

**SMYRNA SCHOOL DISTRICT
Thomas D. Clayton Building Renovations
Bid Number SSD-15-004**

ADDENDUM NO. 4

27 January 2016

Smyrna School District
Thomas D. Clayton Building
80 Monrovia Ave.
Smyrna, Delaware 19977

Fearn-Clendaniel Architects, Inc.
6 Larch Avenue Suite 398
Wilmington, Delaware, 19804
Phone: (302) 998-7615
Fax: ((302) 998-7685

BIDS DUE:

3:00 p.m. on February 11, 2016

LOCATION:

**Smyrna School District Administrative Offices
82 Monrovia Ave, Smyrna, DE 19977**

ARCHITECT'S PROJECT NO: 14107e

1.0 NOTICE TO ALL BIDDERS:

- 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.
- 1.2. The following items are intended to revise and clarify the Contract Documents, 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. **The Bid Due Date has been revised. The new Bid Due Date is 3:00 p.m. on Thursday, February 11, 2016.** (See attached revised Bid Form).
- 1.5. Lighting substitution request by Penn Lighting:

Fixture package is approved with the following required modifications to the submitted package:

 1. All recessed lay-in fixtures shall be provided with 0.125 lenses.
 2. All Master/Satellite whips shall be furnished with 10' whips.
 3. All Emergency fixtures shall use 3 watt heads, ones proposed use 2 watt heads and will not provide adequate illumination.
 4. See Drawing E20-01 modification below.

Lighting controls package not approved.
- 1.6. Lighting substitution request by Illuminations:

Fixture package is approved with the following required modifications to the submitted package:

1. All recessed lay-in fixtures shall be provided with 0.125 lenses.
2. All Master/Satellite whips shall be furnished with 10' whips.
3. All Emergency fixtures shall use 3 watt heads, ones proposed use 2 watt Heads and will not provide adequate illumination.
4. Type D fixture shall be 2 lamp industrial with reflector, wireguard and chain hanger.
5. See Drawing E20-01 modification below

No lighting controls package submitted for review.

1.7. The following substitution requests have been reviewed and are not approved:

1. Door Hardware - Corbin Ruswin DC8000 Closer Device
2. Door Hardware - Corbin Ruswin ED5000 Exit Device
3. Door Hardware - Corbin Ruswin ML2000 Locks

1.8. The existing building utilizes a Johnson Controls Metasys system. This control is wired back to the central office via an underground conduit. As part of the construction effort, this conduit shall remain in service and shall not be demolished. The "new" control system shall interface with the existing automation system within the central office.

1.9. The Smyrna School District has two (2) approved controls contractors: Advanced Power Control, Inc and Modern Controls.

1.10. In reference to Addendum No. 3 item 1.6, exterior applied muntins have been eliminated on all windows. See specification modification identified in this Addendum. All exterior windows will have interior divider grilles located between insulating-glass lites at all exterior units. No window substitutions were added to base scope of work, but a window bid alternate A-1 was added (see specification additions).

1.11. Three Allowances have been added to the project. See Changes to the Specifications identified in this Addendum.

1.12. Two Unit Prices have been added to the project. See Changes to the Specifications identified in this Addendum.

1.13. One Alternate has been added to the project. See Changes to the Specifications identified in this Addendum

2.0 QUESTIONS:

2.1 **Q:** How much area of the existing building is crawlspace?

A: See attached Sketch: A-SK-002. Crawlspace also includes interior foundation walls and piers supporting existing floor framing above. (Existing foundation drawings are not available.) Existing interior foundations will require demolition in the base scope of work. For this reason, we have added an allowance for demolition of interior foundation walls and piers. Provide allowance indicated and unit pricing. See revised bid form, specification 012100 Allowances, and 012200 Unit Prices.

2.2 **Q:** Surface mounted grids cannot work with the specified "Glasvent" glazing system. The perimeter frame is not substantial enough for installation.

A: Grids shall be placed on the interior air space of the insulated glass.

- 2.3 **Q:** Expansion tank ET/1 is indicated both on the mechanical schedule (M201) and the plumbing schedule (P201). Both expansion tanks are different in make, model, capacity and size. Both are indicated to be located in the boiler room, but only one is indicated on the plans. If one is required, please identify which one. If both are required, please identify accurate install locations and differentiate with separate naming conventions.

A: There are two (2) expansion tanks required. One (1) expansion tank is for the building hot water heating system and the other one is for the domestic water heating system. The expansion tank listed on the mechanical drawings is the hot water heating system (see diagram 2/M102) and the expansion tank listed on the plumbing drawings is for the domestic water heater (see diagram 4/P301). Both expansion tanks will be located in the boiler room as indicated on their schedules.

- 2.4 **Q:** Specification section 233113 indicates duct liner type to be used in ducts. Please clarify if all supply & return duct is intended to be lined.

A: In lieu of external duct insulation, internally lined ductwork should be installed on all supply and return ductwork.

- 2.5 **Q:** The pre-bid meeting minutes state in 1.10 that balancing, security and telecommunications work will be contracted through the Owner. Please clarify the extents of these scopes of work.

A: This contract shall coordinate scheduling of contracts performed for the owner. Refer to Specification Section "General Requirements, Article 6"

- 2.6 **Q:** Does security refer to access controls? Are raceways, hanging methods, sleeves and firestopping required for this work by this contractor? Does this work include the intercom work?

A: Refer to Specification Section 28 05 00 Security & Telecommunications Raceway for work to be performed by this contractor for Security & Telecommunications contracts held by the Owner. Intercom is not part of the scope of this contract.

- 2.7 **Q:** Is the telecommunications contractor responsible for their own raceways, hanging methods, sleeves and firestopping?

A: Refer to Specification Section 28 05 00 Security & Telecommunications Raceway for work to be performed by this contractor for Security & Telecommunications contracts held by the Owner.

- 2.8 **Q:** The pre-bid meeting minutes state in 1.18 that the contractor is responsible for obtaining permits. The Smyrna School District will pay for all permit impact fees. Please confirm that the cost of these permits are to not be included in the base bid and that these fees paid for by the SSD will be direct.

A: The SSD will pay permit fees direct. The contractor will be responsible for coordinating and applying for the permit. (Note: The Town has reviewed permit drawings and preliminary application. The contractor and construction cost will need to be added to preliminary information upon award of contract.)

- 2.9 **Q:** Water meters indicated to be supplied by the Town of Smyrna will be installed by the plumber. Please confirm that any meter wiring (if necessary) will be performed by the Town of Smyrna.

A: The water department will furnish the water meter to the contractor. The meter should be prewired for installation of the remote reader which needs to be mounted on the exterior wall. The installation of this system is the responsibility of the installing contractor and should be coordinated with the water department.

2.10 **Q:** Will any temporary fencing be required?

A: Contractor will be responsible for public safety and securing site from intrusion. Means and methods to provide public safety and building security during construction is contractor's responsibility. Temporary enclosures are listed in Temporary Facilities and control specification section 015000.

2.11 **Q:** Drawing A10-01 shows partition type PT3.7 on the wall between rooms 131 and 135. PT3.7 is noted to receive ceramic tile on drawing A12-01. I believe this is a mistake, please clarify.

A: PT3.7 partition type is correct. Drawing A12-01 indicates PT3.7 to receive moisture resistant (MR) GWB to be on Maintenance Room 131 Side. Delete the rest of the note which reads, "Extend tile 6'-6 3/4" above fin floor."

2.12 **Q:** Sections H2, J2, and H3 on A40-01 look like there is a membrane drawn on the interior side of the CMU. Please clarify what this dashed line represents.

A: This dashed line represents dampproofing applied to the exterior face of the CMU wall.

2.13 **Q:** On the door schedule on A40-01, door opening 101A is a 3'-0" wide opening, but in the notes it states 6'-6" width. Door opening 101B is a 6'-0" wide opening, but in the notes it states 7'-0" width. Please clarify what these width notes mean, or if they should be deleted.

A: The opening sizes in the "Comments" column for Door 101A and 101B shall be deleted.

2.14 **Q:** In the vestibule between door openings 100 and 101B on drawing A10-01, there are symbols "IC" and "AP". What do these mean?

A: "IC" stands for Intercom. "AP" stands for Annunciator Panel.

2.15 **Q:** Glazing type G3, G4, and G6 do not appear on the drawings. Please confirm they do not apply to this project.

A: Glazing types G3, G4, and G6 do not apply to this project.

2.16 **Q:** Section 9, 10, and 11 on drawing A41-01 do not appear on any of the window elevations. Please confirm that these sections do not apply to this project.

A: Sections 9, 10, and 11 on Drawing A41-01 do not apply to this project, however, Dtl 11/A41-01 includes a dimension from the interior face of GWB to Column line 2 which is applicable at some of the window jambs throughout the building. See plan for locations.

2.17 **Q:** Please confirm that the refrigerator shown in Room 125 is NIC.

A: The refrigerator shown in Room 125 is NIC. The owner will provide.

2.18 **Q:** All of the toilet rooms are scheduled to receive type 2 wall base, which is wood, on drawing, A80-01. Please confirm that the toilet rooms should really receive type 3 wall base, ceramic cove base.

A: Drawings A50-01 & A80-01, all of the toilet rooms to receive Type 3 wall base, ceramic cove base.

2.19 **Q:** Paragraph 7 on drawing S10-02 discusses sprayed fire-resistant materials. Please confirm that there is no sprayed fire proofing on this project.

A: Spray fire-proofing is not anticipated on this project.

2.20 **Q:** Fire sprinkler note #1 on P101 states "All sprinkler work shall be performed by the owner or approved fire sprinkler contractor." Who is the contractor or can any sprinkler contractor do the work?

A: Drawing P101, Note #1 can be deleted in its entirety.

2.21 **Q:** The Sheathing spec (061600) calls for subfloor and underlayment. There is no subfloor or underlayment shown on the drawings. Please confirm that this spec section does not apply to this project.

A: Delete specification section 061600 Sheathing.

2.22 **Q:** There is a spec for Bituminous Damproofing (071113), but none is shown on the drawings. Please clarify what areas, if any, require damproofing.

A: Damproofing will be required on new exterior wall construction.

3.0 CHANGES TO THE DRAWINGS:

3.1 Drawing E00-01:

A. ADD the following Project Note #8. Include an Allowance equal to \$15,000 for costs by the utility company for the new electric service. Once actual costs are identified during construction, a Credit or Add Change will be applied to the Allowance based on the actual invoice by the Utility Company (Town of Smyrna)

3.2 Drawing E20-01:

A. On fixture schedule, Type F fixture, change Canopy/Surface to Canopy/Recess. Modify fixture selection such that fixture is totally enclosed to prevent entrance of insects.

B. Add the following Town of Smyrna concrete pad detail 3103 for the utility furnished pad mounted transformer. Transformer pad to be included in this contract.

C. Increase integrated short circuit current rating of panels MR, DP1, DP2 and LP1 to 22 KAIC.

4.0 CHANGES TO THE SPECIFICATIONS:

4.1 Table of Contents: Add specification section 012300 Alternates and specification section 085200 Wood Windows

4.2 Bid Form: (See attached revised Form) revisions include:

- A. Revise Bid due date from: February 2, 2016 @ 3:00 PM to: February 11, 2016 @ 3:00 PM
- B. Add Unit Price No. 8 - Existing crawlspace -Interior foundation wall demolition and Unit Price No. 9 – Existing crawlspace -Interior foundation pier demolition.
- C. Add Alternate No. A-1 Provide Clad Wood Windows in lieu of specified Aluminum.

4.3 Revise Specification section 012100 Allowances to add:

- B. Allowance No. 2: Existing crawlspace -Interior foundation wall demolition. As part of the Base Bid provide an allowance for demolition of Five Hundred linear feet (500 lf) of continuous 12" wide interior masonry/concrete foundation wall. Remove interior foundation wall as required to allow installation of new concrete floor. Unused allowance remaining at the end of the job will be credited to the Owner using the Unit Price No. 8 - Existing crawlspace -Interior foundation wall demolition cost per linear foot.
- C. Allowance No. 3: Existing crawlspace -Interior foundation pier demolition. As part of the Base Bid provide an allowance for demolition of thirty (30), 16"x16" interior concrete foundation piers. Remove interior pier as required to allow installation of new concrete floor. Unused allowance remaining at the end of the job will be credited to the Owner using the Unit Price No. 9 - Existing crawlspace -Interior foundation pier demolition cost per pier.
- D. Allowance No. 4: Include an Allowance equal to \$15,000 for costs by the utility company for the new electric service. Once actual costs are identified during construction, a Credit or Add Change Order will be applied to the Allowance based on the actual invoice by the Utility Company (Town of Smyrna).

4.4 Revise Specification section 012200 Unit Prices to add:

- H. Unit Price No. 8 - Existing crawlspace -Interior foundation wall demolition
 - 1. Description: Demolition of continuous 12" wide interior masonry/concrete foundation wall beyond specified allowance. Remove interior foundation wall as required to allow installation of new concrete floor.
 - 2. Unit of Measurement: Linear foot (lf)
- I. Unit Price No. 9 – Existing crawlspace -Interior foundation pier demolition.
 - 1. Description: Demolition of 16"x16" interior concrete foundation piers beyond specified allowance. Remove interior pier as required to allow installation of new concrete floor.
 - 2. Unit of Measurement: one 16"x16" interior concrete foundation pier.

4.5 Add Specification section 012300 Alternates (see attached).

4.6 Add specification section 085200 Wood Windows (see attached).

4.7 Revise Specification section 084113 Aluminum-Framed Entrances and Storefronts:

- 1.5 Submittal; E. – delete 7. Applied muntin profile.

- 2,7 Accessory Materials; C. revise paragraph to read- C. Provide 1" wide interior divider grilles located between insulating-glass lites at all exterior units as indicated on drawings.

4.8 Revise Specification section 085113 Aluminum Windows:

- 1.5 Submittal; B. – delete 8. Muntin profiles.
- 1.5 Submittal; D. – delete 5. Muntins: Applied muntling extrusion profile 12-inch-(300-mm-) long sections.
- 2,7 Fabrication; K. revise paragraph to read- C. Provide 1" wide interior divider grilles located between insulating-glass lites at all exterior units as indicated on drawings.

END OF ADDENDUM NO. 4

THOMAS D. CLAYTON BUILDING – RENOVATIONS
80 MONROVIA AVENUE
SMYRNA, DE 19977
Bid No. SSD-15-004-TDC Renovations

BID FORM

For Bids Due: February 11, 2016 @ 3:00 PM To: Smyrna School District
82 Monrovia Avenue
Smyrna, Delaware 19977

Name of Bidder: _____

Delaware Business License No.:_____ **Taxpayer ID No.:** _____
“(A copy of a Bidders Delaware Business License must be attached to this form.)”

(Other License Nos.): _____

Phone No.: () _____ - _____ **Fax 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 himself 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:

ALTERNATES

Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed out part that does not apply.

ALTERNATE No. A-1: Provide Clad Wood Windows in lieu of specified Aluminum: This alternate includes providing custom clad wood exterior windows in lieu of specified aluminum exterior windows for window types S-1, S-2, S-3, S-4, S-5, and S-6. See specification section '085200 Wood Windows' for detailed wood window information.

Add/Deduct: _____
(\$ _____)

THOMAS D. CLAYTON BUILDING – RENOVATIONS
80 MONROVIA AVENUE
SMYRNA, DE 19977
Bid No. SSD-15-004-TDC Renovations

UNIT PRICES

Unit prices conform to applicable project specification section. Refer to the specifications for a complete description of the following Unit Prices:

	<u>ADD</u>	<u>DEDUCT</u>
A. Unit Price No. 1 - Structural Fill (DelDot Type G):	\$ _____	\$ _____
1. Description: Additional quantity required of less than 500 cubic yards, with work performed according to Division 312000 Section "Earthwork."		
2. Unit of Measurement: Cubic Yard (c.y.)		
B. Unit Price No. 2 - Structural Fill (DelDot Type G):	\$ _____	\$ _____
1. Description: Additional quantity required of more than 500 cubic yards, with work performed according to Division 312000 Section "Earthwork."		
2. Unit of Measurement: Cubic Yard (c.y.)		
C. Unit Price No. 3 - Cut:	\$ _____	\$ _____
1. Description: Removal from site of less than 500 cubic yards according to Division 312000 Section "Earthwork."		
2. Unit of Measurement: Cubic Yard (c.y.)		
D. Unit Price No. 4 - Cut:	\$ _____	\$ _____
1. Description: Removal from site of more than 500 cubic yards according to Division 312000 Section "Earthwork."		
2. Unit of Measurement: Cubic Yard (c.y.)		
E. Unit Price No. 5– Silt Fence:	\$ _____	\$ _____
1. Description: Additional quantity of silt fence material and installation.		
2. Unit of Measurement: Linear Foot (l.f.)		
F. Unit Price No. 6 Geogrid Reinforcement	\$ _____	\$ _____
1. Description: Placement of Tensar BX1100 geogrid reinforcement material and installation per section 2.03 of the Earthwork specification.		
2. Unit of Measurement: Square Yard (s.y.)		
G. Unit Price No. 7 – Brick Re-Pointing	\$ _____	\$ _____
1. Description: Brick re-pointing beyond base bid scope identified on drawings and beyond specified allowance for unforeseen brick pointing requiring replacement.		
2. Unit of Measurement: Square foot (sf)		

THOMAS D. CLAYTON BUILDING – RENOVATIONS
80 MONROVIA AVENUE
SMYRNA, DE 19977
Bid No. SSD-15-004-TDC Renovations

UNIT PRICES (Continued)

Unit prices conform to applicable project specification section. Refer to the specifications for a complete description of the following Unit Prices:

		<u>ADD</u>	<u>DEDUCT</u>
H.	Unit Price No. 8 – Existing crawlspace -Interior foundation wall demolition	\$ _____	\$ _____
	1. Description: Demolition of continuous 12” wide interior masonry/concrete foundation wall beyond specified allowance. Remove interior foundation wall as required to allow installation of new concrete floor.		
	2. Unit of Measurement: Linear foot (lf)		
I.	Unit Price No. 9 – Existing crawlspace -Interior foundation pier demolition.	\$ _____	\$ _____
	1. Description: Demolition of 16”x16” interior concrete foundation piers beyond specified allowance. Remove interior pier as required to allow installation of new concrete floor.		
	2. Unit of Measurement: one 16”x16” interior concrete foundation pier.		

THOMAS D. CLAYTON BUILDING – RENOVATIONS
80 MONROVIA AVENUE
SMYRNA, DE 19977
Bid No. SSD-15-004-TDC Renovations

BID FORM

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for _____ 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 (if 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 achieve substantial completion of all the work within _____ calendar days of the Notice to Proceed.

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)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Security
(Others as Required by Project Manuals)

THOMAS D. CLAYTON BUILDING – RENOVATIONS
80 MONROVIA AVENUE
SMYRNA, DE 19977
Bid No. SSD-15-004-TDC Renovations

BID FORM

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.

<u>Subcontractor Category</u>	<u>Subcontractor Name</u>	<u>Address (City & State)</u>	<u>Subcontractors tax payer ID # or Delaware Business license #</u>
1. <u>Sitework</u>	<hr/>	<hr/>	<hr/>
2. <u>Concrete</u>	<hr/>	<hr/>	<hr/>
3. <u>Masonry</u>	<hr/>	<hr/>	<hr/>
4. <u>Structural Steel</u>	<hr/>	<hr/>	<hr/>
5. <u>Low Slope Roofing</u>	<hr/>	<hr/>	<hr/>
6. <u>Doors/Frames/ Hardware Installer</u>	<hr/>	<hr/>	<hr/>
7. <u>Window Installer</u>	<hr/>	<hr/>	<hr/>
8. <u>Metal Stud/Drywall</u>	<hr/>	<hr/>	<hr/>
9. <u>Painting</u>	<hr/>	<hr/>	<hr/>
10. <u>Resilient/Carpet Floors</u>	<hr/>	<hr/>	<hr/>
11. <u>Acoustical Ceilings</u>	<hr/>	<hr/>	<hr/>
12. <u>Institutional Casework Installer</u>	<hr/>	<hr/>	<hr/>
13. <u>Fire Alarm Installer</u>	<hr/>	<hr/>	<hr/>
14. <u>Plumbing</u>	<hr/>	<hr/>	<hr/>
15. <u>Sprinklers</u>	<hr/>	<hr/>	<hr/>
16. <u>HVAC</u>	<hr/>	<hr/>	<hr/>
17. <u>DDC Controls</u>	<hr/>	<hr/>	<hr/>
18. <u>Electrical</u>	<hr/>	<hr/>	<hr/>

THOMAS D. CLAYTON BUILDING – RENOVATIONS
80 MONROVIA AVENUE
SMYRNA, DE 19977
Bid No. SSD-15-004-TDC Renovations

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 Smyrna School District.

All the terms and conditions of the Smyrna School District, Thomas D. Clayton Building, Renovations, Architect Project No. 14107e have been thoroughly examined and are understood.

NAME OF BIDDER:

**AUTHORIZED REPRESENTATIVE
(TYPED):**

**AUTHORIZED REPRESENTATIVE
(SIGNATURE):**

TITLE:

ADDRESS OF BIDDER:

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.

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

ALTERNATE No. A-1: Provide Clad Wood Windows in lieu of specified Aluminum Windows:

This alternate includes providing custom clad wood exterior windows in lieu of specified aluminum exterior windows for window types S-1, S-2, S-3, S-4, S-5, and S-6. See specification section '085200 Wood Windows' for detailed wood window information.

END OF SECTION 012300

SECTION 085200 - WOOD WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes aluminum-clad wood windows.
 - 1. Double-Hung units.
 - 2. Circle top units.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Review, discuss, and coordinate the interrelationship of wood windows with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealing perimeters, and protecting finishes.
 - 3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
 - 4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for wood windows.
- B. Shop Drawings: Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.
- C. Samples: For each exposed product and for each color specified, 2 by 4 inches (50 by 100 mm) in size.
- D. Samples for Initial Selection: For units with factory-applied color finishes.

1. Include similar Samples of hardware and accessories involving color selection.
- E. Samples for Verification: For wood windows and components required, prepared on Samples of size indicated below:
 1. Exposed Finishes: 2 by 4 inches (50 by 100 mm).
 2. Exposed Hardware: Full-size units.
- F. Product Schedule: For wood windows. Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and Installer.
- B. Product Test Reports: For each type of wood window, for tests performed by a qualified testing agency.
- C. Field quality-control reports.
- D. Sample Warranties: For manufacturer's warranties.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A manufacturer capable of fabricating wood windows that meet or exceed performance requirements indicated and of documenting this performance by test reports, and calculations.
- B. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.
- C. Installer Qualifications: An installer acceptable to wood window manufacturer for installation of units required for this Project.
- D. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 1. Build mockup of typical wall area as shown on Drawings. Mock-up will be inspection of first set of windows installed in the field.

1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace wood windows that fail in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Failure to meet performance requirements.

- b. Structural failures including excessive deflection, water leakage, and air infiltration.
 - c. Faulty operation of movable sash and hardware.
 - d. Deterioration of materials and finishes beyond normal weathering.
 - e. Failure of insulating glass.
- 2. Warranty Period:
 - a. Window: 10 years from date of Substantial Completion.
 - b. Glazing Units: 20 years from date of Substantial Completion.
 - c. Aluminum-Cladding Finish: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide Talon double Hung and Fixed Aluminum-Clad Wood Windows as manufactured by EAGLE Window & Door, Inc.; an Andersen Window & Door company as follows:
 - a. Window Type S-1, S-2, S-3, S-4, Monumental Double-Hung, custom size to match size indicated on drawings. Provide mullion cover between units and at structural posts.
 - b. Window Type S-5, Double-Hung, custom size to match size indicated on drawings.
 - c. Window Type S-6, Fixed Circle Top with Double-Hung frame profile, custom size to match size indicated on drawings.
- B. Source Limitations: Obtain wood windows from single source from single manufacturer.

2.2 WINDOW PERFORMANCE REQUIREMENTS

- A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
 - 1. Window Certification: WDMA certified with label attached to each window.
- B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:
 - 1. Minimum Performance Class: LC.
 - 2. Minimum Performance Grade: 30.
- C. Thermal Transmittance: NFRC 100 maximum whole-window U-factor of 0.30 Btu/sq. ft. x h x deg F (1.71 W/sq. m x K).

- D. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.40.
- E. Sound Transmission Class (STC): Rated for not less than 26 STC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 413.
- F. Outside-Inside Transmission Class (OITC): Rated for not less than 22 OITC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 1332.
- G. Windborne-Debris Resistance: Capable of resisting impact from windborne debris based on testing glazed windows identical to those specified, according to ASTM E 1886 and testing information in ASTM E 1996 and requirements of authorities having jurisdiction.

2.3 WOOD WINDOWS

- A. Operating Types: Provide the following operating types in locations indicated on Drawings:
 - 1. Double hung.
 - 2. Fixed.
- B. Frames and Sashes: Fine-grained wood lumber complying with AAMA/WDMA/CSA 101/I.S.2/A440; kiln dried to a moisture content of not more than 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch (0.8 mm) deep by 2 inches (51 mm) wide; water-repellent preservative treated.
 - 1. Exterior Finish: Aluminum-clad wood.
 - a. Aluminum Finish: Manufacturer's standard baked-on enamel finish.
 - b. Color: White, As selected by Architect from manufacturer's standard range.
 - 2. Interior Finish: Manufacturer's standard color-coated finish.
 - a. Color: White, As selected by Architect from manufacturer's standard range.
- A. Insulating-Glass Units: Manufacturer's standard factory-glazing system that produces weathertight seal.
 - 1. Glazing:
 - a. High-Performance SmartSun Glass.
- B. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.
 - 1. Exposed Hardware Color and Finish: As selected by Architect from manufacturer's standard full range.
- C. Hung Window Hardware:

1. Counterbalancing Mechanism: Complying with AAMA 902, concealed, of size and capacity to hold sash stationary at any open position.
 2. Locks and Latches: Allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only.
 3. Tilt Hardware: Releasing tilt latch allows sash to pivot about horizontal axis to facilitate cleaning exterior surfaces from the interior.
- D. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.
- E. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.
1. Exposed Fasteners: Do not use exposed fasteners to the greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

2.4 ACCESSORIES

- A. Dividers (False Muntins): Provide divider grilles in designs indicated for each sash lite.
1. Quantity and Type: One permanently located between insulating-glass lites.
 2. Material: Manufacturer's standard.
 3. Pattern: As indicated on Drawings.
 4. Color: White
- B. Mullion Covers: Provide clad mullion covers on the exterior between units and to cover structural steel posts between units. Provide painted mullion covers on the interior between units and to cover structural steel posts between units.
- C. Brick Mold: Provide Clad brick Mold at perimeter of window units.
- D. Interior Trim: Provide painted interior trim at perimeter of window units.

2.5 INSECT SCREENS

- A. General: Fabricate insect screens to integrate with window frame. Provide screen for each operable exterior sash. Screen wickets are not permitted.
1. Type and Location: Half, outside for double-hung sashes (lower sash).
- B. Aluminum Frames: Manufacturer's standard aluminum alloy complying with SMA 1004 or SMA 1201. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners, and removable PVC spline/anchor concealing edge of frame.
1. Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet.
 2. Finish for Exterior Screens: Matching color and finish of cladding.

- C. Stainless Steel Mesh Fabric: 20-by-20 (0.85-by-0.85-mm) or 20-by-30 (0.85-by-0.42-mm) mesh of PVC-coated, glass-fiber threads; woven and fused to form a fabric mesh resistant to corrosion, shrinkage, stretch, impact damage, and weather deterioration. Comply with ASTM D 3656.

- 1. Mesh Color: Manufacturer's standard.

2.6 FABRICATION

- A. Fabricate wood windows in sizes indicated. Include a complete system for installing and anchoring windows.
- B. Glaze wood windows in the factory.
- C. Weather strip each operable sash to provide weathertight installation.
- D. Mullions: Provide mullions and cover plates, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units.
- E. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.
- C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

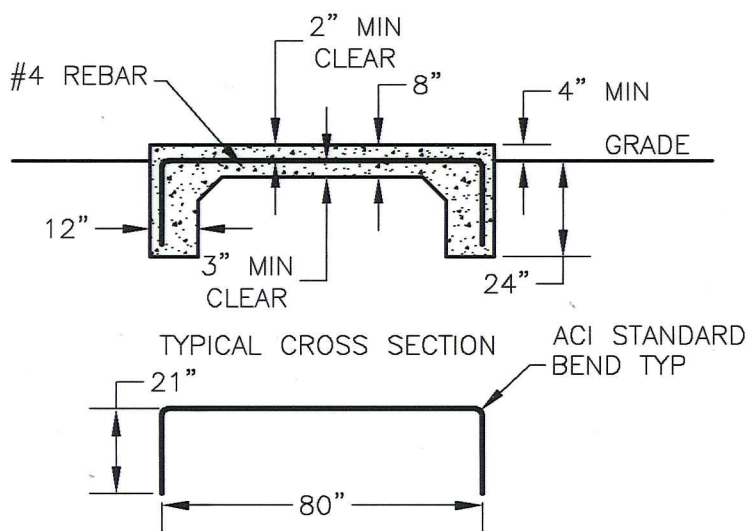
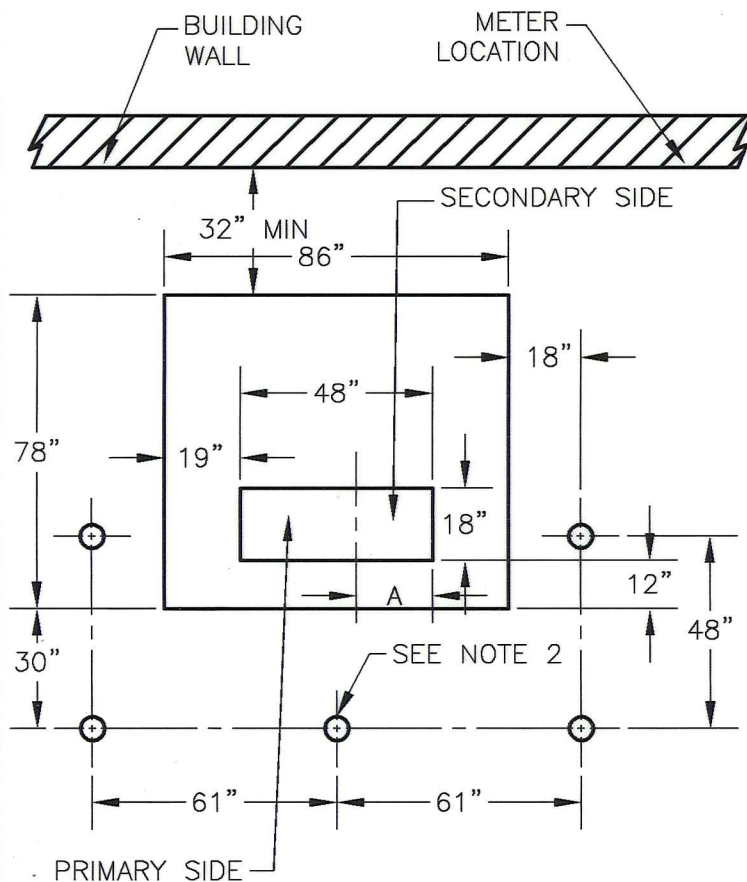
- A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.

- B. Install windows level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

3.3 FIELD QUALITY CONTROL

- A. Remove and replace noncomplying windows and retest as specified above.
- B. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.
- C. Clean exposed surfaces immediately after installing windows. Remove excess sealants, glazing materials, dirt, and other substances.
 - 1. Keep protective films and coverings in place until final cleaning.
- D. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.
- E. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 085200



NOTES:

1. INSPECTION BY THE TOWN OF SMYRNA ELECTRIC DEPARTMENT (302) 653-3493 SHALL BE REQUIRED PRIOR TO POURING CONCRETE FOR THE TRANSFORMER PAD.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF THE PRIMARY CONDUIT, METERING CONDUIT AND GROUNDING REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR FORMING AND POURING OF THE PAD. CONTRACTOR SHALL BE RESPONSIBLE FOR PLACEMENT OF SECONDARY CONDUIT. CONTRACTOR SHALL BE RESPONSIBLE FOR PLACEMENT OF PROTECTIVE BOLLARDS. BOLLARDS SHALL BE MINIMUM 6" DIAMETER, FILLED WITH CONCRETE. BOLLARDS SHALL BE PLACED IN CONCRETE, MINIMUM 36" BELOW GRADE AND MINIMUM 48" ABOVE FINISH GRADE.
3. CONCRETE FOR PAD SHALL HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 3000 PSI AND CONTAIN 3-6% ENTRAINED AIR BY VOLUME, SLUMP SHALL NOT EXCEED 4".
4. SECONDARY CONDUIT(S) SHALL BE SIZED IN ACCORDANCE WITH THE NEC FOR THE INTENDED CONDUCTORS AND SHALL EXTEND 2" ABOVE THE SURFACE OF THE PAD. SECONDARY SIDE OF PAD SHALL BE THE RIGHT SIDE OF THE OPENING, FACING THE FRONT (DOOR SIDE) OF THE ENCLOSURE.
5. TRANSFORMER PAD SHALL BE POURED WITHIN 1/8" OF LEVEL. PAD SHALL CONTAIN #4 REBAR PLACED 12" ON CENTER IN BOTH DIRECTIONS. BARS SHALL BE PLACED NO CLOSER THAN 3" TO EARTH.
6. PAD SHALL BE POURED ON COMPACTED AND NON-ORGANIC MATERIAL.
7. NO WORK WILL BEGIN UNTIL THE PROPERTY IS WITHIN 6" OF GRADE AND THE PROPER EASEMENTS ARE IN PLACE.
8. SECONDARY CONDUITS MUST BE CONTAINED WITHIN DIMENSION INDICATED BELOW.

	DIMENSION "A"
500 KVA AND BELOW	19"
ABOVE 500KVA	26"

	ALL REVISIONS TO BE MADE ON C.A.D. SYSTEM ONLY.		TOWN OF SMYRNA	CAD DWG. NO. 3103
	DATE	DESCRIPTION		
	6-7-05	ELEV. TOLERANCE NOTE	75-2500 KVA 3 PHASE TRANSFORMER PAD DETAIL	FILE NUMBER 013-75
	3-17-08	DIMENSION "A" INFO		
DESIGNED BY TBS	DATE 10-18-04	Downes Associates, Inc. Engineering and Management Consultants Salisbury, Maryland 21801	M.D. 03-17-08	
DRAWN BY FWJ	SCALE 1/4"=1'			
CHECKED BY GKO	JOB NO. 13.75			



Date: Jan 15, 2016

Penn Lighting Associates
417 North 8th Street
Philadelphia PA 19123
Phone: (215) 735-5000
Fax: (215) 735-5459

Job Name
Thomas D. Clayton School - Renovations
PENN16-73992
Smyrna DE

Bid Date
Feb 2, 2016

Submittal Date
Jan 15, 2016

Architect:
Fearn & Clendaniel
6 Larch Ave
Wilmington DE 19804

Engineer:
Fayda Engineering & Energy Solutions
801 West Newport Pike
Wilmington DE 19804



Transmittal

Penn Lighting Associates
 417 North 8th Street
 Philadelphia PA 19123
 Phone: (215) 735-5000
From: Mitch Lapenson

Project Thomas D. Clayton School - Renovations
Quote# PENN16-73992
Location Smyrna DE
 Contact:


ATTACHED WE ARE SENDING YOU 1 COPY OF THE FOLLOWING ITEM:

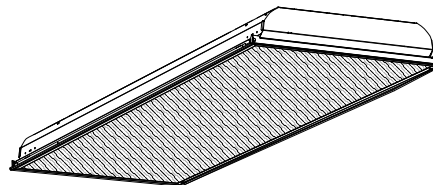
- | | | |
|-----------------------------------|---|--------|
| <input type="checkbox"/> Drawings | <input type="checkbox"/> Specifications | Other: |
| <input type="checkbox"/> Prints | <input type="checkbox"/> Information | |
| <input type="checkbox"/> Plans | <input type="checkbox"/> Submittals | |

THESE ARE TRANSMITTED FOR:

- | | | |
|--|---|---------------------------------|
| <input type="checkbox"/> Prior Approval | <input type="checkbox"/> Resubmittal for Approval | <input type="checkbox"/> Record |
| <input type="checkbox"/> Approval | <input type="checkbox"/> Corrections | Bids due on: |
| <input type="checkbox"/> Approval as Submitted | <input type="checkbox"/> Your Use | Other: |
| <input type="checkbox"/> Approval as Noted | <input type="checkbox"/> Review and Comment | |

Type	MFG	Part
A	DAYBRITE	SPS2GFSVA232UNV-M09-2/2-EB10R
A1	DAYBRITE	SPS2GFSVA232UNV-S-X-EB10R
A2	DAYBRITE	SPS2GFSVA232UNV-2/1-EB10R
A3	DAYBRITE	SPS2GFSVA232UNV-1/2-EB10R
B	DAYBRITE	SPS2GFSVA217UNV-M09-2/2-EB10R
B1	DAYBRITE	SPS2GFSVA217UNV-S-X-EB10R
B2	DAYBRITE	SPS2GFSVA217UNV-2/1-EB10R
B3	DAYBRITE	SPS2GFSVA217UNV-1/2-EB10R
C	DAYBRITE	SPS1GFSVA132UNV-1/1-EB10R
D	DAYBRITE	IA232-UNV-1/2-EB FL-173 FKR-126
E	EVENLITE	TCL4-W-SD
E1	EVENLITE	TCLWP1
E2	EVENLITE	TCLR1H
F	VANTAGE LIGHTING	SQ44LEDEP1-1135K-LSQ4414-SCL-CADDY #517B
G	GARDCO	121-2-50LA-WW-UNIV-BRP
X	EVENLITE	TLXEMRUWSD
X1	EVENLITE	TCXCOMRUWSD
OCC	WATTSTOPPER	WT-600
OCC	WATTSTOPPER	CX-100
OCC	WATTSTOPPER	DT-300
OCC	WATTSTOPPER	BZ-50

Submitted by Penn Lighting Associates		Catalog Number: SPS2GFSVA232UNV-M09-2/2-EB10R Notes:	Type: A PENN16-73992
	Job Name: Thomas D. Clayton School - Renovations Architect: Fearn & Clendaniel (Wilmington) Engineer: Fayda Engineering & Energy Solutions (Wilmington)		



Project: _____
Location: _____
Cat.No: _____
Type: _____
Lamps: _____ Qty: _____
Notes: _____

The Philips Day-Brite / CFI SpecPlus recessed offers specification grade quality and features. Built-in grid clips with positive clamping by screws, easy re-lamping, and 1000 sq. inch lens area puts this luminaire in the lead on performance, safety and ease of maintenance.

Ordering guide

Master unit of M/S wiring with 9' interconnect

example: SPS2GFSVA232UNV-1/2-EB

Family	Air Function	Width	Ceiling Type	Lens Frame	Lens Shielding	Lamp Quantity	Lamp Type	Voltage	Options
SP	S	2							
SP SpecPlus Lensed Troffer	S Static	2 2'	G Grid (lay-in T bar) F Flanged (over lap) Z spline and plaster frame	FS Flat steel RA Regressed aluminum FA Flat aluminum	VA Pattern 12 prismatic acrylic, .095" nominal VI Pattern 12, .125" nominal KA Pattern 19, .156" nominal BP 1/2"x1/2"x1/2" silver plastic louver, polystyrene AP 1/2"x1/2"x1/2" silver plastic louver, acrylic MC 1.5"x1.5"x1" silver plastic louver, polystyrene ML 1.5"x1.5"x1" silver plastic louver, acrylic SE 3/4"x3/4"x3/8" silver plastic louver, polystyrene SF 3/4"x3/4"x3/8" silver plastic louver, acrylic	2 2 lamp 3 3 lamp 4 4 lamp 6 6 lamp (28W or 32W only)	28 28WT5 32 32WT8 54 54WT5HO	UNV Universal voltage, 120-277V 120 120V 277 277V 347 347V	1/2 One 2-lamp ballast 1/3 One 3-lamp ballast 1/21 2-lamp & 1-lamp ballasts 1/4 One 4-lamp ballast 2/2 Two 2-lamp ballasts 1/42 4-lamp & 2-lamp ballasts EB Electronic ballast, <10% THD std. ballast factor EB10R T8 electronic ballast, <10% THD, program rapid start EBHE T8 electronic ballast, high efficiency std. ballast factor EBLHE T8 electronic ballast, high efficiency low ballast factor EBHHE T8 electronic ballast, high efficiency high ballast factor EBD7 Advance Mark 7 dimming ballast, 0-10V (low voltage) control EBDX Advance Mark 10 dimming ballast, phase control EBSD T8 electronic step dimming ballast, .88 ballast factor EBD Electronic dimming ballast, customer specified E1 B100 emerg. ballast, T8, 350-450 lumens, 120/277V ETCAN B100-CAN emerg. ballast, Canada market, T8, 350-450 lumens, 120/347V E7 B60 emerg. ballast, T8, 600-700 lumens, 120/277V E5 B50 emerg. ballast, U.S. or Canada market, T8, 1100-1400 lumens, UNV ESCAN B50-CAN emerg. ballast, Canada market, T8, 1100-1400 lumens, 120/347V E5ST B50ST emerg. ballast w/self test, U.S. or Canada market, T8, 1100-1400 lumens, UNV E7LP LP550 emerg. ballast, T5/T5HO, 430-700 lumens, 120/277V E6LP LP600 emerg. ballast U.S. or Canada market, T5/T5HO, 750-1325 lumens, 120/277V F1 3/8" flex, 3 wire 18 gauge 6' F2 3/8" flex, 4 wire 18 gauge 6' F2/5W 3/8" flex, 5 wire 18 gauge 6' GLR Fusing, fast blow LPT830 Installed T8/T5/T5HO lamps, 80+ CRI, 3000K LPT835 Installed T8/T5/T5HO lamps, 80+ CRI, 3500K LPT841 Installed T8/T5/T5HO lamps, 80+ CRI, 4100K LPT830HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3000K LPT835HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3500K LPT841HL Installed T8/T5 hi lumen lamps, 80+ CRI, 4100K 1W 1-way gasketing, between lens & door frame 2W 2-way gasketing, 1W + gasketing between door frame & housing 3W 3-way gasketing, 2W + gasketing for field installation between housing & ceiling SI Specular Insert (reflector) ICSI Individual cavity specular insert (reflector) PAF Housing painted after fabrication CHIC Chicago plenum rated

2 ballasts

Accessories (order separately)

- **FMA24** – 2'x4' "F" mounting frame for NEMA "F" installations
- **Electrical wiring options** – consult factory

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA232UNV-M09-2/2-
 EB10R

Notes:

Type:**A**

PENN16-73992

SPS SpecPlus 2x4

T8, T5, or T5HO

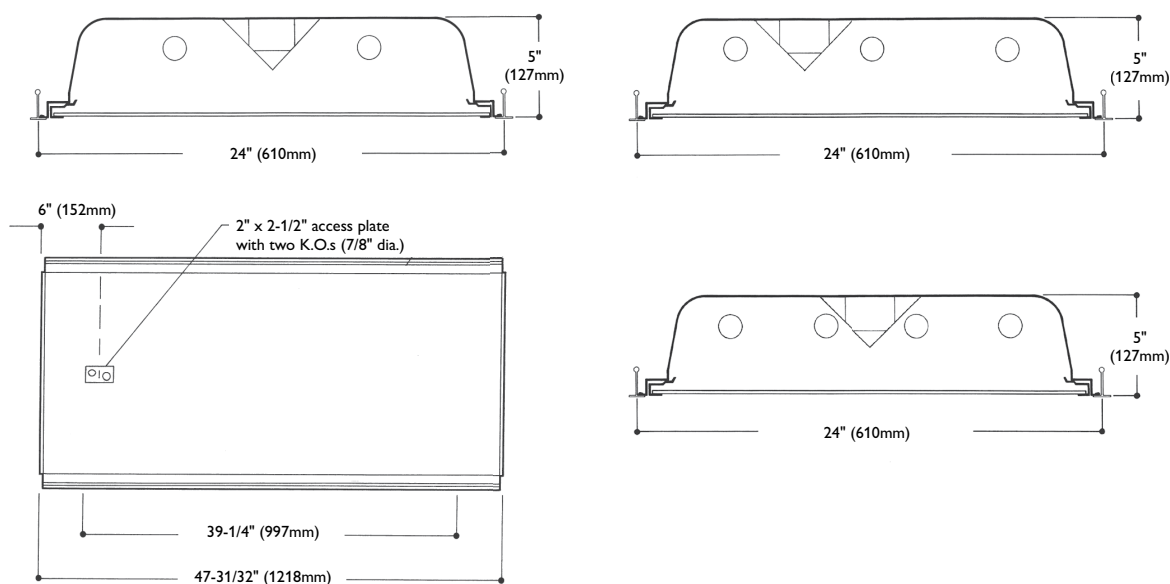
Features

- 5" deep body.
- 3-1/16" lamp to lens for better lamp obscuration.
- 83.2% efficient (2 lamp T8), 80.1% efficient (3 lamp T8), 81.2% efficient (4 lamp T8).
- Clean contoured interior.
- One-piece housing has ribbed construction for added strength.
- Hemmed over side rails for maximum safety.
- Fixture ends turned-in for safe handling.
- Built-in earthquake clips.
- Slimline door frame with 1000 square inch lens opening.
- Door jamb finished black on four sides for positive light stop.
- True mitered corner steel lens frame.
- Spring loaded rooster head latches.
- 18 gauge steel hinges.
- Flat and regressed aluminum doors available.

