMK-22	2' x 2' CFP Surface Mount Kit
CFPSMK-24	2' x 4' CFP Surface Mount Kit
CFPCM36YSC5F-KIT	36" Cable Mount Kit for 1' or 2' wide Cable Mount fixtures, 5 Wire

<sup>1</sup> DLC® (DesignLights Consortium) Qualified - see [www.designlights.org](http://www.designlights.org)  
<sup>2</sup> DLC® (DesignLights Consortium) Premium Qualified - see [www.designlights.org](http://www.designlights.org)

**PHOTOMETRIC DATA**

Test #17.01571 Test Date 5/25/2017

**LUMINAIRE DATA**

Luminaire	CFP22-3335 CFP, Recessed 2' x 2' Flat Panel LED
Ballast	WPC-40U-40-MT-0950
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	3384
Watts	32.03
Mounting	Recessed
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.24 90° = 1.27
Luminous Opening in Feet	Length: 1.80 Width: 1.80 Height: 0.00

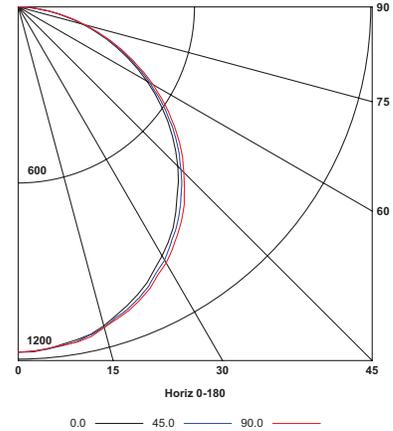
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	914	27.0	27.0
0-40	1497	44.2	44.2
0-60	2649	78.3	78.3
0-90	3384	100.0	100.0
0-180	3384	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	106
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$2.26 based on 3000 hrs. and \$0.08 per KWH

**INDOOR CANDELA PLOT**



**LUMINAIRE DATA**

Luminaire	CFP24-4135 CFP, Recessed 2' x 4' Flat Panel LED
Ballast	WPC-40U-40-MT-1000
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	4309
Watts	40.43
Mounting	Recessed
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.25 90° = 1.27
Luminous Opening in Feet	Length: 3.80 Width: 1.79 Height: 0.00

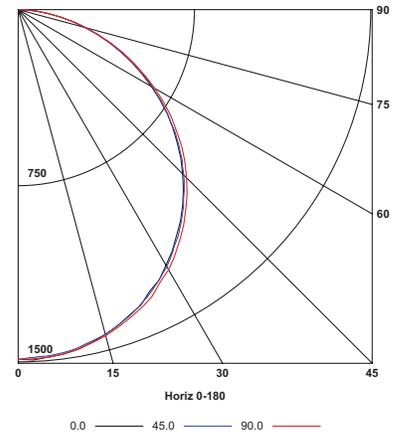
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	1160	26.9	26.9
0-40	1901	44.1	44.1
0-60	3369	78.2	78.2
0-90	4309	100.0	100.0
0-180	4309	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	107
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$2.22 based on 3000 hrs. and \$0.08 per KWH

**INDOOR CANDELA PLOT**



Test #17.01569 Test Date 5/25/2017

**LUMINAIRE DATA**

Luminaire	CFP24-5540 CFP, Recessed 2' x 4' Flat Panel LED
Ballast	WPC-60U-40-MT-1200
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	5611
Watts	49.90
Mounting	Recessed
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.24 90° = 1.27
Luminous Opening in Feet	Length: 3.79 Width: 0.96 Height: 0.04

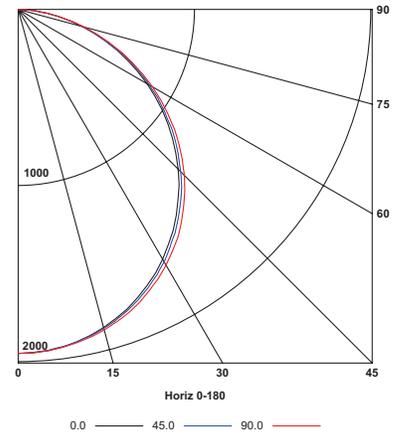
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	1518	27.1	27.1
0-40	2489	44.4	44.4
0-60	4404	78.5	78.5
0-90	5611	100.0	100.0
0-180	5611	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	112
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$2.14 based on 3000 hrs. and \$0.08 per KWH

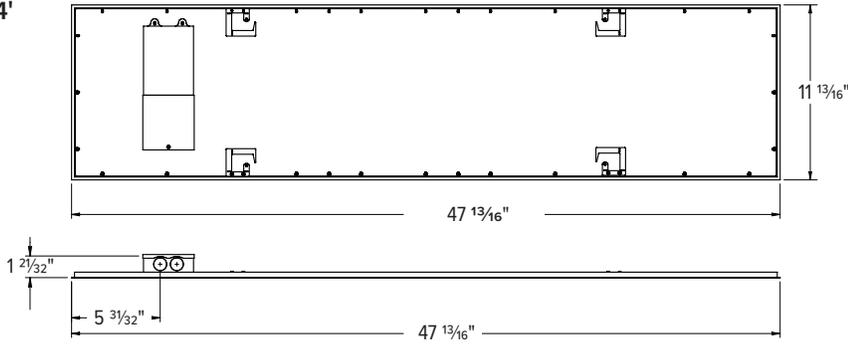
**INDOOR CANDELA PLOT**



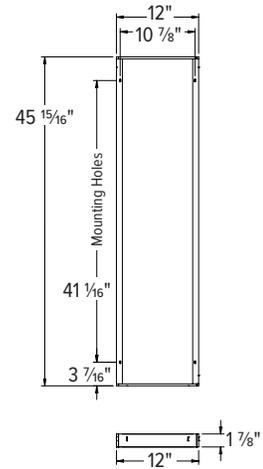
Test #17.02370 Test Date 8/25/2017

**DIMENSIONAL DATA**

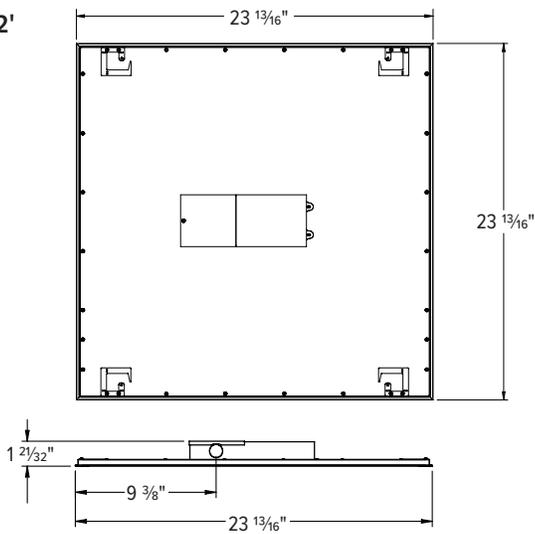
1' X 4'



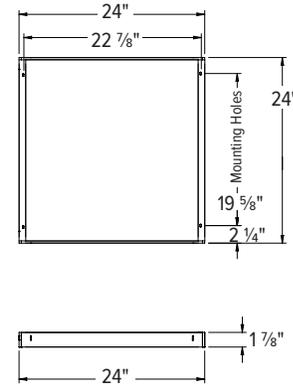
**SURFACE MOUNT**



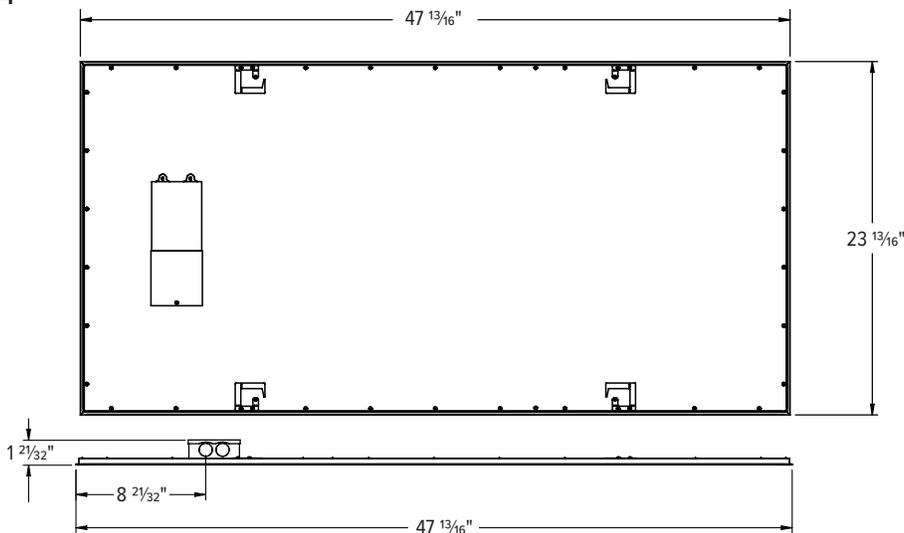
2' X 2'



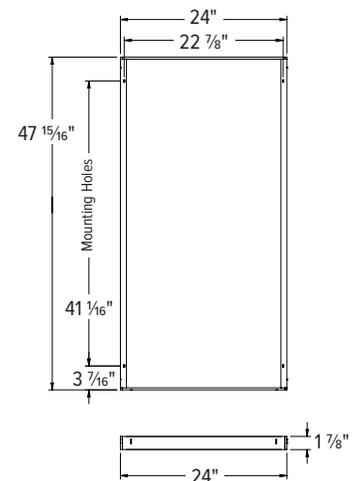
**SURFACE MOUNT**



2' X 4'



**SURFACE MOUNT**



# FINELITE

## High Performance 2" Aperture (HP-2) - Direct



### Alternate Lighting Package

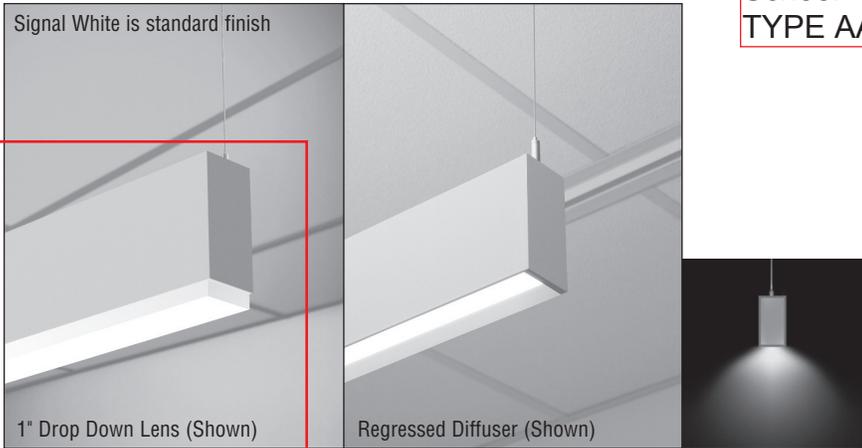
- X'd out fixtures are not accepted

Date

Claymont  
Elementary  
School  
TYPE AA

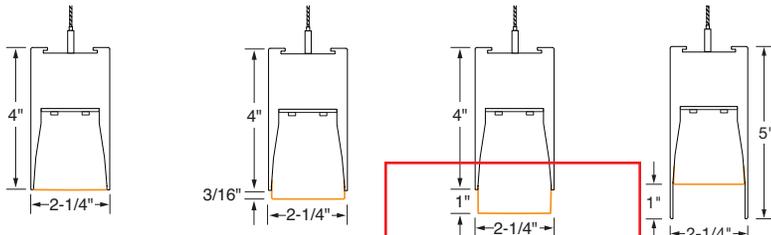
Comments

Signal White is standard finish

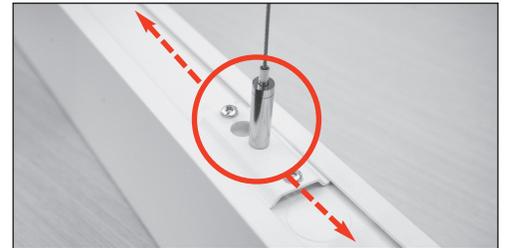


### DESCRIPTION

High Performance 2" Aperture Direct (HP-2 D) is a patented, linear LED luminaire that offers many aesthetic options including Flush, Bottom Glow™, 1" Drop Lens and Regressed diffuser for the downlight. HP-2 D delivers excellent performance using an advanced optical design and mid-power LEDs to achieve 90% of initial light output at 100,000+ hours.



Flush Downlight Diffuser (Standard)    Bottom Glow Diffuser    1" Drop Down Lens    Flat Diffuser with 1" Regress (RG)



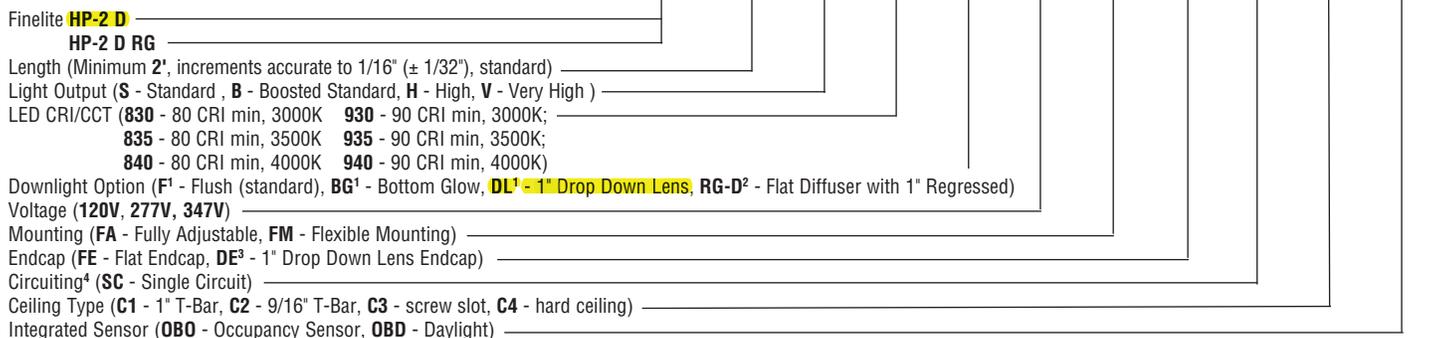
### FLEXIBLE MOUNTING

The flexible mounting bracket adjusts the suspension points along the length of the luminaire to accommodate existing architecture. Suspension points adjust up to 2' in from the end of 8' or 12' luminaire lengths and up to 1' in on shorter lengths.

### AESTHETIC SOLUTIONS

Offering multiple diffuser options with Flush, Bottom Glow, 1" Drop Down Lens and Regressed for a desired aesthetic.

### ORDERING GUIDE: Sample Number: HP-2 D - 32' - H - 835 - F - 120V - FA - FE - SC - C1 - OBO



<sup>1</sup> Available for HP-2 Direct (HP-2 D) only  
<sup>2</sup> Available for HP-2 Direct Regressed (HP-2 D RG) only  
<sup>3</sup> Available for 1" Drop Down Lens (DL) downlight option only  
<sup>4</sup> Contact factory for switching options

Protected by one or more US Patents: 8915613; D702,391; D702,390; D700,732; D727,554 S; D727,550 S, D727,551 S

A brand of Legrand

Finelite, Inc. • 30500 Whipple Road • Union City, CA 94587-1530 • 510 / 441-1100 • Fax: 510 / 441-1510 • www.finelite.com

# Alternate Lighting Package

- X'd out fixtures are not accepted

LED



BUY AMERICAN ACT OF 2009 COMPLIANT

# FINELITE

## High Performance 2" Aperture (HP-2) - Direct

### PHOTOMETRY

#### DOWNLIGHT: FLUSH DIFFUSER

Very High Output - 4' Luminaire

Efficacy: 87 lumens per watt

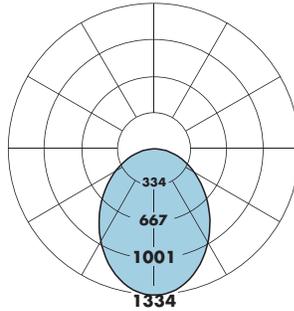
Total luminaire output: 3215 lumens (804 lumens/foot)

36.9 watts (9.2 watts/foot)

Peak Candela Value: 1334 @ 0°

CCT: 3500K

ITL LM79 Report 85136



CANDELA DISTRIBUTION						
	0.0	22.5	45	67.5	90	Flux
0	1334	1334	1334	1334	1334	
5	1327	1326	1326	1325	1324	126
15	1263	1252	1251	1244	1236	352
25	1133	1117	1109	1088	1075	508
35	958	942	923	896	887	576
45	762	747	725	697	686	558
55	563	551	532	509	500	475
65	374	365	351	337	331	349
75	206	201	195	188	184	207
85	62	61	59	57	57	66
90	0	0	0	0	0	

Total Light Output, 3500K, 80 CRI (Lumens) - 4' Luminaire			
S*	B*	H*	V**
1316	1655	2501	3215

Lumen Adjustment Factors - 80 CRI	
3000K	0.985
3500K	1.000
4000K	1.032

Light Output, 3500K, 80 CRI (Lumens Per Foot)			
S*	B*	H*	V**
329	414	625	804

Lumen Adjustment Factors - 90 CRI	
3000K	0.746
3500K	0.760
4000K	0.789

Power, 3500K, 80 CRI (Watts Per Foot)			
S*	B*	H*	V**
3.6	4.6	7.1	9.2

Apply a lumen adjustment factor to calculate lumens for the desired CCT and CRI.

Efficacy, 3500K, 80 CRI (Lumens Per Watt)			
S*	B*	H*	V**
91	90	88	87

### SAMPLE LUMEN ADJUSTMENT CALCULATION

High Output (H), 4000K, 90 CRI

Lumen Adjustment Factor = 0.789

$$\text{Total Light Output} = 2501 \text{ lm} \times 0.789 = 1973 \text{ lm}$$

$$\text{Total Light Output per Foot} = 625 \text{ lm/ft} \times 0.789 = 493 \text{ lm/ft}$$

$$\text{watts/foot} = 7.1 \text{ W/ft}$$

$$\text{Efficacy} = \frac{493 \frac{\text{lm}}{\text{ft}}}{7.1 \frac{\text{W}}{\text{ft}}} = 69 \text{ lm/W}$$

S - Standard Output, B - Boosted Standard Output, H - High Output, V - Very High Output

\* Family Correlation based on 4' luminaire 3500K Very High Output (V) test - 120V.

\*\* Correlation based on ITL report: 85136

# Alternate Lighting Package

- X'd out fixtures are not accepted



BUY AMERICAN ACT OF 2009 COMPLIANT

# FINELITE

## High Performance 2" Aperture (HP-2) - Direct

### PHOTOMETRY

#### DOWNLIGHT: 1" DROP DOWN LENS

Very High Output - 4' Luminaire

Efficacy: 99 lumens per watt

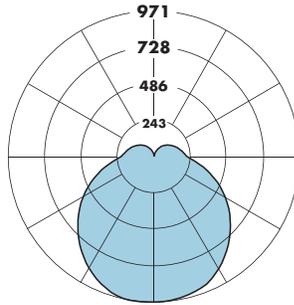
Total luminaire output: 3637 lumens (909 lumens/foot)

36.8 watts (9.2 watts/foot)

CCT: 3500K

CRI: 80

ITL LM79 Report 90630



CANDELA DISTRIBUTION						
	0.0	22.5	45	67.5	90	Flux
0	969	969	969	969	969	969
5	964	965	967	970	971	92
15	921	925	944	955	957	265
25	833	848	880	895	900	402
35	718	745	788	808	814	486
45	586	627	677	705	714	513
55	445	497	556	591	603	485
65	301	362	427	468	483	409
75	159	226	298	344	361	299
85	43	112	187	235	252	189
90	11	78	150	198	213	
95	10	73	141	185	199	137
105	9	61	123	162	175	116
115	7	50	105	139	151	92
125	5	38	85	115	125	68
135	3	26	64	90	99	45
145	2	15	42	65	72	25
155	1	7	22	38	44	11
165	1	2	8	13	18	2
175	0	0	0	0	0	0
180	0	0	0	0	0	0

Total Light Output, 3500K, 80 CRI (Lumens) - 4' Luminaire			
S*	B*	H*	V**
1489	1872	2829	3637

Lumen Adjustment Factors - 80 CRI	
3000K	0.985
3500K	1.000
4000K	1.032

Light Output, 3500K, 80 CRI (Lumens Per Foot)			
S*	B*	H*	V**
372	468	707	909

Lumen Adjustment Factors - 90 CRI	
3000K	0.746
3500K	0.760
4000K	0.789

Power, 3500K, 80 CRI (Watts Per Foot)			
S*	B*	H*	V**
3.6	4.6	7.1	9.2

Apply a lumen adjustment factor to calculate lumens for the desired CCT and CRI.

Efficacy, 3500K, 80 CRI (Lumens Per Watt)			
S*	B*	H*	V**
103	102	100	99

### SAMPLE LUMEN ADJUSTMENT CALCULATION

High Output (H), 4000K, 90 CRI

Lumen Adjustment Factor = 0.789

$$\text{Total Light Output} = 2829 \text{ lm} \times 0.789 = 2232 \text{ lm}$$

$$\text{Total Light Output per Foot} = 707 \text{ lm/ft} \times 0.789 = 558 \text{ lm/ft}$$

$$\text{watts/foot} = 7.1 \text{ W/ft}$$

$$\text{Efficacy} = \frac{558 \frac{\text{lm}}{\text{ft}}}{7.1 \frac{\text{W}}{\text{ft}}} = 79 \text{ lm/W}$$

S - Standard Output, B - Boosted Standard Output, H - High Output, V - Very High Output

\* Family Correlation based on 4' luminaire 3500K Very High Output (V) test - 120V.

\*\* Correlation based on ITL report: 90630

# Alternate Lighting Package

- X'd out fixtures are not accepted

LED



BUY AMERICAN ACT OF 2009 COMPLIANT

# FINELITE

## High Performance 2" Aperture (HP-2) - Direct

### PHOTOMETRY

#### DOWNLIGHT: REGRESSED DIFFUSER

Very High Output - 4' Luminaire

Efficacy: 79 lumens per watt

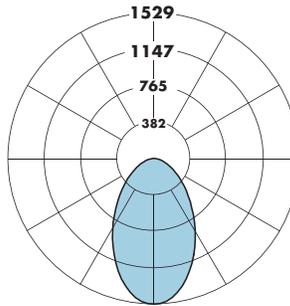
Total luminaire output: 2887 lumens (722 lumens/foot)

36.7 watts (9.2 watts/foot)

CCT: 3500K

CRI: 80

ITL LM79 Report 90350



CANDELA DISTRIBUTION						
	0.0	22.5	45	67.5	90	Flux
0	1529	1529	1529	1529	1529	
5	1520	1518	1513	1507	1504	143
15	1443	1412	1370	1327	1309	385
25	1293	1224	1131	1049	1017	523
35	1086	993	862	757	722	550
45	855	749	608	511	482	490
55	624	516	392	322	305	380
65	407	311	219	178	171	249
75	212	141	103	95	94	131
85	57	32	28	26	26	36
90	0	0	0	0	0	

Total Light Output, 3500K, 80 CRI (Lumens) - 4' Luminaire			
S*	B*	H*	V**
1182	1486	2245	2887

Light Output, 3500K, 80 CRI (Lumens Per Foot)			
S*	B*	H*	V**
295	371	561	722

Power, 3500K, 80 CRI (Watts Per Foot)			
S*	B*	H*	V**
3.6	4.6	7.0	9.2

Efficacy, 3500K, 80 CRI (Lumens Per Watt)			
S*	B*	H*	V**
82	81	80	79

S - Standard Output, B - Boosted Standard Output, H - High Output, V - Very High Output

\* Family Correlation based on 4' luminaire 3500K Very High Output (V) test - 120V.

\*\* Correlation based on ITL report: 90350

Lumen Adjustment Factors - 80 CRI	
3000K	0.985
3500K	1.000
4000K	1.032

Lumen Adjustment Factors - 90 CRI	
3000K	0.746
3500K	0.760
4000K	0.789

Apply a lumen adjustment factor to calculate lumens for the desired CCT and CRI.

### SAMPLE LUMEN ADJUSTMENT CALCULATION

High Output (H), 3500K, 80 CRI

Lumen Adjustment Factor = 0.789

$$\text{Total Light Output} = 2245 \text{ lm} \times 0.789 = 1771 \text{ lm}$$

$$\text{Total Light Output per Foot} = 561 \text{ lm/ft} \times 0.789 = 443 \text{ lm/ft}$$

$$\text{watts/foot} = 7.0 \text{ W/ft}$$

$$\text{Efficacy} = \frac{443 \frac{\text{lm}}{\text{ft}}}{7.0 \frac{\text{W}}{\text{ft}}} = 63 \text{ lm/W}$$

## SPECIFICATIONS

**CONSTRUCTION:** Precision-cut 6061-T6 extruded aluminum body. Internal joiner system, plug-together wiring, standard.

**ENDCAPS:** Flat diecast aluminum endcaps add 1/4" to each end of luminaire. Drop Down Lens Endcap (DE) includes diffuse element to continue luminance of drop lens. It is made of the same material as the drop lens.

**MITERED CORNER:** Illuminated 90° corners in a single plane, with Flush downlight diffuser, standard. Custom angles are available (90° minimum on inside corners), contact factory.

**REFLECTORS:** Die-formed 24-gauge cold-rolled steel reflectors are finished in 96 LG high reflectance matte white powder coat paint.

**DOWNLIGHT OPTION:** 12' maximum diffuser length. Flush frost white snap-in diffuser standard, 73% transmissive, 99% diffusion. Internal secondary diffusers at corners ensure visually seamless, uniform, continuous illumination. Available with Flush, Bottom Glow, 1" Drop Down Lens and Regressed downlight diffusers. 1" Drop Down Lens made of highly efficient acrylic. Available with a solid endcap or an endcap with a diffuse filler to continue the luminous aesthetic.

**LIGHT OUTPUT:** Four lumen packages available, Standard (S), Boosted Standard (B), High (H), and Very High (V). A separate chart summarizes lumen distribution and wattage. Light engines are replaceable.

**LUMEN MAINTENANCE:** 90% of initial light output (L90) at 100,000+ hours; 70% of initial light output (L70) at 200,000+ hours.

**DRIVER:** Replaceable 120V/277V and 347V Constant Current Reduction dimming driver standard. Can be wired dimming or non-dimming. 0-10V dimming controls with a range of 10%- 100%. Dimming to 1% available; consult factory. Driver is fully accessible from below the ceiling. Power Factor: ≥0.9. Total Harmonic Distortion (THD) <20%. Expected driver life-time: 100,000 hours.

**LUTRON DRIVER OPTIONS:** Lut3W-3-wire, LutES-EcoSystem, Lut2W-2-wire.

**ELECTRICAL:** Optional emergency to generator/inverter wiring, internal generator transfer switch, nightlight wiring, step-dimming driver, backup battery. Factory-choice low-profile backup battery available. 8' minimum luminaire length for low profile battery pack. Backup batteries deliver 1000 lumens. Half of a 4' section will be illuminated in emergency mode.



**INTEGRATED SENSORS:** Integrated PIR (Passive Infrared) occupancy and/or daylight sensors available with Flush, Bottom Glow, and Regressed downlight diffusers. Refer to Occupancy Sensor and Daylight Sensor tech sheets for more info.

**MOUNTING:** 50" Fully Adjustable (FA) plated steel aircraft cable with safety stop hardware standard. Contact factory for additional lengths up to 150". The Flexible Mounting Bracket (FM) adjusts the suspension points to accommodate existing architecture. Suspension points adjust up to 2' in from the end of 8' or 12' luminaire lengths and up to 1' in on shorter lengths.

**FINISHES:** Finelite Signal White powder coat standard. Optional Adders: 185 RAL colors.

**FEED:** Standard with one 18-gauge/5-conductor single-circuit feed. 14-gauge feed used when luminaire current exceeds 5 amps.

**LENGTHS:** Any length, 2-foot minimum, in increments down to 1/16" (± 1/32"). 12-foot maximum section length.

**LABELS:** Luminaire and electrical components are ETL-listed conforming to UL 1598 in the U.S.A. and CAN/CSA C22.2 No. 250.0 in Canada. In accordance with NEC Code 410.73 (G), this luminaire contains an internal driver disconnect. Damp Location. Finelite products use electronic components that are RoHS compliant, and the mechanical components of the luminaire have been verified to not knowingly contain any restricted substances listed per RoHS Directive 2011/65/EU.

**WEIGHT:** 2.3 lb/ft.

**WARRANTY:** 10-year performance-based warranty on all standard components. Optional accessories such as emergency battery packs are covered by their individual manufacturer warranties.

**DESCRIPTION**

The CFP offers edge-lit LED technology in a sleek, modern, flat panel design. Light classrooms, offices, medical facilities, cleanrooms and general public spaces using edge-to-edge illumination, without pixelation or bright spots.

**CONSTRUCTION**

Extruded aluminum frame has a matte white finish and smooth frame-to-lens transition.

**FEATURES**

- 1x4, 2x2, and 2x4 sizes
- 80 CRI
- 0-10V dimming
- Recessed, Surface, or Cable Mount
- T-bar clips for secure mounting
- Universal voltage (120-277V)
- IC rated
- 60,000 hour LEDs at L70 (up to 180,000 projected life) for reduced maintenance
- Unique curved 1 1/8" frame
- Suitable for ISO Class 5-9 positive pressure cleanrooms



tradeSELECT®



**STANDARDS, CERTIFICATION AND COMPLIANCE**

All luminaires are built to UL1598 standards and bear appropriate ETL labels. Damp location label standard. Tested in accordance with ISO 14644-1; suitable for ISO Class 5-9 positive pressure cleanrooms. DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations. Please refer to the DLC website for specific product qualifications at [www.designlights.org](http://www.designlights.org).

**WARRANTY**

Five year warranty. Terms and conditions apply.

**ORDERING GUIDE**

Catalog Number	Description	Lumens	Watts	LPW	Qty on Pallet
CFP14-4035 <sup>1</sup>	1x4 Edge-Lit Flat Panel, 4000lm, 3500K	3951	39	101	48
CFP14-4040 <sup>1</sup>	1x4 Edge-Lit Flat Panel, 4000lm, 4000K	4102	39	105	48
CFP22-3335 <sup>1</sup>	2x2 Edge-Lit Flat Panel, 3300lm, 3500K	3382	32	106	36
CFP22-3335-HE <sup>2</sup>	2x2 Edge-Lit Flat Panel, 3300lm, 3500K, High Efficacy	3299	26	125	36
CFP22-3340 <sup>1</sup>	2x2 Edge-Lit Flat Panel, 3300lm, 4000K	3475	32	109	36
CFP22-3340-HE <sup>2</sup>	2x2 Edge-Lit Flat Panel, 3300lm, 4000K, High Efficacy	3430	27	127	36
CFP22-4035 <sup>1</sup>	2x2 Edge-Lit Flat Panel, 4000lm, 3500K	4302	41	105	36
CFP22-4040 <sup>1</sup>	2x2 Edge-Lit Flat Panel, 4000lm, 4000K	4074	40	102	36
CFP24-4135 <sup>1</sup>	2x4 Edge-Lit Flat Panel, 4100lm, 3500K	4307	40	107	24
CFP24-4135-HE <sup>2</sup>	2x4 Edge-Lit Flat Panel, 4100lm, 3500K, High Efficacy	4229	34	124	24
CFP24-4140 <sup>1</sup>	2x4 Edge-Lit Flat Panel, 4100lm, 4000K	4123	40	103	24
CFP24-4140-HE <sup>2</sup>	2x4 Edge-Lit Flat Panel, 4100lm, 4000K, High Efficacy	4334	34	127	24
CFP24-5535 <sup>1</sup>	2x4 Edge-Lit Flat Panel, 5500lm, 3500K	5447	49	110	24
CFP24-5540 <sup>1</sup>	2x4 Edge-Lit Flat Panel, 5500lm, 4000K	5608	50	112	24

**Accessories (Order Separately)**

PLD10M	Dual-Lite® Emergency LED Battery Pack, field installed
FK14	1' x 4' Single Flange Kit
FK22	2' x 2' Single Flange Kit
FK24	2' x 4' Single Flange Kit
CFPSMK-14	1' x 4' CFP Surface Mount Kit
CFPSMK-22	2' x 2' CFP Surface Mount Kit
CFPSMK-24	2' x 4' CFP Surface Mount Kit
CFPCM36YSC5F-KIT	36" Cable Mount Kit for 1' or 2' wide Cable Mount fixtures, 5 Wire

<sup>1</sup> DLC® (DesignLights Consortium) Qualified - see [www.designlights.org](http://www.designlights.org)  
<sup>2</sup> DLC® (DesignLights Consortium) Premium Qualified - see [www.designlights.org](http://www.designlights.org)

**PHOTOMETRIC DATA**

Test #17.01571 Test Date 5/25/2017

**LUMINAIRE DATA**

Luminaire	CFP22-3335 CFP, Recessed 2' x 2' Flat Panel LED
Ballast	WPC-40U-40-MT-0950
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	3384
Watts	32.03
Mounting	Recessed
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.24 90° = 1.27
Luminous Opening in Feet	Length: 1.80 Width: 1.80 Height: 0.00

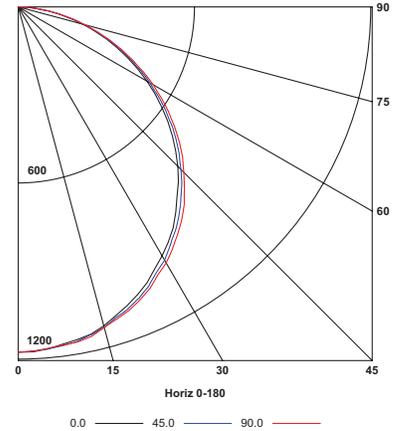
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	914	27.0	27.0
0-40	1497	44.2	44.2
0-60	2649	78.3	78.3
0-90	3384	100.0	100.0
0-180	3384	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	106
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$2.26 based on 3000 hrs. and \$0.08 per KWH

**INDOOR CANDELA PLOT**



**LUMINAIRE DATA**

Test #17.01569 Test Date 5/25/2017

Luminaire	CFP24-4135 CFP, Recessed 2' x 4' Flat Panel LED
Ballast	WPC-40U-40-MT-1000
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	4309
Watts	40.43
Mounting	Recessed
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.25 90° = 1.27
Luminous Opening in Feet	Length: 3.80 Width: 1.79 Height: 0.00

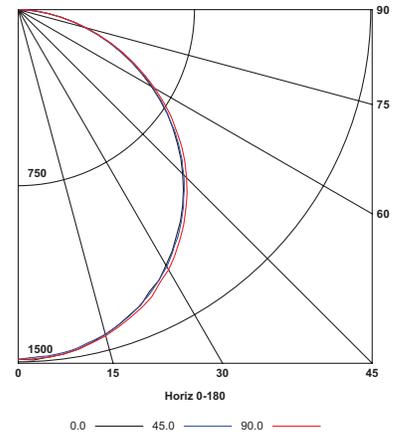
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	1160	26.9	26.9
0-40	1901	44.1	44.1
0-60	3369	78.2	78.2
0-90	4309	100.0	100.0
0-180	4309	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	107
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$2.22 based on 3000 hrs. and \$0.08 per KWH

**INDOOR CANDELA PLOT**



**LUMINAIRE DATA**

Test #17.02370 Test Date 8/25/2017

Luminaire	CFP24-5540 CFP, Recessed 2' x 4' Flat Panel LED
Ballast	WPC-60U-40-MT-1200
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	5611
Watts	49.90
Mounting	Recessed
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.24 90° = 1.27
Luminous Opening in Feet	Length: 3.79 Width: 0.96 Height: 0.04

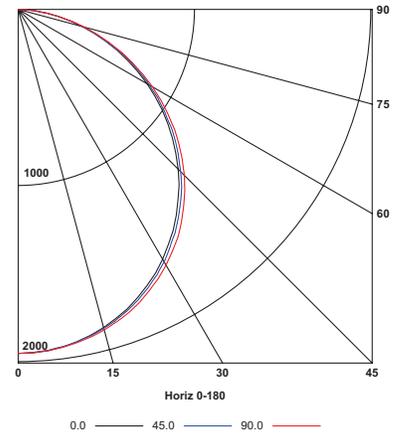
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	1518	27.1	27.1
0-40	2489	44.4	44.4
0-60	4404	78.5	78.5
0-90	5611	100.0	100.0
0-180	5611	100.0	100.0

**ENERGY DATA**

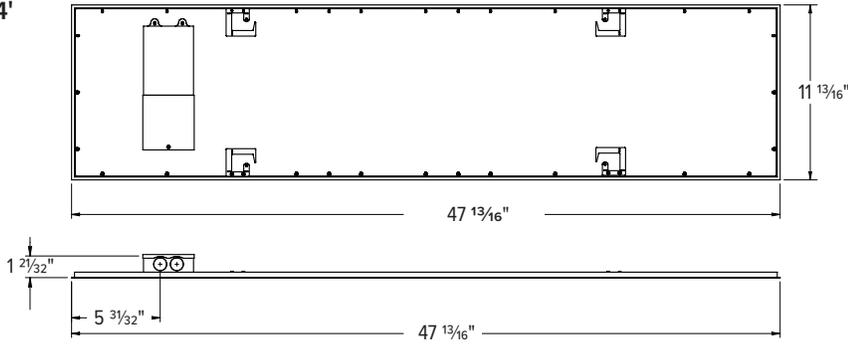
Total Luminaire Efficiency	100.0%
Total Lumens per Watt	112
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$2.14 based on 3000 hrs. and \$0.08 per KWH

**INDOOR CANDELA PLOT**

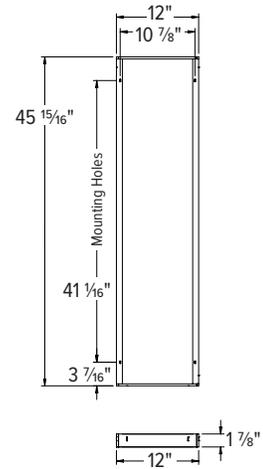


**DIMENSIONAL DATA**

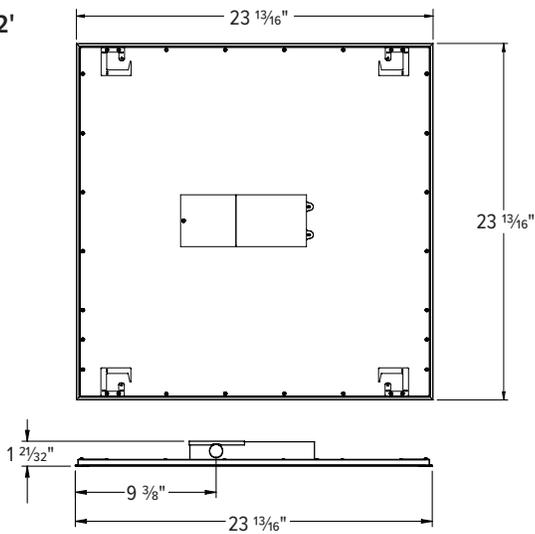
1' X 4'



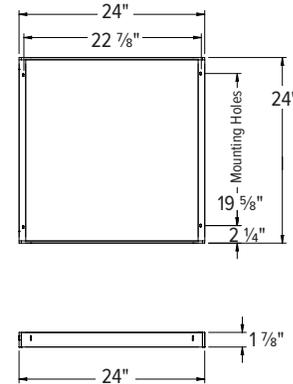
**SURFACE MOUNT**



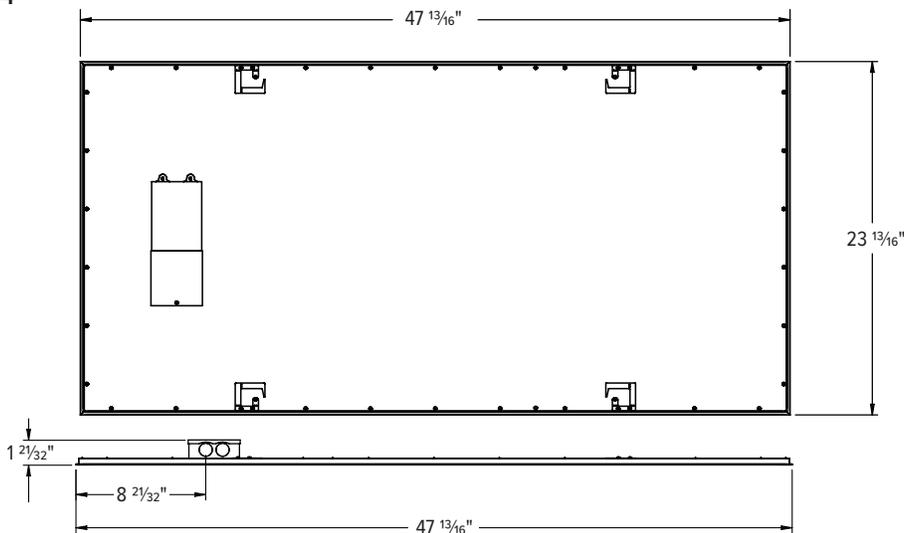
2' X 2'



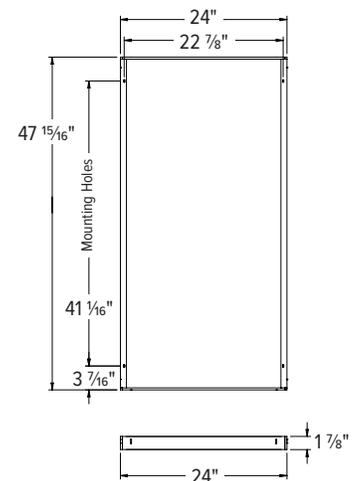
**SURFACE MOUNT**



2' X 4'



**SURFACE MOUNT**



# Alternate Lighting Package

- X'd out fixtures are not accepted

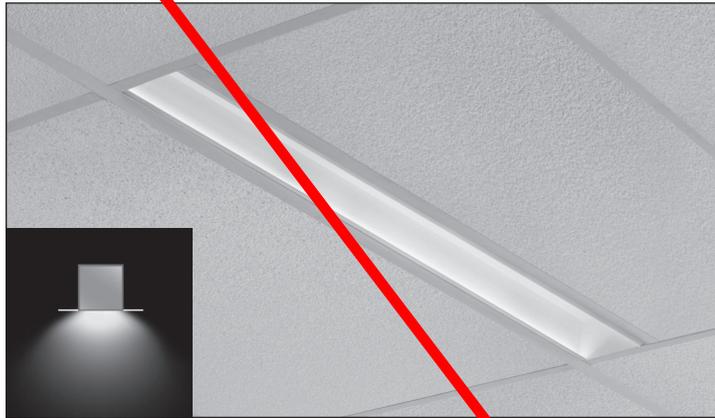


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# FINELITE

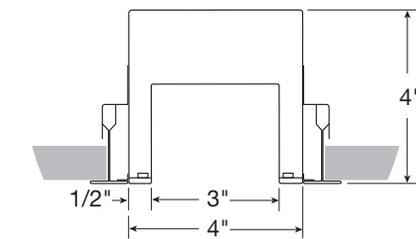
School  
TYPE BB

## H04 - Recessed



### DESCRIPTION

H04 Recessed (H04-R) luminaire delivers unparalleled performance and comfortable illumination. A state-of-the-art rectilinear reflector provides depth and seamless uniformity to recessed applications. Designed to accommodate most ceiling types and tailorable in 1-foot increments.



### DIMENSIONS & LIGHT ENGINE

Mid-powered, micro LED arrays are tucked into the thin bottom rail for seamless illumination.



State-of-the-art polymer reflector material

### UNIQUE POLYMER REFLECTOR

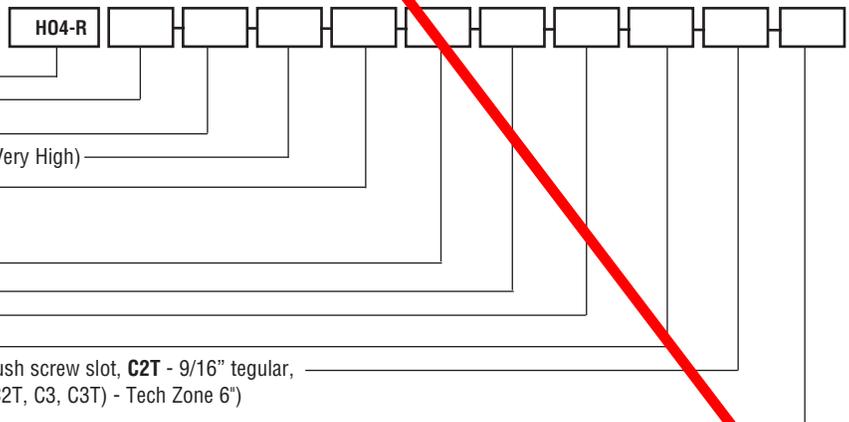
State-of-the-art lightweight reflector material features high reflectivity, reduced presence of seams, and is tailorable for maximum flexibility and performance.

Up To  
**119 LPW**

### PERFORMANCE

H04-R delivers performance of up to 119 lumens per watt. Up to 998 lumens per foot.

**ORDERING GUIDE:** Sample Number: H04-R - RO - 32' - S - 835 - OPN - 120V - SC - SE - C1 - OBO



Finelite **H04-R**

Luminaire Style (**RO** - Rectilinear)

Length (Minimum 2', in 1' increments)

Downlight Output (**S** - Standard, **B** - Boosted Standard, **H** - High, **V** - Very High)

LED CRI/CCT (**830** - 80 CRI min, 3000K **930** - 90 CRI min, 3000K

**835** - 80 CRI min, 3500K **935** - 90 CRI min, 3500K

**840** - 80 CRI min, 4000K **940** - 90 CRI min, 4000K)

Downlight Option (**OPN** - Open)

Voltage (**120V**, **277V**, **347V**)

Circuiting (**SC** - Single Circuit)\*\*

Endcap (**SE** - Solid Endcap (standard))

Ceiling Type (**C1** - T-Bar, **C2** - 9/16" T-Bar, **C3** - screw slot, **C3F** - flush screw slot, **C2T** - 9/16" tegular,

**S** - Spackle Flange), **VF** - Visible Flange, **TZ6** (C1, C2, C2T, C3, C3T) - Tech Zone 6")

Integrated Sensor (**OBO** - Occupancy Sensor, **OBD** - Daylight)

\*Standard section lengths: 4', 8' and 12' (maximum)

\*\*Contact factory for switching options.

# Alternate Lighting Package

- X'd out fixtures are not accepted



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# FINELITE

## H04 - Recessed

### PHOTOMETRY

H04-R-R0-4'-V-835-OPN

Very High Output - 4' Luminaire

Efficacy: 114 lumens per watt

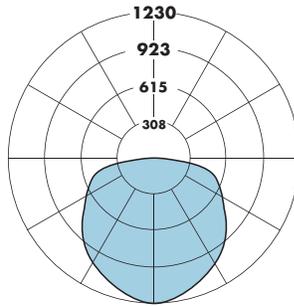
Total luminaire output: 3991 Lumens (998 lumens/foot)

5 Watts (8.8 watts/foot)

Peak Candela Value: 1230 @ 0°

CCT: 3500K; CRI: 80

ITL LM79 Report 89351



CANDELA DISTRIBUTION						
	0.0	22.5	45	67.5	90	Flux
0	1230	1230	1230	1230	1230	
5	1227	1223	1217	1212	1212	116
15	1196	1170	1161	1155	1150	329
25	1126	1085	1078	1077	1073	501
35	1022	974	975	980	979	612
45	884	840	852	860	862	651
55	717	685	706	708	715	631
65	528	514	542	597	618	552
75	316	329	425	484	522	432
85	95	178	159	98	2	155
90	0	0	0	0	0	

Total Light Output, 3500K, 80 CRI (Lumens) - 4' Luminaire			
S*	B*	H*	V**
1634	2054	3104	3991

Lumen Adjustment Factors - 80 CRI	
3000K	0.985
3500K	1.000
4000K	1.032

Light Output, 3500K, 80 CRI (Lumens Per Foot)			
S*	B*	H*	V**
408	513	776	998

Lumen Adjustment Factors - 90 CRI	
3000K	0.746
3500K	0.760
4000K	0.789

Power (Watts Per Foot)			
S*	B*	H*	V**
3.4	4.4	6.7	8.8

Apply a lumen adjustment factor to calculate lumens for the desired CCT and CRI.

Efficacy, 3500K, 80 CRI (Lumens Per Watt)			
S*	B*	H*	V**
119	118	115	114

### SAMPLE LUMEN ADJUSTMENT CALCULATION

High Output (H), 4000K, 90 CRI

Lumen Adjustment Factor = 0.789

$$\text{Total Light Output} = 3104 \text{ lm} \times 0.789 = 2499 \text{ lm}$$

$$\text{Total Light Output per Foot} = 776 \text{ lm/ft} \times 0.789 = 612 \text{ lm/ft}$$

$$\text{watts/foot} = 6.7 \text{ W/ft}$$

$$\text{Efficacy} = \frac{612 \frac{\text{lm}}{\text{ft}}}{6.7 \frac{\text{W}}{\text{ft}}} = 91 \text{ lm/W}$$

S - Standard Output, B - Boosted Standard Output, H - High Output, V - Very High Output

\* Family Correlation based on 4' luminaire 3500K Very High Output (V) test - 120V.

\*\* Based on ITL report: 89351

Protected by one or more US Patents: 8915613; D702,391; D702,390; D700,732

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Due to continuing product improvements, Finelite reserves the right to change specifications without notice. Please visit www.finelite.com for most current data.

# Alternate Lighting Package

- X'd out fixtures are not accepted

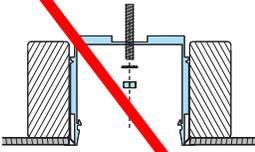


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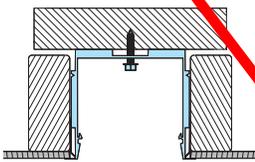
# FINELITE

# H04 - Recessed

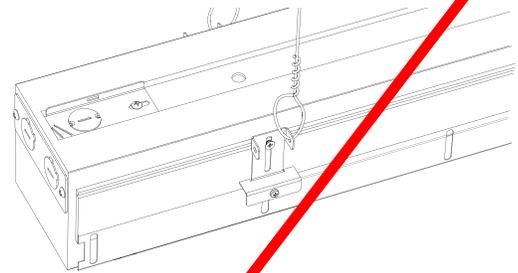
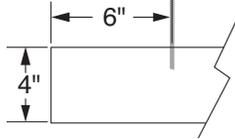
Threaded Rod Option



Screw Mount Option



Mounting location for securing to structure



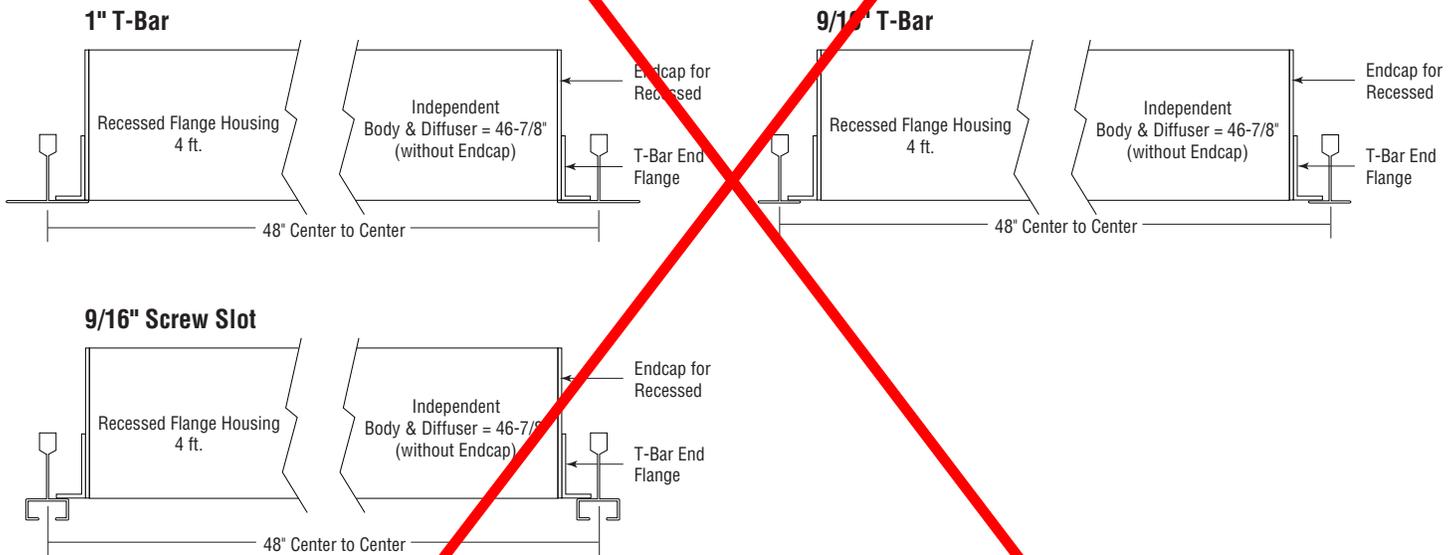
### T-BAR INSTALLATION:

H04-R for T-Bar installations comes standard with a conduit plate at the end, and at the top of the luminaire. Mounting brackets (supplied) secure the luminaire to T-Bar and provide support to structure location. All even foot length (2, 4, 6, ...) luminaire runs are reduced in length by an appropriate amount to fit within typical 2x2 and 2x4 T-Bar systems. Please consult factory for uncommon T-Bar systems.

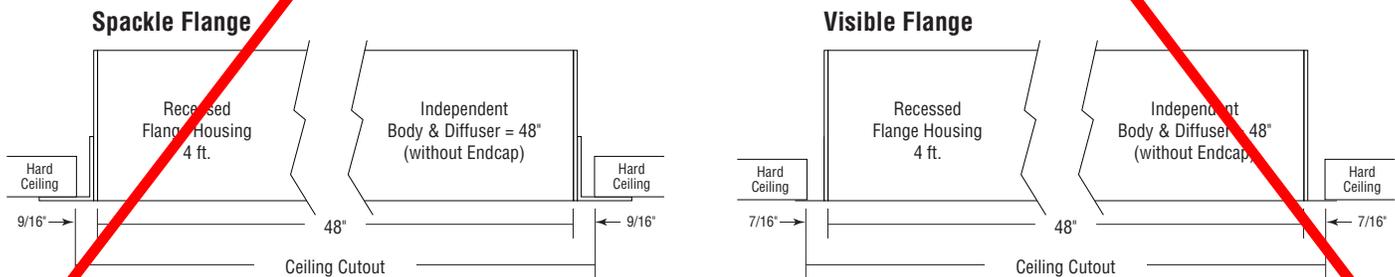
### HARD CEILING MOUNTING OPTIONS

Two mounting options: threaded rod and screw mounting options. Mounting locations are located on each end of the luminaire. Mounting location is 6" away from each end of luminaire.

### GRID LENGTH DETAIL - 4' example



### HARD CEILING LENGTH DETAIL - 4' example



Protected by one or more US Patents: 8915613; D702,391; D702,390; D700,732

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# Alternate Lighting Package

- X'd out fixtures are not accepted



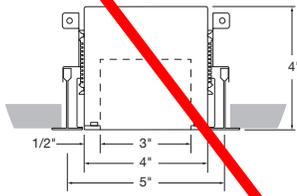
BUY AMERICAN ACT OF 2009 COMPLIANT

# FINELITE

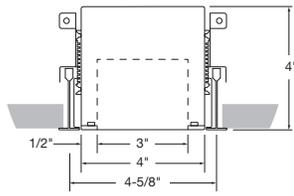
# H04 - Recessed

## MOUNTING TYPES: T-BAR

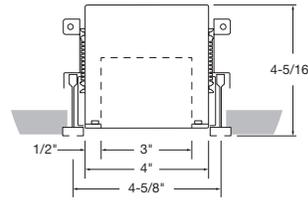
Rough-In Dimensions



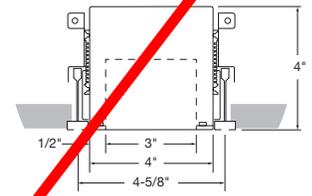
1" T-Bar (C1)



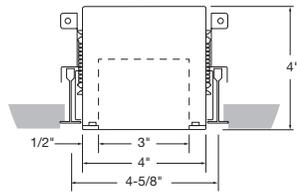
9/16" T-Bar (C2)



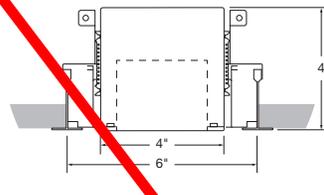
Standard Screw Slot (C3)



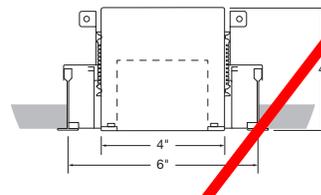
Flush Screw Slot (C3F)



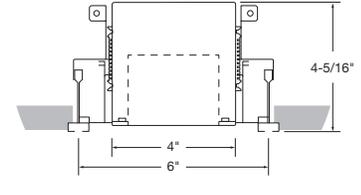
9/16" Tegular (C2T)



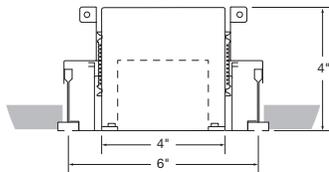
Tech Zone 6" (TZ6)  
1" T-Bar (C1)



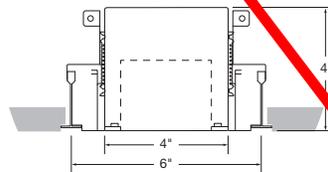
Tech Zone 6" (TZ6)  
9/16" T-Bar (C2)



Tech Zone 6" (TZ6)  
Standard Screw Slot (C3)

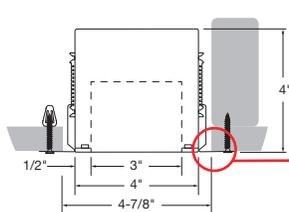


Tech Zone 6" (TZ6)  
Flush Screw Slot (C3F)



Tech Zone 6" (TZ6)  
9/16" Tegular (C2T)

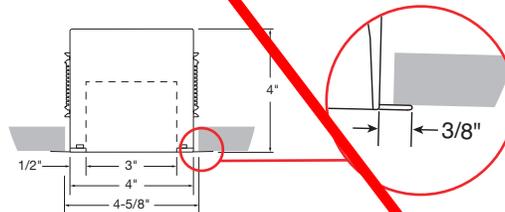
## MOUNTING TYPES: CUTOUT DIMENSIONS



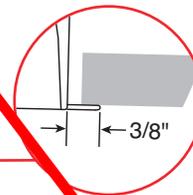
Spackle Flange (SF)



1/16" For  
mudding  
and taping



Visible Flange (VF)



3/8"

Protected by one or more US Patents: 8915613; D702,391; D702,390; D700,732

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### SPECIFICATIONS

**CONSTRUCTION:** Precision-cut extruded aluminum body. Internal joiner system, Plug-together wiring, standard.

**ENDCAPS:** Solid diecast aluminum endcaps close in form and add 1/4" to each end of luminaire.

**REFLECTORS:** High diffuse reflectance film with matte white finish. UV stable, abrasion resistant, and anti-static.

**DOWNLIGHT OPTION:** Direct distribution is totally open with unique polymer reflector material that helps define the rectilinear form.

**LIGHT OUTPUT:** Four lumen packages available, Standard (S), Boosted Standard (B), High (H), and Very High (V). A separate chart summarizes lumen distribution and wattage. Light engines are replaceable.

**LUMEN MAINTENANCE:** 90% of initial light output (L90) at 100,000+ hours; 70% of initial light output (L70) at 200,000+ hours.

**DRIVER:** Replaceable 120V/277V and 347V Constant Current Reduction dimming driver standard. Can be wired dimming or non-dimming. 0-10v dimming controls with a range of 10%-100%. Dimming to 1% is available; consult factory. Expected driver lifetime: 100,000 hours.

**LUTRON DRIVER OPTIONS:** Lut3W-3-wire, LutES-EcoSystem, Lut2W-2-wire.

**ELECTRICAL:** Optional emergency to generator/inverter wiring, internal generator transfer switch, nightlight wiring, step-dimming driver, backup battery. Factory-choice low-profile backup battery available. Chicago Plenum option. 8' minimum luminaire length for low profile battery pack. Bodine BSL722 battery pack also available; 4' minimum luminaire length. Backup batteries deliver 2000 lumens. Half of a 4' (one side) section will be illuminated in EM mode.



**INTEGRATED SENSORS:** Integrated PIR Occupancy and Daylight sensors from a variety of manufacturers can be integrated into the luminaire.

**MOUNTING:** Standard bracket design works with most lay-in ceiling types. Brackets secure luminaire to the ceiling grid from above. Tie-in T-Bar brackets connect the luminaire to the T-Bar for securing to structure. Consult local codes for tie-wire recommendations.

**FINISHES:** Finelite Signal White powder coat standard. Optional Adders: 185 RAL colors.

**FEED:** Standard with one 18-gauge 15-conductor single-circuit feed. 14-gauge feed used when luminaire current exceeds 5 amps. Optional 6" flex conduit whips available.

**LENGTHS:** Any lengths, 2-foot minimum, in 1' increments. 12-foot maximum section length.

**LABELS:** Luminaire and electrical components are ETL-listed conforming to UL 1598 in the U.S.A. and CAN/CSA C22.2 No. 250.0 in Canada. In accordance with NEC Code 410.73 (G), this luminaire contains an internal driver disconnect. Damp Location, IC-Rated. Finelite products use electronic components that are RoHS compliant, and the mechanical components of the luminaire have been verified to not knowingly contain any restricted substances listed per RoHS Directive 2011/65/EU.

**WEIGHT:** 2.8 lbs/ft.

**WARRANTY:** 10-year performance-based warranty on all standard components. Optional accessories such as emergency battery packs are covered by their individual manufacturer warranties.

# FINELITE

Claymont  
Elementary  
School  
TYPE BB2

IC - RATED

LED



BUY AMERICAN ACT OF 2009 COMPLIANT

## H04 - Recessed



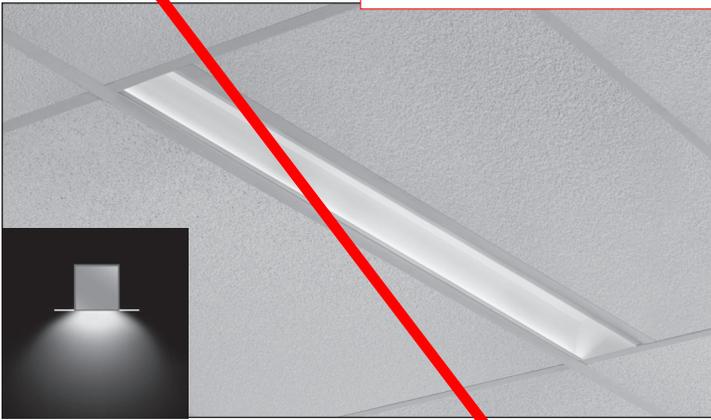
**Alternate Lighting Package**  
- X'd out fixtures are not accepted

Date

Project

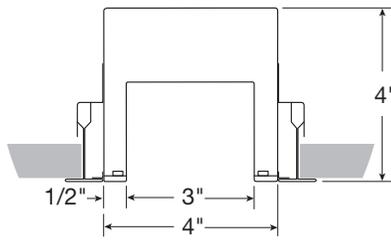
Type

Comments



### DESCRIPTION

H04 Recessed (H04-R) luminaire delivers unparalleled performance and comfortable illumination. A state-of-the-art rectilinear reflector provides depth and seamless uniformity to recessed applications. Designed to accommodate most ceiling types and tailorable in 1-foot increments.



### DIMENSIONS & LIGHT ENGINE

Mid-powered, micro LED arrays are tucked into the thin bottom rail for seamless illumination.



State-of-the-art polymer reflector material

### UNIQUE POLYMER REFLECTOR

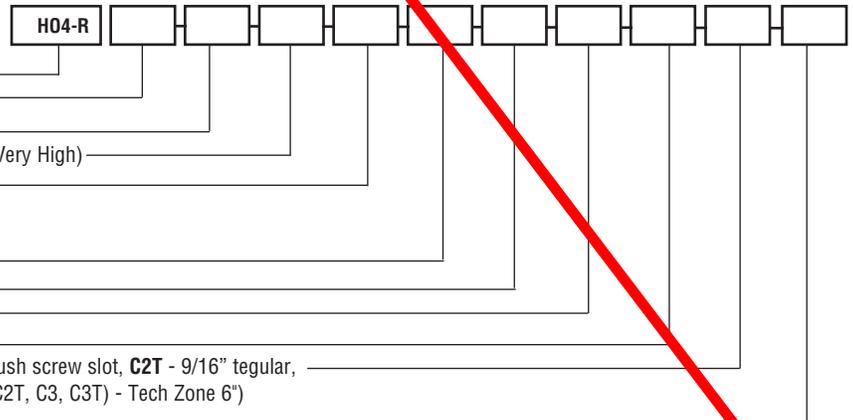
State-of-the-art lightweight reflector material features high reflectivity, reduced presence of seams, and is tailorable for maximum flexibility and performance.

Up To  
**119 LPW**

### PERFORMANCE

H04-R delivers performance of up to 119 lumens per watt. Up to 998 lumens per foot.

**ORDERING GUIDE:** Sample Number: H04-R - RO - 32' - S - 835 - OPN - 120V - SC - SE - C1 - OBO



Finelite **H04-R**

Luminaire Style (**RO** - Rectilinear)

Length (Minimum 2', in 1' increments)

Downlight Output (**S** - Standard, **B** - Boosted Standard, **H** - High, **V** - Very High)

LED CRI/CCT (**830** - 80 CRI min, 3000K **930** - 90 CRI min, 3000K

**835** - 80 CRI min, 3500K **935** - 90 CRI min, 3500K

**840** - 80 CRI min, 4000K **940** - 90 CRI min, 4000K)

Downlight Option (**OPN** - Open)

Voltage (**120V**, **277V**, **347V**)

Circuiting (**SC** - Single Circuit)\*\*

Endcap (**SE** - Solid Endcap (standard))

Ceiling Type (**C1** - 1" T-Bar, **C2** - 9/16" T-Bar, **C3** - screw slot, **C3F** - flush screw slot, **C2T** - 9/16" tegular,

**S** - Spackle Flange), **VF** - Visible Flange, **TZ6** (C1, C2, C2T, C3, C3T) - Tech Zone 6")

Integrated Sensor (**OBO** - Occupancy Sensor, **OBD** - Daylight)

\*Standard section lengths: 4', 8' and 12' (maximum)

\*\*Contact factory for switching options.

# Alternate Lighting Package

- X'd out fixtures are not accepted



BUY AMERICAN ACT OF 2009 COMPLIANT

# FINELITE

## H04 - Recessed

### PHOTOMETRY

H04-R-R0-4'-V-835-OPN

Very High Output - 4' Luminaire

Efficacy: 114 lumens per watt

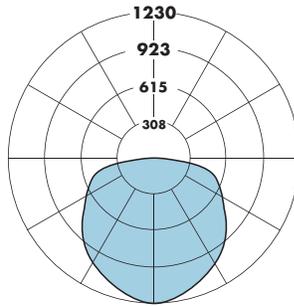
Total luminaire output: 3991 Lumens (998 lumens/foot)

5 Watts (8.8 watts/foot)

Peak Candela Value: 1230 @ 0°

CCT: 3500K; CRI: 80

ITL LM79 Report 89351



CANDELA DISTRIBUTION						
	0.0	22.5	45	67.5	90	Flux
0	1230	1230	1230	1230	1230	
5	1227	1223	1217	1212	1212	116
15	1196	1170	1161	1155	1150	329
25	1126	1085	1078	1077	1073	501
35	1022	974	975	980	979	612
45	884	840	852	860	862	651
55	717	685	706	708	715	631
65	528	514	542	597	618	552
75	316	329	425	484	522	432
85	95	178	159	98	2	155
90	0	0	0	0	0	

Total Light Output, 3500K, 80 CRI (Lumens) - 4' Luminaire			
S*	B*	H*	V**
1634	2054	3104	3991

Lumen Adjustment Factors - 80 CRI	
3000K	0.985
3500K	1.000
4000K	1.032

Light Output, 3500K, 80 CRI (Lumens Per Foot)			
S*	B*	H*	V**
408	513	776	998

Lumen Adjustment Factors - 90 CRI	
3000K	0.746
3500K	0.760
4000K	0.789

Power (Watts Per Foot)			
S*	B*	H*	V**
3.4	4.4	6.7	8.8

Apply a lumen adjustment factor to calculate lumens for the desired CCT and CRI.

Efficacy, 3500K, 80 CRI (Lumens Per Watt)			
S*	B*	H*	V**
119	118	115	114

### SAMPLE LUMEN ADJUSTMENT CALCULATION

High Output (H), 4000K, 90 CRI

Lumen Adjustment Factor = 0.789

$$\text{Total Light Output} = 3104 \text{ lm} \times 0.789 = 2499 \text{ lm}$$

$$\text{Total Light Output per Foot} = 776 \text{ lm/ft} \times 0.789 = 612 \text{ lm/ft}$$

$$\text{watts/foot} = 6.7 \text{ W/ft}$$

$$\text{Efficacy} = \frac{612 \frac{\text{lm}}{\text{ft}}}{6.7 \frac{\text{W}}{\text{ft}}} = 91 \text{ lm/W}$$

S - Standard Output, B - Boosted Standard Output, H - High Output, V - Very High Output

\* Family Correlation based on 4' luminaire 3500K Very High Output (V) test - 120V.

\*\* Based on ITL report: 89351

Protected by one or more US Patents: 8915613; D702,391; D702,390; D700,732

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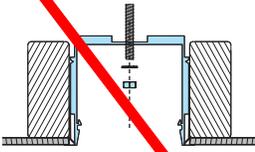


BUY AMERICAN ACT OF 2009 COMPLIANT

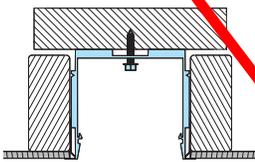
# FINELITE

## H04 - Recessed

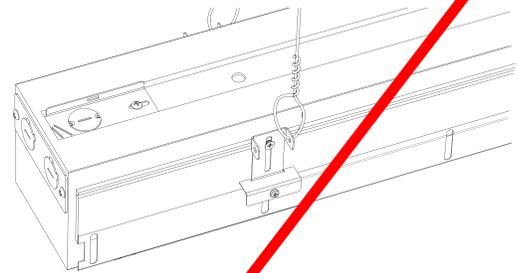
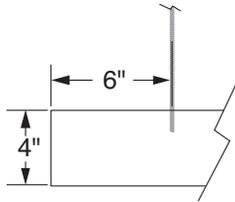
Threaded Rod Option



Screw Mount Option



Mounting location for securing to structure



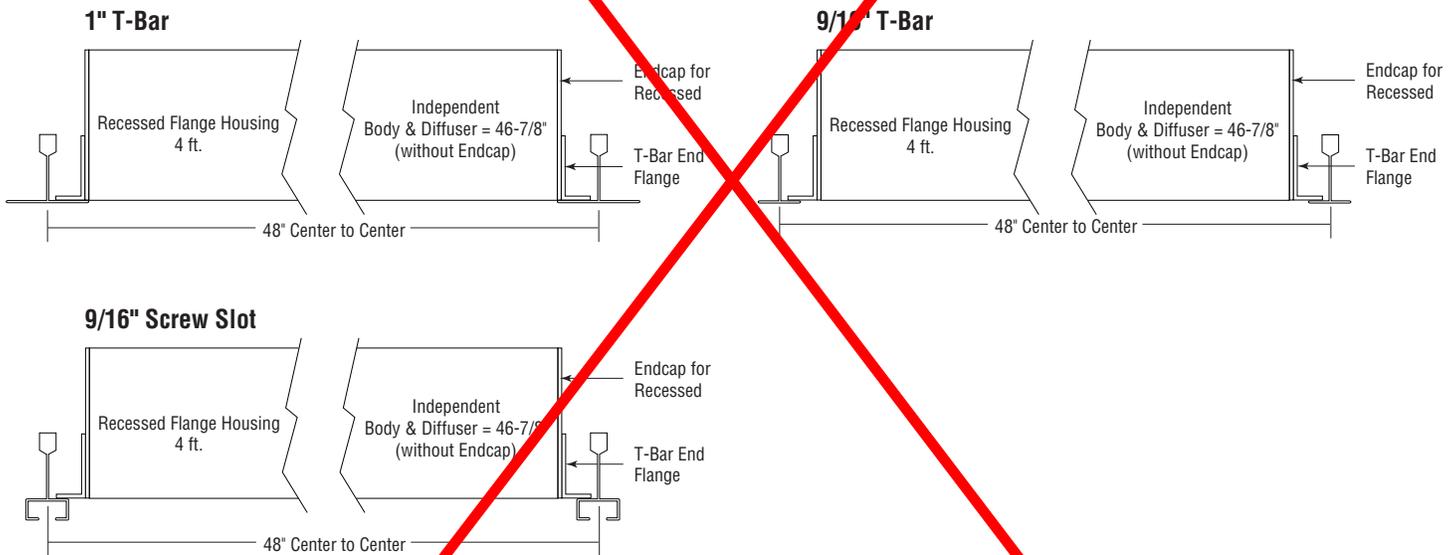
### T-BAR INSTALLATION:

H04-R for T-Bar installations comes standard with a conduit plate at the end, and at the top of the luminaire. Mounting brackets (supplied) secure the luminaire to T-Bar and provide support to structure location. All even foot length (2, 4, 6, ...) luminaire runs are reduced in length by an appropriate amount to fit within typical 2x2 and 2x4 T-Bar systems. Please consult factory for uncommon T-Bar systems.

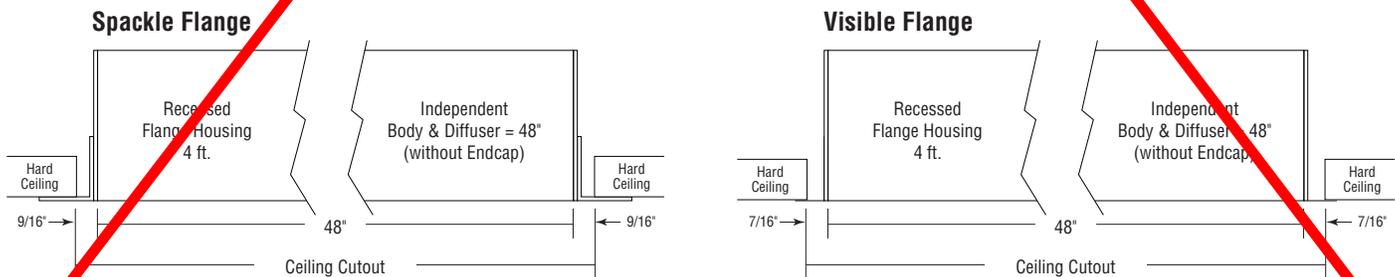
### HARD CEILING MOUNTING OPTIONS

Two mounting options: threaded rod and screw mounting options. Mounting locations are located on each end of the luminaire. Mounting location is 6" away from each end of luminaire.

### GRID LENGTH DETAIL - 4' example



### HARD CEILING LENGTH DETAIL - 4' example



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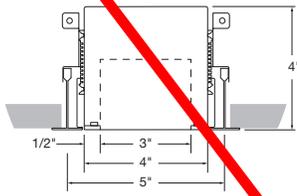
BUY AMERICAN ACT OF 2009 COMPLIANT

# FINELITE

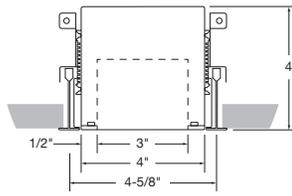
# H04 - Recessed

## MOUNTING TYPES: T-BAR

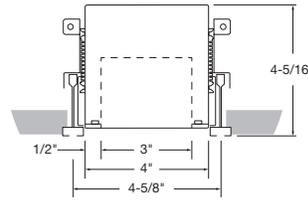
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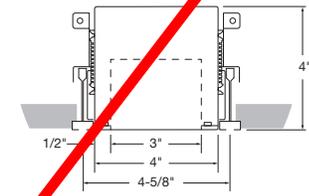
1" T-Bar (C1)



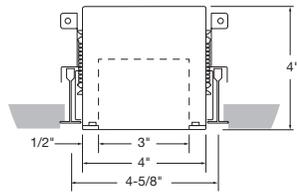
9/16" T-Bar (C2)



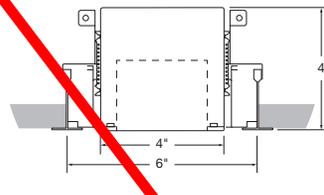
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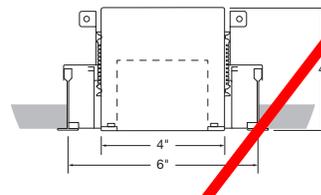
Flush Screw Slot (C3F)



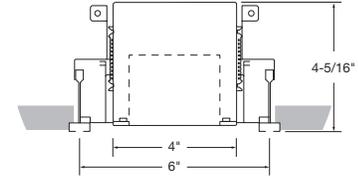
9/16" Tegular (C2T)



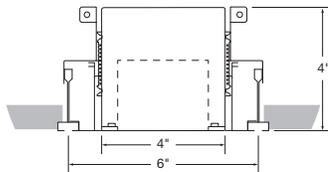
Tech Zone 6" (TZ6)  
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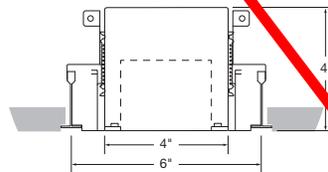
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Standard Screw Slot (C3)

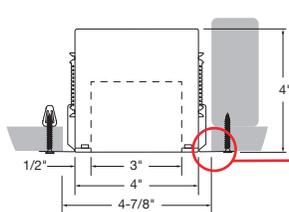


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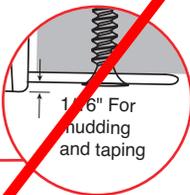


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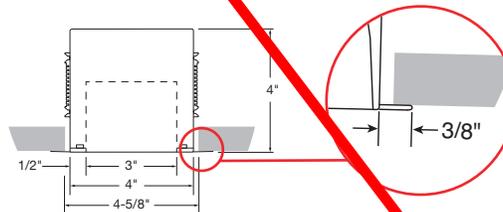
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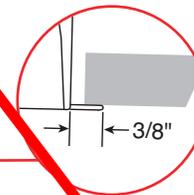
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**LED**



createchange



**FEATURES**

- LED Enclosed and Gasketed
- Long life 60,000 hour LEDs at L80 for reduced maintenance
- Four LED color choices and 80 CRI
- IP66 all sizes when ordered with standard polyacetal (POM) latches
- IP65 all sizes, IP67 4' and 8'
- Available in 2', 4', or 8' lengths
- NEMA 4X housing
- Fiberglass housing with F1 weatherability rating, standard
- Smooth housing for easy cleaning
- Gasket is non-porous to ensure seal
- Impact modified acrylic lens equivalent to 100% DR
- Wide range of lens selections
- Lens firmly secured with tamper resistance ready polyacetal (POM) latches
- Stainless steel latching optional
- ControlScope® compatible
- Drivers include minimum 2.5kV surge protection
- UL Sanitation Certified per NSF Standards
- Removable gear tray electrical access for modular replaceability
- Emergency battery pack installed, optional on most models
- -40°C up to +50°C ambient operation; see table provided for details
- DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations - see www.designlights.org
- Includes surface mounting brackets
- Occupancy and/or daylight sensing accessories available
- Five year warranty

**Alternate Lighting Package**  
- X'd out fixtures are not accepted

Type

Date

Catalog No.

**CONSTRUCTION**

Housing is formed from UL 5VA fiberglass. F1 weatherability rating, suitable for indoor or outdoor use with respect to exposure to UV light. LED affixed to removable heat sinked gear tray. 14 Latches per 8', 8 per 4', 6 per 2'. Latches are provided tamper resistance ready, tamper resistant screws by others. Latches are standard polyacetal (POM), optional in stainless steel. Access openings are provided for electrical connection.

**SHIELDING**

Lineal ribbed frosted acrylic lens impact modified equivalent to 100% DR; modification adds flexibility to reduce impact breakage compared to standard acrylic formulations. Optional ribbed polycarbonate lens or deep acrylic. All lenses available in clear or frost.

**FINISH**

White painted parts are treated with a five-stage phosphate bonding process and finished with high reflectance baked enamel.

**ELECTRICAL**

Long-life LEDs are rated for 60,000 hours at L80 lumen maintenance. Extra High Lumen packages (XL) rated L70 at 60,000 hours. Driver options include fixed output for on/off function, step dimming<sup>6</sup> (high/low/off) or continuous 0-10V dimming. QR code label affixed to housing for easy traceability.

**MOUNTING**

Use flexible conduit only.

**CERTIFICATION**

All luminaires are built to UL 1598 and 2108 standards, and bear appropriate CSA labels. Ingress protection IP65 and IP67 standard. UL Sanitation Certified per NSF Standards. Wet location labeling is standard. Emergency-equipped fixtures built to UL 924. DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations. Please refer to the DLC website for specific product qualifications at www.designlights.org.

**WARRANTY**

Five year warranty (Terms and Conditions Apply).

**ORDERING INFORMATION**

**EXAMPLE LXEM4-35HL-RFA-EDU**

LXEM		-		-		-		-	
MODEL	COLOR TEMP	SHIELDING	DRIVER	VOLTAGE	OPTIONS	SIZE	LUMEN OUTPUT		
<b>LXEM</b> LED Enclosed and Gasketed	30 3000K 35 3500K 40 4000K 50 5000K	<b>RFA</b> Ribbed Frosted Acrylic <b>RA</b> Ribbed Clear Acrylic <sup>11</sup> <b>DFA</b> Deep Frosted Acrylic <b>DCA</b> Deep Clear Acrylic <sup>11</sup> <b>RFP</b> Ribbed Frosted Polycarbonate <sup>5</sup> <b>RP</b> Ribbed Clear Polycarbonate <sup>5,11</sup>	<b>E</b> Fixed Output <b>ESD</b> Step Dimming <sup>6</sup> <b>ED</b> 0-10V Dimming <sup>6</sup> <b>ED1</b> 0-10V 1% Dimming <sup>6</sup>	<b>U</b> 120V-277V <b>347</b> 347V	<b>GLR</b> Fast Blow Fuse <b>OCM</b> Microwave Occupancy Sensor <b>SSL</b> Stainless Steel Tamper Resistance Ready Latches <b>TP</b> Tamper Proof Latches <b>ELL14</b> Emergency Battery Pack Installed, 1400 Lumens <sup>3,6,7</sup> <b>F3C8W</b> 3 Wire 8' Wet Cord <b>F3C15W</b> 3 Wire 15' Wet Cord <b>F4C8W</b> 4 Wire 8' Wet Cord <b>F4C15W</b> 4 Wire 15' Wet Cord <b>F5C8W</b> 5 Wire 8' Wet Cord <b>F5C15W</b> 5 Wire 15' Wet Cord <b>F6C6W</b> 6 Wire 6' Wet Cord <b>SWH</b> Single Wet Hub ½" NPT Hub <b>DWH</b> Dual Wet Hub ½" NPT Hub <b>ZRE</b> ControlScope® compatible <sup>2,9</sup>	2 2' <sup>1,2,3,4</sup> 4 4' 8 8'	<b>VW</b> Very Low Watt <b>LW</b> Low Watt <b>ML</b> Medium Lumen <b>HL</b> High Lumen <b>VL</b> Very High Lumen <b>XL</b> Xtra High Lumen <sup>2</sup>		

**ACCESSORIES (ORDER SEPARATELY)**

- XEDPM** Dual Pendant Brackets (pendant by others)<sup>8</sup>
- XEHX** Chain Hanger Kit (Includes 14" Chain)
- XE45MB** 45° Mounting Bracket<sup>10</sup>
- XE45MBSS** 45° Stainless Steel Mounting Bracket<sup>10</sup>

**SENSOR KITS (Order Separately)**  
All sensor kits include Occupancy & Daylight.  
Daylight activation requires setting of dip-switches on site.

Catalog #	# Relays	Lens Type	Voltage	Wet Label
120V/ 277V OS1360WLK	1	360°	120/277	Yes
OS2360WLK	2	360°	120/277	Yes
OS1AWLK	1	Aisle	120/277	Yes
OS2AWLK	2	Aisle	120/277	Yes

<sup>1</sup> VL and XL not available in 2' size.  
<sup>2</sup> Not available with battery pack.  
<sup>3</sup> Not available with XL lumen package.  
<sup>4</sup> Not available with VL lumen package.  
<sup>5</sup> 2' and 4' only. 8' not available.  
<sup>6</sup> See table for availability.  
<sup>7</sup> Not available in 347V.  
<sup>8</sup> Requires 3/8" OD threaded rod by others.  
<sup>9</sup> Registered trademark of Daintree Networks, used by permission.  
<sup>10</sup> 2 required for 8' fixture.  
<sup>11</sup> Clear lenses (RA, DCA and RP) may cause noticeable light patterns on lit surfaces. See ies files for exact distribution.

**PHOTOMETRIC DATA**

Test# 17905 Test Date 10/13/2016

**LUMINAIRE DATA**

Luminaire	LXEM4-50ML-RFA-EDU LXEM LED Enclosed and Gasketed, Extreme Environment 7" x 51" LED with frosted ribbed acrylic lens
Ballast	XI040C110V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	5306
Watts	42.00
Mounting	Surface
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.24 90° = 1.40
Luminous Opening in Feet	Length: 4.00 Width: 0.54 Height: 0.17

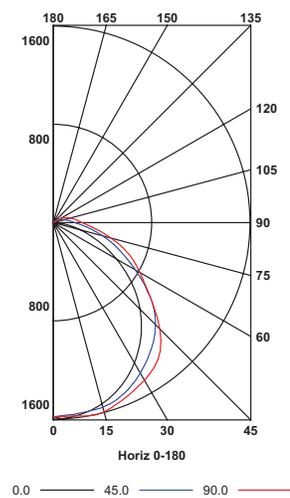
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	1268	23.9	23.9
0-40	2105	39.7	39.7
0-60	3766	71.0	71.0
0-90	5025	94.7	94.7
0-180	5306	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100%
Total Lumens per Watt	126
ANSI/IESNA RP-1-2004 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$1.90 based on 3000 hrs. and \$0.08 per KWH

**INDOOR CANDELA PLOT**



Test# 17989 Test Date 10/10/2016

**LUMINAIRE DATA**

Luminaire	LXEM4-40HL-DFA-EDU LXEM LED Enclosed and Gasketed, Extreme Environment 7" x 51" LED with deep frosted acrylic lens
Ballast	XI054C150V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	6525
Watts	47.30
Mounting	Surface
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.25 90° = 1.28
Luminous Opening in Feet	Length: 4.00 Width: 0.54 Height: 0.29

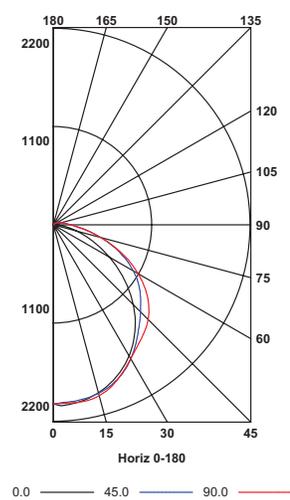
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	1583	24.3	24.3
0-40	2594	39.8	39.8
0-60	4661	71.4	71.4
0-90	6235	95.6	95.6
0-180	6525	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100%
Total Lumens per Watt	138
ANSI/IESNA RP-1-2004 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$1.73 based on 3000 hrs. and \$0.08 per KWH

**INDOOR CANDELA PLOT**



Test# 18012 Test Date 10/18/2016

**LUMINAIRE DATA**

Luminaire	LXEM4-50XL-RA-EDU LXEM LED Enclosed and Gasketed, Extreme Environment 7" x 51" LED with ribbed clear acrylic lens
Ballast	XI040C110V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	10607
Watts	91.40
Mounting	Surface
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.21 90° = 1.38
Luminous Opening in Feet	Length: 4.00 Width: 0.54 Height: 0.17

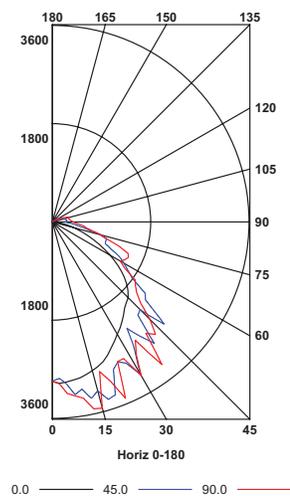
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	2547	24.0	24.0
0-40	4252	40.1	40.1
0-60	7643	72.1	72.1
0-90	10073	95.0	95.0
0-180	10607	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100%
Total Lumens per Watt	116
ANSI/IESNA RP-1-2004 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$2.05 based on 3000 hrs. and \$0.08 per KWH

**INDOOR CANDELA PLOT**



# Alternate Lighting Package

- X'd out fixtures are not accepted

Driver Availability							
LENGTH	OUTPUT	NOMINAL LUMEN RANGE	ESD Available	ED1 Available	347v Available	347 with ESD Available	347 with ED1 Available
2'	VW	2,145 - 2,708	Y	Y	Y	N/A	Y
	LW	2,738 - 3,529	Y	Y	Y	N/A	Y
	ML	3,862 - 4,921	Y	Y	Y	N/A	Y
	HL	4,254 - 5,416	Y	Y	Y	N/A	Y
4'	VW	2,802 - 3,433	Y	Y	Y	N/A	Y
	LW	3,726 - 4,922	Y	Y	Y	N/A	Y
	ML	4,533 - 5,646	Y	Y	Y	N/A	Y
	HL	5,449 - 6,763	Y	Y	Y	N/A	Y
	VL	7,086 - 8,415	Y	Y	Y	N/A	N/A
	XL	9,059 - 11,237	N/A	Y	Y	N/A	N/A
8'	VW	6,078 - 6,866	Y	Y	Y	N/A	Y
	LW	8,095 - 9,276	Y	Y	Y	N/A	Y
	ML	9,844 - 11,293	Y	Y	Y	N/A	Y
	HL	11,851 - 13,525	Y	Y	Y	N/A	Y
	VL	14,747 - 16,830	Y	Y	Y	N/A	N/A
	XL	19,558 - 22,473	N/A	Y	Y	N/A	N/A

MAX. AMBIENT OPERATING TEMP.							
LENGTH	OUTPUT	NOMINAL LUMEN RANGE	WATTS	LPW	MAX AMBIENT OPERATING TEMPERATURE (C°) (UNIVERSAL VOLTAGE)	ELL14 (WITH UNIVERSAL VOLTAGE)	347v
2'	VW	2,145 - 2,708	21	102 - 130	40	NA	35
	LW	2,738 - 3,529	26	105 - 135	40	NA	35
	ML	3,862 - 4,921	39	100 - 128	40	NA	35
	HL	4,254 - 5,416	44	97 - 123	35	NA	30
4'	VW	2,802 - 3,433	25	114 - 141	50	45	45
	LW	3,726 - 4,922	33	112 - 139	50	45	45
	ML	4,533 - 5,646	42	108 - 134	50	45	45
	HL	5,449 - 6,763	47	115 - 143	45	45	35
	VL	7,086 - 8,415	62	115 - 136	40	40	35
	XL	9,059 - 11,237	92	99 - 123	30	NA	25
8'	VW	6,078 - 6,866	49	124-141	50	45	45
	LW	8,095 - 9,276	67	122 - 139	50	45	45
	ML	9,844 - 11,293	84	117 - 134	50	45	45
	HL	11,851 - 13,525	95	125 - 143	45	45	35
	VL	14,747 - 16,830	123	120 - 136	40	40	35
	XL	19,558 - 22,473	183	107 - 123	30	NA	25

# Alternate Lighting Package

- X'd out fixtures are not accepted

		LXEM PREDICTED LIFE			LUMEN MAINTENANCE			
CALCULATED HOURS	LENGTH	OUTPUT	NOMINAL LUMEN RANGE	AMBIENT OPERATING TEMPERATURE (C°)	L70	L80	L90	
		2'	VW	2,145 - 2,708	25	393,000	245,000	115,000
40					207,000	128,000	58,000	
LW			2,738 - 3,529	25	393,000	245,000	115,000	
				40	207,000	128,000	58,000	
ML			3,862 - 4,921	25	282,000	174,000	79,000	
				40	207,000	128,000	58,000	
HL			4,254 - 5,416	25	232,000	143,000	65,000	
				35	175,000	105,000	42,000	
4'			VW	2,802 - 3,433	25	322,000	198,000	90,000
					50	257,000	159,000	72,000
		LW	3,726 - 4,922	25	322,000	198,000	90,000	
				50	257,000	159,000	72,000	
		ML	4,533 - 5,646	25	322,000	198,000	90,000	
				50	257,000	159,000	72,000	
		HL	5,449 - 6,763	25	322,000	198,000	90,000	
				45	282,000	174,000	79,000	
		VL	7,086 - 8,415	25	322,000	198,000	90,000	
				40	228,000	140,000	63,000	
		XL	9,059 - 11,237	25	266,000	164,000	74,000	
				30	240,000	148,000	67,000	
		8'	VW	6,078 - 6,866	25	322,000	198,000	90,000
					50	257,000	159,000	72,000
LW			8,095 - 9,276	25	322,000	198,000	90,000	
				50	257,000	159,000	72,000	
ML	9,844 - 11,293		25	322,000	198,000	90,000		
			50	257,000	159,000	72,000		
HL	11,851 - 13,525		25	322,000	198,000	90,000		
			45	282,000	174,000	79,000		
VL	14,747 - 16,830		25	322,000	198,000	90,000		
			40	228,000	140,000	63,000		
XL	19,558 - 22,473		25	266,000	164,000	74,000		
			30	240,000	148,000	67,000		

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp
LXEM2-30VW-RFP-EDU	Very Low Watt	30K	RFP	2,145	21.1	101.6	40°C
LXEM2-30VW-RA-EDU			RA	2,365	20.8	113.7	40°C
LXEM2-30VW-RP-EDU			RP	2,373	20.8	114.1	40°C
LXEM2-30VW-RFA-EDU			RFA	2,448	20.8	117.7	40°C
LXEM2-30VW-DFA-EDU			DFA	2,467	20.8	118.6	40°C
LXEM2-30VW-DCA-EDU			DCA	2,512	20.8	120.8	40°C
LXEM2-35VW-RFP-EDU		35K	RFP	2,217	21.1	105.1	40°C
LXEM2-35VW-RA-EDU			RA	2,446	20.8	117.6	40°C
LXEM2-35VW-RP-EDU			RP	2,454	20.8	118.0	40°C
LXEM2-35VW-RFA-EDU			RFA	2,531	20.8	121.7	40°C
LXEM2-35VW-DFA-EDU			DFA	2,551	20.8	122.6	40°C
LXEM2-35VW-DCA-EDU			DCA	2,598	20.8	124.9	40°C
LXEM2-40VW-RFP-EDU		40K	RFP	2,252	21.1	106.7	40°C
LXEM2-40VW-RA-EDU			RA	2,484	20.8	119.4	40°C
LXEM2-40VW-RP-EDU			RP	2,492	20.8	119.8	40°C
LXEM2-40VW-RFA-EDU			RFA	2,571	20.8	123.6	40°C
LXEM2-40VW-DFA-EDU			DFA	2,590	20.8	124.5	40°C
LXEM2-40VW-DCA-EDU			DCA	2,638	20.8	126.8	40°C
LXEM2-50VW-RFP-EDU		50K	RFP	2,312	21.1	109.6	40°C
LXEM2-50VW-RA-EDU			RA	2,550	20.8	122.6	40°C
LXEM2-50VW-RP-EDU			RP	2,558	20.8	123.0	40°C
LXEM2-50VW-RFA-EDU			RFA	2,639	20.8	126.9	40°C
LXEM2-50VW-DFA-EDU			DFA	2,659	20.8	127.8	40°C
LXEM2-50VW-DCA-EDU			DCA	2,708	20.8	130.2	40°C
LXEM2-30LW-RFP-EDU	Low Watt	30K	RFP	2,738	26.0	105.3	40°C
LXEM2-30LW-RP-EDU			RP	3,049	26.1	116.8	40°C
LXEM2-30LW-RA-EDU			RA	3,144	26.0	120.9	40°C
LXEM2-30LW-RFA-EDU			RFA	3,180	26.2	121.4	40°C
LXEM2-30LW-DFA-EDU			DFA	3,239	26.1	124.1	40°C
LXEM2-30LW-DCA-EDU			DCA	3,273	26.1	125.4	40°C
LXEM2-35LW-RFP-EDU		35K	RFP	2,831	26.0	108.9	40°C
LXEM2-35LW-RP-EDU			RP	3,153	26.1	120.8	40°C
LXEM2-35LW-RA-EDU			RA	3,251	26.0	125.0	40°C
LXEM2-35LW-RFA-EDU			RFA	3,289	26.2	125.5	40°C
LXEM2-35LW-DFA-EDU			DFA	3,349	26.1	128.3	40°C
LXEM2-35LW-DCA-EDU			DCA	3,385	26.1	129.7	40°C
LXEM2-40LW-RFP-EDU		40K	RFP	2,875	26.0	110.6	40°C
LXEM2-40LW-RP-EDU			RP	3,202	26.1	122.7	40°C
LXEM2-40LW-RA-EDU			RA	3,302	26.0	127.0	40°C
LXEM2-40LW-RFA-EDU			RFA	3,339	26.2	127.5	40°C
LXEM2-40LW-DFA-EDU			DFA	3,401	26.1	130.3	40°C
LXEM2-40LW-DCA-EDU			DCA	3,437	26.1	131.7	40°C
LXEM2-50LW-RFP-EDU		50K	RFP	2,951	26.0	113.5	40°C
LXEM2-50LW-RP-EDU			RP	3,287	26.1	125.9	40°C