Specifications

- **Performance:** In an installation of 2 lamp 32WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .88. To prevent glare the VCP shall not be less than 59 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 1640 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 69.4%.
 In an installation of 3 lamp 32WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .84. To prevent glare the VCP shall not be less than 50 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 2299 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 68.8%.
 In an installation of 4 lamp 32WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .85. To prevent glare the VCP shall not be less than 43 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 3108 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 68.6%.
- **Materials:** Chassis parts – die-formed code gauge cold rolled steel. Housing with side rails hemmed over and housing ends turned-in for safe handling.
- **Finish:** Chassis exterior – White baked polyester enamel. Cavity – white baked polyester enamel minimum 86% reflectance. Phosphate undercoating.
- **Electrical:** Thermally protected class "P" ballast, non PCB. If K.O. is within 3" of ballast, use wire suitable for at least 90°.
- **Labels:** cULus listed. Suitable for damp locations. Models with emergency ballasts suitable for dry locations.

Dimensions



Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA232UNV-M09-2/2-
 EB10R

Notes:

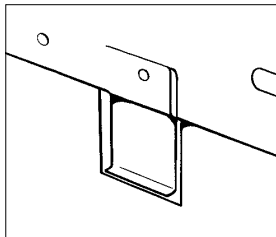
Type:**A**

PENN16-73992

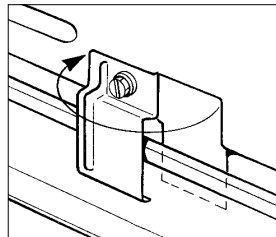
SPS SpecPlus 2x4

T8, T5, or T5HO

Features

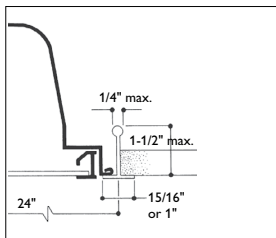


earthquake clip before installation

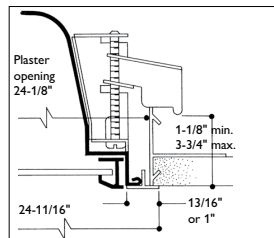


earthquake clip installed (lay-in grid)

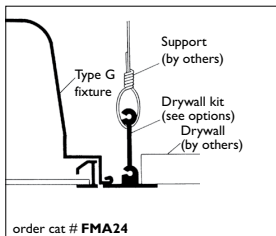
Mounting methods



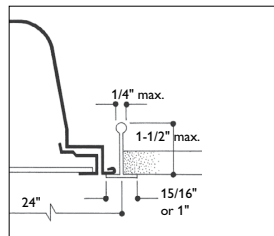
exposed t-grid ceiling (with flat aluminum frame)



plaster ceiling/flanged (with regressed aluminum frame)

order cat # **FMA24**

drywall kit (see options)



exposed T-grid ceiling (with flat steel frame)



Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled, "Contain Mercury" and/or the symbol "HG". Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycling and disposal can be found at www.lamprecycle.org

**Job Name:**

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

SPS2GFSVA232120-1/2-EB
EB10R

Notes:

Type:**A**

PENN16-73992

SPS SpecPlus 2x4

T8, T5, or T5HO

Photometry

Model No. SPS2GFSVA232120-1/2-EB

LER = 67.4 IW - 61.2 BF - 0.87

Comparative yearly lighting energy cost per
1000 lumens = \$3.56

Report Number: ITL49784

Catalog Number: SPS2GFSVA232120-1/2-EB

Lamps: (2) F32T8

Luminaire: 2' x 4' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).

Ballast: M2-RN-T8-ILL-D-120

Report is based on 2850 Lumens per lamp.

Efficiency: 83.1%

CIE Type: Direct

Plane: 0-Deg 90-Deg

Spacing Criteria: 1.2 1.4

Shielding Angles: 90 90

Plane: 0-Deg 90-Deg

Luminous Length: 46.000 21.875

**COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20**

RC	80	50	30	50	30	10	50	30	10
1	91	88	84	82	80	77	79	77	75
2	84	77	72	73	69	65	70	67	64
3	77	68	62	65	60	55	62	58	54
4	70	61	54	58	52	48	56	51	47
5	65	55	48	52	46	42	50	45	41
6	60	49	42	47	41	37	46	40	36
7	56	45	38	43	37	33	42	36	32
8	52	41	34	39	33	29	38	33	29
9	49	38	31	36	30	26	35	30	26
10	46	35	28	34	28	24	33	28	24

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	1817	1817	1817	
5	1811	1812	1815	173
15	1751	1773	1798	502
25	1613	1680	1748	775
35	1388	1512	1622	943
45	1083	1220	1325	932
55	699	803	859	707
65	388	406	450	414
75	218	181	202	214
85	86	76	68	83
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	2358	2657	2885
55	1877	2156	2306
65	1414	1479	1640
75	1297	1077	1202
85	1519	1343	1201

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	1149	25.4	30.6
0- 40	2392	42.0	50.4
0- 60	4032	70.7	85.0
0- 90	4743	83.2	100.0

Model No. SPS2GFSVA332120-1/3-EB

LER = 70.6 IW - 84.4 BF - 0.87

Comparative yearly lighting energy cost per
1000 lumens = \$3.40

Report Number: ITL49785

Catalog Number: SPS2GFSVA332120-1/3-EB

Lamps: (3) F32T8

Luminaire: 2' x 4' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).

Ballast: M3-RN-T8-ILL-120

Report is based on 2850 Lumens per lamp.

Efficiency: 80.0%

CIE Type: Direct

Plane: 0-Deg 90-Deg

Spacing Criteria: 1.2 1.3

Shielding Angles: 90 90

Plane: 0-Deg 90-Deg

Luminous Length: 46.000 21.875

**COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20**

RC	80	50	30	50	30	10	50	30	10
1	88	84	81	79	77	75	76	74	72
2	81	74	69	70	66	63	67	64	61
3	74	66	60	62	58	54	60	56	53
4	68	59	52	56	50	46	54	49	46
5	63	53	46	50	45	40	49	44	40
6	58	48	41	46	40	36	44	39	35
7	54	44	37	42	36	32	41	35	31
8	50	40	33	38	33	28	37	32	28
9	47	37	30	35	30	26	34	29	26
10	44	34	28	33	27	23	32	27	23

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	2694	2694	2694	
5	2683	2687	2692	256
15	2592	2627	2658	742
25	2391	2479	2549	1141
35	2059	2194	2292	1365
45	1609	1733	1814	1323
55	1034	1120	1217	1004
65	571	570	631	587
75	317	260	294	309
85	126	108	98	121
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	3504	3774	3950
55	2776	3007	3267
65	2080	2077	2299
75	1886	1547	1749
85	2226	1908	1731

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	2139	25.0	31.2
0- 40	3504	41.0	51.2
0- 60	5832	68.2	85.2
0- 90	6848	80.1	100.0

Model No. SPS2GFSVA432120-1/4-EB

LER = 73.2 IW - 108.7 BF - 0.86

Comparative yearly lighting energy cost per
1000 lumens = \$3.28

Report Number: ITL49786

Catalog Number: SPS2GFSVA432120-1/4-EB

Lamps: (4) F32T8

Luminaire: 2' x 4' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).

Ballast: E423PII20GII

Report is based on 2850 Lumens per lamp.

Efficiency: 81.1%

CIE Type: Direct

Plane: 0-Deg 90-Deg

Spacing Criteria: 1.2 1.3

Shielding Angles: 90 90

Plane: 0-Deg 90-Deg

Luminous Length: 46.000 21.875

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	3690	3690	3690	
5	3673	3678	3685	350
15	3546	3580	3612	1012
25	3270	3353	3430	1545
35	2814	2948	3056	1839
45	2192	2316	2457	1784
55	1410	1515	1613	1349
65	770	765	853	790
75	440	335	390	420
85	178	152	139	168
90	0	0	0	

**COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20**

RC	80	50	30	50	30	10	50	30	10
1	89	85	82	80	78	76	77	75	73
2	82	75	70	71	67	64	68	65	62
3	75	67	61	63	58	54	61	57	53
4	69	60	53	57	51	47	55	50	46
5	64	54	47	51	45	41	50	44	41
6	59	49	42	46	41	36	45	40	36
7	55	44	37	42	36	32	41	36	32
8	51	40	34	39	33	29	38	33	29
9	48	37	31	36	30	26	35	30	26
10	45	34	28	33	28	24	32	27	24

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	2906	25.5	31.4
0- 40	4745	41.6	51.3
0- 60	7878	69.1	85.1
0- 90	9257	81.2	100.0

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	4773	5043	5351
55	3785	4067	4330
65	2806	2787	3108
75	2618	2112	2320
85	3145	2685	2456



Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

SPS2GFSVA232UNV-S-X-EB10R

Notes:**Type:****A1**

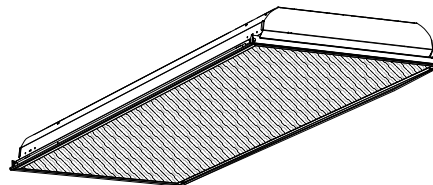
PENN16-73992

PHILIPS
Day-Brite
CFI

Recessed

SpecPlus 2x4

T8, T5, or T5HO



Project: _____

Location: _____

Cat.No: _____

Type: _____

Lamps: _____

Qty: _____

Notes: _____

The Philips Day-Brite / CFI SpecPlus recessed offers specification grade quality and features. Built-in grid clips with positive clamping by screws, easy re-lamping, and 1000 sq. inch lens area puts this luminaire in the lead on performance, safety and ease of maintenance.

Ordering guide**Satellite unit of M/S wiring, no ballasts****example: SPS2GFSVA232UNV-1/2-EB**

Family	Air Function	Width	Ceiling Type	Lens Frame	Lens Shielding	Lamp Quantity	Lamp Type	Voltage	Options
SP	S	2							
SP SpecPlus Lensed Troffer	S Static	2 2'	G Grid (lay-in T bar) F Flanged (over lap) Z spline and plaster frame	FS Flat steel RA Regressed aluminum FA Flat aluminum	VA Pattern 12 prismatic acrylic, .095" nominal VI Pattern 12, .125" nominal KA Pattern 19, .156" nominal BP 1/2"x1/2"x1/2" silver plastic louver, polystyrene AP 1/2"x1/2"x1/2" silver plastic louver, acrylic MC 1.5"x1.5"x1" silver plastic louver, polystyrene ML 1.5"x1.5"x1" silver plastic louver, acrylic SE 3/4"x3/4"x3/8" silver plastic louver, polystyrene SF 3/4"x3/4"x3/8" silver plastic louver, acrylic	2 2 lamp 3 3 lamp 4 4 lamp 6 6 lamp (28W or 32W only)	28 28WT5 32 32WT8 54 54WT5HO	UNV Universal voltage, 120-277V 120 120V 277 277V 347 347V	1/2 One 2-lamp ballast 1/3 One 3-lamp ballast 1/21 2-lamp & 1-lamp ballasts 1/4 One 4-lamp ballast 2/2 Two 2-lamp ballasts 1/42 4-lamp & 2-lamp ballasts EB Electronic ballast, <10% THD std. ballast factor EB10R T8 electronic ballast, <10% THD, program rapid start EBHE T8 electronic ballast, high efficiency std. ballast factor EBLHE T8 electronic ballast, high efficiency low ballast factor EBHHE T8 electronic ballast, high efficiency high ballast factor EBD7 Advance Mark 7 dimming ballast, 0-10V (low voltage) control EBDX Advance Mark 10 dimming ballast, phase control EBSD T8 electronic step dimming ballast, .88 ballast factor EBD Electronic dimming ballast, customer specified E1 B100 emerg. ballast, T8, 350-450 lumens, 120/277V ETCAN B100-CAN emerg. ballast, Canada market, T8, 350-450 lumens, 120/347V E7 B60 emerg. ballast, T8, 600-700 lumens, 120/277V E5 B50 emerg. ballast, U.S. or Canada market, T8, 1100-1400 lumens, UNV ESCAN B50-CAN emerg. ballast, Canada market, T8, 1100-1400 lumens, 120/347V E5ST B50ST emerg. ballast w/self test, U.S. or Canada market, T8, 1100-1400 lumens, UNV E7LP LP550 emerg. ballast, T5/T5HO, 430-700 lumens, 120/277V E6LP LP600 emerg. ballast U.S. or Canada market, T5/T5HO, 750-1325 lumens, 120/277V F1 3/8" flex, 3 wire 18 gauge 6' F2 3/8" flex, 4 wire 18 gauge 6' F2/5W 3/8" flex, 5 wire 18 gauge 6' GLR Fusing, fast blow LPT830 Installed T8/T5/T5HO lamps, 80+ CRI, 3000K LPT835 Installed T8/T5/T5HO lamps, 80+ CRI, 3500K LPT841 Installed T8/T5/T5HO lamps, 80+ CRI, 4100K LPT830HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3000K LPT835HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3500K LPT841HL Installed T8/T5 hi lumen lamps, 80+ CRI, 4100K 1W 1-way gasketing, between lens & door frame 2W 2-way gasketing, 1W + gasketing between door frame & housing 3W 3-way gasketing, 2W + gasketing for field installation between housing & ceiling SI Specular Insert (reflector) ICSI Individual cavity specular insert (reflector) PAF Housing painted after fabrication CHIC Chicago plenum rated

Accessories (order separately)

- **FMA24** – 2'x4' "F" mounting frame for NEMA "F" installations
- **Electrical wiring options** – consult factory

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA232UNV-S-X-EB10R

Type:**A1****Notes:**

PENN16-73992

SPS SpecPlus 2x4

T8, T5, or T5HO

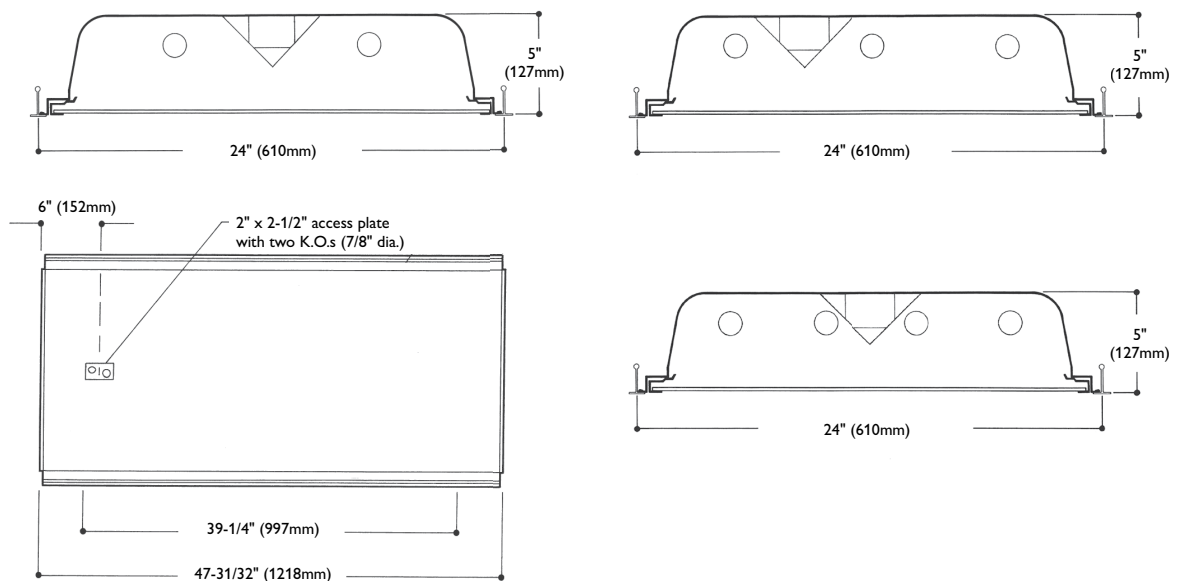
Features

- 5" deep body.
- 3-1/16" lamp to lens for better lamp obscuration.
- 83.2% efficient (2 lamp T8), 80.1% efficient (3 lamp T8), 81.2% efficient (4 lamp T8).
- Clean contoured interior.
- One-piece housing has ribbed construction for added strength.
- Hemmed over side rails for maximum safety.
- Fixture ends turned-in for safe handling.
- Built-in earthquake clips.
- Slimline door frame with 1000 square inch lens opening.
- Door jamb finished black on four sides for positive light stop.
- True mitered corner steel lens frame.
- Spring loaded rooster head latches.
- 18 gauge steel hinges.
- Flat and regressed aluminum doors available.

Specifications

- **Performance:** In an installation of 2 lamp 32WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .88. To prevent glare the VCP shall not be less than 59 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 1640 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 69.4%.
 In an installation of 3 lamp 32WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .84. To prevent glare the VCP shall not be less than 50 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 2299 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 68.8%.
 In an installation of 4 lamp 32WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .85. To prevent glare the VCP shall not be less than 43 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 3108 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 68.6%.
- **Materials:** Chassis parts – die-formed code gauge cold rolled steel. Housing with side rails hemmed over and housing ends turned-in for safe handling.
- **Finish:** Chassis exterior – White baked polyester enamel. Cavity – white baked polyester enamel minimum 86% reflectance. Phosphate undercoating.
- **Electrical:** Thermally protected class "P" ballast, non PCB. If K.O. is within 3" of ballast, use wire suitable for at least 90°.
- **Labels:** cULus listed. Suitable for damp locations. Models with emergency ballasts suitable for dry locations.

Dimensions



Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA232UNV-S-X-EB10R

Type:**A1**

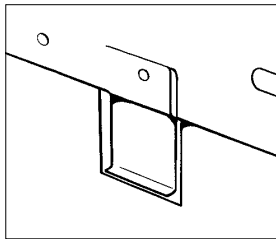
Notes:

PENN16-73992

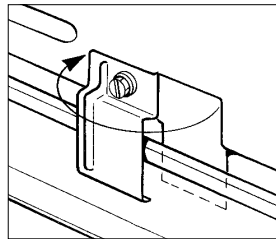
SPS SpecPlus 2x4

T8, T5, or T5HO

Features

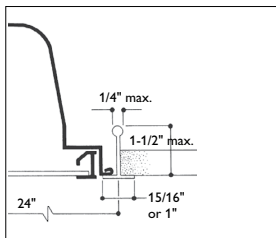


earthquake clip before installation

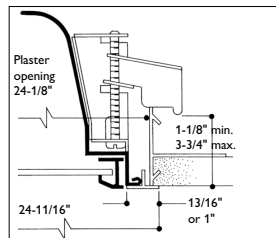


earthquake clip installed (lay-in grid)

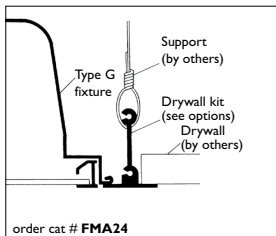
Mounting methods



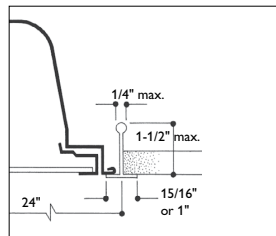
exposed t-grid ceiling (with flat aluminum frame)



plaster ceiling/flanged (with regressed aluminum frame)

order cat # **FMA24**

drywall kit (see options)



exposed T-grid ceiling (with flat steel frame)



Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled, "Contain Mercury" and/or the symbol "HG". Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycling and disposal can be found at www.lamprecycle.org

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

SPS2GFSVA2321UNV-S-X-EB10R

Notes:**Type:****A1**

PENN16-73992

SPS SpecPlus 2x4

T8, T5, or T5HO

Photometry**Model No. SPS2GFSVA232120-1/2-EB**

LER = 67.4 IW - 61.2 BF - 0.87

Comparative yearly lighting energy cost per 1000 lumens = \$3.56

Report Number: ITL49784**Catalog Number:** SPS2GFSVA232120-1/2-EB**Lamps:** (2) F32T8**Luminaire:** 2' x 4' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).**Ballast:** M2-RN-T8-ILL-D-120

Report is based on 2850 Lumens per lamp.

Efficiency: 83.1%**CIE Type:** Direct**Plane:** 0-Deg 90-Deg**Spacing Criteria:** 1.2 1.4**Shielding Angles:** 90 90**Plane:** 0-Deg 90-Deg**Luminous Length:** 46.000 21.875

COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	50	30	10	50	30	10
1	91	88	84	82	80	77	79	77	75
2	84	77	72	73	69	65	70	67	64
3	77	68	62	65	60	55	62	58	54
4	70	61	54	58	52	48	56	51	47
5	65	55	48	52	46	42	50	45	41
6	60	49	42	47	41	37	46	40	36
7	56	45	38	43	37	33	42	36	32
8	52	41	34	39	33	29	38	33	29
9	49	38	31	36	30	26	35	30	26
10	46	35	28	34	28	24	33	28	24

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	1817	1817	1817	
5	1811	1812	1815	173
15	1751	1773	1798	502
25	1613	1680	1748	775
35	1388	1512	1622	943
45	1083	1220	1325	932
55	699	803	859	707
65	388	406	450	414
75	218	181	202	214
85	86	76	68	83
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	2358	2657	2885
55	1877	2156	2306
65	1414	1479	1640
75	1297	1077	1202
85	1519	1343	1201

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	1149	25.4	30.6
0- 40	2392	42.0	50.4
0- 60	4032	70.7	85.0
0- 90	4743	83.2	100.0

Model No. SPS2GFSVA332120-1/3-EB

LER = 70.6 IW - 84.4 BF - 0.87

Comparative yearly lighting energy cost per 1000 lumens = \$3.40

Report Number: ITL49785**Catalog Number:** SPS2GFSVA332120-1/3-EB**Lamps:** (3) F32T8**Luminaire:** 2' x 4' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).**Ballast:** M3-RN-T8-ILL-120

Report is based on 2850 Lumens per lamp.

Efficiency: 80.0%**CIE Type:** Direct**Plane:** 0-Deg 90-Deg**Spacing Criteria:** 1.2 1.3**Shielding Angles:** 90 90**Plane:** 0-Deg 90-Deg**Luminous Length:** 46.000 21.875

COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	50	30	10	50	30	10
1	88	84	81	79	77	75	76	74	72
2	81	74	69	70	66	63	67	64	61
3	74	66	60	62	58	54	60	56	53
4	68	59	52	56	50	46	54	49	46
5	63	53	46	50	45	40	49	44	40
6	58	48	41	46	40	36	44	39	35
7	54	44	37	42	36	32	41	35	31
8	50	40	33	38	33	28	37	32	28
9	47	37	30	35	30	26	34	29	26
10	44	34	28	33	27	23	32	27	23

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	2694	2694	2694	
5	2683	2687	2692	256
15	2592	2627	2658	742
25	2391	2479	2549	1141
35	2059	2194	2292	1365
45	1609	1733	1814	1323
55	1034	1120	1217	1004
65	571	570	631	587
75	317	260	294	309
85	126	108	98	121
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	3504	3774	3950
55	2776	3007	3267
65	2080	2077	2299
75	1886	1547	1749
85	2226	1908	1731

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	2139	25.0	31.2
0- 40	3504	41.0	51.2
0- 60	5832	68.2	85.2
0- 90	6848	80.1	100.0

Model No. SPS2GFSVA432120-1/4-EB

LER = 73.2 IW - 108.7 BF - 0.86

Comparative yearly lighting energy cost per 1000 lumens = \$3.28

Report Number: ITL49786**Catalog Number:** SPS2GFSVA432120-1/4-EB**Lamps:** (4) F32T8**Luminaire:** 2' x 4' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).**Ballast:** E423PII20GI1

Report is based on 2850 Lumens per lamp.

Efficiency: 81.1%**CIE Type:** Direct**Plane:** 0-Deg 90-Deg**Spacing Criteria:** 1.2 1.3**Shielding Angles:** 90 90**Plane:** 0-Deg 90-Deg**Luminous Length:** 46.000 21.875**CANDELA DISTRIBUTION**

	0.0	45.0	90.0	FLUX
0	3690	3690	3690	
5	3673	3678	3685	350
15	3546	3580	3612	1012
25	3270	3353	3430	1545
35	2814	2948	3056	1839
45	2192	2316	2457	1784
55	1410	1515	1613	1349
65	770	765	853	790
75	440	335	390	420
85	178	152	139	168
90	0	0	0	

COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	50	30	10	50	30	10
1	89	85	82	80	78	76	77	75	73
2	82	75	70	71	67	64	68	65	62
3	75	67	61	63	58	54	61	57	53
4	69	60	53	57	51	47	55	50	46
5	64	54	47	51	45	41	50	44	41
6	59	49	42	46	41	36	45	40	36
7	55	44	37	42	36	32	41	36	32
8	51	40	34	39	33	29	38	33	29
9	48	37	31	36	30	26	35	30	26
10	45	34	28	33	28	24	32	27	24


ZONAL LUMEN SUMMARY

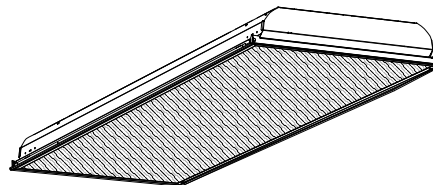
ZONE	LUMENS	% LAMP	% FIXT
0- 30	2906	25.5	31.4
0- 40	4745	41.6	51.3
0- 60	7878	69.1	85.1
0- 90	9257	81.2	100.0

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	4773	5043	5351
55	3785	4067	4330
65	2806	2787	3108
75	2618	2112	2320
85	3145	2685	2456



Submitted by Penn Lighting Associates		Catalog Number: SPS2GFSVA232UNV-2/1-EB10R	Type: A2
	Job Name: Thomas D. Clayton School - Renovations Architect: Fearn & Clendaniel (Wilmington) Engineer: Fayda Engineering & Energy Solutions (Wilmington)	Notes:	PENN16-73992



Project: _____
Location: _____
Cat.No: _____
Type: _____
Lamps: _____ Qty: _____
Notes: _____

The Philips Day-Brite / CFI SpecPlus recessed offers specification grade quality and features. Built-in grid clips with positive clamping by screws, easy re-lamping, and 1000 sq. inch lens area puts this luminaire in the lead on performance, safety and ease of maintenance.

Ordering guide

example: SPS2GFSVA232UNV-1/2-EB

Family	Air Function	Width	Ceiling Type	Lens Frame	Lens Shielding	Lamp Quantity	Lamp Type	Voltage	Options
SP	S	2							
SP SpecPlus Lensed Troffer	S Static	2 2'	G Grid (lay-in T bar) F Flanged (over lap) Z spline and plaster frame	FS Flat steel RA Regressed aluminum FA Flat aluminum	VA Pattern 12 prismatic acrylic, .095" nominal VI Pattern 12, .125" nominal KA Pattern 19, .156" nominal BP 1/2"x1/2"x1/2" silver plastic louver, polystyrene AP 1/2"x1/2"x1/2" silver plastic louver, acrylic MC 1.5"x1.5"x1" silver plastic louver, polystyrene ML 1.5"x1.5"x1" silver plastic louver, acrylic SE 3/4"x3/4"x3/8" silver plastic louver, polystyrene SF 3/4"x3/4"x3/8" silver plastic louver, acrylic	2 2 lamp 3 3 lamp 4 4 lamp 6 6 lamp (28W or 32W only)	28 28WT5 32 32WT8 54 54WT5HO	UNV Universal voltage, 120-277V 120 120V 277 277V 347 347V	1/2 One 2-lamp ballast 1/3 One 3-lamp ballast 1/21 2-lamp & 1-lamp ballasts 1/4 One 4-lamp ballast 2/2 Two 2-lamp ballasts 1/42 4-lamp & 2-lamp ballasts EB Electronic ballast, <10% THD std. ballast factor EB10R T8 electronic ballast, <10% THD, program rapid start EBLHE T8 electronic ballast, high efficiency std. ballast factor EBLHE T8 electronic ballast, high efficiency low ballast factor EBHHE T8 electronic ballast, high efficiency high ballast factor EBD7 Advance Mark 7 dimming ballast, 0-10V (low voltage) control EBDX Advance Mark 10 dimming ballast, phase control EBSD T8 electronic step dimming ballast, .88 ballast factor EBD Electronic dimming ballast, customer specified E1 B100 emerg. ballast, T8, 350-450 lumens, 120/277V ETCAN B100-CAN emerg. ballast, Canada market, T8, 350-450 lumens, 120/347V E7 B60 emerg. ballast, T8, 600-700 lumens, 120/277V E5 B50 emerg. ballast, U.S. or Canada market, T8, 1100-1400 lumens, UNV ESCAN B50-CAN emerg. ballast, Canada market, T8, 1100-1400 lumens, 120/347V E5ST B50ST emerg. ballast w/self test, U.S. or Canada market, T8, 1100-1400 lumens, UNV E7LP LP550 emerg. ballast, T5/T5HO, 430-700 lumens, 120/277V E6LP LP600 emerg. ballast U.S. or Canada market, T5/T5HO, 750-1325 lumens, 120/277V F1 3/8" flex, 3 wire 18 gauge 6' F2 3/8" flex, 4 wire 18 gauge 6' F2/5W 3/8" flex, 5 wire 18 gauge 6' GLR Fusing, fast blow LPT830 Installed T8/T5/T5HO lamps, 80+ CRI, 3000K LPT835 Installed T8/T5/T5HO lamps, 80+ CRI, 3500K LPT841 Installed T8/T5/T5HO lamps, 80+ CRI, 4100K LPT830HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3000K LPT835HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3500K LPT841HL Installed T8/T5 hi lumen lamps, 80+ CRI, 4100K 1W 1-way gasketing, between lens & door frame 2W 2-way gasketing, 1W + gasketing between door frame & housing 3W 3-way gasketing, 2W + gasketing for field installation between housing & ceiling SI Specular Insert (reflector) ICSI Individual cavity specular insert (reflector) PAF Housing painted after fabrication CHIC Chicago plenum rated

Accessories (order separately)

- **FMA24** – 2'x4' "F" mounting frame for NEMA "F" installations
- **Electrical wiring options** – consult factory

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA232UNV-2/1-EB10R

Notes:**Type:****A2**

PENN16-73992

SPS SpecPlus 2x4

T8, T5, or T5HO

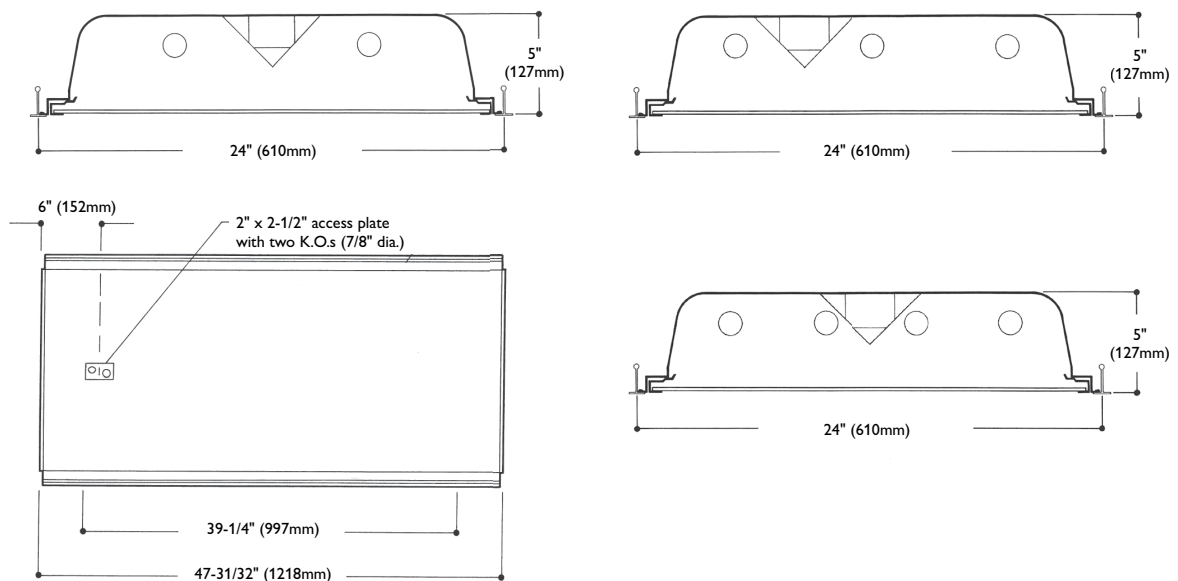
Features

- 5" deep body.
- 3-1/16" lamp to lens for better lamp obscuration.
- 83.2% efficient (2 lamp T8), 80.1% efficient (3 lamp T8), 81.2% efficient (4 lamp T8).
- Clean contoured interior.
- One-piece housing has ribbed construction for added strength.
- Hemmed over side rails for maximum safety.
- Fixture ends turned-in for safe handling.
- Built-in earthquake clips.
- Slimline door frame with 1000 square inch lens opening.
- Door jamb finished black on four sides for positive light stop.
- True mitered corner steel lens frame.
- Spring loaded rooster head latches.
- 18 gauge steel hinges.
- Flat and regressed aluminum doors available.

Specifications

- **Performance:** In an installation of 2 lamp 32WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .88. To prevent glare the VCP shall not be less than 59 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 1640 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 69.4%.
 In an installation of 3 lamp 32WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .84. To prevent glare the VCP shall not be less than 50 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 2299 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 68.8%.
 In an installation of 4 lamp 32WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .85. To prevent glare the VCP shall not be less than 43 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 3108 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 68.6%.
- **Materials:** Chassis parts – die-formed code gauge cold rolled steel. Housing with side rails hemmed over and housing ends turned-in for safe handling.
- **Finish:** Chassis exterior – White baked polyester enamel. Cavity – white baked polyester enamel minimum 86% reflectance. Phosphate undercoating.
- **Electrical:** Thermally protected class "P" ballast, non PCB. If K.O. is within 3" of ballast, use wire suitable for at least 90°.
- **Labels:** cULus listed. Suitable for damp locations. Models with emergency ballasts suitable for dry locations.

Dimensions



Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA232UNV-2/1-EB10R

Type:**A2**

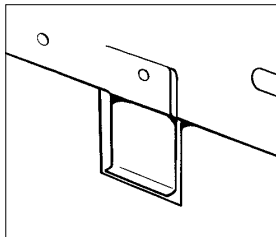
Notes:

PENN16-73992

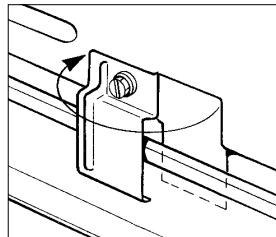
SPS SpecPlus 2x4

T8, T5, or T5HO

Features

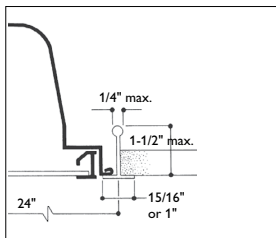


earthquake clip before installation

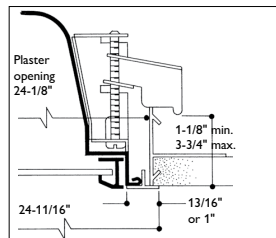


earthquake clip installed (lay-in grid)

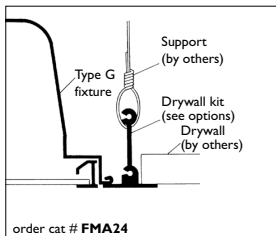
Mounting methods



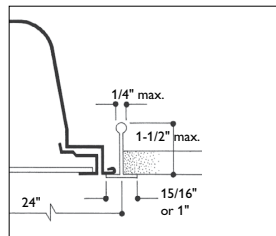
exposed t-grid ceiling (with flat aluminum frame)



plaster ceiling/flanged (with regressed aluminum frame)



order cat # **FMA24**
 drywall kit (see options)



exposed T-grid ceiling (with flat steel frame)



Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled, "Contain Mercury" and/or the symbol "HG". Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycling and disposal can be found at www.lamprecycle.org

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

SPS2GFSVA2321UNV-2/1-EB10R

Notes:

Type:**A2**

PENN16-73992

SPS SpecPlus 2x4

T8, T5, or T5HO

Photometry**Model No. SPS2GFSVA232120-1/2-EB**

LER = 67.4 IW - 61.2 BF - 0.87

Comparative yearly lighting energy cost per 1000 lumens = \$3.56

Report Number: ITL49784**Catalog Number:** SPS2GFSVA232120-1/2-EB**Lamps:** (2) F32T8**Luminaire:** 2' x 4' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).**Ballast:** M2-RN-T8-ILL-D-120

Report is based on 2850 Lumens per lamp.

Efficiency: 83.1%**CIE Type:** Direct**Plane:** 0-Deg 90-Deg**Spacing Criteria:** 1.2 1.4**Shielding Angles:** 90 90**Plane:** 0-Deg 90-Deg**Luminous Length:** 46.000 21.875

COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	50	30	10	50	30	10
1	91	88	84	82	80	77	79	77	75
2	84	77	72	73	69	65	70	67	64
3	77	68	62	65	60	55	62	58	54
4	70	61	54	58	52	48	56	51	47
5	65	55	48	52	46	42	50	45	41
6	60	49	42	47	41	37	46	40	36
7	56	45	38	43	37	33	42	36	32
8	52	41	34	39	33	29	38	33	29
9	49	38	31	36	30	26	35	30	26
10	46	35	28	34	28	24	33	28	24

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	1817	1817	1817	
5	1811	1812	1815	173
15	1751	1773	1798	502
25	1613	1680	1748	775
35	1388	1512	1622	943
45	1083	1220	1325	932
55	699	803	859	707
65	388	406	450	414
75	218	181	202	214
85	86	76	68	83
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	2358	2657	2885
55	1877	2156	2306
65	1414	1479	1640
75	1297	1077	1202
85	1519	1343	1201

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	1149	25.4	30.6
0- 40	2392	42.0	50.4
0- 60	4032	70.7	85.0
0- 90	4743	83.2	100.0

Model No. SPS2GFSVA332120-1/3-EB

LER = 70.6 IW - 84.4 BF - 0.87

Comparative yearly lighting energy cost per 1000 lumens = \$3.40

Report Number: ITL49785**Catalog Number:** SPS2GFSVA332120-1/3-EB**Lamps:** (3) F32T8**Luminaire:** 2' x 4' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).**Ballast:** M3-RN-T8-ILL-120

Report is based on 2850 Lumens per lamp.

Efficiency: 80.0%**CIE Type:** Direct**Plane:** 0-Deg 90-Deg**Spacing Criteria:** 1.2 1.3**Shielding Angles:** 90 90**Plane:** 0-Deg 90-Deg**Luminous Length:** 46.000 21.875

COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	50	30	10	50	30	10
1	88	84	81	79	77	75	76	74	72
2	81	74	69	70	66	63	67	64	61
3	74	66	60	62	58	54	60	56	53
4	68	59	52	56	50	46	54	49	46
5	63	53	46	50	45	40	49	44	40
6	58	48	41	46	40	36	44	39	35
7	54	44	37	42	36	32	41	35	31
8	50	40	33	38	33	28	37	32	28
9	47	37	30	35	30	26	34	29	26
10	44	34	28	33	27	23	32	27	23

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	2694	2694	2694	
5	2683	2687	2692	256
15	2592	2627	2658	742
25	2391	2479	2549	1141
35	2059	2194	2292	1365
45	1609	1733	1814	1323
55	1034	1120	1217	1004
65	571	570	631	587
75	317	260	294	309
85	126	108	98	121
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	3504	3774	3950
55	2776	3007	3267
65	2080	2077	2299
75	1886	1547	1749
85	2226	1908	1731

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	2139	25.0	31.2
0- 40	3504	41.0	51.2
0- 60	5832	68.2	85.2
0- 90	6848	80.1	100.0

Model No. SPS2GFSVA432120-1/4-EB

LER = 73.2 IW - 108.7 BF - 0.86

Comparative yearly lighting energy cost per 1000 lumens = \$3.28

Report Number: ITL49786**Catalog Number:** SPS2GFSVA432120-1/4-EB**Lamps:** (4) F32T8**Luminaire:** 2' x 4' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).**Ballast:** E423PII20GII

Report is based on 2850 Lumens per lamp.

Efficiency: 81.1%**CIE Type:** Direct**Plane:** 0-Deg 90-Deg**Spacing Criteria:** 1.2 1.3**Shielding Angles:** 90 90**Plane:** 0-Deg 90-Deg**Luminous Length:** 46.000 21.875**CANDELA DISTRIBUTION**

	0.0	45.0	90.0	FLUX
0	3690	3690	3690	
5	3673	3678	3685	350
15	3546	3580	3612	1012
25	3270	3353	3430	1545
35	2814	2948	3056	1839
45	2192	2316	2457	1784
55	1410	1515	1613	1349
65	770	765	853	790
75	440	335	390	420
85	178	152	139	168
90	0	0	0	

COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	50	30	10	50	30	10
1	89	85	82	80	78	76	77	75	73
2	82	75	70	71	67	64	68	65	62
3	75	67	61	63	58	54	61	57	53
4	69	60	53	57	51	47	55	50	46
5	64	54	47	51	45	41	50	44	41
6	59	49	42	46	41	36	45	40	36
7	55	44	37	42	36	32	41	36	32
8	51	40	34	39	33	29	38	33	29
9	48	37	31	36	30	26	35	30	26
10	45	34	28	33	28	24	32	27	24

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	2906	25.5	31.4
0- 40	4745	41.6	51.3
0- 60	7878	69.1	85.1
0- 90	9257	81.2	100.0

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	4773	5043	5351
55	3785	4067	4330
65	2806	2787	3108
75	2618	2112	2320
85	3145	2685	2456



Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

SPS2GFSVA232UNV-1/2-EB10R

Notes:**Type:****A3**

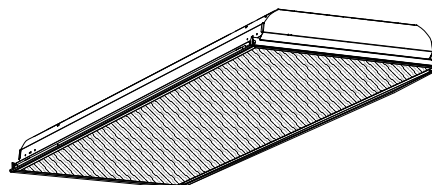
PENN16-73992

PHILIPS
Day-Brite
CFI

Recessed

SpecPlus 2x4

T8, T5, or T5HO



Project: _____
Location: _____
Cat.No: _____
Type: _____
Lamps: _____ Qty: _____
Notes: _____

The Philips Day-Brite / CFI SpecPlus recessed offers specification grade quality and features. Built-in grid clips with positive clamping by screws, easy re-lamping, and 1000 sq. inch lens area puts this luminaire in the lead on performance, safety and ease of maintenance.

Ordering guide

example: SPS2GFSVA232UNV-1/2-EB

Family	Air Function	Width	Ceiling Type	Lens Frame	Lens Shielding	Lamp Quantity	Lamp Type	Voltage	Options
SP	S	2							
SP SpecPlus Lensed Troffer	S Static	2 2'	G Grid (lay-in T bar) F Flanged (over lap) Z spline and plaster frame	FS Flat steel RA Regressed aluminum FA Flat aluminum	VA Pattern 12 prismatic acrylic, .095" nominal VI Pattern 12, .125" nominal KA Pattern 19, .156" nominal BP 1/2"x1/2"x1/2" silver plastic louver, polystyrene AP 1/2"x1/2"x1/2" silver plastic louver, acrylic MC 1.5"x1.5"x1" silver plastic louver, polystyrene ML 1.5"x1.5"x1" silver plastic louver, acrylic SE 3/4"x3/4"x3/8" silver plastic louver, polystyrene SF 3/4"x3/4"x3/8" silver plastic louver, acrylic	2 2 lamp 3 3 lamp 4 4 lamp 6 6 lamp (28W or 32W only)	28 28WT5 32 32WT8 54 54WT5HO	UNV Universal voltage, 120-277V 120 120V 277 277V 347 347V	1/2 One 2-lamp ballast 1/3 One 3-lamp ballast 1/21 2-lamp & 1-lamp ballasts 1/4 One 4-lamp ballast 2/2 Two 2-lamp ballasts 1/42 4-lamp & 2-lamp ballasts EB Electronic ballast, <10% THD std. ballast factor EB10R T8 electronic ballast, <10% THD, program rapid start EBLHE T8 electronic ballast, high efficiency std. ballast factor EBLHE T8 electronic ballast, high efficiency low ballast factor EBHHE T8 electronic ballast, high efficiency high ballast factor EBD7 Advance Mark 7 dimming ballast, 0-10V (low voltage) control EBDX Advance Mark 10 dimming ballast, phase control EBSD T8 electronic step dimming ballast, .88 ballast factor EBD Electronic dimming ballast, customer specified E1 B100 emerg. ballast, T8, 350-450 lumens, 120/277V ETCAN B100-CAN emerg. ballast, Canada market, T8, 350-450 lumens, 120/347V E7 B60 emerg. ballast, T8, 600-700 lumens, 120/277V E5 B50 emerg. ballast, U.S. or Canada market, T8, 1100-1400 lumens, UNV ESCAN B50-CAN emerg. ballast, Canada market, T8, 1100-1400 lumens, 120/347V E5ST B50ST emerg. ballast w/self test, U.S. or Canada market, T8, 1100-1400 lumens, UNV E7LP LP550 emerg. ballast, T5/T5HO, 430-700 lumens, 120/277V E6LP LP600 emerg. ballast U.S. or Canada market, T5/T5HO, 750-1325 lumens, 120/277V F1 3/8" flex, 3 wire 18 gauge 6' F2 3/8" flex, 4 wire 18 gauge 6' F2/5W 3/8" flex, 5 wire 18 gauge 6' GLR Fusing, fast blow LPT830 Installed T8/T5/T5HO lamps, 80+ CRI, 3000K LPT835 Installed T8/T5/T5HO lamps, 80+ CRI, 3500K LPT841 Installed T8/T5/T5HO lamps, 80+ CRI, 4100K LPT830HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3000K LPT835HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3500K LPT841HL Installed T8/T5 hi lumen lamps, 80+ CRI, 4100K 1W 1-way gasketing, between lens & door frame 2W 2-way gasketing, 1W + gasketing between door frame & housing 3W 3-way gasketing, 2W + gasketing for field installation between housing & ceiling SI Specular Insert (reflector) ICSI Individual cavity specular insert (reflector) PAF Housing painted after fabrication CHIC Chicago plenum rated

Accessories (order separately)

- **FMA24** – 2'x4' "F" mounting frame for NEMA "F" installations
- **Electrical wiring options** – consult factory

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA232UNV-1/2-EB10R

Type:**A3****Notes:**

PENN16-73992

SPS SpecPlus 2x4

T8, T5, or T5HO

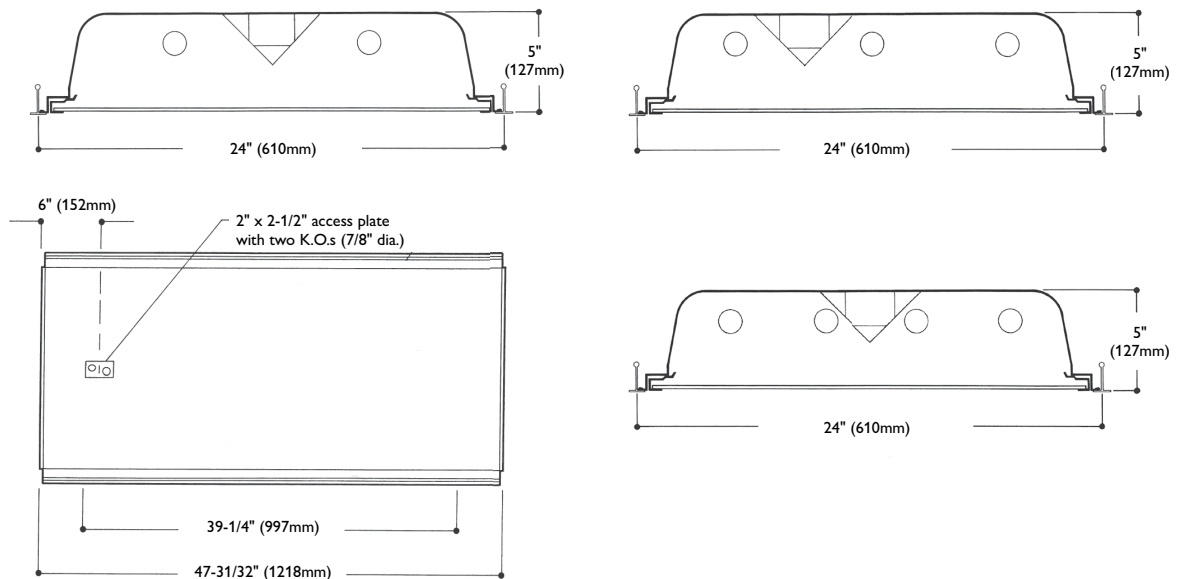
Features

- 5" deep body.
- 3-1/16" lamp to lens for better lamp obscuration.
- 83.2% efficient (2 lamp T8), 80.1% efficient (3 lamp T8), 81.2% efficient (4 lamp T8).
- Clean contoured interior.
- One-piece housing has ribbed construction for added strength.
- Hemmed over side rails for maximum safety.
- Fixture ends turned-in for safe handling.
- Built-in earthquake clips.
- Slimline door frame with 1000 square inch lens opening.
- Door jamb finished black on four sides for positive light stop.
- True mitered corner steel lens frame.
- Spring loaded rooster head latches.
- 18 gauge steel hinges.
- Flat and regressed aluminum doors available.