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp	
LXEM2-50LW-RA-EDU	Low Watt	50K	RA	3,390	26.0	130.4	40°C	
LXEM2-50LW-RFA-EDU			RFA	3,428	26.2	130.9	40°C	
LXEM2-50LW-DFA-EDU			DFA	3,492	26.1	133.8	40°C	
LXEM2-50LW-DCA-EDU			DCA	3,529	26.1	135.2	40°C	
LXEM2-30ML-RFP-EDU	Medium Lumen	30K	RFP	3,862	38.5	100.3	40°C	
LXEM2-30ML-RP-EDU			RP	4,228	38.5	109.8	40°C	
LXEM2-30ML-RFA-EDU			RFA	4,343	38.5	112.8	40°C	
LXEM2-30ML-RA-EDU			RA	4,446	38.5	115.5	40°C	
LXEM2-30ML-DFA-EDU			DFA	4,526	38.5	117.5	40°C	
LXEM2-30ML-DCA-EDU			DCA	4,565	38.5	118.6	40°C	
LXEM2-35ML-RFP-EDU		35K	RFP	3,993	38.5	103.7	40°C	
LXEM2-35ML-RP-EDU			RP	4,371	38.5	113.5	40°C	
LXEM2-35ML-RFA-EDU			RFA	4,490	38.5	116.6	40°C	
LXEM2-35ML-RA-EDU			RA	4,597	38.5	119.4	40°C	
LXEM2-35ML-DFA-EDU			DFA	4,680	38.5	121.5	40°C	
LXEM2-35ML-DCA-EDU			DCA	4,720	38.5	122.6	40°C	
LXEM2-40ML-RFP-EDU		40K	RFP	4,055	38.5	105.3	40°C	
LXEM2-40ML-RP-EDU			RP	4,439	38.5	115.3	40°C	
LXEM2-40ML-RFA-EDU			RFA	4,560	38.5	118.4	40°C	
LXEM2-40ML-RA-EDU			RA	4,668	38.5	121.3	40°C	
LXEM2-40ML-DFA-EDU			DFA	4,752	38.5	123.4	40°C	
LXEM2-40ML-DCA-EDU			DCA	4,793	38.5	124.5	40°C	
LXEM2-50ML-RFP-EDU		50K	RFP	4,163	38.5	108.1	40°C	
LXEM2-50ML-RP-EDU			RP	4,558	38.5	118.4	40°C	
LXEM2-50ML-RFA-EDU			RFA	4,682	38.5	121.6	40°C	
LXEM2-50ML-RA-EDU			RA	4,793	38.5	124.5	40°C	
LXEM2-50ML-DFA-EDU			DFA	4,879	38.5	126.7	40°C	
LXEM2-50ML-DCA-EDU			DCA	4,921	38.5	127.8	40°C	
LXEM2-30HL-RFP-EDU		High Lumen	30K	RFP	4,254	44.1	96.5	35°C
LXEM2-30HL-RP-EDU				RP	4,700	44.1	106.6	35°C
LXEM2-30HL-RA-EDU				RA	4,868	44.1	110.4	35°C
LXEM2-30HL-RFA-EDU				RFA	4,874	44.1	110.5	35°C
LXEM2-30HL-DFA-EDU	DFA			5,008	44.1	113.6	35°C	
LXEM2-30HL-DCA-EDU	DCA			5,024	44.1	113.9	35°C	
LXEM2-35HL-RFP-EDU	35K		RFP	4,399	44.1	99.7	35°C	
LXEM2-35HL-RP-EDU			RP	4,860	44.1	110.2	35°C	
LXEM2-35HL-RA-EDU			RA	5,033	44.1	114.1	35°C	
LXEM2-35HL-RFA-EDU			RFA	5,040	44.1	114.3	35°C	
LXEM2-35HL-DFA-EDU			DFA	5,179	44.1	117.4	35°C	
LXEM2-35HL-DCA-EDU			DCA	5,195	44.1	117.8	35°C	
LXEM2-40HL-RFP-EDU	40K		RFP	4,467	44.1	101.3	35°C	
LXEM2-40HL-RP-EDU			RP	4,935	44.1	111.9	35°C	
LXEM2-40HL-RA-EDU			RA	5,111	44.1	115.9	35°C	
LXEM2-40HL-RFA-EDU			RFA	5,117	44.1	116.0	35°C	

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp	
LXEM2-40HL-DFA-EDU	High Lumen	40K	DFA	5,259	44.1	119.2	35°C	
LXEM2-40HL-DCA-EDU			DCA	5,275	44.1	119.6	35°C	
LXEM2-50HL-RFP-EDU		50K	RFP	4,586	44.1	104.0	35°C	
LXEM2-50HL-RP-EDU			RP	5,066	44.1	114.9	35°C	
LXEM2-50HL-RA-EDU			RA	5,248	44.1	119.0	35°C	
LXEM2-50HL-RFA-EDU			RFA	5,254	44.1	119.1	35°C	
LXEM2-50HL-DFA-EDU			DFA	5,399	44.1	122.4	35°C	
LXEM2-50HL-DCA-EDU			DCA	5,416	44.1	122.8	35°C	
LXEM4-30VW-RFP-EDU	Very Low Watt	30K	RFP	2,802	24.5	114.4	50°C	
LXEM4-30VW-RP-EDU			RP	2,938	24.4	120.4	50°C	
LXEM4-30VW-RA-EDU			RA	3,039	24.4	124.6	50°C	
LXEM4-30VW-RFA-EDU			RFA	3,048	24.5	124.4	50°C	
LXEM4-30VW-DCA-EDU			DCA	3,180	24.4	130.3	50°C	
LXEM4-30VW-DFA-EDU			DFA	3,184	24.4	130.5	50°C	
LXEM4-35VW-RFP-EDU		35K	RFP	2,897	24.5	118.2	50°C	
LXEM4-35VW-RP-EDU			RP	3,038	24.4	124.5	50°C	
LXEM4-35VW-RA-EDU			RA	3,143	24.4	128.8	50°C	
LXEM4-35VW-RFA-EDU			RFA	3,151	24.5	128.6	50°C	
LXEM4-35VW-DCA-EDU			DCA	3,288	24.4	134.8	50°C	
LXEM4-35VW-DFA-EDU			DFA	3,293	24.4	134.9	50°C	
LXEM4-40VW-RFP-EDU		40K	RFP	2,942	24.5	120.1	50°C	
LXEM4-40VW-RP-EDU			RP	3,085	24.4	126.4	50°C	
LXEM4-40VW-RA-EDU			RA	3,191	24.4	130.8	50°C	
LXEM4-40VW-RFA-EDU			RFA	3,200	24.5	130.6	50°C	
LXEM4-40VW-DCA-EDU			DCA	3,339	24.4	136.8	50°C	
LXEM4-40VW-DFA-EDU			DFA	3,344	24.4	137.0	50°C	
LXEM4-50VW-RFP-EDU		50K	RFP	3,020	24.5	123.3	50°C	
LXEM4-50VW-RP-EDU			RP	3,168	24.4	129.8	50°C	
LXEM4-50VW-RA-EDU			RA	3,276	24.4	134.3	50°C	
LXEM4-50VW-RFA-EDU			RFA	3,285	24.5	134.1	50°C	
LXEM4-50VW-DCA-EDU			DCA	3,428	24.4	140.5	50°C	
LXEM4-50VW-DFA-EDU			DFA	3,433	24.4	140.7	50°C	
LXEM4-30LW-RFP-EDU		Low Watt	30K	RFP	3,726	33.3	111.9	50°C
LXEM4-30LW-RP-EDU				RP	3,872	33.3	116.3	50°C
LXEM4-30LW-RFA-EDU				RFA	4,048	33.3	121.5	50°C
LXEM4-30LW-RA-EDU				RA	4,054	33.3	121.8	50°C
LXEM4-30LW-DFA-EDU				DFA	4,241	33.3	127.4	50°C
LXEM4-30LW-DCA-EDU				DCA	4,303	33.3	129.2	50°C
LXEM4-35LW-RFP-EDU	35K		RFP	3,853	33.3	115.7	50°C	
LXEM4-35LW-RP-EDU			RP	4,004	33.3	120.2	50°C	
LXEM4-35LW-RFA-EDU			RFA	4,185	33.3	125.7	50°C	
LXEM4-35LW-RA-EDU			RA	4,192	33.3	125.9	50°C	
LXEM4-35LW-DFA-EDU			DFA	4,385	33.3	131.7	50°C	
LXEM4-35LW-DCA-EDU			DCA	4,449	33.3	133.6	50°C	

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp	
LXEM4-40LW-RFP-EDU	Low Watt	40K	RFP	3,912	33.3	117.5	50°C	
LXEM4-40LW-RP-EDU			RP	4,066	33.3	122.1	50°C	
LXEM4-40LW-RFA-EDU			RFA	4,250	33.3	127.6	50°C	
LXEM4-40LW-RA-EDU			RA	4,257	33.3	127.8	50°C	
LXEM4-40LW-DFA-EDU			DFA	4,453	33.3	133.7	50°C	
LXEM4-40LW-DCA-EDU			DCA	4,518	33.3	135.7	50°C	
LXEM4-50LW-RFP-EDU		50K	RFP	4,017	33.3	120.6	50°C	
LXEM4-50LW-RP-EDU			RP	4,174	33.3	125.3	50°C	
LXEM4-50LW-RFA-EDU			RFA	4,363	33.3	131.0	50°C	
LXEM4-50LW-RA-EDU			RA	4,371	33.3	131.3	50°C	
LXEM4-50LW-DFA-EDU			DFA	4,572	33.3	137.3	50°C	
LXEM4-50LW-DCA-EDU			DCA	4,638	33.3	139.3	50°C	
LXEM4-30ML-RFP-EDU		Medium Lumen	30K	RFP	4,533	41.9	108.2	50°C
LXEM4-30ML-RP-EDU				RP	4,714	41.9	112.5	50°C
LXEM4-30ML-RFA-EDU	RFA			4,922	42.0	117.2	50°C	
LXEM4-30ML-RA-EDU	RA			4,924	42.0	117.2	50°C	
LXEM4-30ML-DFA-EDU	DFA			5,160	42.0	122.9	50°C	
LXEM4-30ML-DCA-EDU	DCA			5,238	42.0	124.7	50°C	
LXEM4-35ML-RFP-EDU	35K		RFP	4,688	41.9	111.9	50°C	
LXEM4-35ML-RP-EDU			RP	4,875	41.9	116.3	50°C	
LXEM4-35ML-RFA-EDU			RFA	5,089	42.0	121.2	50°C	
LXEM4-35ML-RA-EDU			RA	5,091	42.0	121.2	50°C	
LXEM4-35ML-DFA-EDU			DFA	5,336	42.0	127.0	50°C	
LXEM4-35ML-DCA-EDU			DCA	5,416	42.0	128.9	50°C	
LXEM4-40ML-RFP-EDU	40K		RFP	4,760	41.9	113.6	50°C	
LXEM4-40ML-RP-EDU			RP	4,950	41.9	118.1	50°C	
LXEM4-40ML-RFA-EDU			RFA	5,168	42.0	123.1	50°C	
LXEM4-40ML-RA-EDU			RA	5,170	42.0	123.1	50°C	
LXEM4-40ML-DFA-EDU			DFA	5,418	42.0	129.0	50°C	
LXEM4-40ML-DCA-EDU			DCA	5,500	42.0	130.9	50°C	
LXEM4-50ML-RFP-EDU	50K		RFP	4,887	41.9	116.6	50°C	
LXEM4-50ML-RP-EDU			RP	5,082	41.9	121.3	50°C	
LXEM4-50ML-RFA-EDU			RFA	5,306	42.0	126.3	50°C	
LXEM4-50ML-RA-EDU			RA	5,308	42.0	126.4	50°C	
LXEM4-50ML-DFA-EDU			DFA	5,563	42.0	132.4	50°C	
LXEM4-50ML-DCA-EDU			DCA	5,646	42.0	134.4	50°C	
LXEM4-30HL-RFP-EDU	High Lumen		30K	RFP	5,449	47.4	115.0	45°C
LXEM4-30HL-RP-EDU				RP	5,648	47.2	119.7	45°C
LXEM4-30HL-RFA-EDU				RFA	5,926	47.4	125.0	45°C
LXEM4-30HL-RA-EDU				RA	5,932	47.3	125.4	45°C
LXEM4-30HL-DFA-EDU				DFA	6,214	47.3	131.4	45°C
LXEM4-30HL-DCA-EDU				DCA	6,273	47.4	132.4	45°C
LXEM4-35HL-RFP-EDU		35K	RFP	5,634	47.4	118.9	45°C	
LXEM4-35HL-RP-EDU			RP	5,840	47.2	123.7	45°C	

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp
LXEM4-35HL-RFA-EDU	High Lumen	35K	RFA	6,127	47.4	129.3	45°C
LXEM4-35HL-RA-EDU			RA	6,133	47.3	129.7	45°C
LXEM4-35HL-DFA-EDU			DFA	6,425	47.3	135.8	45°C
LXEM4-35HL-DCA-EDU			DCA	6,487	47.4	136.9	45°C
LXEM4-40HL-RFP-EDU		40K	RFP	5,721	47.4	120.7	45°C
LXEM4-40HL-RP-EDU			RP	5,931	47.2	125.7	45°C
LXEM4-40HL-RFA-EDU			RFA	6,222	47.4	131.3	45°C
LXEM4-40HL-RA-EDU			RA	6,228	47.3	131.7	45°C
LXEM4-40HL-DFA-EDU			DFA	6,525	47.3	137.9	45°C
LXEM4-40HL-DCA-EDU		DCA	6,587	47.4	139.0	45°C	
LXEM4-50HL-RFP-EDU		50K	RFP	5,874	47.4	123.9	45°C
LXEM4-50HL-RP-EDU			RP	6,089	47.2	129.0	45°C
LXEM4-50HL-RFA-EDU			RFA	6,388	47.4	134.8	45°C
LXEM4-50HL-RA-EDU			RA	6,394	47.3	135.2	45°C
LXEM4-50HL-DFA-EDU			DFA	6,699	47.3	141.6	45°C
LXEM4-50HL-DCA-EDU			DCA	6,763	47.4	142.7	45°C
LXEM4-30VL-RP-EDU	Very High Lumen	30K	RP	7,086	61.6	115.0	40°C
LXEM4-30VL-RA-EDU			RA	7,373	61.7	119.5	40°C
LXEM4-30VL-RFP-EDU			RFP	7,388	61.6	119.9	40°C
LXEM4-30VL-RFA-EDU			RFA	7,395	61.6	120.0	40°C
LXEM4-30VL-DFA-EDU			DFA	7,756	61.7	125.7	40°C
LXEM4-30VL-DCA-EDU			DCA	7,806	61.7	126.5	40°C
LXEM4-35VL-RP-EDU		35K	RP	7,327	61.6	118.9	40°C
LXEM4-35VL-RA-EDU			RA	7,624	61.7	123.6	40°C
LXEM4-35VL-RFP-EDU			RFP	7,639	61.6	124.0	40°C
LXEM4-35VL-RFA-EDU			RFA	7,646	61.6	124.1	40°C
LXEM4-35VL-DFA-EDU			DFA	8,020	61.7	130.0	40°C
LXEM4-35VL-DCA-EDU		DCA	8,072	61.7	130.8	40°C	
LXEM4-40VL-RP-EDU		40K	RP	7,440	61.6	120.8	40°C
LXEM4-40VL-RA-EDU			RA	7,742	61.7	125.5	40°C
LXEM4-40VL-RFP-EDU			RFP	7,757	61.6	125.9	40°C
LXEM4-40VL-RFA-EDU			RFA	7,764	61.6	126.0	40°C
LXEM4-40VL-DFA-EDU			DFA	8,144	61.7	132.0	40°C
LXEM4-40VL-DCA-EDU			DCA	8,197	61.7	132.8	40°C
LXEM4-50VL-RP-EDU		50K	RP	7,639	61.6	124.0	40°C
LXEM4-50VL-RA-EDU			RA	7,948	61.7	128.8	40°C
LXEM4-50VL-RFP-EDU			RFP	7,964	61.6	129.3	40°C
LXEM4-50VL-RFA-EDU			RFA	7,971	61.6	129.4	40°C
LXEM4-50VL-DFA-EDU			DFA	8,361	61.7	135.5	40°C
LXEM4-50VL-DCA-EDU			DCA	8,415	61.7	136.4	40°C
LXEM4-30XL-RFP-EDU	Xtra High Lumen	30K	RFP	9,059	91.3	99.2	30°C
LXEM4-30XL-RP-EDU			RP	9,448	91.2	103.6	30°C
LXEM4-30XL-RFA-EDU			RFA	9,779	91.2	107.2	30°C
LXEM4-30XL-RA-EDU			RA	9,839	91.4	107.7	30°C

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp	
LXEM4-30XL-DFA-EDU	Xtra High Lumen	30K	DFA	10,358	91.4	113.3	30°C	
LXEM4-30XL-DCA-EDU			DCA	10,424	91.5	113.9	30°C	
LXEM4-35XL-RFP-EDU		35K	RFP	9,367	91.3	102.6	30°C	
LXEM4-35XL-RP-EDU			RP	9,769	91.2	107.1	30°C	
LXEM4-35XL-RFA-EDU			RFA	10,111	91.2	110.9	30°C	
LXEM4-35XL-RA-EDU			RA	10,174	91.4	111.3	30°C	
LXEM4-35XL-DFA-EDU			DFA	10,710	91.4	117.2	30°C	
LXEM4-35XL-DCA-EDU			DCA	10,778	91.5	117.8	30°C	
LXEM4-40XL-RFP-EDU		40K	RFP	9,512	91.3	104.2	30°C	
LXEM4-40XL-RP-EDU			RP	9,920	91.2	108.8	30°C	
LXEM4-40XL-RFA-EDU			RFA	10,268	91.2	112.6	30°C	
LXEM4-40XL-RA-EDU			RA	10,331	91.4	113.0	30°C	
LXEM4-40XL-DFA-EDU			DFA	10,876	91.4	119.0	30°C	
LXEM4-40XL-DCA-EDU			DCA	10,945	91.5	119.6	30°C	
LXEM4-50XL-RFP-EDU		50K	RFP	9,765	91.3	107.0	30°C	
LXEM4-50XL-RP-EDU			RP	10,184	91.2	111.7	30°C	
LXEM4-50XL-RFA-EDU			RFA	10,542	91.2	115.6	30°C	
LXEM4-50XL-RA-EDU			RA	10,607	91.4	116.0	30°C	
LXEM4-50XL-DFA-EDU			DFA	11,166	91.4	122.2	30°C	
LXEM4-50XL-DCA-EDU			DCA	11,237	91.5	122.8	30°C	
LXEM8-30VW-RA-EDU	Very Low Watt	30K	RA	6,078	48.8	124.6	50°C	
LXEM8-30VW-RFA-EDU			RFA	6,096	49.0	124.4	50°C	
LXEM8-30VW-DCA-EDU			DCA	6,360	48.8	130.3	50°C	
LXEM8-30VW-DFA-EDU			DFA	6,369	48.8	130.5	50°C	
LXEM8-35VW-RA-EDU		35K	RA	6,285	48.8	128.8	50°C	
LXEM8-35VW-RFA-EDU			RFA	6,303	49.0	128.6	50°C	
LXEM8-35VW-DCA-EDU			DCA	6,576	48.8	134.8	50°C	
LXEM8-35VW-DFA-EDU			DFA	6,585	48.8	134.9	50°C	
LXEM8-40VW-RA-EDU		40K	RA	6,382	48.8	130.8	50°C	
LXEM8-40VW-RFA-EDU			RFA	6,400	49.0	130.6	50°C	
LXEM8-40VW-DCA-EDU			DCA	6,678	48.8	136.8	50°C	
LXEM8-40VW-DFA-EDU			DFA	6,687	48.8	137.0	50°C	
LXEM8-50VW-RA-EDU		50K	RA	6,553	48.8	134.3	50°C	
LXEM8-50VW-RFA-EDU			RFA	6,571	49.0	134.1	50°C	
LXEM8-50VW-DCA-EDU			DCA	6,856	48.8	140.5	50°C	
LXEM8-50VW-DFA-EDU			DFA	6,866	48.8	140.7	50°C	
LXEM8-30LW-RFA-EDU		Low Watt	30K	RFA	8,095	66.6	121.5	50°C
LXEM8-30LW-RA-EDU				RA	8,109	66.6	121.8	50°C
LXEM8-30LW-DFA-EDU				DFA	8,482	66.6	127.4	50°C
LXEM8-30LW-DCA-EDU				DCA	8,605	66.6	129.2	50°C
LXEM8-35LW-RFA-EDU	35K		RFA	8,370	66.6	125.7	50°C	
LXEM8-35LW-RA-EDU			RA	8,385	66.6	125.9	50°C	
LXEM8-35LW-DFA-EDU			DFA	8,770	66.6	131.7	50°C	
LXEM8-35LW-DCA-EDU			DCA	8,898	66.6	133.6	50°C	

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp	
LXEM8-40LW-RFA-EDU	Low Watt	40K	RFA	8,500	66.6	127.6	50°C	
LXEM8-40LW-RA-EDU			RA	8,514	66.6	127.8	50°C	
LXEM8-40LW-DFA-EDU			DFA	8,906	66.6	133.7	50°C	
LXEM8-40LW-DCA-EDU			DCA	9,035	66.6	135.7	50°C	
LXEM8-50LW-RFA-EDU		50K	RFA	8,727	66.6	131.0	50°C	
LXEM8-50LW-RA-EDU			RA	8,741	66.6	131.3	50°C	
LXEM8-50LW-DFA-EDU			DFA	9,143	66.6	137.3	50°C	
LXEM8-50LW-DCA-EDU			DCA	9,276	66.6	139.3	50°C	
LXEM8-30ML-RFA-EDU	Medium Lumen	30K	RFA	9,844	84.0	117.2	50°C	
LXEM8-30ML-RA-EDU			RA	9,847	84.0	117.2	50°C	
LXEM8-30ML-DFA-EDU			DFA	10,320	84.0	122.9	50°C	
LXEM8-30ML-DCA-EDU			DCA	10,476	84.0	124.7	50°C	
LXEM8-35ML-RFA-EDU		35K	RFA	10,179	84.0	121.2	50°C	
LXEM8-35ML-RA-EDU			RA	10,182	84.0	121.2	50°C	
LXEM8-35ML-DFA-EDU			DFA	10,671	84.0	127.0	50°C	
LXEM8-35ML-DCA-EDU			DCA	10,832	84.0	128.9	50°C	
LXEM8-40ML-RFA-EDU		40K	RFA	10,336	84.0	123.1	50°C	
LXEM8-40ML-RA-EDU			RA	10,340	84.0	123.1	50°C	
LXEM8-40ML-DFA-EDU			DFA	10,836	84.0	129.0	50°C	
LXEM8-40ML-DCA-EDU			DCA	10,999	84.0	130.9	50°C	
LXEM8-50ML-RFA-EDU		50K	RFA	10,612	84.0	126.3	50°C	
LXEM8-50ML-RA-EDU			RA	10,616	84.0	126.4	50°C	
LXEM8-50ML-DFA-EDU			DFA	11,125	84.0	132.4	50°C	
LXEM8-50ML-DCA-EDU			DCA	11,293	84.0	134.4	50°C	
LXEM8-30HL-RFA-EDU		High Lumen	30K	RFA	11,851	94.8	125.0	45°C
LXEM8-30HL-RA-EDU				RA	11,863	94.6	125.4	45°C
LXEM8-30HL-DFA-EDU				DFA	12,428	94.6	131.4	45°C
LXEM8-30HL-DCA-EDU				DCA	12,547	94.8	132.4	45°C
LXEM8-35HL-RFA-EDU	35K		RFA	12,254	94.8	129.3	45°C	
LXEM8-35HL-RA-EDU			RA	12,267	94.6	129.7	45°C	
LXEM8-35HL-DFA-EDU			DFA	12,851	94.6	135.8	45°C	
LXEM8-35HL-DCA-EDU			DCA	12,973	94.8	136.9	45°C	
LXEM8-40HL-RFA-EDU	40K		RFA	12,444	94.8	131.3	45°C	
LXEM8-40HL-RA-EDU			RA	12,456	94.6	131.7	45°C	
LXEM8-40HL-DFA-EDU			DFA	13,049	94.6	137.9	45°C	
LXEM8-40HL-DCA-EDU			DCA	13,174	94.8	139.0	45°C	
LXEM8-50HL-RFA-EDU	50K		RFA	12,776	94.8	134.8	45°C	
LXEM8-50HL-RA-EDU			RA	12,789	94.6	135.2	45°C	
LXEM8-50HL-DFA-EDU			DFA	13,397	94.6	141.6	45°C	
LXEM8-50HL-DCA-EDU			DCA	13,525	94.8	142.7	45°C	
LXEM8-30VL-RA-EDU	Very High Lumen		30K	RA	14,747	123.4	119.5	40°C
LXEM8-30VL-RFA-EDU				RFA	14,789	123.2	120.0	40°C
LXEM8-30VL-DFA-EDU				DFA	15,512	123.4	125.7	40°C
LXEM8-30VL-DCA-EDU				DCA	15,613	123.4	126.5	40°C

# Alternate Lighting Package

- X'd out fixtures are not accepted

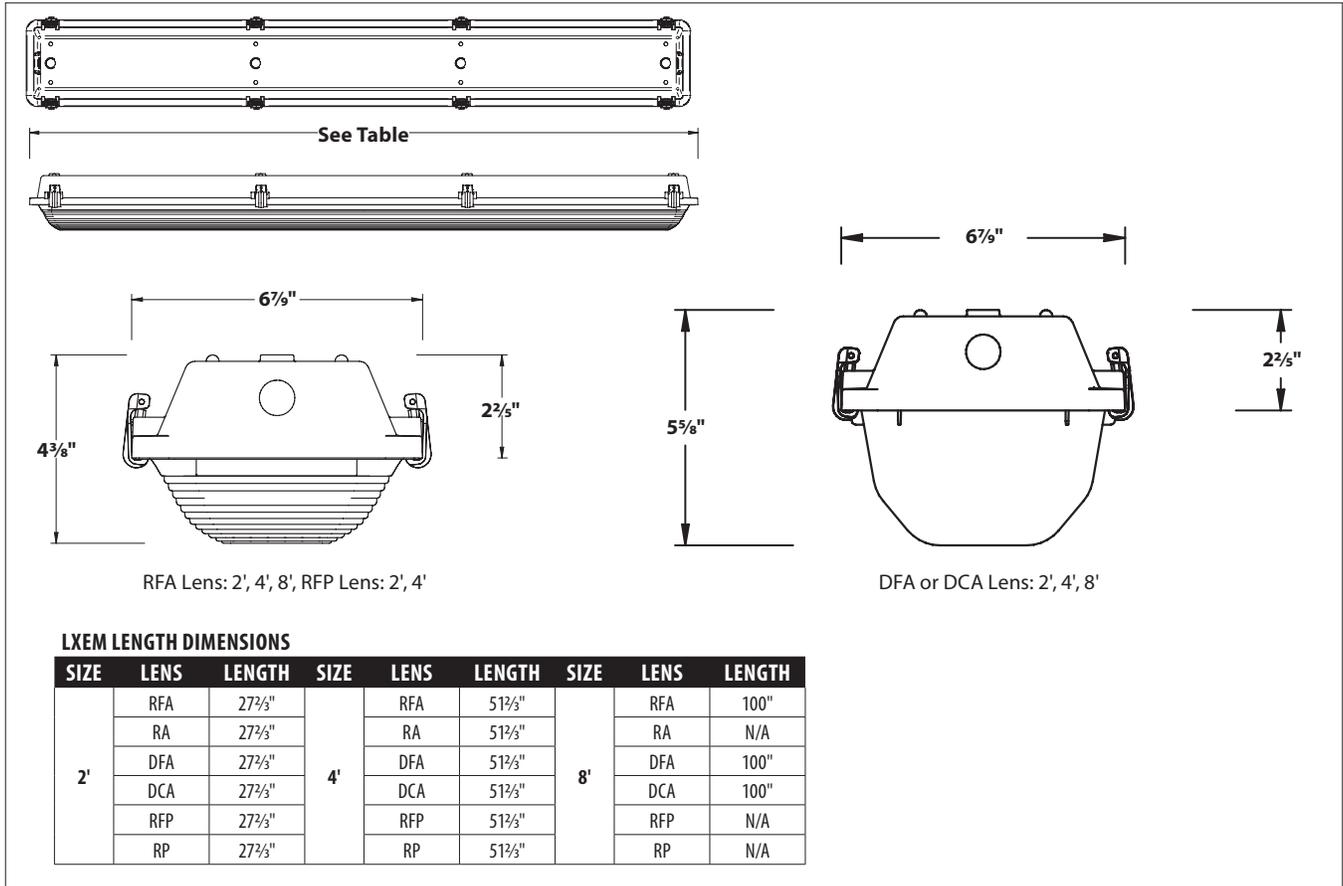
**PRODUCT AVAILABILITY**

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp
LXEM8-35VL-RA-EDU	Very High	35K	RA	15,248	123.4	123.6	40°C
LXEM8-35VL-RFA-EDU			RFA	15,292	123.2	124.1	40°C
LXEM8-35VL-DFA-EDU			DFA	16,040	123.4	130.0	40°C
LXEM8-35VL-DCA-EDU			DCA	16,143	123.4	130.8	40°C
LXEM8-40VL-RA-EDU		40K	RA	15,484	123.4	125.5	40°C
LXEM8-40VL-RFA-EDU			RFA	15,529	123.2	126.0	40°C
LXEM8-40VL-DFA-EDU			DFA	16,288	123.4	132.0	40°C
LXEM8-40VL-DCA-EDU			DCA	16,393	123.4	132.8	40°C
LXEM8-50VL-RA-EDU		50K	RA	15,897	123.4	128.8	40°C
LXEM8-50VL-RFA-EDU			RFA	15,943	123.2	129.4	40°C
LXEM8-50VL-DFA-EDU			DFA	16,722	123.4	135.5	40°C
LXEM8-50VL-DCA-EDU			DCA	16,830	123.4	136.4	40°C
LXEM8-30XL-RFA-EDU	Xtra High Lumen	30K	RFA	19,558	182.4	107.2	30°C
LXEM8-30XL-RA-EDU			RA	19,678	182.8	107.7	30°C
LXEM8-30XL-DFA-EDU			DFA	20,716	182.8	113.3	30°C
LXEM8-30XL-DCA-EDU			DCA	20,847	183.0	113.9	30°C
LXEM8-35XL-RFA-EDU		35K	RFA	20,223	182.4	110.9	30°C
LXEM8-35XL-RA-EDU			RA	20,348	182.8	111.3	30°C
LXEM8-35XL-DFA-EDU			DFA	21,420	182.8	117.2	30°C
LXEM8-35XL-DCA-EDU			DCA	21,556	183.0	117.8	30°C
LXEM8-40XL-RFA-EDU		40K	RFA	20,536	182.4	112.6	30°C
LXEM8-40XL-RA-EDU			RA	20,662	182.8	113.0	30°C
LXEM8-40XL-DFA-EDU			DFA	21,752	182.8	119.0	30°C
LXEM8-40XL-DCA-EDU			DCA	21,889	183.0	119.6	30°C
LXEM8-50XL-RFA-EDU		50K	RFA	21,083	182.4	115.6	30°C
LXEM8-50XL-RA-EDU			RA	21,213	182.8	116.0	30°C
LXEM8-50XL-DFA-EDU			DFA	22,332	182.8	122.2	30°C
LXEM8-50XL-DCA-EDU			DCA	22,473	183.0	122.8	30°C

# Alternate Lighting Package

- X'd out fixtures are not accepted

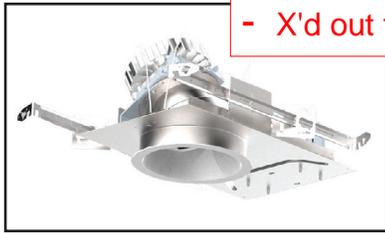
## DIMENSIONAL DATA



**NOTE:** All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.

# Alternate Lighting Package

- X'd out fixtures are not accepted



## Downlight LF6ML WW

120V - 277V  
0-10V Dimming

### APPLICATIONS:

LiteFrame LF6ML is a 6" specification grade LED wall wash downlight that utilizes high efficiency LEDs to obtain color consistency, energy savings, and low maintenance costs. 50,000 hours minimum life up to 35°C (95°F) in open plenum applications

### HOUSING:

One-piece 22 gauge non-corrosive steel platform. Pre-wired j-box with snap-on cover for easy access. Snap-in connection from driver compartment allows easy installation of light engine/trim assembly without tools above or below the ceiling and can be upgraded to accommodate technology improvements. Approve for 8 (4 in/4 out) No. 12 AWG conductors rated for 90°C through wiring.

### REFLECTOR:

High purity aluminum, Alzak, iridescence suppressed upper reflector. Self-trim standard. Painted white self-trim (WT) available as option.

### LED LIGHT ENGINE:

The LF6ML uses the Philips Fortimo DLM LED Module. This module provides controlled color consistency (3 SDCM) from fixture to fixture. The system is designed for optional life and lumen maintenance (>50,000 hours at 70% lumen maintenance). Both reflector and light engine assembly are mechanically retained to housing.

### LED DRIVER:

The LF6ML utilizes the Philips Fortimo LED Driver specifically designed to optimize efficiency of the Fortimo DLM Module. Driver is designed to match the 50,000 hours minimum life expectancy of the system. Meets UL Class 2, inherent short circuit protection, self limited, overload protected. If critical temperatures are reached on driver or LED module, integrated thermal feedback loop will gradually reduce current to protect system life. Driver is universal 120V-277V. Optional Lutron Series A driver is also available.

### DIMMING:

Comes standard with 0-10V dimming capability. Flicker-free dimming to 10%. 0-10V control may consume up to 1mA. 0-10V, Lutron 2 wire, 3 wire, and EcoSystem dimming available to 1% and DMX with RDM (remote device management) dimming to less than 0.1%.

### INSTALLATION:

Adjustable Bar hangers included (Not with CP housing). Universal adjustable mounting brackets also accept 1/2" EMT conduit or 1 1/2" or 3/4" lathing channel (by others) or Prescolite 24" bar hangers (B24 or B6).

### CERTIFICATIONS:

CSA certified to US and Canadian safety standards. Suitable for damp locations. Approved for through wiring. Non-IC rated.

### WARRANTY:

5 year warranty. See www.prescolite.com for details.

Claymont

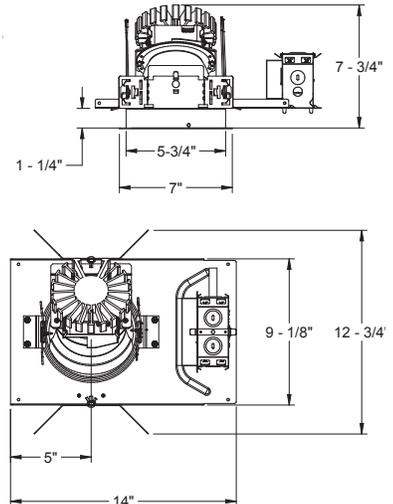
Elementary

School TYPE CC

TYPE: \_\_\_\_\_

## LiteFrame®

Ceiling Cutout: 6 1/4"  
Maximum Ceiling Thickness 1 1/4"  
For conversion to millimeters,  
multiply inches by 25.4  
Not to Scale



See page 3 for CP, LVIE and NX(I)E line art

CATALOG NUMBER:

EXAMPLE: LF6MLWW-6LFML30L35K8WWWT

Order housing, reflector, and accessories separately

HOUSING	DRIVER OPTION	VOLTAGE OPTION	HOUSING OPTIONS	TRIM APERTURE	CRI	REF. COLOR OPTIONS	REFLECTOR OPTIONS	ACCESSORIES
<input type="checkbox"/> <b>LF6ML</b> Medium Lumen 0-10V 10% dimming 120-277V	Standard 0-10V 10% Dimming <input type="checkbox"/> <b>DM17</b> 0-10V dimming at 1%, 120-277V <input type="checkbox"/> <b>HDM<sup>2,8</sup></b> Lutron 3-wire/ EcoSystem to 1% <input type="checkbox"/> <b>2DM<sup>2,8</sup></b> Lutron 2-wire Leading Edge to 1% (120V only) <input type="checkbox"/> <b>DMX<sup>2,8</sup></b> DMX with RDM dimming to <0.1%	Standard 120V/277V <input type="checkbox"/> <b>120</b> 120V <input type="checkbox"/> <b>277</b> 277V <input type="checkbox"/> <b>347</b> 347V	<input type="checkbox"/> <b>CP<sup>2,4,5</sup></b> Chicago Plenum <input type="checkbox"/> <b>WW<sup>1</sup></b> Wall Wash <input type="checkbox"/> <b>LV<sup>9</sup></b> Lutron Vive Enabled, 0-10V, 120-277V <input type="checkbox"/> <b>LVE (HDM Only)</b> Lutron Vive Enabled, EcoSystem <input type="checkbox"/> <b>NXWE<sup>5,10,11</sup></b> NX Wireless Enabled <input type="checkbox"/> <b>NXE<sup>5,10,11</sup></b> NX Enabled, Dual SmartPorts	<input type="checkbox"/> <b>6LFML30L</b> Semi-Diffuse Clear Alzak Reflector with 3000 Lumen Module  <b>KELVIN</b> <input type="checkbox"/> <b>27K</b> 2700 Kelvin <input type="checkbox"/> <b>30K</b> 3000 Kelvin <input type="checkbox"/> <b>35K</b> 3500 Kelvin <input type="checkbox"/> <b>40K</b> 4000 Kelvin <input type="checkbox"/> <b>50K</b> 5000 Kelvin	<input type="checkbox"/> <b>8</b> 80+ CRI <input type="checkbox"/> <b>9</b> 90+ CRI <b>REF. FINISH OPTIONS</b> Standard Semi-Diffuse <input type="checkbox"/> <b>SP</b> Specular <input type="checkbox"/> <b>SS</b> Semi- Specular <input type="checkbox"/> <b>MFC</b> American Matte™ <input type="checkbox"/> <b>V</b> Kurt Versen Specular <input type="checkbox"/> <b>VS</b> Kurt Versen Softglow® <input type="checkbox"/> <b>VSS</b> Kurt Versen SoftSheen™	Standard Clear Alzak <input type="checkbox"/> <b>CG</b> Champagne Gold Alzak <input type="checkbox"/> <b>GD</b> Gold Alzak <input type="checkbox"/> <b>BL</b> Black Alzak <input type="checkbox"/> <b>WE</b> Wheat Alzak <input type="checkbox"/> <b>LW</b> Light Wheat Alzak <input type="checkbox"/> <b>PW</b> Pewter Alzak <input type="checkbox"/> <b>WH</b> Painted Matte White Reflector and Flange <input type="checkbox"/> <b>BC</b> Painted Black Reflector and Flange	<input type="checkbox"/> <b>AM<sup>3</sup></b> Antimicrobial coating on clear Alzak reflector only <input type="checkbox"/> <b>WW<sup>1</sup></b> Wall Wash <b>TRIM OPTIONS</b> <input type="checkbox"/> <b>WT</b> Painted White Flange Only <input type="checkbox"/> <b>TRG</b> Trim Ring Gasket <input type="checkbox"/> <b>WF</b> Wide Flange	<input type="checkbox"/> <b>B24<sup>4</sup></b> Set of two 24" bar hangers for T-bar ceilings <input type="checkbox"/> <b>B6<sup>4</sup></b> Set of two (2) bar hangers for ceiling joist up to 24" centers <input type="checkbox"/> <b>LFSC6</b> 6" Reflector screw cover <input type="checkbox"/> <b>LiteGear<sup>6</sup></b> Inverter, single phase central lighting, 125VA-250VA <input type="checkbox"/> <b>LPS Series<sup>6</sup></b> LitePower micro-inverter, 20VA- 55VA

### Notes:

- WW option required on both housing and trim.
- Not available with 347V
- Clear Alzak standard. Consult factory for other colors
- For WW fixtures bar hanger accessory should be selected with CP housing, not included as standard.
- Not available with DMX, LV or LVE
- See Central Inverter compatibility note and web links on page 3
- For DM1, do not specify a voltage if 120 or 277
- Voltage must be specified with HDM, 2DM and DMX
- LV requires standard dimming or DM1
- Not available with CP option
- Not available with HDM, 2DM or DMX



In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product.  
Web: [www.prescolite.com](http://www.prescolite.com) • Tech Support: (888) 777-4832

LF6ML-028

DRIVER DATA	6LFML30L
Input Voltage	120V - 277V
Input Frequency	50/60 Hz
Input Current	0.273A (120V) 0.118A (277V)
Input Power	32.7W
Power Factor	≥0.90
THD	<20%
EMI Filtering	FCC 47CFR Part 15, Class A
Operating Temperature	-20°C to 35°C
Dimming	0-10V
Over-voltage, over-current, short-circuit protected	
*Power consumption and photometric output may vary slightly with various driver and CRI options.	

### Lumen Multiplier Table

Photometrics published below are for the 3000K, 80 CRI. This table may be used to approximate the lumen values at different Kelvin temperatures and CRI.

4000 Kelvin	1.07
3500 Kelvin	1.00
3000 Kelvin	1.00
2700 Kelvin	0.95
80 CRI.....	1.00
90 CRI.....	0.91

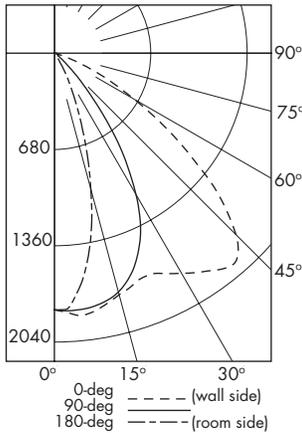
### Delivered Lumens

The table below shows the delivered lumens for the various lumen outputs.

Output	CRI	Distribution	Delivered Lumens	Input Watts	Lumens Per Watt	Full Catalog String
30L	80	45	2542	32.7	78	LF6ML-6LFML30L30K8WW

### LF6ML-6LFML30L30K8WW

LED Light Engine: 3000K, 80 CRI  
System Wattage: 32.7W  
Fixture Delivered Lumens: 2542  
Fixture Efficacy: 78



### CANDELA DISTRIBUTION

DEG	0	90	180
0	1808	1808	1808
5	1854	1816	1715
15	1762	1742	990
25	1711	1431	302
35	1874	806	46
45	1808	204	39
55	1041	36	44
65	354	25	39
75	14	20	34
85	2	10	17
90	0	0	0

### LUMINANCE DATA IN CANDELA/SQ. METER

Angle in Vertical	0 DEG	90 DEG	180 DEG
45°	140025	91949	15763
55°	99429	42427	3401
65°	45934	9451	3297
75°	2871	1436	4306
85°	1066	2132	6394

MULTIPLE UNITS	
UNITS ON 3" CENTER	UNITS ON 4" CENTER
1' 2' 3' 4'	

### 2.5' DISTANCE FIXTURE MOUNTED OUT FROM WALLS

DISTANCE FROM CEILING IN FEET	FOOTCANDLE DISTRIBUTION ON WALL SURFACE (Direct Only)													
	1' CENTER				2' CENTER				3' CENTER					
1	18	3	2	1	1	6	4	6	6	4	6	6	4	6
2	100	37	3	1	1	91	51	91	91	24	91	91	24	91
3	88	54	11	2	1	105	109	105	98	68	98	98	68	98
4	48	40	17	4	1	70	88	70	59	70	59	59	70	59
5	28	25	17	6	2	48	56	48	39	51	40	40	51	39
6	18	17	14	7	3	33	37	34	29	35	29	29	35	29
7	12	12	10	7	4	24	20	24	22	25	22	22	25	22
8	9	9	8	6	4	19	20	19	17	19	18	18	19	17
9	8	8	7	6	4	15	16	15	14	16	15	15	16	15

LF6ML-6LFML30L30K8WW

Test No. 18.00440-03

Test No. 18.00440-03

Tested at 25°C Ambient in accordance to IESNA LM-79-2008

**Dimming Compatibility Table**

Dimming Ballast	Manufacturer	Web Link
DM/DM1	Lutron DTVT	<a href="http://bit.ly/11jSvZg">http://bit.ly/11jSvZg</a>
DM/DM1	Leviton AWRMG-7xx, AWSMG-7xx, AWSMT-7xx	<a href="http://bit.ly/1Bjn2R9">http://bit.ly/1Bjn2R9</a>
HDM	Lutron	<a href="http://bit.ly/1vtjHAL">http://bit.ly/1vtjHAL</a>
2DM	Lutron	<a href="http://bit.ly/1S4WjXK">http://bit.ly/1S4WjXK</a>

**DMX**

See instruction sheet on [www.prescolite.com](http://www.prescolite.com) for connection & installation information.  
Other useful links: <http://www.eldoled.com/led-drivers/powerdrive/50-watt/ac-561s/>

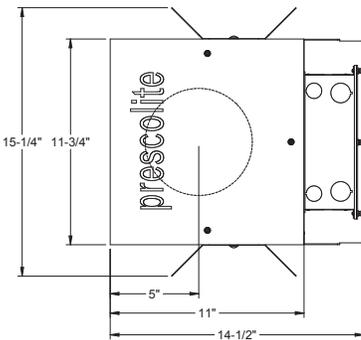
**Central Inverters**

For full fixture output in back-up mode, we recommend you visit [www.dual-lite.com](http://www.dual-lite.com) for your Central Lighting Inverter options. Please contact your local Hubbell representative for any assistance with proper sizing and loading of your inverter selection. Central lighting inverters must be ordered separately.

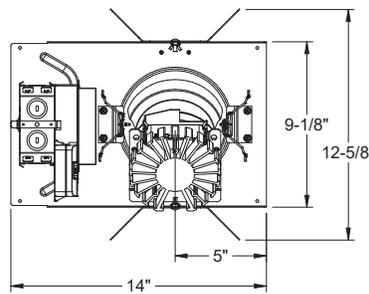
**LiteGear:** [www.dual-lite.com/products/litegear\\_lg\\_series](http://www.dual-lite.com/products/litegear_lg_series)  
**LPS Series:** [www.dual-lite.com/products/lps](http://www.dual-lite.com/products/lps)

**NX Distributed Intelligence:** **NX** DISTRIBUTED INTELLIGENCE

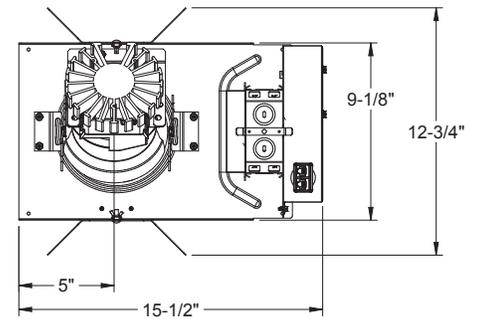
Supports indoor and outdoor applications, wired, wireless and hybrid networked NX lighting control deployments and enables emerging applications such as Hubbell Lighting's SpectraSync™ color tuning technology.  
See separate [NX™ Solutions Guide](#) for additional details.  
See Hubbell Controls Solution [NX Brochure](#).



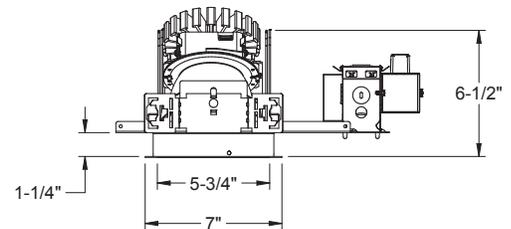
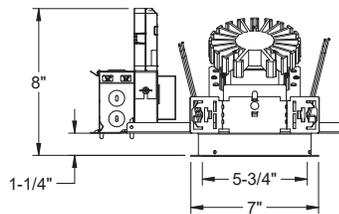
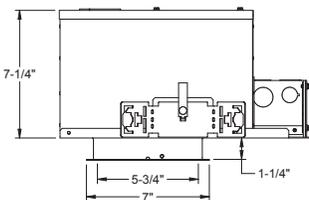
**LF6MLWW CP**



**LF6MLWW LV(E)**



**LF6MLWW NX(WE)**



Job Name:

Contact:

Ordering Code:

Fixture Type:



## Zilinder Optic

### Description

Zilinder is an acrylic cylindrical tube for 4" and 6" NU PRIME (621). Made of premium, UV stabilized, even diffuse PMMA. NU PRIME LITEOPTICS are engineered for maximum diffusion and positioned to allow for the reflector to work most efficiently. NU PRIME LITEOPTICS are computer designed for the most efficient light diffusion for a gentle, glare-free illumination.

### Mounting

Flange offered in standard white included. Specify additional colors if needed.

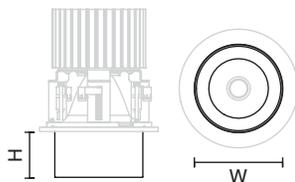
### Listings

- ETLus Listed to UL1598 (suitable for dry and damp locations)
- cETL Listed to CSA C22.2 #250.0

## Ordering Codes

Follow the steps to specify your fixture, example: 4ZLR2

Size	Part Number	Height <sup>1</sup>
4 4" Optic	<b>ZLR</b> Zilinder	2 2" height 4 4" height
<b>6</b> 6" Optic		<b>3</b> 3" height 6 6" height



	W	H
4ZLR2	4"	2-1/8"
4ZLR4	4"	4-1/8"
6ZLR3	6"	2-5/8"
6ZLR6	6"	5-1/8"

### NOTES

1. Nominal, see chart for actual height



LM-79

Job Name: Elementary School TYPE D Contact: \_\_\_\_\_

Ordering Code: \_\_\_\_\_ Fixture Type: \_\_\_\_\_



## NU6RD PRIME

### Description

The NU6RD PRIME recessed downlight series by ALPHABET offers multiple cutting edge LED technologies, premium performance and pleasing aesthetics. NU6RD is the legacy, best selling, 621 Series with 1 piece reflectors, bayonet thin trim rings and specialty lens, decorative LiteOptics and optional WET rated construction. XICATO XTM LED with EldoLED 1%, flicker free dimming standard. Comes standard with white Trim Ring.

### Housing

Aluminum die cast frame provides enhanced structural reinforcement to the LED assembly. Thermally advanced anodized heat sink using 6063 alloy. Wet location construction is offered. 90min constant power IOTA emergency battery backup available in several power options.

### Mounting

An advanced mounting system allows for quick and secure installation with LED and Driver serviceability from below the ceiling. The LED assembly uses two die cast aluminum Mounting Clamp Grips (MCG) that swing out to tighten onto variable ceiling thicknesses ranging from 1/8" to 1-1/8" thick. Integrated rubber feet on each MCG provide a non-slip vibration resistant installation. The hidden MCG system is accessible from below ceiling by removing the Trim Ring and Reflector. Integrated Bar Hangers feature integral toothed nails, T-bar mounting slots with locking holes, Tabs for joist positioning, and extendibility from 14" to 24". Retrofit mounting option allows for installation from below ceiling by use of compact driver box. Ceiling cutout size is 6-1/4" round.