Specifications

- **Performance:** In an installation of 2 lamp 32WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .88. To prevent glare the VCP shall not be less than 59 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 1640 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 69.4%.
 In an installation of 3 lamp 32WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .84. To prevent glare the VCP shall not be less than 50 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 2299 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 68.8%.
 In an installation of 4 lamp 32WT8 luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .85. To prevent glare the VCP shall not be less than 43 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 3108 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 68.6%.
- **Materials:** Chassis parts – die-formed code gauge cold rolled steel. Housing with side rails hemmed over and housing ends turned-in for safe handling.
- **Finish:** Chassis exterior – White baked polyester enamel. Cavity – white baked polyester enamel minimum 86% reflectance. Phosphate undercoating.
- **Electrical:** Thermally protected class "P" ballast, non PCB. If K.O. is within 3" of ballast, use wire suitable for at least 90°.
- **Labels:** cULus listed. Suitable for damp locations. Models with emergency ballasts suitable for dry locations.

Dimensions



Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA232UNV-1/2-EB10R

Type:**A3**

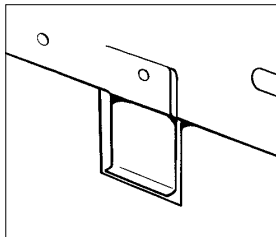
Notes:

PENN16-73992

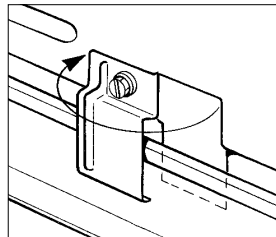
SPS SpecPlus 2x4

T8, T5, or T5HO

Features

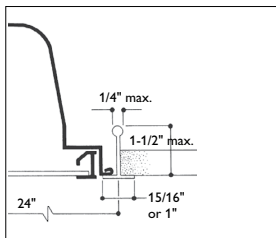


earthquake clip before installation

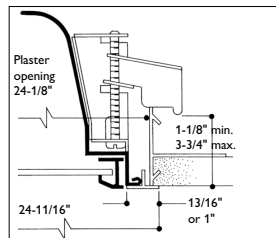


earthquake clip installed (lay-in grid)

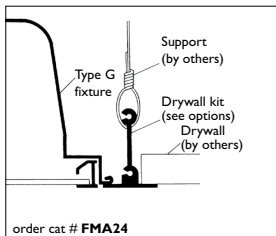
Mounting methods



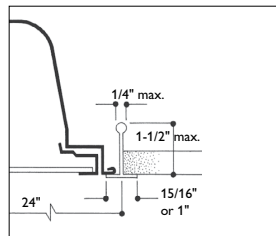
exposed t-grid ceiling (with flat aluminum frame)



plaster ceiling/flanged (with regressed aluminum frame)



order cat # **FMA24**
 drywall kit (see options)



exposed T-grid ceiling (with flat steel frame)



Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled, "Contain Mercury" and/or the symbol "HG". Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycling and disposal can be found at www.lamprecycle.org

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

SPS2GFSVA2321UNV-1/2-EB10R

Notes:**Type:****A3**

PENN16-73992

SPS SpecPlus 2x4

T8, T5, or T5HO

Photometry**Model No. SPS2GFSVA232120-1/2-EB**

LER = 67.4 IW - 61.2 BF - 0.87

Comparative yearly lighting energy cost per 1000 lumens = \$3.56

Report Number: ITL49784**Catalog Number:** SPS2GFSVA232120-1/2-EB**Lamps:** (2) F32T8**Luminaire:** 2' x 4' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).**Ballast:** M2-RN-T8-ILL-D-120

Report is based on 2850 Lumens per lamp.

Efficiency: 83.1%**CIE Type:** Direct**Plane:** 0-Deg 90-Deg**Spacing Criteria:** 1.2 1.4**Shielding Angles:** 90 90**Plane:** 0-Deg 90-Deg**Luminous Length:** 46.000 21.875

COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	50	30	10	50	30	10
1	91	88	84	82	80	77	79	77	75
2	84	77	72	73	69	65	70	67	64
3	77	68	62	65	60	55	62	58	54
4	70	61	54	58	52	48	56	51	47
5	65	55	48	52	46	42	50	45	41
6	60	49	42	47	41	37	46	40	36
7	56	45	38	43	37	33	42	36	32
8	52	41	34	39	33	29	38	33	29
9	49	38	31	36	30	26	35	30	26
10	46	35	28	34	28	24	33	28	24

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	1817	1817	1817	
5	1811	1812	1815	173
15	1751	1773	1798	502
25	1613	1680	1748	775
35	1388	1512	1622	943
45	1083	1220	1325	932
55	699	803	859	707
65	388	406	450	414
75	218	181	202	214
85	86	76	68	83
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	2358	2657	2885
55	1877	2156	2306
65	1414	1479	1640
75	1297	1077	1202
85	1519	1343	1201

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	1149	25.4	30.6
0- 40	2392	42.0	50.4
0- 60	4032	70.7	85.0
0- 90	4743	83.2	100.0

Model No. SPS2GFSVA332120-1/3-EB

LER = 70.6 IW - 84.4 BF - 0.87

Comparative yearly lighting energy cost per 1000 lumens = \$3.40

Report Number: ITL49785**Catalog Number:** SPS2GFSVA332120-1/3-EB**Lamps:** (3) F32T8**Luminaire:** 2' x 4' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).**Ballast:** M3-RN-T8-ILL-120

Report is based on 2850 Lumens per lamp.

Efficiency: 80.0%**CIE Type:** Direct**Plane:** 0-Deg 90-Deg**Spacing Criteria:** 1.2 1.3**Shielding Angles:** 90 90**Plane:** 0-Deg 90-Deg**Luminous Length:** 46.000 21.875

COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	50	30	10	50	30	10
1	88	84	81	79	77	75	76	74	72
2	81	74	69	70	66	63	67	64	61
3	74	66	60	62	58	54	60	56	53
4	68	59	52	56	50	46	54	49	46
5	63	53	46	50	45	40	49	44	40
6	58	48	41	46	40	36	44	39	35
7	54	44	37	42	36	32	41	35	31
8	50	40	33	38	33	28	37	32	28
9	47	37	30	35	30	26	34	29	26
10	44	34	28	33	27	23	32	27	23

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	2694	2694	2694	
5	2683	2687	2692	256
15	2592	2627	2658	742
25	2391	2479	2549	1141
35	2059	2194	2292	1365
45	1609	1733	1814	1323
55	1034	1120	1217	1004
65	571	570	631	587
75	317	260	294	309
85	126	108	98	121
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	3504	3774	3950
55	2776	3007	3267
65	2080	2077	2299
75	1886	1547	1749
85	2226	1908	1731

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	2139	25.0	31.2
0- 40	3504	41.0	51.2
0- 60	5832	68.2	85.2
0- 90	6848	80.1	100.0

Model No. SPS2GFSVA432120-1/4-EB

LER = 73.2 IW - 108.7 BF - 0.86

Comparative yearly lighting energy cost per 1000 lumens = \$3.28

Report Number: ITL49786**Catalog Number:** SPS2GFSVA432120-1/4-EB**Lamps:** (4) F32T8**Luminaire:** 2' x 4' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).**Ballast:** E423PII20GII

Report is based on 2850 Lumens per lamp.

Efficiency: 81.1%**CIE Type:** Direct**Plane:** 0-Deg 90-Deg**Spacing Criteria:** 1.2 1.3**Shielding Angles:** 90 90**Plane:** 0-Deg 90-Deg**Luminous Length:** 46.000 21.875**CANDELA DISTRIBUTION**

	0.0	45.0	90.0	FLUX
0	3690	3690	3690	
5	3673	3678	3685	350
15	3546	3580	3612	1012
25	3270	3353	3430	1545
35	2814	2948	3056	1839
45	2192	2316	2457	1784
55	1410	1515	1613	1349
65	770	765	853	790
75	440	335	390	420
85	178	152	139	168
90	0	0	0	

COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	50	30	10	50	30	10
1	89	85	82	80	78	76	77	75	73
2	82	75	70	71	67	64	68	65	62
3	75	67	61	63	58	54	61	57	53
4	69	60	53	57	51	47	55	50	46
5	64	54	47	51	45	41	50	44	41
6	59	49	42	46	41	36	45	40	36
7	55	44	37	42	36	32	41	36	32
8	51	40	34	39	33	29	38	33	29
9	48	37	31	36	30	26	35	30	26
10	45	34	28	33	28	24	32	27	24


ZONAL LUMEN SUMMARY

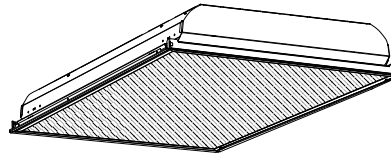
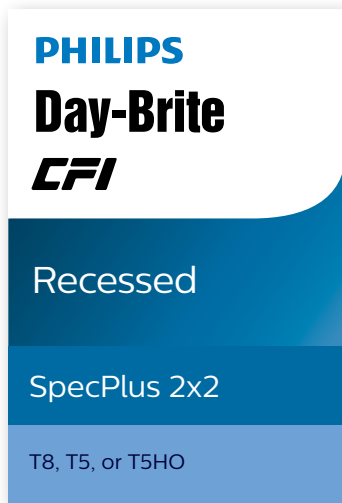
ZONE	LUMENS	% LAMP	% FIXT
0- 30	2906	25.5	31.4
0- 40	4745	41.6	51.3
0- 60	7878	69.1	85.1
0- 90	9257	81.2	100.0

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	4773	5043	5351
55	3785	4067	4330
65	2806	2787	3108
75	2618	2112	2320
85	3145	2685	2456



Submitted by Penn Lighting Associates		Catalog Number: SPS2GFSVA217UNV-M09-2/2-EB10R Notes:	Type: B PENN16-73992
	Job Name: Thomas D. Clayton School - Renovations Architect: Fearn & Clendaniel (Wilmington) Engineer: Fayda Engineering & Energy Solutions (Wilmington)		



Project: _____
Location: _____
Cat.No: _____
Type: _____
Lamps: _____ Qty: _____
Notes: _____

The Philips Day-Brite / CFI SpecPlus recessed offers specification grade quality and features. Built-in grid clips with positive clamping by screws, easy re-lamping, and 475 sq. inch lens area puts this luminaire in the lead on performance, safety and ease of maintenance.

Ordering guide

Master unit of M/S Wiring w/9' interconnect

example: SPS2GFSVA26UUNV-1/2-EB

Family	Air Function	Width	Ceiling Type	Lens Frame	Lens Shielding	Lamp Quantity	Lamp Type	Voltage	Options
SP	S	2							
SP SpecPlus Lensed Troffer	S Static	2 2'	G Grid (lay-in T bar) F Flanged (over lap) Z spline and plaster frame	FS Flat steel RA Regressed aluminum FA Flat aluminum	VA Pattern 12 prismatic acrylic, .095" nominal VI Pattern 12, .125" nominal VY K-12, .125" nominal KA Pattern 19, .156" nominal BP 1/2"x1/2"x1/2" silver plastic louver, polystyrene AP 1/2"x1/2"x1/2" silver plastic louver, acrylic MC 1.5"x1.5"x1" silver plastic louver, polystyrene ML 1.5"x1.5"x1" silver plastic louver, acrylic SE 3/4"x3/4"x3/8" silver plastic louver, polystyrene SF 3/4"x3/4"x3/8" silver plastic louver, acrylic	2 2 lamp 3 3 lamp 4 4 lamp	2U* T8, 1-5/8" U lamp 6U** T8, 6" U lamp 14 14WT5 17 17WT8 24 24WT5HO	UNV Universal voltage, 120-277V 120 120V 277 277V 347 347V	1/2 One 2-lamp ballast 1/3 One 3-lamp ballast 1/21 2-lamp & 1-lamp ballasts 1/4 One 4-lamp ballast 2/2 Two 2-lamp ballasts EB Electronic ballast, < 10% THD std. ballast factor EB10R T8 electronic ballast, <10% THD, program rapid start EBHE T8 electronic ballast, high efficiency std. ballast factor EBLHE T8 electronic ballast, high efficiency low ballast factor EBHHE T8 electronic ballast, high efficiency high ballast factor EBD7 Advance Mark 7 dimming ballast, 0-10V (low voltage) control EBDX Advance Mark 10 dimming ballast, phase control EBSD T8 electronic step dimming ballast, 88 ballast factor EBD Electronic dimming ballast, customer specified E1 B100 emerg. ballast, T8, 350-450 lumens, 120/277V E1CAN B100- CAN emerg. ballast, Canada market, T8, 350-450 lumens, 120/347V E7 B60 emerg. ballast, T8, 600-700 lumens, 120/277V E5 B50 emerg. ballast, U.S. or Canada market, T8, 1100-1400 lumens, UNV ESCAN B50- CAN emerg. ballast, Canada market, T8, 1100-1400 lumens, 120/347V ESST B50ST emerg. ballast w/self test, U.S. or Canada market, T8, 1100-1400 lumens, UNV E7LP LP550 emerg. ballast T5/T5HO, 430-700 lumens, 120/277V E6LP LP600 emerg. ballast U.S. or Canada market, T5/T5HO, 750-1325 lumens, 120/277V F1 3/8" flex, 3 wire 18 gauge 6' F2 3/8" flex, 4 wire 18 gauge 6' F2/SW 3/8" flex, 5 wire 18 gauge 6' GLR Fusing, fast blow LPT830 Installed T8/T5 lamps, 80+ CRI, 3000K LPT835 Installed T8/T5 lamps, 80+ CRI, 3500K LPT841 Installed T8/T5 lamps, 80+ CRI, 4100K LPT830HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3000K LPT835HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3500K LPT841HL Installed T8/T5 hi lumen lamps, 80+ CRI, 4100K 1W 1-way gasketing, between lens & door frame 2W 2-way gasketing, 1W + gasketing between door frame & housing 3W 3-way gasketing, 2W + gasketing for field installation between housing & ceiling PAF Housing painted after fabrication

2 Ballasts

Accessories (order separately)

- **FMA22** – 2'x2' "F" mounting frame for NEMA "F" installations
- **Electrical wiring options** – consult factory

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-M09-2/2-
 EB10R

Notes:

Type:**B**

PENN16-73992

SPS SpecPlus 2x2

T8, T5, or T5HO

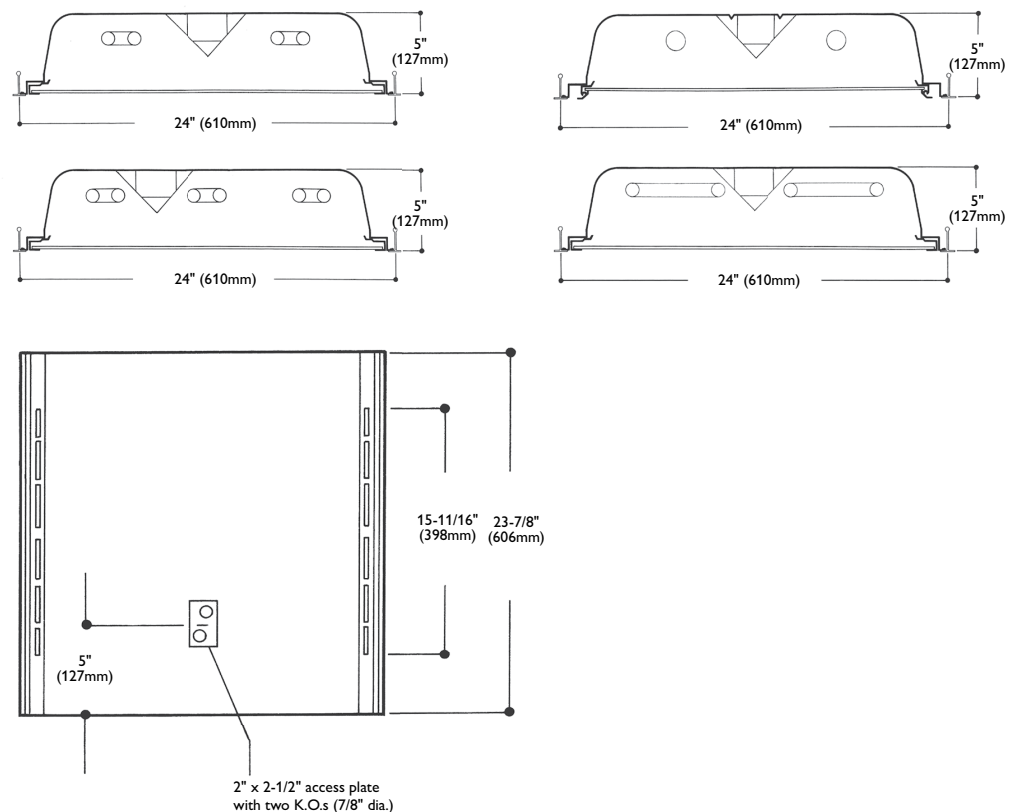
Features

- 5" deep body.
- 3-1/16" lamp to lens for better lamp obscuration.
- 71.6% efficient (2 – 6" U lamp), 67.9% efficient (3 – 1-5/8" U lamp).
- Clean contoured interior, no holes.
- Hemmed over side rails for maximum safety.
- Fixture ends turned-in for safe handling.
- Built-in earthquake clips.
- Slimline door frame with 475 square inch lens opening.
- Door jamb finished black on four sides for positive light stop.
- True mitered corner steel lens frame.
- Spring loaded rooster head latches.
- 18 gauge steel hinges.
- Flat and regressed aluminum doors available.

Specifications

- **Performance:** In an installation of 3 lamp 31W 1-5/8" U lamp luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .72. To prevent glare the VCP shall not be less than 35 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 3497 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 66.8%.
 In an installation of 2 lamp 31W 6" U lamp luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .75. To prevent glare the VCP shall not be less than 40 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 2629 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 67.4%.
- **Materials:** Chassis parts – die-formed code gauge cold rolled steel. Housing with side rails hemmed over and housing ends turned-in for safe handling.
- **Finish:** Chassis exterior – White baked polyester enamel. Cavity – white baked polyester enamel minimum 86% reflectance. Phosphate undercoating.
- **Electrical:** Thermally protected class "P" ballast, non PCB. If K.O. is within 3" of ballast, use wire suitable for at least 90°.
- **Labels:** cULus listed. Suitable for damp locations. Models with emergency ballasts suitable for dry locations.

Dimensions



Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-M09-2/2-
 EB10R

Notes:

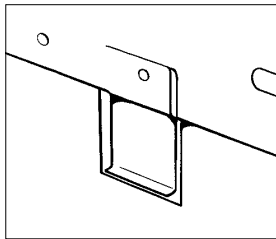
Type:**B**

PENN16-73992

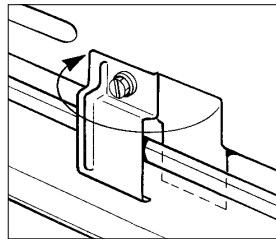
SPS SpecPlus 2x2

T8, T5, or T5HO

Features

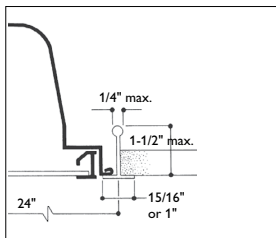


earthquake clip before installation

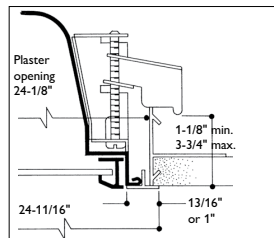


earthquake clip installed (lay-in grid)

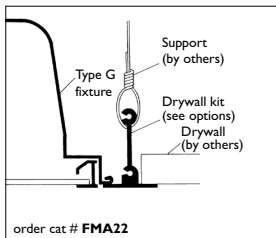
Mounting methods



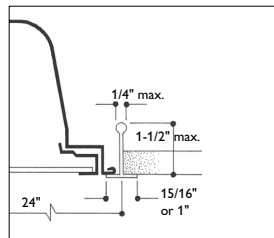
exposed t-grid ceiling (with flat aluminum frame)



plaster ceiling/flanged (with regressed aluminum frame)



drywall kit (see options)



exposed T-grid ceiling (with flat steel frame)



Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled, "Contain Mercury" and/or the symbol "HG". Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycling and disposal can be found at www.lamprecycle.org

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-M09-2/2-
EB10R

Notes:

Type:**B**

PENN16-73992

SPS SpecPlus 2x2

T8, T5, or T5HO

Photometry

Model No. SPS2GFSVA32U120-1/3-EB

LER = 64.1 IW = 76.2 BF = 0.88

Comparative yearly lighting energy cost per
1000 lumens = \$3.74

Report Number: G00057

Catalog Number: SPS2GFSVA32U120-1/3-EB

Lamps: (3) U6T8

Luminaire: 2' x 2' SpecPlus with regressed
aluminum door frame and extruded
virgin acrylic shielding .095" nominal
thickness (similar to pattern 12).

Ballast: REL-3P32-SC

Report is based on 2725 Lumens per lamp.

Efficiency: 67.9%

CIE Type: Direct

Plane: 0-Deg 90-Deg

Spacing Criteria: 1.2 1.3

Shielding Angles: 90 90

Plane: 0-Deg 90-Deg

Luminous Length: 21.875 21.875

COEFFICIENTS OF UTILIZATION -
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	10	50	30	10
RW 70	70	50	30	10	50	30	10
1	75	72	69	67	65	63	62
2	69	63	59	60	57	54	55
3	63	56	51	53	49	46	45
4	58	51	45	48	44	40	46
5	54	46	40	43	39	35	42
6	50	41	36	39	35	31	38
7	46	38	32	36	31	28	35
8	43	34	29	33	28	25	32
9	40	32	26	31	26	23	30
10	38	29	24	28	24	21	28

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	2391	2391	2391	
5	2376	2376	2382	226
15	2269	2289	2315	647
25	2056	2106	2160	971
35	1728	1799	1877	1126
45	1277	1361	1467	1051
55	786	840	909	755
65	434	411	460	434
75	219	201	264	244
85	82	87	109	98
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	5803.	6184.	6666.
55	4403.	4705.	5092.
65	3300.	3125.	3497.
75	2719.	2495.	3277.
85	3023.	3207.	4018.

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	1844	22.6	33.2
0- 40	2970	36.3	53.5
0- 60	4776	58.4	86.0
0- 90	5552	67.9	100.0

Model No. SPS2GFSVA26U120-1/2-EB

LER = 60.9 IW = 56.3 BF = 0.87

Comparative yearly lighting energy cost per
1000 lumens = \$3.94

Report Number: G00035

Catalog Number: SPS2GFSVA26U120-1/2-EB

Lamps: (2) U6T8

Luminaire: 2' x 2' SpecPlus with regressed
aluminum door frame and extruded
virgin acrylic shielding .095" nominal
thickness (similar to pattern 12).

Ballast: REL-2P32-SC

Report is based on 2750 Lumens per lamp.

Efficiency: 71.5%

CIE Type: Direct

Plane: 0-Deg 90-Deg

Spacing Criteria: 1.2 1.3

Shielding Angles: 90 90

Plane: 0-Deg 90-Deg

Luminous Length: 21.875 21.875

COEFFICIENTS OF UTILIZATION -
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	10	50	30	10
RW 70	70	50	30	10	50	30	10
1	79	75	73	71	69	67	66
2	72	67	62	63	59	56	58
3	66	59	54	56	52	48	51
4	61	53	47	50	46	42	49
5	56	48	42	45	40	37	44
6	52	43	37	41	36	32	40
7	49	39	33	38	33	29	37
8	45	36	30	35	30	26	34
9	42	33	28	32	27	24	31
10	40	31	25	30	25	21	29

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	1669	1669	1669	
5	1659	1658	1661	158
15	1578	1593	1614	451
25	1431	1464	1502	675
35	1212	1249	1309	785
45	913	960	1068	750
55	572	611	673	551
65	318	302	342	319
75	160	146	192	178
85	58	62	78	70
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	4164.	4410.	4906.
55	3239.	3460.	3811.
65	2444.	2321.	2629.
75	2008.	1832.	2410.
85	2162.	2311.	2907.

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	1283	23.3	32.6
0- 40	2069	37.6	52.6
0- 60	3369	61.3	85.6
0- 90	3936	71.6	100.0



Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-S-X-EB10R

Notes:**Type:****B1**

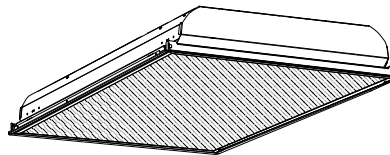
PENN16-73992

PHILIPS
Day-Brite
CFI

Recessed

SpecPlus 2x2

T8, T5, or T5HO



Project: _____

Location: _____

Cat.No: _____

Type: _____

Lamps: _____

Qty: _____

Notes: _____

The Philips Day-Brite / CFI SpecPlus recessed offers specification grade quality and features. Built-in grid clips with positive clamping by screws, easy re-lamping, and 475 sq. inch lens area puts this luminaire in the lead on performance, safety and ease of maintenance.

Ordering guide**Satellite unit of M/S Wiring, no ballasts**

example: SPS2GFSVA26UUNV-1/2-EB

Family	Air Function	Width	Ceiling Type	Lens Frame	Lens Shielding	Lamp Quantity	Lamp Type	Voltage	Options
SP	S	2						—	
SP SpecPlus Lensed Troffer	S Static	2 2'	G Grid (lay-in T bar) F Flanged (over lap) Z spline and plaster frame	FS Flat steel RA Regressed aluminum FA Flat aluminum	VA Pattern 12 prismatic acrylic, .095" nominal VI Pattern 12, .125" nominal VY K-12, .125" nominal KA Pattern 19, .156" nominal BP 1/2"x1/2"x1/2" silver plastic louver, polystyrene AP 1/2"x1/2"x1/2" silver plastic louver, acrylic MC 1.5"x1.5"x1" silver plastic louver, polystyrene ML 1.5"x1.5"x1" silver plastic louver, acrylic SE 3/4"x3/4"x3/8" silver plastic louver, polystyrene SF 3/4"x3/4"x3/8" silver plastic louver, acrylic	2 2 lamp 3 3 lamp 4 4 lamp	2U* T8, 1-5/8" U lamp 6U** T8, 6" U lamp 14 14WT5 17 17WT8 24 24WT5HO	UNV Universal voltage, 120-277V 120 120V 277 277V 347 347V	1/2 One 2-lamp ballast 1/3 One 3-lamp ballast 1/21 2-lamp & 1-lamp ballasts 1/4 One 4-lamp ballast 2/2 Two 2-lamp ballasts EB Electronic ballast, <10% THD std. ballast factor EB10R T8 electronic ballast, <10% THD, program rapid start EBHE T8 electronic ballast, high efficiency std. ballast factor EBLHE T8 electronic ballast, high efficiency low ballast factor EBHHE T8 electronic ballast, high efficiency high ballast factor EBD7 Advance Mark 7 dimming ballast, 0-10V (low voltage) control EBDX Advance Mark 10 dimming ballast, phase control EBSD T8 electronic step dimming ballast, 88 ballast factor EBD Electronic dimming ballast, customer specified E1 B100 emerg. ballast, T8, 350-450 lumens, 120/277V E1CAN B100-CAN emerg. ballast, Canada market, T8, 350-450 lumens, 120/347V E7 B60 emerg. ballast, T8, 600-700 lumens, 120/277V E5 B50 emerg. ballast, U.S. or Canada market, T8, 1100-1400 lumens, UNV ESCAN B50-CAN emerg. ballast, Canada market, T8, 1100-1400 lumens, 120/347V ESST B50ST emerg. ballast w/self test, U.S. or Canada market, T8, 1100-1400 lumens, UNV E7LP LP550 emerg. ballast T5/T5HO, 430-700 lumens, 120/277V E6LP LP600 emerg. ballast U.S. or Canada market, T5/T5HO, 750-1325 lumens, 120/277V F1 3/8" flex, 3 wire 18 gauge 6' F2 3/8" flex, 4 wire 18 gauge 6' F2/SW 3/8" flex, 5 wire 18 gauge 6' GLR Fusing, fast blow LPT830 Installed T8/T5 lamps, 80+ CRI, 3000K LPT835 Installed T8/T5 lamps, 80+ CRI, 3500K LPT841 Installed T8/T5 lamps, 80+ CRI, 4100K LPT830HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3000K LPT835HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3500K LPT841HL Installed T8/T5 hi lumen lamps, 80+ CRI, 4100K 1W 1-way gasketing, between lens & door frame 2W 2-way gasketing, 1W + gasketing between door frame & housing 3W 3-way gasketing, 2W + gasketing for field installation between housing & ceiling PAF Housing painted after fabrication

Accessories (order separately)

- **FMA22** – 2'x2' "F" mounting frame for NEMA "F" installations
- **Electrical wiring options** – consult factory

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-S-X-EB10R

Type:**B1****Notes:**

PENN16-73992

SPS SpecPlus 2x2

T8, T5, or T5HO

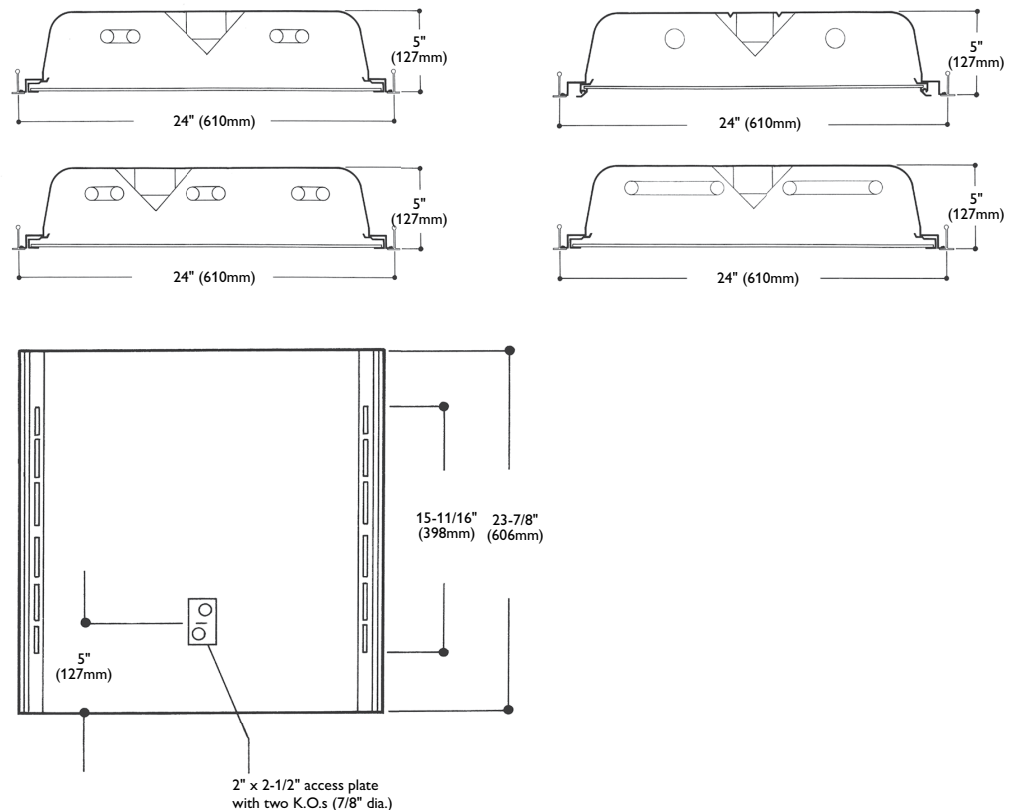
Features

- 5" deep body.
- 3-1/16" lamp to lens for better lamp obscuration.
- 71.6% efficient (2 – 6" U lamp), 67.9% efficient (3 – 1-5/8" U lamp).
- Clean contoured interior, no holes.
- Hemmed over side rails for maximum safety.
- Fixture ends turned-in for safe handling.
- Built-in earthquake clips.
- Slimline door frame with 475 square inch lens opening.
- Door jamb finished black on four sides for positive light stop.
- True mitered corner steel lens frame.
- Spring loaded rooster head latches.
- 18 gauge steel hinges.
- Flat and regressed aluminum doors available.

Specifications

- **Performance:** In an installation of 3 lamp 31W 1-5/8" U lamp luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .72. To prevent glare the VCP shall not be less than 35 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 3497 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 66.8%.
 In an installation of 2 lamp 31W 6" U lamp luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .75. To prevent glare the VCP shall not be less than 40 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 2629 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 67.4%.
- **Materials:** Chassis parts – die-formed code gauge cold rolled steel. Housing with side rails hemmed over and housing ends turned-in for safe handling.
- **Finish:** Chassis exterior – White baked polyester enamel. Cavity – white baked polyester enamel minimum 86% reflectance. Phosphate undercoating.
- **Electrical:** Thermally protected class "P" ballast, non PCB. If K.O. is within 3" of ballast, use wire suitable for at least 90°.
- **Labels:** cULus listed. Suitable for damp locations. Models with emergency ballasts suitable for dry locations.

Dimensions



Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-S-X-EB10R

Type:**B1**

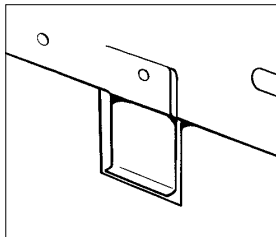
Notes:

PENN16-73992

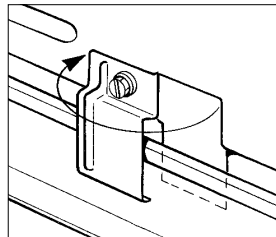
SPS SpecPlus 2x2

T8, T5, or T5HO

Features

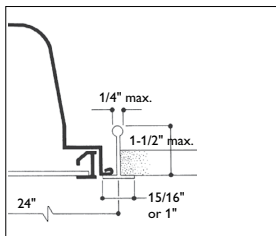


earthquake clip before installation

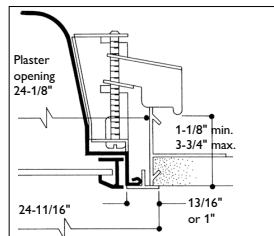


earthquake clip installed (lay-in grid)

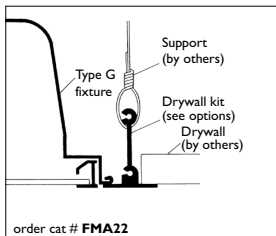
Mounting methods



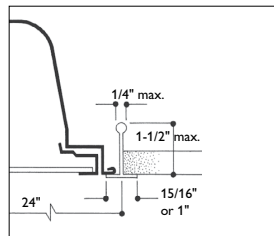
exposed t-grid ceiling (with flat aluminum frame)



plaster ceiling/flanged (with regressed aluminum frame)



order cat # **FMA22**
 drywall kit (see options)



exposed T-grid ceiling (with flat steel frame)



Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled, "Contain Mercury" and/or the symbol "HG". Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycling and disposal can be found at www.lamprecycle.org

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-S-X-EB10R

Notes:**Type:****B1**

PENN16-73992

SPS SpecPlus 2x2

T8, T5, or T5HO

Photometry

Model No. SPS2GFSVA32U120-1/3-EB

LER = 64.1 IW = 76.2 BF = 0.88

Comparative yearly lighting energy cost per 1000 lumens = \$3.74

Report Number: G00057**Catalog Number:** SPS2GFSVA32U120-1/3-EB**Lamps:** (3) U6T8**Luminaire:** 2' x 2' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).**Ballast:** REL-3P32-SC

Report is based on 2725 Lumens per lamp.

Efficiency: 67.9%**CIE Type:** Direct**Plane:** 0-Deg 90-Deg**Spacing Criteria:** 1.2 1.3**Shielding Angles:** 90 90**Plane:** 0-Deg 90-Deg**Luminous Length:** 21.875 21.875

COEFFICIENTS OF UTILIZATION -
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	10	50	30	10
RW 70	70	50	30	10	50	30	10
1	75	72	69	67	65	63	62
2	69	63	59	60	57	54	55
3	63	56	51	53	49	46	45
4	58	51	45	48	44	40	46
5	54	46	40	43	39	35	42
6	50	41	36	39	35	31	38
7	46	38	32	36	31	28	35
8	43	34	29	33	28	25	32
9	40	32	26	31	26	23	30
10	38	29	24	28	24	21	28

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	2391	2391	2391	
5	2376	2376	2382	226
15	2269	2289	2315	647
25	2056	2106	2160	971
35	1728	1799	1877	1126
45	1277	1361	1467	1051
55	786	840	909	755
65	434	411	460	434
75	219	201	264	244
85	82	87	109	98
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	5803.	6184.	6666.
55	4403.	4705.	5092.
65	3300.	3125.	3497.
75	2719.	2495.	3277.
85	3023.	3207.	4018.

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	1844	22.6	33.2
0- 40	2970	36.3	53.5
0- 60	4776	58.4	86.0
0- 90	5552	67.9	100.0

Model No. SPS2GFSVA26U120-1/2-EB

LER = 60.9 IW = 56.3 BF = 0.87

Comparative yearly lighting energy cost per 1000 lumens = \$3.94

Report Number: G00035**Catalog Number:** SPS2GFSVA26U120-1/2-EB**Lamps:** (2) U6T8**Luminaire:** 2' x 2' SpecPlus with regressed aluminum door frame and extruded virgin acrylic shielding .095" nominal thickness (similar to pattern 12).**Ballast:** REL-2P32-SC

Report is based on 2750 Lumens per lamp.

Efficiency: 71.5%**CIE Type:** Direct**Plane:** 0-Deg 90-Deg**Spacing Criteria:** 1.2 1.3**Shielding Angles:** 90 90**Plane:** 0-Deg 90-Deg**Luminous Length:** 21.875 21.875

COEFFICIENTS OF UTILIZATION -
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	10	50	30	10
RW 70	70	50	30	10	50	30	10
1	79	75	73	71	69	67	66
2	72	67	62	63	59	56	58
3	66	59	54	56	52	48	51
4	61	53	47	50	46	42	49
5	56	48	42	45	40	37	44
6	52	43	37	41	36	32	40
7	49	39	33	38	33	29	37
8	45	36	30	35	30	26	34
9	42	33	28	32	27	24	31
10	40	31	25	30	25	21	29

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	1669	1669	1669	
5	1659	1658	1661	158
15	1578	1593	1614	451
25	1431	1464	1502	675
35	1212	1249	1309	785
45	913	960	1068	750
55	572	611	673	551
65	318	302	342	319
75	160	146	192	178
85	58	62	78	70
90	0	0	0	


LUMINANCE DATA IN CANDELA/SQ. METER

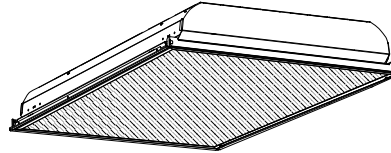
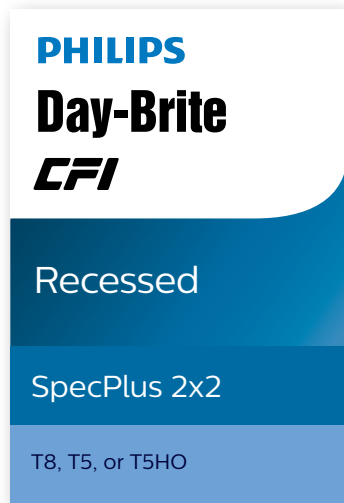
AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	4164.	4410.	4906.
55	3239.	3460.	3811.
65	2444.	2321.	2629.
75	2008.	1832.	2410.
85	2162.	2311.	2907.

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	1283	23.3	32.6
0- 40	2069	37.6	52.6
0- 60	3369	61.3	85.6
0- 90	3936	71.6	100.0



Submitted by Penn Lighting Associates		Catalog Number: SPS2GFSVA217UNV-2/1-EB10R	Type: B2
	Job Name: Thomas D. Clayton School - Renovations Architect: Fearn & Clendaniel (Wilmington) Engineer: Fayda Engineering & Energy Solutions (Wilmington)	Notes:	PENN16-73992



Project: _____
Location: _____
Cat.No: _____
Type: _____
Lamps: _____ Qty: _____
Notes: _____

The Philips Day-Brite / CFI SpecPlus recessed offers specification grade quality and features. Built-in grid clips with positive clamping by screws, easy re-lamping, and 475 sq. inch lens area puts this luminaire in the lead on performance, safety and ease of maintenance.

Ordering guide

example: SPS2GFSVA26UUNV-1/2-EB

Family	Air Function	Width	Ceiling Type	Lens Frame	Lens Shielding	Lamp Quantity	Lamp Type	Voltage	Options
SP	S	2						-	
SP SpecPlus Lensed Troffer	S Static	2 2'	G Grid (lay-in T bar)	FS Flat steel RA Regressed aluminum FA Flat aluminum	VA Pattern 12 prismatic acrylic, .095" nominal VI Pattern 12, .125" nominal VY K-12, .125" nominal KA Pattern 19, .156" nominal BP 1/2"x1/2"x1/2" silver plastic louver, polystyrene AP 1/2"x1/2"x1/2" silver plastic louver, acrylic MC 1.5"x1.5"x1" silver plastic louver, polystyrene ML 1.5"x1.5"x1" silver plastic louver, acrylic SE 3/4"x3/4"x3/8" silver plastic louver, polystyrene SF 3/4"x3/4"x3/8" silver plastic louver, acrylic	2 2 lamp 3 3 lamp 4 4 lamp	2U* T8, 1-5/8" U lamp 6U** T8, 6" U lamp 14 14WT5 17 17WT8 24 24WT5HO	UNV Universal voltage, 120-277V 120 120V 277 277V 347 347V	1/2 One 2-lamp ballast 1/3 One 3-lamp ballast 1/21 2-lamp & 1-lamp ballasts 1/4 One 4-lamp ballast 2/2 Two 2-lamp ballasts EB Electronic ballast, <10% THD std. ballast factor EB10R T8 electronic ballast, <10% THD, program rapid start EBLHE T8 electronic ballast, high efficiency low ballast factor EBHHE T8 electronic ballast, high efficiency high ballast factor EBD7 Advance Mark 7 dimming ballast, 0-10V (low voltage) control EBDX Advance Mark 10 dimming ballast, phase control EBSD T8 electronic step dimming ballast, 88 ballast factor EBD Electronic dimming ballast, customer specified E1 B100 emerg. ballast, T8, 350-450 lumens, 120/277V E1CAN B100-CAN emerg. ballast, Canada market, T8, 350-450 lumens, 120/347V E7 B60 emerg. ballast, T8, 600-700 lumens, 120/277V E5 B50 emerg. ballast, U.S. or Canada market, T8, 1100-1400 lumens, UNV ESCAN B50-CAN emerg. ballast, Canada market, T8, 1100-1400 lumens, 120/347V ESST B50ST emerg. ballast w/self test, U.S. or Canada market, T8, 1100-1400 lumens, UNV E7LP LP550 emerg. ballast T5/T5HO, 430-700 lumens, 120/277V E6LP LP600 emerg. ballast U.S. or Canada market, T5/T5HO, 750-1325 lumens, 120/277V F1 3/8" flex, 3 wire 18 gauge 6' F2 3/8" flex, 4 wire 18 gauge 6' F2/SW 3/8" flex, 5 wire 18 gauge 6' GLR Fusing, fast blow LPT830 Installed T8/T5 lamps, 80+ CRI, 3000K LPT835 Installed T8/T5 lamps, 80+ CRI, 3500K LPT841 Installed T8/T5 lamps, 80+ CRI, 4100K LPT830HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3000K LPT835HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3500K LPT841HL Installed T8/T5 hi lumen lamps, 80+ CRI, 4100K 1W 1-way gasketing, between lens & door frame 2W 2-way gasketing, 1W + gasketing between door frame & housing 3W 3-way gasketing, 2W + gasketing for field installation between housing & ceiling PAF Housing painted after fabrication

2/1 - 2 ballasts

Accessories (order separately)

- **FMA22** – 2'x2' "F" mounting frame for NEMA "F" installations
- **Electrical wiring options** – consult factory

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-2/1-EB10R

Type:**B2****Notes:**

PENN16-73992

SPS SpecPlus 2x2

T8, T5, or T5HO

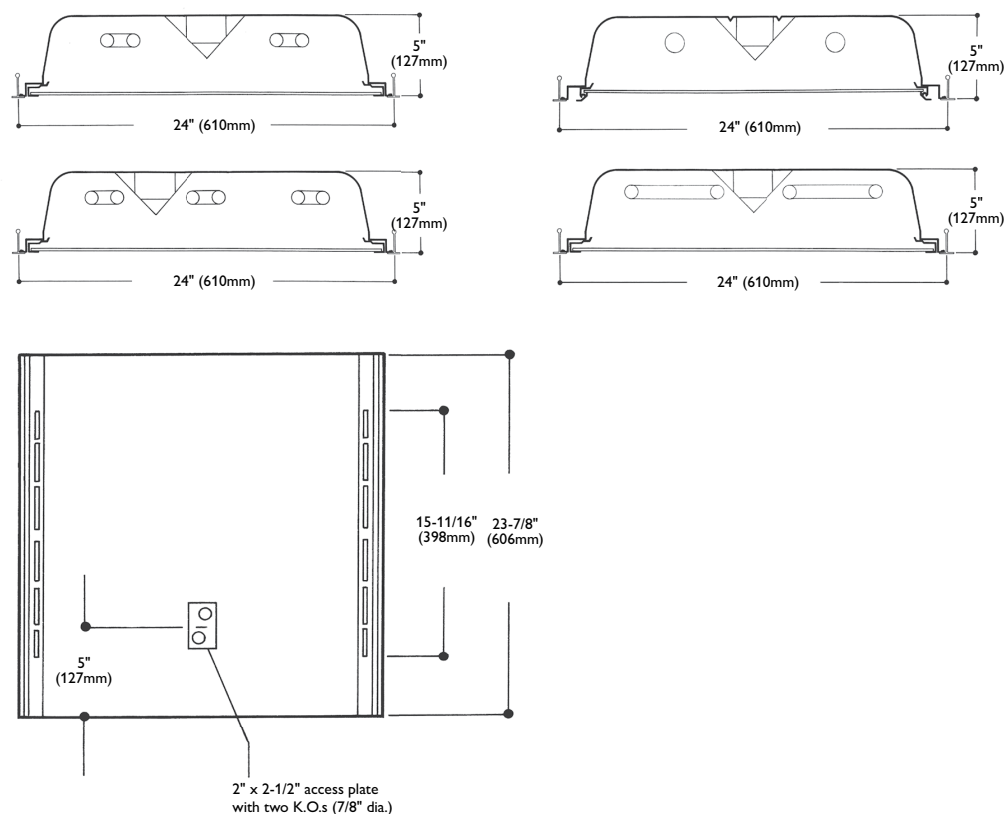
Features

- 5" deep body.
- 3-1/16" lamp to lens for better lamp obscuration.
- 71.6% efficient (2 – 6" U lamp), 67.9% efficient (3 – 1-5/8" U lamp).
- Clean contoured interior, no holes.
- Hemmed over side rails for maximum safety.
- Fixture ends turned-in for safe handling.
- Built-in earthquake clips.
- Slimline door frame with 475 square inch lens opening.
- Door jamb finished black on four sides for positive light stop.
- True mitered corner steel lens frame.
- Spring loaded rooster head latches.
- 18 gauge steel hinges.
- Flat and regressed aluminum doors available.

Specifications

- **Performance:** In an installation of 3 lamp 31W 1-5/8" U lamp luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .72. To prevent glare the VCP shall not be less than 35 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 3497 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 66.8%.
 In an installation of 2 lamp 31W 6" U lamp luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .75. To prevent glare the VCP shall not be less than 40 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 2629 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 67.4%.
- **Materials:** Chassis parts – die-formed code gauge cold rolled steel. Housing with side rails hemmed over and housing ends turned-in for safe handling.
- **Finish:** Chassis exterior – White baked polyester enamel. Cavity – white baked polyester enamel minimum 86% reflectance. Phosphate undercoating.
- **Electrical:** Thermally protected class "P" ballast, non PCB. If K.O. is within 3" of ballast, use wire suitable for at least 90°.
- **Labels:** cULus listed. Suitable for damp locations. Models with emergency ballasts suitable for dry locations.

Dimensions



Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-2/1-EB10R

Type:**B2**

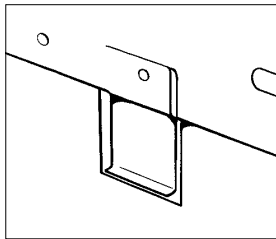
Notes:

PENN16-73992

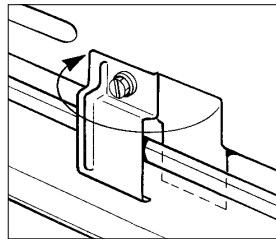
SPS SpecPlus 2x2

T8, T5, or T5HO

Features

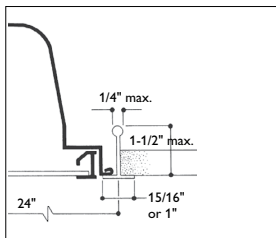


earthquake clip before installation

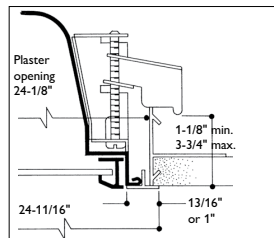


earthquake clip installed (lay-in grid)

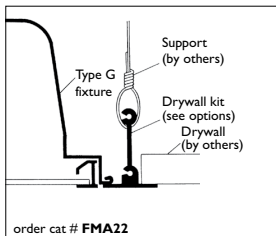
Mounting methods



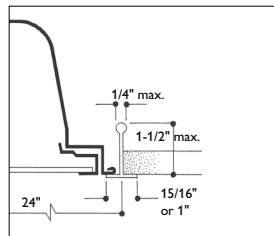
exposed t-grid ceiling (with flat aluminum frame)



plaster ceiling/flanged (with regressed aluminum frame)



drywall kit (see options)



exposed T-grid ceiling (with flat steel frame)



Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled, "Contain Mercury" and/or the symbol "HG". Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycling and disposal can be found at www.lamprecycle.org

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-2/1-EB10R

Notes:**Type:****B2**

PENN16-73992

SPS SpecPlus 2x2

T8, T5, or T5HO

Photometry**Model No. SPS2GFSVA32U120-1/3-EB**

LER = 64.1 IW = 76.2 BF = 0.88

Comparative yearly lighting energy cost per
1000 lumens = \$3.74

Report Number: G00057**Catalog Number:** SPS2GFSVA32U120-1/3-EB**Lamps:** (3) U6T8

Luminaire: 2' x 2' SpecPlus with regressed
aluminum door frame and extruded
virgin acrylic shielding .095" nominal
thickness (similar to pattern 12).

Ballast: REL-3P32-SC

Report is based on 2725 Lumens per lamp.

Efficiency: 67.9%**CIE Type:** Direct

Plane: 0-Deg 90-Deg

Spacing Criteria: 1.2 1.3

Shielding Angles: 90 90

Plane: 0-Deg 90-Deg

Luminous Length: 21.875 21.875

**COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20**

RC	80	50	30	10	50	30	10
RW 70	70	50	30	10	50	30	10
1	75	72	69	67	65	63	62
2	69	63	59	60	57	54	55
3	63	56	51	53	49	46	45
4	58	51	45	48	44	40	43
5	54	46	40	43	39	35	38
6	50	41	36	39	35	31	38
7	46	38	32	36	31	28	35
8	43	34	29	33	28	25	32
9	40	32	26	31	26	23	30
10	38	29	24	28	24	21	28

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	2391	2391	2391	
5	2376	2376	2382	226
15	2269	2289	2315	647
25	2056	2106	2160	971
35	1728	1799	1877	1126
45	1277	1361	1467	1051
55	786	840	909	755
65	434	411	460	434
75	219	201	264	244
85	82	87	109	98
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	5803.	6184.	6666.
55	4403.	4705.	5092.
65	3300.	3125.	3497.
75	2719.	2495.	3277.
85	3023.	3207.	4018.

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	1844	22.6	33.2
0- 40	2970	36.3	53.5
0- 60	4776	58.4	86.0
0- 90	5552	67.9	100.0

Model No. SPS2GFSVA26U120-1/2-EB

LER = 60.9 IW = 56.3 BF = 0.87

Comparative yearly lighting energy cost per
1000 lumens = \$3.94

Report Number: G00035**Catalog Number:** SPS2GFSVA26U120-1/2-EB**Lamps:** (2) U6T8

Luminaire: 2' x 2' SpecPlus with regressed
aluminum door frame and extruded
virgin acrylic shielding .095" nominal
thickness (similar to pattern 12).

Ballast: REL-2P32-SC

Report is based on 2750 Lumens per lamp.

Efficiency: 71.5%**CIE Type:** Direct

Plane: 0-Deg 90-Deg

Spacing Criteria: 1.2 1.3

Shielding Angles: 90 90

Plane: 0-Deg 90-Deg

Luminous Length: 21.875 21.875

**COEFFICIENTS OF UTILIZATION –
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20**

RC	80	50	30	10	50	30	10
RW 70	70	50	30	10	50	30	10
1	79	75	73	71	69	67	66
2	72	67	62	63	59	56	58
3	66	59	54	56	52	48	51
4	61	53	47	50	46	42	49
5	56	48	42	45	40	37	44
6	52	43	37	41	36	32	40
7	49	39	33	38	33	29	37
8	45	36	30	35	30	26	34
9	42	33	28	32	27	24	31
10	40	31	25	30	25	21	29

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	1669	1669	1669	
5	1659	1658	1661	158
15	1578	1593	1614	451
25	1431	1464	1502	675
35	1212	1249	1309	785
45	913	960	1068	750
55	572	611	673	551
65	318	302	342	319
75	160	146	192	178
85	58	62	78	70
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	4164.	4410.	4906.
55	3239.	3460.	3811.
65	2444.	2321.	2629.
75	2008.	1832.	2410.
85	2162.	2311.	2907.

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	1283	23.3	32.6
0- 40	2069	37.6	52.6
0- 60	3369	61.3	85.6
0- 90	3936	71.6	100.0



Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-1/2-EB10R

Notes:**Type:****B3**

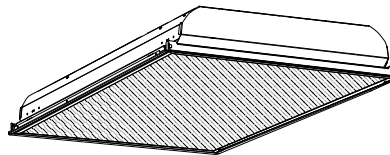
PENN16-73992

PHILIPS
Day-Brite
CFI

Recessed

SpecPlus 2x2

T8, T5, or T5HO



Project: _____
Location: _____
Cat.No: _____
Type: _____
Lamps: _____ Qty: _____
Notes: _____

The Philips Day-Brite / CFI SpecPlus recessed offers specification grade quality and features. Built-in grid clips with positive clamping by screws, easy re-lamping, and 475 sq. inch lens area puts this luminaire in the lead on performance, safety and ease of maintenance.

Ordering guide

example: SPS2GFSVA26UUNV-1/2-EB

Family	Air Function	Width	Ceiling Type	Lens Frame	Lens Shielding	Lamp Quantity	Lamp Type	Voltage	Options
SP	S	2						—	
SP SpecPlus Lensed Troffer	S Static	2 2'	G Grid (lay-in T bar) F Flanged (over lap) Z spline and plaster frame	FS Flat steel RA Regressed aluminum FA Flat aluminum	VA Pattern 12 prismatic acrylic, .095" nominal VI Pattern 12, .125" nominal VY K-12, .125" nominal KA Pattern 19, .156" nominal BP 1/2"x1/2"x1/2" silver plastic louver, polystyrene AP 1/2"x1/2"x1/2" silver plastic louver, acrylic MC 1.5"x1.5"x1" silver plastic louver, polystyrene ML 1.5"x1.5"x1" silver plastic louver, acrylic SE 3/4"x3/4"x3/8" silver plastic louver, polystyrene SF 3/4"x3/4"x3/8" silver plastic louver, acrylic	2 2 lamp 3 3 lamp 4 4 lamp	2U* T8, 1-5/8" U lamp 6U** T8, 6" U lamp 14 14WT5 17 17WT8 24 24WT5HO *2 or 3 lamp only **2 lamp only	UNV Universal voltage, 120-277V 120 120V 277 277V 347 347V	1/2 One 2-lamp ballast 1/3 One 3-lamp ballast 1/21 2-lamp & 1-lamp ballasts 1/4 One 4-lamp ballast 2/2 Two 2-lamp ballasts EB Electronic ballast, <10% THD std. ballast factor EB10R T8 electronic ballast, <10% THD, program rapid start EBHE T8 electronic ballast, high efficiency std. ballast factor EBLHE T8 electronic ballast, high efficiency low ballast factor EBHHE T8 electronic ballast, high efficiency high ballast factor EBD7 Advance Mark 7 dimming ballast, 0-10V (low voltage) control EBDX Advance Mark 10 dimming ballast, phase control EBSD T8 electronic step dimming ballast, 88 ballast factor EBD Electronic dimming ballast, customer specified E1 B100 emerg. ballast, T8, 350-450 lumens, 120/277V E1CAN B100-CAN emerg. ballast, Canada market, T8, 350-450 lumens, 120/347V E7 B60 emerg. ballast, T8, 600-700 lumens, 120/277V E5 B50 emerg. ballast, U.S. or Canada market, T8, 1100-1400 lumens, UNV ESCAN B50-CAN emerg. ballast, Canada market, T8, 1100-1400 lumens, 120/347V ESST B50ST emerg. ballast w/self test, U.S. or Canada market, T8, 1100-1400 lumens, UNV E7LP LP550 emerg. ballast T5/T5HO, 430-700 lumens, 120/277V E6LP LP600 emerg. ballast U.S. or Canada market, T5/T5HO, 750-1325 lumens, 120/277V F1 3/8" flex, 3 wire 18 gauge 6' F2 3/8" flex, 4 wire 18 gauge 6' F2/SW 3/8" flex, 5 wire 18 gauge 6' GLR Fusing, fast blow LPT830 Installed T8/T5 lamps, 80+ CRI, 3000K LPT835 Installed T8/T5 lamps, 80+ CRI, 3500K LPT841 Installed T8/T5 lamps, 80+ CRI, 4100K LPT830HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3000K LPT835HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3500K LPT841HL Installed T8/T5 hi lumen lamps, 80+ CRI, 4100K 1W 1-way gasketing, between lens & door frame 2W 2-way gasketing, 1W + gasketing between door frame & housing 3W 3-way gasketing, 2W + gasketing for field installation between housing & ceiling PAF Housing painted after fabrication

Accessories (order separately)

- **FMA22** – 2'x2' "F" mounting frame for NEMA "F" installations
- **Electrical wiring options** – consult factory

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-1/2-EB10R

Type:**B3****Notes:**

PENN16-73992

SPS SpecPlus 2x2

T8, T5, or T5HO

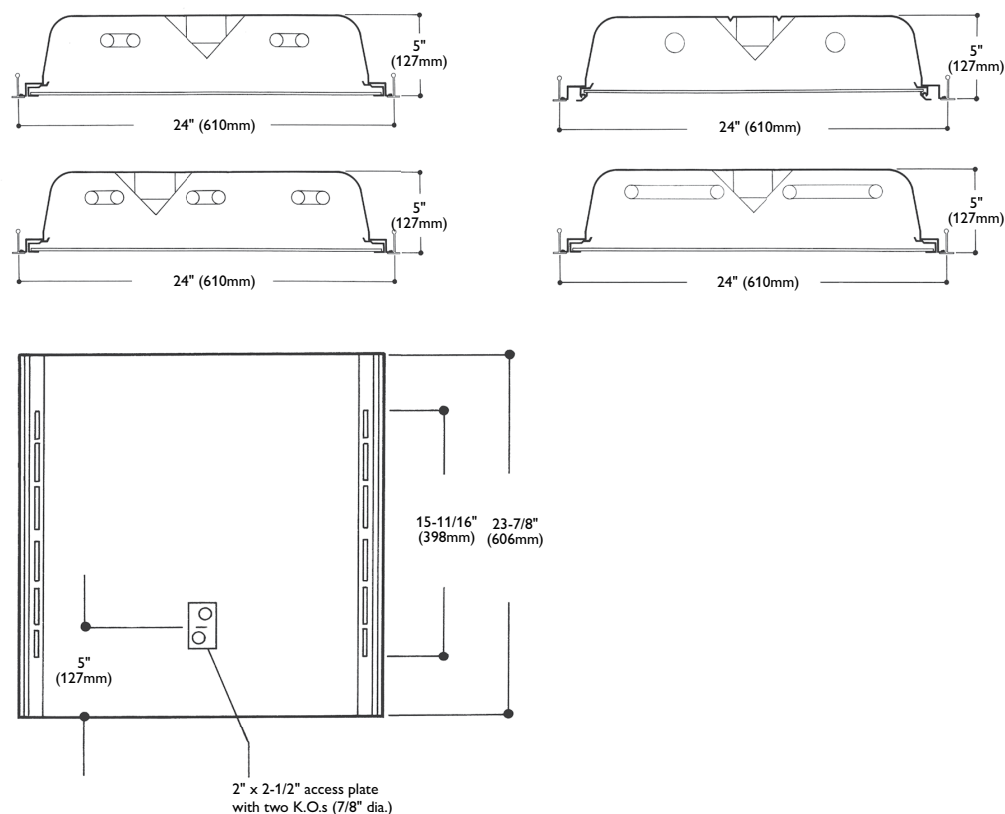
Features

- 5" deep body.
- 3-1/16" lamp to lens for better lamp obscuration.
- 71.6% efficient (2 – 6" U lamp), 67.9% efficient (3 – 1-5/8" U lamp).
- Clean contoured interior, no holes.
- Hemmed over side rails for maximum safety.
- Fixture ends turned-in for safe handling.
- Built-in earthquake clips.
- Slimline door frame with 475 square inch lens opening.
- Door jamb finished black on four sides for positive light stop.
- True mitered corner steel lens frame.
- Spring loaded rooster head latches.
- 18 gauge steel hinges.
- Flat and regressed aluminum doors available.

Specifications

- **Performance:** In an installation of 3 lamp 31W 1-5/8" U lamp luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .72. To prevent glare the VCP shall not be less than 35 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 3497 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 66.8%.
 In an installation of 2 lamp 31W 6" U lamp luminaires in a room cavity ratio of 1, with reflectance 80% ceiling, 50% wall, 20% floor, the C.U. shall not be less than .75. To prevent glare the VCP shall not be less than 40 either lengthwise or crosswise (at 100fc level) and the average brightness at 65° shall not exceed 2629 candelas per square meter. To control veiling reflections, luminaire output in the 30°-90° zone shall not be less than 67.4%.
- **Materials:** Chassis parts – die-formed code gauge cold rolled steel. Housing with side rails hemmed over and housing ends turned-in for safe handling.
- **Finish:** Chassis exterior – White baked polyester enamel. Cavity – white baked polyester enamel minimum 86% reflectance. Phosphate undercoating.
- **Electrical:** Thermally protected class "P" ballast, non PCB. If K.O. is within 3" of ballast, use wire suitable for at least 90°.
- **Labels:** cULus listed. Suitable for damp locations. Models with emergency ballasts suitable for dry locations.

Dimensions



Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-1/2-EB10R

Type:**B3**

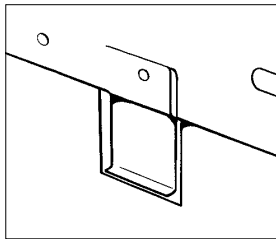
Notes:

PENN16-73992

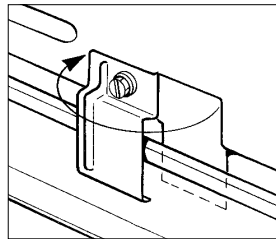
SPS SpecPlus 2x2

T8, T5, or T5HO

Features

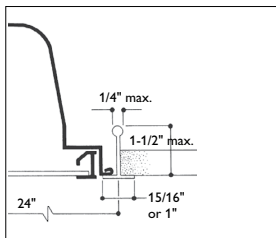


earthquake clip before installation

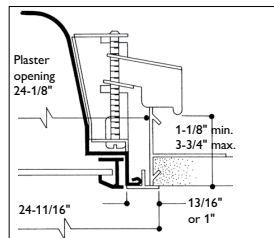


earthquake clip installed (lay-in grid)

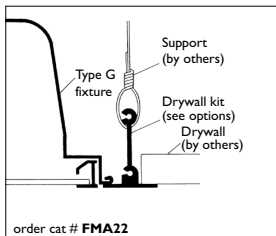
Mounting methods



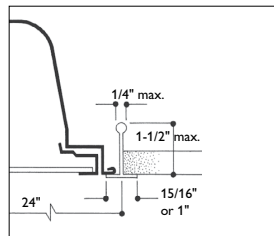
exposed t-grid ceiling (with flat aluminum frame)



plaster ceiling/flanged (with regressed aluminum frame)



drywall kit (see options)



exposed T-grid ceiling (with flat steel frame)

order cat # **FMA22**

Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled, "Contain Mercury" and/or the symbol "HG". Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycling and disposal can be found at www.lamprecycle.org

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

SPS2GFSVA217UNV-1/2-EB10R

Notes:**Type:****B3**

PENN16-73992

SPS SpecPlus 2x2

T8, T5, or T5HO

Photometry**Model No. SPS2GFSVA32U120-1/3-EB**

LER = 64.1 IW = 76.2 BF = 0.88

Comparative yearly lighting energy cost per
1000 lumens = \$3.74

Report Number: G00057

Catalog Number: SPS2GFSVA32U120-1/3-EB
Lamps: (3) U6T8

Luminaire: 2' x 2' SpecPlus with regressed
aluminum door frame and extruded
virgin acrylic shielding .095" nominal
thickness (similar to pattern 12).

Ballast: REL-3P32-SC

Report is based on 2725 Lumens per lamp.

Efficiency: 67.9%**CIE Type:** Direct

Plane: 0-Deg 90-Deg

Spacing Criteria: 1.2 1.3

Shielding Angles: 90 90

Plane: 0-Deg 90-Deg

Luminous Length: 21.875 21.875

COEFFICIENTS OF UTILIZATION -
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	10	50	30	10
RW	70	50	30	10	50	30	10
1	75	72	69	67	65	63	62
2	69	63	59	60	57	54	55
3	63	56	51	53	49	46	45
4	58	51	45	48	44	40	46
5	54	46	40	43	39	35	42
6	50	41	36	39	35	31	38
7	46	38	32	36	31	28	35
8	43	34	29	33	28	25	32
9	40	32	26	31	26	23	30
10	38	29	24	28	24	21	28

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	2391	2391	2391	
5	2376	2376	2382	226
15	2269	2289	2315	647
25	2056	2106	2160	971
35	1728	1799	1877	1126
45	1277	1361	1467	1051
55	786	840	909	755
65	434	411	460	434
75	219	201	264	244
85	82	87	109	98
90	0	0	0	

LUMINANCE DATA IN CANDELA/SQ. METER

AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	5803.	6184.	6666.
55	4403.	4705.	5092.
65	3300.	3125.	3497.
75	2719.	2495.	3277.
85	3023.	3207.	4018.

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	1844	22.6	33.2
0- 40	2970	36.3	53.5
0- 60	4776	58.4	86.0
0- 90	5552	67.9	100.0

Model No. SPS2GFSVA26U120-1/2-EB

LER = 60.9 IW = 56.3 BF = 0.87

Comparative yearly lighting energy cost per
1000 lumens = \$3.94

Report Number: G00035

Catalog Number: SPS2GFSVA26U120-1/2-EB
Lamps: (2) U6T8

Luminaire: 2' x 2' SpecPlus with regressed
aluminum door frame and extruded
virgin acrylic shielding .095" nominal
thickness (similar to pattern 12).

Ballast: REL-2P32-SC

Report is based on 2750 Lumens per lamp.

Efficiency: 71.5%**CIE Type:** Direct

Plane: 0-Deg 90-Deg

Spacing Criteria: 1.2 1.3

Shielding Angles: 90 90

Plane: 0-Deg 90-Deg

Luminous Length: 21.875 21.875

COEFFICIENTS OF UTILIZATION -
ZONAL CAVITY METHOD, EFFECTIVE
FLOOR CAVITY REFLECTANCE 0.20

RC	80	50	30	10	50	30	10
RW	70	50	30	10	50	30	10
1	79	75	73	71	69	67	66
2	72	67	62	63	59	56	58
3	66	59	54	56	52	48	51
4	61	53	47	50	46	42	49
5	56	48	42	45	40	37	44
6	52	43	37	41	36	32	40
7	49	39	33	38	33	29	37
8	45	36	30	35	30	26	34
9	42	33	28	32	27	24	31
10	40	31	25	30	25	21	29

CANDELA DISTRIBUTION

	0.0	45.0	90.0	FLUX
0	1669	1669	1669	
5	1659	1658	1661	158
15	1578	1593	1614	451
25	1431	1464	1502	675
35	1212	1249	1309	785
45	913	960	1068	750
55	572	611	673	551
65	318	302	342	319
75	160	146	192	178
85	58	62	78	70
90	0	0	0	


LUMINANCE DATA IN CANDELA/SQ. METER

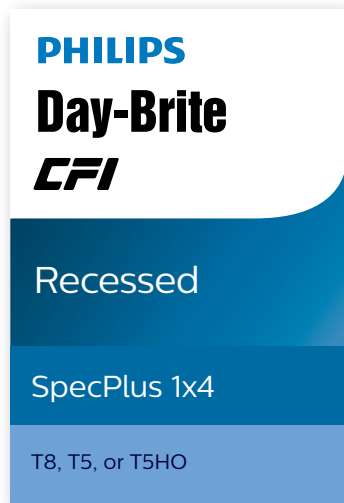
AVERAGE IN DEG.	AVERAGE 0-DEG.	AVERAGE 45-DEG.	AVERAGE 90-DEG.
45	4164.	4410.	4906.
55	3239.	3460.	3811.
65	2444.	2321.	2629.
75	2008.	1832.	2410.
85	2162.	2311.	2907.

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% FIXT
0- 30	1283	23.3	32.6
0- 40	2069	37.6	52.6
0- 60	3369	61.3	85.6
0- 90	3936	71.6	100.0



Submitted by Penn Lighting Associates		Catalog Number: SPS1GFSVA132UNV-1/1-EB10R	Type: C PENN16-73992
 Penn Lighting Associates	Job Name: Thomas D. Clayton School - Renovations Architect: Fearn & Clendaniel (Wilmington) Engineer: Fayda Engineering & Energy Solutions (Wilmington)	Notes:	



Project: _____
Location: _____
Cat.No: _____
Type: _____
Lamps: _____ Qty: _____
Notes: _____

The Philips Day-Brite / CFI SpecPlus recessed offers specification grade quality and features. Built-in grid clips, easy re-lamping, and large lens area puts this luminaire in the lead on performance, safety and ease of maintenance.

Ordering guide

example: SPS1GFSVA232UNV-1/2-EB

Family	Air Function	Width	Ceiling Type	Lens Frame	Lens Shielding	Lamp Quantity	Lamp Type	Voltage	Options
SP	S	1	G					-	
SP SpecPlus Lensed Troffer	S Static	1 1'	G Grid (lay-in T bar)	FS Flat steel FA Flat aluminum RA Regressed aluminum	VA Pattern 12 prismatic acrylic, .095" nominal VI Pattern 12, .125" nominal KA Pattern 19, .156" nominal VL Pattern 12, .187" nominal, high impact acrylic BP 1/2"x1/2"x1/2" silver plastic louver, polystyrene AP 1/2"x1/2"x1/2" silver plastic louver, acrylic MC 1.5"x1.5"x1" silver plastic louver, polystyrene ML 1.5"x1.5"x1" silver plastic louver, acrylic SE 3/4"x3/4"x3/8" silver plastic louver, polystyrene SF 3/4"x3/4"x3/8" silver plastic louver, acrylic	1 1 lamp 2 2 lamp 3 3 lamp	28 28WT5 32 32WT8 54 54WT5HO	UNV Universal voltage, 120-277V 120 120V 277 277V 347 347V	1/1 One 1-lamp ballast 1/2 One 2-lamp ballast 1/3 One 3-lamp ballast 1/21 2-lamp & 1-lamp ballasts EB Electronic ballast, <10% THD std. ballast factor EB10R T8 electronic ballast, <10% THD, program rapid start EBHE T8 electronic ballast, high efficiency std. ballast factor EBLHE T8 electronic ballast, high efficiency low ballast factor EBHHE T8 electronic ballast, high efficiency high ballast factor EBD7 Advance Mark 7 dimming ballast, 0-10V (low voltage) control EBDX Advance Mark 10 dimming ballast, phase control EBSD T8 electronic step dimming ballast, .88 ballast factor EBD Electronic dimming ballast, customer specified E1 B100 emerg. ballast, T8, 350-450 lumens, 120/277V ETCAN B100-CAN emerg. ballast, Canada market, T8, 350-450 lumens, 120/347V E7 B60 emerg. ballast, T8, 600-700 lumens, 120/277V E5 B50 emerg. ballast, U.S. or Canada market, T8, 1100-1400 lumens, UNV E5CAN B50-CAN emerg. ballast, Canada market, T8, 1100-1400 lumens, 120/347V E5ST B50ST emerg. ballast w/self test, U.S. or Canada market, T8, 1100-1400 lumens, UNV E7LP LP550 emerg. ballast T5/T5HO, 430-700 lumens, 120/277V E6LP LP600 emerg. ballast U.S. or Canada market, T5/T5HO, 750-1325 lumens, 120/277V F1 3/8" flex, 3 wire 18 gauge 6' F2 3/8" flex, 4 wire 18 gauge 6' F2/5W 3/8" flex, 5 wire 18 gauge 6' GLR Fusing, fast blow LPT830HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3000K LPT835HL Installed T8/T5 hi lumen lamps, 80+ CRI, 3500K LPT841HL Installed T8/T5 hi lumen lamps, 80+ CRI, 4100K LPT830 Installed T8/T5/T5HO lamps, 80+ CRI, 3000K LPT835 Installed T8/T5/T5HO lamps, 80+ CRI, 3500K LPT841 Installed T8/T5/T5HO lamps, 80+ CRI, 4100K 1W 1-way gasketing, between lens & door frame 2W 2-way gasketing, 1W + gasketing between door frame & housing 3W 3-way gasketing, 2W + gasketing for field installation between housing & ceiling PAF Housing painted after fabrication

Accessories (order separately)

- **GCP** – Grid clip pack (1'x4')
- **FMA14** – 1'x4' "F" mounting frame for NEMA "F" installations
- **Electrical wiring options** – consult factory

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS1GFSVA132UNV-1/1-EB10R

Notes:**Type:****C**

PENN16-73992

SPS SpecPlus 1x4

T8, T5, or T5HO

Construction/finish

- Quality recessed troffer for the following "NEMA" ceiling types: NEMA "G"-Grid, NEMA "NFSG"-Narrow Faced Slot Grid, NEMA "GR"-Grid Regressed, NEMA "NFG"-Narrow Faced Grid
- Field assembled and installed "F" mounting Frame adapts fixture for use in NEMA "F" ceilings requiring flanges.
- Housing is constructed of pre-painted steel.
- Troffer body die-formed CR steel with reinforcing ribs for rigidity.
- 7/8" K.O.'s provided in each end cap and quick wire access plate in housing top with two 7/8" K.O.'s provided.

- Snap on wireway cover.
- T-bar clips are not integral to the luminaire, and must be ordered separately.
- Low profile body minimizes clearance required.
- All units have wire hanger tabs for independent wire suspension.

Electrical

- UL listed, suitable for damp locations.
- Self-contained fluorescent emergency power packs can be incorporated. UL listed for dry locations.
- No exposed internal wiring.

Enclosure

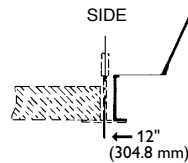
- Flat steel door frame has mitered corners.
- Hinged and latched (from either side) door frame.
- Mechanically designed interlocks eliminate light leaks, no gaskets are needed.
- White (standard) or black (optional) door frames available.
- Diffuser is clear color stabilized 100% prismatic acrylic.

Ceiling Configuration

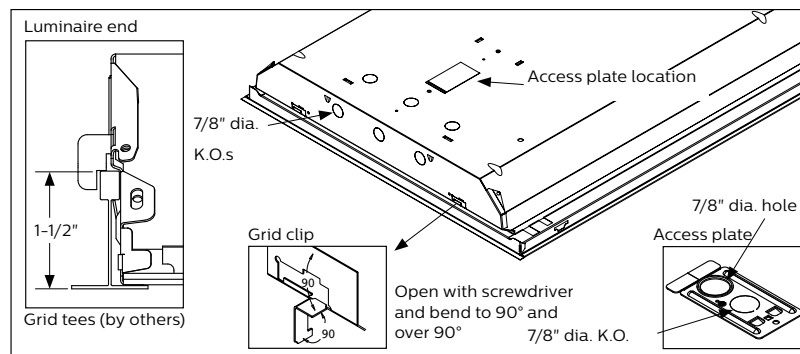
SP S 1 G FS VA 2 32

Ceiling type

G = Grid (NEMA G)



(NEMA Type G)
 Lay-in acoustical
 ceilings using exposed
 grid suspension, with
 tees for luminaires on
 12" x 48" spacing.



Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

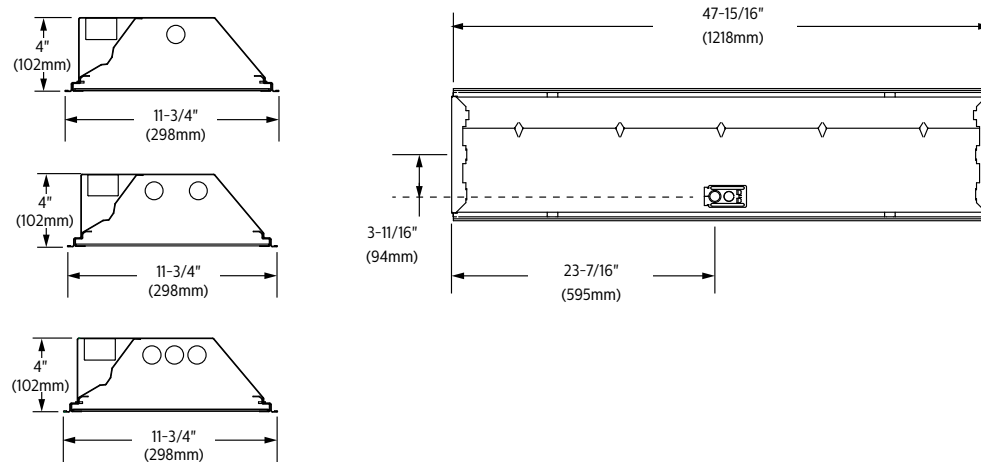
SPS1GFSVA132UNV-1/1-EB10R

Notes:**Type:****C**

PENN16-73992

SPS SpecPlus 1x4

T8, T5, or T5HO

Dimensions**Photometry****SpecPlus 1x4 2 Lamp T8****Efficiency – 69.2%****LER – 68****TER – 61**

Catalog No.	SPS1GFSVA232
Test No.	33910
S/MH	1.3
Lamp Type	F32T8
Lumens/Lamp	3100
Ballast Factor	.89
Input Watts	56

Candlepower

Angle	End	45	Cross
0	1732	1732	1732
5	1722	1723	1728
15	1668	1677	1679
25	1545	1553	1561
35	1352	1353	1335
45	1080	1039	960
55	715	666	573
65	394	342	309
75	213	159	149
85	99	58	35

Light Distribution

Degrees	Lumens	% Lamp	% Luminaire
0-30	1363	22.0	31.8
0-40	2219	35.8	51.8
0-60	3639	58.7	84.9
0-90	4290	69.2	100

Average Luminance

Angle	End	45°	Cross
45	5170	4977	4596
55	4223	3933	3382
65	3154	2738	2479
75	2788	2077	1951
85	3838	2270	1354

Coefficients of Utilization**Effective Floor Cavity Reflectance 20 Per (Pfc=0.20)**

pcc	80	70	50
pw	70	50	30
RCR	70	50	30
0	81	81	81
1	76	72	69
2	68	64	59
3	64	56	52
4	58	51	45
5	54	46	40
6	50	40	35
7	46	38	32
8	44	34	28
9	40	32	26
10	38	28	23

Comparative yearly lighting energy cost per 1000 lumens – **\$3.53** based on 3000 hrs. and \$.08 pwr KWH.

The photometric results were obtained in the Philips Day-Brite laboratory which is NVLAP accredited by the National Institute of Standards and Technology.

**Job Name:**

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

SPS1GFSVA132UNV-1/1-EB10R

Type:**C**

Notes:

PENN16-73992

SPS SpecPlus 1x4

T8, T5, or T5HO

Photometry**SpecPlus 1x4 3 Lamp T8****Efficiency – 62.1%****LER – 62****TER – 56**

Catalog No.	SPS1GFSVA332
Test No.	33911
S/MH	1.2
Lamp Type	F32T8
Lumens/Lamp	3100
Ballast Factor	.83
Input Watts	77

Candlepower

Angle	End	45	Cross
0	2377	2377	2377
5	2364	2366	2368
15	2287	2299	2294
25	2118	2122	2119
35	1844	1835	1788
45	1468	1390	1255
55	970	871	727
65	528	441	392
75	284	207	193
85	132	78	48

Light Distribution

Degrees	Lumens	% Lamp	% Luminaire
0-30	1865	20.1	32.3
0-40	3028	32.6	52.4
0-60	4924	52.9	85.3
0-90	5778	62.1	100

Average Luminance

Angle	End	45	Cross
45	7030	6656	6010
55	5729	5141	4294
65	4230	3536	3144
75	3711	2704	2519
85	5122	3049	1858

Comparative yearly lighting energy cost per 1000 lumens – **\$3.87** based on 3000 hrs. and 5.08 pwr KWH.

The photometric results were obtained in the Philips Day-Brite laboratory which is NVLAP accredited by the National Institute of Standards and Technology.

Coefficients of Utilization**Effective Floor Cavity Reflectance 20 Per (Pfc=0.20)**

pcc	80			70			50		
pw	70	50	30	70	50	30	50	30	
RCR									
0	73	73	73	71	71	71	68	68	
1	68	65	63	66	64	61	60	58	
2	61	57	54	60	56	53	54	51	
3	56	51	46	56	50	46	48	45	
4	53	46	40	51	45	40	44	39	
5	48	40	35	47	40	35	39	34	
6	45	36	32	44	36	32	35	30	
7	41	34	28	40	34	28	33	28	
8	39	30	26	38	30	26	29	26	
9	36	28	23	35	28	23	28	23	
10	34	27	22	34	26	22	26	20	



Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled, "Contain Mercury" and/or the symbol "Hg". Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycling and disposal can be found at www.lamprecycle.org

© 2015 Koninklijke Philips N.V. All rights reserved.
 Philips reserves the right to make changes in specifications and/or to discontinue any product at any time without notice or obligation and will not be liable for any consequences resulting from the use of this publication.
philips.com/luminaires

SpecPlus_1x4_T8_T5_T5HO 10/15 page 4 of 4



Philips Lighting, North America Corporation
 200 Franklin Square Drive, Somerset, NJ 08873
 Tel. 855-486-2216

Philips Lighting Canada Ltd.
 281 Hillmount Rd, Markham, ON, Canada L6C 2S3
 Tel. 800-668-9008

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

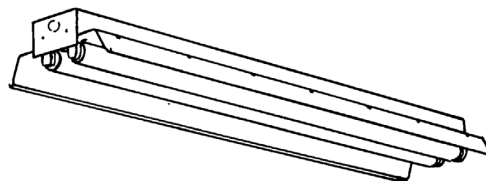
Catalog Number:

IA232-UNV-1/2-EB FL-173 FKR-126

Type:**D**

Notes:

PENN16-73992



Project: _____
Location: _____
Cat.No: _____
Type: _____
Lamps: _____ Qty: _____
Notes: _____

The Philips Day-Brite / Philips CFI all purpose industrial is an industrial luminaire available with or without uplight at a economical price.

Ordering guide**Example: IA232-1/2-EB**

Family	No. of Lamps per Cross Section	Lamp Type	Voltage	Options
<input type="text"/>	<input type="text" value="2"/>	<input type="text" value="—"/>	<input type="text" value="—"/>	<input type="text"/>
IA Industrial w/ uplight	(not included)	28 28WT5 (46")	UNV Universal voltage	1/2 One 2-lamp ballast
	2	32 32WT8 (48")	120/277V	1/4 One 4-lamp ballast
TIA Tandem Unit w/uplight		54HO 54WT5HO (46")	120 120V	2/2 Two 2-lamp ballasts
IS Solid Top Reflector			277 277V	EB Electronic ballast, <10% THD
TIS Tandem Unit w/solid top			347 347V	EB10R T8 electronic ballast, program rapid start, <10% THD
				EBHE T8 electronic ballast, high efficiency, std. ballast factor
				EBLHE T8 electronic ballast, high efficiency, low ballast factor
				EBHHE T8 electronic ballast, high efficiency, high ballast factor
				LT20 -20°F start option (T8, use in conjunction with ballast option)
				E1 B100 emerg. ballast, T8, 350-450 lumens, 120/277V
				E1CAN B100-CAN emerg. ballast, Canada market, T8, 350-450 lumens, 120/347V
				E7 B60 emerg. ballast, T8, 600-700 lumens, 120/277V
				E5 B50 emerg. ballast, U.S. or Canada market, T8, 1100-1400 lumens, UNV
				E5CAN B50-CAN emerg. ballast, Canada market, T8, 1100-1400 lumens, 120/347V
				E5ST B50ST emerg. ballast w/self test, U.S. or Canada market, T8, 1100-1400 lumens, UNV
				E7LP LP550 emerg. ballast T5/T5HO, 430-700 lumens, 120/277V
				E6LP LP600 emerg. ballast U.S. or Canada market, T5/T5HO, 750-1325 lumens, 120/277V
				GLR Fusing, fast blow

Accessories (order separately)

- **CS-400** Rigid canopy
- **CS-500** 42" top swivel canopy
- **CS-12** 12" Stem
- **CS-18** 18" Stem
- **CS-24** 24" Stem
- **CS-30** 30" Stem
- **CS-36** 36" Stem
- **CS-48** 48" Stem
- **CTBH-1** T-bar sliding hanger, flush mount
- **CTBH-2** T-bar sliding hanger, 1-1/2" spacing
- **FKR-126** Chain hanger set
- **N-3380/3381** Universal joint aligner, octagonal box, 1/2" / 3/4" I.P.S.
- **TH-1** Sliding hanger, flush mounting
- **TH-2** Sliding hanger, 1-1/2" spacing except T12HO/VHO
- **TC-1** Heavy duty coupler
- **FKR-173** 4' Wire guard (use 2 for 8')

See section 1600-OA for option info. and 950-SS for mounting hardware.
Power Connect modular wiring available, see sheet 1604-OA for details

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

IA232-UNV-1/2-EB FL-173 FKR-126

Notes:**Type:****D**

PENN16-73992

IA All purpose industrial

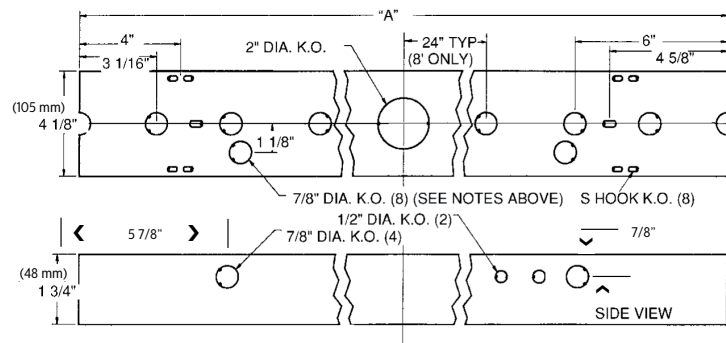
T5, T5HO, or T8

Construction/Finish

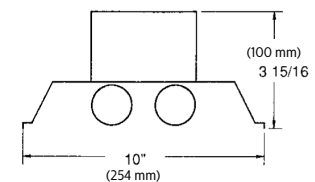
- Reflectors feature reinforcing forms and are painted with high reflectance baked white enamel finish.
- Multiple knockouts for convenient installation.
- Heavy duty channel of code gauge die formed steel with baked white enamel finish.
- Reflectors are easily installed and have up-light construction standard. Solid top reflectors are available.
- Combination end cap/coupler requires no tools for installation.
- 1/4 turn reflector fastener requires no tools.
- Suitable for unit or row, direct or suspension mounting.


Electrical

- cULus listed for direct mounting on low density ceilings and damp locations.
- Self-contained fluorescent emergency power packs can be incorporated.