### Listings

- ETLus Listed to UL1598, cETL Listed to CSA C22.2 #250.0
- Type IC with IC, ICAT, or Chicago Plenum box option
- Suitable for dry and damp locations, wet location with lens option
- Made in the USA - meets the requirements of the Buy American provision within the ARRA

## Ordering Code

Follow the steps to specify your fixture, example: **621-4-XTM19-13LM-35K-98-DA40-120-10V-IC-INV**

Series	Aperture	LED	Delivered Lumen	CCT	CRI	Reflector	Voltage	Dimming
<b>621</b>	<b>6</b> 6"	<b>XTM19</b>	07LM <sup>2.5</sup> 595 lm	<b>27K</b> 2700K	<b>83</b> 83 CRI <b>98</b> 98 CRI	<b>DA20</b> diffuse, 20°	<b>120</b> 120V <b>277</b> 277V	<b>DIM10</b> <sup>5</sup> standard driver with flicker free 0-10V dimming to 1%
		<b>BIOS</b> <sup>7</sup>	10LM <sup>2.5</sup> 850 lm	<b>30K</b> 3000K		<b>DA40</b> diffuse, 40°		<b>DIM10Z</b> <sup>6</sup> flicker free 0-10V dimming to 0%
		<b>XIM19</b> <sup>7</sup>	13LM <sup>2.5</sup> 1105 lm	<b>V30K</b> 3000K Vibrant		<b>DA60</b> diffuse, 60°		<b>DALI</b> <sup>6</sup> flicker free dali dimming to 1%
			20LM <sup>2</sup> 1700 lm	<b>35K</b> 3500K		<b>SA20</b> specular, 20°		<b>DALIZ</b> <sup>6</sup> flicker free dali dimming to 0%
			30LM 2550 lm	<b>40K</b> 4000K		<b>SA40</b> specular, 40°		<b>DMXZ</b> flicker free dmx dimming to 0%
			<b>40LM</b> <sup>4</sup> 3400 lm	<b>B27K</b> <sup>2</sup> 2700K Beauty		<b>SA60</b> specular, 60°		<b>LUDA</b> <sup>3</sup> lutron ecosystem dimming to 1%
			50LM <sup>1,3,4,5</sup> 4250 lm					

### Mounting Options

- NC** new construction with ceiling fitting plate, for t-bar or gwb ceilings
- IC**<sup>4</sup> insulation contact housing
- ICAT**<sup>4</sup> insulation contact /airtight housing
- CP**<sup>4</sup> chicago plenum housing
- RET** retrofit, no ceiling pan

### LightOptics

- 6ZLR3** zylinder 3"
- 6ZLR6** zylinder 6"
- POB** pupil optic blue
- POW** pupil optic white
- POP** pupil optic perforated
- CRO** corona ring
- DFS** diffused screen lens
- CGS** clear screen lens
- CFP** etched float acrylic perforated
- CFS** etched float acrylic
- TRP** trim ring custom paint

### Options

- EM7** emergency battery backup, 90 minutes at 7 watts to LED
- EM12**<sup>5</sup> emergency battery backup, 90 minutes at 12 watts to LED
- FOR 347V** order separate "347V to 277V"
- OPTION** step down transformer p/n: P70489

### Notes

- 98 CRI not available for 40LM or 50LM.
- B27K Beauty Series choose 98 CRI (actual 93). Available for 07LM, 10LM, 13LM, and 20LM only.
- LUDA not available for 50LM
- IC/ICAT/CP not available for 40LM or 50LM.
- EM12 not available for 83CRI in 07LM, 10LM, 13LM.
- Driver uses logarithmic dimming curve as standard. For linear dimming curve add "LIN" after dimming code, i.e. DIM10LIN.
- For BIOS and XIM please consult factory.

Job Name:

Contact:

Ordering Code:

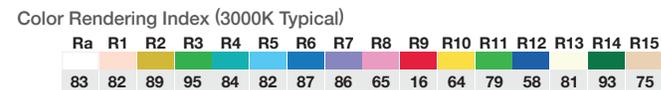
Fixture Type:

**Xicato Series LED Performance**

**SDCM** 1 x 2 MacAdam Ellipse  
**DUV** +/- 0.001  
**Life** L80 50,000 hrs  
**Warranty** 5 year "no color shift" warranty  
 5 year fixture warranty

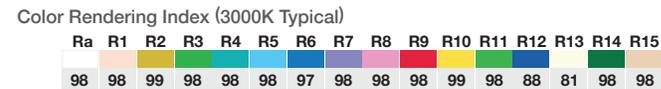
**Standard Series**

**LED** Patented Cold Remote Phosphor, Xicato® XTM19 Standard Series  
**CCT** 2700k, 3000k, 3500k, 4000k  
**CRI Ra** 83 typical  
**GAI<sub>BB</sub>** 97



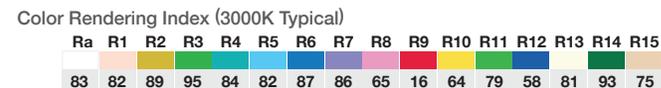
**Artist Series**

**LED** Patented Cold Remote Phosphor, Xicato® XTM19 Artist Series  
**CCT** 2700k, 3000k, 3500k, 4000k  
**CRI Ra** 98 typical  
**GAI<sub>BB</sub>** 109



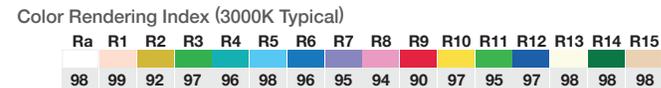
**Vibrant Series (V80)**

**LED** Patented Cold Remote Phosphor, Xicato® XTM19 Vibrant Series (V80)  
**CCT** 3000k  
**CRI Ra** 83 typical  
**GAI<sub>BB</sub>** 111



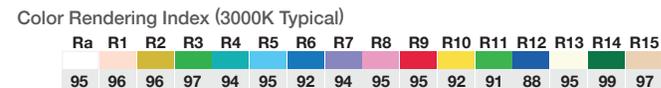
**Vibrant Series (V95)**

**LED** Patented Cold Remote Phosphor, Xicato® XTM19 Vibrant Series (V95)  
**CCT** 3000k  
**CRI Ra** 98 typical  
**GAI<sub>BB</sub>** 120



**Beauty Series**

**LED** Patented Cold Remote Phosphor, Xicato® XTM19 Beauty Series  
**CCT** 2700k  
**CRI Ra** 95 typical  
**GAI<sub>BB</sub>** 133



**Delivered Lumen / Wattage Chart**

Source Lumens	Delivered Lumens	Fixture Wattage
700 lm	595 lm	9 W
1000 lm	850 lm	12 W
1300 lm	1105 lm	16 W
2000 lm	1700 lm	25 W
3000 lm	2550 lm	37 W
4000 lm	3400 lm	49 W
5000 lm	4250 lm	56 W

Source Lumens	Delivered Lumens	Fixture Wattage
700 lm	595 lm	11 W
1000 lm	850 lm	15 W
1300 lm	1105 lm	21 W
2000 lm	1700 lm	33 W
3000 lm	2550 lm	42 W

Source Lumens	Delivered Lumens	Fixture Wattage
700 lm	595 lm	9 W
1000 lm	850 lm	12 W
1300 lm	1105 lm	16 W
2000 lm	1700 lm	25 W
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3000 lm	2550 lm	42 W

Source Lumens	Delivered Lumens	Fixture Wattage
1300 lm	1105 lm	21 W
2000 lm	1700 lm	33 W

**Notes**

Values presented are average. Due to installation location and environment, end use performance may vary. Refer to IES file for specific values.

Job Name:

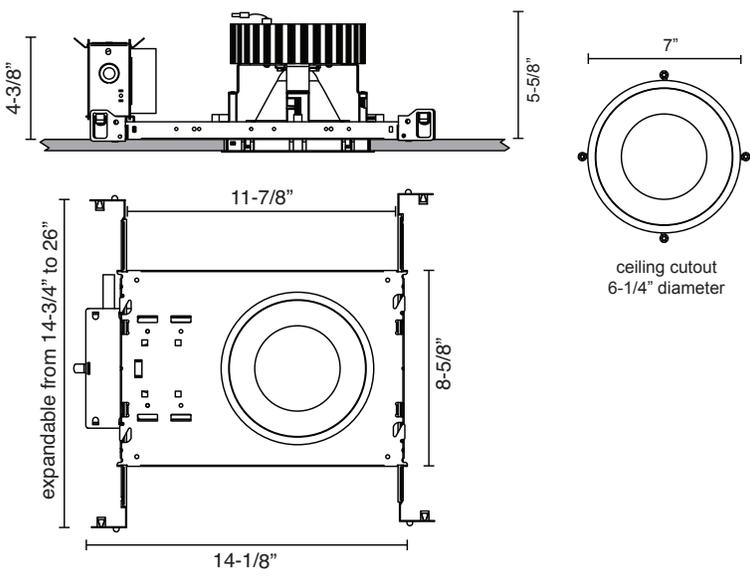
Contact:

Ordering Code:

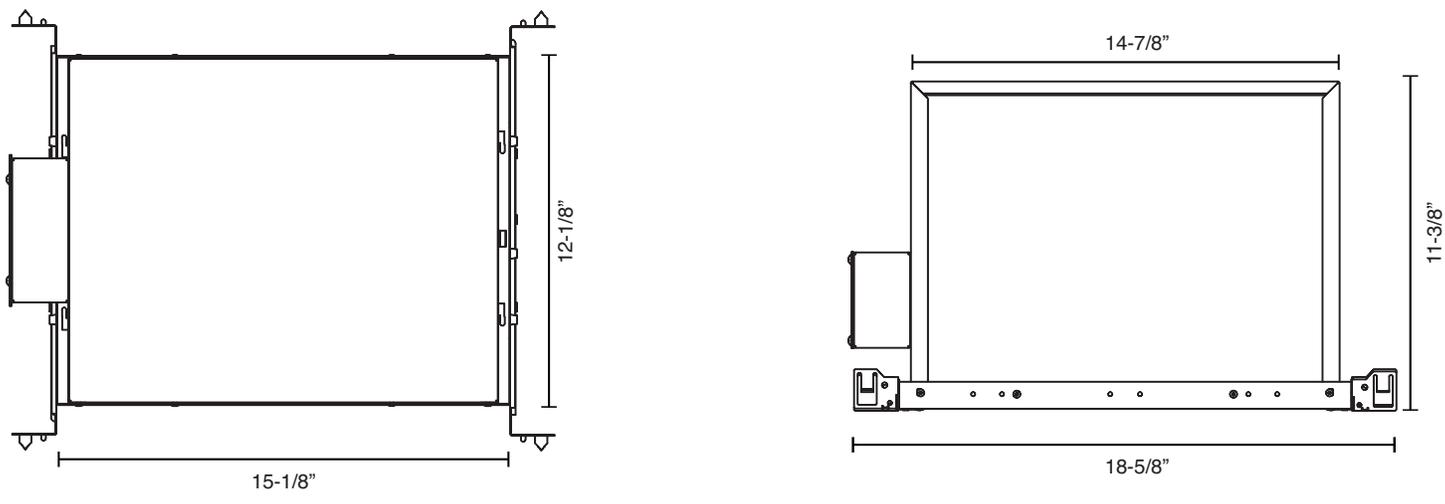
Fixture Type:

**MOUNTING**

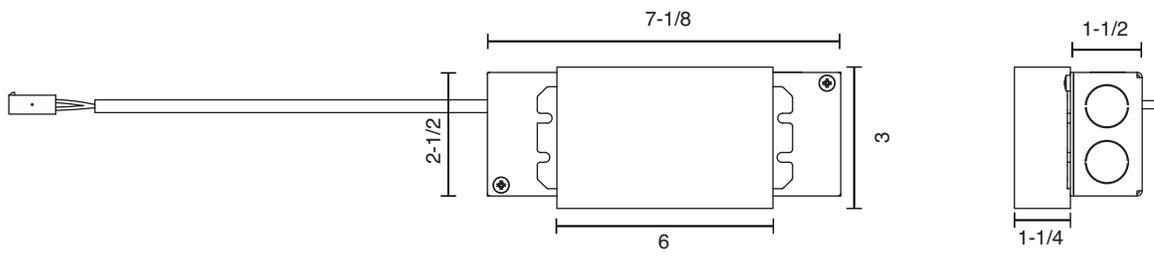
**NC - NEW CONSTRUCTION**



**IC - INSULATION CONTACT HOUSING**  
**CP - CHICAGO PLENUM**  
**ICAT - INSULATION CONTACT / AIR TIGHT**



**RET - RETROFIT**



Job Name:

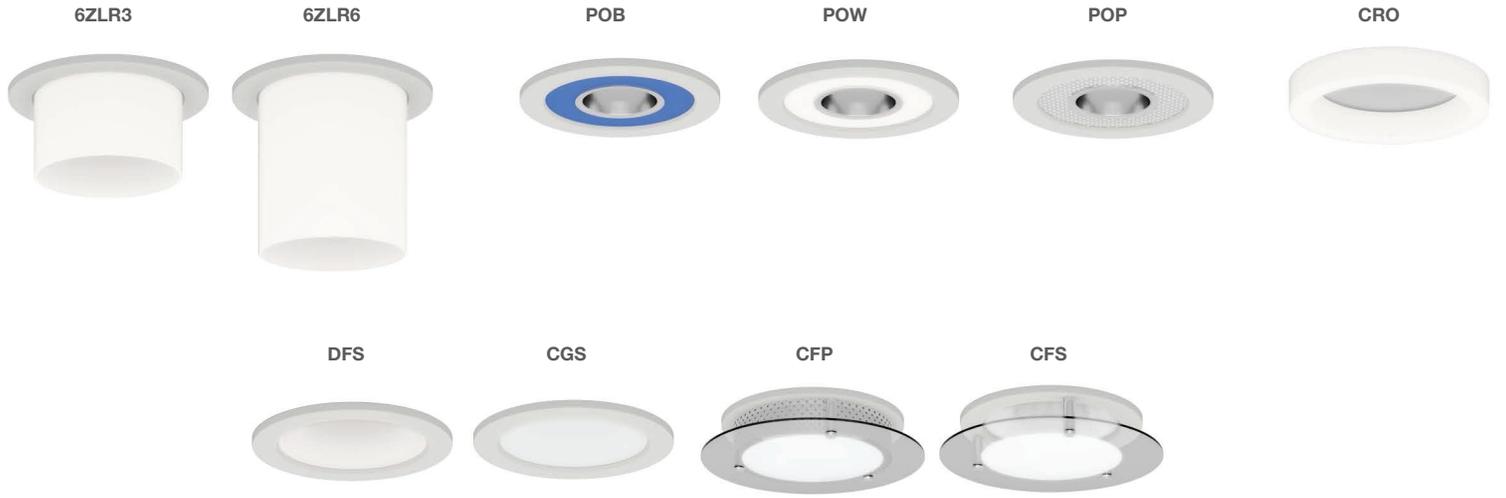
Contact:

Ordering Code:

Fixture Type:

**Lite Optic Options**

- 6ZLR3** zylinder 3"
- 6ZLR6** zylinder 6"
- POB** pupil optic blue
- POW** pupil optic white
- POP** pupil optic perforated
- CRO** corona ring
- DFS** diffused screen lens
- CGS** clear screen lens
- CFP** etched float acrylic perforated
- CFS** etched float acrylic





# Alternate Lighting Package

- X'd out fixtures are not accepted

Claymont  
Elementary  
School TYPE E

# SE Series Die Cast Exit Sign

Catalog Number	
Comments	Type

## FEATURES

### Application

The SE Series offers bright and even LED illumination in an attractive die-cast aluminum housing. Features include UL listing for 2 hour runtime, AC or Emergency operation with optional Spectron® self-test/self-diagnostic circuitry. Special Wording (SW) option also allows for customization of the stencil field to convey important information. Housing designed for quick and easy installation with low energy consumption. Damp location listed. Includes a Vandal/Tamper Resistant (VTR) option. The VTR option includes a polycarbonate faceshield and tamper resistant screws.

### Construction

Housing, exit face and matching canopy constructed of high-strength die-cast aluminum. Sign finish is textured white, white with brushed aluminum face, black, or black with brushed aluminum face. Diffuser finish is color-matched silk-screened coating which provides optimized LED light output. Exit face design in single or double face with red or green letters and break-out chevrons. Break-out chevrons are also included with the special worded option. Exit stencil with 6" letters and 3/4" stroke.

### Installation

Universal mounting (wall, ceiling, end) to standard 3 1/2" or 4" octagon or square electrical box by use of easily removed, template configured knockouts. Cast aluminum canopy and universal mounting plate included. All mounting hardware is fully concealed.

### Illumination

Exit face illumination is provided by energy savings, long life red or green LEDs. Exceeds UL 924 requirements for brightness and uniformity. 10 year LED life.

### Compliances

UL 924 Listed (Meets 1998 brightness and uniformity requirements)  
UL Damp Location Listed  
NFPA 70  
NFPA 101  
U.S. Patents No. 6,050,013 and 6,082,031  
CEC T20 Compliant

### Warranty

Unit and electronics: 5 years full.



## ACCESSORIES

<b>FCM-R</b>	Kit converts AC red letter models to emergency operation
<b>FCM-G</b>	Kit converts AC green letter models to emergency operation
<b>PMCW</b>	12 1/2" Pendant mounting kit (white)
<b>PMCB</b>	12 1/2" Pendant mounting kit (black)
<b>WGLX</b>	Wire guard (Wall mount)
<b>WGLXC</b>	Wire guard (Ceiling mount)
<b>WGLXE</b>	Wire guard (End mount)
<b>VRS3</b>	Vandal resistant shield

## ORDERING GUIDE

MODEL	FACES	LETTER COLOR	FINISH	OPERATION	SELF-DIAGNOSTIC	OPTIONS
<b>SE</b>	<b>S</b> Single <b>D</b> Double	<b>R</b> Red <b>G</b> Green	<b>W</b> White <b>B</b> Black <b>WN</b> White with brushed face <b>BN</b> Black with brushed face	<b>BLANK</b> AC only <b>E</b> Emergency	<b>Blank</b> None <b>I</b> Spectron® self-testing/self-diagnostic electronics*	<b>SW</b> Special Wording <sup>7</sup> <b>2C</b> 2 Circuit Operation <sup>2,3</sup> <b>FAP</b> Fire alarm panel interface <sup>1,3,4</sup> <b>FM</b> Flasher module <sup>5</sup> <b>AF</b> Audible flasher module <sup>1,4</sup> <b>DC</b> Remote DC operation <sup>2,4,5</sup> <b>24K</b> 220-240VAC, 60Hz. operation <b>VTR</b> Vandal/tamper resistant option <sup>6</sup> <b>LRBB</b> Sign assembly less rough-in back box - SERS only

\* For use with emergency models only.

(1) For use with Spectron® self-diagnostic models only.  
(2) For use with AC models only.  
(3) Operates with 24-volt AC or DC fire alarm panels.  
(4) For emergency illumination of sign from remote 6-24 VDC power sources.  
(5) -DC option may not be specified with -2C or -FAP options.  
(6) -AF, -FM and -FAP options may not be specified together.  
(7) Enter Special Wording choice from page 959: example SW10. Not available with SEMR or SERS models.  
(8) Provides polycarbonate face shield and tamper-proof screws. Meets UL listing requirements for floor proximity use.





## Alternate Lighting Package

- X'd out fixtures are not accepted

# SE Series

Die Cast Exit Sign

### SPECIFICATIONS

#### Electronics

Available with AC, emergency and Spectron® self-test/ self-diagnostic electronics option. Emergency and self-diagnostic models equipped with isolation transformer and fully automatic constant current solid state charger with sealed maintenance-free nickel-cadmium battery. All emergency models with 2-hour minimum run-time. All components mounted inside housing. Includes test switch and AC-on indicator. Transient/ surge protection, low voltage disconnect and AC lock-out features included. Battery re-charge within UL time standards. Includes pre-stripped AC input pigtail leads.

#### Power Consumption

Model	120VAC	277VAC
Red AC Only	2.6 Watts	2.6 Watts
Green AC Only	2.1 Watts	2.1 Watts
Red Emergency	3.8 Watts	3.8 Watts
Green Emergency	3.5 Watts	3.5 Watts

\* Wattage figures include LED lamps, transformer and electronics power requirements. LED lamp assemblies (red or green) consume less than 1 watt.

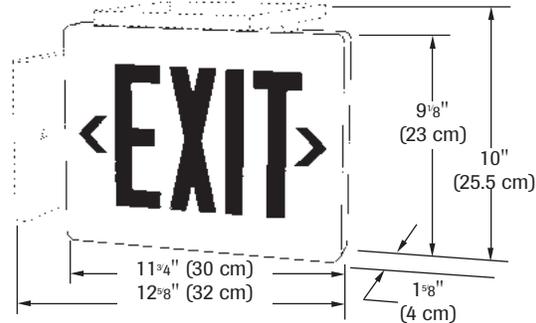
**Power Factor, Average:** .8 (lagging)

**Battery Type:** Maintenance-free sealed nickel cadmium battery

**AC Input:** 120/277VAC, 60 Hz. (all models)

**Operating Temperature Range:** 0°C to 40°C (32°F to 104°F)

### DIMENSIONS





## Alternate Lighting Package

- X'd out fixtures are not accepted

# SE Series

Special Wording

### STANDARD SIGNS

Dual-Lite's cast-aluminum SE Series exit signs feature an option for custom or standard special-wording. The images below represent a sample of standard special-worded signs available. A comprehensive list of all standard special-wording signs is shown on the next page. Because the artwork and silk-screening for these signs were previously developed, pricing for these standard special-worded signs do not incur a setup charge. If your special-worded requirements do not show up on this list, please contact the factory to request your custom special-worded sign. Custom special-worded signs will incur a one time setup charge for each development.



SW65 (Makhraj Arabic)



SW10



SW13



SW40



SW47



SW5



SW101



SW7



SW97



SW22



SW31



SW45



SW37



SW98



SW9



SW30



SW69



SW48



SW73



SW4

NOTE: Special worded signs do not meet letter size requirements of UL 924.



# Alternate Lighting Package

- X'd out fixtures are not accepted

# SE Series Special Wording

## STANDARD SPECIAL WORDING SIGNS

CATEGORY	SPECIAL WORDING NUMBER	DESCRIPTION
<b>EXIT</b>	SW 1	TO EXIT
	SW 2	NOT AN EXIT
	SW 22	EXIT W/ WHEELCHAIR SYMBOL
	SW 37	NO EXIT
	SW 42	EMERGENCY EXIT ONLY
	SW 63	WHEELCHAIR SYMBOL/ EXIT
	SW 67	EMERGENCY EXIT
	SW 70	FIRE EXIT ONLY
SW 73	TO FIRE ESCAPE	
<b>AREAS/ALERTS</b>	SW 5	DARKROOM IN USE
	SW 9	ON AIR
	SW 27	QUIET
	SW 29	PERFORMANCE IN PROGRESS
	SW 44	IMAGE ACQUISITION
	SW 52	STUDIO IN USE
	SW 55	BATTERY CHARGING IN PROCESS
	SW 61	UNCLEARED VISITORS
	SW 68	STAND BY ON AIR
	SW 80	TV STUDIO IN USE
	SW 85	JURY IN SESSION
	SW 88	DARKROOM IN USE/DO NOT ENTER
	SW 96	L CLEARED / IN AREA
	SW 100	CLASSIFIED/BREIFING
	SW 102	UNCLEAR/VISITOR IN AREA
	SW 103	ON THE AIR w/ SYMBOL
	SW 109	JUVENILE IN CELL
	SW 111	MEETING IN PROGRESS
	SW 115	RECORDING
	SW 121	QUIET PLEASE/SLEEP STUDY IN PROGRESS
	SW 128	INTERVIEW IN PROGRESS
	SW 129	SIMULATOR/IN USE
	SW 131	RANGE/IN USE
	SW 133	COURT/IN/SESSION
	SW 134	STAND/BY
	SW 135	VISITOR
	SW 156	ON AIR/STUDIO ONE
	SW 157	ON AIR/STUDIO TWO
	SW 158	ON AIR/STUDIO THREE
	SW 159	RECORDING ROOM IN USE
	SW 162	THE MAGNET IS ON
	SW 163	WAITING AREA
	SW 164	Brief in Progress
	SW 171	WARNING HAZARD
	SW 172	LIVE FIRING IN PROGRESS
SW 173	QUIET/COURT IN SESSION	
SW 174	OPEN	
SW 176	PATIENT WAITING	
SW 179	OCCUPIED	
SW 181	WHEELCHAIR ACCESS ICON	
<b>DANGER/ALERTS</b>	SW 6	CAUTION
	SW 47	DANGER
	SW 137	OSPA/ASSISTANCE/NEEDED

CATEGORY	SPECIAL WORDING NUMBER	DESCRIPTION	
<b>EVACUATION</b>	SW 10	AREA OF REFUGE	
	SW 11	AREA OF REFUGE WITH WHEELCHAIR SYMBOL	
	SW 12	AREA OF RESCUE ASSISTANCE	
	SW 13	AREA OF RESCUE ASSISTANCE WITH WHEELCHAIR SYMBOL	
	SW 14	ELEVATOR	
	SW 24	CAUTION STAIRS	
	SW 25	NOT AN AREA OF REFUGE	
	SW 40	AREA OF RESCUE	
	SW 48	STAIRS	
	SW 79	TO AREA OF RESCUE ASSISTANCE	
	SW 97	EMERGENCY ASSISTANCE	
	SW 117	TO AREA OF REFUGE	
	SW 122	AREA OF REFUGE ASSISTANCE	
	SW 123	UP	
	SW 124	DOWN	
	SW 132	RED CROSS (SYMBOL ONLY)	
	<b>INTERNATIONAL EXIT</b>	SW 32	EXIT/SALIDA
		SW 41	ARABIC/EXIT
		SW 64	ARABIC/EXIT
SW 65		MAKHRAJ ARABIC/EXIT	
SW 66		ARABIC/EXIT	
SW 69		SALIDA	
<b>RESTROOMS/FACILITIES</b>	SW 15	RESTROOMS	
	SW 16	MEN	
	SW 17	MEN WITH SYMBOL	
	SW 18	WOMEN	
	SW 19	WOMEN WITH SYMBOL	
	SW 54	PHONE	
	SW 91	DECORATIVE CROSS SYMBOL	
	SW 92	NON SMOKING	
	SW 98	NO SMOKING	
	SW 118	WHEELCHAIR (SYMBOL ONLY)	
<b>ON/OFF</b>	SW 50	GENERATOR ON	
	SW 75	FAN OFF	
	SW 82	EMERGENCY POWER ON	
	SW 84	CITY WATER BACKUP ON	
	SW 106	READY ON	
<b>PEDESTRIANS/CROSSING</b>	SW 108	READY	
	SW 78	CAUTION WATCH FOR PEDESTRIANS	

CATEGORY	SPECIAL WORDING NUMBER	DESCRIPTION
<b>LABORATORY</b>	SW 4	X-RAY IN USE
	SW 20	WARNING LASER ON
	SW 21	BEAM ON
	SW 23	CAT SCAN IN USE
	SW 26	MRI ROOM IN USE
	SW 28	MRI IN USE
	SW 31	LASER IN USE
	SW 33	LASER ON DO NOT ENTER
	SW 34	MAGNET ON
	SW 36	UV LIGHTING IN USE
	SW 38	CLOSE HOODS
	SW 39	RADIATION ON
	SW 43	DANGER BIO HAZARD IN USE
	SW 45	MAGNET IN USE
	SW 46	LASER LAB IN USE
	SW 49	X-RAY ON
	SW 51	CAUTION X-RAY
	SW 53	BEAM ON DO NOT ENTER
	SW 56	FIRE
	SW 57	CT IN USE
	SW 58	OPEN LASER
	SW 62	RADIATION IN USE
	SW 71	X-RAY
	SW 72	X-RAY OFF
	SW 83	MAGNET AT FIELD
	SW 87	BEAM IN USE
	SW 89	CRYOSTAT MAGNET IN USE
	SW 93	LASER ENABLED
	SW 105	CT SCAN/IN USE
	SW 107	DANGER
	SW 112	X-RAY IN USE/DO NOT ENTER
	SW 113	MAGNET/RAMPED
	SW 116	SCANNER IN USE
	SW 120	UV/RADIATION
	SW 125	NO ENTRY FUEL CELL WORK IN PROGRESS
	SW 127	RADIATION
	SW 136	RADIATION/SOURCE/EXPOSED
	SW 138	RAYOS-X/ EN USO
	SW 139	RADIATION/WARNING
	SW 140	CT ON/DO NOT ENTER
	SW 141	LINAC/ IN USE
	SW 143	TEST CELL/ IN USE
	SW 145	MRI MAGNET/ IN USE
	SW 146	POLYGRAPH/ IN USE
	SW 147	TEM IN USE
	SW 148	ETEM IN USE
	SW 152	BLAST TUBE
	SW 155	LAB IN USE
SW 160	BEAM READY	
SW 175	MAGNET ALWAYS ON	
SW 183	CATH TUBE IN USE	
SW 184	STAT	

NOTE: Special worded signs do not meet letter size requirements of UL 924.



# Alternate Lighting Package

- X'd out fixtures are not accepted

Mont Elementary  
School TYPE E1

## LE Series Edge-Lit LED Exit Sign

Catalog Number	
Comments	Type

### FEATURES

#### Application

The LE Series provides bright, even letter illumination in an energy-saving LED edge-lit exit sign configuration. AC or Emergency operation with optional Spectron® self-test/self-diagnostic circuitry. Special Wording ("SW") option allows customizing the stencil field to convey important information.

#### Construction

Water-clear injection-molded acrylic EXIT plaque is available with clear, white or mirror backgrounds. High strength extruded aluminum trim available in six finishes. Exit face design in single or double face with red or green letters. Custom printed directional chevron arrows. Standard EXIT stencil with 6" letters and 3/4" stroke. Rough-in kit: galvanized steel, .036 (20 Ga.) housing, .060 (16 Ga.) mounting bars.

#### Installation

Universal rough-in box accommodates recessed installation of all models in wall, ceiling or end-mount applications. All mounting hardware is fully concealed.

#### Illumination

Exit face illumination is provided by energy saving, long life red or green LEDs. Exceeds UL 924 requirements for brightness and uniformity. 10 year LED life.

#### Compliances

UL 924 Listed  
NFPA 70  
NFPA 101  
CEC T20 Compliant

#### Warranty

Fixture: 5 Years Full  
Battery: 2 Years Full, 8 Years Pro-Rata



Ceiling Mount



Wall Mount



End Mount



Special Wording Option

### ACCESSORIES

**URK** Universal rough-in kit  
**URK2C** Universal 2-circuit rough-in kit 1,2,3

- 1 For use with AC models only.
- 2 Rough-in kit may not be ordered separately on models specified with -24K option.
- c Must be ordered in conjunction with -2C option on exit sign

#### To Order Rough-In Kit Separately

To order rough-in kit only for field installation, add "XK" option suffix to exit model number and order "URK" or "URK2C" kit separately.

### ORDERING GUIDE

<b>LE</b>									
MODEL	MOUNTING	FACES	LETTER COLOR	DIRECTIONAL ARROWS	FINISH	OPERATION	SELF-DIAGNOSTIC	OPTIONS	
	<b>C</b> Ceiling mount <b>W</b> Wall mount <b>E</b> End mount	<b>S</b> Single <b>D</b> Double* <small>* Not for use with wall mounted models.</small>	<b>R</b> Red <b>G</b> Green	<b>X</b> No arrows EXIT <b>R</b> Right arrow* EXIT> <b>L</b> Left arrow* <EXIT <b>D</b> Double arrows <EXIT> <b>C</b> L/R arrows** <EXIT/EXIT> <small>* Not for use with double face models. Use "C" L/R arrow designator ** Double face models only. Provides reversible right or left arrow indicator</small>	<b>N</b> Satin Aluminum <b>W</b> White <b>C</b> Chrome <b>B</b> Black <b>S</b> Satin brass <b>Z</b> Dark Bronze	<b>A</b> AC only <b>E</b> Emergency	<b>Blank</b> None <b>I</b> Spectron® self-testing/self-diagnostic electronics	<b>SW</b> See available special wording choices on page 3 <sup>10,11</sup> <b>2C</b> 2 Circuit Operation <sup>2,5</sup> <b>FAP</b> Fire alarm panel interface <sup>3,5,6</sup> <b>FM</b> Flasher module <sup>1,6</sup> <b>AF</b> Audible flasher module <sup>1,6</sup> <b>DC</b> Remote DC operation <sup>2,4,5</sup> <b>24K</b> 220-240VAC, 60Hz. operation <sup>9</sup> <b>XK</b> Recessed mount exit sign less rough-in-kit <sup>7,9</sup> <b>W</b> White plaque background <b>M</b> Mirror-plaque background <sup>8</sup>	

1 For use with emergency models only.  
2 For use with AC models only.  
3 Operates with 24-volt AC or DC fire alarm panels.  
4 For emergency illumination of sign from remote 6-24VDC power sources.  
5 -DC option may not be specified with -2C or -FAP options.  
6 -AF, -FM and -FAP options may not be specified together.  
7 Allows ordering of rough-in kit separately for recessed mount (LE) models. See "Accessories".  
8 For use with single face models only. Standard on double face models.  
9 Rough-in kit may not be ordered separately on models specified with -24K option.  
10 Specify special wording code from page 3 when ordering. Example: SW41  
11 Some special wording signs not available with directional arrows.



# Alternate Lighting Package

- X'd out fixtures are not accepted

# LE Series

## Recessed Mounting Edge-Lit LED Exit Sign

### SPECIFICATIONS

#### Electronics

Available with AC, emergency and Spectron® self-test/self-diagnostic electronics option. Emergency and self-diagnostic models equipped with isolation transformer and fully automatic constant current solid state charger with sealed maintenance-free nickel-cadmium battery. All emergency models with 90-minute run-time. All components mounted inside housing. Includes test switch and AC-on indicator. Transient/surge protection, low voltage disconnect and AC lock-out features included. Battery re-charge within UL time standards. Includes pre-stripped AC input pigtail leads.

### POWER CONSUMPTION (120/277VAC)

Model	Single Face	Double Face
Red AC Only	2.2 watts	3.4 watts
Green AC Only	2.5 watts	4.0 watts
Red Emergency	3.3 watts	4.5 watts
Green Emergency	3.6 watts	5.0 watts

\* Wattage figures include LED lamps, transformer and electronics power requirements.

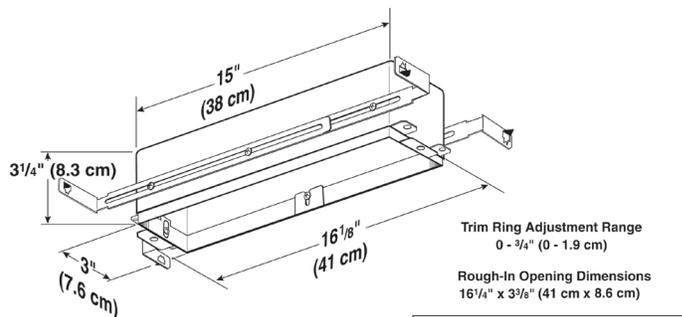
**Power Factor, Average:** .8 (lagging)

**Battery Type:** Maintenance-free sealed nickel cadmium battery

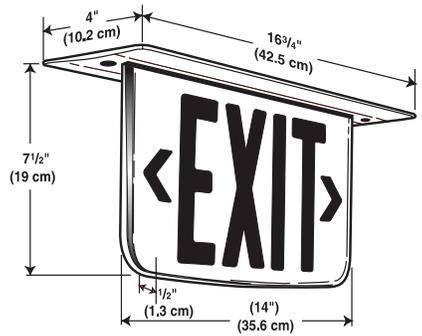
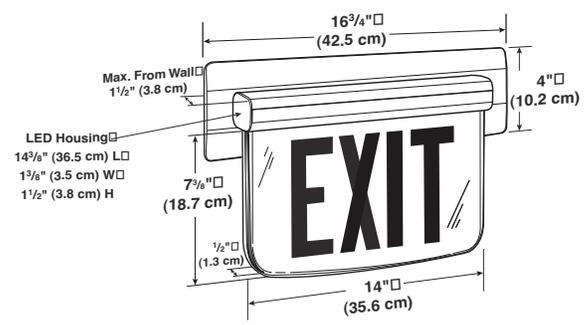
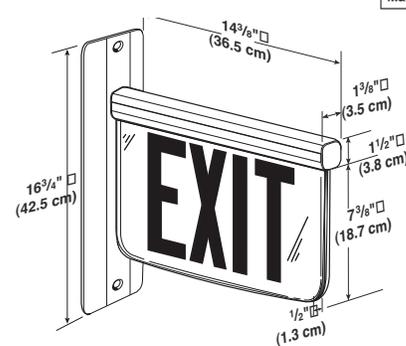
**AC Input:** 120/277VAC, 60 Hz. (all models)

**Operating Temperature Range:** 20°C to 30°C (68°F to 86°F)

### DIMENSIONS



Mounting Bar Adjustment Range	
Side Mounted	End Mounted
Min: 16 1/4" (41 cm)	Min: 13" (33 cm)
Max: 25 1/4" (64 cm)	Max: 22 3/4" (57.8 cm)



LE Series architectural recessed LED edge-lit exit signs feature an option for standard or custom special-wording. The images below represent standard special-worded signs available for the LE Series. The artwork and silk-screening for the standard signs shown below were previously developed therefore pricing for these special-worded signs do not incur a setup charge.

If your special-worded requirements do not appear on this page, please contact the factory to request your custom special-wording sign. Custom special wording signs incur a one time set-up charge for each development.



## Alternate Lighting Package

- X'd out fixtures are not accepted

# LE Series

## Recessed Mounting Edge-Lit LED Exit Sign

### STANDARD SPECIAL WORDING SIGNS WITH DIRECTIONAL ARROWS



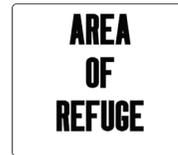
SW118



SW41 (Arabic/Exit)



SW13



SW10



SW69



SW11

### STANDARD SPECIAL WORDING SIGNS WITHOUT DIRECTIONAL ARROWS



SW4



SW3



SW31



SW2

### STANDARD SPECIAL WORDING SIGNS

Category	Special Wordings Number	Description
EXIT	SW 2	NOT AN EXIT
	SW 142	EXIT (TEXT IS INVERTED)
	SW 144	EXIT (W/ WHEELCHAIR SYMBOL)
DO NOT ENTER	SW 3	IN USE
EVACUATION	SW 10	AREA OF REFUGE
	SW 11	AREA OF REFUGE WITH WHEELCHAIR SYMBOL
	SW 13	AREA OF RESCUE ASSISTANCE WITH WHEELCHAIR SYMBOL
	SW 48	STAIRS
	SW 117	TO AREA/OF REFUGE
	SW 149	AREA OF RESCUE
LABORATORY	SW 4	X-RAY IN USE
	SW 21	BEAM ON
	SW 28	MRI IN USE
	SW 31	LASER IN USE
	SW 52	RADIATION IN USE
	SW 57	CT IN USE
	SW 166	TESTING IN PROGRESS
RESTROOM/FACILITIES	SW 30	ROOM IN USE
	SW 118	HANDICAPPED (SYMBOL ONLY)
	SW 167	RESTROOM OCCUPIED
	SW 168	ELEVATOR
	SW 169	MEN (NO ARROWS/CHEVRONS)
	SW 170	WOMEN (NO ARROWS/CHEVRONS)
INTERNATIONAL EXITS	SW 41	ARABIC/ EXIT
	SW 69	SALIDA
	SW 165	SALIDA (INVERTED TEXT)
AREA/ALERTS	SW 9	ON AIR
	SW 178	EMERGENCY CALL STATION

NOTE: Special worded signs do not meet letter size requirements of UL 924.

## PRODUCT SPECIFICATIONS

### Construction:

- LED Polycarbonate Vaportite
- Finish: White
- Lens: Injection Moulded Polycarbonate
- Dimensions:
  - LLC023 – 14.3”D x 5.7”H
  - LLC034 – 17.7”D x 5.7”H

### Performance:

- LLC023 – UNV/28W/1620LM
- LLC034 – UNV/34W/2380LM

### Notes:

- Lumens noted are Delivered
- Wet Rated – suitable for harsh environments
- Wall or Ceiling Mount
- Warranty: 1 year on body and lens. 5 years on LED.
- ETL Listed

Job Name:

Type:



### Ordering Information:

Sample: LLC034-4000K

PART #	COLOR TEMP		
LLC023	4000K		
LLC034	5000K		

Note: Specifications are subject to change without notice.



All products are UL and/or ETL Certified.

2017.06

Lumencia Lighting, Inc.

215-512-7000 • Fax 267-288-5604

www.lumencia.com

421 Bustleton Pike, Feasterville, PA 19053

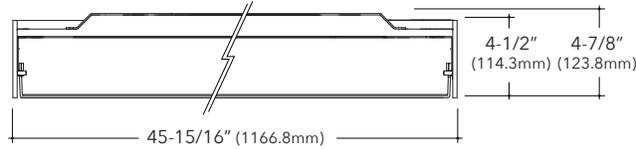
# Alternate Lighting Package

- X'd out fixtures are not accepted



## FINA F48

48" Direct and Uplight Architectural Round



Claymont Elementary School TYPE FF

### Key Features

- Extruded aluminum housing is rolled and welded for seamless finish with 1/4" trim
- Aluminum top cover conceals all electrical components. Highly reflective die-formed white painted steel reflector
- FINA offered with a 5-year limited warranty. Covers LED, driver and fixture
- IC Rated (recessed only), UL and cUL Listed, approved for dry/damp location
- Maximum fixture weight is 75 lbs
- Room-side maintenance for LED system
- Buy American Act compliant



Example Part #: F48-A-830HO-G-U-OL1-1-0-W



F48 _	SHIELDING	CRY CCT & OUTPUT	MOUNTING <sup>1</sup>
<b>F48</b> - 48" Fina Direct <b>F48U</b> - 48" Fina Uplight (7% Uplight) <i>Shielding pg. 2</i>	<b>A</b> - Flat Satine Lens <b>AR</b> - Regress Satine Lens <b>AL</b> - Lowered Satine Lens <b>C</b> - Flat Convex Lens <b>CR</b> - Regress Convex Lens <b>CL</b> - Lowered Convex Lens <b>V</b> - Flat Concave Lens <b>VL</b> - Lowered Concave Lens <i>Shielding pg. 2</i>	<b>27</b> - 2700K <b>30</b> - 3000K <b>35</b> - 3500K <b>40</b> - 4000K <b>CL</b> - Custom Lumens <b>CW</b> - Custom Watts <i>Lumen Output pg. 2</i>  <i>Example: 830HO is 8 = 80 CRI; 30 = 3000K; HO = High Output; Blank = Standard Output</i>	<b>AC3</b> - 3 AC to JB or ST <b>AH4</b> - 4 AC w/hub to JB or ST <b>PP</b> - Pendant Pipe to JB or ST <b>PS</b> - Pendant Swivel to JB or ST <b>S</b> - Surface Mount <b>WA</b> - Wall Mount <b>G</b> - Grid Ceiling <b>FL</b> - Flanged <b>NF</b> - Non-Flanged <b>SF</b> - Spackle Flange <i>Mounting pg. 3</i>
VOLTAGE	DRIVER	CIRCUITING	BATTERY & EMERGENCY
<b>U</b> - Universal (120 thru 277V) <b>1</b> - 120V <b>2</b> - 277V <b>3</b> - 347V <i>Voltage pg. 4</i>	<b>OL1</b> - Osram (10%, 0-10v, standard) <b>OL2</b> - Osram (1%, 0-10v) <b>OL3</b> - Osram 347v (10%, 0-10v) <b>EE1</b> - ekoLED ECOdrive (1%, 0-10v) <b>EE3</b> - ekoLED ECOdrive (1%, DALI) <b>PL1</b> - Philips Xitanium (1%, 0-10v) <b>PH1</b> - Philips Xitanium (50%/100%) <b>LH1</b> - Lutron Hi-Lume (1%, EcoSystem) <b>L51</b> - Lutron 5-Series (5%, EcoSystem) <b>ND</b> - Non-Dimming <i>Driver pg. 4</i>	<b>1</b> - Single Circuit <b>E</b> - Emergency (entire fixture) <b>N</b> - Night Light (entire fixture) <i>Circuiting pg. 4</i>	<b>0</b> - None <b>1P</b> - Philips Bodine 10W <b>1I</b> - Iota 10W <b>1IC</b> - Iota 10W (CEC Listed) <b>1G</b> - Philips Bodine GTD <i>Battery and Emergency pg. 4</i>
FINISH	FIXTURE OPTIONS	CONTROLS	
<b>W</b> - White <b>S</b> - Metallic Silver <b>BL</b> - Textured Black <b>BR</b> - Bronze <b>GR</b> - Graphite <b>CC</b> - Custom Color <i>Finish pg. 4</i>	<b>CP</b> - Chicago Plenum <b>AM</b> - Antimicrobial Paint <b>FW6</b> - 6' Flex Whip <b>FW12</b> - 12' Flex Whip <b>GLR</b> - Fast Blow Fusing <b>GMF</b> - Slow Blow Fusing <b>CC-C</b> - Custom Color Canopy <b>CC-P</b> - Custom Color Pendant <i>Fixture Options pg. 5</i>	Pinnacle is able to accommodate different control solutions from different manufacturers. Consult Factory for more information.	

<sup>1</sup>Example: AC348JB. AC3 = 3 Aircraft Cables, 48 = 48" long cables, JB = connects to junction box. Standard AC cable lengths are 48" and 120", field adjustable. Standard pendant lengths are 12", 18", & 48"  
 Specifications and dimensions subject to change without notice. Specification sheets that appear on pinnacle-ltg.com are the most recent version and supersede all other previously printed or electronic versions.



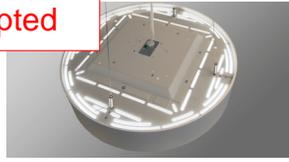
**Housing**

**F36 - DIRECT**



**Alternate Lighting Package**  
- X'd out fixtures are not accepted

**UPLIGHT**



Fina with uplight has slots in top of housing to allow for about 7% of indirect light to create glow above fixture

**Shielding**

- White virgin acrylic lens with matte finish, removable for LED access
- Select from flat, concave, or convex formed satine lens
- Lens available in 3 positions  
- Flush - Regressed - Lowered

<p><b>A</b> Flat Lens</p>	<p><b>C</b> Convex Lens</p>	<p><b>V</b> Concave Lens</p>
<p><b>AR</b> Regress Satine Lens</p>	<p><b>CR</b> Regress Convex Lens</p>	<p><b>VL</b> Lowered Concave Lens</p>
<p><b>AL</b> Lowered Satine Lens</p>	<p><b>CL</b> Lowered Convex Lens</p>	

**Output**

- Specify either 80 or 90 CRI
- Longer lead-time may apply for 90 CRI. Consult factory.
- 90 CRI = R9≥19 and 90 CRI = R9≥61

**Custom Output- Lumens OR Wattage**

**CL** \_\_\_\_\_ Specify CRI, CCT and desired lumens (i.e. CL8351500) *Specify lumens between standard offering listed below. Lumens are specified per color temp*

**CW** \_\_\_\_\_ Specify CRI, CCT and desired wattage (i.e. CW940200) *Specify watts between standard offering listed below*

**80 CRI**

	Color	Output	Housing			UPLIGHT		
			DIRECT					
			Watts	Lumens	LPW	Watts	Lumens	LPW
<b>830</b>	3000K	Standard	135.8	10932	80.5	123.8	10354	83.6
<b>830HO</b>	3000K	High	238.7	19117	80.1	217.9	18251	83.8
<b>835</b>	3500K	Standard	135.8	11242	82.8	123.8	10647	86.0
<b>835HO</b>	3500K	High	238.7	19658	82.4	217.9	18767	86.1
<b>840</b>	4000K	Standard	135.8	11459	84.4	123.8	10853	87.7
<b>840HO</b>	4000K	High	238.7	20038	83.9	217.9	19130	87.8

**90 CRI**

<b>927</b>	2700K	Standard	135.8	8641	63.6	123.8	8184	66.1
<b>927HO</b>	2700K	High	238.7	15109	63.3	217.9	14425	66.2
<b>930</b>	3000K	Standard	135.8	10069	74.1	123.8	9537	77.0
<b>930HO</b>	3000K	High	238.7	17607	73.8	217.9	16810	77.1
<b>935</b>	3500K	Standard	135.8	10107	74.4	123.8	9572	77.3
<b>935HO</b>	3500K	High	238.7	17673	74.0	217.9	16872	77.4
<b>940</b>	4000K	Standard	135.8	10222	75.3	123.8	9681	78.2
<b>940HO</b>	4000K	High	238.7	17874	74.9	217.9	17064	78.3

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# Alternate Lighting Package

- X'd out fixtures are not accepted

F48

Architectural Recessed



## Mounting - Suspended - Recessed

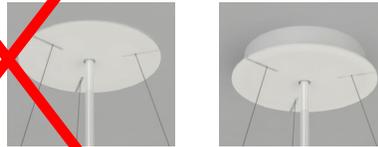
- Aircraft cables and pendants mount directly to a standard junction box or structure
- Canopies, pendant, and power cords are white. Specify canopy and pendant color in Fixture Options
- AC canopies can be installed below the ceiling plane or semi-recessed into the ceiling for a flush mount installation, no specification required (see below)

- Must specify overall pendant length of 12", 18" or 24"
- Must specify cable length, either 48" or 120" standard, field adjustable
- Designed to install into acoustical grid and inaccessible ceilings
- Tie off fixture to structure with retention wires
- Maximum fixture weight is 75 lbs

<b>AC3__JB</b> 3 AC cables to fixture to J-Box	<b>AH4__JB</b> 4 AC cables with hub to fixture to J-Box	<b>PP__JB</b> Pendant Pipe to J-Box <b>PS__JB</b> Pendant Swivel to J-Box	<b>S</b> Surface Mount Ceiling
<b>AC3__ST</b> 3 AC cables to fixture to Structure	<b>AH4__ST</b> 4 AC cables with hub to fixture to Structure	<b>PP__ST</b> Pendant Pipe to Structure <b>PS__ST</b> Pendant Swivel to Structure	<b>WA</b> Surface Mount Wall

## Canopies

- The canopy can be installed either below the ceiling plane or semi-recessed into the ceiling for a flush mount installation
- Standard kit can be installed either way
- Flush canopy installation is not available for fixtures installed below a grid rail



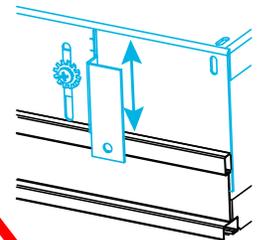
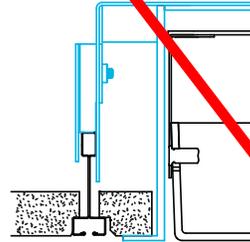
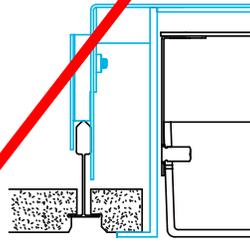
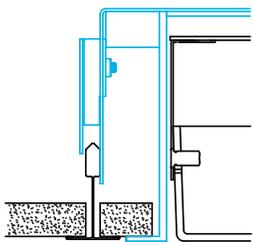
## G

Grid Ceiling with 3/4" (19.1mm) Trim  
15/16" T-Bar

9/16" T-Bar

Screw Slot T-Bar

Recessed box allows for 1/2" of adjustability to accommodate a variety of grid ceilings



## FL

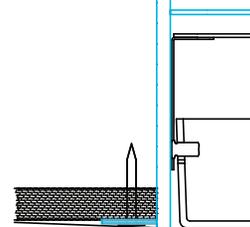
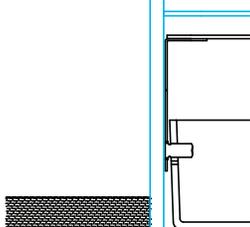
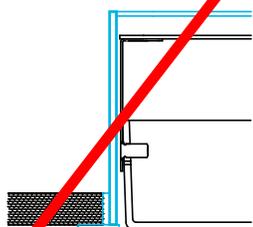
Standard 3/4" (19.1mm) Flange  
Exposed Flange

## NF

Non-Flange with 1/4" (6.4mm) Trim  
Metal Pan or Millwork

## SF

Spackle Flange  
Drywall, Flangeless



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# Alternate Lighting Package

- X'd out fixtures are not accepted

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## Voltage

- Some FINA configurations will not accommodate all voltage options; consult with factory

<b>U</b>	Universal
<b>1</b>	120 volt
<b>2</b>	277 volt
<b>3</b>	347 volt

## Driver

- Standard Driver Option = OL1
- Driver Lifetime: 50,000 hours at 25°C ambient operating conditions
- For more Driver options, see Pinnacle Resource Guide
- Some FINA configurations will not accommodate all driver options; consult with factory

<b>OL1</b>	Osram Optotronic 10%, 0-10v
<b>OL2</b>	Osram Optotronic 1%, 0-10v, nominal 1% dimming range
<b>OL3</b>	Osram Optotronic 347v 10%, 0-10v, requires 347v option
<b>EE1</b>	eldoLED ECOdrive 1%, 0-10v Logarithmic
<b>EE3</b>	eldoLED ECOdrive 1%, DALI Logarithmic
<b>PL2</b>	Philips Advance Xitanium 1%, 0-10v
<b>PS1</b>	Philips Advance Xitanium Step Dimming 50%/100%
<b>LH1</b>	Lutron Hi-lume Soft-on, Fade-to-black 1%, EcoSystem, LDE1
<b>L51</b>	Lutron 5-Series 5%, EcoSystem, LDE5
<b>ND</b>	Non-Dimming

## Circuiting

- Select fixture circuiting from options below
- Some FINA configurations will not accommodate all circuiting options; consult with factory

<b>1</b>	Single Circuit
<b>E</b>	Emergency Circuit only
<b>N</b>	Night Light Circuit only

## Battery & Emergency

- Select battery or emergency options if required
- Battery duration is 90 minutes
- Test button is integral to fixture
- For more Battery options, see Pinnacle Resource Guide

<b>0</b>	No Battery
<b>1P</b>	Philips Bodine 10w Integral
<b>1I</b>	lota 10w Integral
<b>1IC</b>	lota 10w Integral, CEC Listed
<b>1G</b>	Philips Bodine GTD

### For Approximate Battery Lumen Output

- Multiply battery wattage X fixture LPW shown on Lumen Table
- 10 (watts) x 92.3 (LPW) = 923 battery lumen output

### Battery & Emergency Ordering Examples

- Single circuit, 10w integral battery Ordering Code: 1-1P
- Emergency circuit only, 10w integral battery Ordering Code: E-1P

## Finish

- Powder-coat white painted finish on exposed trim

<b>W</b>	White
<b>S</b>	Metallic Silver
<b>BL</b>	Textured Silver
<b>BR</b>	Bronze
<b>GR</b>	Graphite
<b>CC</b>	Custom Color

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# Alternate Lighting Package

- X'd out fixtures are not accepted

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Architectural Recessed



## Fixture Options

- Additional options to enhance the fixture and finish of the product

<b>CP</b>	Chicago Plenum
<b>AM</b>	Antimicrobial Paint
<b>FW6</b>	Flex Whip 6'
<b>FW12</b>	Flex Whip 12'
<b>GLR</b>	Internal Fast Blow Fuse
<b>GMF</b>	Internal Slow Blow Fuse
<b>CC-C</b>	Custom Color Canopy
<b>CC-P</b>	Custom Color Pendant

- Specify CC-C and/or CC-P to match housing. If not specified, canopy and/or pendant will be standard matte white.