Dimensions

DIM "A"		
4' CHANNEL	(1219 mm)	48"
8' CHANNEL	(2438 mm)	96"



Submitted by Penn Lighting Associates		Catalog Number: IA232-UNV-1/2-EB FL-173 FKR-126	Type: D
	Job Name: Thomas D. Clayton School - Renovations Architect: Fearn & Clendaniel (Wilmington) Engineer: Fayda Engineering & Energy Solutions (Wilmington)	Notes:	PENN16-73992

IA All purpose industrial

T5, T5HO, or T8

Photometry

IA all purpose industrial, 4' 2 Lamp 32WT8

Efficiency – 86.6%

LER – FI-76

TER – 46

		Candlepower				Light Distribution				Average Luminance				
Catalog No.	IA232-1/2-EB	Angle	End	45	Cross	Degrees	Lumens	% Lamp	% Luminaire	Angle	End	45'	Cross	
Test No.	42321	0	1310	1310	1310	0-30	1065	18.4	21.2	45	3870	4886	5562	
S/MH	1.5	5	1312	1307	1306	0-40	1804	31.1	35.9	55	3684	5392	6232	
Lamp Type	F32T8	15	1263	1288	1314	0-60	3493	60.2	69.5	65	3338	5991	6952	
Lumens/Lamp	2900	25	1169	1249	1317	0-90	4848	83.6	96.5	75	2725	6400	6023	
Ballast Factor	.92	35	1039	1186	1295	90-180	176	3.0	3.5	85	1337	2891	1445	
Input Watts	61	45	869	1097	1249	0-180	5024	86.6	100.0					
		55	671	982	1135									
		65	448	804	933									
		75	224	526	495									
		85	37	80	40									
		95	0	12	4									
		105	0	42	46									
		115	0	75	79									
		125	0	59	108									
		135	0	10	76									
		145	0	1	12									
		155	0	1	2									
		165	0	0	1									
		175	0	0	0									
Comparative yearly lighting energy cost per 1000 lumens – \$3.16 based on 3000 hrs. and \$.08 pwr KWH.														
The photometric results were obtained in the Philips Day-Brite laboratory which is NVLAP accredited by the National Institute of Standards and Technology.														
						Coefficients of Utilization								
						EFFECTIVE FLOOR CAVITY REFLECTANCE 20 PER (pfc=0.20)								
						pcc	80			70			50	
						pw	70	50	30	70	50	30	50	30
						RCR								
						0	102	102	102	100	100	100	94	94
						1	92	88	83	90	85	81	81	78
						2	82	75	68	81	72	68	69	65
						3	75	65	57	72	64	56	60	55
						4	68	56	48	66	56	47	53	46
						5	63	51	41	59	50	41	46	40
						6	57	45	36	56	44	36	41	35
						7	53	40	33	51	40	32	38	32
						8	48	36	28	47	35	28	34	28
						9	46	34	26	45	33	26	32	26
						10	42	30	23	41	30	23	28	23

Coefficients of Utilization

EFFECTIVE FLOOR CAVITY REFLECTANCE 20 PER (pfc=0.20)

pcc	80			70			50		
pw	70	50	30	70	50	30	50	30	
RCR									
0	102	102	102	100	100	100	94	94	
1	92	88	83	90	85	81	81	78	
2	82	75	68	81	72	68	69	65	
3	75	65	57	72	64	56	60	55	
4	68	56	48	66	56	47	53	46	
5	63	51	41	59	50	41	46	40	
6	57	45	36	56	44	36	41	35	
7	53	40	33	51	40	32	38	32	
8	48	36	28	47	35	28	34	28	
9	46	34	26	45	33	26	32	26	
10	42	30	23	41	30	23	28	23	



Some luminaires use fluorescent or high intensity discharge (HID) lamps that contain small amounts of mercury. Such lamps are labeled, "Contain Mercury" and/or the symbol "HG". Lamps that contain mercury must be disposed of in accordance with local requirements. Information regarding lamp recycling and disposal can be found at www.lamprecycle.org

© 2015 Koninklijke Philips N.V. All rights reserved.
Philips reserves the right to make changes in specifications and/or to discontinue any product at any time without notice or obligation and will not be liable for any consequences resulting from the use of this publication.
philips.com/luminaires

IA_industrial_T5_T5HO_T8 08/15 page 3 of 3



Philips Lighting North America Corporation
200 Franklin Square Drive, Somerset, NJ 08873
Tel. 855-486-2216

Philips Lighting Canada Ltd.
A division of Philips Electronics Ltd.
281 Hillmount Rd, Markham, ON, Canada L6C 2S3
Tel. 800-668-9008

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:
 TCL4-W-SD
Notes:**Type:****E**

PENN16-73992

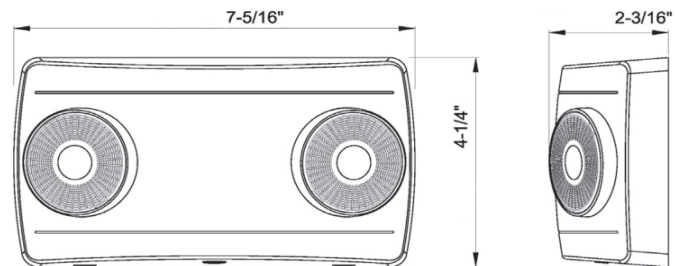
Telesis

LED Series

TCL LED Emergency Light

The Telesis TCL provides high performance in a low profile contemporary housing that complements most interior applications. The TCL is engineered for Quick fit easy installation and maintenance free reliability.

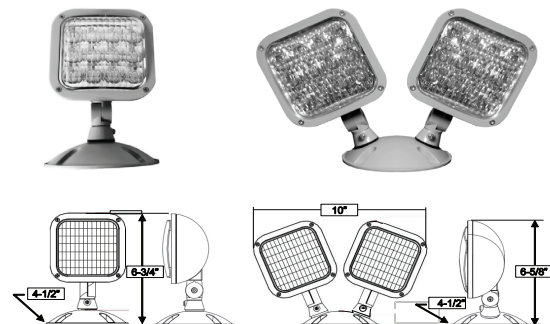
The 2 watt LED lamps provide 125 lumens each for superior spacing. Long lamp life (up to 100,000 hours) with very low power consumption.



Indoor Remote heads



Outdoor Remote Heads



2575 Metropolitan Drive, Treose, PA 19053 • USA
 TEL: (800) 872 0879 • FAX: (215) 244 4208 • www.evenlite.com

Project name:

Approved By:

Catalog No:

Type No:

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

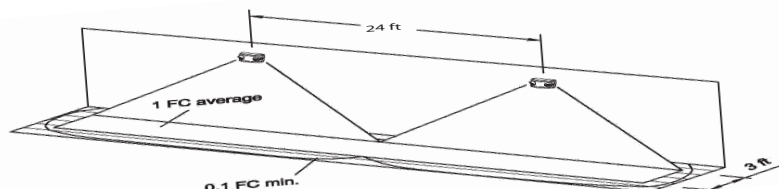
Catalog Number:**TCL4-W-SD****Notes:****Type:****E**

PENN16-73992

Telesis Series LED Emergency Light

FEATURES

- Two fully adjustable High Brightness 2 watt LED Heads each producing 125 lumens for optimum spacing and distribution
- Compact low profile contemporary design provides 90 minutes of emergency operation
- Injection molded, high impact thermoplastic housing in a white finish
- Knock out mounting pattern on back plate and top conduit entry provides quick installation
- Snap-fit housing suitable for Wall or Ceiling mounting
- Maintenance free sealed Nickel Cadmium (TCL2) or Nickel Metal Hydride batteries (TCL4) operating temperature range 10°C to 40°C
- Remote capability with TCL4 can power two 1 watt LED lampheads, or can be used for longer run time
- Optional single or double indoor or outdoor remote heads are available, with 3.6 volt 1 watt LED's
- Available with optional full Self-Test/Self-Diagnostics
- Field selectable 120 or 277 VAC 60 HZ
- Combined momentary test switch and AC status indicator provided for ease of testing
- Fully automatic, solid state, two-rate charger will recharge battery per UL 924 requirements
- Line-latch prevents unnecessary discharge of battery during installation, loads will not illuminate until after application of utility power
- Low voltage cut-off prevents battery damage and ensures positive charge acceptance following an extended discharge
- Brownout sensing assures emergency operation during periods of low line voltage
- Damp location environmentally-coated circuitry provided as standard
- UL 924 Listed, meets NFPA101 Life Safety Code, NFPA 70-NEC, and OSHA requirements
- 3 Year limited warranty



Mounting height is 8' reflectance of 80-50-20

ORDERING GUIDE

Telesis TCL	Battery Capacity		
Model		Color	Options
TCL Telesis LED Emergency Light	2 – 2 Watt LED Heads, Nickel Cadmium Battery, 90 Minute Operation with No Remote Capability 4 – 2 Watt LED Heads, Nickel Metal Hydride Battery, 90 Minute Operation with 2 Watts Remote Capability	W White (Standard) B Black (Only available with TCL4-SD)	SD Self-Test/Self-Diagnostics – only Available in TCL4 TCRH1 Single Indoor Remote Head (order separately) TCRH2 Double Indoor Remote Head (order separately) TCWP1* Single Outdoor Remote Head (order separately) TCWP2* Double Outdoor Remote Head (order separately) TCLWG Wire Guard 6" x 8" x 4" VRS Polycarbonate Vandal Shield *Outdoor remote heads are Gray standard, Black to order

Example: TCL4-W-SD-TCRH2

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

TCLWP1

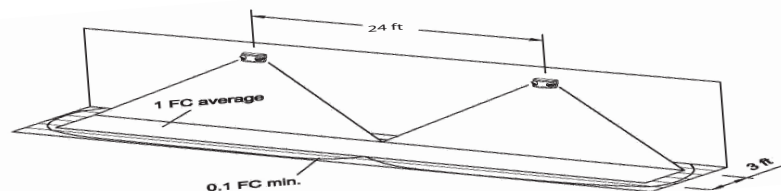
Notes:**Type:****E1**

PENN16-73992

Telesis Series LED Emergency Light

FEATURES

- Two fully adjustable High Brightness 2 watt LED Heads each producing 125 lumens for optimum spacing and distribution
- Compact low profile contemporary design provides 90 minutes of emergency operation
- Injection molded, high impact thermoplastic housing in a white finish
- Knock out mounting pattern on back plate and top conduit entry provides quick installation
- Snap-fit housing suitable for Wall or Ceiling mounting
- Maintenance free sealed Nickel Cadmium (TCL2) or Nickel Metal Hydride batteries (TCL4) operating temperature range 10°C to 40°C
- Remote capability with TCL4 can power two 1 watt LED lampheads, or can be used for longer run time
- Optional single or double indoor or outdoor remote heads are available, with 3.6 volt 1 watt LED's
- Available with optional full Self-Test/Self-Diagnostics
- Field selectable 120 or 277 VAC 60 HZ
- Combined momentary test switch and AC status indicator provided for ease of testing
- Fully automatic, solid state, two-rate charger will recharge battery per UL 924 requirements
- Line-latch prevents unnecessary discharge of battery during installation, loads will not illuminate until after application of utility power
- Low voltage cut-off prevents battery damage and ensures positive charge acceptance following an extended discharge
- Brownout sensing assures emergency operation during periods of low line voltage
- Damp location environmentally-coated circuitry provided as standard
- UL 924 Listed, meets NFPA101 Life Safety Code, NFPA 70-NEC, and OSHA requirements
- 3 Year limited warranty



Mounting height is 8' reflectance of 80-50-20

ORDERING GUIDE

Telesis TCL	Battery Capacity		
Model		Color	Options
TCL Telesis LED Emergency Light	<p>2 – 2 Watt LED Heads, Nickel Cadmium Battery, 90 Minute Operation with No Remote Capability</p> <p>4 – 2 Watt LED Heads, Nickel Metal Hydride Battery, 90 Minute Operation with 2 Watts Remote Capability</p>	<p>W White (Standard)</p> <p>B Black (Only available with TCL4-SD)</p>	<p>SD Self-Test/Self-Diagnostics – only Available in TCL4</p> <p>TCRH1 Single Indoor Remote Head (order separately)</p> <p>TCRH2 Double Indoor Remote Head (order separately)</p> <p>TCWP1* Single Outdoor Remote Head (order separately)</p> <p>TCWP2* Double Outdoor Remote Head (order separately)</p> <p>TCLWG Wire Guard 6" x 8" x 4"</p> <p>VRS Polycarbonate Vandal Shield</p>

*Outdoor remote heads are Gray standard, Black to order

Example: TCL4-W-SD-TCRH2

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

TCLR H1

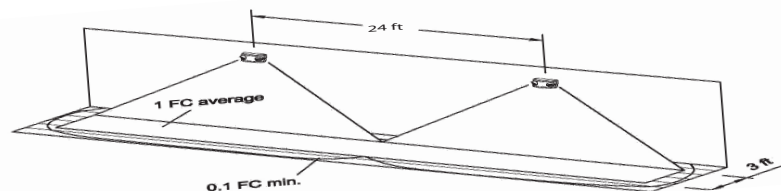
Notes:**Type:****E2**

PENN16-73992

Telesis Series LED Emergency Light

FEATURES

- Two fully adjustable High Brightness 2 watt LED Heads each producing 125 lumens for optimum spacing and distribution
- Compact low profile contemporary design provides 90 minutes of emergency operation
- Injection molded, high impact thermoplastic housing in a white finish
- Knock out mounting pattern on back plate and top conduit entry provides quick installation
- Snap-fit housing suitable for Wall or Ceiling mounting
- Maintenance free sealed Nickel Cadmium (TCL2) or Nickel Metal Hydride batteries (TCL4) operating temperature range 10°C to 40°C
- Remote capability with TCL4 can power two 1 watt LED lampheads, or can be used for longer run time
- Optional single or double indoor or outdoor remote heads are available, with 3.6 volt 1 watt LED's
- Available with optional full Self-Test/Self-Diagnostics
- Field selectable 120 or 277 VAC 60 HZ
- Combined momentary test switch and AC status indicator provided for ease of testing
- Fully automatic, solid state, two-rate charger will recharge battery per UL 924 requirements
- Line-latch prevents unnecessary discharge of battery during installation, loads will not illuminate until after application of utility power
- Low voltage cut-off prevents battery damage and ensures positive charge acceptance following an extended discharge
- Brownout sensing assures emergency operation during periods of low line voltage
- Damp location environmentally-coated circuitry provided as standard
- UL 924 Listed, meets NFPA101 Life Safety Code, NFPA 70-NEC, and OSHA requirements
- 3 Year limited warranty



Mounting height is 8' reflectance of 80-50-20

ORDERING GUIDE

Telesis TCL	Battery Capacity		
Model		Color	Options
TCL Telesis LED Emergency Light	2 – 2 Watt LED Heads, Nickel Cadmium Battery, 90 Minute Operation with No Remote Capability 4 – 2 Watt LED Heads, Nickel Metal Hydride Battery, 90 Minute Operation with 2 Watts Remote Capability	W White (Standard) B Black (Only available with TCL4-SD)	SD Self-Test/Self-Diagnostics – only Available in TCL4 TCRH1 Single Indoor Remote Head (order separately) TCRH2 Double Indoor Remote Head (order separately) TCWP1* Single Outdoor Remote Head (order separately) TCWP2* Double Outdoor Remote Head (order separately) TCLWG Wire Guard 6" x 8" x 4" VRS Polycarbonate Vandal Shield

*Outdoor remote heads are Gray standard, Black to order

Example: TCL4-W-SD-TCRH2

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

SQ44LEDEP1-1135K-LSQ4414-SCL-
CADDY #517B

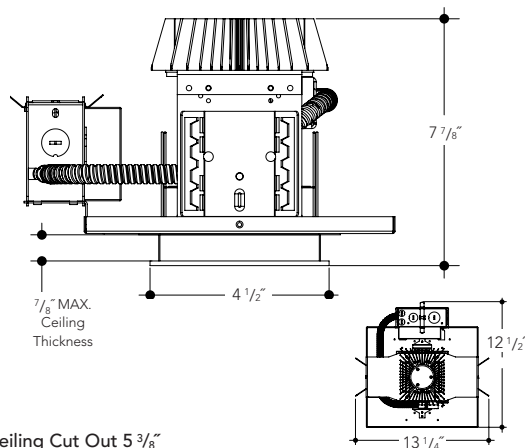
Notes:

Type:**F**

PENN16-73992

Project Name: _____

Type: _____

DIMENSIONS

Ceiling Cut Out 5 3/8"

FEATURES**Philips Fortimo LED Module**

LED downlight with Fortimo remote phosphor LED module available in 1100, 1500, 2000 and 3000 lumens. A variety of control systems can be accommodated, using the standard Xitanium or with optional drivers including Lutron. Please consult factory.

Benefits:

- Remote phosphor module has CRI 80 for excellent color consistency.
- Highly Energy Efficient Lighting Solution - 90 lumens per watt.
- Xitanium driver output 25-56V and dimmable with 0-10 volt controls.
- Input volts 120-277V.
- Long Life 50,000 hours.

Frame

Heavy duty galvanized steel components including frame, adjustable mounting ears and junction box. Fixture is prewired and grounded with easy access from below, listed for through branch circuit wiring.

Standard mounting bars (included) incorporate rigid formed cross sections and include joist positioning tabs, integral nails, auxiliary nailholes, T-Bar slots and holes for locking to grid using self-tapping screws (supplied by others). Mounting ears will accept our standard bars (14"-24" ext), optional Caddy #517B (27" ext) and other mounting methods.

Insulation must be kept 3" away from fixture. Listed for damp locations.



Manufactured and Listed to UL 1598, ETL and CSA standards.
Suitable for Damp Locations. Wet location under covered ceiling.

**ORDERING INFORMATION**

EXAMPLE: SQ44LEDEP1-1127K-LSQ4411-SCL

Wattage LED	Housing	Voltage	Lumens	Kelvin	Reflector	Lens	Finish	Options
See Chart	SQ44LEDEP	1	-11 = 1100	27K = 2700K	LSQ441(X)	1	SCL	AT
Below		2	-15 = 1500	30K = 3000K		1P	SGC	DL-3
			-20 = 2000	35K = 3500K		1FR	ECL	DL-2
			-30 = 3000	40K = 4000K		4	WHT	EM
						4P		PF
						2D		
						4D		
						6D		
						8D		

Lumens	Wattage*
1100-3k	13
1100-4k	12
1500-3k	18
1500-4k	16
2000-3k	25.5
2000-4k	23
3000-3k	37
3000-4k	33

*Actual Wattage/Lumens may vary.

Voltage	Lens	Special Optics	Options
1 - 120 Volts	1 Clear Glass	2D - Optical Diffuser-20°	AT - Airtight
2 - 277 Volts	1P Clear Polycarbonate	4D - Optical Diffuser-40°	DL-3 - Lutron 3-Wire - Please Consult Factory
3 - 347 Volt - Please Consult Factory	1FR Frosted	6D - Optical Diffuser-60°	DL-2 - Lutron 2-Wire - Please Consult Factory
	4 Prismatic Glass	8D - Optical Diffuser-80°	
	4P Prismatic Acrylic		

Vantage reserves the right to change components, finishes or design details in any manner which does not alter the installed appearance or reduce performance and intended function.

▲ See Options pages for other options and finishes.

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

121-2-50LA-WW-UNIV-BRP

Type:**G**

Notes:

PENN16-73992

Job:

Type:

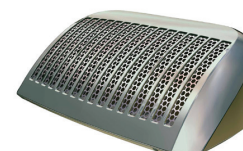
Notes:

120 LINE LED

Page 1 of 4

121 LED Performance Sconce - Generation 2

The Philips Gardco 121 LED Performance Sconce provides an energy efficient, architecturally pleasing solution for wall mount applications. The sloped surface ribs of the die cast aluminum housing create a distinctly unique aesthetic element, and perform important functions in the Philips Gardco thermal management system. 121 Generation 2 luminaires feature high performance Class 1 LED systems. The high performance LED optical systems produce full cutoff performance, minimizing glare and light trespass. Philips Gardco's LED technology provides maximized light output and maximum energy savings.



PREFIX	OPTICAL SYSTEM	LED WATTAGE	LED SELECTION	VOLTAGE	FINISH	OPTIONS
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Enter the order code into the appropriate box above. Note: Philips Gardco reserves the right to refuse a configuration. Not all combinations and configurations are valid. Refer to notes below for exclusions and limitations. For questions or concerns, please consult the factory.

PREFIX**121** 121 LED Performance Sconce - Constant Wattage / Full Light Output**121-MR** 121 LED Performance Sconce - Motion Response**121-DIM** 121 LED Performance Sconce - 0 - 10V Dimming**121-APD** 121 LED Performance Sconce - Automatic Profile Dimming**121-DCC** 121 LED Performance Sconce - Dual Circuit Control**OPTICAL SYSTEM****2** Type 2**3** Type 3**4** Type 4**MT** Medium Throw

All optical systems are supplied with a clear glass lens standard. A Diffuse Lens (DL) option is available. See **OPTIONS** on Page 2.

LED WATTAGE AND LUMEN VALUES

Single LED Array Wattages, Available in 121, 121-MR, 121-DIM and 121-APD Only

Ordering Code	Average System Watts ¹	LED Current (mA)	LED Quantity - Single LED Array	LED Selection	Luminaire Initial Absolute Lumens ²			
					TYPE 2	TYPE 3	TYPE 4	MT
18LA	18	350	16	NW	1,673	1,707	1,609	2,022
26LA	26	530	16	NW	2,442	2,485	2,345	2,927
35LA-700	36	700	16	NW	3,102	3,139	2,972	3,650
35LA-350	35	350	32	NW	3,664	3,736	3,523	4,425
50LA	52	530	32	NW	5,587	5,685	5,365	6,697
75LA	72	700	32	NW	6,199	6,538	6,296	7,289

Dual LED Array Wattages, Available in 121-DCC Only

Ordering Code	Average System Watts ¹	LED Current (mA)	LED Quantity - Dual LED Arrays		LED Selection	Luminaire Initial Absolute Lumens ²			
			Per LED Array	Total LEDs		TYPE 2	TYPE 3	TYPE 4	MT
35LA-2	35	350	16	32	NW	3664	3,736	3,523	4,425
50LA-2	52	530	16	32	NW	5587	5,685	5,365	6,697
75LA-2	72	700	16	32	NW	6199	6,538	6,296	7,289

1. Wattage may vary by +/- 8% due to LED manufacturer forward volt specification and ambient temperature. Wattage shown is average for 120V through 277V input.

Actual wattage may vary by an additional +/- 10% due to actual input voltage.

2. Values shown are for luminaires without the DL option. Tests are in process for configurations not shown. "(s)" following the value indicates that values are scaled from tests on similar, but not identical luminaire configurations. Contact Gardco.applications@philips.com if any approximate estimates are required for design purposes. Lumen values based on tests performed in compliance with IESNA LM-79.

**PHILIPS**

GARDCO

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

121-2-50LA-WW-UNIV-BRP

Type:**G**

PENN16-73992

120 LINE LED

Page 2 of 4

121 LED Performance Sconce - Generation 2

LED SELECTION

CW	Cool White - 5700°K - 75 CRI Nominal
NW	Neutral White - 4000°K - 70 CRI Nominal
WW	Warm White - 3000°K - 80 CRI Nominal

VOLTAGE

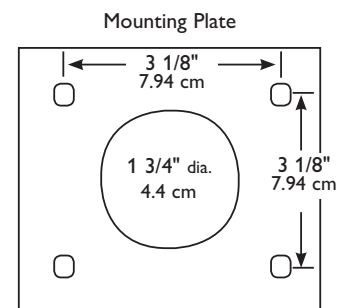
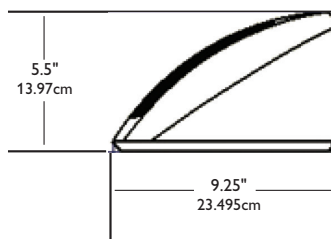
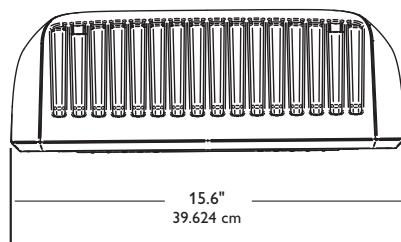
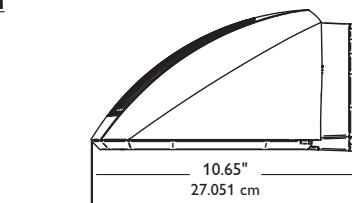
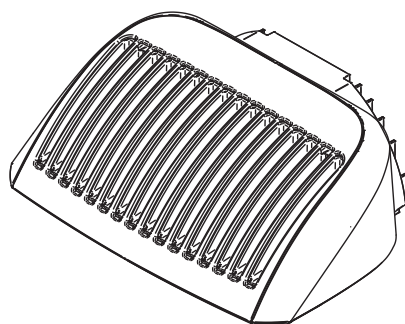
120
208
240
277

UNIV Accepts 120V through 277V input, 50hz to 60hz.**347** 347V - Requires Extended Back Box, which is provided standard. Requires and includes auxilliary transformer mounted in Extended Back Box.**FINISH**

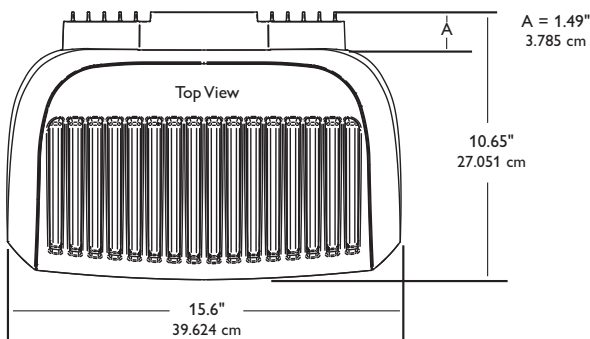
BRP	Bronze Paint
BLP	Black Paint
WP	White Paint
NP	Natural Aluminum Paint
BGP	Beige Paint
OC	Optional Color Paint Specify Optional Color or RAL ex: OC-LGP or OC-RAL7024.
SC	Special Paint Specify. Must supply color chip.

OPTIONS

F	Fusing (Provide specific input voltage)
DL	Solite Diffusing Glass Lens (Reduces performance significantly.)
PCB	Button Type Photocontrol (Provide specific input voltage)
WS	Wall Mounted Box for Surface Conduit (Rear entry permitted.)
EBB	Extended Back Box (Provided standard with 347V luminaires.)

DIMENSIONS**With Extended Back Box (EBB) Option****Mounting Bolt Pattern**

Note: Mounting plate center is located in the center of the luminaire width and 2.38" (6.03cm) above the luminaire bottom (lens down position). Splices must be made in the J-box (by others). Mounting plate must be secured by max. 5/16" (.79cm) diameter bolts (by others) structurally to the wall.



Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

121-2-50LA-WW-UNIV-BRP

Type:**G****Notes:**

PENN16-73992

120 LINE LED

Page 3 of 4

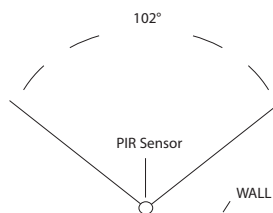
121 LED Performance Sconce - Generation 2

LUMINAIRE CONFIGURATION INFORMATION

121-CWL: 121 LED sconce providing constant wattage and constant light output when power to the luminaire is energized.

121-MR: 121 LED sconce including a passive infrared (PIR) motion sensor capable of detecting motion within 30 feet of the 121 LED Sconce. The PIR sensor is mounted in the center of the luminaire, near the wall edge of the door frame, approximately 1.5" forward from the wall, and is less than .75" in diameter. When no motion is detected for 5 minutes, the Motion Response system reduces the wattage by 75%, to 25% of the normal constant wattage, reducing the light level accordingly. When motion is detected by the PIR, the luminaire returns to full wattage and full light output. The PIR sensor is capable of motion detection across a total angle of 102° from the center of the sensor (51° to either side of center.) The sensor may be adjusted directionally to maximize detection of motion to one side of the luminaire if desired based on site traffic patterns. PIR sensor provided is the Panasonic EKMB1203112. If the PIR sensor fails, the luminaire will operate in default-high mode. Motion sensors utilized consume 0.0 watts in the off state.

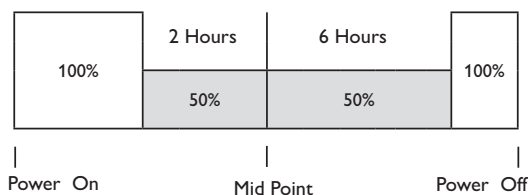
Sensor Coverage Pattern



121-DIM: 121 LED sconce provided with 0 -10V dimming for connection to a control system provided by others.

121-APD: Philips Gardco performance LED sconces with Automatic Profile Dimming are provided with the Philips DynaDimmer included. The DynaDimmer is factory programmed to go to 50% power, 50% light output two (2) hours prior to night time mid-point and remain at 50% for six (6) hours after night time mid-point. Mid-point is continuously calculated by the DynaDimmer based on the average mid-point of the last two full night cycles. Short duration cycles, and power interruptions are ignored and do not affect the determination of mid-point.

APD Dimming Profile



121-DCC: 121 LED sconce provided with dual circuiting, and dual arrays, permitting separate switching of each led array. Available in LED wattages shown on Page 1 only.

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

121-2-50LA-WW-UNIV-BRP

Type:**G****Notes:**

PENN16-73992

120 LINE LED

Page 4 of 4

121 LED Performance Sconce - Generation 2

SPECIFICATIONS

GENERAL: Each Philips Gardco 121 luminaire is a wall mounted full cutoff luminaire with integrated lensed LEDs mounted in a fixed array. Internal components are totally enclosed in a rain-tight, dust-tight and corrosion resistant housing. The housing, back plate and door frame are die cast aluminum. A choice of four (4) optical systems is available. Luminaires are suitable for wet locations, mounted in the normal downlight position.

HOUSING: The single-piece stylized housing is die cast aluminum. A memory retentive gasket seals the housing with the door frame to exclude moisture, dust, insects and pollutants from the luminaire. A black, die cast ribbed backplate is included.

IP RATING: Luminaires are rated IP66.

DOOR FRAME: A single-piece die cast aluminum door frame integrates to the housing form. The door frame is hinged closed and secured to the housing with two (2) captive stainless steel fasteners.

OPTICAL SYSTEMS: Philips Gardco 121 Generation 2 LED luminaires utilize lensed LED arrays set to achieve IES Type II, Type III, and Type IV distributions, as well as a Medium Throw distribution. Individual LED arrays are replaceable. Luminaires feature high performance Class 1 LED systems. Luminaires are supplied standard with a clear glass lens.

ELECTRICAL: Luminaires are equipped with an LED driver that accepts 120V through 277V, 50hz to 60hz, input. Driver output is either 350 mA, 530 mA or 700 mA, based on the LED wattage selected. Component-to-component wiring within the luminaire will carry no more than 80% of rated current and is listed by UL for use at 600 VAC at 302°F/150°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 15A or higher. Power factor is not less than 90%. Luminaires consume 0.0 watts in the off state. Surge protector standard. 10KA per AN SI/IEEE C62.41.2.

LED THERMAL MANAGEMENT: The 121 design provides deep integral thermal radiation fins cast into the upper housing to assist in the thermal management so critical to long LED system life. Metallic screens are placed over the fins and integrated to the housing to prevent the buildup of dust, dirt and contaminants, while permitting required air flow for cooling

LED PERFORMANCE:**PREDICTED LUMEN DEPRECIATION DATA⁴**

Ambient Temperature °C	Driver mA	L ₇₀ Hours ⁵
25 °C	350 mA	180,000
	530 mA	150,000
	700 mA	120,000
40 °C	350 mA	170,000
	530 mA	130,000
	700 mA	100,000

⁴ Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions.

⁵ L₇₀ is the predicted time when LED performance depreciates to 70% of initial lumen output.

FINISH: Each standard color luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) textured polyester powdercoat finish. Standard colors include bronze (BRP), black (BLP), white (WVP), natural aluminum (NP) and beige (BGP). Consult factory for specifications on custom colors.

LABELS: All luminaires bear either UL or CUL (where applicable) Wet Location labels.

WARRANTY: Philips Gardco luminaires feature a 5 year limited warranty. Philips Gardco LED luminaires with LED arrays feature a 5 year limited warranty covering the LED arrays and LED drivers. See Warranty Information on www.sitelighting.com for complete details and exclusions.

FULL CUTOFF PERFORMANCE: Full cutoff performance means a luminaire distribution where zero candela intensity occurs at an angle at or above 90° above nadir. Additionally, the candela per 1000 lamp lumens does not numerically exceed 100 (10 percent) at a vertical angle of 80° above nadir. This applies to all lateral angles around the luminaire.



© 2014 Koninklijke Philips N.V. All rights reserved.

Philips reserves the right to make changes in specifications and/or to discontinue any product at any time without notice or obligation and will not be liable for any consequences resulting from the use of this publication.

Philips Lighting
North America Corporation
200 Franklin Square Drive
Somerset, NJ 08873
Tel. 855-486-2216

Imported by: Philips Lighting,
A division of Philips Electronics Ltd.
281 Hillmount Rd,
Markham, ON, Canada L6C 2S3
Tel. 800-668-9008

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

TLXEMRUWSD

Notes:**Type:****X**

PENN16-73992

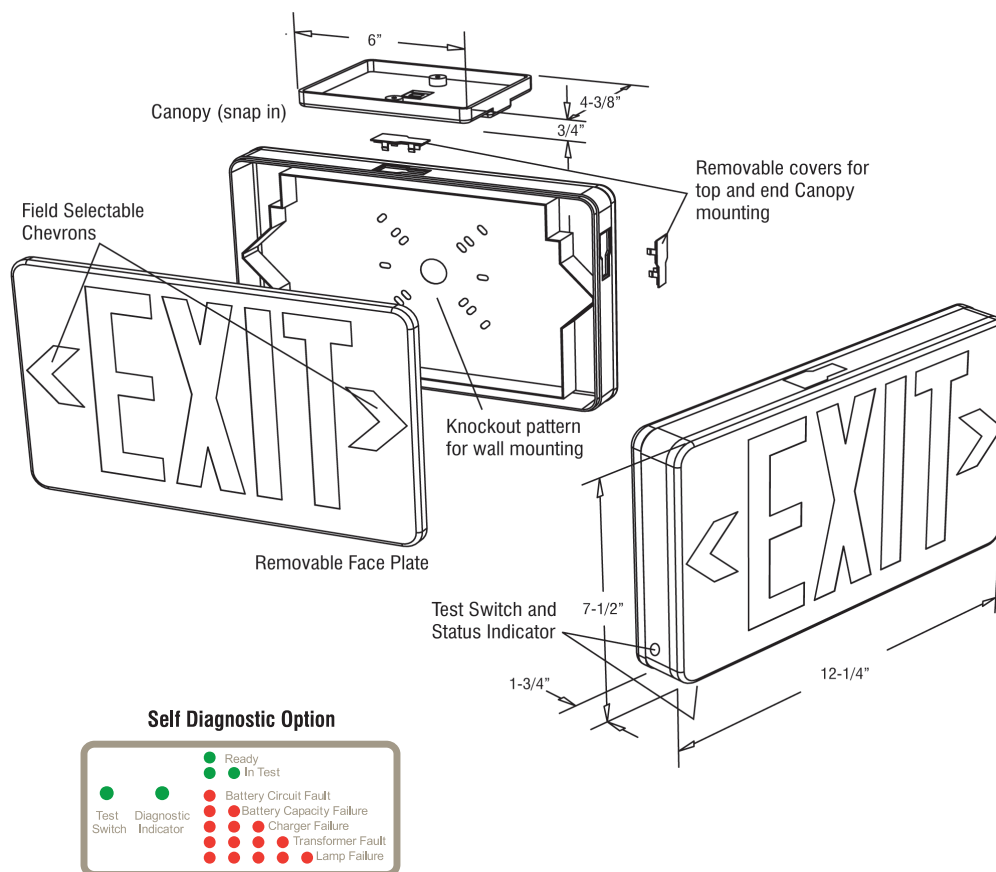
Telesis

Commercial Grade

LED Exit Signs



Telesis LED exit signs feature low energy, long life LED light sources in an attractive, and economical low profile, tough ABS housing. Telesis exits are universal single or double face, and include a low profile canopy and field selectable chevron indicators. Snap-Fit construction and quick connect components provide fast, installer friendly installation and ease of maintenance.



2575 Metropolitan Drive, Treose, PA 19053 • USA
 TEL: (800) 872 0879 • FAX: (215) 244 4208 • www.evenlite.com

Project name:

Approved By:

Catalog No:

Type No:

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:**TLXEMRUWSD****Notes:****Type:****X**

PENN16-73992

Telesis LED Exit Signs

FEATURES

- Exceptionally Low Energy Consumption at just 2 Watts avg.
- LED light source with 20+ years life expectancy
- Attractive, Low Profile ABS Injection Molded Thermoplastic housing in a pure white or Black finish
- Universal single or double face with mounting canopy
- Snap Together, Quick Fit Installation with Field Selectable Chevron Directional Indicators
- High Intensity LED Array and spectrally matched diffuser providing superior visual brightness and uniformity
- Field Selectable 120 or 277 VAC input
- Damp location listed as standard
- Available with a full self-test / self-diagnostic option and infrared remote testing
- Electronic Control Circuit and Isolation Transformer provide current control and circuit protection ensuring optimum LED efficiency and life
- Fully integral Quick Connect components
- 3 Hour Emergency Duration with premium Nickel Cadmium Battery
- Operating temperature range 0°C to 50°C
- Low voltage cut-off prevents battery damage and ensures positive charge acceptance following an extended discharge
- Line-latch prevents unnecessary discharge of battery during installation
- AC Present Indicator and Push to Test Switch
- UL 924 listed and meets or exceeds all performance standards as required by NFPA 101 Life Safety Code, NFPA 70-NEC, and OSHA
- 3 Year Limited Warranty

Remote Control Transmitter



* Add option designation – RT to product number.

Order Remote Transmitters separately - order code: TLRT

ORDERING GUIDE

TLX				
Model	Operation	Letter Color	Housing Color	Options
TLX Telesis LED Exit Sign	AC AC Only 120/277 EM Battery Back-up Emergency	RU Red Universal GU Green Universal	W White (standard) B Black	US Assembled in the USA, ARRA Compliant for Levels 1&2 DK Two Circuit Input (AC Only Operation) SD Self-Diagnostic Testing (EM Only) SDRT Self-Diagnostic with Infrared remote Testing Receiver Option and Fire Alarm Interface (EM Only) TLRT Infrared Remote Hand Held Transmitter (order separately) PA 12" Swivel Pendant Kit PB 24" Swivel Pendant Kit PC 36" Swivel Pendant Kit PD 48" Swivel Pendant Kit M990010 Wall Mount Wire Guard 16" W x 11" H x 3" D

Example: TLX-EM-RU-W-SD

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:
 TCXCOMRUWSD

Notes:

Type:**X1**

PENN16-73992

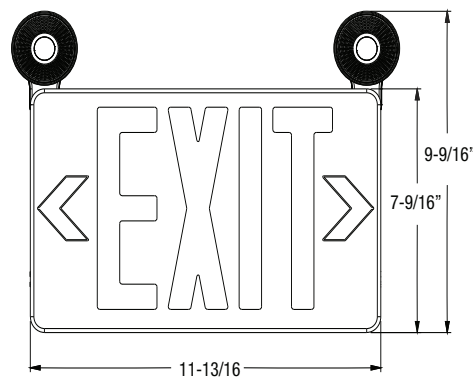
Telesis

TCX LED Combination

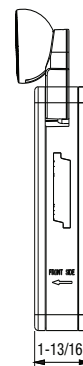
LED Exit Sign and Emergency Light

Telesis TCX Combined LED Exit and LED emergency light provides the reliability of LED's in both the exit sign and the emergency heads.

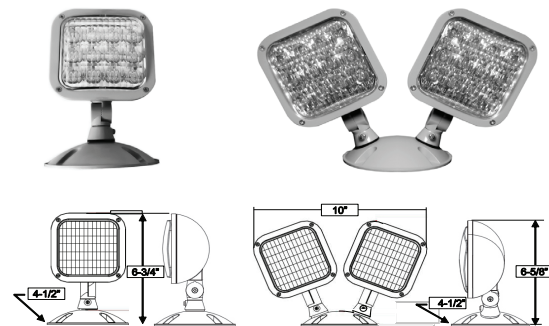
The 2 watt LED lamps provide 125 lumens each for superior spacing performance. The exit legend is illuminated with long life high brightness red or green LED's. Remote capability to power optional LED remote heads is included as standard.



Indoor Remote heads



Outdoor Remote Heads



2575 Metropolitan Drive, Treose, PA 19053 • USA
 TEL: (800) 872 0879 • FAX: (215) 244 4208 • www.evenlite.com

Project name:

Approved By:

Catalog No:

Type No:

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

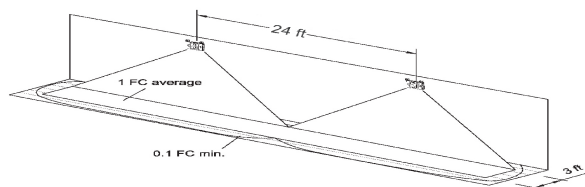
Catalog Number:**TCXCOMRUWSD****Notes:****Type:****X1**

PENN16-73992

Telesis TCXCOM Combination LED Exit Sign and Emergency Light

FEATURES

- Two fully adjustable high brightness 2 watt LED heads each producing 125 Lumens for optimum spacing and distribution
- Compact low profile design provides the required 90 minutes of emergency operation
- Injection molded flame retardant, high impact thermoplastic housing in White or Black(optional)
- Universal mounting canopy included for ceiling mounting, universal single or double face
- Snap together, quick fit installation with field selectable chevron directional indicators
- Long Life, High Intensity LED Array available in red or green with 6" letter and 3/4" stroke
- Maintenance free Nickel Cadmium batteries, operating temperature range 10°C to 40°C
- Remote capability is standard and can operate two 1 watt LED lampheads, or can be used for longer run time
- Optional single or double remote heads are available with 3.6 volt 1 watt LED's in indoor and outdoor models
- Available with full Self-Test/Self-Diagnostic option
- Field Selectable 120 or 277 VAC input
- Test switch and AC indicator light provided for ease of testing
- Solid state transfer relay for reliability
- Fully automatic, solid state two rate charger will recharge battery per UL 924 requirements
- Line latch prevents unnecessary discharge of battery during installation, loads will not illuminate until after application of power
- Low voltage cut-off prevents battery damage and ensures positive charge acceptance following an extended discharge
- Brownout sensing assures emergency operation during periods of low line voltage
- Suitable for use in damp locations
- UL 924 listed and meets NFPA 101 Life Safety Code, NFPA 70-NEC and OSHA requirements
- 3 Year Limited Warranty



Mounting height is 8' reflectance of 80-50-20

ORDERING GUIDE

TCXCOM					
Model	Operation	Letter Color	Number of Faces	Housing Color	Options
TCXCOM Telesis LED Exit/Emergency Light Combo*	2 x 2 Watt LED Lamp-heads	R Red LED G Green LED	U Single/Double Face Universal Mount	W White (Standard) B Black (must be ordered with SD option)	SD Self-Diagnostic Testing TCRH1 Single Indoor Remote Head (Order Separately) TCRH2 Double Indoor Remote Head (Order Separately) TCWP1* Single Outdoor Remote Head (Order Separately) TCWP2* Double Outdoor Remote Head (Order Separately) VRS2 Polycarbonate Vandal Shield WG6 20" X 17" X 9" *Outdoor remote heads are Gray standard, Black to order
* Remote capability is standard, two one watt LED heads maximum					

Example: TCXCOM-RU-W-SD

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

WT-600

Notes:

Type:**OCC**

PENN16-73992



SENSORS

Occupancy & Vacancy

WT Ultrasonic Ceiling Sensors

Ultrasonic technology
with 32 KHz frequency

Automatic or manual-on
operation when used with
a BZ-150 Power Pack

Advanced Signal Processing
circuitry automatically
adjusts detection threshold



User-adjustable DIP switch time
delay and sensitivity settings

Hallway and 600, 1100 and 2200
square foot coverages available

Isolated relay allows sensor to
interface with building control systems

PROJECT

LOCATION/TYPE

Product Overview

Description

WattStopper's WT Ultrasonic Ceiling Sensors utilize 32 KHz frequency ultrasonic technology to detect occupancy. The sensors are available in several models to control lighting in a wide variety of applications.

Operation

WT Sensors are 24 VDC and utilize advanced, omni-directional, ultrasonic technology. When movement is detected in a controlled area, it switches lighting on through a WattStopper power or auxiliary pack. The sensor controls the power pack through low voltage wiring. Once the area is vacated and the time delay has elapsed, lighting systems automatically switch off.

Advanced Signal Processing (ASP)

WT Sensors use WattStopper's ASP circuitry, which filters out moving air noise by checking for small cyclical changes found in turbulent air. This helps to eliminate false on problems found in sensors without ASP.

Applications

WT sensors offer excellent control of lighting for many areas of a building. The sensors are designed to effectively control offices, restrooms, storage areas and open office areas, and can control large partitioned office spaces when configured in zone patterns. The WT can be used with BD Din Rail Mounted Power Packs and low-voltage momentary wall switches to achieve manual-on/auto-off control. The WT sensors' superior performance and ease of installation will provide fast paybacks and many years of energy savings.

Features

- ASP circuitry helps to eliminate false on
- Advanced, omni-directional, ultrasonic technology for reliable occupancy detection
- Angled transmitter and receiver pairs help optimize sensitivity while eliminating unwanted detection from ceiling air movement
- Coverage ranges from 600 to 2200 square feet, and 90 linear feet for hallways
- Isolated relay can interface with HVAC, EMS or an additional lighting load
- DIP switch-adjustable time delay and sensitivity
- LED indicates occupancy detection
- Qualifies for ARRA-funded public works projects

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

WT-600

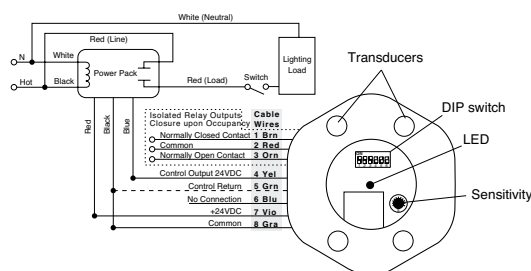
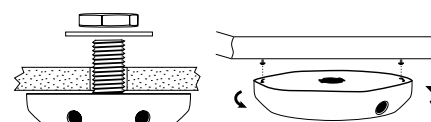
Notes:**Type:****OCC**

PENN16-73992

Specifications

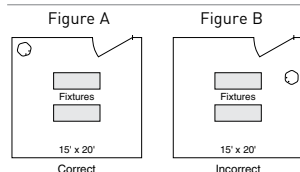
- Solid state, crystal-controlled (32.768 kHz \pm 0.002%)
- Omni-directional transmission (360° coverage)
- Temperature and humidity resistant 32 kHz receivers
- Digital DIP switch time delay: 15 seconds to 30 minutes
- Isolated relay with N/O and N/C outputs; rated for 1 Amp @ 30 VDC/VAC

- Mounts to ceiling tile or Wiremold V5738-WH box
- Max. WT-605s per power pack: B=4, BZ=5
- Max. WT-600s per power pack: B=3, BZ=4
- Max. WT-1105s, WT-2205s, WT-2255s: B=3, BZ=5
- Max. WT-1100s, WT-2200s, WT-2250s: B=2, BZ=3
- Dimensions: 4.8" x 1.5" (122mm x 38mm) diameter x depth
- UL and cUL listed
- Five year warranty

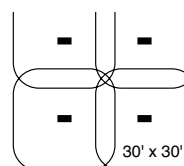
**Wiring,
Installation
& Placement****Wiring & Controls****Installation**

Mount the sensors to a vibration-free surface with the receivers facing the area of coverage.

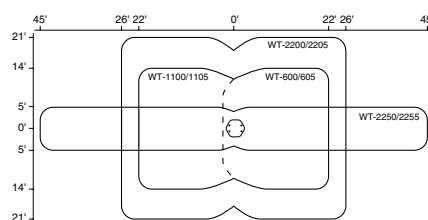
Note: Place 4" away from supply ducts, 6" from horizontal discharge ducts and 6" from power packs.

Enclosed Office Placement

For enclosed spaces, place sensors as in Figure A. Sensors placed as in Figure B may see out the door and cause false triggers.

Open Office Placement

A typical layout for an open office space would be to place WT-2200 or WT-2205 sensors so they control zones that overlap. For partitioned spaces, a typical zone is about 25' x 25' with an overlap on the coverages that senses motion up to 30' x 30'.

**Coverage
& Settings****Coverage Pattern**

Coverages shown represent half-step walking motion. Actual coverages can vary for each application depending on the shape and use of space and the obstacles present. Coverage may be reduced if product is mounted greater than 12 feet high.

DIP Switch Settings

◀ = factory preset

● = ON - = OFF

	DIP Switch #					
Time Delay	1	2	3	4	5	6
15 seconds	●	-	-	-	-	-
2 minutes	●	-	-	-	-	-
4 minutes	●	-	-	-	-	-
6 minutes	●	-	-	-	-	-
8 minutes	●	-	-	-	-	-
10 minutes	●	-	-	-	-	-
12 minutes	●	-	-	-	-	-
14 minutes	●	-	-	-	-	-

	DIP Switch #					
*16 minutes	-	-	-	-	-	-
18 minutes	-	-	-	-	-	-
20 minutes	-	-	-	-	-	-
22 minutes	-	-	-	-	-	-
24 minutes	-	-	-	-	-	-
26 minutes	-	-	-	-	-	-
28 minutes	-	-	-	-	-	-
30 minutes	-	-	-	-	-	-
Output Disable	-	-	-	-	-	-
Override	-	-	-	-	-	-

**Ordering
Information**

Catalog No.	Voltage	Current	Coverage	Feature
<input type="checkbox"/> WT-605	24 VDC	27 mA	180° one-sided, 600 ft ² (55.7 m ²)	
<input checked="" type="checkbox"/> WT-600	24 VDC	37 mA	180° one-sided, 600 ft ² (55.7 m ²)	Isolated relay
<input type="checkbox"/> WT-1105	24 VDC	30 mA	360° two-sided, 1100 ft ² (102.2 m ²)	
<input type="checkbox"/> WT-1100	24 VDC	40 mA	360° two-sided, 1100 ft ² (102.2 m ²)	Isolated relay
<input type="checkbox"/> WT-2205	24 VDC	30 mA	360° two-sided, 2200 ft ² (204.4 m ²)	
<input type="checkbox"/> WT-2200	24 VDC	40 mA	360° two-sided, 2200 ft ² (204.4 m ²)	Isolated relay
<input type="checkbox"/> WT-2255	24 VDC	30 mA	360° two-sided, 90 linear ft (27.4 m)	
<input type="checkbox"/> WT-2250	24 VDC	40 mA	360° two-sided, 90 linear ft (27.4 m)	Isolated relay

All units are white and use WattStopper power packs. Current consumption can be slightly higher when only one sensor per power pack is used.



SENSORS

Occupancy & Vacancy

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

CX-100

Notes:

Type:**OCC**

PENN16-73992



SENSORS

Occupancy & Vacancy

CX-100 Series Passive Infrared Ceiling/Wall Sensors

Turns lights on and off
based on occupancy

User-adjustable time
delay and sensitivity

ASIC technology reduces
components and provides
greater reliability



Choice of four coverage patterns

Built-in light level sensor

Isolated relay for use with HVAC
or other control systems

Automatic or manual-on operation
when used with a BZ-150 Power Pack

PROJECT

LOCATION/TYPE

Product Overview

Description

WattStopper's CX-100 Series Passive Infrared (PIR) Ceiling/Wall Sensors detect occupancy to control lighting in a wide variety of applications. These sensors provide superior coverage and performance with great energy savings.

Operation

CX-100 Series Sensors are 24 VDC and control lighting systems through WattStopper power packs. Utilizing the latest PIR technology, they turn lights on when a difference is detected between infrared energy from a human body in motion and the background space. After the area is vacated and the time delay elapses, lighting automatically turns off.

Features

- ASIC technology reduces components and enhances reliability
- Pulse Count Processing eliminates false off without reducing sensitivity
- Detection Signature Analysis eliminates false triggers and provides immunity to RFI and EMI
- Digital time delay adjustable from 15 seconds to 30 minutes
- Adjustable sensitivity enables occupancy detection to match the level of activity for each space
- LED indicates occupancy detection

Coverage Choices

The CX-100 Series Sensors are available with a choice of coverage patterns. The standard lens offers coverage up to 1000 square feet for typical desktop activity. When using the CX-100/105-1 or -3 lens, motion moving toward sensors will begin to be detected at 55 to 60 feet.

Applications

The CX sensors are ideal for large areas and can cover up to 2000 square feet of walking motion. By choosing the proper lens pattern for each application, the sensors can reliably cover large offices, computer rooms, classrooms, aisleways, warehouses and open offices where coverage cut-off is desired. Corner mounting to a wall or ceiling adds versatility and more control to the coverage.

- The CX-100's integrated light level sensor can create bi-level control for added energy savings
- Multilevel Fresnel lens for superior desktop occupancy detection with four lens patterns
- Isolated relay can interface with HVAC, EMS and monitoring systems, or with an additional lighting load
- Dual-element, temperature compensated pyroelectric sensor
- Swivel mounting bracket for convenient corner mounting to wall or ceiling
- Qualifies for ARRA-funded public works projects

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

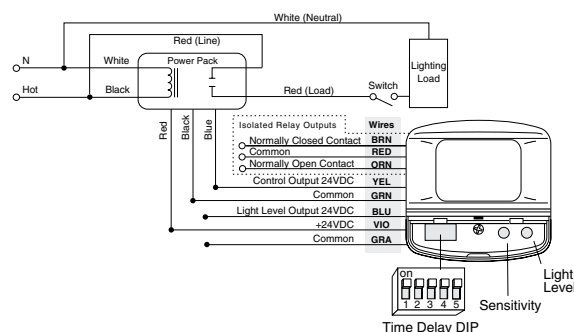
CX-100

Notes:**Type:****OCC**

PENN16-73992

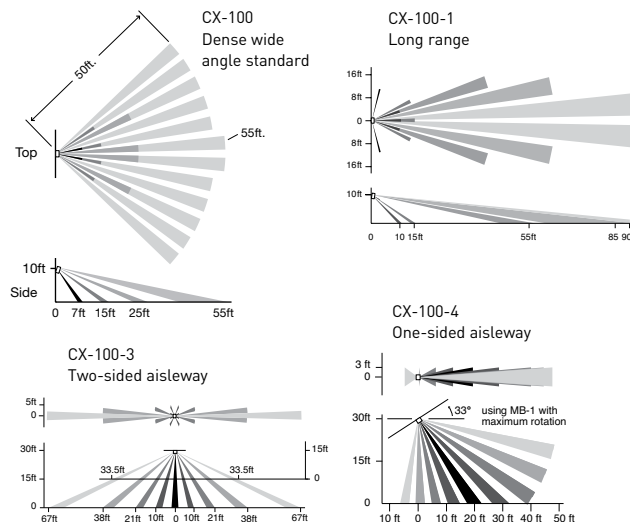
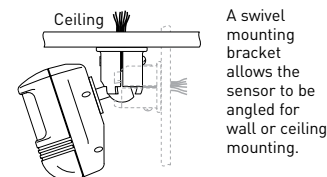
Specifications

- Dual-element, temperature compensated pyroelectric sensor
- CX-100 contains isolated relay with N/O and N/C outputs; rated for 1 Amp at 24 VDC/VAC
- Adjustable time delay: 15 seconds to 30 minutes
- CX-100 integrated light level sensor: three to 200 footcandles (32 to 2,152 lux)
- Max. CX-100s per power pack: B=6, BZ=8
- Max. CX-105s per power pack: B=14, BZ=18
- Dimensions: 3.3" x 3.3" x 2.1" (83.8mm x 83.8mm x 53.3mm) W x L x D
- UL and cUL listed
- Five year warranty

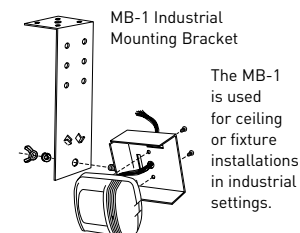
Wiring & Settings**Wiring Diagram****DIP Switch Settings**

Time Delays	1	2	3	4	5
15 seconds	●	●	●	●	●
2 minutes	●	●	●	●	●
4 minutes	●	●	●	●	●
6 minutes	●	●	●	●	●
8 minutes	●	●	●	●	●
10 minutes	●	●	●	●	●
12 minutes	●	●	●	●	●
14 minutes	●	●	●	●	●
16 minutes	●	●	●	●	●
18 minutes	●	●	●	●	●
20 minutes	●	●	●	●	●
22 minutes	●	●	●	●	●
24 minutes	●	●	●	●	●
26 minutes	●	●	●	●	●
28 minutes	●	●	●	●	●
30 minutes	●	●	●	●	●
Override	●	●	●	●	●

●=on —=off ♦=factory preset

Coverage & Mounting**Coverage Patterns****Mounting**

Grooves on the bracket help to achieve desired angle for coverage.

Industrial Mounting

Coverages shown are maximum and represent half-step walking motion. Under ideal conditions with no barriers or obstacles, coverage for half-step walking motion with the standard lens can reach up to 2000 ft², while coverage for typical desktop activity can reach up to 1000 ft². When using the CX-100/105-1 or -3 lens, motion moving toward sensors will begin to be detected at 55 to 60 feet.

Ordering Information

Catalog No.	Voltage	Current	Coverage	Features
<input type="checkbox"/> CX-100	24 VDC	19 mA	up to 2000 ft² (185.8 m²)	isolated relay, light level
<input type="checkbox"/> CX-100-1	24 VDC	19 mA	up to 90 linear ft (27.4 m)	isolated relay, light level
<input type="checkbox"/> CX-100-3	24 VDC	19 mA	up to 120 linear ft (36.6 m)	isolated relay, light level
<input type="checkbox"/> CX-100-4	24 VDC	19 mA	up to 50 linear ft (15.2 m)	isolated relay, light level
<input type="checkbox"/> CX-105	24 VDC	8 mA	up to 2000 ft² (185.8 m²)	
<input type="checkbox"/> CX-105-1	24 VDC	8 mA	up to 90 linear ft (27.4 m)	
<input type="checkbox"/> CX-105-1-U	24 VDC	8 mA	up to 90 linear ft (27.4 m)	
<input type="checkbox"/> CX-105-3	24 VDC	8 mA	up to 120 linear ft (36.6 m)	
<input type="checkbox"/> CX-105-4	24 VDC	8 mA	up to 50 linear ft (15.2 m)	
<input type="checkbox"/> MB-1	Industrial Mounting Bracket (recommended for use with -3 and -4 lenses)			
<input type="checkbox"/> MB-2	Industrial Mounting Bracket for HID fixtures			

All units are white and use WattStopper power packs. Current consumption can be slightly higher when only one sensor per power pack is used.

-U = ARRA compliant. Product produced in the U.S.



SENSORS

Occupancy & Vacancy

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

DT-300

Notes:

Type:**OCC**

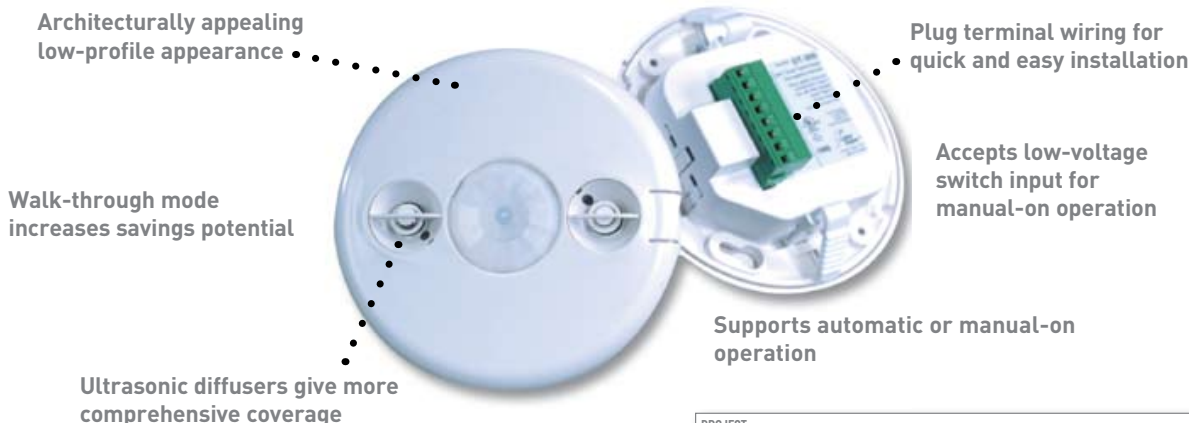
PENN16-73992



SENSORS

Occupancy & Vacancy

DT-300 Series Low Voltage Dual Technology Ceiling Sensors



PROJECT

LOCATION/TYPE

Product Overview

Description

The DT-300 Series Dual Technology Ceiling Sensors combine the benefits of passive infrared (PIR) and ultrasonic technologies to detect occupancy. Sensors have a flat, unobtrusive appearance and provide 360 degrees of coverage.

Operation

Low voltage DT-300 Series sensors utilize a WattStopper power pack to turn lights on when both PIR and ultrasonic technologies detect occupancy. They can also work with a low voltage switch for manual-on operation. PIR technology senses motion via a change in infrared energy within the controlled area, whereas ultrasonic uses 40KHz high frequency ultrasound. Once lights are on, detection by either technology holds them on. When no occupancy is detected for the length of the time delay, lights turn off. DT-300 Series Sensors can also be set to trigger lights on when either technology or both detect occupancy, or to require both technologies to hold lighting on.

Features

- Advanced control logic based on RISC microcontroller provides:
 - Detection Signature Processing eliminates false triggers and provides immunity to RFI and EMI
 - Walk-through mode turns lights off three minutes after the area is initially occupied – ideal for brief visits such as mail delivery
 - Available with built-in light level sensor featuring simple, one-step setup
- Sensors work with low-voltage momentary switches to provide manual control
- Patented ultrasonic diffusion technology spreads coverage to a wider area
- LEDs indicate occupancy detection
- Uses plug terminal wiring system for quick and easy installation
- Eight occupancy logic options provide the ability to customize control to meet application needs
- Available with isolated relay for integration with BAS or HVAC
- Qualifies for ARRA-funded public works projects
- Sensor coverage tested to NEMA Guide Publication WD 7-2000

Time Delay Options

The DT-300 is factory set for a 20 minute time delay, ideal for both energy savings and user satisfaction in most applications. Installers can quickly select other fixed time delays (5, 10, 15 or 30 minutes) via DIP switches. Fixed time delays eliminate the occupant dissatisfaction associated with an automatically adjusted time delay option, and reduce callbacks. Walk-through mode may be enabled for added energy savings in spaces with frequent transient traffic.

Application

DT-300 Series Dual Technology Sensors have the flexibility to work in a variety of applications, where one technology alone could cause false triggers. Ideal applications include classrooms, open office spaces, large offices and computer rooms. The DT-300 Series mounting system makes them easy to install in ceiling tiles or to junction boxes, providing the flexibility to be used in a wide range of spaces.

Job Name:

Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:

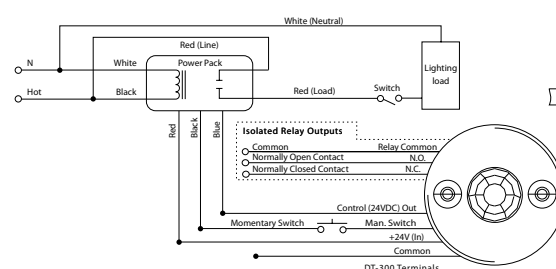
DT-300

Notes:**Type:****OCC**

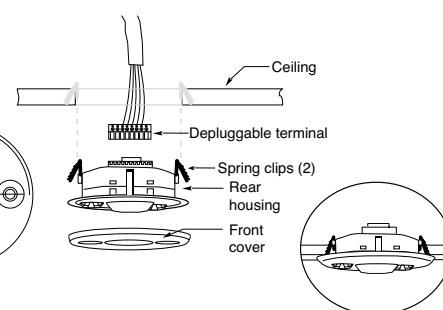
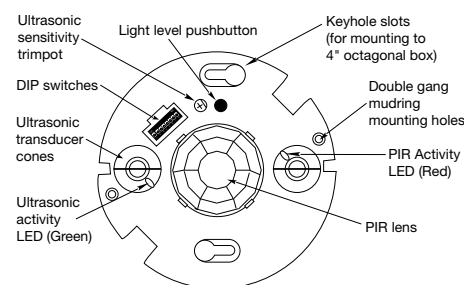
PENN16-73992

Specifications

- 24 VDC/VAC
- Ultrasonic frequency: 40kHz
- Time delays: 5, 10, 15, 20, or 30 minutes, Walk-through/Test Modes
- Sensitivity adjustment: High/low (PIR); variable with trim pot (ultrasonic)
- Built-in light level sensor: 10 to 300 footcandles (107.6 to 3,229.2 lux)
- Low-voltage, momentary switch input for manual on or off operation
- DT-300 contains an isolated relay with N/O and N/C outputs; rated for 1 Amp @ 30 VDC/VAC
- Multi-level Fresnel lens provides 360° coverage
- Mounting options: ceiling tile; 4" octagonal J-box, 1.5" deep
- Max DT-300s per power pack: B=2, BZ=3
- Max DT-305s per power pack: B=3, BZ=4
- Dimensions: 4.50" diameter x 1.02" deep (114.3mm x 25.9mm)
- UL and cUL listed
- Five year warranty

Wiring & Mounting**Wiring Diagram**

*Momentary switch connection is optional.
 Connect only when momentary switch is installed.

Ceiling Mounting**Controls & Settings****Product Controls****DIP Switch Settings**

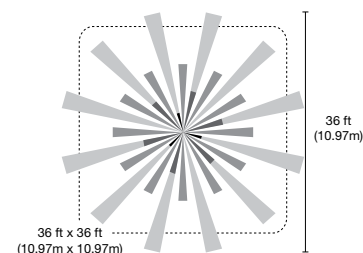
Feature	Switch#	Settings	6	7	8
Time Delay	1 2 3				
Test Mode/20 min	↓ ↓ ↓	Standard	↓	↓	↓
30 seconds	↓ ↓ ↓	Option 1	↓	↓	↓
5 minutes	↓ ↓ ↓	Option 2	↓	↓	↓
10 minutes	↓ ↓ ↓	Option 3	↓	↓	↓
15 minutes	↓ ↓ ↓	Option 4	↓	↓	↓
20 minutes	↓ ↓ ↓	Option 5	↓	↓	↓
25 minutes	↓ ↓ ↓	Option 6	↓	↓	↓
30 minutes	↓ ↓ ↓	Option 7	↓	↓	↓
Walk-Through	4				
Enabled	↑				
Disabled	↓				
PIR Sensitivity	5				
Minimum	↑				
Maximum	↓				

Occupancy Logic	Settings	6	7	8
Standard	↓ ↓ ↓			
Option 1	↓ ↓ ↓			
Option 2	↓ ↓ ↓			
Option 3	↓ ↓ ↓			
Option 4	↓ ↓ ↓			
Option 5	↓ ↓ ↓			
Option 6	↓ ↓ ↓			
Option 7	↓ ↓ ↓			

Occupancy Logic	Initial Occupancy	Maintain Occupancy	Re-trigger (seconds duration)
Standard	Both	Either	Either(5)
Option 1	Either	Either	Either(5)
Option 2	PIR	Either	Either(5)
Option 3	Both	PIR	Both(5)
Option 4	PIR	PIR	PIR(5)
Option 5	Either	PIR	Either(5)
Option 6	Man.	Either	Either(30)
Option 7	Man.	PIR	Both(30)

◀ = Factory Setting
 ↑ = ON
 ↓ = OFF

The control technology (occupancy logic) is selectable. The default setting requires both technologies to trigger on, either to hold on, and is recommended for most applications.

Coverage**Coverage Pattern**

Coverage shown is maximum and represents half-step walking motion. Under ideal conditions, coverage for half-step walking motion can reach up to 1000 ft².

Ordering Information

Catalog No.	Voltage	Current	Coverage	Features
<input type="checkbox"/> DT-300	24 VDC/VAC	43 mA	up to 1000 ft² [92.9 m²]	Isolated relay, light level
<input type="checkbox"/> DT-300-U				
<input type="checkbox"/> DT-305	24 VDC/VAC	35 mA	up to 1000 ft² [92.9 m²]	
<input type="checkbox"/> DT-305-U				

Sensors are white and use WattStopper power packs. Current consumption can be slightly higher when only one sensor per power pack is used.

-U = ARRA compliant. Product produced in the U.S.



SENSORS

Occupancy & Vacancy

Job Name:

Thomas D. Clayton School - Renovations
Architect: Fearn & Clendaniel (Wilmington)
Engineer: Fayda Engineering & Energy
Solutions (Wilmington)

Catalog Number:

BZ-50

Notes:

Type:**OCC**

PENN16-73992



SENSORS

Power Packs

BZ-50 Universal Voltage Power Pack

High-efficiency switching
power supply

Overcurrent protection
(low-voltage)

Plenum rated

120/277VAC, 50/60Hz

Zero crossing for reliability
and increased product life



PROJECT

LOCATION/TYPE

Product Overview

Description

The BZ-50 Universal Voltage Power Pack provides 24 VDC operating voltage to WattStopper's low-voltage occupancy sensors. This device is constructed with environmentally friendly materials and is RoHS-compliant.

Operation

The BZ-50 consists of a high-efficiency switching power supply and a high-current relay. It has an input of 120/277 VAC, 50/60Hz, and an output of 24VDC, 225mA. It turns the connected load on and off automatically based on occupancy sensor input.

Plenum Rated

The BZ-50 Power Pack is comprised of Teflon-coated low-voltage leads and an ABS, UL 2043 and 94V-0 plastic resin enclosure that is plenum-rated. As a result, the BZ-50 does not require installation into the junction box, but can be cost-effectively installed directly into the plenum.

Applications

The BZ-50 Power Pack is designed to be flexible enough to control almost any lighting or HVAC load, such as lighting circuits, self-contained air conditioners, pumps, fans, motors, VAV systems, motorized damper controls and setback thermostats. The BZ-50 is well-suited for any application which requires high-voltage switching through low-voltage controls. By linking power packs and sensors, an almost unlimited number of configurations can be obtained.

Features

- Self-contained power supply relay system
- Efficient switching power supply providing optimized current output based on number of sensors
- LED indicates status of relay or if there is a low-voltage overcurrent
- RoHS-compliant
- Zero crossing circuitry for reliability and increased product life
- UL 2043 plenum rated for cost-effective installation
- 1/2" snap-in nipple attaches to standard electrical enclosures through 1/2" knockouts
- 14 AWG wires on the relay for 20A operation
- Qualifies for ARRA-funded public works projects

Job Name:

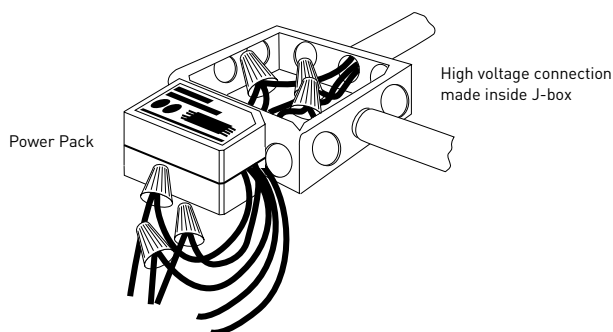
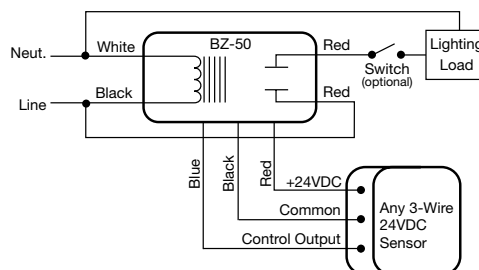
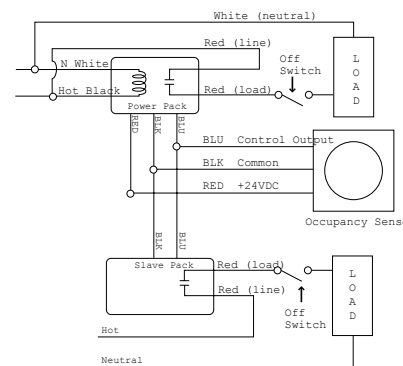
Thomas D. Clayton School - Renovations
 Architect: Fearn & Clendaniel (Wilmington)
 Engineer: Fayda Engineering & Energy
 Solutions (Wilmington)

Catalog Number:**BZ-50****Notes:****Type:****OCC**

PENN16-73992

Specifications

- 120/277VAC, 50/60Hz voltage input
- Secondary voltage of 24 VDC
- Secondary output of 225 mA
[with relay connected]
- Low-voltage leads are rated for 300 volts
- UL-rated 94 V-0 grey plastic enclosure
- Dimensions: 1.6" x 2.75" x 1.6"
(40.6mm x 69.9mm x 40.6mm) H x W x D
with a 1/2" (12.7mm) snap-in nipple
- UL and cUL listed
- Five year warranty

**System Layout
& Wiring****Installation Diagram****Wiring with Occupancy Sensor****Auxiliary Relay Pack with Sensor****Ordering
Information**

Catalog No.	Input Voltage	Load Ratings			Output
		Ballast(A)	Incan(A)	Motor(HP)	
<input type="checkbox"/> BZ-50	120/277VAC; 50/60Hz	20	20	1*	24 VDC; 225 mA**
<input type="checkbox"/> BZ-50-U					

*1 Hp rated at 120/250 VAC. **Output is 225 mA with relay connected.
 -U = ARRA compliant. Product produced in the U.S.

**Installation
Notes**

- 1) All WattStopper power packs should be installed in accordance with state, local, and national electrical codes and requirements.
- 2) Power packs are designed to attach to existing or new electrical enclosures with .5" 125.40mmJ knockout (check electrical codes in your area).
- 3) Most applications require UL-listed, 18-22 AWG, 3-conductor, Class 2 cables for low-voltage wiring. For plenum return ceilings use UL-listed plenum-approved cables.



illuminations inc.

ILLUMINATIONS INC
1157 PHOENIXVILLE PIKE
SUITE 105
WEST CHESTER, PA 19380-4524
Phone: 610-325-2220
Fax: 610-325-2225
Contact: Geiger, Josh

Thomas D. Clayton Building Renovations

16-39130-0

1/22/2016

Type	Manufacturer	Catalog Number
A	ABL-FLUORESCENT	2SP8 G 2 32 A12 MVOLT GEB10PS LST11
A1	ABL-FLUORESCENT	2SP8 G 2 32 A12 MVOLT GEB10PS
A2	ABL-FLUORESCENT	2SP8 G 2 32 A12 MVOLT GEB10PS
A3	ABL-FLUORESCENT	2SP8 G 2 32 A12 MVOLT GEB10PS
B	ABL-FLUORESCENT	2SP8 G 2 17 A12 MVOLT GEB10PS LST11
B1	ABL-FLUORESCENT	2SP8 G 2 17 A12 MVOLT GEB10PS
B2	ABL-FLUORESCENT	2SP8 G 2 17 A12 MVOLT GEB10PS
B3	ABL-FLUORESCENT	2SP8 G 2 17 A12 MVOLT GEB10PS
C	ABL-FLUORESCENT	SP8 G 1 32 A12 MVOLT GEB10PS
D	ABL-FLUORESCENT	Z 2 32 MVOLT GEB10IS
E	ISOLITE	RL2LED 2 WH SD
E1	BEGHELLI	BLT1 LED 5W W
E2	ISOLITE	RLLED RH1
F	ABL-DOWNLIGHTING	EVO SQ 35/10 4WR MVOLT EZ1
G	ABL-HI-TEK	ASW1 LED 42C 350 30K SR2 MVOLT DDBXD
X	BEGHELLI	VA4 R SA
X1	BEGHELLI	PCH R



FEATURES & SPECIFICATIONS

INTENDED USE — Specification premium, high performance, static T8 luminaires provide general illumination for recessed applications; ideal for restricted plenum spaces. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

ATTRIBUTES — Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION — Smooth hemmed sides and smooth, inward formed end flanges for safe handling. Lighter weight fixture allows safe, easy installation.

Standard steel door frame has superior structural integrity with premium extruded appearance and precision flush mitered corners. Steel door allows easy lens replacement without frame disassembly (for lenses up to .156" thick). Powder-painted, steel latches provide easy, secure door closure.

Superior mechanical light seal requires no foam gasketing. Integral T-bar clips secure fixture to T-bar system. Housing formed from cold-rolled steel. Acrylic shielding material 100% UV stabilized. No asbestos is used in this product.

US PATENTS: 6,210,025; 6,231,213; 6,213,625; 2,288,471.

FINISH — Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Painted parts finished with highly reflective matte white enamel.

OPTICAL — A12 lens features reverse apex technology for superior lamp obscuration and improved visual comfort.

ELECTRICAL — Standard ballast is electronic, thermally protected, resetting, Class P, HPF, non-PCB, UL Listed, CSA certified ballast, universal voltage and sound rated A.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTINGS — Standard: UL. Optional: Canada — CSA or cUL; Mexico — NOM.

WARRANTY — 1-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

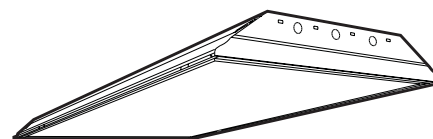
Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.

Specification Premium T8 Troffer

SP8 2'X4'

2, 3, 4 or 6 Lamps
T8



Specifications

Length: 48 (1218)
Width: 24 (609)
Depth: 3-11/16 (94)
Weight: 22 lbs (9.9 kg)



All dimensions are inches (millimeters).

ORDERING INFORMATION

For shortest lead times, configure products using **bolded options**.

Example: 2SP8 G 3 32 A12 MVOLT 1/3 GEB10IS

2SP8							
Series	Trim type	Number of lamps	Lamp type	Door frame	Diffuser type	Voltage	Options
2SP8 2' wide	G Grid F Overlapping flanged	2 3 4 6 Not included	32 32W T8 (48")	(blank) Flush steel, white FN Flush aluminum, natural FM Flush aluminum, matte black FW Flush aluminum, white RN Regressed aluminum, natural RM Regressed aluminum, matte black RW Regressed aluminum, white	A12 #12 pattern acrylic A12125 #12 pattern acrylic, .125" thick RA125 #12 pattern acrylic, .125" thick, reverse apex A19 #19 pattern acrylic, .156" thick A15 #15 pattern acrylic, .2" thick PC1S 1/2" x 1/2" x 1/2" plastic cube louver, silver PC2S 1-1/2" x 1-1/2" x 1" plastic cube louver, silver w/ flange PC3S 3/4" x 3/4" x 1/2" plastic cube louver, silver	120 277 347 ¹ MVOLT² Others available	1/4 One 4-lamp ballast 1/3 One 3-lamp ballast GEB10IS Electronic ballast, <10% THD, instant start GEB10PS Electronic ballast, <10% THD, programmed start GEB10RS Electronic ballast, <10% THD, rapid start EL Emergency battery pack (nominal 300 lumens) ³ EL14 Emergency battery pack (nominal 1400 lumens) ³ GLR Internal fast-blow fuse ⁴ GMF Internal slow-blow fuse ⁴ LST Tandem-wired fixture pairs (shared ballasts) PWS1836 6' prewire, 3/8" dia., 18-gauge, 1 circuit PWS1846 6' prewire, 3/8" dia., 18-gauge, 2 circuit LP_ Lamped, specify lamp type and color JP Palletized and stretch-wrapped without individual cartons; grid trim only CSA CSA Certified NOM NOM Certified CP Chicago Plenum

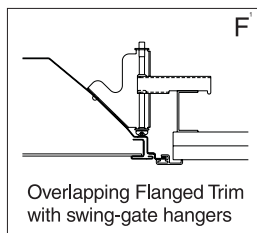
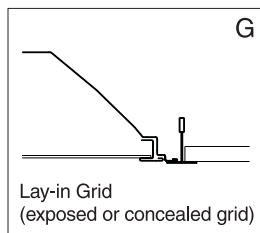
NOTE:

- Not available with GEB10PS.
- MVOLT standard for 120-277V applications, 50-60 hz operation. Some options require voltage specified.
- Must order 2/3 or 1/41/2 ballast configuration with 6 lamp units.
- Must specify voltage 120 or 277V.

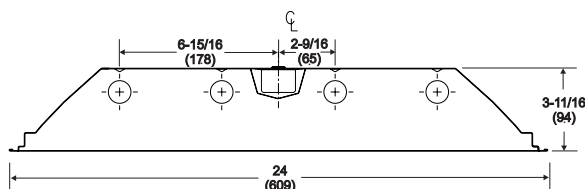
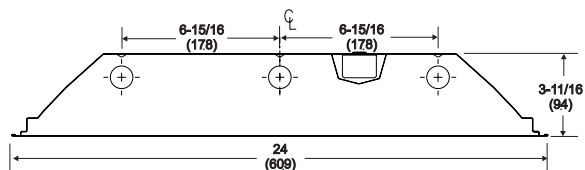
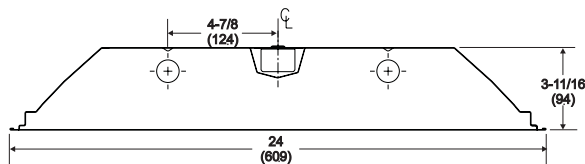
SP8 2'x4' Static T8 Troffer

MOUNTING DATA

Continuous row mounting of flanged units requires CRE and CRM trim options (see Options).



DIMENSIONS



NOTE:

- 1 Recommended rough-in dimensions for F-trim fixtures 24"x48". (Tolerance is +1/4"-0"). Swing-gate range 1-3/16" to 3-15/16". Swing-gate span 23-3/8" to 26-11/16". Fixture swing-gate points require additional 9/16" over nominal fixture height.

PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

2SP8 2 32 A12*

Report LTL 7525

Lumens per lamp - 2850 – Lum. eff. - 85.5%

S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	102	102	102	99	99	99	95	95	95
1	94	90	87	92	88	85	85	82	80
2	86	80	74	84	78	73	75	71	68
3	79	71	64	77	70	64	67	62	58
4	73	63	56	71	62	56	60	55	50
5	67	57	50	66	56	49	54	48	44
6	62	52	44	61	51	44	49	43	39
7	58	47	40	57	46	40	45	39	34
8	54	43	36	53	42	36	41	35	31
9	51	39	33	49	39	33	38	32	28
10	47	36	30	46	36	30	35	29	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1541	27.0	31.6
0-40	2571	45.1	52.7
0-60	4192	73.5	86.0
0-90	4874	85.5	100.0
90-180	0	0	0
0-180	4874	85.5	100.0

2SP8 3 32 A12*

Report LTL 7492

Lumens per lamp - 2850 – Lum. eff. - 83.6%

S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	100	100	100	97	97	97	93	93	93
1	92	88	85	90	86	83	83	80	78
2	84	78	73	82	77	72	74	70	66
3	78	70	63	76	68	62	66	61	57
4	72	62	55	70	61	55	59	54	49
5	66	56	49	64	55	49	53	48	43
6	61	51	44	60	50	43	49	43	38
7	57	46	39	56	46	39	44	38	34
8	53	42	36	52	42	35	41	35	31
9	50	39	32	49	38	32	38	32	28
10	47	36	30	46	36	29	35	29	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	2319	27.1	32.4
0-40	3833	44.8	53.6
0-60	6164	72.1	86.2
0-90	7147	83.6	100.0
90-180	0	0	0
0-180	7147	83.6	100.0

2SP8 4 32 A12*

Report LTL 7526

Lumens per lamp - 2850 – Lum. eff. - 81.5%

S/MH (along) 1.2 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	97	97	97	95	95	95	91	91	91
1	90	86	83	87	84	81	81	78	76
2	82	76	71	80	75	70	72	68	65
3	76	68	62	74	67	61	64	59	55
4	70	61	54	68	60	53	58	52	48
5	64	55	48	63	54	47	52	46	42
6	60	50	43	58	49	42	47	42	37
7	56	45	38	54	44	38	43	37	33
8	52	41	35	51	41	34	40	34	30
9	48	38	32	47	38	31	37	31	27
10	46	35	29	44	35	29	34	28	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	3029	26.6	32.6
0-40	4999	43.8	53.8
0-60	8017	70.3	86.3
0-90	9292	81.5	100.0
90-180	0	0	0
0-180	9292	81.5	100.0

* With reverse apex lens



FEATURES & SPECIFICATIONS

INTENDED USE — Specification premium, high performance, static T8 luminaires provide general illumination for recessed applications; ideal for restricted plenum spaces. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

ATTRIBUTES — Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION — Smooth hemmed sides and smooth, inward formed end flanges for safe handling. Lighter weight fixture allows safe, easy installation.

Standard steel door frame has superior structural integrity with premium extruded appearance and precision flush mitered corners. Steel door allows easy lens replacement without frame disassembly (for lenses up to .156" thick). Powder-painted, steel latches provide easy, secure door closure.

Superior mechanical light seal requires no foam gasketing. Integral T-bar clips secure fixture to T-bar system. Housing formed from cold-rolled steel. Acrylic shielding material 100% UV stabilized. No asbestos is used in this product.

US PATENTS: 6,210,025; 6,231,213; 6,213,625; 2,288,471.

FINISH — Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Painted parts finished with highly reflective matte white enamel.

OPTICAL — A12 lens features reverse apex technology for superior lamp obscuration and improved visual comfort.

ELECTRICAL — Standard ballast is electronic, thermally protected, resetting, Class P, HPF, non-PCB, UL Listed, CSA certified ballast, universal voltage and sound rated A.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTINGS — Standard: UL. Optional: Canada — CSA or cUL; Mexico — NOM.

WARRANTY — 1-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

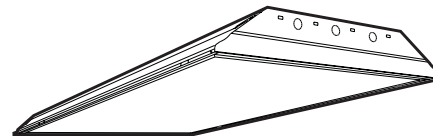
Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.

Specification Premium T8 Troffer

SP8 2'X4'

2, 3, 4 or 6 Lamps
T8



Specifications

Length: 48 (1218)

Width: 24 (609)

Depth: 3-11/16 (94)

Weight: 22 lbs (9.9 kg)



All dimensions are inches (millimeters).

ORDERING INFORMATION

For shortest lead times, configure products using **bolded options**.

Example: 2SP8 G 3 32 A12 MVOLT 1/3 GEB10IS

2SP8							
Series	Trim type	Number of lamps	Lamp type	Door frame	Diffuser type	Voltage	Options
2SP8 2' wide	G Grid	2	32 32W T8 (48")	(blank) Flush steel, white	A12 #12 pattern acrylic	120	1/4 One 4-lamp ballast
	F Overlapping flanged	3		FN Flush aluminum, natural	A12125 #12 pattern acrylic, .125" thick	277	1/3 One 3-lamp ballast
		4		FM Flush aluminum, matte black	RA125 #12 pattern acrylic, .125" thick, reverse apex	347 ¹	GEB10IS Electronic ballast, <10% THD, instant start
		6		FW Flush aluminum, white	A19 #19 pattern acrylic, .156" thick	MVOLT² Others available	GEB10PS Electronic ballast, <10% THD, programmed start
		Not included		RN Regressed aluminum, natural	A15 #15 pattern acrylic, .2" thick		GEB10RS Electronic ballast, <10% THD, rapid start
				RM Regressed aluminum, matte black	PC1S 1/2" x 1/2" x 1/2" plastic cube louver, silver		EL Emergency battery pack (nominal 300 lumens) ³
				RW Regressed aluminum, white	PC2S 1-1/2" x 1-1/2" x 1" plastic cube louver, silver w/ flange		EL14 Emergency battery pack (nominal 1400 lumens) ³
					PC3S 3/4" x 3/4" x 1/2" plastic cube louver, silver		GLR Internal fast-blow fuse ⁴
							GMF Internal slow-blow fuse ⁴
							LST Tandem-wired fixture pairs (shared ballasts)
							PWS1836 6' prewire, 3/8" dia., 18-gauge, 1 circuit
							PWS1846 6' prewire, 3/8" dia., 18-gauge, 2 circuit
							LP_ Lamped, specify lamp type and color
							JP Palletized and stretch-wrapped without individual cartons; grid trim only
							CSA CSA Certified
							NOM NOM Certified
							CP Chicago Plenum

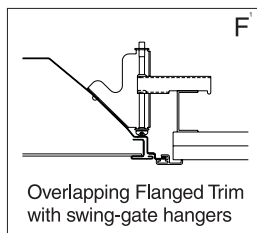
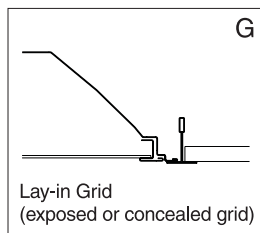
NOTE:

- Not available with GEB10PS.
- MVOLT standard for 120-277V applications, 50-60 Hz operation. Some options require voltage specified.
- Must order 2/3 or 1/41/2 ballast configuration with 6 lamp units.
- Must specify voltage 120 or 277V.

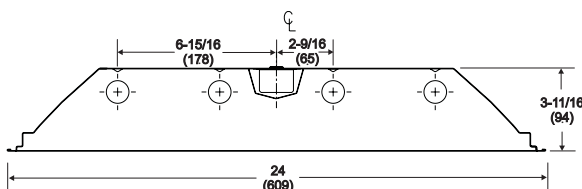
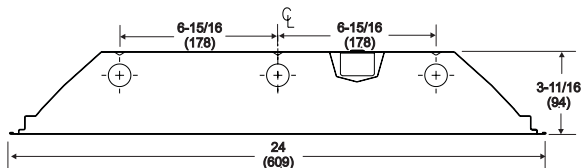
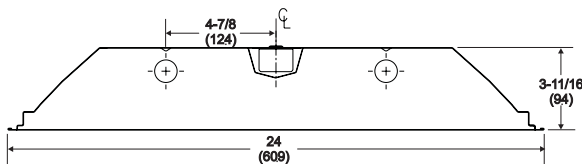
SP8 2'x4' Static T8 Troffer

MOUNTING DATA

Continuous row mounting of flanged units requires CRE and CRM trim options (see Options).



DIMENSIONS



NOTE:

- 1 Recommended rough-in dimensions for F-trim fixtures 24"x48". (Tolerance is +1/4"-0"). Swing-gate range 1-3/16" to 3-15/16". Swing-gate span 23-3/8" to 26-11/16". Fixture swing-gate points require additional 9/16" over nominal fixture height.

PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

2SP8 2 32 A12*

Report LTL 7525

Lumens per lamp - 2850 – Lum. eff. - 85.5%

S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	102	102	102	99	99	99	95	95	95
1	94	90	87	92	88	85	85	82	80
2	86	80	74	84	78	73	75	71	68
3	79	71	64	77	70	64	67	62	58
4	73	63	56	71	62	56	60	55	50
5	67	57	50	66	56	49	54	48	44
6	62	52	44	61	51	44	49	43	39
7	58	47	40	57	46	40	45	39	34
8	54	43	36	53	42	36	41	35	31
9	51	39	33	49	39	33	38	32	28
10	47	36	30	46	36	30	35	29	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1541	27.0	31.6
0-40	2571	45.1	52.7
0-60	4192	73.5	86.0
0-90	4874	85.5	100.0
90-180	0	0	0
0-180	4874	85.5	100.0

2SP8 3 32 A12*

Report LTL 7492

Lumens per lamp - 2850 – Lum. eff. - 83.6%

S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	100	100	100	97	97	97	93	93	93
1	92	88	85	90	86	83	83	80	78
2	84	78	73	82	77	72	74	70	66
3	78	70	63	76	68	62	66	61	57
4	72	62	55	70	61	55	59	54	49
5	66	56	49	64	55	49	53	48	43
6	61	51	44	60	50	43	49	43	38
7	57	46	39	56	46	39	44	38	34
8	53	42	36	52	42	35	41	35	31
9	50	39	32	49	38	32	38	32	28
10	47	36	30	46	36	29	35	29	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	2319	27.1	32.4
0-40	3833	44.8	53.6
0-60	6164	72.1	86.2
0-90	7147	83.6	100.0
90-180	0	0	0
0-180	7147	83.6	100.0

2SP8 4 32 A12*

Report LTL 7526

Lumens per lamp - 2850 – Lum. eff. - 81.5%

S/MH (along) 1.2 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	97	97	97	95	95	95	91	91	91
1	90	86	83	87	84	81	81	78	76
2	82	76	71	80	75	70	72	68	65
3	76	68	62	74	67	61	64	59	55
4	70	61	54	68	60	53	58	52	48
5	64	55	48	63	54	47	52	46	42
6	60	50	43	58	49	42	47	42	37
7	56	45	38	54	44	38	43	37	33
8	52	41	35	51	41	34	40	34	30
9	48	38	32	47	38	31	37	31	27
10	46	35	29	44	35	29	34	28	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	3029	26.6	32.6
0-40	4999	43.8	53.8
0-60	8017	70.3	86.3
0-90	9292	81.5	100.0
90-180	0	0	0
0-180	9292	81.5	100.0

* With reverse apex lens



FEATURES & SPECIFICATIONS

INTENDED USE — Specification premium, high performance, static T8 luminaires provide general illumination for recessed applications; ideal for restricted plenum spaces. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

ATTRIBUTES — Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION — Smooth hemmed sides and smooth, inward formed end flanges for safe handling. Lighter weight fixture allows safe, easy installation.