## Controls

- Pinnacle is able to accommodate different control solutions from different manufacturers. Consult Factory for more information.

## Photometrics

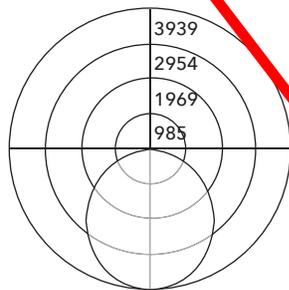
### Fina Direct

#### Candela Distribution

Vert Angle	Horizontal Angle				
	0	22.5	45	67.5	90
0	3939	3939	3939	3939	3939
5	3920	3921	3922	3921	3921
10	3872	3874	3873	3872	3872
15	3788	3789	3790	3787	3788
20	3673	3672	3672	3670	3670
25	3524	3524	3522	3521	3520
30	3346	3345	3343	3340	3341
35	3141	3139	3137	3134	3135
40	2911	2907	2908	2906	2901
45	2658	2655	2656	2652	2653
50	2381	2382	2380	2376	2376
55	2087	2088	2085	2080	2082
60	1773	1775	1773	1768	1770
65	1446	1453	1448	1442	1446
70	1113	1122	1117	1116	1118
75	785	795	796	791	794
80	487	491	491	492	492
85	226	223	225	230	226
90	0	0	0	0	0

#### Luminance Data (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3589	3587	3583
55	3474	3471	3466
65	3268	3272	3268
75	2896	2936	2928
85	2472	2482	2472



#### Satine Lens

Test #	ITL80426
Catalog #	F48A-840
Lumens	11459 lm
Watts	135.8 W
Efficacy	84 LPW

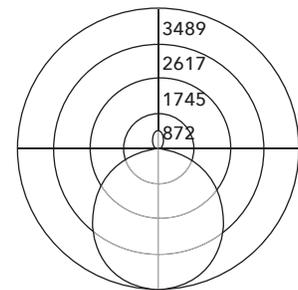
### Fina Uplight

#### Candela Distribution

Vert Angle	Horizontal Angle				
	0	22.5	45	67.5	90
0	3489	3489	3489	3489	3489
5	3475	3476	3476	3477	3476
10	3432	3433	3433	3433	3432
15	3357	3357	3357	3357	3357
20	3254	3253	3256	3254	3255
25	3123	3123	3123	3124	3124
30	2965	2965	2972	2966	2966
35	2787	2782	2785	2784	2784
40	2583	2578	2580	2581	2580
45	2356	2355	2356	2356	2355
50	2114	2115	2115	2114	2112
55	1850	1851	1851	1852	1852
60	1577	1579	1579	1577	1583
65	1285	1293	1292	1292	1297
70	995	1002	998	996	1005
75	710	712	711	711	718
80	441	446	442	443	450
85	208	212	210	215	215
90	0	0	0	0	0
95	6	6	6	7	7
100	18	17	17	18	19
105	32	31	28	30	32
110	47	45	44	46	48
115	64	61	62	64	66
120	87	86	80	85	88
125	115	115	104	110	113
130	144	133	126	135	140
135	174	142	141	154	159
140	156	153	155	168	175
145	174	173	174	185	190
150	205	204	203	209	212
155	242	240	240	242	243
160	281	281	279	279	279
165	313	314	312	312	312
170	339	339	338	337	337
175	357	357	355	356	356
180	365	365	365	365	365

#### Luminance Data (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3182	3182	3181
55	3081	3082	3083
65	2912	2920	2931
75	2620	2624	2650
85	2275	2298	2360



#### Satine Lens

Test #	ITL81637
Catalog #	F48U-A-840
Lumens	10861 lm
Watts	123.8 W
Efficacy	88 LPW

For all available IES files, please visit our website at [pinnacle-ltg.com](http://pinnacle-ltg.com). Photometric testing in accordance to IESNA-LM-79-08 at an NVLAP accredited testing laboratory. Testing conducted at 25°C ambient conditions

## Approvals & Certifications

**Construction:** Extruded aluminum housing is rolled and welded for seamless finish with minimal trim detail. Aluminum top cover conceal all electrical components. Highly reflective die-formed white painted steel reflector. Wiring access on both sides and top of housing.

**Shielding:** Single piece lift and shift diffuse lens creating a fully luminous housing. Available with standard satine lens.

**Mounting:** Designed to install into acoustical grid and inaccessible ceilings. Recessed, aircraft cable, pendant and surface mount available. For recessed, specify G for acoustical grid ceiling. Specify FL, NF, or SF for inaccessible ceilings and specify S or WA for surface or wall mount. Specify AC or PP for suspended mounting. Tie off fixture to structure with retention wires. Maximum fixture weight is 75 lbs.

**LED:** 25°C test environment. Lumen output/wattage has a margin of +/- 5%. All luminaire configurations tested in accordance with IES LM-79. Diodes tested in accordance with IES LM-80. Minimum lifetime greater than 60,000 hours. MacAdam 3-Step Ellipses. Not all products are Lighting Facts listed. For all available IES files, please visit our website at [pinnacle-ltg.com](http://pinnacle-ltg.com).

**CRI, CCT & Output:** Two lumen packages available. Standard and High (HO). Custom outputs are available. Specify custom lumens or watts between standard offering listed on CRI, CCT & Output page. 80 CRI is available for 3000K, 3500K, and 4000K. 90 CRI is available for 2700K, 3000K, 3500K, and 4000K. 80 CRI = R9≥19 and 90 CRI = R9≥61.

**Voltage:** Universal (U), 120 volt (1), 277 volt (2) and 347 volt (3) options available. Must specify OL in Driver section when 347 volt (3) is selected. Some FINA configurations will not accommodate all voltage options; consult with factory.

**Driver:** Standard Driver Option is Osram 0-10V, 10% = OL1. Electronic driver, Power factor is >0.9 with a THD <20%. Driver Lifetime: 50,000 hours at 25°C ambient operating conditions. For more driver options, see Pinnacle Resource Guide. Some FINA configurations will not accommodate all driver options.

**Circuiting:** Select from single circuit (S), Emergency circuit (E) or Night Light circuit (N). Some FINA configurations will not accommodate all circuiting options; consult with factory.

**Battery & Emergency:** Select battery or emergency options if required. If battery or emergency option is not required, enter 0. Battery duration is 90 minutes as standard. Test button is integral to fixture. For more Battery options, see Pinnacle Resource Guide.

**Finish:** Standard powder-coat textured white, metallic silver, textured black, graphite, or bronze painted finish, consult factory for chip of standard paint finishes. Contact factory for additional custom color and finish options.

**Controls:** Consult factory.

**Labels:** UL and cUL Listed. Standard and HO lumen packages are IC Rated, approved for dry/damp location unless otherwise noted.

**Fixture Weight:** 75 lbs maximum

**Buy American Act Compliant**

**Warranty:** FINA LED offered with a 5-year limited warranty. Covers LED, driver and fixture.

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**INTERACTIVE MENU**

- Ordering Guide
- Photometric Data
- Dimensional Data

**EXTERNAL LINKS**

- NX Distributed Intelligence™ Brochure
- SpectraSync™ Brochure

**PROJECT INFORMATION**

Project Name \_\_\_\_\_

Type \_\_\_\_\_

Catalog No. \_\_\_\_\_

Date \_\_\_\_\_

**COMPATIBLE WITH:**



**FEATURES**

- Uninterrupted ribbon of light; row mounting optional
- Long life 60,000 hour LEDs at L80 for reduced maintenance
- Superior color consistency within a 3-step MacAdam ellipse and greater than 80 CRI
- Available in 2', 4' or 8' lengths
- Optional integral emergency battery pack
- Three lens options as well as less lens (NL)
- Modular replaceable LED boards and driver accessible for future maintenance or upgrades
- Surface mount, wall mount or suspended
- DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations - see [www.designlights.org](http://www.designlights.org)
- Optional SpectraSync™ offers three modes of tunable white solutions and integrates seamlessly into a variety of control systems
- NX Distributed Intelligence™ provides options for standalone and networked integrated sensor with wired or wireless connectivity for NX system deployments
- Five year warranty



**MULTIPURPOSE LINEAR**

**CONSTRUCTION**

Housing, wireway, and ends are formed from code-gauge steel. Housing components act as heat sink for LED heat dissipation. Knockouts are provided for electrical access and mounting. Available with or without frosted acrylic lens.

**FINISH**

White painted parts are treated with a five-stage phosphate bonding process and finished with high reflectance baked enamel.

**ELECTRICAL**

Long-life LEDs are rated for 60,000 hours at L80 lumen maintenance. Driver options include fixed output for on/off function, step dimming (high/low/ off), or continuous 0-10V dimming. Superior drivers and long-life LEDs provide quality illumination for prolonged service life. Drivers < 10% THD at 120V, power factor >0.95.

**CERTIFICATION**

All luminaires are built to UL 1598 and 2108 standards, and bear appropriate CSA c/US labels. Damp location labeling is standard. Emergency equipped fixtures are listed to UL924 standards for emergency situations. Adheres to LM79, LM80, and TM21 industry standards.

**WARRANTY**

Five year warranty (Terms and Conditions apply).

**ORDERING INFORMATION**

EXAMPLE MPS4-40ML-CW-EDU

YOUR ORDER **MPS** - - -

MPS		SIZE	CRI	COLOR TEMPERATURE	LUMEN OUTPUT	LENS
<b>MODEL</b>	<b>MPS</b> MultiPurpose Linear	<b>2</b> 2' <b>4</b> 4' <b>8</b> 8'	<b>Blank</b> 80 <b>9</b> 90 <sup>9</sup>	<b>30</b> 3000K <b>35</b> 3500K <b>40</b> 4000K <b>50</b> 5000K <b>2750T</b> 2700K-5000K SpectraSync™ Tunable White <b>2765T</b> 2700K-6500K SpectraSync™ Tunable White	<b>XW</b> 4' (2700, 8' (5400) <b>XWHE</b> 4' (2500, 8' (5000) <b>VW</b> 2' (1700), 4' (3400), 8' (6900) <b>VWHE</b> 4' (3300), 8' (6600) <b>MW</b> 2' (2300), 4' (3800), 8' (7700) <b>MWHE</b> 2' (2100), 4' (3700), 8' (7400) <b>LW</b> 2' (2500), 4' (4200), 8' (8400) <b>LWHE</b> 2' (2600), 4' (4100), 8' (8200) <b>ML</b> 2' (3600), 4' (4800), 8' (9500) <b>MLHE</b> 4' (4700), 8' (9400) <b>HL</b> 2' (3800), 4' (6000), 8' (12,000) <b>HLHE</b> 4' (5700), 8' (11,500) <b>VL</b> 4' (7100), 8' (14,200) <b>XL</b> 4' (8400), 8' (17,000)	<b>C</b> Curve, Frosted Acrylic <b>F</b> Flat, Frosted Acrylic <b>NL</b> Less Lens <b>CP</b> Curve, Frosted Polycarbonate

DISTRIBUTION <sup>6</sup>	DRIVER	VOLTAGE	OPTIONS	CONTROL OPTIONS <sup>8</sup>
<b>N</b> Narrow Distribution <sup>10</sup> <b>W</b> Wide Distribution	<b>E</b> Fixed Output <b>ED</b> 0-10V Dimming <b>ED1</b> 0-10V 1% Dimming <b>EDD</b> Dim-to-Dark <b>ESD</b> Step Dimming <b>LUTH</b> Hi-lume 1% EcoSystem LED driver with Soft-on, Fade-to-Black dimming technology <sup>2</sup> <b>LUT5</b> 5-Series EcoSystem LED driver <sup>2</sup>	<b>U</b> 120V-277V <b>347</b> 347V (E,ED,ED1 only)	<b>ELL14</b> Emergency Battery Pack, 10W <sup>3,4,5,7</sup> <b>GLR</b> Fast Blow Fuse <b>GTD</b> Generator Transfer Device <b>MPSCE</b> Injection Molded ABS Material Curve Endcap <b>MPSCE-MB</b> Injection Molded ABS Material Curve Endcap, Matte Black <b>MPSFE</b> Injection Molded ABS Material Flat Endcap <b>MPSFE-MB</b> Injection Molded ABS Material Flat Endcap, Matte Black <b>MB</b> Matte Black <b>ZT</b> ZET Metallic Silver	<b>NXS</b> NX, PIR Occupancy Sensor, Dimming Daylight Harvesting <b>NXSW</b> NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting <b>NXWE</b> NX Wireless Enabled <b>NXE</b> NX Enabled, Dual SmartPorts <b>NXES</b> NX Enabled, PIR Occupancy Sensor, Dimming Daylight Harvesting <b>ODPG</b> Occupancy and Daylight Sensors w/Grouping, Philips SNS200

**ACCESSORIES (ORDER SEPARATELY)**

- S18** 18" Stem, Canopy
- SS18** 18" Swivel Stem—45° Swivel
- CM24SCF3-KIT** 24" Adjustable Cable Mounting Kit, 3 wire feed
- CM48SCF3-KIT** 48" Adjustable Cable Mounting Kit, 3 wire feed
- CSHC** Chain Hanger Assembly
- MPSZT** Zip Tee Hanger - 1 1/2" Spacer on T-Bar Ceiling
- MPSTH** Slide Tong Hanger
- MPSCRK-C** Continuous Row Kit, Curve
- MPSCRK-F** Continuous Row Kit, Flat
- MPSWG2** 2' Wire Guard
- MPSWG4** 4' Wire Guard, 2 Required for 8' Fixture
- MPSCE** Injection Molded ABS Material Curve Endcap
- MPSCE-MB** Injection Molded ABS Material Curve Endcap, Matte Black
- MPSFE** Injection Molded ABS Material Flat Endcap
- MPSFE-MB** Injection Molded ABS Material Flat Endcap, Matte Black

<sup>1</sup> Only available in curve lens.  
<sup>2</sup> Not available in VL, XL, HE packages.  
<sup>3</sup> Delivered Emergency Lumens = ELL14 = 1210 lms.  
<sup>4</sup> Not available in 2 ft size.  
<sup>5</sup> Not available with thru wire on XL.  
<sup>6</sup> Applicable to lens only.  
<sup>7</sup> Emergency battery pack max ambient temperature: -25°C.  
<sup>8</sup> Control Options include Injection Molded ABS End Cap.  
<sup>9</sup> Not available with HE lumen packages.  
<sup>10</sup> Only available with Curve, Frosted Acrylic lens

**DRIVER AVAILABILITY TABLE**

2'

	VW	MW	MWHE	LW	LWHE	ML	HL
E	X	X	X	X	X	X	X
ED	X	X	X	X	X	X	X
ED1	X	X	X	X	X	X	X
EDD	X	X		X		X	X
ESD	X	X		X		X	X
LUT5	X	X		X		X	X
LUTH	X	X		X		X	X
347	X	X		X		X	X

2ft with ODP/ODPG not available for VW,MW,LW

**DRIVER AVAILABILITY TABLE**

4/8'

	XW	XWHE	VW	VWHE	MW	MWHE	LW	LWHE	ML	MLHE	HL	HLHE	VL	XL
E	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ED	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ED1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EDD	X		X		X		X		X		X		X	X
ESD	X		X		X		X		X		X		X	X
347	X		X		X		X		X		X		X	X
LUT5	X		X		X		X		X		X			
LUTH	X		X		X		X		X		X			

XL not available with thru wire

# Alternate Lighting Package

- X'd out fixtures are not accepted

STANDARD EFFICACY PERFORMANCE TABLE						
FIXTURE	COLOR	LENS	DISTRIBUTION	LUMENS	WATTS	LPW
MPS2-VW	3500K	CURVE	WIDE	1659	13.8	120
			NARROW	1597	13.5	118
		FLAT	WIDE	1584	13.5	117
	4000K	NO LENS	WIDE	1724	13.8	125
			NARROW	1681	13.8	122
			FLAT	WIDE	1618	13.5
		CURVE	WIDE	1604	13.5	119
			NARROW	1746	13.8	127
			FLAT	WIDE	1746	13.8
MPS2-MW	3500K	CURVE	WIDE	2201	18.2	121
			NARROW	2092	17.8	118
		FLAT	WIDE	2076	17.8	117
	4000K	NO LENS	WIDE	2287	18.2	126
			NARROW	2229	18.2	122
			FLAT	WIDE	2119	17.8
		CURVE	WIDE	2102	17.8	118
			NARROW	2316	18.2	127
			FLAT	WIDE	2316	18.2
MPS2-LW	3500K	CURVE	WIDE	2444	20.4	120
			NARROW	2328	19.9	117
		FLAT	WIDE	2309	19.9	116
	4000K	NO LENS	WIDE	2540	20.4	124
			NARROW	2475	20.4	121
			FLAT	WIDE	2358	19.9
		CURVE	WIDE	2338	19.9	118
			NARROW	2572	20.4	126
			FLAT	WIDE	2572	20.4
MPS2-ML	3500K	CURVE	WIDE	3452	29.0	119
			NARROW	3447	28.8	120
		FLAT	WIDE	3414	28.8	119
	4000K	NO LENS	WIDE	3587	29.0	124
			NARROW	3496	29.0	121
			FLAT	WIDE	3491	28.8
		CURVE	WIDE	3458	28.8	120
			NARROW	3632	29.0	125
			FLAT	WIDE	3632	29.0
MPS2-HL	3500K	CURVE	WIDE	3655	31.7	115
			NARROW	3707	31.5	118
		FLAT	WIDE	3678	31.5	117
	4000K	NO LENS	WIDE	3797	31.7	120
			NARROW	3701	31.7	117
			FLAT	WIDE	3701	31.7
		CURVE	WIDE	3754	31.5	119
			NARROW	3725	31.5	118
			FLAT	WIDE	3725	31.5
MPS4-XW	3500K	CURVE	WIDE	3846	31.7	121
			NARROW	2574	20.0	129
		FLAT	WIDE	2574	20.0	129
	4000K	NO LENS	WIDE	2463	20.0	123
			NARROW	2674	20.0	134
			FLAT	WIDE	2606	20.0
		CURVE	WIDE	2574	20.0	129
			NARROW	2494	20.0	125
			FLAT	WIDE	2708	20.0
MPS4-VW	3500K	CURVE	WIDE	3279	26.7	123
			NARROW	3152	26.5	119
		FLAT	WIDE	3134	26.5	118
	4000K	NO LENS	WIDE	3450	26.7	129
			NARROW	3321	26.7	124
			FLAT	WIDE	3192	26.5
		CURVE	WIDE	3174	26.5	120
			NARROW	3564	26.7	133
			FLAT	WIDE	3564	26.7
MPS4-MW	3500K	CURVE	WIDE	3656	30.4	120
			NARROW	3511	30.1	117
		FLAT	WIDE	3491	30.1	116
	4000K	NO LENS	WIDE	3847	30.4	127
			NARROW	3702	30.4	122
			FLAT	WIDE	3556	30.1
		CURVE	WIDE	3535	30.1	117
			NARROW	3974	30.4	131
			FLAT	WIDE	3974	30.4

# Alternate Lighting Package

- X'd out fixtures are not accepted

STANDARD EFFICACY PERFORMANCE TABLE							
FIXTURE	COLOR	LENS	DISTRIBUTION	LUMENS	WATTS	LPW	
MPS4-LW	3500K	CURVE	WIDE	4043	34.4	118	
			NARROW	4094	32.5	126	
		FLAT	WIDE	4072	32.5	125	
	4000K	NO LENS		4255	34.4	124	
			CURVE	WIDE	4095	34.4	119
				NARROW	4147	32.5	128
		FLAT	WIDE	4124	32.5	127	
			NO LENS		4395	34.4	128
					4556	40.1	114
MPS4-ML	3500K	CURVE	WIDE	4556	40.1	114	
			NARROW	4649	37.7	123	
		FLAT	WIDE	4625	37.8	122	
	4000K	NO LENS		4794	40.1	120	
			CURVE	WIDE	4614	40.1	115
				NARROW	4709	37.7	125
		FLAT	WIDE	4684	37.8	124	
			NO LENS		4952	40.1	123
					5760	49.5	116
MPS4-HL	3500K	CURVE	WIDE	5760	49.5	116	
			NARROW	5781	49.4	117	
		FLAT	WIDE	5741	49.4	116	
	4000K	NO LENS		6061	49.5	122	
			CURVE	WIDE	5833	49.5	118
				NARROW	5855	49.4	119
		FLAT	WIDE	5814	49.4	118	
			NO LENS		6261	49.5	126
					6769	54.1	125
MPS4-VL	3500K	CURVE	WIDE	6769	54.1	125	
			NARROW	6675	54.1	123	
		FLAT	WIDE	6637	54.1	123	
	4000K	NO LENS		7122	54.1	132	
			CURVE	WIDE	6855	54.1	127
				NARROW	6760	54.1	125
		FLAT	WIDE	6722	54.1	124	
			NO LENS		7357	54.1	136
					8045	66.5	121
MPS4-XL	3500K	CURVE	WIDE	8045	66.5	121	
			NARROW	7878	66.8	118	
		FLAT	WIDE	7813	66.9	117	
	4000K	NO LENS		8466	66.5	127	
			CURVE	WIDE	8148	66.5	123
				NARROW	7979	66.8	119
		FLAT	WIDE	7913	66.9	118	
			NO LENS		8745	66.5	132
					5147	40.0	129
MPS8-XW	3500K	CURVE	WIDE	5147	40.0	129	
			NARROW	4939	39.8	124	
		FLAT	WIDE	4925	40.0	123	
	4000K	NO LENS		5348	40.0	134	
			CURVE	WIDE	5213	40.0	130
				NARROW	5002	39.8	126
		FLAT	WIDE	4988	40.0	125	
			NO LENS		5416	40.0	135
					6558	53.4	123
MPS8-VW	3500K	CURVE	WIDE	6558	53.4	123	
			NARROW	6303	53.0	119	
		FLAT	WIDE	6269	53.0	118	
	4000K	NO LENS		6814	53.4	128	
			CURVE	WIDE	6642	53.4	124
				NARROW	6384	53.0	120
		FLAT	WIDE	6349	53.0	120	
			NO LENS		6901	53.4	129
					7311	60.8	120
MPS8-MW	3500K	CURVE	WIDE	7311	60.8	120	
			NARROW	7022	60.2	117	
		FLAT	WIDE	6981	60.2	116	
	4000K	NO LENS		7596	60.8	125	
			CURVE	WIDE	7405	60.8	122
				NARROW	7112	60.2	118
		FLAT	WIDE	7071	60.2	117	
			NO LENS		7693	60.8	127

# Alternate Lighting Package

- X'd out fixtures are not accepted

STANDARD EFFICACY PERFORMANCE TABLE						
FIXTURE	COLOR	LENS	DISTRIBUTION	LUMENS	WATTS	LPW
MPS8-LW	3500K	CURVE	WIDE	8087	68.8	118
			NARROW	8189	65.0	126
		FLAT	WIDE	8144	65.0	125
	4000K	CURVE	WIDE	8402	68.8	122
			NARROW	8190	68.8	119
			FLAT	WIDE	8293	65.0
NO LENS		WIDE	8248	65.0	127	
		NARROW	8510	68.8	124	
		FLAT	WIDE	8510	68.8	124
MPS8-ML	3500K	CURVE	WIDE	9111	80.2	114
			NARROW	9298	75.4	123
		FLAT	WIDE	9250	75.6	122
	4000K	CURVE	WIDE	9466	80.2	118
			NARROW	9227	80.2	115
		FLAT	WIDE	9417	75.4	125
MPS8-HL	3500K	CURVE	WIDE	9368	75.6	124
			NARROW	9587	80.2	120
		FLAT	WIDE	9587	80.2	120
	4000K	CURVE	WIDE	11520	99.0	116
			NARROW	11562	98.8	117
		FLAT	WIDE	11481	98.8	116
MPS8-VL	3500K	CURVE	WIDE	11969	99.0	121
			NARROW	11667	99.0	118
		FLAT	WIDE	11710	98.8	119
	4000K	CURVE	WIDE	11628	98.8	118
			NARROW	12122	99.0	122
		FLAT	WIDE	12122	99.0	122
MPS8-XL	3500K	CURVE	WIDE	13537	108.2	125
			NARROW	13350	108.2	123
		FLAT	WIDE	13275	108.2	123
	4000K	CURVE	WIDE	14065	108.2	130
			NARROW	13710	108.2	127
		FLAT	WIDE	13521	108.2	125
MPS8-XL	3500K	CURVE	WIDE	13444	108.2	124
			NARROW	14245	108.2	132
		FLAT	WIDE	14245	108.2	132
	4000K	CURVE	WIDE	16091	133.0	121
			NARROW	15757	133.6	118
		FLAT	WIDE	15626	133.8	117
MPS8-XL	3500K	CURVE	WIDE	16718	133.0	126
			NARROW	16296	133.0	123
		FLAT	WIDE	15826	133.8	118
	4000K	CURVE	WIDE	16932	133.0	127
			NARROW	15958	133.6	119
		FLAT	WIDE	15826	133.8	118
4000K	CURVE	WIDE	16932	133.0	127	
		NARROW	15958	133.6	119	
	FLAT	WIDE	15826	133.8	118	

# Alternate Lighting Package

- X'd out fixtures are not accepted

SpectraSync and NX Availability Table								
			Only With 80 CRI			Only With 80 CRI		
			No Battery Pack			With Battery Pack		
PRODUCT	SIZE	LUMEN PACKAGE	CTC	NX	CTC+NX	CTC	NX	CTC+NX
MPS	2ft	VW	Y	Y	N	—	—	—
		MW	Y	Y	N	—	—	—
		LW	Y	Y	N	—	—	—
		ML	N	Y	N	—	—	—
		HL	N	Y	N	—	—	—
	4ft	XW	Y	Y	Y	Y	Y	Y
		VW	Y	Y	Y	Y	Y	Y
		MW	Y	Y	Y	Y	Y	Y
		LW	Y	Y	Y	Y	Y	Y
		ML	Y	Y	Y	Y	Y	Y
		HL	Y	Y	Y	Y	Y	Y
		VL	N	Y	N	N	Y	N
	8ft	XL	N	Y	N	N	Y	N
		XW	Y	Y	Y	Y	Y	Y
		VW	Y	Y	Y	Y	Y	Y
		MW	N	Y	N	N	Y	N
		LW	N	Y	N	N	Y	N
		ML	N	Y	N	N	Y	N
		HL	N	Y	N	N	Y	N
		VL	N	Y	N	N	Y	N
		XL	N	Y	N	N	Y	N

MAX AMBIENT BY DRIVER (MIN. -25°C)											
		80 CRI									
		E/ED/ED1		ESDU		ED347		EDD		LUT	
SIZE	LUMEN PACKAGE	CEILING/SURFACE MOUNT	PENDANT/TH MOUNT								
2'	VW	35	40	35	40	35	40	35	40	35	40
	MW	35	40	35	40	35	40	35	40	35	40
	LW	35	40	35	40	35	40	35	40	35	40
	ML	35	40	35	40	35	40	35	40	35	40
	HL	30	35	30	35	30	35	30	35	30	35
4'	XW	35	45	35	45	35	45	30	35	30	35
	VW	35	45	35	45	35	45	30	35	30	35
	MW	35	45	35	45	35	45	30	35	30	35
	LW	35	45	35	45	35	45	30	35	30	35
	ML	35	45	35	45	35	45	30	35	30	35
	HL	35	40	35	40	35	40	25	30	30	35
	VL	30	30	30	30	30	30	30	30	—	—
XL*	25	25	25	25	25	25	25	25	—	—	
8'	XW	35	45	35	45	35	45	30	35	30	35
	VW	35	45	35	45	35	45	30	35	30	35
	MW	35	45	35	45	35	45	30	35	30	35
	LW	35	45	35	45	35	45	30	35	30	35
	ML	35	45	35	45	35	45	30	35	30	35
	VL	30	30	30	30	30	30	30	30	—	—
XL*	25	25	25	25	25	25	25	25	—	—	

\*No Thru Wire

Note: Standard and HE lumen packages have equal ambient temperatures.

Note: Emergency battery pack max ambient temperature: 25°C.

Test 19735 Test Date 9/25/2017

**LUMINAIRE DATA**

Luminaire	MPS4-40ML-CN-EDU MPS MultiPurpose Linear, Narrow LED 4ft, Frosted Linear Prisms Lens
Ballast	XI040C110V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	4742
Watts	37.70
Mounting	Surface
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.18 90° = 1.77
Luminous Opening in Feet	Length: 4.00 Width: 0.25 Height: 0.12

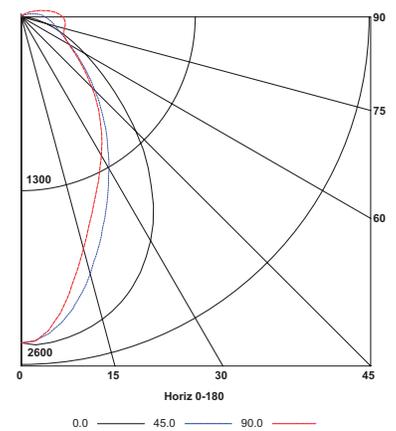
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	1542	32.5	32.5
0-40	2326	49.1	49.1
0-60	3518	74.2	74.2
0-90	4385	92.5	92.5
0-180	4742	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	126
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$1.92 based on 3000 hrs. and \$0.08 per KWH

**INDOOR CANDELA PLOT**



**LUMINAIRE DATA**

Luminaire	MPS4-40ML-CW-EDU MPS MultiPurpose Linear, Wide LED 4ft, Frosted Linear Prisms Lens
Ballast	XI040C110V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	4615
Watts	40.10
Mounting	Surface
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.20 90° = 1.33
Luminous Opening in Feet	Length: 4.00 Width: 0.25 Height: 0.13

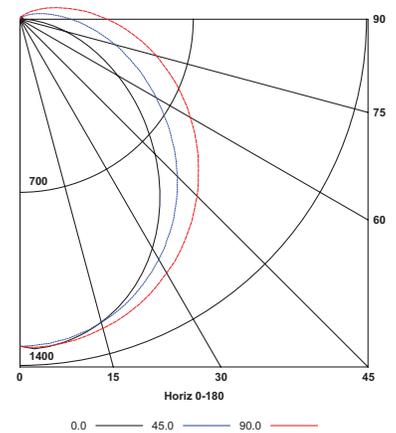
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	1029	22.3	22.3
0-40	1688	36.6	36.6
0-60	3019	65.4	65.4
0-90	4248	92.0	92.0
0-180	4615	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	115
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$2.09 based on 3000 hrs. and \$0.08 per KWH

**INDOOR CANDELA PLOT**



Test 19600 Test Date 4/19/2017

**LUMINAIRE DATA**

Luminaire	MPS4-40ML-FW-EDU MPS MultiPurpose Linear, Wide LED 4ft, Frosted Linear Prisms Lens
Ballast	XI040C110V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	4685
Watts	37.80
Mounting	Surface
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.24 90° = 1.67
Luminous Opening in Feet	Length: 4.00 Width: 0.25 Height: 0.05

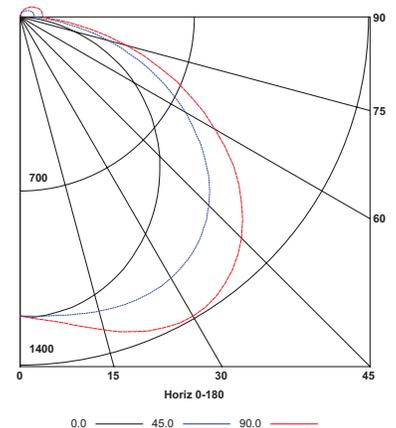
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	1026	21.9	21.9
0-40	1756	37.5	37.5
0-60	3324	70.9	70.9
0-90	4435	94.7	94.7
0-180	4685	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	124
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$1.95 based on 3000 hrs. and \$0.08 per KWH

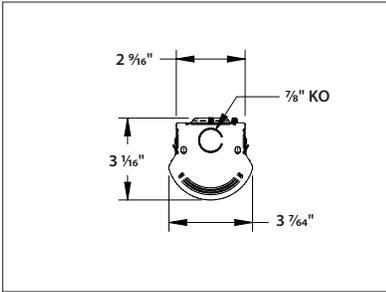
**INDOOR CANDELA PLOT**



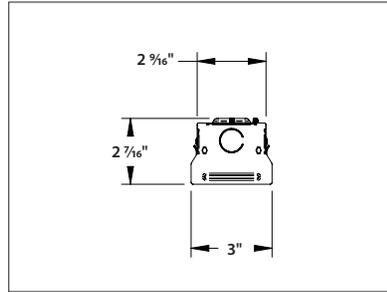
Test 19652 Test Date 9/25/2017

**DIMENSIONAL DATA**

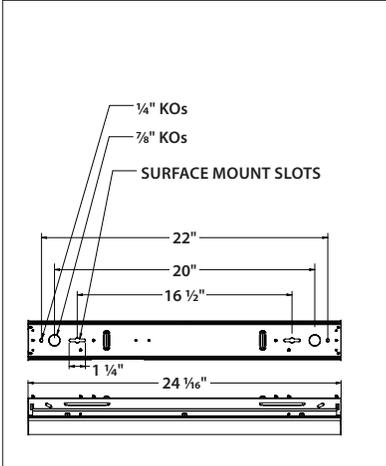
**MPS END VIEW - CURVE LENS**



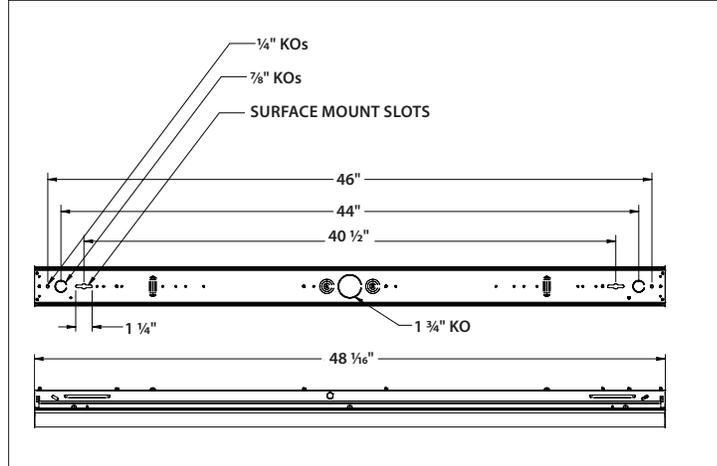
**MPS END VIEW - FLAT LENS**



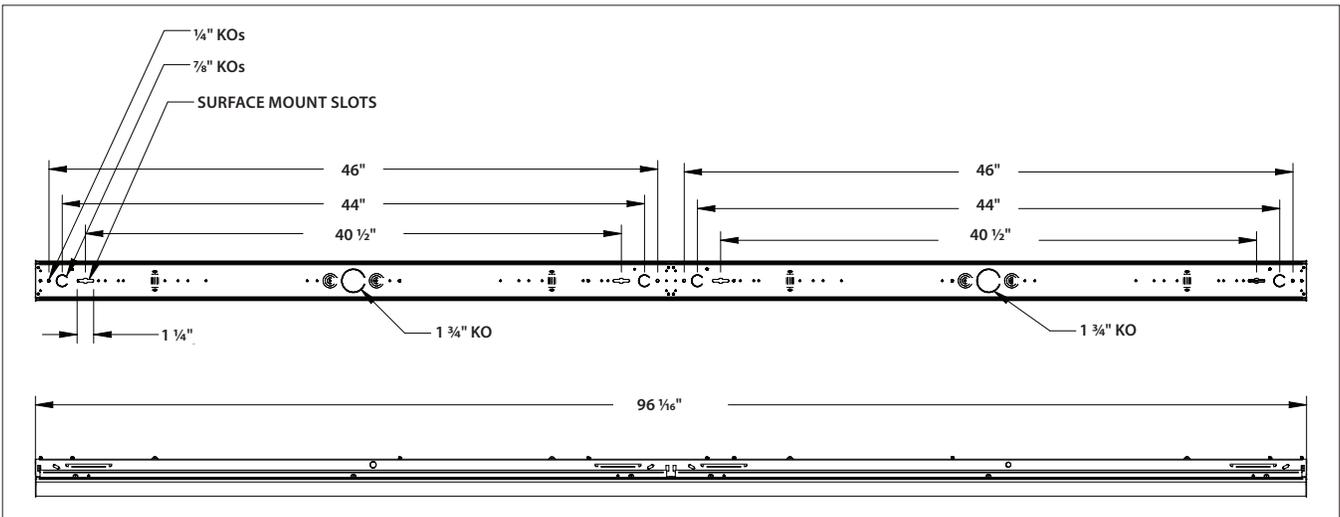
**MPS 2' DIMENSIONS**



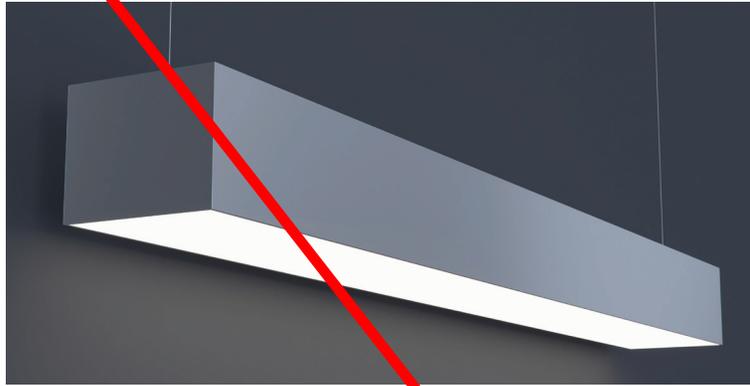
**MPS 4' DIMENSIONS**



**MPS 8' DIMENSIONS**



DATE	PROJECT	FIRM	TYPE
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Linear luminaire with 6" aperture. For use in indoor applications where an LED luminaire providing continuous light is required. Suspended, surface or wall mount installation. For custom mounting consult factory.

### FEATURES

- Available In Custom Lengths & Long Runs To 1/16" Accuracy
- Corners & Patterns Available (See Page 2)
- Damp Location Rated
- CRI 90+ Standard
- 2700K, 3000K, 3500K, 4000K & 5000K Color Temperatures Available
- Enlighted/Wattstopper Sensors Available

**APPLICATIONS** Offices, Lobbies, Retail Stores, Classrooms, Reception Areas & Corridors

**CONSTRUCTION** Extruded Aluminum Housing, Steel End Caps, Formed Steel Gear Tray | **OPTICS** Extruded High Transmission Satin Acrylic Lens With No LED Imaging

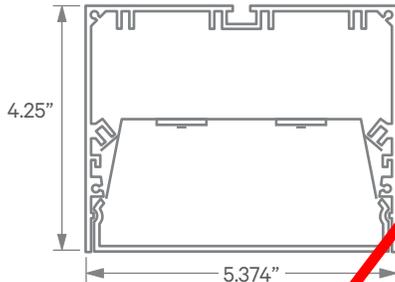
**WARRANTY** 5 Year Limited Warranty (Covers Standard Components) | **FINISH** Standard Powder-Coated White. Custom RAL Colors Available

**FIXTURE RATINGS & CERTIFICATIONS** Union Made ETL Listed | Made In The USA | Damp Location Rated



**ELECTRICAL** Integral Driver With 0-10V 10% Dimming Standard. Several Driver Options Available. See Below For Lutron Dimming Information

### EXTRUSION DIMENSIONS



### LED SYSTEM INFORMATION

	Nominal System Watts	Nominal Delivered Lumens	Nominal Efficacy
Standard (LTG1)	9 W/ft	840 Lm/ft	93 Lm/W
Low (LTG2)	6.5 W/ft	615 Lm/ft	95 Lm/W
High (LTG3)	13 W/ft	1,300 Lm/ft	90 Lm/W

Based on a 3500K luminaire using one driver. Please consult factory for custom lumen outputs & wattage.

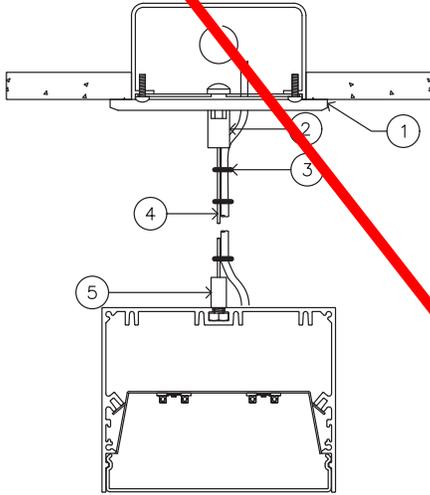
### ORDERING

<b>1 - FIXTURE ID</b> LS6 LED	<b>2 - LENGTH</b> 2 - 2 ft 4 - 4 ft 8 - 8 ft x'-x" - Custom (specify length) **Patterns available consult factory	<b>3 - COLOR TEMP</b> 27 - 2700K/90 CRI 30 - 3000K/90 CRI 35 - 3500K/90 CRI 40 - 4000K/90 CRI 50 - 5000K/90 CRI TW* - Tunable White RGBW* - RGB + 3000K *Must use DMX Driver (Remote)	<b>4 - LED SYSTEM</b> LTG1 - Standard LTG2 - Low LTG3 - High C - Custom Output (ie-C550Lm/ft)	<b>5 - VOLTAGE</b> UNV - Universal (120/277V)	<b>6 - DRIVER (Remote)</b> DB - Standard 10% Dimming (0-10V) DL1% - 1% Dimming (0-10V) DB.0% - .01% Dimming (0-10V) LTEA - Lutron 2-wire 1% Dimming L3DA - Lutron 3-wire 1% Dimming LDE1 - Lutron Digital EcoSystem LDE5 - 5 Series EcoSystem; 5% Dimming DMX - For Color Tuning and RGBW
<b>7 - FINISH</b> W - White (Standard) BLK - Black CC - Custom Color (provide RAL#)	<b>8 - MOUNTING</b> AC - Aircraft Cable (50") SM - Surface Mount WM - Wall Mount	<b>9 - OPTICS</b> SD - Standard Diffuser	<b>10 - CONTROL (Optional)</b> EIS - Integral Sensor by Enlighted WIS - Integral Sensor by Wattstopper	<b>11 - CIRCUIT (Optional)</b> EM 120V - Emergency Pack EM 277V - Emergency Pack	

DATE	PROJECT	FIRM	TYPE
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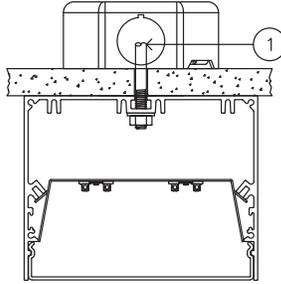
## MOUNTING OPTIONS

AC - Air Craft Cable (50")



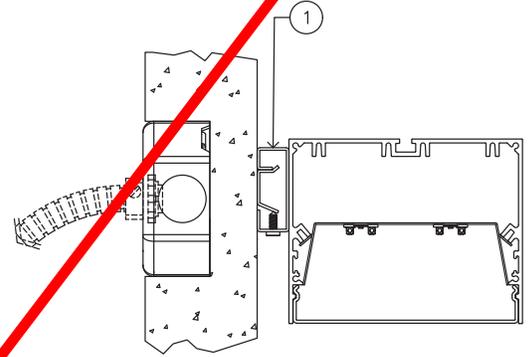
- 1 - 5" Round Canopy (Standard White Finish)
- 2 - Canopy Retainer
- 3 - SJT Cord (Standard White)
- 4 - Air Craft Cable
- 5 - Gripper

SM - Surface Mount



- 1 - Threaded Rod (not supplied)

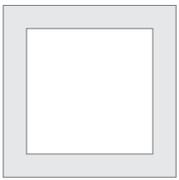
WM - Wall Mount



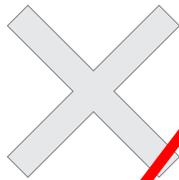
- 1 - 0.75" Wall Mount Bracket

## CORNERS & PATTERNS

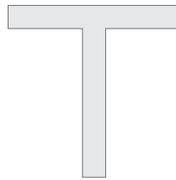
Available with illuminated corners, angles, and custom patterns. **Must consult factory for custom corners, patterns and elevations.**



Square Patterns



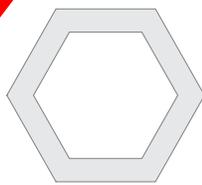
X Patterns



T Patterns



Custom Angles



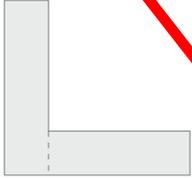
Custom Patterns



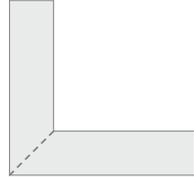
Custom Elevations

DATE	PROJECT	FIRM	TYPE
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LENS CUT OPTIONS



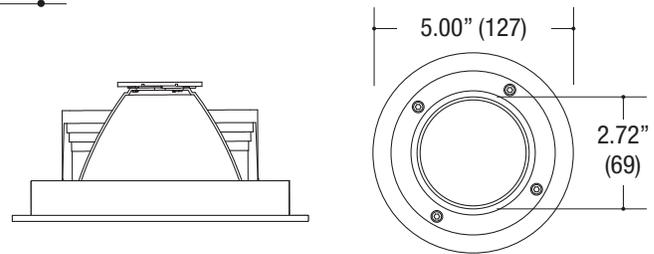
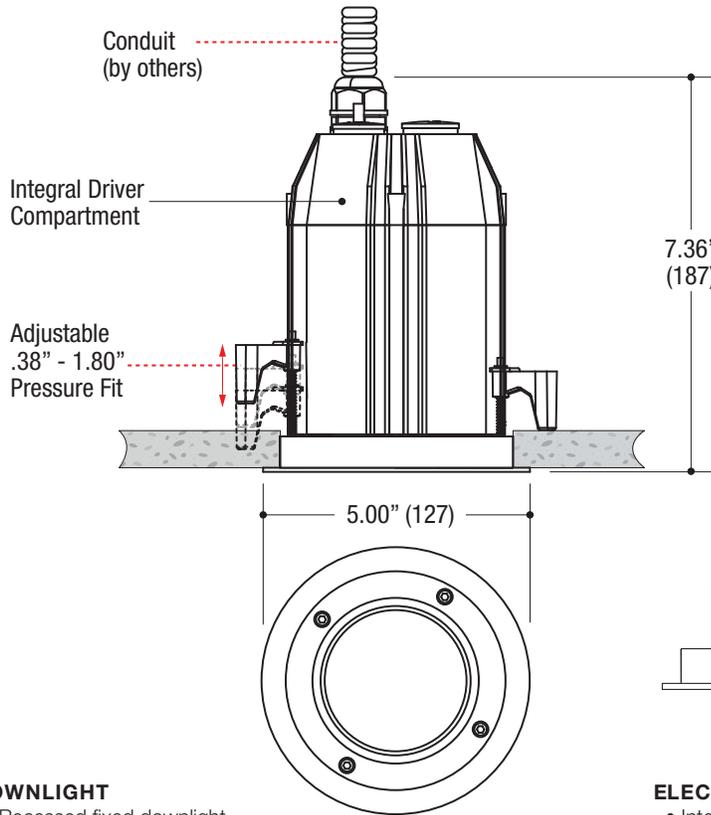
Straight-cut



Mitered Angle

NOTE: Straight-Cut is standard configuration. Mitered Angle is optional and must be specified.