Standard steel door frame has superior structural integrity with premium extruded appearance and precision flush mitered corners. Steel door allows easy lens replacement without frame disassembly (for lenses up to .156" thick). Powder-painted, steel latches provide easy, secure door closure.

Superior mechanical light seal requires no foam gasketing. Integral T-bar clips secure fixture to T-bar system. Housing formed from cold-rolled steel. Acrylic shielding material 100% UV stabilized. No asbestos is used in this product.

US PATENTS: 6,210,025; 6,231,213; 6,213,625; 2,288,471.

FINISH — Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Painted parts finished with highly reflective matte white enamel.

OPTICAL — A12 lens features reverse apex technology for superior lamp obscuration and improved visual comfort.

ELECTRICAL — Standard ballast is electronic, thermally protected, resetting, Class P, HPF, non-PCB, UL Listed, CSA certified ballast, universal voltage and sound rated A.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTINGS — Standard: UL. Optional: Canada — CSA or cUL; Mexico — NOM.

WARRANTY — 1-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

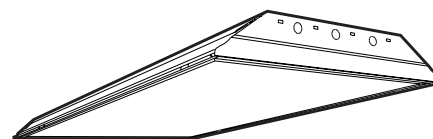
Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.

Specification Premium T8 Troffer

SP8 2'X4'

2, 3, 4 or 6 Lamps
T8



Specifications

Length: 48 (1218)

Width: 24 (609)

Depth: 3-11/16 (94)

Weight: 22 lbs (9.9 kg)



All dimensions are inches (millimeters).

ORDERING INFORMATION

For shortest lead times, configure products using **bolded options**.

Example: 2SP8 G 3 32 A12 MVOLT 1/3 GEB10IS

2SP8							
Series	Trim type	Number of lamps	Lamp type	Door frame	Diffuser type	Voltage	Options
2SP8 2' wide	G Grid	2	32 32W T8 (48")	(blank) Flush steel, white	A12 #12 pattern acrylic	120	1/4 One 4-lamp ballast
	F Overlapping flanged	3		FN Flush aluminum, natural	A12125 #12 pattern acrylic, .125" thick	277	1/3 One 3-lamp ballast
		4		FM Flush aluminum, matte black	RA125 #12 pattern acrylic, .125" thick, reverse apex	MVOLT² Others available	GEB10IS Electronic ballast, <10% THD, instant start
		6		FW Flush aluminum, white	A19 #19 pattern acrylic, .156" thick		GEB10PS Electronic ballast, <10% THD, programmed start
		Not included		RN Regressed aluminum, natural	A15 #15 pattern acrylic, .2" thick		GEB10RS Electronic ballast, <10% THD, rapid start
				RM Regressed aluminum, matte black	PC1S 1/2" x 1/2" x 1/2" plastic cube louver, silver		EL Emergency battery pack (nominal 300 lumens) ³
				RW Regressed aluminum, white	PC2S 1-1/2" x 1-1/2" x 1" plastic cube louver, silver w/ flange		EL14 Emergency battery pack (nominal 1400 lumens) ³
					PC3S 3/4" x 3/4" x 1/2" plastic cube louver, silver		GLR Internal fast-blow fuse ⁴
							GMF Internal slow-blow fuse ⁴
							LST Tandem-wired fixture pairs (shared ballasts)
							PWS1836 6' prewire, 3/8" dia., 18-gauge, 1 circuit
							PWS1846 6' prewire, 3/8" dia., 18-gauge, 2 circuit
							LP_ Lamped, specify lamp type and color
							JP Palletized and stretch-wrapped without individual cartons; grid trim only
							CSA CSA Certified
							NOM NOM Certified
							CP Chicago Plenum

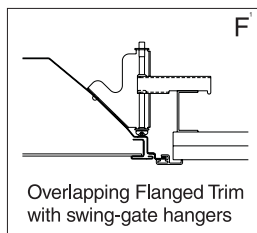
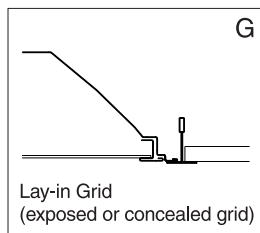
NOTE:

- Not available with GEB10PS.
- MVOLT standard for 120-277V applications, 50-60 Hz operation. Some options require voltage specified.
- Must order 2/3 or 1/41/2 ballast configuration with 6 lamp units.
- Must specify voltage 120 or 277V.

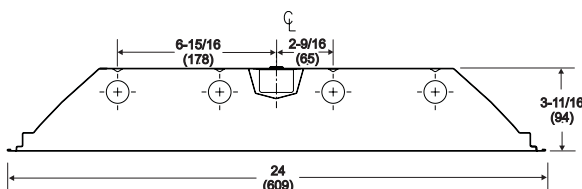
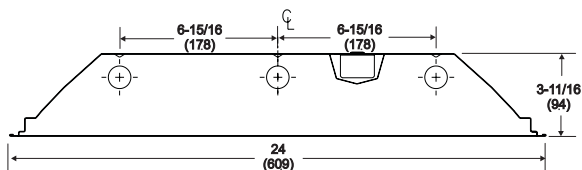
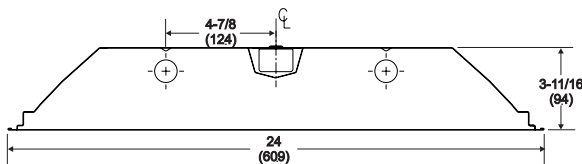
SP8 2'x4' Static T8 Troffer

MOUNTING DATA

Continuous row mounting of flanged units requires CRE and CRM trim options (see Options).



DIMENSIONS



NOTE:

- 1 Recommended rough-in dimensions for F-trim fixtures 24"x48". (Tolerance is +1/4"-0") Swing-gate range 1-3/16" to 3-15/16". Swing-gate span 23-3/8" to 26-11/16". Fixture swing-gate points require additional 9/16" over nominal fixture height.

PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

2SP8 2 32 A12*

Report LTL 7525

Lumens per lamp - 2850 – Lum. eff. - 85.5%

S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	102	102	102	99	99	99	95	95	95
1	94	90	87	92	88	85	85	82	80
2	86	80	74	84	78	73	75	71	68
3	79	71	64	77	70	64	67	62	58
4	73	63	56	71	62	56	60	55	50
5	67	57	50	66	56	49	54	48	44
6	62	52	44	61	51	44	49	43	39
7	58	47	40	57	46	40	45	39	34
8	54	43	36	53	42	36	41	35	31
9	51	39	33	49	39	33	38	32	28
10	47	36	30	46	36	30	35	29	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1541	27.0	31.6
0-40	2571	45.1	52.7
0-60	4192	73.5	86.0
0-90	4874	85.5	100.0
90-180	0	0	0
0-180	4874	85.5	100.0

2SP8 3 32 A12*

Report LTL 7492

Lumens per lamp - 2850 – Lum. eff. - 83.6%

S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	100	100	100	97	97	97	93	93	93
1	92	88	85	90	86	83	83	80	78
2	84	78	73	82	77	72	74	70	66
3	78	70	63	76	68	62	66	61	57
4	72	62	55	70	61	55	59	54	49
5	66	56	49	64	55	49	53	48	43
6	61	51	44	60	50	43	49	43	38
7	57	46	39	56	46	39	44	38	34
8	53	42	36	52	42	35	41	35	31
9	50	39	32	49	38	32	38	32	28
10	47	36	30	46	36	29	35	29	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	2319	27.1	32.4
0-40	3833	44.8	53.6
0-60	6164	72.1	86.2
0-90	7147	83.6	100.0
90-180	0	0	0
0-180	7147	83.6	100.0

2SP8 4 32 A12*

Report LTL 7526

Lumens per lamp - 2850 – Lum. eff. - 81.5%

S/MH (along) 1.2 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	97	97	97	95	95	95	91	91	91
1	90	86	83	87	84	81	81	78	76
2	82	76	71	80	75	70	72	68	65
3	76	68	62	74	67	61	64	59	55
4	70	61	54	68	60	53	58	52	48
5	64	55	48	63	54	47	52	46	42
6	60	50	43	58	49	42	47	42	37
7	56	45	38	54	44	38	43	37	33
8	52	41	35	51	41	34	40	34	30
9	48	38	32	47	38	31	37	31	27
10	46	35	29	44	35	29	34	28	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	3029	26.6	32.6
0-40	4999	43.8	53.8
0-60	8017	70.3	86.3
0-90	9292	81.5	100.0
90-180	0	0	0
0-180	9292	81.5	100.0

* With reverse apex lens



FEATURES & SPECIFICATIONS

INTENDED USE — Specification premium, high performance, static T8 luminaires provide general illumination for recessed applications; ideal for restricted plenum spaces. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

ATTRIBUTES — Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION — Smooth hemmed sides and smooth, inward formed end flanges for safe handling. Lighter weight fixture allows safe, easy installation.

Standard steel door frame has superior structural integrity with premium extruded appearance and precision flush mitered corners. Steel door allows easy lens replacement without frame disassembly (for lenses up to .156" thick). Powder-painted, steel latches provide easy, secure door closure.

Superior mechanical light seal requires no foam gasketing. Integral T-bar clips secure fixture to T-bar system. Housing formed from cold-rolled steel. Acrylic shielding material 100% UV stabilized. No asbestos is used in this product.

US PATENTS: 6,210,025; 6,231,213; 6,213,625; 2,288,471.

FINISH — Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Painted parts finished with highly reflective matte white enamel.

OPTICAL — A12 lens features reverse apex technology for superior lamp obscuration and improved visual comfort.

ELECTRICAL — Standard ballast is electronic, thermally protected, resetting, Class P, HPF, non-PCB, UL Listed, CSA certified ballast, universal voltage and sound rated A.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTINGS — Standard: UL. Optional: Canada — CSA or cUL; Mexico — NOM.

WARRANTY — 1-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

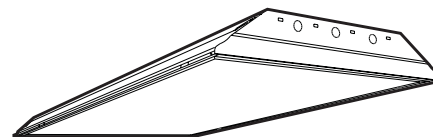
Note: Actual performance may differ as a result of end-user environment and application.

Specifications subject to change without notice.

Specification Premium T8 Troffer

SP8 2'X4'

2, 3, 4 or 6 Lamps
T8



Specifications

Length: 48 (1218)
Width: 24 (609)
Depth: 3-11/16 (94)
Weight: 22 lbs (9.9 kg)



All dimensions are inches (millimeters).

ORDERING INFORMATION

For shortest lead times, configure products using **bolded options**.

Example: 2SP8 G 3 32 A12 MVOLT 1/3 GEB10IS

2SP8							
Series	Trim type	Number of lamps	Lamp type	Door frame	Diffuser type	Voltage	Options
2SP8 2' wide	G Grid	2	32 32W T8 (48")	(blank) Flush steel, white	A12 #12 pattern acrylic	120	1/4 One 4-lamp ballast
	F Overlapping flanged	3		FN Flush aluminum, natural	A12125 #12 pattern acrylic, .125" thick	277	1/3 One 3-lamp ballast
		4		FM Flush aluminum, matte black	RA125 #12 pattern acrylic, .125" thick, reverse apex	MVOLT² Others available	GEB10IS Electronic ballast, <10% THD, instant start
		6		FW Flush aluminum, white	A19 #19 pattern acrylic, .156" thick		GEB10PS Electronic ballast, <10% THD, programmed start
		Not included		RN Regressed aluminum, natural	A15 #15 pattern acrylic, .2" thick		GEB10RS Electronic ballast, <10% THD, rapid start
				RM Regressed aluminum, matte black	PC1S 1/2" x 1/2" x 1/2" plastic cube louver, silver		EL Emergency battery pack (nominal 300 lumens) ³
				RW Regressed aluminum, white	PC2S 1-1/2" x 1-1/2" x 1" plastic cube louver, silver w/ flange		EL14 Emergency battery pack (nominal 1400 lumens) ³
					PC3S 3/4" x 3/4" x 1/2" plastic cube louver, silver		GLR Internal fast-blow fuse ⁴
							GMF Internal slow-blow fuse ⁴
							LST Tandem-wired fixture pairs (shared ballasts)
							PWS1836 6' prewire, 3/8" dia., 18-gauge, 1 circuit
							PWS1846 6' prewire, 3/8" dia., 18-gauge, 2 circuit
							LP_ Lamped, specify lamp type and color
							JP Palletized and stretch-wrapped without individual cartons; grid trim only
							CSA CSA Certified
							NOM NOM Certified
							CP Chicago Plenum

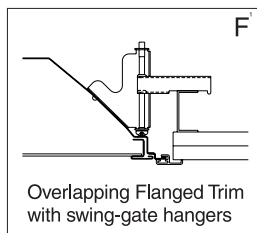
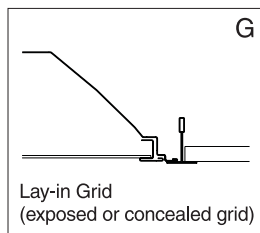
NOTE:

- Not available with GEB10PS.
- MVOLT standard for 120-277V applications, 50-60 Hz operation. Some options require voltage specified.
- Must order 2/3 or 1/41/2 ballast configuration with 6 lamp units.
- Must specify voltage 120 or 277V.

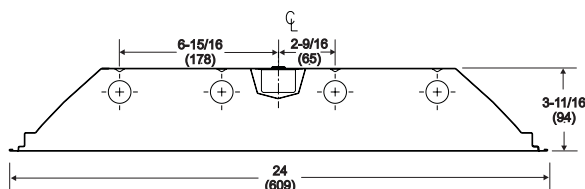
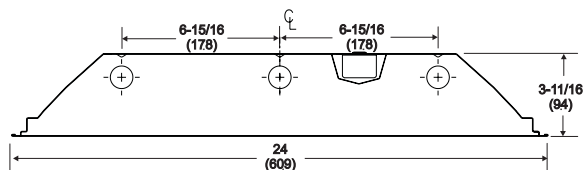
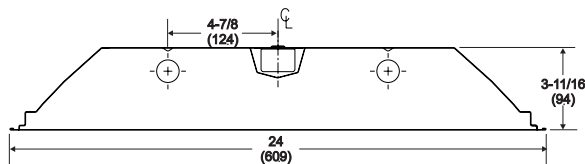
SP8 2'x4' Static T8 Troffer

MOUNTING DATA

Continuous row mounting of flanged units requires CRE and CRM trim options (see Options).



DIMENSIONS



NOTE:

- 1 Recommended rough-in dimensions for F-trim fixtures 24"x48". (Tolerance is +1/4"-0"). Swing-gate range 1-3/16" to 3-15/16". Swing-gate span 23-3/8" to 26-11/16". Fixture swing-gate points require additional 9/16" over nominal fixture height.

PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

2SP8 2 32 A12*

Report LTL 7525

Lumens per lamp - 2850 – Lum. eff. - 85.5%

S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	102	102	102	99	99	99	95	95	95
1	94	90	87	92	88	85	85	82	80
2	86	80	74	84	78	73	75	71	68
3	79	71	64	77	70	64	67	62	58
4	73	63	56	71	62	56	60	55	50
5	67	57	50	66	56	49	54	48	44
6	62	52	44	61	51	44	49	43	39
7	58	47	40	57	46	40	45	39	34
8	54	43	36	53	42	36	41	35	31
9	51	39	33	49	39	33	38	32	28
10	47	36	30	46	36	30	35	29	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1541	27.0	31.6
0-40	2571	45.1	52.7
0-60	4192	73.5	86.0
0-90	4874	85.5	100.0
90-180	0	0	0
0-180	4874	85.5	100.0

2SP8 3 32 A12*

Report LTL 7492

Lumens per lamp - 2850 – Lum. eff. - 83.6%

S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	100	100	100	97	97	97	93	93	93
1	92	88	85	90	86	83	83	80	78
2	84	78	73	82	77	72	74	70	66
3	78	70	63	76	68	62	66	61	57
4	72	62	55	70	61	55	59	54	49
5	66	56	49	64	55	49	53	48	43
6	61	51	44	60	50	43	49	43	38
7	57	46	39	56	46	39	44	38	34
8	53	42	36	52	42	35	41	35	31
9	50	39	32	49	38	32	38	32	28
10	47	36	30	46	36	29	35	29	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	2319	27.1	32.4
0-40	3833	44.8	53.6
0-60	6164	72.1	86.2
0-90	7147	83.6	100.0
90-180	0	0	0
0-180	7147	83.6	100.0

2SP8 4 32 A12*

Report LTL 7526

Lumens per lamp - 2850 – Lum. eff. - 81.5%

S/MH (along) 1.2 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	97	97	97	95	95	95	91	91	91
1	90	86	83	87	84	81	81	78	76
2	82	76	71	80	75	70	72	68	65
3	76	68	62	74	67	61	64	59	55
4	70	61	54	68	60	53	58	52	48
5	64	55	48	63	54	47	52	46	42
6	60	50	43	58	49	42	47	42	37
7	56	45	38	54	44	38	43	37	33
8	52	41	35	51	41	34	40	34	30
9	48	38	32	47	38	31	37	31	27
10	46	35	29	44	35	29	34	28	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	3029	26.6	32.6
0-40	4999	43.8	53.8
0-60	8017	70.3	86.3
0-90	9292	81.5	100.0
90-180	0	0	0
0-180	9292	81.5	100.0

* With reverse apex lens



FEATURES & SPECIFICATIONS

INTENDED USE — Specification premium, high performance, static T8 luminaires provide general illumination for recessed applications; ideal for restricted plenum spaces. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

Attributes: Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION — Smooth hemmed sides and smooth, inward formed end flanges for safe handling. Lighter weight fixture allows safe, easy installation.

Standard steel door frame has superior structural integrity with premium extruded appearance and precision flush mitered corners. Steel door allows easy lens replacement without frame disassembly (for lenses up to .156" thick). Powder-painted, steel latches provide easy, secure door closure.

Superior mechanical light seal requires no foam gasketing. Integral T-bar clips secure fixture to T-bar system. Housing formed from cold-rolled steel. Acrylic shielding material 100% UV stabilized. No asbestos is used in this product.

US PATENTS: 6,210,025; 6,231,213; 6,213,625; 2,288,471.

Finish: Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Painted parts finished with highly reflective matte white enamel.

OPTICS — A12 lens features reverse apex technology for superior lamp obscuration and improved visual comfort.

ELECTRICAL — Standard ballast is electric, thermally protected, resetting, Class P, HPF, non-PCB, UL Listed, CSA certified ballast, universal voltage and sound rated A.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTINGS — Standard: UL. Optional: Canada — CSA or cUL; Mexico — NOM.

WARRANTY — 1-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Specifications subject to change without notice.

Catalog Number
Notes
Type



Specification Premium T8 Troffer

SP8 2'X2'



**COMPACT FLUORESCENT,
STRAIGHT AND U LAMPS**

2, 3, 4 Lamps

CF or T8 only

Specifications

Length: 24 (61.0)

Width: 24 (61.0)

Depth: 3-11/16 (9.4)

Weight: 15 lbs (7 kg)



All dimensions are inches (centimeters) unless otherwise indicated.

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: 2SP8 G 3 U31 A12125 MVOLT 1/3 GEB10IS

Series	Trim type	Number of lamps	Lamp type	Door	Diffuser
2SP8 2' wide	G Grid F Overlapping flanged	2 3 4 ¹ Not included.	17 17W T8 (24") U31 31W T8 (24") U316 32W T8 U (6" leg. 24") ² CF40 40W TTS (24")	(blank) Flush steel, white FN Flush aluminum, natural FM Flush aluminum, matte black FW Flush aluminum, white RN Regressed aluminum, natural RM Regressed aluminum, matte black RW Regressed aluminum, white	A12 #12 pattern acrylic, reverse apex A12125 #12 pattern acrylic, .125" thick RA125 #12 pattern acrylic, .125" thick, reverse apex A19 #19 pattern acrylic, .156" thick A15 #15 pattern acrylic, .2" thick PC15 1/2" x 1/2" x 1/2" plastic cube louver, silver PC25 1-1/2" x 1-1/2" x 1" plastic cube louver, silver w/flange PC35 3/4" x 3/4" x 1/2" plastic cube louver, silver
Voltage	Options				
120	1/4	One 4-lamp ballast	GMF	Internal slow-blow fuse ⁷	
277	1/3	One 3-lamp ballast	LST	Tandem-wired fixture pairs (shared ballasts)	
347	GEB10IS	Electronic ballast, ≤ 10% THD, instant start	PWS1836	6' prewire, 3/8" dia., 18-gauge, 1-circuit	
MVOLT ³	GEB10RS	Electronic ballast, ≤ 10% THD, rapid start	JP	Palletized and stretch-wrapped without individual cartons, grid trim only	
Others available.	GEB10PS	Electronic ballast, < 10% THD, programmed start ⁴	CSA	CSA Certified	
	EL	Emergency battery pack (nominal 300 lumens) ⁵	NOM	NOM Certified	
	EL14	Emergency battery pack (nominal 1400 lumens) ⁶			
	GLR	Internal fast-blow fuse ⁷			

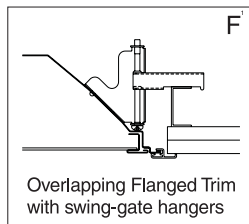
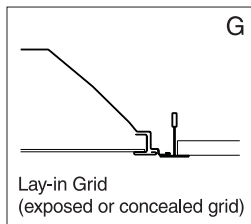
Notes

- Four-lamp models available with 17W straight tubes only.
- Not available on 3-lamp models. Use U31.
- MVOLT standard for 120-277V applications, 50-60Hz operation. Some options require voltage specified.
- Not available with compact fluorescent lamps — use GEB10RS.
- Must use 1/4 with 4-lamp 17W.
- Not available with 2 or 4 lamp 17W or 2 lamp U31 and CF40.
- Must specify voltage; 120 or 277.

SP8 2' x 2' Static T8 Troffer

MOUNTING DATA

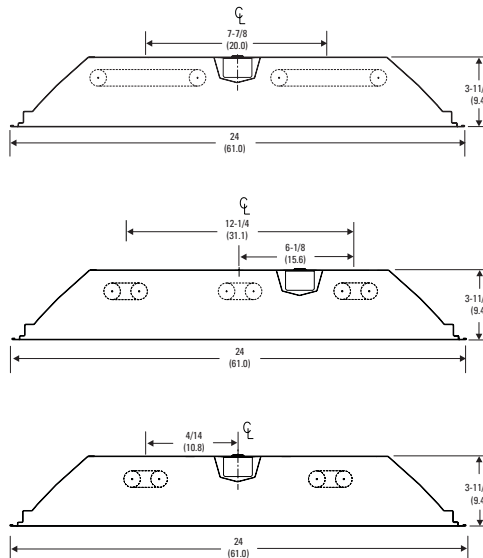
Continuous row mounting of flanged units requires CRE and CRM trim options (see Options).

**Notes**

- 1 Recommended rough-in dimensions for F-trim fixtures: 24" x 24" (Tolerance is +1/4" or -0"). Swing-gate range 1-3/16" to 3-11/16". Swing-gate span 23-3/8" to 26-11/16". Fixture swing-gate points require additional 9/16" over nominal fixture height.

DIMENSIONS

All dimensions are inches (centimeters) unless otherwise indicated. Specifications subject to change without notice.



PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

2SP8 2CF40 A12***Report LTL 7538RP****Lumens per lamp - 3150 – Lum. eff. - 86.0%****S/MH (along) 1.2 (across) 1.4****Coefficient of Utilization**

Ceiling	80%				70%				50%			
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	70%	50%	30%
0	102	102	102	100	100	100	96	96	96			
1	95	91	88	92	89	86	85	83	81			
2	87	81	75	85	79	74	76	72	69			
3	80	72	66	78	71	65	68	63	59			
4	74	64	58	72	63	57	61	56	51			
5	68	58	51	67	57	50	55	50	45			
6	63	53	46	62	52	45	50	44	40			
7	59	48	41	58	47	41	46	40	36			
8	55	44	37	54	43	37	42	36	32			
9	52	41	34	50	40	34	39	33	29			
10	48	37	31	47	37	31	36	30	26			

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1811	28.7	33.4
0-40	2989	47.5	55.2
0-60	4700	74.6	86.8
0-90	5418	86.0	100.0
90-180	0	0	0
0-180	5418	86.0	100.0

2SP8 2U31 A12***Report LTL 7547****Lumens per lamp - 2800 – Lum. eff. - 75.4%****S/MH (along) 1.2 (across) 1.4****Coefficient of Utilization**

Ceiling	80%				70%				50%			
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	70%	50%	30%
0	90	90	90	88	88	88	84	84	84			
1	83	80	77	81	78	75	75	73	71			
2	76	71	66	74	69	65	67	63	60			
3	70	63	57	68	62	57	60	55	51			
4	65	56	50	63	55	50	54	49	45			
5	60	51	44	58	50	44	48	43	39			
6	55	46	40	54	45	39	44	39	35			
7	52	42	36	50	41	35	40	35	31			
8	48	38	32	47	38	32	37	32	28			
9	45	35	29	44	35	29	34	29	25			
10	42	33	27	41	32	27	32	27	23			

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1396	24.9	33.1
0-40	2302	41.1	54.5
0-60	3654	65.3	86.6
0-90	4220	75.4	100.0
90-180	0	0	0
0-180	4220	75.4	100.0

2SP8 2 U316 A12**Report LTL 8579****Lumens per lamp - 2600 – Lum. eff. - 72.8%****S/MH (along) 1.2 (across) 1.3****Coefficient of Utilization**

Ceiling	80%				70%				50%			
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	70%	50%	30%
0	87	87	87	85	85	85	81	81	81			
1	80	77	74	78	75	73	72	70	68			
2	73	68	63	72	67	62	64	61	58			
3	68	61	55	66	59	54	57	53	49			
4	62	54	48	61	53	48	52	47	43			
5	58	49	43	56	48	42	47	42	38			
6	53	44	38	52	44	38	42	37	33			
7	50	40	34	49	40	34	39	34	30			
8	46	37	31	45	37	31	36	31	27			
9	43	34	28	42	34	28	33	28	24			
10	41	32	26	40	31	26	31	26	22			

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1266	24.4	33.4
0-40	2059	39.6	54.4
0-60	3246	62.4	85.7
0-90	3787	72.8	100.0
90-180	0	0	0
0-180	3787	72.8	100.0



FEATURES & SPECIFICATIONS

INTENDED USE — Specification premium, high performance, static T8 luminaires provide general illumination for recessed applications; ideal for restricted plenum spaces. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

Attributes: Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION — Smooth hemmed sides and smooth, inward formed end flanges for safe handling. Lighter weight fixture allows safe, easy installation.

Standard steel door frame has superior structural integrity with premium extruded appearance and precision flush mitered corners. Steel door allows easy lens replacement without frame disassembly (for lenses up to .156" thick). Powder-painted, steel latches provide easy, secure door closure.

Superior mechanical light seal requires no foam gasketing. Integral T-bar clips secure fixture to T-bar system. Housing formed from cold-rolled steel. Acrylic shielding material 100% UV stabilized. No asbestos is used in this product.

US PATENTS: 6,210,025; 6,231,213; 6,213,625; 2,288,471.

Finish: Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Painted parts finished with highly reflective matte white enamel.

OPTICS — A12 lens features reverse apex technology for superior lamp obscuration and improved visual comfort.

ELECTRICAL — Standard ballast is electric, thermally protected, resetting, Class P, HPF, non-PCB, UL Listed, CSA certified ballast, universal voltage and sound rated A.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTINGS — Standard: UL. Optional: Canada — CSA or cUL; Mexico — NOM.

WARRANTY — 1-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Specifications subject to change without notice.

Catalog Number
Notes
Type



Specification Premium T8 Troffer

SP8 2'X2'

**COMPACT FLUORESCENT,
STRAIGHT AND U LAMPS**

2, 3, 4 Lamps

CF or T8 only



Specifications

Length: 24 (61.0)

Width: 24 (61.0)

Depth: 3-11/16 (9.4)

Weight: 15 lbs (7 kg)



All dimensions are inches (centimeters) unless otherwise indicated.

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: 2SP8 G 3 U31 A12125 MVOLT 1/3 GEB10IS

Series	Trim type	Number of lamps	Lamp type	Door	Diffuser
2SP8 2' wide	G Grid F Overlapping flanged	2 3 4 ¹ Not included.	17 17W T8 (24") U31 31W T8 (24") U316 32W T8 U (6" leg. 24") ² CF40 40W TTS (24")	(blank) Flush steel, white FN Flush aluminum, natural FM Flush aluminum, matte black FW Flush aluminum, white RN Regressed aluminum, natural RM Regressed aluminum, matte black RW Regressed aluminum, white	A12 #12 pattern acrylic, reverse apex A12125 #12 pattern acrylic, .125" thick RA125 #12 pattern acrylic, .125" thick, reverse apex A19 #19 pattern acrylic, .156" thick A15 #15 pattern acrylic, .2" thick PC15 1/2" x 1/2" x 1/2" plastic cube louver, silver PC25 1-1/2" x 1-1/2" x 1" plastic cube louver, silver w/flange PC35 3/4" x 3/4" x 1/2" plastic cube louver, silver
Voltage	Options				
120	1/4 One 4-lamp ballast				GMF Internal slow-blow fuse ⁷
277	1/3 One 3-lamp ballast				LST Tandem-wired fixture pairs (shared ballasts)
347	GEB10IS Electronic ballast, ≤ 10% THD, instant start				PWS1836 6' prewire, 3/8" dia., 18-gauge, 1-circuit
MVOLT³ Others available.	GEB10RS Electronic ballast, ≤ 10% THD, rapid start				JP Palletized and stretch-wrapped without individual cartons, grid trim only
	GEB10PS Electronic ballast, < 10% THD, programmed start ⁴				CSA CSA Certified
	EL Emergency battery pack (nominal 300 lumens) ⁵				NOM NOM Certified
	EL14 Emergency battery pack (nominal 1400 lumens) ⁶				
	GLR Internal fast-blow fuse ⁷				

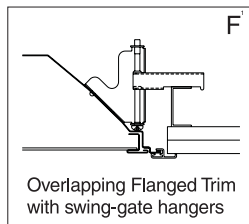
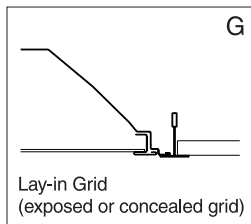
Notes

- Four-lamp models available with 17W straight tubes only.
- Not available on 3-lamp models. Use U31.
- MVOLT standard for 120-277V applications, 50-60Hz operation. Some options require voltage specified.
- Not available with compact fluorescent lamps — use GEB10RS.
- Must use 1/4 with 4-lamp 17W.
- Not available with 2 or 4 lamp 17W or 2 lamp U31 and CF40.
- Must specify voltage; 120 or 277.

SP8 2' x 2' Static T8 Troffer

MOUNTING DATA

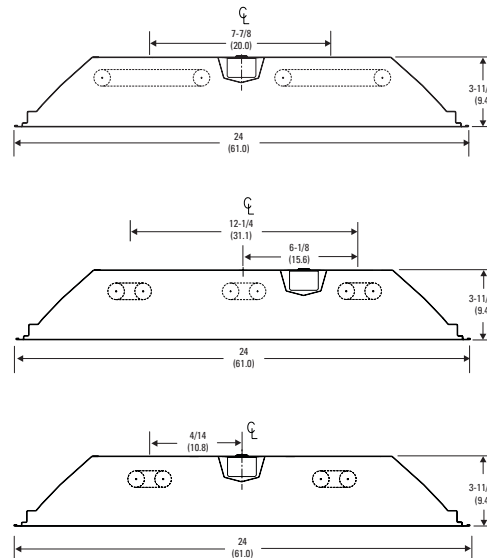
Continuous row mounting of flanged units requires CRE and CRM trim options (see Options).

**Notes**

- 1 Recommended rough-in dimensions for F-trim fixtures: 24" x 24" (Tolerance is +1/4" or -0"). Swing-gate range 1-3/16" to 3-11/16". Swing-gate span 23-3/8" to 26-11/16". Fixture swing-gate points require additional 9/16" over nominal fixture height.

DIMENSIONS

All dimensions are inches (centimeters) unless otherwise indicated. Specifications subject to change without notice.



PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

2SP8 2CF40 A12***Report LTL 7538RP****Lumens per lamp - 3150 – Lum. eff. - 86.0%****S/MH (along) 1.2 (across) 1.4****Coefficient of Utilization**

Ceiling	80%				70%				50%			
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	70%	50%	30%
0	102	102	102	100	100	100	96	96	96			
1	95	91	88	92	89	86	85	83	81			
2	87	81	75	85	79	74	76	72	69			
3	80	72	66	78	71	65	68	63	59			
4	74	64	58	72	63	57	61	56	51			
5	68	58	51	67	57	50	55	50	45			
6	63	53	46	62	52	45	50	44	40			
7	59	48	41	58	47	41	46	40	36			
8	55	44	37	54	43	37	42	36	32			
9	52	41	34	50	40	34	39	33	29			
10	48	37	31	47	37	31	36	30	26			

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1811	28.7	33.4
0-40	2989	47.5	55.2
0-60	4700	74.6	86.8
0-90	5418	86.0	100.0
90-180	0	0	0
0-180	5418	86.0	100.0

2SP8 2U31 A12***Report LTL 7547****Lumens per lamp - 2800 – Lum. eff. - 75.4%****S/MH (along) 1.2 (across) 1.4****Coefficient of Utilization**

Ceiling	80%				70%				50%			
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	70%	50%	30%
0	90	90	90	88	88	88	84	84	84			
1	83	80	77	81	78	75	75	73	71			
2	76	71	66	74	69	65	67	63	60			
3	70	63	57	68	62	57	60	55	51			
4	65	56	50	63	55	50	54	49	45			
5	60	51	44	58	50	44	48	43	39			
6	55	46	40	54	45	39	44	39	35			
7	52	42	36	50	41	35	40	35	31			
8	48	38	32	47	38	32	37	32	28			
9	45	35	29	44	35	29	34	29	25			
10	42	33	27	41	32	27	32	27	23			

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1396	24.9	33.1
0-40	2302	41.1	54.5
0-60	3654	65.3	86.6
0-90	4220	75.4	100.0
90-180	0	0	0
0-180	4220	75.4	100.0

2SP8 2 U316 A12**Report LTL 8579****Lumens per lamp - 2600 – Lum. eff. - 72.8%****S/MH (along) 1.2 (across) 1.3****Coefficient of Utilization**

Ceiling	80%				70%				50%			
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	70%	50%	30%
0	87	87	87	85	85	85	81	81	81			
1	80	77	74	78	75	73	72	70	68			
2	73	68	63	72	67	62	64	61	58			
3	68	61	55	66	59	54	57	53	49			
4	62	54	48	61	53	48	52	47	43			
5	58	49	43	56	48	42	47	42	38			
6	53	44	38	52	44	38	42	37	33			
7	50	40	34	49	40	34	39	34	30			
8	46	37	31	45	37	31	36	31	27			
9	43	34	28	42	34	28	33	28	24			
10	41	32	26	40	31	26	31	26	22			

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1266	24.4	33.4
0-40	2059	39.6	54.4
0-60	3246	62.4	85.7
0-90	3787	72.8	100.0
90-180	0	0	0
0-180	3787	72.8	100.0



FEATURES & SPECIFICATIONS

INTENDED USE — Specification premium, high performance, static T8 luminaires provide general illumination for recessed applications; ideal for restricted plenum spaces. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

Attributes: Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION — Smooth hemmed sides and smooth, inward formed end flanges for safe handling. Lighter weight fixture allows safe, easy installation.

Standard steel door frame has superior structural integrity with premium extruded appearance and precision flush mitered corners. Steel door allows easy lens replacement without frame disassembly (for lenses up to .156" thick). Powder-painted, steel latches provide easy, secure door closure.

Superior mechanical light seal requires no foam gasketing. Integral T-bar clips secure fixture to T-bar system. Housing formed from cold-rolled steel. Acrylic shielding material 100% UV stabilized. No asbestos is used in this product.

US PATENTS: 6,210,025; 6,231,213; 6,213,625; 2,288,471.

Finish: Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Painted parts finished with highly reflective matte white enamel.

OPTICS — A12 lens features reverse apex technology for superior lamp obscuration and improved visual comfort.

ELECTRICAL — Standard ballast is electric, thermally protected, resetting, Class P, HPF, non-PCB, UL Listed, CSA certified ballast, universal voltage and sound rated A.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTINGS — Standard: UL. Optional: Canada — CSA or cUL; Mexico — NOM.

WARRANTY — 1-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Specifications subject to change without notice.

Catalog Number
Notes
Type



Specification Premium T8 Troffer

SP8 2'X2'



**COMPACT FLUORESCENT,
STRAIGHT AND U LAMPS**

2, 3, 4 Lamps
CF or T8 only

Specifications

Length: 24 (61.0)
Width: 24 (61.0)
Depth: 3-11/16 (9.4)
Weight: 15 lbs (7 kg)



All dimensions are inches (centimeters) unless otherwise indicated.

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: 2SP8 G 3 U31 A12125 MVOLT 1/3 GEB10IS

Series	Trim type	Number of lamps	Lamp type	Door	Diffuser
2SP8 2' wide	G Grid F Overlapping flanged	2 3 4 ¹ Not included.	17 17W T8 (24") U31 31W T8 (24") U316 32W T8 U (6" leg. 24") ² CF40 40W TTS (24")	(blank) Flush steel, white FN Flush aluminum, natural FM Flush aluminum, matte black FW Flush aluminum, white RN Regressed aluminum, natural RM Regressed aluminum, matte black RW Regressed aluminum, white	A12 #12 pattern acrylic, reverse apex A12125 #12 pattern acrylic, .125" thick RA125 #12 pattern acrylic, .125" thick, reverse apex A19 #19 pattern acrylic, .156" thick A15 #15 pattern acrylic, .2" thick PC15 1/2" x 1/2" x 1/2" plastic cube louver, silver PC25 1-1/2" x 1-1/2" x 1" plastic cube louver, silver w/flange PC35 3/4" x 3/4" x 1/2" plastic cube louver, silver
Voltage	Options				
120	1/4 One 4-lamp ballast				GMF Internal slow-blow fuse ⁷
277	1/3 One 3-lamp ballast				LST Tandem-wired fixture pairs (shared ballasts)
347	GEB10IS Electronic ballast, ≤ 10% THD, instant start				PWS1836 6' prewire, 3/8" dia., 18-gauge, 1-circuit
MVOLT ³ Others available.	GEB10RS Electronic ballast, ≤ 10% THD, rapid start				JP Palletized and stretch-wrapped without individual cartons, grid trim only
	GEB10PS Electronic ballast, < 10% THD, programmed start ⁴				CSA CSA Certified
	EL Emergency battery pack (nominal 300 lumens) ⁵				NOM NOM Certified
	EL14 Emergency battery pack (nominal 1400 lumens) ⁶				
	GLR Internal fast-blow fuse ⁷				

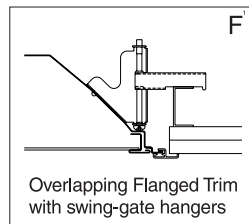
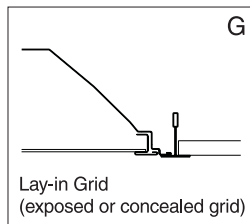
Notes

- Four-lamp models available with 17W straight tubes only.
- Not available on 3-lamp models. Use U31.
- MVOLT standard for 120-277V applications, 50-60Hz operation. Some options require voltage specified.
- Not available with compact fluorescent lamps — use GEB10RS.
- Must use 1/4 with 4-lamp 17W.
- Not available with 2 or 4 lamp 17W or 2 lamp U31 and CF40.
- Must specify voltage; 120 or 277.

SP8 2' x 2' Static T8 Troffer

MOUNTING DATA

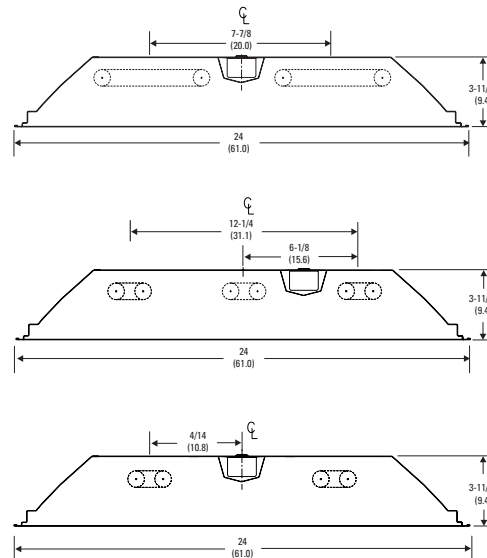
Continuous row mounting of flanged units requires CRE and CRM trim options (see Options).

**Notes**

- 1 Recommended rough-in dimensions for F-trim fixtures: 24" x 24" (Tolerance is +1/4" or -0"). Swing-gate range 1-3/16" to 3-11/16". Swing-gate span 23-3/8" to 26-11/16". Fixture swing-gate points require additional 9/16" over nominal fixture height.

DIMENSIONS

All dimensions are inches (centimeters) unless otherwise indicated. Specifications subject to change without notice.



PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

2SP8 2CF40 A12***Report LTL 7538RP****Lumens per lamp - 3150 – Lum. eff. - 86.0%****S/MH (along) 1.2 (across) 1.4****Coefficient of Utilization**

Ceiling	80%				70%				50%			
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	70%	50%	30%
0	102	102	102	100	100	100	96	96	96			
1	95	91	88	92	89	86	85	83	81			
2	87	81	75	85	79	74	76	72	69			
3	80	72	66	78	71	65	68	63	59			
4	74	64	58	72	63	57	61	56	51			
5	68	58	51	67	57	50	55	50	45			
6	63	53	46	62	52	45	50	44	40			
7	59	48	41	58	47	41	46	40	36			
8	55	44	37	54	43	37	42	36	32			
9	52	41	34	50	40	34	39	33	29			
10	48	37	31	47	37	31	36	30	26			

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1811	28.7	33.4
0-40	2989	47.5	55.2
0-60	4700	74.6	86.8
0-90	5418	86.0	100.0
90-180	0	0	0
0-180	5418	86.0	100.0

2SP8 2U31 A12***Report LTL 7547****Lumens per lamp - 2800 – Lum. eff. - 75.4%****S/MH (along) 1.2 (across) 1.4****Coefficient of Utilization**

Ceiling	80%				70%				50%			
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	70%	50%	30%
0	90	90	90	88	88	88	84	84	84			
1	83	80	77	81	78	75	75	73	71			
2	76	71	66	74	69	65	67	63	60			
3	70	63	57	68	62	57	60	55	51			
4	65	56	50	63	55	50	54	49	45			
5	60	51	44	58	50	44	48	43	39			
6	55	46	40	54	45	39	44	39	35			
7	52	42	36	50	41	35	40	35	31			
8	48	38	32	47	38	32	37	32	28			
9	45	35	29	44	35	29	34	29	25			
10	42	33	27	41	32	27	32	27	23			

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1396	24.9	33.1
0-40	2302	41.1	54.5
0-60	3654	65.3	86.6
0-90	4220	75.4	100.0
90-180	0	0	0
0-180	4220	75.4	100.0

2SP8 2 U316 A12**Report LTL 8579****Lumens per lamp - 2600 – Lum. eff. - 72.8%****S/MH (along) 1.2 (across) 1.3****Coefficient of Utilization**

Ceiling	80%				70%				50%			
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	70%	50%	30%
0	87	87	87	85	85	85	81	81	81			
1	80	77	74	78	75	73	72	70	68			
2	73	68	63	72	67	62	64	61	58			
3	68	61	55	66	59	54	57	53	49			
4	62	54	48	61	53	48	52	47	43			
5	58	49	43	56	48	42	47	42	38			
6	53	44	38	52	44	38	42	37	33			
7	50	40	34	49	40	34	39	34	30			
8	46	37	31	45	37	31	36	31	27			
9	43	34	28	42	34	28	33	28	24			
10	41	32	26	40	31	26	31	26	22			

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1266	24.4	33.4
0-40	2059	39.6	54.4
0-60	3246	62.4	85.7
0-90	3787	72.8	100.0
90-180	0	0	0
0-180	3787	72.8	100.0



FEATURES & SPECIFICATIONS

INTENDED USE — Specification premium, high performance, static T8 luminaires provide general illumination for recessed applications; ideal for restricted plenum spaces. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

Attributes: Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION — Smooth hemmed sides and smooth, inward formed end flanges for safe handling. Lighter weight fixture allows safe, easy installation.