PROJECT	TYPE	CATALOG NUMBER
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### DOWNLIGHT

- Recessed fixed downlight
- Die-cast aluminum trim
- Powder coat finish

### HOUSING

- Extruded aluminum central housing
- Powder coat finish
- Dust and water jet tight sealed
- **Ceiling Cut-Out - Ø4.65"**

### LED SOURCE

- Field-changeable optic
- **CREE**

### ELECTRICAL

- Integral LED driver included
- Primary wiring compartment with power supply
- Double cable entry for through wiring
- Superpure aluminum reflector
- Dimmable

### MOUNTING

- Swing out pressure fit mounting clips
- Adjustable up to 1.80" max. ceiling thickness

### LABELS

- Suitable for wet location
- **IP66 rated**



### ORDERING INFO

SERIES	WATTAGE	CRI / COLOR	BEAM	DRIVER / VOLTAGE	FINISH	OPTIONS
<b>5911-1AA-T</b>	<b>08C</b> 8W LED 1118lm	<b>8027</b> 80CRI / 2700K <b>8030</b> 80CRI / 3000K	<b>N</b> Narrow 15° <b>M</b> Medium 36° <b>W</b> Wide 46° <b>V</b> Very Wide 67°	<b>DMU</b> Dimming Multiple Forward/Reverse Phase (@ 120V only) 0-10V Wires Present (@ 120-277V)	<b>SS</b> Silver	<b>EM</b> Remotely Mounted Emergency LED Inverter (Field wiring required)
<b>BULLET MINI</b> Die-Cast Aluminum Trim Fixed Downlight Trimmed Fixture	<b>13C</b> 13W LED 1505lm <b>19C</b> 19W LED 2028lm Delivered lumens @ 80CRI / 3000K Narrow Beam	<b>8035</b> 80CRI / 3500K <b>8040</b> 80CRI / 4000K <b>9227</b> 92CRI / 2700K <b>9230</b> 92CRI / 3000K <b>9235</b> 92CRI / 3500K <b>9240</b> 92CRI / 4000K				

Ordering Example: **5911-1AA-T-19C-8030-N-DMU-SS-EM**

# CTL8071

15W LED Track Fixture

**Alternate Lighting Package**

- X'd out fixtures are not accepted

## Specifications/Features

### Fixture

Small scale, 15W LED Cylinder Track Fixture delivering up to 1150 lumens. Constructed of extruded and machined aluminum, the heat-sink and integrated driver housing provide a sleek modern look, designed to quietly compliment any space. Dimming is standard. Precision aiming adjustment. 315° aiming horizontal rotation, 90° vertical rotation. Integral ON/OFF switch and track polarity indicator are standard. Will accept (1) LF18 Lens or a LA-35 Louver when used with the FA-17 Accessory Holder.

### Lamp

Light engine consists of a single, high lumen output multi-chip LED array. Available in the following color temperatures:  
2700K; CRI 80 min., 83 Typical  
3000K; CRI 80 min., 83 Typical  
3500K; CRI 80 min., 83 Typical  
Excellent fixture to fixture color consistency within a 2-step MacAdam Ellipse tolerance. Available in Spot (16°), Medium (20°) and Flood (38°) beam distributions. Each molded TIR optic has been optically engineered to provide a smooth uniform beam, maximizing output and minimizing glare. System designed and rated for 50,000 hours at 70% lumen maintenance.

### Electrical

15W Driver Specifications:  
Input Wattage 15W  
Input Voltage: 120VAC, 50/60Hz  
Dimming: Forward Phase (Incandescent)

### Warranty

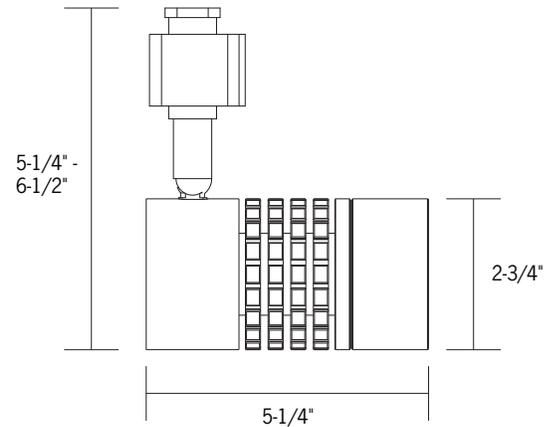
This complete fixture is covered by ConTech's full five (5) year replacement guarantee after date of purchase.

### Listing

cCSAus Certified

### Fixture Compatibility

Standard ConTech track fixtures are cCSAus Certified as-is for use with ConTech's many track systems, as well as with Juno<sup>®1</sup> Lighting track. By changing the prefix in the part number, ConTech can install inserts which make our fixtures compatible with other manufacturers. Replace "CTL" with "HTL" for Halo<sup>®2</sup> track, "LTL" for Lightolier<sup>®3</sup> track, and "PTL" for Capri<sup>®4</sup> track. For more information, please consult our factory.



## Ordering Information

Example Order:  -

Track System	Fixture	Beam	Color Temp	Dimming Option	Finish
	<b>8071</b>				
<b>CTL</b> - ConTech <b>HTL</b> - Halo <b>LTL</b> - Lightolier <b>PTL</b> - Capri	<b>8071</b> - 15W	<b>S</b> - Spot <b>M</b> - Medium <b>F</b> - Flood	<b>27</b> - 2700K <b>3</b> - 3000K <b>35</b> - 3500K	<b>D</b> - Dimming	<b>B</b> - Black <b>P</b> - White <b>S</b> - Silver

### Accessories

**FA-17-(B,P,S)** - Accessory Holder  
**BD17-B** - Black Barn Doors  
**LA-35** - Black Honeycomb Louver  
**LF18 - A, B, CL, G, LB, R, RO, Y, 73, LS, SL, UV**  
3-1/16" Dia. Tempered Glass Lenses

*Color/Pattern Legend*  
**-A** (Amber), **-B** (Blue), **-CL** (Clear),  
**-G** (Green), **-LB** (Light Blue), **-R** (Red),  
**-RO** (Rose), **-Y** (Yellow), **-73** (Spread Lens),  
**-LS** (Linear Spread Lens), **-SL** (Soft Light),  
**-UV** (Optivex UV Filter)

1. Juno is a registered trademark of Juno Lighting  
2. Halo is a registered trademark of Cooper Lighting  
3. Lightolier is a registered trademark of Philips Lighting  
4. Capri is a registered trademark of Philips Lighting

# CTL8071

## 15W LED Track Fixture

### Photometrics

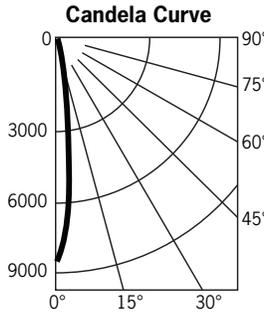
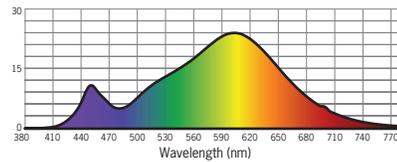
Lumen output values fluctuate based on CCT and CRI. To estimate lumen output of the various CCT/CRI options, multiply 3000K (80 CRI min) results by the following:

CCT	Standard CRI
2700K	.935
3000K	N/A
3500K	1.0

### CTL8071S3D

Designed for 50,000 Hour Lamp Life<sup>1</sup>; LM-63 Test No. 82604

**Light Output (Fixture Delivered Lumens):** 1196  
**Total Watts@120V:** 14.1; **Lumens Per Watt:** 84.8  
**Center Beam Candle Power:** 8601  
**Color Rendering Index (CRI)<sup>2</sup>:** 83  
**Color Temperature (CCT)<sup>3</sup>:** 3065K Warm White  
**Spectral Power Distribution Chart<sup>4</sup>**  
 LM-79 Test No. 82609



#### Candlepower Summary

FROM 0	CANDELA	LUMENS
0	8601	
5	6517	503
15	1386	396
25	269	134
35	113	73
45	50	40
55	29	26
65	16	16
75	6	6
85	1	1
95	0	

#### Intensity Distribution

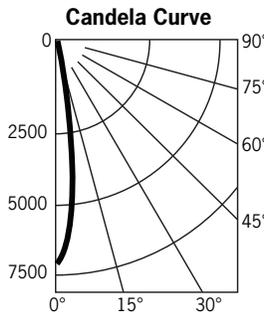
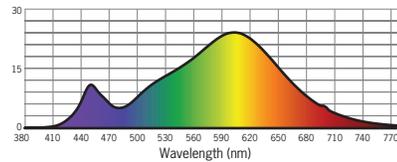
DISTANCE (FT.)	FOOTCANDLES (FC)	BEAM DIAMETER (FT.)
6'	238.9	1.6
8'	134.4	2.2
10'	86.0	2.7
12'	59.7	3.3
14'	43.9	3.8
16'	33.6	4.4

**Beam Distribution: 16°**

### CTL8071M3D

Designed for 50,000 Hour Lamp Life<sup>1</sup>; LM-63 Test No. 82605

**Light Output (Fixture Delivered Lumens):** 1149  
**Total Watts@120V:** 13.6; **Lumens Per Watt:** 84.5  
**Center Beam Candle Power:** 6893  
**Color Rendering Index (CRI)<sup>2</sup>:** 83  
**Color Temperature (CCT)<sup>3</sup>:** 3063K Warm White  
**Spectral Power Distribution Chart<sup>4</sup>**  
 LM-79 Test No. 82610



#### Candlepower Summary

FROM 0	CANDELA	LUMENS
0	6893	
5	5482	445
15	1417	408
25	306	150
35	105	69
45	44	35
55	26	24
65	13	13
75	5	5
85	1	1
95	0	

#### Intensity Distribution

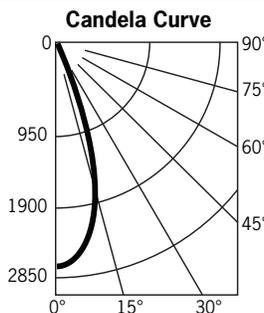
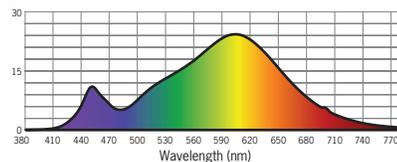
DISTANCE (FT.)	FOOTCANDLES (FC)	BEAM DIAMETER (FT.)
6'	191.5	1.9
8'	107.7	2.5
10'	68.9	3.2
12'	47.9	3.8
14'	35.2	4.4
16'	26.9	5.1

**Beam Distribution: 19°**

### CTL8071F3D

Designed for 50,000 Hour Lamp Life<sup>1</sup>; LM-63 Test No. 82606

**Light Output (Fixture Delivered Lumens):** 1176  
**Total Watts@120V:** 13.6; **Lumens Per Watt:** 86.5  
**Center Beam Candle Power:** 2808  
**Color Rendering Index (CRI)<sup>2</sup>:** 83  
**Color Temperature (CCT)<sup>3</sup>:** 3074K Warm White  
**Spectral Power Distribution Chart<sup>4</sup>**  
 LM-79 Test No. 82611



#### Candlepower Summary

FROM 0	CANDELA	LUMENS
0	2808	
5	2676	244
15	1711	464
25	560	270
35	166	108
45	53	44
55	28	25
65	15	15
75	6	6
85	1	1
95	0	

#### Intensity Distribution

DISTANCE (FT.)	FOOTCANDLES (FC)	BEAM DIAMETER (FT.)
6'	78.0	3.4
8'	43.9	4.6
10'	28.1	5.7
12'	19.5	6.9
14'	14.3	8.0
16'	11.0	9.2

**Beam Distribution: 35°**

1. Dependent on surrounding temperatures  
 2. Accuracy of rendering colors  
 3. Color appearance of light source  
 4. Colors present within the light source

# Alternate Lighting Package

- X'd out fixtures are not accepted

PROJECT NAME:

Claymont  
Elementary  
School TYPE N

PROJECT TYPE:

## SOLID STATE AREA LIGHTING

# RAZAR WALLMOUNT-LED

## SPECIFICATIONS

### OPTICAL HOUSING

Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly with integral cooling fins. The Optical Panel mounting surface is milled flat (surface variance  $\pm .003$ " ) to facilitate thermal transfer of heat to housing and cooling fins. The Optical Housing bolts to the Electrical Housing forming a unified assembly. The minimum wall thickness is .188".

### ELECTRICAL HOUSING

Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly. Minimum wall thickness is .188". Fixture Mounting Plate affixes to mounting surface over a recessed j-box. Electrical Housing anchors on the top edge of the Mounting Plate and stainless steel recessed socket head screws tighten the Electrical Housing to the Mounting Plate from the bottom.

### PLED™ OPTICAL MODULES

Emitters (LED's) are arrayed on a metal core PCB panel with each emitter located on a copper thermal transfer pad and enclosed by an LED refractor. The asymmetric distributions, have a micro-reflector inside the refractor which re-directs the house side emitter output towards the street side and functions as a house side shielding element. Refractors are injection molded H12 acrylic. Each LED refractor is sealed to the PCB over an emitter and all refractors are retained by an aluminum frame. Any one Panel, or group of Panels in a luminaire, have the same optical pattern. LED refractors produce Type II, III, and Type IV site/area distributions as well as other specialty asymmetric distributions. Panels are field replaceable and field rotatable in 90° increments.

### LED DRIVER(S)

Constant current electronic with a power factor of >.90 and a minimum operating temperature of -30°C/-22°F Driver(s) is/are UL and cUL recognized and mounted to a driver assembly plate that has slotted holes to facilitate ease of assembly removal for fixture installation. Quick disconnects for incoming power and optical assembly power are provided. Drivers accept an input of 120-277V, 50/60Hz and utilize 0-10V dimming. 347V-480V, 50,60Hz also available on some models. Surge protector supplied for field installation at the most conveniently serviceable location.

### LED EMITTERS

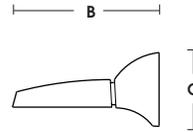
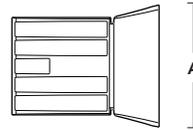
High output LED's are utilized with drive currents ranging from 350mA to 1050mA. 70CRI Minimum. LED's are available in standard Neutral White (4000K), or optional Cool White (5000K) or Warm White (3000K). Consult Factory for other LED options.

### AMBER LED's

**PCA** (Phosphor Converted Amber) LED's utilize phosphors to create color output similar to LPS lamps and have a slight output in the blue spectral bandwidth. **TRA** (True Amber) LED's utilize material that emits light in the amber spectral bandwidth only without the use of phosphors.

### FINISH

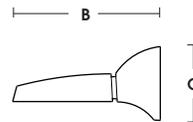
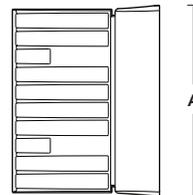
Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.



FIXTURE	A	B	C
RZRW1	8.75" (22mm)	12" (305mm)	6" (152mm)
RZRW1-EM	11" (279mm)	14" (356mm)	6.5" (165mm)

## RZR-WM1

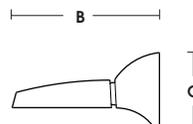
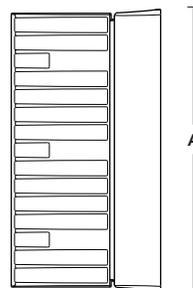
PATENT PENDING



FIXTURE	A	B	C
RZRW2	16" (406mm)	12" (305mm)	6" (152mm)
RZRW2-EM	16" (406mm)	14" (356mm)	6.5" (165mm)

## RZR-WM2

PATENT PENDING



FIXTURE	A	B	C
RZRW3	23" (584mm)	12" (305mm)	6" (152mm)
RZRW3-EM	23" (584mm)	14" (356mm)	6.5" (165mm)

## RZR-WM3

PATENT PENDING



2018002



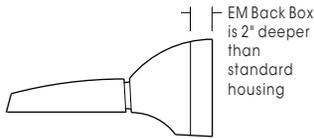
# Alternate Lighting Package

- X'd out fixtures are not accepted

# RAZAR WALL MOUNTED EMERGENCY SERIES-LED

## S P E C I F I C A T I O N S

### EMERGENCY OPTION



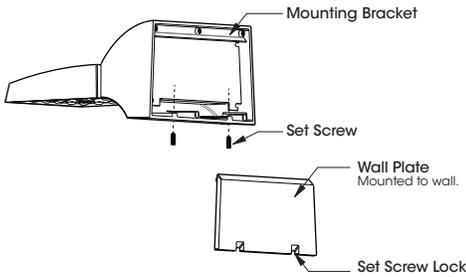
THE EMERGENCY OPTION BACK BOX EXTENDS 2" BEYOND THE STANDARD HOUSING AND CONTAINS THE EMERGENCY COMPONENTS (EC) INCLUDING BATTERIES.

THE EM-LED SYSTEM PROVIDES POWER TO ALL LEDS IN THE ARRAY (20, 40, or 60) TO MEET THE FOLLOWING LIGHT LEVELS FOR A MINIMUM OF 90 MINUTES -

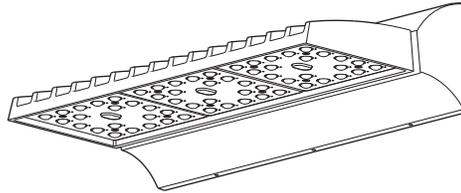
- WM1 = 45% @ 350MA
- WM2 = 36% @ 350MA
- WM3 = 24% @ 350MA

\* MULTIPLY THE % ABOVE BY THE LUMEN OUTPUT @ 350MA

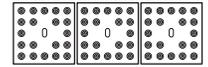
### WALL MOUNTING



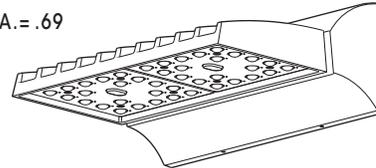
### PLED® MODULES



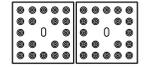
**RZR-WM3-LED** E.P.A. = .69  
Available in:  
60 LED Module



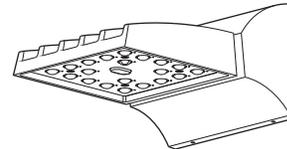
60 LED Module



**RZR-WM2-LED** E.P.A. = .47  
Available in:  
40 LED Module



40 LED Module



**RZR-WM1-LED** E.P.A. = .33  
Available in:  
20 LED Module



20 LED Module

### MAX INPUT WATTAGE

# OF LED's	DRIVE CURRENT			
	350mA	525mA	700mA	1050mA
60	68W	99W	131W	198W
40	45W	66W	87W	134W
20	23W	33W	44W	66W

Spec/Order Example: RZR-WM2/PLED-IV/40LED-700mA/CW/277/RAL-8019-S/SF

## S P E C / O R D E R I N G I N F O R M A T I O N

MODEL	OPTICS	LED MODE			VOLTAGE	FINISH	OPTIONS
MODEL	OPTICS	LED MODE			VOLTAGE	FINISH	OPTIONS
<input type="checkbox"/> RZR-WM1	<b>PLED® DISTRIBUTION TYPE</b> <input type="checkbox"/> TYPE II PLED-II ..... <input type="checkbox"/> TYPE II FRONT ROW PLED-II-FR ..... <input type="checkbox"/> <b>RZR-WM2</b> TYPE III PLED-III ..... <input type="checkbox"/> TYPE III WIDE PLED-III-W ..... <input type="checkbox"/> RZR-WM3 TYPE IV PLED-IV ..... <input type="checkbox"/> TYPE IV-FT PLED-IV-FT .....	<b>NO. LED's</b> <input type="checkbox"/> 20LED  <input type="checkbox"/> <b>RZR-WM2</b> <input type="checkbox"/> 40LED  <input type="checkbox"/> RZR-WM3 <input type="checkbox"/> 60LED	<b>DRIVE CURRENT</b> <input type="checkbox"/> 350mA <input type="checkbox"/> 525mA <input type="checkbox"/> 700mA <sup>1</sup> <input type="checkbox"/> 1050mA <sup>1</sup>	<b>COLOR TEMP - CCT</b> <input type="checkbox"/> NW (4000K) *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K)  CONSULT FACTORY FOR OTHER LED COLORS  AMBER <sup>2</sup> <input type="checkbox"/> PHOSPHOR CONVERTED AMBER PCA <input type="checkbox"/> TRUE AMBER <sup>3</sup> TRA	<input type="checkbox"/> 120 <input type="checkbox"/> 208 <input type="checkbox"/> 240 <input type="checkbox"/> 277 <input type="checkbox"/> 347 <input type="checkbox"/> 480	<b>STANDARD TEXTURED FINISH</b> <input type="checkbox"/> BLACK RAL-9005-T <input type="checkbox"/> WHITE RAL-9003-T <input type="checkbox"/> GREY RAL-7004-T <input type="checkbox"/> DARK BRONZE RAL-8019-T <input type="checkbox"/> GREEN RAL-6005-T  FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH SUFFIX "S" (EXAMPLE: RAL-9005-S)  CONSULT FACTORY FOR CUSTOM COLORS	<input type="checkbox"/> HIGH-LOW DIMMING FOR EXTERNAL CONTROL... HLSW <input type="checkbox"/> HOUSE SIDE SHIELDING ..... HS-PLED <input type="checkbox"/> PHOTO CELL + VOLTAGE (EXAMPLE: PC120V)... PC+V <input type="checkbox"/> SINGLE FUSE (120V & 277V)... SF <input type="checkbox"/> DOUBLE FUSE (208V & 240V)... DF <input type="checkbox"/> EMERGENCY BACKUP 1... EM1 <input type="checkbox"/> EMERGENCY BACKUP 1 (HOUSING ONLY)... EMH1 <input type="checkbox"/> EMERGENCY BACKUP 2... EM2 <input type="checkbox"/> EMERGENCY BACKUP 3... EM3 <input type="checkbox"/> SURFACE CONDUIT 1... SC1 <input type="checkbox"/> SURFACE CONDUIT 2... SC2 <input type="checkbox"/> SURFACE CONDUIT 3... SC3
<b>NOTES:</b> 1 - 700mA and 1050mA NOT FOR USE WITH TRA LED'S 2 - NARROW BAND AMBERS HAVE NO DEFINABLE CCT EQUIVALENT 3 - AVAILABLE IN 350mA & 525mA DRIVE CURRENTS ONLY							



# Alternate Lighting Package

- X'd out fixtures are not accepted

LED COUNT	SOURCE TYPE	SOURCE	INITIAL LUMENS - 4000K	INITIAL LUMENS - 3000K	INITIAL LUMENS - 5000K	L70 GREATER THAN (HR)-TM21	STARTING TEMP.	SYSTEM WATTS	VOLTS	MAX INPUT AMPS
20	LED	20 PLED® Optical Module - 350mA	2,501 - 2,789	2,189 - 2,442	2,561 - 2,857	60,000+	-20°F	23	120 277	0.24 0.10
20	LED	20 PLED® Optical Module - 525mA	3,523 - 3,930	3,085 - 3,441	3,608 - 4,025	60,000+	-20°F	33	120 277	0.34 0.15
20	LED	20 PLED® Optical Module - 700mA	4,411 - 4,920	3,862 - 4,308	4,517 - 5,039	60,000+	-20°F	44	120 277	0.45 0.20
20	LED	20 PLED® Optical Module - 1050mA	5,797 - 6,466	5,075 - 5,661	5,937 - 6,622	60,000+	-20°F	66	120 277	0.68 0.30
40	LED	40 PLED® Optical Module - 350mA	5,002 - 5,579	4,379 - 4,884	5,122 - 5,713	60,000+	-20°F	45	120 277	0.38 0.17
40	LED	40 PLED® Optical Module - 525mA	7,047 - 7,860	6,170 - 6,881	7,216 - 8,049	60,000+	-20°F	66	120 277	0.55 0.24
40	LED	40 PLED® Optical Module - 700mA	8,822 - 9,840	7,724 - 8,615	9,034 - 10,077	60,000+	-20°F	87	120 277	0.73 0.32
40	LED	40 PLED® Optical Module - 1050mA	11,594 - 12,932	10,150 - 11,322	11,872 - 13,244	60,000+	-20°F	134	120 277	1.12 0.49
60	LED	60 PLED® Optical Module - 350mA	7,502 - 8,368	6,568 - 7,326	7,683 - 8,570	60,000+	-20°F	68	120 277	0.46 0.20
60	LED	60 PLED® Optical Module - 525mA	10,570 - 11,790	9,254 - 10,322	10,824 - 12,074	60,000+	-20°F	99	120 277	0.68 0.30
60	LED	60 PLED® Optical Module - 700mA	13,233 - 14,760	11,586 - 12,923	13,552 - 15,116	60,000+	-20°F	131	120 277	0.88 0.38
60	LED	60 PLED® Optical Module - 1050mA	17,391 - 19,398	15,226 - 16,983	17,810 - 19,866	60,000+	-20°F	198	120 277	1.31 0.57

### NOTES:

1. Max Input Amps is the highest of starting, operating, or open circuit currents
2. Lumen values for LED Modules vary according to the distribution type
3. System Watts includes the source watts and all driver components.
4. Fuse value should be sufficient to protect all wiring components.
5. L70(10K) - TM-21 6x rule applied

L70(10K) - Calculated = 244,000 @ 700mA  
= 102,000@ 1050mA

**WARNING:** All fixtures must be installed in accordance with local codes or the National Electrical Code. Failure to do so may result in serious personal injury.

- 1) Max Input Amps is the highest of starting, operating, or open circuit currents
  - 2) Lumen values for LED Modules vary according to the distribution type
  - 3) System Watts includes the source watts and all driver components.
  - 4) Fuse value should be sufficient to protect all wiring components.
  - 5) L70(10K) - TM-21 6x rule applied
- L70(10K) - Calculated = 244,000 @ 700mA  
= 102,000@ 1050mA



# Alternate Lighting Package

- X'd out fixtures are not accepted

SOLID STATE AREA LIGHTING

PROJECT NAME:

Claymont  
Elementary  
School TYPE N1

PROJECT TYPE:

## RAZAR WALLMOUNT-LED

### SPECIFICATIONS

#### OPTICAL HOUSING

Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly with integral cooling fins. The Optical Panel mounting surface is milled flat (surface variance  $\pm .003"$ ) to facilitate thermal transfer of heat to housing and cooling fins. The Optical Housing bolts to the Electrical Housing forming a unified assembly. The minimum wall thickness is .188".

#### ELECTRICAL HOUSING

Heavy cast low copper aluminum (A356 alloy; <0.2% copper) assembly. Minimum wall thickness is .188". Fixture Mounting Plate affixes to mounting surface over a recessed j-box. Electrical Housing anchors on the top edge of the Mounting Plate and stainless steel recessed socket head screws tighten the Electrical Housing to the Mounting Plate from the bottom.

#### PLED™ OPTICAL MODULES

Emitters (LED's) are arrayed on a metal core PCB panel with each emitter located on a copper thermal transfer pad and enclosed by an LED refractor. The asymmetric distributions, have a micro-reflector inside the refractor which re-directs the house side emitter output towards the street side and functions as a house side shielding element. Refractors are injection molded H12 acrylic. Each LED refractor is sealed to the PCB over an emitter and all refractors are retained by an aluminum frame. Any one Panel, or group of Panels in a luminaire, have the same optical pattern. LED refractors produce Type II, III, and Type IV site/area distributions as well as other specialty asymmetric distributions. Panels are field replaceable and field rotatable in 90° increments.

#### LED DRIVER(S)

Constant current electronic with a power factor of >.90 and a minimum operating temperature of -30°C/-22°F Driver(s) is/are UL and cUL recognized and mounted to a driver assembly plate that has slotted holes to facilitate ease of assembly removal for fixture installation. Quick disconnects for incoming power and optical assembly power are provided. Drivers accept an input of 120-277V, 50/60Hz and utilize 0-10V dimming. 347V-480V, 50,60Hz also available on some models. Surge protector supplied for field installation at the most conveniently serviceable location.

#### LED EMITTERS

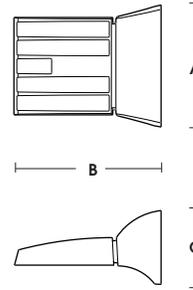
High output LED's are utilized with drive currents ranging from 350mA to 1050mA. 70CRI Minimum. LED's are available in standard Neutral White (4000K), or optional Cool White (5000K) or Warm White (3000K). Consult Factory for other LED options.

#### AMBER LED's

**PCA** (Phosphor Converted Amber) LED's utilize phosphors to create color output similar to LPS lamps and have a slight output in the blue spectral bandwidth. **TRA** (True Amber) LED's utilize material that emits light in the amber spectral bandwidth only without the use of phosphors.

#### FINISH

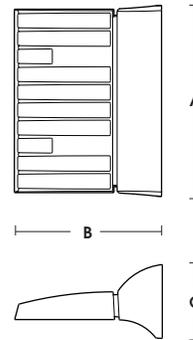
Electrostatically applied TGIC Polyester Powder Coat on substrate prepared with 20 PSI power wash at 140°F. Four step media blast and iron phosphate pretreatment for protection and paint adhesion. 400°F bake for maximum hardness and durability.



FIXTURE	A	B	C
RZRW1	8.75" (222mm)	12" (305mm)	6" (152mm)
RZRW1-EM	11" (279mm)	14" (356mm)	6.5" (165mm)

### RZR-WM1

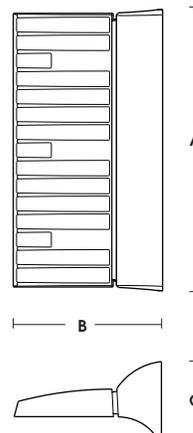
PATENT PENDING



FIXTURE	A	B	C
RZRW2	16" (406mm)	12" (305mm)	6" (152mm)
RZRW2-EM	16" (406mm)	14" (356mm)	6.5" (165mm)

### RZR-WM2

PATENT PENDING



FIXTURE	A	B	C
RZRW3	23" (584mm)	12" (305mm)	6" (152mm)
RZRW3-EM	23" (584mm)	14" (356mm)	6.5" (165mm)

### RZR-WM3

PATENT PENDING



2018002



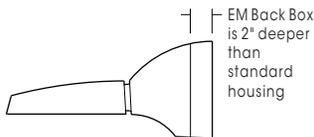
# Alternate Lighting Package

- X'd out fixtures are not accepted

# RAZAR WALLMOUNTED SERIES-LED

## SPECIFICATIONS

### EMERGENCY OPTION



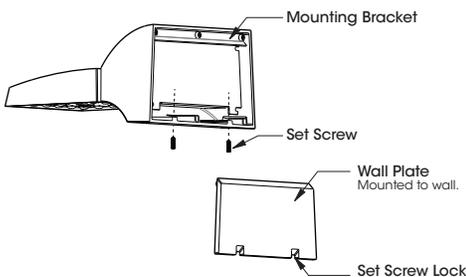
THE EMERGENCY OPTION BACK BOX EXTENDS 2" BEYOND THE STANDARD HOUSING AND CONTAINS THE EMERGENCY COMPONENTS (EC) INCLUDING BATTERIES.

THE EM-LED SYSTEM PROVIDES POWER TO ALL LEDS IN THE ARRAY (20, 40, or 60) TO MEET THE FOLLOWING LIGHT LEVELS FOR A MINIMUM OF 90 MINUTES -

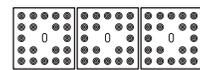
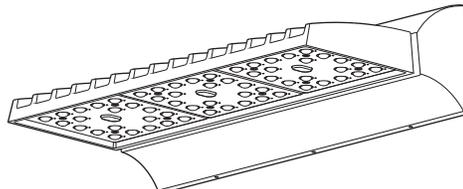
- WM1 = 45% @ 350MA
- WM2 = 36% @ 350MA
- WM3 = 24% @ 350MA

\* MULTIPLY THE % ABOVE BY THE LUMEN OUTPUT @ 350MA

### WALL MOUNTING

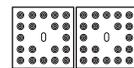
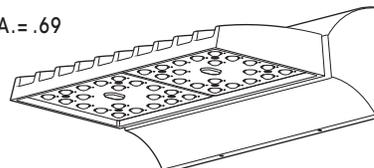


### PLED® MODULES



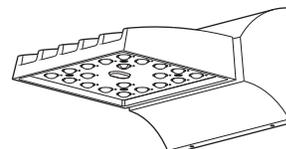
60 LED Module

**RZR-WM3-LED** E.P.A. = .69  
Available in:  
60 LED Module



40 LED Module

**RZR-WM2-LED** E.P.A. = .47  
Available in:  
40 LED Module



20 LED Module

**RZR-WM1-LED** E.P.A. = .33  
Available in:  
20 LED Module

### MAX INPUT WATTAGE

# OF LED's	DRIVE CURRENT			
	350mA	525mA	700mA	1050mA
60	68W	99W	131W	198W
40	45W	66W	87W	134W
20	23W	33W	44W	66W

Spec/Order Example: RZR-WM2/PLED-IV/40LED-700mA/CW/277/RAL-8019-S/SF

## SPEC / ORDERING INFORMATION

MODEL	OPTICS	LED MODE			VOLTAGE	FINISH	OPTIONS
<input type="checkbox"/> RZR-WM1	<input type="checkbox"/> TYPE II <b>PLED-II</b> ..... <input type="checkbox"/> TYPE II FRONT ROW <b>PLED-II-FR</b> .....	<b>RZR-WM1</b> <input type="checkbox"/> 20LED	<input type="checkbox"/> 350mA <input type="checkbox"/> 525mA <input type="checkbox"/> 700mA <sup>1</sup>	<input type="checkbox"/> <b>NW (4000K)</b> *STANDARD <input type="checkbox"/> CW (5000K) <input type="checkbox"/> WW (3000K)	<input type="checkbox"/> 120 <input type="checkbox"/> 208 <input type="checkbox"/> 240 <input type="checkbox"/> 277 <input type="checkbox"/> 347 <input type="checkbox"/> 480	<input type="checkbox"/> BLACK <b>RAL-9005-T</b>  <input type="checkbox"/> WHITE <b>RAL-9003-T</b>  <input type="checkbox"/> GREY <b>RAL-7004-T</b>  <input type="checkbox"/> DARK BRONZE <b>RAL-8019-T</b>  <input type="checkbox"/> GREEN <b>RAL-6005-T</b>  FOR SMOOTH FINISH REPLACE SUFFIX "T" WITH SUFFIX "S" (EXAMPLE: RAL-9005-S)	<input type="checkbox"/> HIGH-LOW DIMMING FOR EXTERNAL CONTROL... <b>HLSW</b> <input type="checkbox"/> HOUSE SIDE SHIELDING ..... <b>HS-PLED</b> <input type="checkbox"/> PHOTO CELL + VOLTAGE (EXAMPLE: PC120V) ... <b>PC+V</b> <input type="checkbox"/> SINGLE FUSE (120V & 277V) ..... <b>SF</b> <input type="checkbox"/> DOUBLE FUSE (208V & 240V) ..... <b>DF</b> <input type="checkbox"/> EMERGENCY BACKUP 1... <b>EM1</b> <input type="checkbox"/> EMERGENCY BACKUP 1 (HOUSING ONLY) ... <b>EMH1</b> <input type="checkbox"/> EMERGENCY BACKUP 2... <b>EM2</b> <input type="checkbox"/> EMERGENCY BACKUP 3... <b>EM3</b> <input type="checkbox"/> SURFACE CONDUIT 1... <b>SC1</b> <input type="checkbox"/> SURFACE CONDUIT 2... <b>SC2</b> <input type="checkbox"/> SURFACE CONDUIT 3... <b>SC3</b>
<input type="checkbox"/> RZR-WM2	<input type="checkbox"/> TYPE III <b>PLED-III</b> ..... <input type="checkbox"/> TYPE III WIDE <b>PLED-III-W</b> .....	<b>RZR-WM2</b> <input type="checkbox"/> 40LED	<input type="checkbox"/> 1050mA <sup>1</sup>	CONSULT FACTORY FOR OTHER LED COLORS  AMBER <sup>2</sup> <input type="checkbox"/> PHOSPHOR CONVERTED AMBER PCA  <input type="checkbox"/> TRUE AMBER <sup>3</sup> TRA			
<input type="checkbox"/> <b>RZR-WM3</b>	<input type="checkbox"/> TYPE IV <b>PLED-IV</b> ..... <input type="checkbox"/> TYPE IV-FT <b>PLED-IV-FT</b> .....	<b>RZR-WM3</b> <input type="checkbox"/> 60LED					

NOTES:  
 1 - 700mA and 1050mA NOT FOR USE WITH TRA LED'S  
 2 - NARROW BAND AMBERS HAVE NO DEFINABLE CCT EQUIVALENT  
 3 - AVAILABLE IN 350mA & 525mA DRIVE CURRENTS ONLY



# Alternate Lighting Package

- X'd out fixtures are not accepted

LED COUNT	SOURCE TYPE	SOURCE	INITIAL LUMENS - 4000K	INITIAL LUMENS - 3000K	INITIAL LUMENS - 5000K	L70 GREATER THAN (HR)-TM21	STARTING TEMP.	SYSTEM WATTS	VOLTS	MAX INPUT AMPS
20	LED	20 PLED® Optical Module - 350mA	2,501 - 2,789	2,189 - 2,442	2,561 - 2,857	60,000+	-20°F	23	120 277	0.24 0.10
20	LED	20 PLED® Optical Module - 525mA	3,523 - 3,930	3,085 - 3,441	3,608 - 4,025	60,000+	-20°F	33	120 277	0.34 0.15
20	LED	20 PLED® Optical Module - 700mA	4,411 - 4,920	3,862 - 4,308	4,517 - 5,039	60,000+	-20°F	44	120 277	0.45 0.20
20	LED	20 PLED® Optical Module - 1050mA	5,797 - 6,466	5,075 - 5,661	5,937 - 6,622	60,000+	-20°F	66	120 277	0.68 0.30
40	LED	40 PLED® Optical Module - 350mA	5,002 - 5,579	4,379 - 4,884	5,122 - 5,713	60,000+	-20°F	45	120 277	0.38 0.17
40	LED	40 PLED® Optical Module - 525mA	7,047 - 7,860	6,170 - 6,881	7,216 - 8,049	60,000+	-20°F	66	120 277	0.55 0.24
40	LED	40 PLED® Optical Module - 700mA	8,822 - 9,840	7,724 - 8,615	9,034 - 10,077	60,000+	-20°F	87	120 277	0.73 0.32
40	LED	40 PLED® Optical Module - 1050mA	11,594 - 12,932	10,150 - 11,322	11,872 - 13,244	60,000+	-20°F	134	120 277	1.12 0.49
60	LED	60 PLED® Optical Module - 350mA	7,502 - 8,368	6,568 - 7,326	7,683 - 8,570	60,000+	-20°F	68	120 277	0.46 0.20
60	LED	60 PLED® Optical Module - 525mA	10,570 - 11,790	9,254 - 10,322	10,824 - 12,074	60,000+	-20°F	99	120 277	0.68 0.30
60	LED	60 PLED® Optical Module - 700mA	13,233 - 14,760	11,586 - 12,923	13,552 - 15,116	60,000+	-20°F	131	120 277	0.88 0.38
60	LED	60 PLED® Optical Module - 1050mA	17,391 - 19,398	15,226 - 16,983	17,810 - 19,866	60,000+	-20°F	198	120 277	1.31 0.57

**NOTES:**

1. Max Input Amps is the highest of starting, operating, or open circuit currents
2. Lumen values for LED Modules vary according to the distribution type
3. System Watts includes the source watts and all driver components.
4. Fuse value should be sufficient to protect all wiring components.
5. L70(10K) - TM-21 6x rule applied  
L70(10K) - Calculated = 244,000 @ 700mA  
= 102,000@ 1050mA

**WARNING:** All fixtures must be installed in accordance with local codes or the National Electrical Code. Failure to do so may result in serious personal injury.

- 1) Max Input Amps is the highest of starting, operating, or open circuit currents
- 2) Lumen values for LED Modules vary according to the distribution type
- 3) System Watts includes the source watts and all driver components.
- 4) Fuse value should be sufficient to protect all wiring components.
- 5) L70(10K) - TM-21 6x rule applied  
L70(10K) - Calculated = 244,000 @ 700mA  
= 102,000@ 1050mA



# Alternate Lighting Package

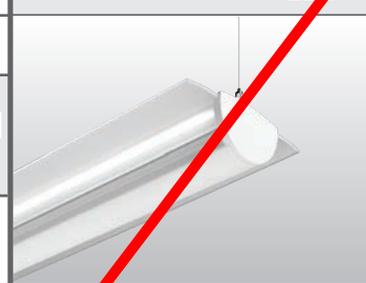
- X'd out fixtures are not accepted

Claymont  
Elementary  
School TYPE O

## SUSPENDED INDIRECT ARCHITECTURAL – GULLWING

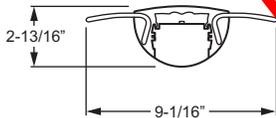
# SIA3

LED



CATALOG #:	TYPE:							
PROJECT:	NOTES:							
<b>EXAMPLE</b> <b>SIA3 - GW - 4 - L20/835 - AC/D48 - OPTIONS - DRV - UNV</b>								
SERIES	FIXTURE STYLE	NOMINAL LENGTH	LUMEN PACKAGE	CRI & CCT	MOUNTING	OPTIONS	DRIVER	VOLTAGE

### CROSS SECTION



### ORDERING INFORMATION

**SERIES**  
**SIA3** Suspended Indirect Architectural – Gullwing

**FIXTURE STYLE**  
**GW** Gullwing

**NOMINAL LENGTH**  
**Stand-alone** – 4' & 8' nominal lengths, fixture ships assembled. Example: 4 = 4'.  
**Row-mount** – Lengths specified in 4' increments. Example: 12 = 12'.

**PRODUCT BUILDER**  
Simplify ordering & layout design with the Williams Linear Product Builder at [hew.com](http://hew.com)

**LED PACKAGE**

Example: L20/835			
LUMEN PACKAGE	NOMINAL LUMENS PER FOOT	MINIMUM CRI & CCT	WATTAGE PER FOOT
<b>L10</b>	<b>1,000</b>	<b>830 = 80 CRI, 3000K</b>	<b>8.1</b>
<b>L15</b>	1,500	<b>835 = 80 CRI, 3500K</b>	12.2
<b>L20</b>	2,000	<b>840 = 80 CRI, 4000K</b>	16.3

Nominal lumen output based on 3500 CCT. Actual lumens may vary +/-5%, see fixture performance data. Additional lumen packages available, see options.

**MOUNTING**  
See page 2 for details.

EXAMPLE: AC/D48		
MOUNTING	TYPE	LENGTH
<b>AC</b> = Aircraft	<b>D</b> = 1" grid & harmonic	<b>24 = 24"</b>
	<b>N</b> = 9/16" grid	<b>48 = 48"</b>
	<b>S</b> = Slot grid	<b>96 = 96"</b>

**OPTIONS**  
For color options, visit the SIA3 online at [hew.com](http://hew.com).  
**EM/10W REMOTE** Remote mount 10-watt emergency LED battery, 4' sections only (requires remote mounted LED driver, provided with remote mounting enclosure for installation in ceiling above fixture. Separate power and control wiring to remote box required. Consult factory for specifications; not available with OCC sensor)

**(L\_\_)** Additional lower lumen packages available. Specify in increments of 100 nominal lumens per foot. Option must be specified with next higher lumen package.  
**Example:** 1,600 nominal lumens = SIA3-GW-4-L20/835-(L16)  
**OCCWS FSP-201-L** Factory-installed occupancy sensor, 120V or 277V only, must specify L2 or L3 lens type. See page 3 for details (not available with EM/10W REMOTE)

**ACCESSORIES**  
**FCIR-100** Remote controller for occupancy sensor, specify quantity required per project.

**DRIVER**  
Additional dimming drivers available, see [Technical Information](#).  
**DRV** Driver prewired for non-dimming applications  
**DIM** Driver prewired for 0-10V low voltage dimming applications

**VOLTAGE**

<b>120</b>	120V
<b>277</b>	277V
<b>UNV</b>	120-277V
<b>347</b>	347V

### FEATURES

- Attractive, architectural details are captured in this compact suspended LED luminaire.
- Dramatic, illuminated, acrylic gullwing design element enhances and illuminates.
- Precision uplight optics provide soft, uniform indirect illumination.
- Designed for stand-alone and continuous row-mount applications.
- Multiple dimming protocols available.
- This fixture is proudly made in the USA.

# Alternate Lighting Package

- X'd out fixtures are not accepted

# SIA3

## SUSPENDED INDIRECT ARCHITECTURAL – GULLWING

### LED

### FIXTURE PERFORMANCE DATA

LED PACKAGE	WATTAGE	DELIVERED LUMENS	EFFICACY (lm/W)
4'			
L10	31.5	3836	121.8
L15	47.9	5753	120.1
L20	64.2	7670	119.5
8'			
L10	63.0	7671	121.8
L15	95.8	11507	120.1
L20	128.3	15841	123.5

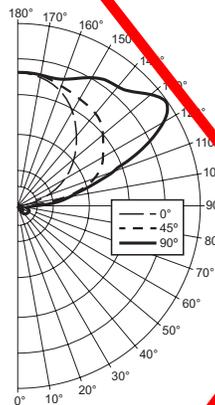
- Photometrics tested in accordance with IESNA LM-79. Results shown are based on 25°C ambient temperature.
- Wattage shown is average for 120V through 277V input.
- Results based on 3500K, 80 CRI, actual lumens may vary +/-5%
- Use multiplier table to calculate additional options.

### MULTIPLIER TABLE

COLOR TEMPERATURE	
CCT/CRI	CONVERSION FACTOR
3000K/80CRI	0.99
3500K/80CRI	1.00
4000K/80CRI	1.03
5000K/80CRI	1.06

### PHOTOMETRY

**SIA3-GW-4'-L20/835** Total Luminaire Output: 7670 lumens; 64 Watts | Efficacy: 119 lm/W | 82.8 CRI; 3500K CCT



Vertical Angle	Horizontal Angle			Zonal Lumens
	0°	45°	90°	
0	28	28	28	
5	29	28	29	3
15	26	33	48	10
25	24	46	71	22
35	24	61	105	40
45	24	80	143	62
55	22	88	164	81
65	15	87	163	87
75	8	74	135	76
85	5	62	132	86
90	9	161	201	
95	59	354	427	318
105	266	843	921	742
115	529	1202	1797	1175
125	806	1364	2357	1325
135	1067	1528	2106	1205
145	1300	1597	2001	1023
155	1500	1630	1832	768
165	1652	1707	1733	482
175	1736	1752	1735	166
180	1746	1746	1746	

LUMEN SUMMARY	Zone	Lumens	% Fixture
	0 - 30	35	1
	0 - 40	75	1
	0 - 60	217	3
	0 - 90	466	6
	90 - 120	2235	29
	90 - 150	5788	76
	90 - 180	7204	94
	0 - 180	7670	100

### SPECIFICATIONS

**Housing** – Extruded aluminum with milled aluminum end caps.

**Shielding** – Extruded frosted acrylic uplight lens with diffuse extruded frosted acrylic wing panels.

**Finish** – Textured matte white polyester TGIC powder coat bonded to phosphate-free, multi-stage pretreated metal. All parts painted after fabrication to facilitate installation, increase efficiency, and inhibit corrosion.

**Electrical** – High quality mid-power LED boards. L70 > 50,000 hours per IES TM-21.

**Mounting** – Suspended. 1/16" diameter adjustable steel leveling aircraft cable and mounting hardware necessary for grid or hard ceiling applications provided.

**Labels** – cETLus conforms to UL STD 1598. Certified to CAN/CSA STD C22.2 No. 250.0. Suitable for damp locations.

**Qualifications** – RoHS compliant.

**Warranty** – 5-year limited fixture warranty, see [hew.com/warranty](http://hew.com/warranty).

### IMPORTANT:

Electrostatic sensitive unit. Observe precautions when handling.

### FIXTURE DETAILS

MOUNTING INFORMATION (center to center mounting cable)		Nominal Length	A	B	C
		4'	46-1/8"	46-1/4"	47-1/16"
			93-3/16"	93-1/4"	94-1/8"
<b>STANDARD HARDWARE</b> (Grid and Hardpan)					
<b>FEEDER</b>		<b>JOINER</b>		<b>Notes:</b> <ul style="list-style-type: none"> <li>Fixtures are provided with adjustable length aircraft cables and mounting hardware, must specify.</li> <li>Electrical supply is brought into the feeder fixture, either as part of a row or as a stand-alone unit. Joiner fixtures complete the row.</li> <li>The feeder kits are standard with a 5" canopy to cover the junction box and a 2" canopy at the non-feed point. No junction box is required at non-feed points.</li> </ul>	

# Alternate Lighting Package

- X'd out fixtures are not accepted

## SUSPENDED INDIRECT ARCHITECTURAL – GULLWING

# SIA3

## LED

### INTEGRAL OCCUPANCY SENSOR DETAILS



**EXAMPLE** **OCCWS FSP-211 - L2**

OCCUPANCY  
SENSOR

LENS

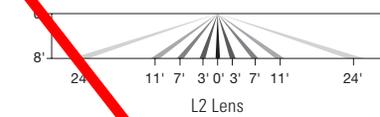
#### ORDERING INFORMATION

**OCCWS FSP-211-\_\_** Factory-installed occupancy sensor, must specify lens (120V or 277V only)

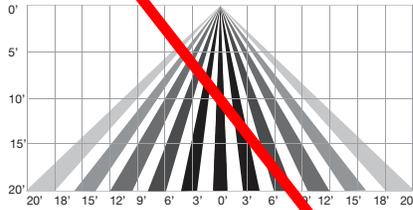
#### LENS

**L2** Coverage at 8' mounting height:  $\phi 48'$   
**L3** Coverage at 20' mounting height:  $\phi 40'$

#### COVERAGE PATTERNS



L2 Lens



L3 Lens

#### FSIR-100



Optional occupancy sensor remote

- ▶ Fully adjustable high and low dimmed light levels.
- ▶ Designed for LED fixtures; rated for extreme temperatures and up to 200,000 on/off cycles.
- ▶ Hold-off setpoint with automatic calibration option for convenience and added energy savings.
- ▶ Adjustable via handheld wireless configuration tool (ordered separately).
- ▶ Adjustable time delay and cutoff delay.
- ▶ Factory set to 10% dimming at 5 minutes, cutoff at 1 hour.



**LED**



**INTERACTIVE MENU**

- Ordering Guide
- Product Availability Tables
- Photometric Data
- Dimensional Data

**PROJECT INFORMATION**

Project Name \_\_\_\_\_

Type \_\_\_\_\_

Catalog No. \_\_\_\_\_

Date \_\_\_\_\_

**FEATURES**

- Full distribution LED troffer
- Direct replacement of fluorescent 2x4
- Wet location option available
- Long-life, 60,000 hour LEDs at L80 reduce life cycle maintenance costs
- Four LED color choices and 80 CRI
- Many shielding choices
- Two door frame choices
- Metal to metal light leak protection on all four sides of shielding frame
- Fixed output, step dimming (high/low/off), 0-10V dimming, 0-10V dimming-dim to dark drivers available
- Hinged optical system allows easy access to LED modules and electrical from below the ceiling
- UL Sanitation certified per NSF standards
- All models standard with IC rating
- DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations - see www.designlights.org
- Five year warranty)



**LJT24**

**CONSTRUCTION**

Luminaire housing, end caps, and reflectors are die-formed code-gauge cold-rolled steel. Optical system hinges from either side for easy access to LED module and electrical components. Mechanical light trap prevents light leaks.

**FINISH**

All metal parts processed with a multi-stage phosphate bonding treatment and finished with a high reflectance baked white enamel.

**SHIELDING**

Lens is high transmission pattern #12 acrylic (A12) for light diffusion without compromise to light output. Other shielding may be specified. If desired shielding media is not shown in ordering guide, contact your local Hubbell Lighting representative.

**INSTALLATION**

An access plate is furnished with each recessed fixture for fast wiring connections without the necessity to open the fixture or wireway.

**CEILING COMPATIBILITY**

Designed for recessed installation in standard inverted tee grid ceilings (G). Four integral T-bar clips standard. Also available for recessed installation in hard ceilings (G with FK accessory), surface mount at ceiling plane (SM), or cable mount suspension below ceiling plane (CM). For compatibility with specific ceilings contact your Hubbell Lighting representative.

**CERTIFICATION**

All luminaires are built to UL 1598 and 2108 standards, and bear appropriate CSA labels. UL Sanitation Certified per NSF Standards. Damp location labeling standard, wet location labeling is optional. Emergency equipped fixtures labeled UL924. Adheres to LM79, LM80 and TM21 industry standards. IC rating is standard on all models. DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations. Please refer to the DLC website for specific product qualifications at www.designlights.org.

**WARRANTY**

Five year warranty. (Terms and Conditions Apply)



Product Availability			
Lumen Package	Lumens	Input Watts	LPW
LJT24-50XWG-FSA12-EU	2919	20	145
LJT24-40XWG-FSA12-EU	2681	20	133
LJT24-35XWG-FSA12-EU	2640	20	131
LJT24-30XWG-FSA12-EU	2563	20	127
LJT24-50VWG-FSA12-EU	3806	27	142
LJT24-40VWG-FSA12-EU	3495	27	130
LJT24-35VWG-FSA12-EU	3441	27	128
LJT24-30VWG-FSA12-EU	3341	27	125
LJT24-50MWG-FSA12-EU	4297	31	140
LJT24-40MWG-FSA12-EU	3946	31	129
LJT24-35MWG-FSA12-EU	3886	31	127
LJT24-30MWG-FSA12-EU	3772	31	123
LJT24-50LWG-FSA12-EU	4720	34	139
LJT24-40LWG-FSA12-EU	4334	34	127
LJT24-35LWG-FSA12-EU	4268	34	126
LJT24-30LWG-FSA12-EU	4144	34	122
LJT24-50MLG-FSA12-EU	5218	38	136
<b>LJT24-40MLG-FSA12-EU</b>	<b>4792</b>	<b>38</b>	<b>125</b>
LJT24-35MLG-FSA12-EU	4718	38	123
LJT24-30MLG-FSA12-EU	4581	38	119
LJT24-50HLG-FSA12-EU	6017	45	133
LJT24-40HLG-FSA12-EU	5526	45	122
LJT24-35HLG-FSA12-EU	5441	45	120
LJT24-30HLG-FSA12-EU	5286	45	117
LJT24-50VLG-FSA12-EU	8191	59	138
LJT24-40VLG-FSA12-EU	7522	59	127
LJT24-35VLG-FSA12-EU	7407	59	125
LJT24-30VLG-FSA12-EU	7192	59	121
LJT24-50XLG-FSA12-EU	9763	73	134
LJT24-40XLG-FSA12-EU	8966	73	123
LJT24-35XLG-FSA12-EU	8829	73	121
LJT24-30XLG-FSA12-EU	8571	73	117

**PHOTOMETRIC DATA**

Test 16399 Test Date 06/28/2016

**LUMINAIRE DATA**

Luminaire	LJT24-40LWG-FSA12-EU LJT LED, Lensed Troffer 2' X 4' LED with A12 pattern acrylic prisms lens
Ballast	XI040C110V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	4334
Watts	34.00
Mounting	Recessed
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.19 90° = 1.19
Luminous Opening in feet	Length: 3.92 Width: 1.92 Height: 0.00

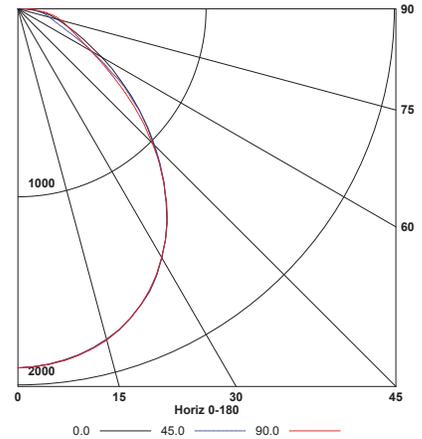
**ENERGY DATA**

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	127
ANSI/IESNA RP-1-2004 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$1.89 based on 3000 hrs. and \$0.08 per KWH

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt.
0-30	1456	33.6	33.6
0-40	2317	53.5	53.5
0-60	3680	84.9	84.9
0-90	4334	100.0	100.0
0-180	4334	100.0	100.0

**INDOOR CANDELA PLOT**



Test 16402 Test Date 06/27/2016

**LUMINAIRE DATA**

Luminaire	LJT24-40MLG-FSA12-EU LJT LED, Lensed Troffer 2' X 4' LED with A12 pattern acrylic prisms lens
Ballast	XI040C110V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	4792
Watts	38.40
Mounting	Recessed
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.19 90° = 1.19
Luminous Opening in feet	Length: 3.81 Width: 1.80 Height: 0.00

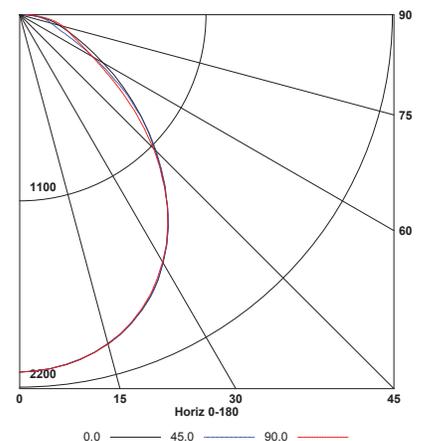
**ENERGY DATA**

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	125
ANSI/IESNA RP-1-2004 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$1.90 based on 3000 hrs. and \$0.08 per KWH

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt.
0-30	1609	33.6	33.6
0-40	2562	53.5	53.5
0-60	4069	84.9	84.9
0-90	4792	100.0	100.0
0-180	4792	100.0	100.0

**INDOOR CANDELA PLOT**



Test 16405 Test Date 06/28/2016

**LUMINAIRE DATA**

Luminaire	LJT24-40HLG-FSA12-EU LJT LED, Lensed Troffer 2' X 4' LED with A12 pattern acrylic prisms lens
Ballast	XI054C150V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	5526
Watts	45.20
Mounting	Recessed
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.18 90° = 1.18
Luminous Opening in feet	Length: 3.81 Width: 1.80 Height: 0.00

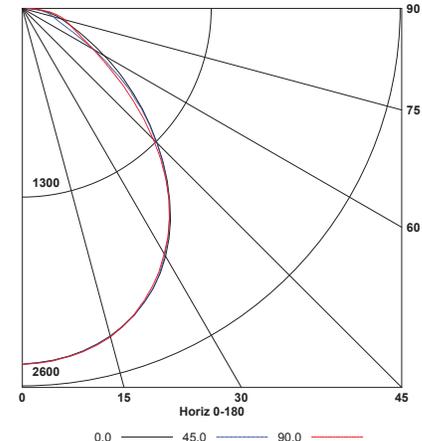
**ENERGY DATA**

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	122
ANSI/IESNA RP-1-2004 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$1.95 based on 3000 hrs. and \$0.08 per KWH

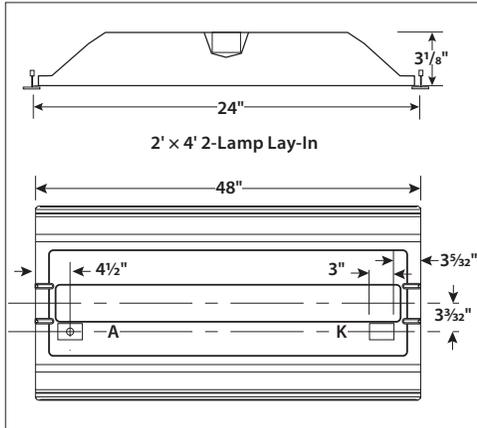
**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt.
0-30	1870	33.8	33.8
0-40	2975	53.8	53.8
0-60	4704	85.1	85.1
0-90	5526	100.0	100.0
0-180	5526	100.0	100.0

**INDOOR CANDELA PLOT**



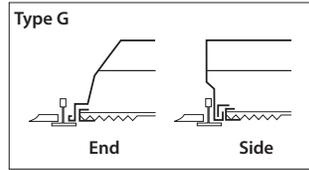
**DIMENSIONAL DATA**



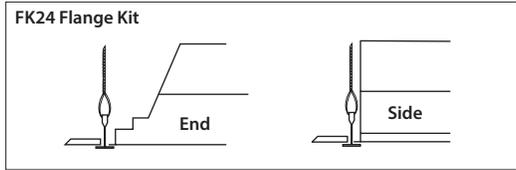
A: 7/8" Diameter knockout  
K: 2" x 3" through hole for access plate.

**NOTE:** All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.

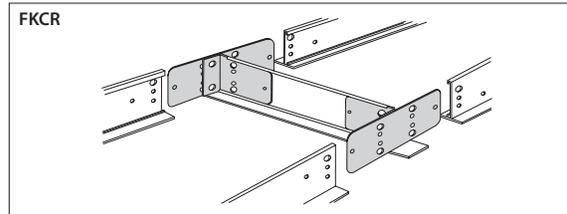
**CEILING COMPATIBILITY**



For lay-in installation in exposed grid ceilings. Maximum tee widths of 1" and maximum tee heights of 2" allowed.



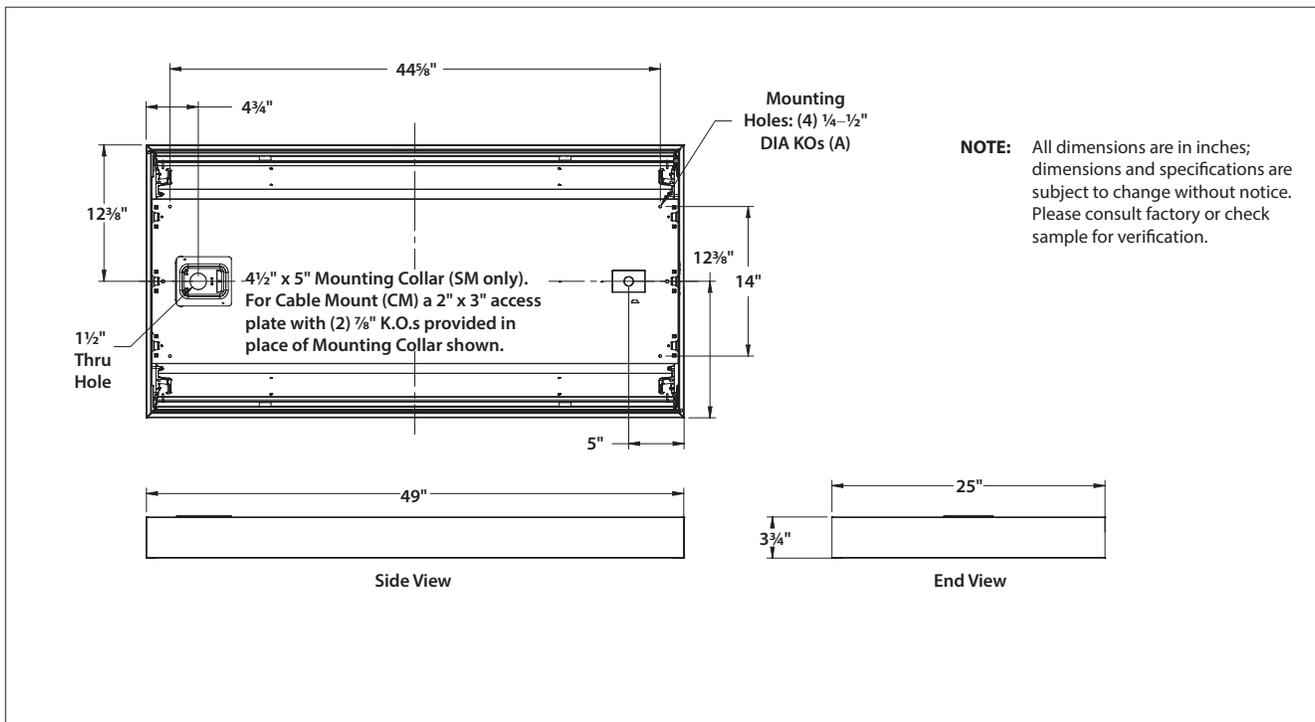
For hard ceiling applications order FK24 flange kit. Flange kit wires directly into concealed ceiling opening for a clean, finished appearance.



For flanged fixtures in row configurations, the FKCR adapter bracket kit is required in addition to the FK24 kit. Order one less FKCR than the total number of fixtures in row. (Example: Row of two, order (2) FK24 & (1) FKCR)

Rough cut out dimensions using FK24 & FKCR adapters:  
Width 24 3/8", Length [48" x (# in row)] + 3/8". Example: (48" x 2) + 3/8" = 96 3/8"  
Flange kit rough in dimensions for single unit only: 24 3/8" x 48 3/8"

**DIMENSIONAL DATA - SURFACE MOUNT (SM) AND CABLE MOUNT (CM)**



**SURFACE MOUNT**

Order SM ceiling type. Mounting collar required for surface mounting. (4) Mounting knock-outs, 1/4" to 1/2" provided as shown, marked "A".

**CABLE MOUNT**

Order CM ceiling type. Access plate supplied for cable mounting or suspension. Use CM48Y2C3F-KIT 48" cable mount kit. Includes 3 wire feed cord. For other wiring needs, contact Hubbell Lighting representative. Mounting knock-outs, 1/4" to 1/2", provided as shown, marked "A".

**Fabbian**

**Alternate Lighting Package**

- X'd out fixtures are not accepted

School TYPE Q

Cloudy

**F21A02A71**

Mathieu Lehanneur

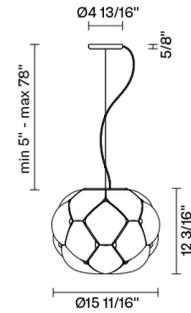


Fixture Type

Project Name



**Dimensions**



**Description**

Pendant lamp with shaded white blown glass diffuser with metal structures in die-cast aluminium.

**Voltage**  
120V

**Dimmable**  
TRIAC

**Specs**  
 DRY

**Material**  
Glass - Metal

**Light source**

LED 1x17W-120°  
3000K  
1850 CRI >80

**Color**

Translucent white

**Notes**

Led dimmable 20%-100%

**Other colors available**

Check online [www.fabbian.us](http://www.fabbian.us)

**Included accessories**

LED  
Off-center cable fastener

**In the same family**



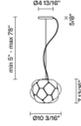
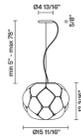
Ceiling

# Alternate Lighting Package

- X'd out fixtures are not accepted

## Cloudy F21

Other options

	code	electrification	technical info
	F21 A01 A 71	LED 120V 1x8.5W-120° 3000K 800 Cri >80	 DRY
			
	F21 A02 A 71	LED 120V 1x17W-120° 3000K 1850 Cri >80	 DRY
			
	<b>F21 A05 A 71</b>	E26 120V cod. A15208 1x150W WHITE 2900K 1100lm cod. A15218 1x32W WHITE 2700K 1920lm	 DRY

## Alternate Lighting Package

- X'd out fixtures are not accepted

Claymont  
Elementary  
School TYPE R

**SPI**LIGHTING  
PROJECT DETAILS

# Lightruss LED - New Construction

LLB12021

Job Name: \_\_\_\_\_

Type: \_\_\_\_\_

Notes:

## DESCRIPTION

Lightruss is a series of light modules offering indirect lighting in a continuous truss system accommodating corners and elevation changes. Offered in two scales, Lightruss can effectively illuminate a variety of spaces. The quick disconnect system provides easier installation and reduced maintenance efforts. Our dedicated team designs each Lightruss to suit the project's specific needs. Lightruss is ideal for use in natatoriums, water parks, athletic facilities and many others. The indirect light and lens over the light engine provide reduced glare and a delivered foot candle needed for high definition sports coverage and showroom quality illumination. For a complimentary lighting layout, contact our applications team at [SPITeam@spilighting.com](mailto:SPITeam@spilighting.com).



## FEATURES & BENEFITS

- IP68 light engines, connectors and fully potted drivers stand up to harsh natatorium environments
- Modular part system allows for ease of maintenance
- System is pre-wired at the factory with quick connectors in each of the sections for easy wiring and installation
- Tube structure allows for three separate race ways to give maximum flexibility in circuitry and other wiring
- Precision injection molded optics used for consistent performance from unit to unit
- Standard top lens corrects color over-angle discoloration, delivering a clean white beam suitable for highly-finished ceilings and walls
- Back cover plate available for applications such as bleachers, cat walks and viewing areas
- Footcandle levels are capable of meeting many HD television requirements
- Optical performance allows for the creation of a fully indirect LED system equal to current 400W and 1000W Metal Halide (MH) Lightruss Systems

## Alternate Lighting Package

- X'd out fixtures are not accepted

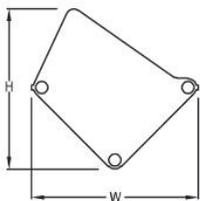
Up to 40% energy savings with an indirect LED system when compared to an indirect Metal Halide (MH) system

- Handcrafted in USA

### SPECIFICATIONS

- **LIGHT SOURCE:** IP68 white LED light engine
- **LUMEN MAINTENANCE:** L70 life = 50,000+ hours
- **EFFICACY:** up to 105 lm/W delivered
- **CCT:** 4000K
- **MAX AMBIENT OPERATING TEMP:** 34°C (93°F)
- **FINISH:** Choose from more than 30 thermoset polyester powder coat paint colors. RAL®, Pantone®, or custom finishes available upon request.
- **APPROVALS:** ETL listed to UL standards (US & Canada) for use in damp locations; not recommended for exterior applications

### DIMENSIONS



W	H	L
20 in	19.2 in	48.5 in
50.8 cm	48.8 cm	123.2 cm

**Mounting Weight**  
Consult Factory.

### CONFIGURATOR

Not all options are available in all configurations, consult factory for details.

Catalog	Light Source:	Voltage:	Mounting:	Accessories:	Options:
	Finish:		Finish:		
	A	B	C	D	E

### A - LIGHT SOURCE \*

To ensure color consistency, SPI uses precise bin selection and strict quality processes to maintain a 3-step (MacAdam) SDCM on all white LED

## Alternate Lighting Package

- X'd out fixtures are not accepted

lampings. Published LED luminaire wattages are calculated using a typical power supply efficiency of 88%; exact wattages may vary based on application.

- L507W** | White 507W LED Light Engine 4000K | Delivered Lumens: 53,712
- L634W** | White 634W LED Light Engine 4000K | Delivered Lumens: 67,140
- L761W** | White 761W LED Light Engine 4000K | Delivered Lumens: 80,568

See last page for finish options

### B - VOLTAGE

- 120-277V** | Universal Voltage

### C - MOUNTING

- AC** | Aircraft Cable Canopy See last page for finish options **CANOPY** | Canopy for Lightruss Length:
- STM** | Stem Mount **CANOPY** | Canopy for Lightruss Length:
- AC** | Aircraft Cable

### D - ACCESSORIES

- CS**<sup>1</sup> | Cut-Off Shield
- LV**<sup>2</sup> | Blade Louver

<sup>1</sup> Apply .85 multiplier for delivered lumens

<sup>2</sup> Apply .55 multiplier for delivered lumens

### E - OPTIONS

- 90 DEG** | 90 Degree Corner Tube
- 45 DEG** | 45 Degree Corner Tube

# Alternate Lighting Package

- X'd out fixtures are not accepted

## Available Finishes

Not all finishes are available in all configurations, consult factory for details.

## Paint Colors

<b>PT01</b> Super White	<b>PT02</b> White	<b>PT03</b> Morning Light	<b>PT04</b> Warm White	<b>PT05</b> Putty
<b>PT06</b> Warm Beige	<b>PT07</b> Light Taupe	<b>PT08</b> Medium Taupe	<b>PT09</b> Medium Grey	<b>PT10</b> Dark Grey
<b>PT11</b> Black	<b>PT12</b> Dark Chocolate	<b>PT13</b> Warm Grey	<b>PT14</b> Light Grey	<b>PT15</b> Sage
<b>PT16</b> Spruce	<b>PT17</b> Red	<b>PT18</b> Deep Red	<b>PT19</b> Blue	<b>PT20</b> Dark Green
<b>PT21</b> Pearl White (Metallic)	<b>PT22</b> Platinum (Metallic)	<b>PT27</b> Deep Copper (Metallic)	<b>PT28</b> Dark Stainless (Metallic)	<b>PT29</b> Red Brass (Metallic)
<b>PT31</b> Medium Bronze (Metallic)	<b>PT32</b> Dark Bronze (Metallic)	<b>PT33</b> Dark Blue	<b>PT40</b> Yellow	<b>PT41</b> Orange
<b>PT42</b> Sky Blue	<b>PT43</b> Teal	<b>PT44</b> Green	<b>PT45</b> Purple	<b>PT46</b> Aluminum (Metallic)
<b>PT47</b> Deep Red Brass (Metallic)	<b>PT48</b> Brass (Metallic)	<b>PT49</b> Bronze (Metallic)	<b>PT50</b> Matte White	

# Alternate Lighting Package

- X'd out fixtures are not accepted

**LEDGE** – model: FM-14

MODERN FORMS

LED Interior & Exterior Ceiling & Wall Mounts



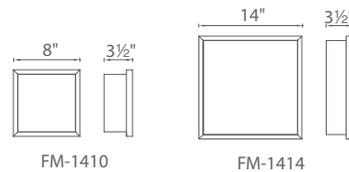
Claymont  
Elementary  
School TYPE T

Fixture Type:

Catalog Number:

Project: \_\_\_\_\_

Location: \_\_\_\_\_



## PRODUCT DESCRIPTION

The geometric simplicity and clean lines of this versatile ceiling mount work in a variety of applications, from suburban transitional to downtown chic. A sturdy aluminum construction houses a mitered shade that softens the LED illumination for just the right amount of ambiance, whether you're designing a luxury hotel or making yourself at home.

## FEATURES

- ADA compliant, low profile design
- Wall or ceiling flush mount
- ETL & cETL wet location listed, IP44 rated
- CEC Title 24 Compliant
- Listed for use in closets
- Full range dimming when used with compatible dimmers\*
- No transformer or driver required
- 277V option available (special order)
- 50,000 hour rated life
- Color Temp: 3000K (2700K / 3500K available special order)
- CRI: 90

## ORDER NUMBER

Model	Width	Wattage	Voltage	LED Lumens	Delivered Lumens	Finish
<b>FM-1410</b>	8"	17W	120V	1104	750	<b>AL</b> Brushed Aluminum
<b>FM-1414</b>	14"	38W		2772	1475	<b>BK</b> Black
						<b>BZ</b> Bronze
						<b>GH</b> Graphite

Example: **FM-1414-AL**

For 277V special order, add an "F" before the finish: **FM-1410F-GH**

For 2700K add "-27"; 3500K add "-35" before the finish: **FM-1414-35-BK**

## SPECIFICATIONS

### Construction:

**Light Source:** High output LED.

**Finish:** Brushed Aluminum (AL), Black (BK), Bronze (BZ), Graphite (GH)

**Standards:** ETL & cETL wet location listed. ADA compliant. CEC Title 24.

## REPLACEMENT GLASS

Part#	Fixture
<b>RPL-GLA-FM1410</b>	FM-1410

modernforms.com  
Phone (800) 526.2588  
Fax (800) 526.2585

Headquarters/Eastern Distribution Center  
44 Harbor Park Drive  
Port Washington, NY 11050

Central Distribution Center  
1600 Distribution Ct  
Lithia Springs, GA 30122

Western Distribution Center  
1750 Archibald Avenue  
Ontario, CA 91760

**Alternate Lighting Package**

- X'd out fixtures are not accepted

Claymont  
Elementary  
School TYPE X

Enclosed and Gasketed Fiberglass Extreme Environment / LED

**LED**



createchange



**FEATURES**

- LED Enclosed and Gasketed
- Long life 60,000 hour LEDs at L80 for reduced maintenance
- Four LED color choices and 80 CRI
- IP66 all sizes when ordered with standard polyacetal (POM) latches
- IP65 all sizes, IP67 4' and 8'
- Available in 2', 4', or 8' lengths
- NEMA 4X housing
- Fiberglass housing with F1 weatherability rating, standard
- Smooth housing for easy cleaning
- Gasket is non-porous to ensure seal
- Impact modified acrylic lens equivalent to 100% DR
- Wide range of lens selections
- Lens firmly secured with tamper resistance ready polyacetal (POM) latches
- Stainless steel latching optional
- ControlScope® compatible
- Drivers include minimum 2.5kV surge protection
- UL Sanitation Certified per NSF Standards
- Removable gear tray electrical access for modular replaceability
- Emergency battery pack installed, optional on most models
- -40°C up to +50°C ambient operation; see table provided for details
- DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations - see www.designlights.org
- Includes surface mounting brackets
- Occupancy and/or daylight sensing accessories available
- Five year warranty

**PROJECT INFORMATION**

Project Name \_\_\_\_\_

Type \_\_\_\_\_

Catalog No. \_\_\_\_\_

Date \_\_\_\_\_

**CONSTRUCTION**

Housing is formed from UL 5VA fiberglass. F1 weatherability rating, suitable for indoor or outdoor use with respect to exposure to UV light. LED affixed to removable heat sinked gear tray. 14 Latches per 8', 8 per 4', 6 per 2'. Latches are provided tamper resistance ready, tamper resistant screws by others. Latches are standard polyacetal (POM), optional in stainless steel. Access openings are provided for electrical connection.

**SHIELDING**

Lineal ribbed frosted acrylic lens impact modified equivalent to 100% DR; modification adds flexibility to reduce impact breakage compared to standard acrylic formulations. Optional ribbed polycarbonate lens or deep acrylic. All lenses available in clear or frost.

**FINISH**

White painted parts are treated with a five-stage phosphate bonding process and finished with high reflectance baked enamel.

**ELECTRICAL**

Long-life LEDs are rated for 60,000 hours at L80 lumen maintenance. Extra High Lumen packages (XL) rated L70 at 60,000 hours. Driver options include fixed output for on/off function, step dimming<sup>6</sup> (high/low/off) or continuous 0-10V dimming. QR code label affixed to housing for easy traceability.

**MOUNTING**

Use flexible conduit only.

**CERTIFICATION**

All luminaires are built to UL 1598 and 2108 standards, and bear appropriate CSA labels. Ingress protection IP65 and IP67 standard. UL Sanitation Certified per NSF Standards. Wet location labeling is standard. Emergency-equipped fixtures built to UL 924. DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations. Please refer to the DLC website for specific product qualifications at www.designlights.org.

**WARRANTY**

Five year warranty (Terms and Conditions Apply).

**ORDERING INFORMATION**

**EXAMPLE LXEM4-35HL-RFA-EDU**

LXEM									
MODEL	COLOR TEMP	SHIELDING	DRIVER	VOLTAGE	OPTIONS	SIZE	LUMEN OUTPUT		
<b>LXEM</b> LED Enclosed and Gasketed	30 3000K 35 3500K 40 4000K 50 5000K	RFA Ribbed Frosted Acrylic RA Ribbed Clear Acrylic <sup>11</sup> DFA Deep Frosted Acrylic DCA Deep Clear Acrylic <sup>11</sup> RFP Ribbed Frosted Polycarbonate <sup>5</sup> RP Ribbed Clear Polycarbonate <sup>5,11</sup>	E Fixed Output ESD Step Dimming <sup>6</sup> ED 0-10V Dimming ED1 0-10V 1% Dimming <sup>6</sup>	U 120V-277V 347 347V	GLR Fast Blow Fuse OCM Microwave Occupancy Sensor SSL Stainless Steel Tamper Resistance Ready Latches TP Tamper Proof Latches ELL14 Emergency Battery Pack Installed, 1400 Lumens <sup>3,6,7</sup> F3C8W 3 Wire 8' Wet Cord F3C15W 3 Wire 15' Wet Cord F4C8W 4 Wire 8' Wet Cord F4C15W 4 Wire 15' Wet Cord F5C8W 5 Wire 8' Wet Cord F5C15W 5 Wire 15' Wet Cord F6C6W 6 Wire 6' Wet Cord SWH Single Wet Hub ½" NPT Hub DWH Dual Wet Hub ½" NPT Hub ZRE ControlScope® compatible <sup>2,9</sup>	2 2' <sup>1,2,3,4</sup> 4 4' 8 8'	VV Very Low Watt LW Low Watt ML Medium Lumen HL High Lumen VL Very High Lumen XL Xtra High Lumen <sup>2</sup>		

**ACCESSORIES (ORDER SEPARATELY)**

- XEDPM Dual Pendant Brackets (pendant by others)<sup>8</sup>
- XEHC Chain Hanger Kit (Includes 14" Chain)
- XE45MB 45° Mounting Bracket<sup>10</sup>
- XE45MBSS 45° Stainless Steel Mounting Bracket<sup>10</sup>

**SENSOR KITS (Order Separately)**  
All sensor kits include Occupancy & Daylight.  
Daylight activation requires setting of dip-switches on site.

	Catalog #	# Relays	Lens Type	Voltage	Wet Label
120V/ 277V	OS1360WLK	1	360°	120/277	Yes
	OS2360WLK	2	360°	120/277	Yes
	OS1AWLK	1	Aisle	120/277	Yes
	OS2AWLK	2	Aisle	120/277	Yes

<sup>1</sup> VL and XL not available in 2' size.  
<sup>2</sup> Not available with battery pack.  
<sup>3</sup> Not available with XL lumen package.  
<sup>4</sup> Not available with VL lumen package.  
<sup>5</sup> 2' and 4' only, 8' not available.  
<sup>6</sup> See table for availability.  
<sup>7</sup> Not available in 347V.  
<sup>8</sup> Requires 3/8" OD threaded rod by others.  
<sup>9</sup> Registered trademark of Daintree Networks, used by permission.  
<sup>10</sup> 2 required for 8' fixture.  
<sup>11</sup> Clear lenses (RA, DCA and RP) may cause noticeable light patterns on lit surfaces. See ies files for exact distribution.

**PHOTOMETRIC DATA**

Test# 17905 Test Date 10/13/2016

**LUMINAIRE DATA**

Luminaire	LXEM4-50ML-RFA-EDU LXEM LED Enclosed and Gasketed, Extreme Environment 7" x 51" LED with frosted ribbed acrylic lens
Ballast	XI040C110V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	5306
Watts	42.00
Mounting	Surface
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.24 90° = 1.40
Luminous Opening in Feet	Length: 4.00 Width: 0.54 Height: 0.17

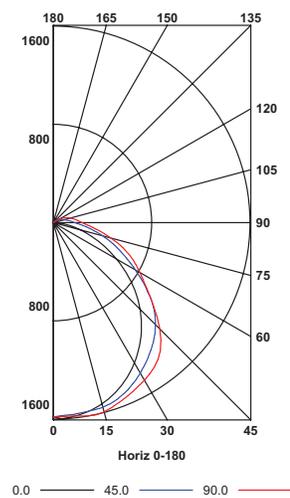
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	1268	23.9	23.9
0-40	2105	39.7	39.7
0-60	3766	71.0	71.0
0-90	5025	94.7	94.7
0-180	5306	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100%
Total Lumens per Watt	126
ANSI/IESNA RP-1-2004 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$1.90 based on 3000 hrs. and \$0.08 per KWH

**INDOOR CANDELA PLOT**



Test# 17989 Test Date 10/10/2016

**LUMINAIRE DATA**

Luminaire	LXEM4-40HL-DFA-EDU LXEM LED Enclosed and Gasketed, Extreme Environment 7" x 51" LED with deep frosted acrylic lens
Ballast	XI054C150V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	6525
Watts	47.30
Mounting	Surface
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.25 90° = 1.28
Luminous Opening in Feet	Length: 4.00 Width: 0.54 Height: 0.29

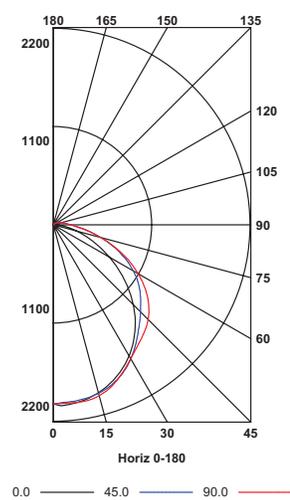
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	1583	24.3	24.3
0-40	2594	39.8	39.8
0-60	4661	71.4	71.4
0-90	6235	95.6	95.6
0-180	6525	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100%
Total Lumens per Watt	138
ANSI/IESNA RP-1-2004 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$1.73 based on 3000 hrs. and \$0.08 per KWH

**INDOOR CANDELA PLOT**



Test# 18012 Test Date 10/18/2016

**LUMINAIRE DATA**

Luminaire	LXEM4-50XL-RA-EDU LXEM LED Enclosed and Gasketed, Extreme Environment 7" x 51" LED with ribbed clear acrylic lens
Ballast	XI040C110V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	10607
Watts	91.40
Mounting	Surface
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.21 90° = 1.38
Luminous Opening in Feet	Length: 4.00 Width: 0.54 Height: 0.17

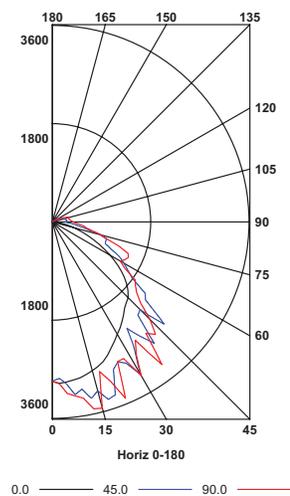
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	2547	24.0	24.0
0-40	4252	40.1	40.1
0-60	7643	72.1	72.1
0-90	10073	95.0	95.0
0-180	10607	100.0	100.0

**ENERGY DATA**

Total Luminaire Efficiency	100%
Total Lumens per Watt	116
ANSI/IESNA RP-1-2004 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$2.05 based on 3000 hrs. and \$0.08 per KWH

**INDOOR CANDELA PLOT**



# Alternate Lighting Package

- X'd out fixtures are not accepted

Driver Availability							
LENGTH	OUTPUT	NOMINAL LUMEN RANGE	ESD Available	ED1 Available	347v Available	347 with ESD Available	347 with ED1 Available
2'	VW	2,145 - 2,708	Y	Y	Y	N/A	Y
	LW	2,738 - 3,529	Y	Y	Y	N/A	Y
	ML	3,862 - 4,921	Y	Y	Y	N/A	Y
	HL	4,254 - 5,416	Y	Y	Y	N/A	Y
4'	VW	2,802 - 3,433	Y	Y	Y	N/A	Y
	LW	3,726 - 4,922	Y	Y	Y	N/A	Y
	ML	4,533 - 5,646	Y	Y	Y	N/A	Y
	HL	5,449 - 6,763	Y	Y	Y	N/A	Y
	VL	7,086 - 8,415	Y	Y	Y	N/A	N/A
	XL	9,059 - 11,237	N/A	Y	Y	N/A	N/A
8'	VW	6,078 - 6,866	Y	Y	Y	N/A	Y
	LW	8,095 - 9,276	Y	Y	Y	N/A	Y
	ML	9,844 - 11,293	Y	Y	Y	N/A	Y
	HL	11,851 - 13,525	Y	Y	Y	N/A	Y
	VL	14,747 - 16,830	Y	Y	Y	N/A	N/A
	XL	19,558 - 22,473	N/A	Y	Y	N/A	N/A

MAX. AMBIENT OPERATING TEMP.							
LENGTH	OUTPUT	NOMINAL LUMEN RANGE	WATTS	LPW	MAX AMBIENT OPERATING TEMPERATURE (C°) (UNIVERSAL VOLTAGE)	ELL14 (WITH UNIVERSAL VOLTAGE)	347v
2'	VW	2,145 - 2,708	21	102 - 130	40	NA	35
	LW	2,738 - 3,529	26	105 - 135	40	NA	35
	ML	3,862 - 4,921	39	100 - 128	40	NA	35
	HL	4,254 - 5,416	44	97 - 123	35	NA	30
4'	VW	2,802 - 3,433	25	114 - 141	50	45	45
	LW	3,726 - 4,922	33	112 - 139	50	45	45
	ML	4,533 - 5,646	42	108 - 134	50	45	45
	HL	5,449 - 6,763	47	115 - 143	45	45	35
	VL	7,086 - 8,415	62	115 - 136	40	40	35
	XL	9,059 - 11,237	92	99 - 123	30	NA	25
8'	VW	6,078 - 6,866	49	124-141	50	45	45
	LW	8,095 - 9,276	67	122 - 139	50	45	45
	ML	9,844 - 11,293	84	117 - 134	50	45	45
	HL	11,851 - 13,525	95	125 - 143	45	45	35
	VL	14,747 - 16,830	123	120 - 136	40	40	35
	XL	19,558 - 22,473	183	107 - 123	30	NA	25

# Alternate Lighting Package

- X'd out fixtures are not accepted

		LXEM PREDICTED LIFE			LUMEN MAINTENANCE			
CALCULATED HOURS	LENGTH	OUTPUT	NOMINAL LUMEN RANGE	AMBIENT OPERATING TEMPERATURE (C°)	L70	L80	L90	
		2'	VW	2,145 - 2,708	25	393,000	245,000	115,000
40					207,000	128,000	58,000	
LW			2,738 - 3,529	25	393,000	245,000	115,000	
				40	207,000	128,000	58,000	
ML			3,862 - 4,921	25	282,000	174,000	79,000	
				40	207,000	128,000	58,000	
HL			4,254 - 5,416	25	232,000	143,000	65,000	
				35	175,000	105,000	42,000	
4'			VW	2,802 - 3,433	25	322,000	198,000	90,000
					50	257,000	159,000	72,000
		LW	3,726 - 4,922	25	322,000	198,000	90,000	
				50	257,000	159,000	72,000	
		ML	4,533 - 5,646	25	322,000	198,000	90,000	
				50	257,000	159,000	72,000	
		HL	5,449 - 6,763	25	322,000	198,000	90,000	
				45	282,000	174,000	79,000	
		VL	7,086 - 8,415	25	322,000	198,000	90,000	
				40	228,000	140,000	63,000	
		XL	9,059 - 11,237	25	266,000	164,000	74,000	
				30	240,000	148,000	67,000	
		8'	VW	6,078 - 6,866	25	322,000	198,000	90,000
					50	257,000	159,000	72,000
LW			8,095 - 9,276	25	322,000	198,000	90,000	
				50	257,000	159,000	72,000	
ML	9,844 - 11,293		25	322,000	198,000	90,000		
			50	257,000	159,000	72,000		
HL	11,851 - 13,525		25	322,000	198,000	90,000		
			45	282,000	174,000	79,000		
VL	14,747 - 16,830		25	322,000	198,000	90,000		
			40	228,000	140,000	63,000		
XL	19,558 - 22,473		25	266,000	164,000	74,000		
			30	240,000	148,000	67,000		

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp
LXEM2-30VW-RFP-EDU	Very Low Watt	30K	RFP	2,145	21.1	101.6	40°C
LXEM2-30VW-RA-EDU			RA	2,365	20.8	113.7	40°C
LXEM2-30VW-RP-EDU			RP	2,373	20.8	114.1	40°C
LXEM2-30VW-RFA-EDU			RFA	2,448	20.8	117.7	40°C
LXEM2-30VW-DFA-EDU			DFA	2,467	20.8	118.6	40°C
LXEM2-30VW-DCA-EDU			DCA	2,512	20.8	120.8	40°C
LXEM2-35VW-RFP-EDU		35K	RFP	2,217	21.1	105.1	40°C
LXEM2-35VW-RA-EDU			RA	2,446	20.8	117.6	40°C
LXEM2-35VW-RP-EDU			RP	2,454	20.8	118.0	40°C
LXEM2-35VW-RFA-EDU			RFA	2,531	20.8	121.7	40°C
LXEM2-35VW-DFA-EDU			DFA	2,551	20.8	122.6	40°C
LXEM2-35VW-DCA-EDU			DCA	2,598	20.8	124.9	40°C
LXEM2-40VW-RFP-EDU		40K	RFP	2,252	21.1	106.7	40°C
LXEM2-40VW-RA-EDU			RA	2,484	20.8	119.4	40°C
LXEM2-40VW-RP-EDU			RP	2,492	20.8	119.8	40°C
LXEM2-40VW-RFA-EDU			RFA	2,571	20.8	123.6	40°C
LXEM2-40VW-DFA-EDU			DFA	2,590	20.8	124.5	40°C
LXEM2-40VW-DCA-EDU			DCA	2,638	20.8	126.8	40°C
LXEM2-50VW-RFP-EDU		50K	RFP	2,312	21.1	109.6	40°C
LXEM2-50VW-RA-EDU			RA	2,550	20.8	122.6	40°C
LXEM2-50VW-RP-EDU			RP	2,558	20.8	123.0	40°C
LXEM2-50VW-RFA-EDU			RFA	2,639	20.8	126.9	40°C
LXEM2-50VW-DFA-EDU			DFA	2,659	20.8	127.8	40°C
LXEM2-50VW-DCA-EDU			DCA	2,708	20.8	130.2	40°C
LXEM2-30LW-RFP-EDU	Low Watt	30K	RFP	2,738	26.0	105.3	40°C
LXEM2-30LW-RP-EDU			RP	3,049	26.1	116.8	40°C
LXEM2-30LW-RA-EDU			RA	3,144	26.0	120.9	40°C
LXEM2-30LW-RFA-EDU			RFA	3,180	26.2	121.4	40°C
LXEM2-30LW-DFA-EDU			DFA	3,239	26.1	124.1	40°C
LXEM2-30LW-DCA-EDU			DCA	3,273	26.1	125.4	40°C
LXEM2-35LW-RFP-EDU		35K	RFP	2,831	26.0	108.9	40°C
LXEM2-35LW-RP-EDU			RP	3,153	26.1	120.8	40°C
LXEM2-35LW-RA-EDU			RA	3,251	26.0	125.0	40°C
LXEM2-35LW-RFA-EDU			RFA	3,289	26.2	125.5	40°C
LXEM2-35LW-DFA-EDU			DFA	3,349	26.1	128.3	40°C
LXEM2-35LW-DCA-EDU			DCA	3,385	26.1	129.7	40°C
LXEM2-40LW-RFP-EDU		40K	RFP	2,875	26.0	110.6	40°C
LXEM2-40LW-RP-EDU			RP	3,202	26.1	122.7	40°C
LXEM2-40LW-RA-EDU			RA	3,302	26.0	127.0	40°C
LXEM2-40LW-RFA-EDU			RFA	3,339	26.2	127.5	40°C
LXEM2-40LW-DFA-EDU			DFA	3,401	26.1	130.3	40°C
LXEM2-40LW-DCA-EDU			DCA	3,437	26.1	131.7	40°C
LXEM2-50LW-RFP-EDU		50K	RFP	2,951	26.0	113.5	40°C
LXEM2-50LW-RP-EDU			RP	3,287	26.1	125.9	40°C

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp	
LXEM2-50LW-RA-EDU	Low Watt	50K	RA	3,390	26.0	130.4	40°C	
LXEM2-50LW-RFA-EDU			RFA	3,428	26.2	130.9	40°C	
LXEM2-50LW-DFA-EDU			DFA	3,492	26.1	133.8	40°C	
LXEM2-50LW-DCA-EDU			DCA	3,529	26.1	135.2	40°C	
LXEM2-30ML-RFP-EDU	Medium Lumen	30K	RFP	3,862	38.5	100.3	40°C	
LXEM2-30ML-RP-EDU			RP	4,228	38.5	109.8	40°C	
LXEM2-30ML-RFA-EDU			RFA	4,343	38.5	112.8	40°C	
LXEM2-30ML-RA-EDU			RA	4,446	38.5	115.5	40°C	
LXEM2-30ML-DFA-EDU			DFA	4,526	38.5	117.5	40°C	
LXEM2-30ML-DCA-EDU			DCA	4,565	38.5	118.6	40°C	
LXEM2-35ML-RFP-EDU		35K	RFP	3,993	38.5	103.7	40°C	
LXEM2-35ML-RP-EDU			RP	4,371	38.5	113.5	40°C	
LXEM2-35ML-RFA-EDU			RFA	4,490	38.5	116.6	40°C	
LXEM2-35ML-RA-EDU			RA	4,597	38.5	119.4	40°C	
LXEM2-35ML-DFA-EDU			DFA	4,680	38.5	121.5	40°C	
LXEM2-35ML-DCA-EDU			DCA	4,720	38.5	122.6	40°C	
LXEM2-40ML-RFP-EDU			40K	RFP	4,055	38.5	105.3	40°C
LXEM2-40ML-RP-EDU				RP	4,439	38.5	115.3	40°C
LXEM2-40ML-RFA-EDU				RFA	4,560	38.5	118.4	40°C
LXEM2-40ML-RA-EDU				RA	4,668	38.5	121.3	40°C
LXEM2-40ML-DFA-EDU				DFA	4,752	38.5	123.4	40°C
LXEM2-40ML-DCA-EDU				DCA	4,793	38.5	124.5	40°C
LXEM2-50ML-RFP-EDU		50K	RFP	4,163	38.5	108.1	40°C	
LXEM2-50ML-RP-EDU			RP	4,558	38.5	118.4	40°C	
LXEM2-50ML-RFA-EDU			RFA	4,682	38.5	121.6	40°C	
LXEM2-50ML-RA-EDU			RA	4,793	38.5	124.5	40°C	
LXEM2-50ML-DFA-EDU			DFA	4,879	38.5	126.7	40°C	
LXEM2-50ML-DCA-EDU			DCA	4,921	38.5	127.8	40°C	
LXEM2-30HL-RFP-EDU		High Lumen	30K	RFP	4,254	44.1	96.5	35°C
LXEM2-30HL-RP-EDU				RP	4,700	44.1	106.6	35°C
LXEM2-30HL-RA-EDU				RA	4,868	44.1	110.4	35°C
LXEM2-30HL-RFA-EDU				RFA	4,874	44.1	110.5	35°C
LXEM2-30HL-DFA-EDU	DFA			5,008	44.1	113.6	35°C	
LXEM2-30HL-DCA-EDU	DCA			5,024	44.1	113.9	35°C	
LXEM2-35HL-RFP-EDU	35K		RFP	4,399	44.1	99.7	35°C	
LXEM2-35HL-RP-EDU			RP	4,860	44.1	110.2	35°C	
LXEM2-35HL-RA-EDU			RA	5,033	44.1	114.1	35°C	
LXEM2-35HL-RFA-EDU			RFA	5,040	44.1	114.3	35°C	
LXEM2-35HL-DFA-EDU			DFA	5,179	44.1	117.4	35°C	
LXEM2-35HL-DCA-EDU			DCA	5,195	44.1	117.8	35°C	
LXEM2-40HL-RFP-EDU	40K		RFP	4,467	44.1	101.3	35°C	
LXEM2-40HL-RP-EDU			RP	4,935	44.1	111.9	35°C	
LXEM2-40HL-RA-EDU			RA	5,111	44.1	115.9	35°C	
LXEM2-40HL-RFA-EDU			RFA	5,117	44.1	116.0	35°C	

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp	
LXEM2-40HL-DFA-EDU	High Lumen	40K	DFA	5,259	44.1	119.2	35°C	
LXEM2-40HL-DCA-EDU			DCA	5,275	44.1	119.6	35°C	
LXEM2-50HL-RFP-EDU		50K	RFP	4,586	44.1	104.0	35°C	
LXEM2-50HL-RP-EDU			RP	5,066	44.1	114.9	35°C	
LXEM2-50HL-RA-EDU			RA	5,248	44.1	119.0	35°C	
LXEM2-50HL-RFA-EDU			RFA	5,254	44.1	119.1	35°C	
LXEM2-50HL-DFA-EDU			DFA	5,399	44.1	122.4	35°C	
LXEM2-50HL-DCA-EDU			DCA	5,416	44.1	122.8	35°C	
LXEM4-30VW-RFP-EDU	Very Low Watt	30K	RFP	2,802	24.5	114.4	50°C	
LXEM4-30VW-RP-EDU			RP	2,938	24.4	120.4	50°C	
LXEM4-30VW-RA-EDU			RA	3,039	24.4	124.6	50°C	
LXEM4-30VW-RFA-EDU			RFA	3,048	24.5	124.4	50°C	
LXEM4-30VW-DCA-EDU			DCA	3,180	24.4	130.3	50°C	
LXEM4-30VW-DFA-EDU			DFA	3,184	24.4	130.5	50°C	
LXEM4-35VW-RFP-EDU		35K	RFP	2,897	24.5	118.2	50°C	
LXEM4-35VW-RP-EDU			RP	3,038	24.4	124.5	50°C	
LXEM4-35VW-RA-EDU			RA	3,143	24.4	128.8	50°C	
LXEM4-35VW-RFA-EDU			RFA	3,151	24.5	128.6	50°C	
LXEM4-35VW-DCA-EDU			DCA	3,288	24.4	134.8	50°C	
LXEM4-35VW-DFA-EDU			DFA	3,293	24.4	134.9	50°C	
LXEM4-40VW-RFP-EDU		40K	RFP	2,942	24.5	120.1	50°C	
LXEM4-40VW-RP-EDU			RP	3,085	24.4	126.4	50°C	
LXEM4-40VW-RA-EDU			RA	3,191	24.4	130.8	50°C	
LXEM4-40VW-RFA-EDU			RFA	3,200	24.5	130.6	50°C	
LXEM4-40VW-DCA-EDU			DCA	3,339	24.4	136.8	50°C	
LXEM4-40VW-DFA-EDU			DFA	3,344	24.4	137.0	50°C	
LXEM4-50VW-RFP-EDU		50K	RFP	3,020	24.5	123.3	50°C	
LXEM4-50VW-RP-EDU			RP	3,168	24.4	129.8	50°C	
LXEM4-50VW-RA-EDU			RA	3,276	24.4	134.3	50°C	
LXEM4-50VW-RFA-EDU			RFA	3,285	24.5	134.1	50°C	
LXEM4-50VW-DCA-EDU			DCA	3,428	24.4	140.5	50°C	
LXEM4-50VW-DFA-EDU			DFA	3,433	24.4	140.7	50°C	
LXEM4-30LW-RFP-EDU		Low Watt	30K	RFP	3,726	33.3	111.9	50°C
LXEM4-30LW-RP-EDU				RP	3,872	33.3	116.3	50°C
LXEM4-30LW-RFA-EDU				RFA	4,048	33.3	121.5	50°C
LXEM4-30LW-RA-EDU				RA	4,054	33.3	121.8	50°C
LXEM4-30LW-DFA-EDU				DFA	4,241	33.3	127.4	50°C
LXEM4-30LW-DCA-EDU				DCA	4,303	33.3	129.2	50°C
LXEM4-35LW-RFP-EDU	35K		RFP	3,853	33.3	115.7	50°C	
LXEM4-35LW-RP-EDU			RP	4,004	33.3	120.2	50°C	
LXEM4-35LW-RFA-EDU			RFA	4,185	33.3	125.7	50°C	
LXEM4-35LW-RA-EDU			RA	4,192	33.3	125.9	50°C	
LXEM4-35LW-DFA-EDU			DFA	4,385	33.3	131.7	50°C	
LXEM4-35LW-DCA-EDU			DCA	4,449	33.3	133.6	50°C	

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp	
LXEM4-40LW-RFP-EDU	Low Watt	40K	RFP	3,912	33.3	117.5	50°C	
LXEM4-40LW-RP-EDU			RP	4,066	33.3	122.1	50°C	
LXEM4-40LW-RFA-EDU			RFA	4,250	33.3	127.6	50°C	
LXEM4-40LW-RA-EDU			RA	4,257	33.3	127.8	50°C	
LXEM4-40LW-DFA-EDU			DFA	4,453	33.3	133.7	50°C	
LXEM4-40LW-DCA-EDU			DCA	4,518	33.3	135.7	50°C	
LXEM4-50LW-RFP-EDU		50K	RFP	4,017	33.3	120.6	50°C	
LXEM4-50LW-RP-EDU			RP	4,174	33.3	125.3	50°C	
LXEM4-50LW-RFA-EDU			RFA	4,363	33.3	131.0	50°C	
LXEM4-50LW-RA-EDU			RA	4,371	33.3	131.3	50°C	
LXEM4-50LW-DFA-EDU			DFA	4,572	33.3	137.3	50°C	
LXEM4-50LW-DCA-EDU			DCA	4,638	33.3	139.3	50°C	
LXEM4-30ML-RFP-EDU		Medium Lumen	30K	RFP	4,533	41.9	108.2	50°C
LXEM4-30ML-RP-EDU				RP	4,714	41.9	112.5	50°C
LXEM4-30ML-RFA-EDU	RFA			4,922	42.0	117.2	50°C	
LXEM4-30ML-RA-EDU	RA			4,924	42.0	117.2	50°C	
LXEM4-30ML-DFA-EDU	DFA			5,160	42.0	122.9	50°C	
LXEM4-30ML-DCA-EDU	DCA			5,238	42.0	124.7	50°C	
LXEM4-35ML-RFP-EDU	35K		RFP	4,688	41.9	111.9	50°C	
LXEM4-35ML-RP-EDU			RP	4,875	41.9	116.3	50°C	
LXEM4-35ML-RFA-EDU			RFA	5,089	42.0	121.2	50°C	
LXEM4-35ML-RA-EDU			RA	5,091	42.0	121.2	50°C	
LXEM4-35ML-DFA-EDU			DFA	5,336	42.0	127.0	50°C	
LXEM4-35ML-DCA-EDU			DCA	5,416	42.0	128.9	50°C	
LXEM4-40ML-RFP-EDU	40K		RFP	4,760	41.9	113.6	50°C	
LXEM4-40ML-RP-EDU			RP	4,950	41.9	118.1	50°C	
LXEM4-40ML-RFA-EDU			RFA	5,168	42.0	123.1	50°C	
LXEM4-40ML-RA-EDU			RA	5,170	42.0	123.1	50°C	
LXEM4-40ML-DFA-EDU			DFA	5,418	42.0	129.0	50°C	
LXEM4-40ML-DCA-EDU			DCA	5,500	42.0	130.9	50°C	
LXEM4-50ML-RFP-EDU	50K		RFP	4,887	41.9	116.6	50°C	
LXEM4-50ML-RP-EDU			RP	5,082	41.9	121.3	50°C	
LXEM4-50ML-RFA-EDU			RFA	5,306	42.0	126.3	50°C	
LXEM4-50ML-RA-EDU			RA	5,308	42.0	126.4	50°C	
LXEM4-50ML-DFA-EDU			DFA	5,563	42.0	132.4	50°C	
LXEM4-50ML-DCA-EDU			DCA	5,646	42.0	134.4	50°C	
LXEM4-30HL-RFP-EDU	High Lumen		30K	RFP	5,449	47.4	115.0	45°C
LXEM4-30HL-RP-EDU				RP	5,648	47.2	119.7	45°C
LXEM4-30HL-RFA-EDU				RFA	5,926	47.4	125.0	45°C
LXEM4-30HL-RA-EDU				RA	5,932	47.3	125.4	45°C
LXEM4-30HL-DFA-EDU				DFA	6,214	47.3	131.4	45°C
LXEM4-30HL-DCA-EDU				DCA	6,273	47.4	132.4	45°C
LXEM4-35HL-RFP-EDU		35K	RFP	5,634	47.4	118.9	45°C	
LXEM4-35HL-RP-EDU			RP	5,840	47.2	123.7	45°C	

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp
LXEM4-35HL-RFA-EDU	High Lumen	35K	RFA	6,127	47.4	129.3	45°C
LXEM4-35HL-RA-EDU			RA	6,133	47.3	129.7	45°C
LXEM4-35HL-DFA-EDU			DFA	6,425	47.3	135.8	45°C
LXEM4-35HL-DCA-EDU			DCA	6,487	47.4	136.9	45°C
LXEM4-40HL-RFP-EDU		40K	RFP	5,721	47.4	120.7	45°C
LXEM4-40HL-RP-EDU			RP	5,931	47.2	125.7	45°C
LXEM4-40HL-RFA-EDU			RFA	6,222	47.4	131.3	45°C
LXEM4-40HL-RA-EDU			RA	6,228	47.3	131.7	45°C
LXEM4-40HL-DFA-EDU			DFA	6,525	47.3	137.9	45°C
LXEM4-40HL-DCA-EDU		DCA	6,587	47.4	139.0	45°C	
LXEM4-50HL-RFP-EDU		50K	RFP	5,874	47.4	123.9	45°C
LXEM4-50HL-RP-EDU			RP	6,089	47.2	129.0	45°C
LXEM4-50HL-RFA-EDU			RFA	6,388	47.4	134.8	45°C
LXEM4-50HL-RA-EDU			RA	6,394	47.3	135.2	45°C
LXEM4-50HL-DFA-EDU			DFA	6,699	47.3	141.6	45°C
LXEM4-50HL-DCA-EDU			DCA	6,763	47.4	142.7	45°C
LXEM4-30VL-RP-EDU	Very High Lumen	30K	RP	7,086	61.6	115.0	40°C
LXEM4-30VL-RA-EDU			RA	7,373	61.7	119.5	40°C
LXEM4-30VL-RFP-EDU			RFP	7,388	61.6	119.9	40°C
LXEM4-30VL-RFA-EDU			RFA	7,395	61.6	120.0	40°C
LXEM4-30VL-DFA-EDU			DFA	7,756	61.7	125.7	40°C
LXEM4-30VL-DCA-EDU			DCA	7,806	61.7	126.5	40°C
LXEM4-35VL-RP-EDU		35K	RP	7,327	61.6	118.9	40°C
LXEM4-35VL-RA-EDU			RA	7,624	61.7	123.6	40°C
LXEM4-35VL-RFP-EDU			RFP	7,639	61.6	124.0	40°C
LXEM4-35VL-RFA-EDU			RFA	7,646	61.6	124.1	40°C
LXEM4-35VL-DFA-EDU			DFA	8,020	61.7	130.0	40°C
LXEM4-35VL-DCA-EDU		DCA	8,072	61.7	130.8	40°C	
LXEM4-40VL-RP-EDU		40K	RP	7,440	61.6	120.8	40°C
LXEM4-40VL-RA-EDU			RA	7,742	61.7	125.5	40°C
LXEM4-40VL-RFP-EDU			RFP	7,757	61.6	125.9	40°C
LXEM4-40VL-RFA-EDU			RFA	7,764	61.6	126.0	40°C
LXEM4-40VL-DFA-EDU			DFA	8,144	61.7	132.0	40°C
LXEM4-40VL-DCA-EDU			DCA	8,197	61.7	132.8	40°C
LXEM4-50VL-RP-EDU		50K	RP	7,639	61.6	124.0	40°C
LXEM4-50VL-RA-EDU			RA	7,948	61.7	128.8	40°C
LXEM4-50VL-RFP-EDU			RFP	7,964	61.6	129.3	40°C
LXEM4-50VL-RFA-EDU			RFA	7,971	61.6	129.4	40°C
LXEM4-50VL-DFA-EDU			DFA	8,361	61.7	135.5	40°C
LXEM4-50VL-DCA-EDU			DCA	8,415	61.7	136.4	40°C
LXEM4-30XL-RFP-EDU	Xtra High Lumen	30K	RFP	9,059	91.3	99.2	30°C
LXEM4-30XL-RP-EDU			RP	9,448	91.2	103.6	30°C
LXEM4-30XL-RFA-EDU			RFA	9,779	91.2	107.2	30°C
LXEM4-30XL-RA-EDU			RA	9,839	91.4	107.7	30°C

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp	
LXEM4-30XL-DFA-EDU	Xtra High Lumen	30K	DFA	10,358	91.4	113.3	30°C	
LXEM4-30XL-DCA-EDU			DCA	10,424	91.5	113.9	30°C	
LXEM4-35XL-RFP-EDU		35K	RFP	9,367	91.3	102.6	30°C	
LXEM4-35XL-RP-EDU			RP	9,769	91.2	107.1	30°C	
LXEM4-35XL-RFA-EDU			RFA	10,111	91.2	110.9	30°C	
LXEM4-35XL-RA-EDU			RA	10,174	91.4	111.3	30°C	
LXEM4-35XL-DFA-EDU			DFA	10,710	91.4	117.2	30°C	
LXEM4-35XL-DCA-EDU			DCA	10,778	91.5	117.8	30°C	
LXEM4-40XL-RFP-EDU		40K	RFP	9,512	91.3	104.2	30°C	
LXEM4-40XL-RP-EDU			RP	9,920	91.2	108.8	30°C	
LXEM4-40XL-RFA-EDU			RFA	10,268	91.2	112.6	30°C	
LXEM4-40XL-RA-EDU			RA	10,331	91.4	113.0	30°C	
LXEM4-40XL-DFA-EDU			DFA	10,876	91.4	119.0	30°C	
LXEM4-40XL-DCA-EDU			DCA	10,945	91.5	119.6	30°C	
LXEM4-50XL-RFP-EDU		50K	RFP	9,765	91.3	107.0	30°C	
LXEM4-50XL-RP-EDU			RP	10,184	91.2	111.7	30°C	
LXEM4-50XL-RFA-EDU			RFA	10,542	91.2	115.6	30°C	
LXEM4-50XL-RA-EDU			RA	10,607	91.4	116.0	30°C	
LXEM4-50XL-DFA-EDU			DFA	11,166	91.4	122.2	30°C	
LXEM4-50XL-DCA-EDU			DCA	11,237	91.5	122.8	30°C	
LXEM8-30VW-RA-EDU	Very Low Watt	30K	RA	6,078	48.8	124.6	50°C	
LXEM8-30VW-RFA-EDU			RFA	6,096	49.0	124.4	50°C	
LXEM8-30VW-DCA-EDU			DCA	6,360	48.8	130.3	50°C	
LXEM8-30VW-DFA-EDU			DFA	6,369	48.8	130.5	50°C	
LXEM8-35VW-RA-EDU		35K	RA	6,285	48.8	128.8	50°C	
LXEM8-35VW-RFA-EDU			RFA	6,303	49.0	128.6	50°C	
LXEM8-35VW-DCA-EDU			DCA	6,576	48.8	134.8	50°C	
LXEM8-35VW-DFA-EDU			DFA	6,585	48.8	134.9	50°C	
LXEM8-40VW-RA-EDU		40K	RA	6,382	48.8	130.8	50°C	
LXEM8-40VW-RFA-EDU			RFA	6,400	49.0	130.6	50°C	
LXEM8-40VW-DCA-EDU			DCA	6,678	48.8	136.8	50°C	
LXEM8-40VW-DFA-EDU			DFA	6,687	48.8	137.0	50°C	
LXEM8-50VW-RA-EDU		50K	RA	6,553	48.8	134.3	50°C	
LXEM8-50VW-RFA-EDU			RFA	6,571	49.0	134.1	50°C	
LXEM8-50VW-DCA-EDU			DCA	6,856	48.8	140.5	50°C	
LXEM8-50VW-DFA-EDU			DFA	6,866	48.8	140.7	50°C	
LXEM8-30LW-RFA-EDU		Low Watt	30K	RFA	8,095	66.6	121.5	50°C
LXEM8-30LW-RA-EDU				RA	8,109	66.6	121.8	50°C
LXEM8-30LW-DFA-EDU				DFA	8,482	66.6	127.4	50°C
LXEM8-30LW-DCA-EDU				DCA	8,605	66.6	129.2	50°C
LXEM8-35LW-RFA-EDU	35K		RFA	8,370	66.6	125.7	50°C	
LXEM8-35LW-RA-EDU			RA	8,385	66.6	125.9	50°C	
LXEM8-35LW-DFA-EDU			DFA	8,770	66.6	131.7	50°C	
LXEM8-35LW-DCA-EDU			DCA	8,898	66.6	133.6	50°C	

# Alternate Lighting Package

- X'd out fixtures are not accepted

### PRODUCT AVAILABILITY

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp	
LXEM8-40LW-RFA-EDU	Low Watt	40K	RFA	8,500	66.6	127.6	50°C	
LXEM8-40LW-RA-EDU			RA	8,514	66.6	127.8	50°C	
LXEM8-40LW-DFA-EDU			DFA	8,906	66.6	133.7	50°C	
LXEM8-40LW-DCA-EDU			DCA	9,035	66.6	135.7	50°C	
LXEM8-50LW-RFA-EDU		50K	RFA	8,727	66.6	131.0	50°C	
LXEM8-50LW-RA-EDU			RA	8,741	66.6	131.3	50°C	
LXEM8-50LW-DFA-EDU			DFA	9,143	66.6	137.3	50°C	
LXEM8-50LW-DCA-EDU			DCA	9,276	66.6	139.3	50°C	
LXEM8-30ML-RFA-EDU	Medium Lumen	30K	RFA	9,844	84.0	117.2	50°C	
LXEM8-30ML-RA-EDU			RA	9,847	84.0	117.2	50°C	
LXEM8-30ML-DFA-EDU			DFA	10,320	84.0	122.9	50°C	
LXEM8-30ML-DCA-EDU			DCA	10,476	84.0	124.7	50°C	
LXEM8-35ML-RFA-EDU		35K	RFA	10,179	84.0	121.2	50°C	
LXEM8-35ML-RA-EDU			RA	10,182	84.0	121.2	50°C	
LXEM8-35ML-DFA-EDU			DFA	10,671	84.0	127.0	50°C	
LXEM8-35ML-DCA-EDU			DCA	10,832	84.0	128.9	50°C	
LXEM8-40ML-RFA-EDU		40K	RFA	10,336	84.0	123.1	50°C	
LXEM8-40ML-RA-EDU			RA	10,340	84.0	123.1	50°C	
LXEM8-40ML-DFA-EDU			DFA	10,836	84.0	129.0	50°C	
LXEM8-40ML-DCA-EDU			DCA	10,999	84.0	130.9	50°C	
LXEM8-50ML-RFA-EDU		50K	RFA	10,612	84.0	126.3	50°C	
LXEM8-50ML-RA-EDU			RA	10,616	84.0	126.4	50°C	
LXEM8-50ML-DFA-EDU			DFA	11,125	84.0	132.4	50°C	
LXEM8-50ML-DCA-EDU			DCA	11,293	84.0	134.4	50°C	
LXEM8-30HL-RFA-EDU		High Lumen	30K	RFA	11,851	94.8	125.0	45°C
LXEM8-30HL-RA-EDU				RA	11,863	94.6	125.4	45°C
LXEM8-30HL-DFA-EDU				DFA	12,428	94.6	131.4	45°C
LXEM8-30HL-DCA-EDU				DCA	12,547	94.8	132.4	45°C
LXEM8-35HL-RFA-EDU	35K		RFA	12,254	94.8	129.3	45°C	
LXEM8-35HL-RA-EDU			RA	12,267	94.6	129.7	45°C	
LXEM8-35HL-DFA-EDU			DFA	12,851	94.6	135.8	45°C	
LXEM8-35HL-DCA-EDU			DCA	12,973	94.8	136.9	45°C	
LXEM8-40HL-RFA-EDU	40K		RFA	12,444	94.8	131.3	45°C	
LXEM8-40HL-RA-EDU			RA	12,456	94.6	131.7	45°C	
LXEM8-40HL-DFA-EDU			DFA	13,049	94.6	137.9	45°C	
LXEM8-40HL-DCA-EDU			DCA	13,174	94.8	139.0	45°C	
LXEM8-50HL-RFA-EDU	50K		RFA	12,776	94.8	134.8	45°C	
LXEM8-50HL-RA-EDU			RA	12,789	94.6	135.2	45°C	
LXEM8-50HL-DFA-EDU			DFA	13,397	94.6	141.6	45°C	
LXEM8-50HL-DCA-EDU			DCA	13,525	94.8	142.7	45°C	
LXEM8-30VL-RA-EDU	Very High Lumen		30K	RA	14,747	123.4	119.5	40°C
LXEM8-30VL-RFA-EDU				RFA	14,789	123.2	120.0	40°C
LXEM8-30VL-DFA-EDU				DFA	15,512	123.4	125.7	40°C
LXEM8-30VL-DCA-EDU				DCA	15,613	123.4	126.5	40°C

# Alternate Lighting Package

- X'd out fixtures are not accepted

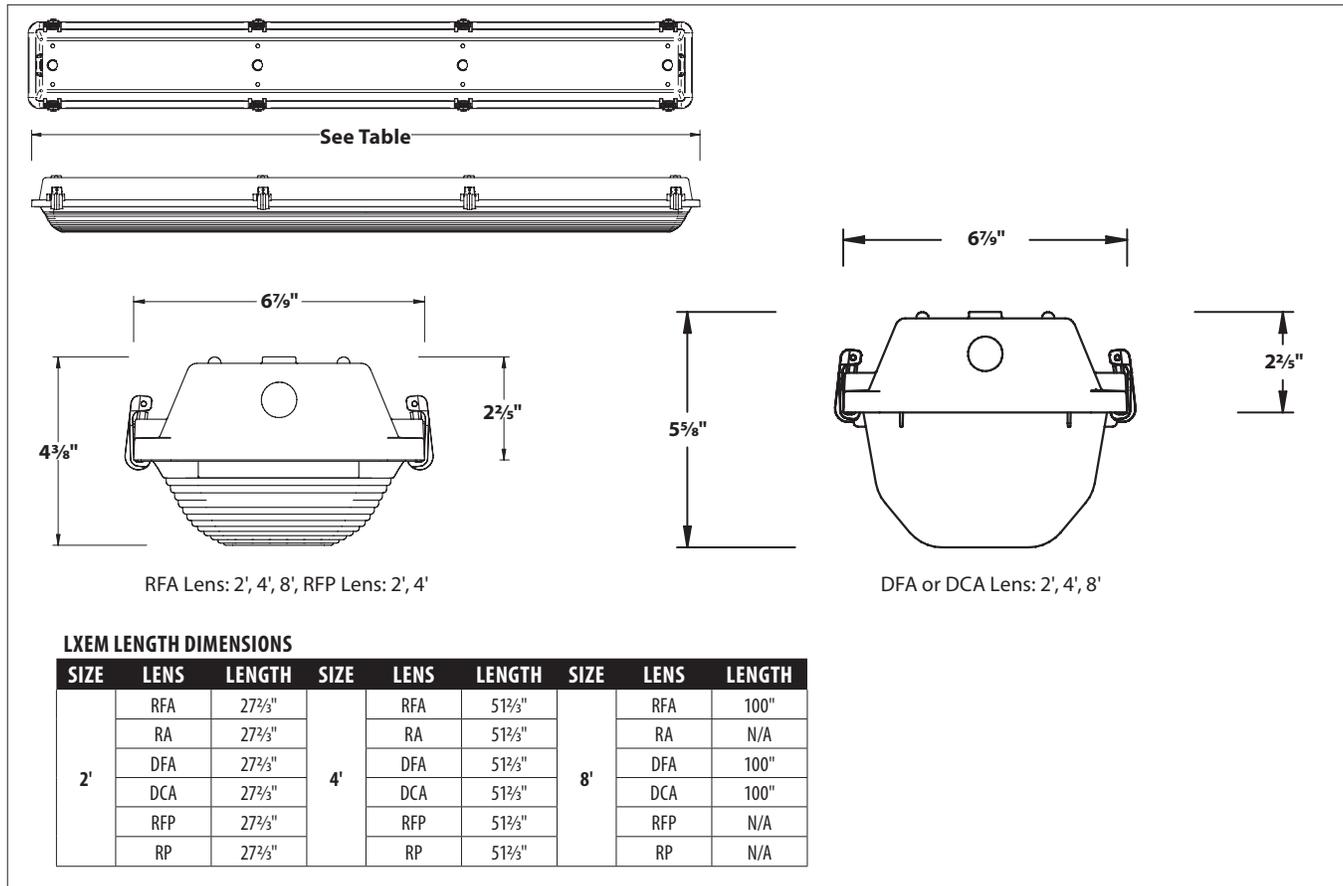
**PRODUCT AVAILABILITY**

Lumen Package	Output	Color	Lens	Lumens	Watts	LPW	Max Ambient Operating Temp
LXEM8-35VL-RA-EDU	Very High	35K	RA	15,248	123.4	123.6	40°C
LXEM8-35VL-RFA-EDU			RFA	15,292	123.2	124.1	40°C
LXEM8-35VL-DFA-EDU			DFA	16,040	123.4	130.0	40°C
LXEM8-35VL-DCA-EDU			DCA	16,143	123.4	130.8	40°C
LXEM8-40VL-RA-EDU		40K	RA	15,484	123.4	125.5	40°C
LXEM8-40VL-RFA-EDU			RFA	15,529	123.2	126.0	40°C
LXEM8-40VL-DFA-EDU			DFA	16,288	123.4	132.0	40°C
LXEM8-40VL-DCA-EDU			DCA	16,393	123.4	132.8	40°C
LXEM8-50VL-RA-EDU		50K	RA	15,897	123.4	128.8	40°C
LXEM8-50VL-RFA-EDU			RFA	15,943	123.2	129.4	40°C
LXEM8-50VL-DFA-EDU			DFA	16,722	123.4	135.5	40°C
LXEM8-50VL-DCA-EDU			DCA	16,830	123.4	136.4	40°C
LXEM8-30XL-RFA-EDU	Xtra High Lumen	30K	RFA	19,558	182.4	107.2	30°C
LXEM8-30XL-RA-EDU			RA	19,678	182.8	107.7	30°C
LXEM8-30XL-DFA-EDU			DFA	20,716	182.8	113.3	30°C
LXEM8-30XL-DCA-EDU			DCA	20,847	183.0	113.9	30°C
LXEM8-35XL-RFA-EDU		35K	RFA	20,223	182.4	110.9	30°C
LXEM8-35XL-RA-EDU			RA	20,348	182.8	111.3	30°C
LXEM8-35XL-DFA-EDU			DFA	21,420	182.8	117.2	30°C
LXEM8-35XL-DCA-EDU			DCA	21,556	183.0	117.8	30°C
LXEM8-40XL-RFA-EDU		40K	RFA	20,536	182.4	112.6	30°C
LXEM8-40XL-RA-EDU			RA	20,662	182.8	113.0	30°C
LXEM8-40XL-DFA-EDU			DFA	21,752	182.8	119.0	30°C
LXEM8-40XL-DCA-EDU			DCA	21,889	183.0	119.6	30°C
LXEM8-50XL-RFA-EDU		50K	RFA	21,083	182.4	115.6	30°C
LXEM8-50XL-RA-EDU			RA	21,213	182.8	116.0	30°C
LXEM8-50XL-DFA-EDU			DFA	22,332	182.8	122.2	30°C
LXEM8-50XL-DCA-EDU			DCA	22,473	183.0	122.8	30°C

# Alternate Lighting Package

- X'd out fixtures are not accepted

## DIMENSIONAL DATA



**NOTE:** All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.

Job Name: Alternate Lighting Package  
 - X'd out fixtures are not accepted

Ordering Code: \_\_\_\_\_ Fixture type: \_\_\_\_\_



# BETA4

## Description

BETA4 is a performance spot fixture in a par30 cylinder form factor integrated with industry best LEDs up to 3230lm. BETA4 has many options for most applications and carries the first Year NO COLOR SHIFT warranty.

## Housing

Extruded aluminum housing with white, matte chrome or black finish

## Mounting

Canopy over a 3" - 4" recessed round junction box

## Electrical / Led Driver

- 120Vac input, 50/60Hz
- Trailing Edge (ELV) 10% dimming
- Consult factory for other voltage options

## Listings

- ETLus Listed to UL1598 (suitable for dry and damp locations only)
- cETL Listed to CSA C22.2 #250.0
- Made in the USA - meets the requirements of the Buy American provision within the ARRA

## Ordering Codes

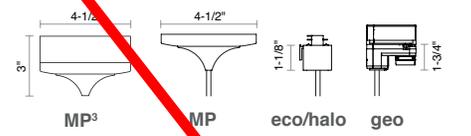
Follow the steps to specify your fixture, example: 608 - 4 - XTM19 - 38LM - V30K - 83 - SA60 - 120 - ELV - MC - MP - CLR

Part Number	Aperture	LED	Delivered Lumen	CCT	CRI	Reflector	Voltage	Dimming
608	4 4"	XTM19 XIM19 <sup>4</sup>	16LM <sup>1</sup> 1360 lm 20LM <sup>3</sup> 1700 lm 30LM <sup>2</sup> 2550 lm 38LM <sup>1,2</sup> 3230 lm	27K 2700K 30K 3000K V30K 3000K Vibrant 35K 3500K 40K 4000K B27K <sup>2</sup> 2700K Beauty	83 <sup>1,2</sup> 83 CRI 98 <sup>2,3</sup> 98 CRI	DA90 diffuse, 20° DA60 diffuse, 60° SA20 specular, 20° SA40 specular, 40° SA60 specular, 60°	120 <sup>2</sup> 120V	ELV 10% trailing edge dimming

- Finish**
- BK black
  - MC matte silver
  - WH white

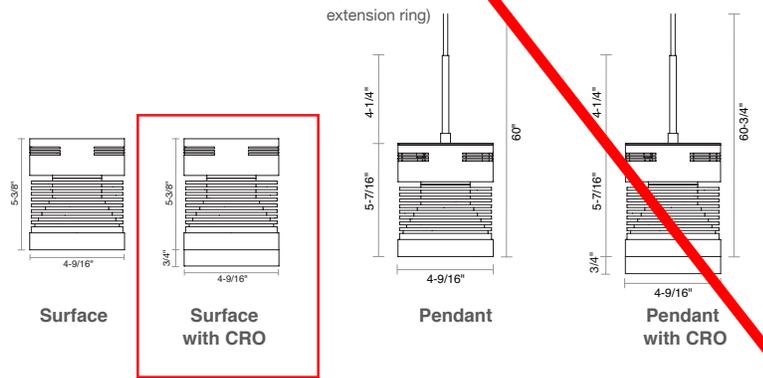
- Mounting**
- S Surface mount
  - MP<sup>2</sup> Pendant canopy
  - ECOBK 700/HALO black
  - ECOSV 700/HALO matte silver
  - ECOWH 700/HALO white
  - GEOBK 710 black
  - GEOSV 710 matte silver
  - GEOWH 710 white

- Lite Optics**
- CLR standard snoot / lens
  - CRO corona ring / lens



## Notes

- 38LM only available in 83 CRI
- 83 CRI-38LM and 98 CRI-30LM offered only in MP. Must use extension ring.
- B27K Beauty Series is only available for 20LM. Choose 98 CRI. Actual 95 CRI
- XIM please consult factory.



Job Name:

Contact:

Ordering Code:

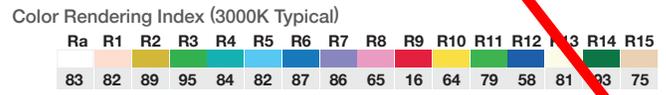
Fixture Type:

**Xicato Series LED Performance**

**SDCM** 1 x 2 MacAdam Ellipse  
**DUV** +/- 0.001  
**Life** L80 50,000 hrs  
**Warranty** 5 year "no color shift" warranty  
 5 year fixture warranty

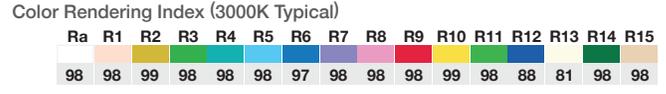
**Standard Series**

**LED** Patented Cold Remote Phosphor, Xicato® XTM19 Standard Series  
**CCT** 2700k, 3000k, 3500k, 4000k  
**CRI Ra** 83 typical  
**GAI<sub>BB</sub>** 97



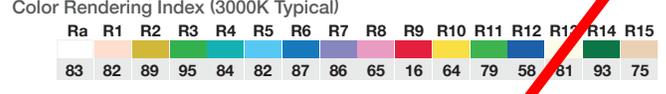
**Artist Series**

**LED** Patented Cold Remote Phosphor, Xicato® XTM19 Artist Series  
**CCT** 2700k, 3000k, 3500k, 4000k  
**CRI Ra** 98 typical  
**GAI<sub>BB</sub>** 109



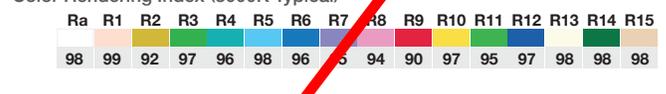
**Vibrant Series (V80)**

**LED** Patented Cold Remote Phosphor, Xicato® XTM19 Vibrant Series (V80)  
**CCT** 3000k  
**CRI Ra** 83 typical  
**GAI<sub>BB</sub>** 111



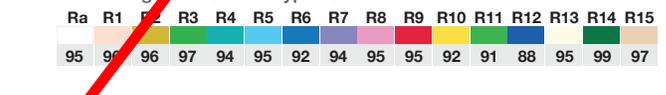
**Vibrant Series (V95)**

**LED** Patented Cold Remote Phosphor, Xicato® XTM19 Vibrant Series (V95)  
**CCT** 3000k  
**CRI Ra** 98 typical  
**GAI<sub>BB</sub>** 120



**Beauty Series**

**LED** Patented Cold Remote Phosphor, Xicato® XTM19 Beauty Series  
**CCT** 2700k  
**CRI Ra** 95 typical  
**GAI<sub>BB</sub>** 133



**Notes**

Values presented are average. Due to installation location and environment, end use performance may vary. Refer to IES file for specific values.

**Delivered Lumen / Wattage Chart**

Source Lumens	Delivered Lumens	Fixture Wattage
1600 lm	1360 lm	13.2 W
2000 lm	1700 lm	19.5 W
3000 lm	2550 lm	28.5 W
3800 lm	3230 lm	30.1 W

Source Lumens	Delivered Lumens	Fixture Wattage
1600 lm	1360 lm	15.6 W
2000 lm	1700 lm	17.5 W
3000 lm	2550 lm	22.3 W
3800 lm	3230 lm	34.1 W

Source Lumens	Delivered Lumens	Fixture Wattage
1600 lm	1360 lm	11.7 W
2000 lm	1700 lm	13.5 W
3000 lm	2550 lm	18.6 W
3800 lm	3230 lm	29.1 W

Source Lumens	Delivered Lumens	Fixture Wattage
1600 lm	1360 lm	15.6 W
2000 lm	1700 lm	17.5 W
3000 lm	2550 lm	23.8 W
3800 lm	3230 lm	34.1 W

Source Lumens	Delivered Lumens	Fixture Wattage
2000 lm	1700 lm	26.4 W

Job Name:

Contact:

Ordering Code:

Fixture Type:

Accessories

- 900331 Diffuser lens
- 900332 Frosted lens
- 900330 Linear lens



900331



900332



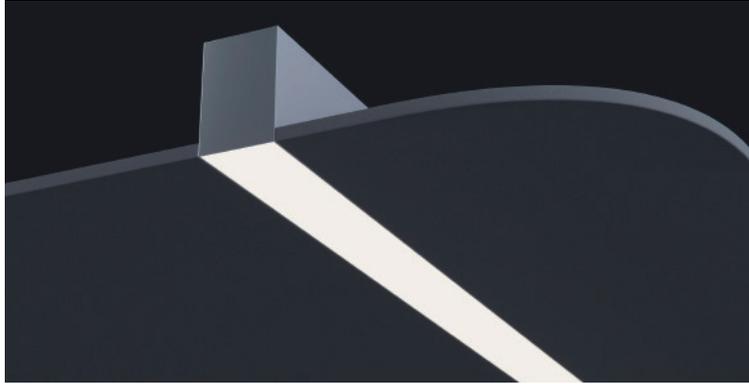
900330

DATE

- X'd out fixtures are not accepted

FIRM

TYPE



Narrow, recessed, architectural luminaire. For use in indoor applications where an LED luminaire with small profile providing continuous light is required. Suitable for grid systems and drywall installation as well as custom mounting requests.

### FEATURES

- Available In Custom Lengths & Long Runs To 1/16" Accuracy
- Corners & Patterns Available (See Page 3)
- Damp Location Rated
- CRI 90+ Standard
- 5 Year, 50,000 Hour Fixture Warranty
- 2700K, 3000K, 3500K, 4000K & 5000K Color Temperatures Available
- Enlighted/Wattstopper Sensors Available

**APPLICATIONS** Offices, Lobbies, Retail Stores, Classrooms, Reception Areas & Corridors

**CONSTRUCTION** Extruded Aluminum Housing and Steel End Caps. Formed Aluminum Gear Tray

**OPTICS** Extruded High Transmission Satin Acrylic Lens With No LED Imaging

**WARRANTY** 5 Year Limited Warranty (Covers Standard Components)

**FINISH** Standard Powder-Coated White

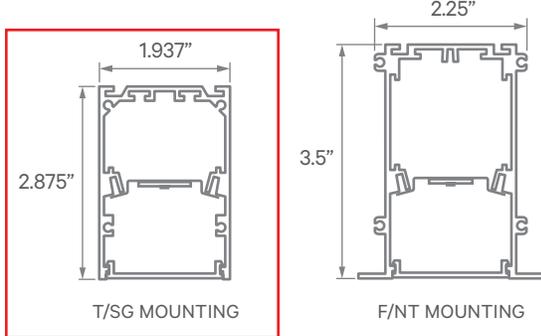
**FIXTURE RATINGS & CERTIFICATIONS** Union Made ETL Listed Made In The USA Damp Location Rated



**ELECTRICAL** Integral Driver With 0-10V 10% Dimming Standard. Several Driver Options Available. See Below For Lutron Dimming Information

2-Wire Forward Phase; Hi-Lume 1% Dimming, Only Available For 120V	LTEA
3-Wire EcoSystem; Hi-lume 1% Dimming	L3DA
Digital EcoSystem; Hi-lume 1% Dimming, 'Soft-on Fade-to-black' (Required for Daylighting)	LDE1
5 Series EcoSystem; 5% Dimming	LDE5

### EXTRUSION DIMENSIONS

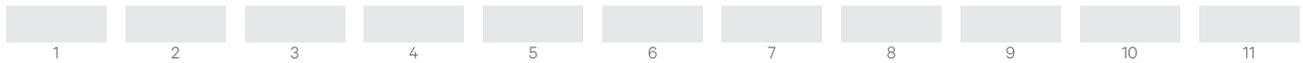


### LED SYSTEM INFORMATION

	Nominal System Watts	Nominal Delivered Lumens	Nominal Efficacy
Standard (LTG1)	7.25 W/ft	683 Lm/ft	94 Lm/W
<b>Low (LTG2)</b>	<b>5 W/ft</b>	<b>470 Lm/ft</b>	94 Lm/W
High (LTG3)	8.75 W/ft	783 Lm/ft	90 Lm/W

Based on a 3500K luminaire using one driver. Please consult factory for custom lumen outputs & wattage.

### ORDERING



<p><b>1 - FIXTURE ID</b></p> <p>LSR1 LED</p>	<p><b>2 - LENGTH</b></p> <p>2 - 2 ft 4 - 4 ft 8 - 8 ft x'-x" - Custom (specify length)</p> <p>**Patterns available, consult factory</p>	<p><b>3 - COLOR TEMP</b></p> <p>27 - 2700K/90 CRI 30 - 3000K/90 CRI 35 - 3500K/90 CRI 40 - 4000K/90 CRI 50 - 5000K/90 CRI TW* - Tunable White RGBW* - RGB + 3000K</p> <p>*Must use DMX Driver (Remote)</p>	<p><b>4 - LED SYSTEM</b></p> <p>LTG1 - Standard LTG2 - Low LTG3 - High C - Custom Output (ie-C550Lm/ft)</p>	<p><b>5 - VOLTAGE</b></p> <p>UNV - Universal (120/277V)</p>	<p><b>6 - DRIVER</b></p> <p>DB - Standard 10% Dimming (0-10V) DB1% - 1% Dimming (0-10V) DB.01% - .01% Dimming (0-10V) LTEA* - Lutron 2-wire 1% Dimming L3DA* - Lutron 3-wire 1% Dimming LDE1* - Lutron Digital EcoSystem LDE5* - 5 Series EcoSystem; 5% Dimming</p> <p>*Refer to 'Electrical' Information Above DMX - For Color Tuning and RGBW</p>	<p><b>7 - FINISH</b></p> <p>W - White (Standard)</p>	<p><b>8 - MOUNTING</b></p> <p>T - 9/16" Tee Grid T15 - 15/16" Tee Grid SG - Slot Grid/Interlude F - Flange NT - No Trim/Spackle Flange</p>	<p><b>9 - CONTROL</b></p> <p>EIS - Integral Sensor by Enlighted WIS - Integral Sensor by Wattstopper</p>	<p><b>10 - OPTICS</b></p> <p>SD - Standard Diffuser ASYM - Asymmetric Optic BW - Batwing</p>	<p><b>11 - OPTIONS</b></p> <p>WH - Whips CP - Chicago Plenum EM 120V - Emergency Pack EM 277V - Emergency Pack</p>
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DATE

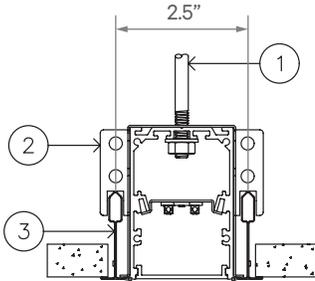
PROJECT

FIRM

TYPE

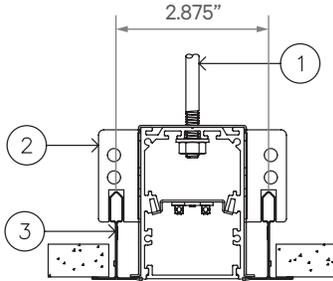
## MOUNTING OPTIONS

T - 9/16" Tee Grid



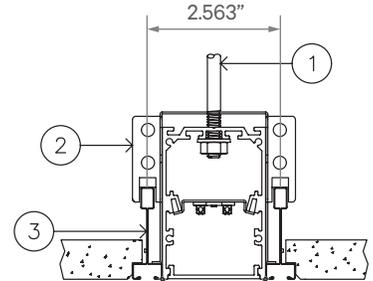
- 1 - Threaded Rod (not supplied)
- 2 - Tee Grid Bracket
- 3 - Tee Grid

T15 - 15/16" Tee Grid



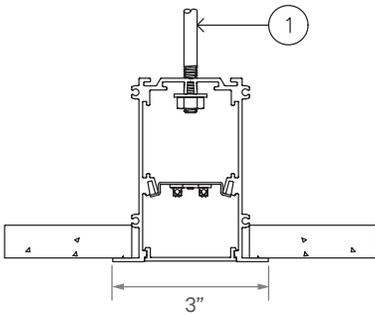
- 1 - Threaded Rod (not supplied)
- 2 - Tee Grid Bracket
- 3 - Tee Grid

SG - Slot Grid/Interlude



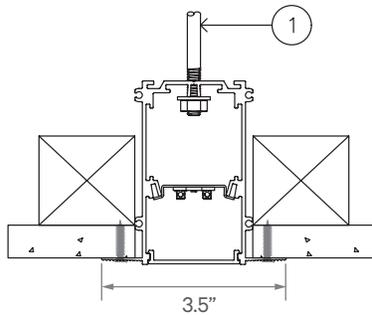
- 1 - Threaded Rod (not supplied)
- 2 - Slot Grid Bracket
- 3 - Slot Grid

F - Flange



- 1 - 1/4-20 Threaded Rod Optional

NT - No Trim/Spackle Flange



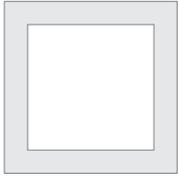
- 1 - 1/4-20 Threaded Rod Optional

DATE

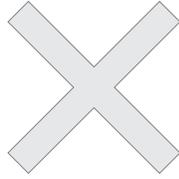
PROJECT

FIRM

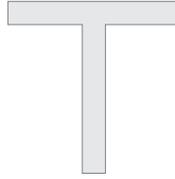
TYPE

**CORNERS & PATTERNS**Available with illuminated corners, angles, and custom patterns. **Must consult factory for custom corners and patterns.**

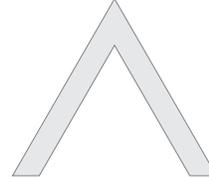
Square Patterns



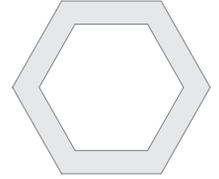
X Patterns



T Patterns



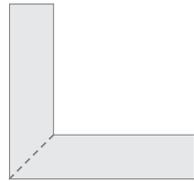
Custom Angles



Custom Patterns

**LENS CUT OPTIONS**

Straight-cut



Mitered Angle

**NOTE:** Straight-Cut is standard configuration, Mitered Angle is optional and must be specified.

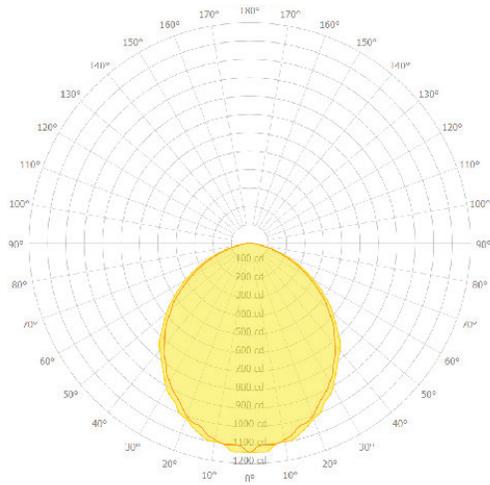
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PROJECT

FIRM

TYPE

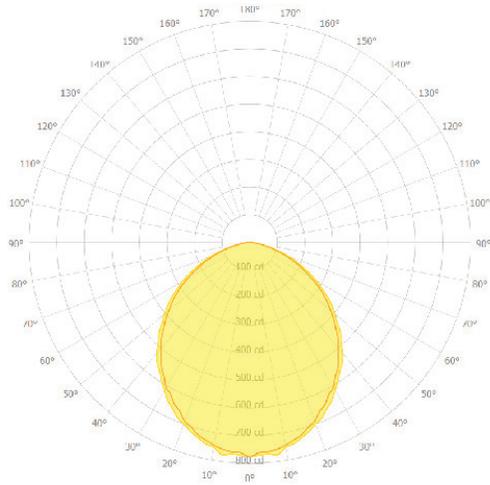
PHOTOMETRICS



**LSR1 LED 4FT LTG1 3500K**  
**DELIVERED LUMENS: 2,733Lm**  
**TOTAL WATTS: 29W**  
**EFFICACY: 94 Lumens/Watt**

ZONAL LUMEN SUMMARY

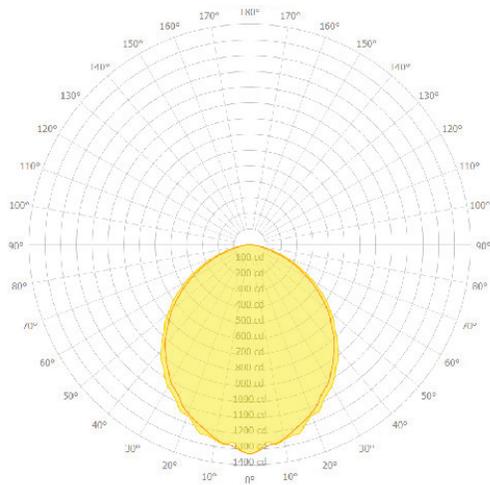
ZONE	LUMENS	% LAMP	% FIXTURE
0.00 - 30.00	838.12	22.06	30.66
0.00 - 40.00	1346.95	35.46	49.27
0.00 - 60.00	2281.95	60.07	83.48
0.00 - 90.00	2733.54	71.96	100.00
90.00 - 120.00	0.08	0.00	0.00
90.00 - 150.00	0.08	0.00	0.00
90.00 - 180.00	0.08	0.00	0.00
0.00 - 180.00	2733.54	71.96	100.00



**LSR1 LED 4FT LTG2 3500K**  
**DELIVERED LUMENS: 1,880Lm**  
**TOTAL WATTS: 20W**  
**EFFICACY: 94 Lumens/Watt**

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXTURE
0.00 - 30.00	576.90	22.09	30.68
0.00 - 40.00	926.64	35.48	49.28
0.00 - 60.00	1569.75	60.10	83.48
0.00 - 90.00	1880.40	71.99	100.00
90.00 - 120.00	0.06	0.00	0.00
90.00 - 150.00	0.06	0.00	0.00
90.00 - 180.00	0.06	0.00	0.00
0.00 - 180.00	1880.40	71.99	100.00



**LSR1 LED 4FT LTG3 3500K**  
**DELIVERED LUMENS: 3,133Lm**  
**TOTAL WATTS: 35W**  
**EFFICACY: 90 Lumens/Watt**

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXTURE
0.00 - 30.00	961.40	22.08	30.68
0.00 - 40.00	1544.53	35.48	49.29
0.00 - 60.00	2616.16	60.10	83.49
0.00 - 90.00	3133.48	71.98	100.00
90.00 - 120.00	0.10	0.00	0.00
90.00 - 150.00	0.10	0.00	0.00
90.00 - 180.00	0.10	0.00	0.00
0.00 - 180.00	3133.48	71.98	100.00