Standard steel door frame has superior structural integrity with premium extruded appearance and precision flush mitered corners. Steel door allows easy lens replacement without frame disassembly (for lenses up to .156" thick). Powder-painted, steel latches provide easy, secure door closure.

Superior mechanical light seal requires no foam gasketing. Integral T-bar clips secure fixture to T-bar system. Housing formed from cold-rolled steel. Acrylic shielding material 100% UV stabilized. No asbestos is used in this product.

US PATENTS: 6,210,025; 6,231,213; 6,213,625; 2,288,471.

Finish: Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Painted parts finished with highly reflective matte white enamel.

OPTICS — A12 lens features reverse apex technology for superior lamp obscuration and improved visual comfort.

ELECTRICAL — Standard ballast is electric, thermally protected, resetting, Class P, HPF, non-PCB, UL Listed, CSA certified ballast, universal voltage and sound rated A.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTINGS — Standard: UL. Optional: Canada — CSA or cUL; Mexico — NOM.

WARRANTY — 1-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Specifications subject to change without notice.

Catalog Number
Notes
Type



Specification Premium T8 Troffer

SP8 2'X2'



**COMPACT FLUORESCENT,
STRAIGHT AND U LAMPS**

2, 3, 4 Lamps

CF or T8 only

Specifications

Length: 24 (61.0)

Width: 24 (61.0)

Depth: 3-11/16 (9.4)

Weight: 15 lbs (7 kg)



All dimensions are inches (centimeters) unless otherwise indicated.

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: 2SP8 G 3 U31 A12125 MVOLT 1/3 GEB10IS

Series	Trim type	Number of lamps	Lamp type	Door	Diffuser
2SP8 2' wide	G Grid F Overlapping flanged	2 3 4 ¹ Not included.	17 17W T8 (24") U31 31W T8 (24") U316 32W T8 U (6" leg. 24") ² CF40 40W TTS (24")	(blank) Flush steel, white FN Flush aluminum, natural FM Flush aluminum, matte black FW Flush aluminum, white RN Regressed aluminum, natural RM Regressed aluminum, matte black RW Regressed aluminum, white	A12 #12 pattern acrylic, reverse apex A12125 #12 pattern acrylic, .125" thick RA125 #12 pattern acrylic, .125" thick, reverse apex A19 #19 pattern acrylic, .156" thick A15 #15 pattern acrylic, .2" thick PC15 1/2" x 1/2" x 1/2" plastic cube louver, silver PC25 1-1/2" x 1-1/2" x 1" plastic cube louver, silver w/flange PC35 3/4" x 3/4" x 1/2" plastic cube louver, silver
Voltage	Options				
120	1/4 One 4-lamp ballast				GMF Internal slow-blow fuse ⁷
277	1/3 One 3-lamp ballast				LST Tandem-wired fixture pairs (shared ballasts)
347	GEB10IS Electronic ballast, ≤ 10% THD, instant start				PWS1836 6' prewire, 3/8" dia., 18-gauge, 1-circuit
MVOLT ³	GEB10RS Electronic ballast, ≤ 10% THD, rapid start				JP Palletized and stretch-wrapped without individual cartons, grid trim only
Others available.	GEB10PS Electronic ballast, < 10% THD, programmed start ⁴				CSA CSA Certified
	EL Emergency battery pack (nominal 300 lumens) ⁵				NOM NOM Certified
	EL14 Emergency battery pack (nominal 1400 lumens) ⁶				
	GLR Internal fast-blow fuse ⁷				

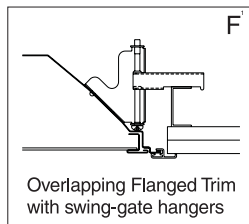
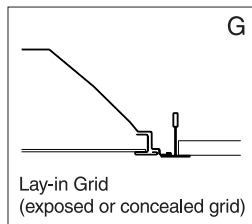
Notes

- Four-lamp models available with 17W straight tubes only.
- Not available on 3-lamp models. Use U31.
- MVOLT standard for 120-277V applications, 50-60Hz operation. Some options require voltage specified.
- Not available with compact fluorescent lamps — use GEB10RS.
- Must use 1/4 with 4-lamp 17W.
- Not available with 2 or 4 lamp 17W or 2 lamp U31 and CF40.
- Must specify voltage; 120 or 277.

SP8 2' x 2' Static T8 Troffer

MOUNTING DATA

Continuous row mounting of flanged units requires CRE and CRM trim options (see Options).

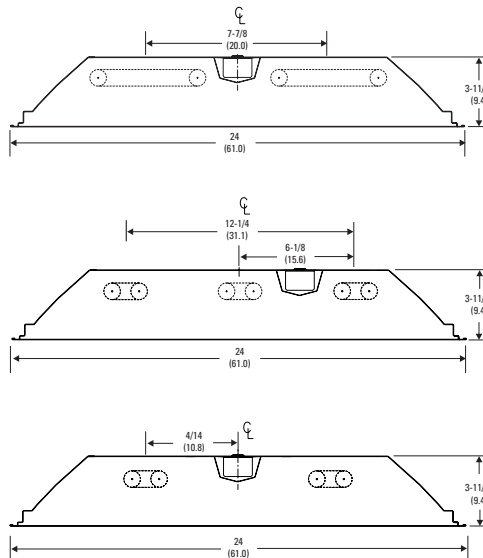


Notes

- 1 Recommended rough-in dimensions for F-trim fixtures: 24" x 24" (Tolerance is +1/4" or -0"). Swing-gate range 1-3/16" to 3-11/16". Swing-gate span 23-3/8" to 26-11/16". Fixture swing-gate points require additional 9/16" over nominal fixture height.

DIMENSIONS

All dimensions are inches (centimeters) unless otherwise indicated. Specifications subject to change without notice.



PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

2SP8 2CF40 A12*

Report LTL 7538RP

Lumens per lamp - 3150 – Lum. eff. - 86.0%

S/MH (along) 1.2 (across) 1.4

Coefficient of Utilization

Ceiling	80%				70%				50%			
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	70%	50%	30%
0	102	102	102	100	100	100	96	96	96			
1	95	91	88	92	89	86	85	83	81			
2	87	81	75	85	79	74	76	72	69			
3	80	72	66	78	71	65	68	63	59			
4	74	64	58	72	63	57	61	56	51			
5	68	58	51	67	57	50	55	50	45			
6	63	53	46	62	52	45	50	44	40			
7	59	48	41	58	47	41	46	40	36			
8	55	44	37	54	43	37	42	36	32			
9	52	41	34	50	40	34	39	33	29			
10	48	37	31	47	37	31	36	30	26			

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1811	28.7	33.4
0-40	2989	47.5	55.2
0-60	4700	74.6	86.8
0-90	5418	86.0	100.0
90-180	0	0	0
0-180	5418	86.0	100.0

2SP8 2U31 A12*

Report LTL 7547

Lumens per lamp - 2800 – Lum. eff. - 75.4%

S/MH (along) 1.2 (across) 1.4

Coefficient of Utilization

Ceiling	80%				70%				50%			
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	70%	50%	30%
0	90	90	90	88	88	88	84	84	84			
1	83	80	77	81	78	75	75	73	71			
2	76	71	66	74	69	65	67	63	60			
3	70	63	57	68	62	57	60	55	51			
4	65	56	50	63	55	50	54	49	45			
5	60	51	44	58	50	44	48	43	39			
6	55	46	40	54	45	39	44	39	35			
7	52	42	36	50	41	35	40	35	31			
8	48	38	32	47	38	32	37	32	28			
9	45	35	29	44	35	29	34	29	25			
10	42	33	27	41	32	27	32	27	23			

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1396	24.9	33.1
0-40	2302	41.1	54.5
0-60	3654	65.3	86.6
0-90	4220	75.4	100.0
90-180	0	0	0
0-180	4220	75.4	100.0

2SP8 2 U316 A12

Report LTL 8579

Lumens per lamp - 2600 – Lum. eff. - 72.8%

S/MH (along) 1.2 (across) 1.3

Coefficient of Utilization

Ceiling	80%				70%				50%			
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	70%	50%	30%
0	87	87	87	85	85	85	81	81	81			
1	80	77	74	78	75	73	72	70	68			
2	73	68	63	72	67	62	64	61	58			
3	68	61	55	66	59	54	57	53	49			
4	62	54	48	61	53	48	52	47	43			
5	58	49	43	56	48	42	47	42	38			
6	53	44	38	52	44	38	42	37	33			
7	50	40	34	49	40	34	39	34	30			
8	46	37	31	45	37	31	36	31	27			
9	43	34	28	42	34	28	33	28	24			
10	41	32	26	40	31	26	31	26	22			

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1266	24.4	33.4
0-40	2059	39.6	54.4
0-60	3246	62.4	85.7
0-90	3787	72.8	100.0
90-180	0	0	0
0-180	3787	72.8	100.0



FEATURES & SPECIFICATIONS

INTENDED USE — Specification premium, high performance, static T8 luminaires provide general illumination for recessed applications; ideal for restricted plenum spaces. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

ATTRIBUTES — Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION — Smooth hemmed sides and smooth, inward formed end flanges for safe handling. Lighter weight fixture allows safe, easy installation.

Standard steel door frame has superior structural integrity with premium extruded appearance and precision flush mitered corners. Powder-painted, steel latches provide easy, secure door closure.

Superior mechanical light seal requires no foam gasketing. Integral T-bar clips secure fixture to T-bar system. Housing formed from cold-rolled steel. Acrylic shielding material 100% UV stabilized. No asbestos is used in this product.

FINISH — Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Painted parts finished with high-gloss, baked white enamel.

OPTICAL — A12 lens features reverse apex technology for superior lamp obscuration and improved visual comfort.

ELECTRICAL — Standard ballast is electronic, thermally protected, resetting, Class P, HPF, non-PCB, UL Listed, CSA certified ballast. Energy-saving and electronic ballasts sound rated A.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTINGS — Standard: UL. Optional: Canada — CSA or cUL; Mexico — NOM.

WARRANTY — 1-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.

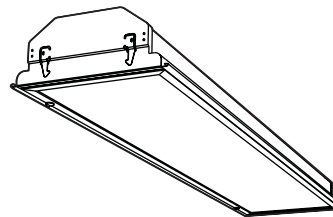
Specifications subject to change without notice.

Catalog Number
Notes
Type

Specification Premium Static Troffer

SP8 1'X4'

1, 2 or 3 Lamps



Specifications

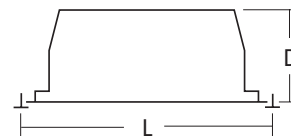
Length: 48 (121.8)

Width: 12 (30.5)

Depth: 4-1/2 (11.4)

Weight: 17 lbs (7.7 kg)

All dimensions are inches (centimeters).



ORDERING INFORMATION

For shortest lead times, configure products using **bolded options**.

Example: SP8 G 3 32 A12 MVOLT GEB10IS

SP8							
Series	Trim type	Number of lamps	Lamp type	Door frame	Diffuser type	Voltage	Options ¹
SP8 1' wide	G Grid F Overlapping flanged	1	32 32W T8 (48")	(blank) Flush steel, white	A12 #12 pattern acrylic	120	1/3 One 3-lamp ballast
		2		FN Flush aluminum, natural	A1212S #12 pattern acrylic, .125" thick	277	GEB10IS Electronic ballast, <10% THD, instant start
		3		FM Flush aluminum, matte black	RA12S #12 pattern acrylic, 0.125" thick, reverse apex	347	GEB10RS Electronic ballast, <10% THD, rapid start
		Not included		FW Flush aluminum, white	A19 #19 pattern acrylic, .156" thick	MVOLT Others available	EL Emergency battery pack (nominal 300 lumens)
				RN Regressed aluminum, natural	A15 #15 pattern acrylic, .2" thick		EL14 Emergency battery pack (nominal 1400 lumens)
				RW Regressed aluminum, white	PC1S 1/2" x 1/2" x 1/2" plastic cube louver, silver		GLR Internal fast-blow fuse
					PC2S 1-1/2" x 1-1/2" x 1" plastic cube louver, silver w/ flange		GMF Internal slow-blow fuse
					PC3S 3/4" x 3/4" x 1/2" plastic cube louver, silver		PWS1836 6' prewire, 3/8" dia., 18-gauge, 1 circuit
							LP_ Lamped, specify lamp type and color
							PAF Painted after fabrication (white enamel)
							SSR Specular silver interior finish (95% reflective)
							JP Palletized and stretch-wrapped without individual cartons; grid trim only
							CSA CSA Certified
							NOM NOM Certified
							GEB10PS - Program Start Ballast

NOTES:

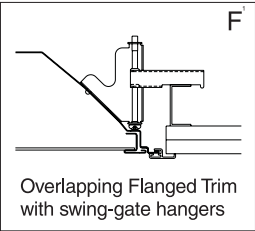
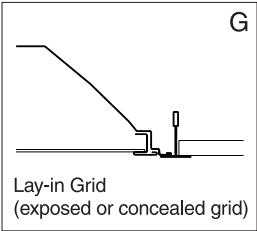
- 1 MVOLT standard for 120-277V applications, 50-60 Hz operation. Some options require voltage specified.

<div>2</div> <div>illuminations inc.</div>	<div>Project 16-39130-0</div> <div>Thomas D. Clayton Building Renovations</div> <div>Submitted By</div> <div>ILLUMINATIONS INC</div>	<div>Catalog Number</div> <div>SP8 G 1 32 A12 MVOLT GEB10PS</div> <div>Notes</div>	<div>Type</div> <div>C</div>
--	--	--	------------------------------

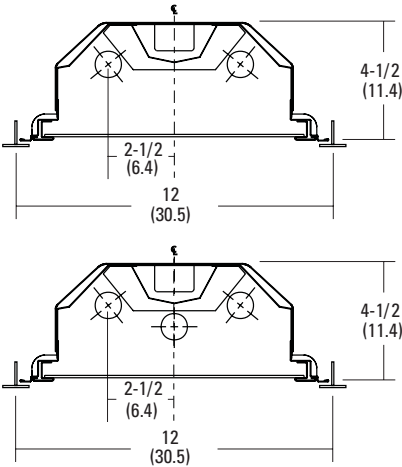
SP8 1'x4'
Static Troffer, Straight Lamps

MOUNTING DATA

Continuous row mounting of flanged units requires CRE and CRM trim options (see Options).



DIMENSIONS



NOTE:
1 Recommended rough-in dimensions for F-trim fixtures 12"x48". (Tolerance is +1/4"-0"). Swing-gate range 1-9/16" to 3-3/4". Swing-gate span 10-3/4" to 14-3/4".

PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

SP8 2 32 A12
Report: LTL12537
LUMENS PER LAMP:2850
Luminaire Efficiency: 76.3%

Coefficients of Utilization

	20%								
	80%			50%			30%		
	70%	50%	30%	50%	30%	10%	50%	30%	10%
0	91	91	91	85	85	85	81	81	81
1	84	81	78	76	74	72	73	71	69
2	77	72	67	67	64	61	65	62	59
3	71	64	58	60	56	52	58	55	51
4	66	57	51	55	50	46	53	48	45
5	61	52	46	49	44	40	48	43	40
6	57	47	41	45	40	36	44	39	35
7	53	43	37	41	36	32	40	35	32
8	49	39	33	38	33	29	37	32	29
9	46	36	31	35	30	26	34	30	26
10	43	34	28	33	28	24	32	27	24

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0° - 30°	1525	26.8	35.0
0° - 40°	2434	42.7	56.0
0° - 60°	3753	65.8	86.3
0° - 90°	4351	76.3	100.0
90° - 180°	0	0.0	0.0
0° - 180°	4351	76.3	100.0



FEATURES & SPECIFICATIONS

INTENDED USE — The industry's next generation in linear direct fluorescent products. This new compact, low-profile design offers our customers unique product features which improve the overall installation process and appearance while reducing labor cost, making it the most versatile solution for commercial, retail, manufacturing, warehouse, and cove and display applications.

CONSTRUCTION — Compact designed channel and cover are formed from code-gauge cold-rolled steel. Innovative T8 two-lamp back plate offers compact design and additional socket protection. Locking lamp holder tracks bolsters strength of the overall strip construction while creating improved lamp stability. Design includes T8 socket, features rotating collar and enclosed contacts. Improved easy "snap n' lock" end plates allow for quick attachment.

Designed to accommodate a wide variety of T8 lamp lengths. Channel offers the gripper back feature which strengthens the overall construction and allows for the use of the new Z spring hanger (see back). Newly designed, patent-pending channel cover offers a secure fit design, allowing for easy access and quick attachment without pinching wires.

Finish: High-gloss, baked white enamel finish (white standard). Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Other channel paint finish options: black (MB), smoke gray (SMG) and galvanized (GALV).

OPTICS — Reflector options include solid or apertured designs in both symmetric and asymmetric configurations. Consult factory for special-apertured versions.

ELECTRICAL — Thermally protected, resetting, Class P, HPF, non-PCB, UL listed. Suitable for damp locations. AWN, TFN or THHN wire used throughout, rated for required temperatures.

INSTALLATION — Patented-pending "three-point" row connector locks channel together for straighter and faster row mounting; included as standard. Ideal for surface-mount or suspended.

LISTINGS — UL Listed, CUL Listed or CSA Certified to Canadian Standards. Listed for 25° C ambient temperature.

WARRANTY — 1-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Actual performance may differ as a result of end-user environment and application.

Note: Specifications subject to change without notice.

Catalog Number
Notes
Type

One-Lamp T8

Two-Lamp T8

Two-Lamp T5



Low-Profile T5/T8 Striplight

Linear Lamps
1 or 2 Lamps

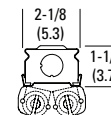
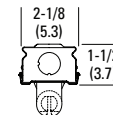
Specifications

T8 Length: 24 (61.0), 36 (91.4), 48 (121.9)
72 (182.9) or 96 (243.8)

T5 Length: 22-3/8 (56.8), 34-1/8 (86.7), 46 (116.8)
68-3/8 (173.6) or 92 (233.6)

Width: 2-1/8 (5.4)

Depth: 1-1/2 (3.8)



All dimensions are in inches (centimeters) unless otherwise noted.

ORDERING INFORMATION

For shortest lead times, configure products using **standard options (shown in bold.)**

Example: Z 1 32 MVOLT GEB10IS

Series	Reflectors	Number of lamps	Lamp type	Voltage	Ballast	Options
Z Compact strip <small>For tandem double-length unit, add prefix T. Example: TZ</small>	<small>(see page 3 for ordering nomenclature)</small>	1	17 17W T8 (24")	120	GEB10IS T8 electronic ballast, ≤10% THD, instant start (T8 only)	GLR Internal fast-blow fuse (add X for external) ²
		2	25 25W T8 (36")	277		TILW Tandem in-line wiring
		Not included	32 32W T8 (48")	347		CSA CSA Certified
			14T5 14W T5 (22")	Others available	GEB10RS T8 electronic ballast, ≤10% THD, rapid start ¹	NOM NOM Certified
			21T5 21W T5 (34")			MSI Aisle motion sensor ^{2,3}
			24T5HO 24W T5 HO (22")		GEB10PS Electronic ballast, ≤10% THD, programmed start	MSI360 360° motion sensor ^{2,3}
			28T5 28W T5 (46")			MSE360LBZ 360° motion sensor; for mounting within row or at end of row ^{2,3,4}
			39T5HO 39W T5 HO (34")			
			54T5HO 54W T5 HO (46")		BILP High-efficiency .78 bf (low)	
						EL55 Emergency battery pack (nominal 390-700 lumens); consult factory for additional battery packs ^{2,3,4}
						EL65 Emergency battery pack (nominal 725-1325 lumens) ^{2,3,4}

Accessories: Order as separate catalog number.		Field Installable Reflectors	
SQ_	Swivel-stem hanger (specify length in 2" increments)	For T8 fixtures only	
ZSPRG	Tong and T-grid hanger (for 15/16" T-grid)	Z8SMR48	Symmetric reflector, 48" white ⁵
HC36	Hanger chain, 36"	Z8ASR48	Asymmetric reflector, 48" white ⁵
ZACVH	Adjustable aircraft cable with hook	Z8SMR36	Symmetric reflector, 36" white ⁵
WGZ48	48" wireguard, white⁵	Z8ASR36	Asymmetric reflector, 36" white ⁵
WGZ8SMR48	48" wireguard, white, for symmetric reflector ⁵	Z8SMR24	Symmetric reflector, 24" white
WGZ8ASR48	48" wireguard, white, for asymmetric reflector ⁵	Z8ASR24	Asymmetric reflector, 24" white
WGZ46	46" wireguard, white ⁵		
WGZ5SMR46	46" wireguard, white, for symmetric reflector ⁵		
WGZ5ASR46	46" wireguard, white, for asymmetric reflector ⁵		
		For T5 fixtures only	
		Z5SMR46	Symmetric reflector, 46" white ⁵
		Z5ASR46	Asymmetric reflector, 46" white ⁵
		Z5SMR34	Symmetric reflector, 34" white ⁵
		Z5ASR34	Asymmetric reflector, 34" white ⁵
		Z5SMR22	Symmetric reflector, 22" white
		Z5ASR22	Asymmetric reflector, 22" white

Notes

1 For 347V.

2 Specify voltage (available 120/277V).

3 Not available with CSA Certified.

4 Available with 4' and 8' lengths only.

5 Order two for tandem double length fixtures.

Z T8 / T5 Striplight

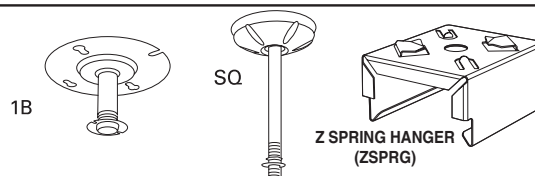
MOUNTING DATA

For unit or row installation, surface or stem mounting.

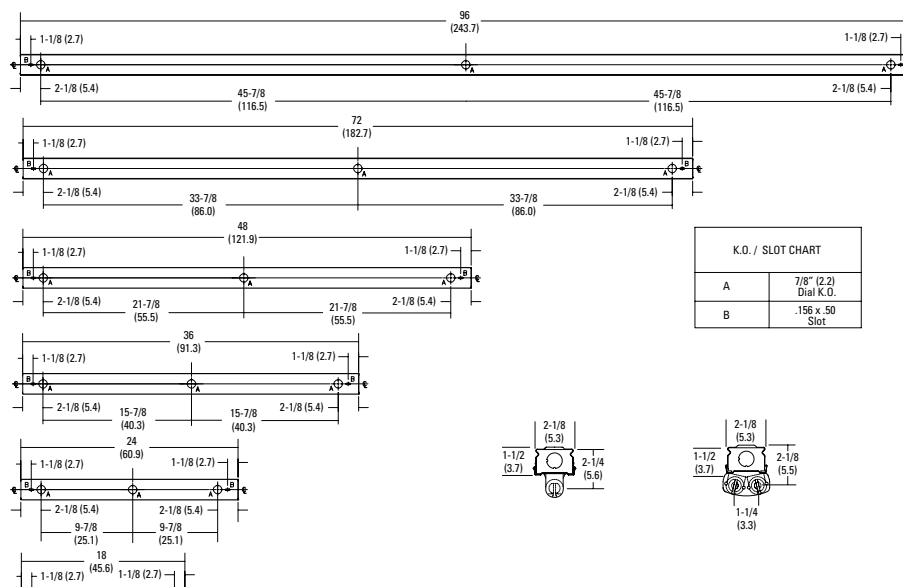
Unit installation — Minimum of two hangers required.

Row installation — One hanger per channel plus one per row required.

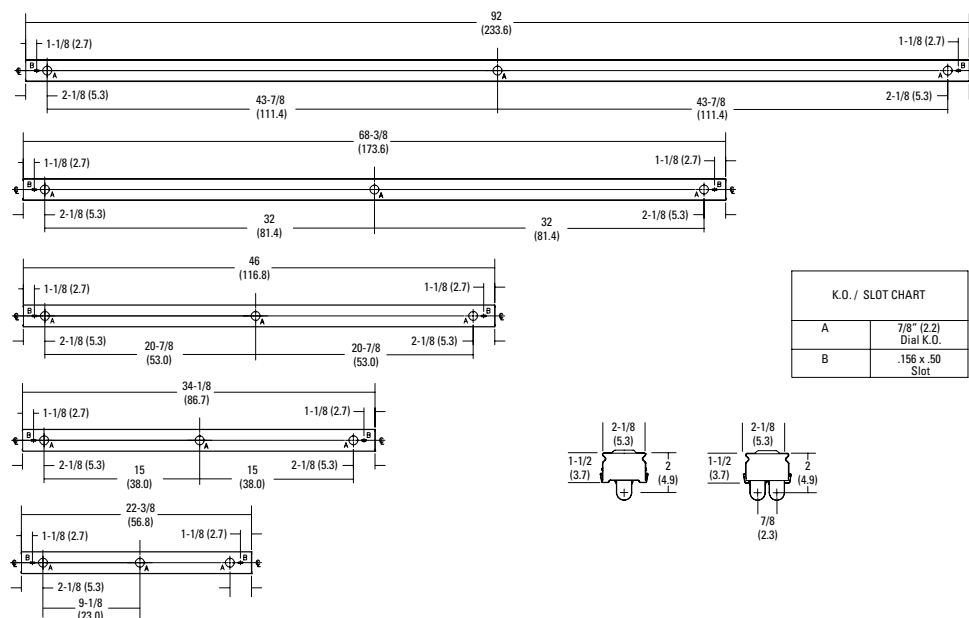
Review local codes when installing any product, as the minimum of 1 hanger per fixture may not satisfy your local building code.



T8 DIMENSIONS



T5 DIMENSIONS

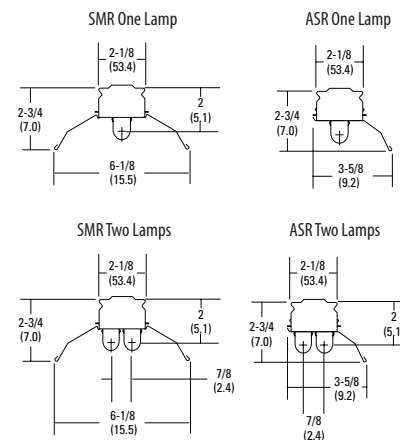
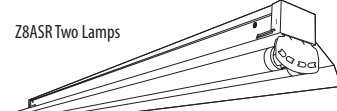
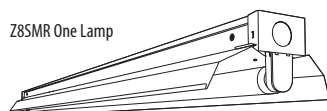
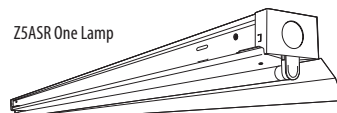
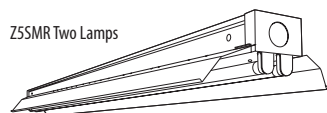


PHOTOMETRICS

See www.lithonia.com.

Z T8 / T5 Striplight

REFLECTORS

*Specifications*

All dimensions are inches (centimeters)

ORDERING INFORMATION

For shortest lead times, configure products using **bolded options**.

Example: Z5SMR46A8

Series/Length/Distribution			Finish
Series	Length	Distribution	(blank) White MB Matte black GALV Galvanized SKGY Smoke gray SSR Specular finish aluminum (95% reflectance)
Z5ASR Asymmetric reflector, T5	<u>Z5ASR/Z5SMR only</u>	(blank) Solid	
Z5SMR Symmetric reflector, T5	22 Nominal 22" length	A2 ASR with 2% uplight	
Z8ASR Asymmetric reflector, T8	34 Nominal 34" length	A4 ASR with 4% uplight	
Z8SMR Symmetric reflector, T8	46 Nominal 46" length	A5 SMR with 5% uplight	
	<u>Z8ASR/Z8SMR only</u>	A8 SMR with 8% uplight	
	24 Nominal 24" length	P Perforated	
	36 Nominal 36" length		
	48 Nominal 48" length		


isolite

RL2-LED SERIES

Compact LED Emergency Light



Optional LED Remote Heads



Single Remote Head



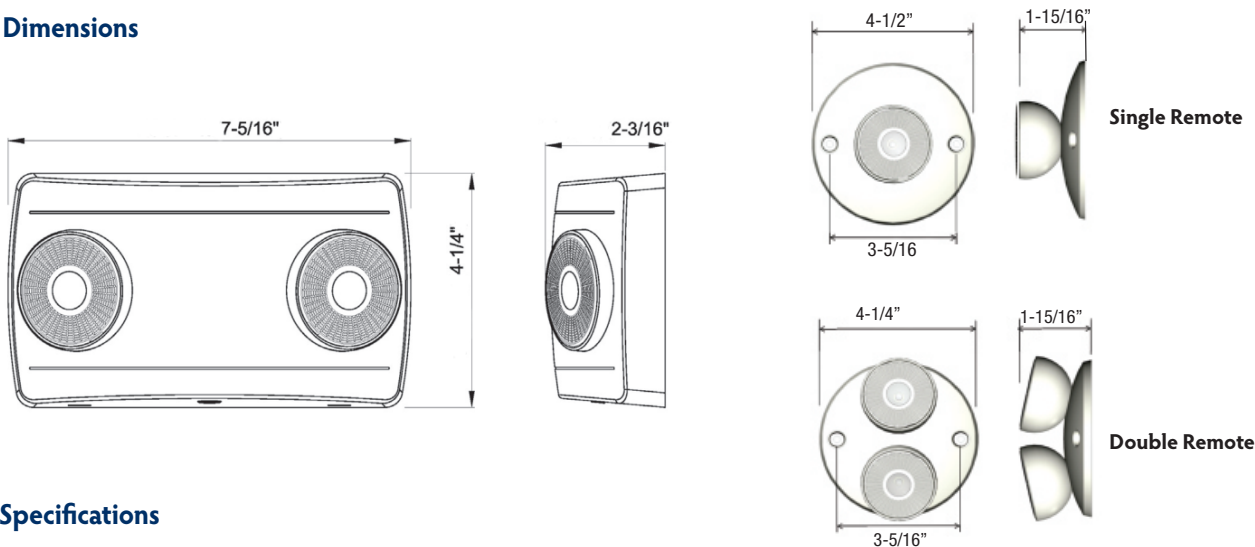
Double Remote Head

- Compact, low-profile design – only 7 5/16" x 4 1/16"
- High output 2-Watt adjustable LED heads provide 125 Lumens each
- Quick snap-fit installation for Ceiling Mount and Wall Mount
- Remote capability of two 1-Watt remote heads standard
- Damp location standard
- UL 924 Listed



ISOLITE RL2 LED SERIES

Dimensions



Specifications

Overall size: 7-5/16" x 4-1/4" x 2-3/16"**Weight:** RL2LED2/WH 1.08 lbs.

RL2LED4/WH 1.12 lbs.

Construction

- Injection-molded flame-retardant, high-impact thermoplastic housing

Battery

- Maintenance-free Nickel Cadmium batteries (RL2-LED2) or Nickel Metal Hydride batteries (RL2-LED4), operating temperature range 10°C to 40°C provides 90 minutes of emergency operation

Lamps

- Two fully adjustable high-output 2-W LED heads producing 125 Lumens each for optimum spacing

Approvals

- UL 924 listed and meets NFPA 101 Life Safety Code, NFPA 70-NEC and OSHA requirements

Electronics

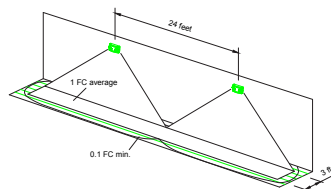
- Solid-state charger and transfer
- High-output, energy-efficient LED technology
- Line latch prevents unnecessary discharge of battery
- Brownout protection
- LED AC present indicator and push-to-test switch
- 120 or 277 field-selectable inputs

Features

- High-output 2-W adjustable LED heads provide 125 Lumens each
- LED heads replace traditional 5.4-W Tungsten and 5W MR16 Lamp Heads
- Quick snap-fit installation for Ceiling Mount and Wall Mount
- Knockout mounting pattern on back plate and top conduit entry
- Remote capability of two 1-W remote heads standard
- Available with full Self-Test/Self-Diagnostic option
- Suitable for use in damp location applications
- Compact low-profile design
- Swivel pendant mounting available upon request
- White housing standard
- Black housing available

Warranty

Isolite offers a 3-year limited warranty. For further details, refer to General Warranty and obligations in Isolite manual.

**Suggested Spacing**

Mounting height is 8'
reflectance of 80-50-20"

Ordering Information

Series	Battery Capacity	Housing Color	Options	Accessories
RL2LED	2 = 2W LED Heads 4 = 2W LED Heads* * Includes 2W Remote Capacity	WH = White BK = Black* *BK comes standard with Self Diagnostic option	SD = Self Diagnostics* *Only Available with "4" Battery	RLLEDRH1 = Single Indoor 1W Remote RLLEDRH2 = Double Indoor 1W Remote RLLEDWP1 = Single Outdoor 1W Remote RLLEDWP2 = Double Outdoor 1W Remote RLLEDWG = Wire Guard (6" x 8" x 4") VRS = Polycarbonate Vandal Shield



BLT - MR16

Die-cast Remote Head

INDOOR



Job/Location: _____
 Contractor: _____
 Prepared By: _____

Job Type: _____
 Date: _____



BLT - MR16 SURFACE EMERGENCY REMOTE

The **BLT** series is a die-cast emergency lighting remote that features a powerful MR16 lamp. The advanced rotary collar design locks the lamp and internal fixture parts into place while allowing for simple lamp replacement. The rotary collar system features a friction-lock fully adjustable swivel - no tools are needed to aim the lamp!

LAMP SELECTION

	6V	12V	24V
MR16	5, 10W	10, 12, 20, 35, 50W	12, 20, 35, 50W
LED	5W	5, 7W	5, 7W

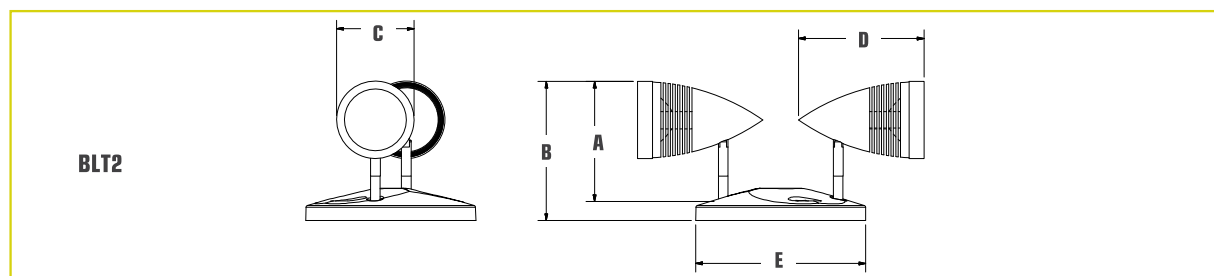
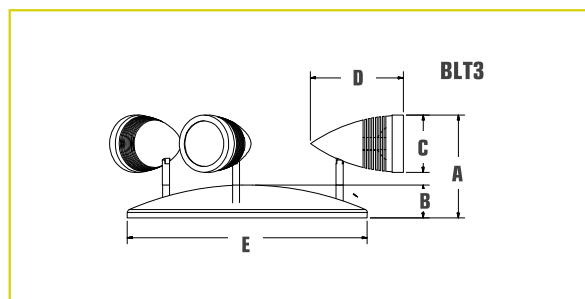
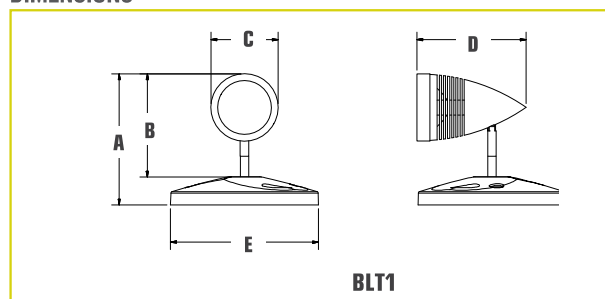
ORDERING INFORMATION

Series	Voltage / Wattage	Options
BLT1 (Single head)	See lamp selection	B (black remote and canopy)
BLT2 (Double head)		W (white remote and canopy)
BLT3 (Triple head)		LC (less canopy)

Technical

HOME

DIMENSIONS



MODEL	A	B	C	D	E
BLT1	4 ¹ / ₈ " (104mm)	3 ¹ / ₂ " (89mm)	2 ¹ / ₄ " (58mm)	3 ³ / ₄ " (94mm)	5" (127mm)
BLT2	4 ¹ / ₈ " (104mm)	3 ¹ / ₂ " (89mm)	2 ¹ / ₄ " (58mm)	3 ³ / ₄ " (94mm)	5" (127mm)
BLT3	4 ¹ / ₈ " (104mm)	1 ¹ / ₄ " (33mm)	2 ¹ / ₄ " (58mm)	3 ³ / ₄ " (94mm)	9 ¹ / ₂ " (241mm)



isolite

RL2-LED SERIES

Compact LED Emergency Light



Optional LED Remote Heads



Single Remote Head



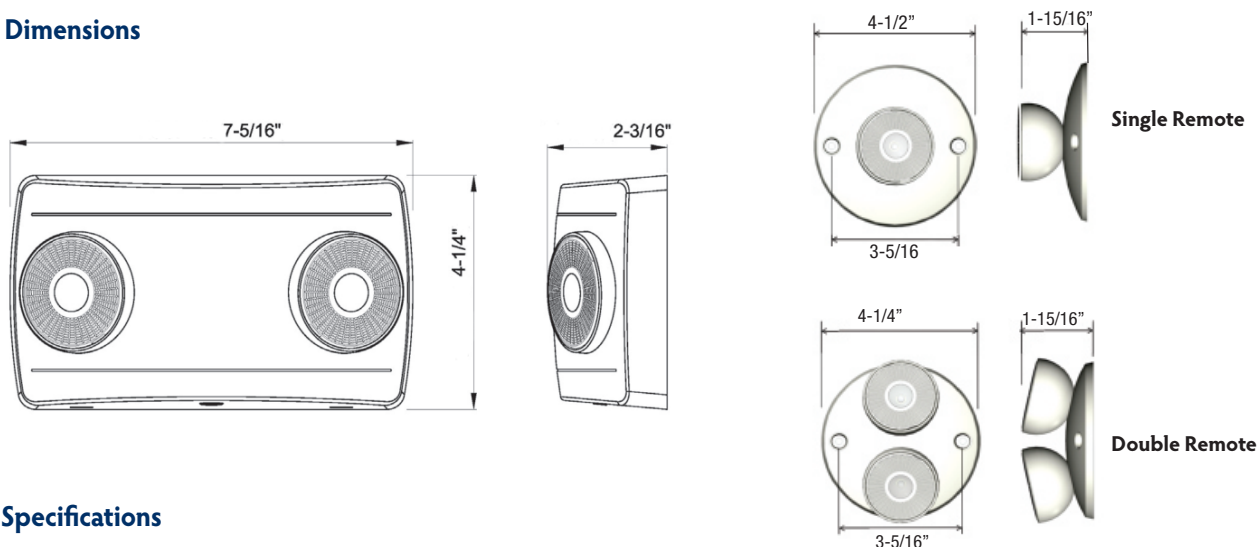
Double Remote Head

- Compact, low-profile design – only 7 5/16" x 4 1/16"
- High output 2-Watt adjustable LED heads provide 125 Lumens each
- Quick snap-fit installation for Ceiling Mount and Wall Mount
- Remote capability of two 1-Watt remote heads standard
- Damp location standard
- UL 924 Listed



ISOLITE RL2 LED SERIES

Dimensions



Specifications

Overall size: 7⁵/₁₆" x 4¹/₄" x 2³/₁₆"**Weight:** RL2LED2/WH 1.08 lbs.

RL2LED4/WH 1.12 lbs.

Construction

- Injection-molded flame-retardant, high-impact thermoplastic housing

Battery

- Maintenance-free Nickel Cadmium batteries (RL2-LED2) or Nickel Metal Hydride batteries (RL2-LED4), operating temperature range 10°C to 40°C provides 90 minutes of emergency operation

Lamps

- Two fully adjustable high-output 2-W LED heads producing 125 Lumens each for optimum spacing

Approvals

- UL 924 listed and meets NFPA 101 Life Safety Code, NFPA 70-NEC and OSHA requirements

Electronics

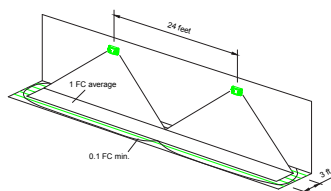
- Solid-state charger and transfer
- High-output, energy-efficient LED technology
- Line latch prevents unnecessary discharge of battery
- Brownout protection
- LED AC present indicator and push-to-test switch
- 120 or 277 field-selectable inputs

Features

- High-output 2-W adjustable LED heads provide 125 Lumens each
- LED heads replace traditional 5.4-W Tungsten and 5W MR16 Lamp Heads
- Quick snap-fit installation for Ceiling Mount and Wall Mount
- Knockout mounting pattern on back plate and top conduit entry
- Remote capability of two 1-W remote heads standard
- Available with full Self-Test/Self-Diagnostic option
- Suitable for use in damp location applications
- Compact low-profile design
- Swivel pendant mounting available upon request
- White housing standard
- Black housing available

Warranty

Isolite offers a 3-year limited warranty. For further details, refer to General Warranty and obligations in Isolite manual.

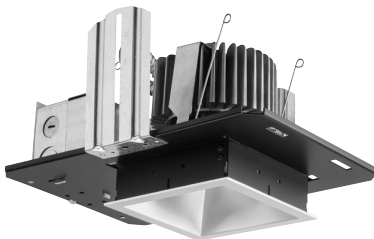
**Suggested Spacing**

Mounting height is 8'
reflectance of 80-50-20"

Ordering Information

Series	Battery Capacity	Housing Color	Options	Accessories
RL2LED	2 = 2W LED Heads 4 = 2W LED Heads* * Includes 2W Remote Capacity	WH = White BK = Black* *BK comes standard with Self Diagnostic option	SD = Self Diagnostics* *Only Available with "4" Battery	RLLEDRH1 = Single Indoor 1W Remote RLLEDRH2 = Double Indoor 1W Remote RLLEDWP1 = Single Outdoor 1W Remote RLLEDWP2 = Double Outdoor 1W Remote RLLEDWG = Wire Guard (6" x 8" x 4") VRS = Polycarbonate Vandal Shield





Luminaire Type:
Catalog Number
(autopopulated):

Gotham Architectural Downlighting
LED Downlights

4" Evo® Square Downlight

Solid-State Lighting



FEATURES

OPTICAL SYSTEM

- Self-flanged semi-specular, matte-diffuse finishing trim
- Patented Bounding Ray™ optical design (U.S. Patent No. 5,800,050)
- 55° cutoff to source and source image
- Top-down flash characteristic
- Polycarbonate lens integral to light engine

MECHANICAL SYSTEM

- 16-gauge galvanized steel construction; maximum 1-1/4" ceiling thickness
- Telescopic mounting bars maximum of 24" and minimum of 15", included, 4" vertical adjustment
- Toolless adjustments post installation
- Junction box capacity: 8 (4 in, 4 out) 12AWG rated for 90°C
- Light engine and driver accessible through aperture
- Patented adjustable aperture allows 1/4" adjustments in all directions and up to 5° of rotation allowing post-installation adjustments to ensure trim-to-trim alignment.

ELECTRICAL SYSTEM

- Fully serviceable and upgradeable lensed LED light engine
- 70% lumen maintenance at 50,000 hours
- Tested according to LM-79 and LM-80 standards
- Overload and short circuit protected
- 2.5 SDCM; 85 CRI typical, 90+ CRI optional

LISTINGS

- Fixtures are CSA certified to meet US and Canadian standards; wet location, covered ceiling

WARRANTY

- 5-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C.

ORDERING INFORMATION

EXAMPLE: EVO SQ 35/10 4AR LSS MVOLT EZ1

Series	Type	Color temperature	Nominal lumen values	Aperture/Trim color	Finish	Voltage
EVO	SQ	27/ 2700 K 30/ 3000 K 35/ 3500 K 40/ 4000 K	07 750 lumens 10 1000 lumens 15 1500 lumens 20 2000 lumens 25 2500 lumens 30 3000 lumens	4AR Clear 4PR Pewter 4WTR Wheat 4WR¹ White 4BR ¹ Black	LSS Semi-specular LD Matte-diffuse NEED TO CHOOSE	MVOLT 120 277 347 ²

Driver ³	Options			
EZ1 eldoLED ECOdrive 0-10V dimming driver. Minimum dimming range level 1%.	SF Single fuse. Specify 120V or 277V.	BGTD Bodine generator transfer device. Specify 120V or 277V.		
EZB eldoLED SOLOdrive 0-10V dimming driver. Minimum dimming level <1%.	TRW⁶ White painted flange	CP¹⁰ Chicago plenum. Specify 120V or 277V.		
EDAB eldoLED SOLOdrive DALI dimming driver. Minimum dimming level <1%. Minimum lumen 1500/Maximum lumen 3000.	TRBL⁷ Black painted flange	CRI¹⁰ High CRI (90+)		
EDXB eldoLED POWERdrive DMX with RDM (remote device management). Minimum dimming level <1%. Includes termination resistor. Minimum lumen 1500/Maximum lumen 3000.	EL⁸ Emergency battery pack with integral test switch	CRI90 High CRI (90+)		
EXA1 XPoint Wireless, eldoLED ECOdrive 1% dimming, 0-10V. Refer to XPoint tech sheet.	ELR⁸ Emergency battery pack with remote test switch	RRL_ RELOC®-ready luminaire connectors enable a simple and consistent factory installed option across all ABL luminaire brands. Refer to RRL for complete nomenclature.		
EXAB XPoint Wireless, eldoLED SOLOdrive <1% dimming, 0-10V. Refer to XPoint tech sheet.	NPS80EZ⁵ nLight® dimming pack controls 0-10V eldoLED drivers.			
ECOS2^{4,5} Lutron® Hi-lume® 2-wire forward-phase dimming driver. Minimum dimming level 1%. Minimum lumen 1500/Maximum lumen 3000.	NPS80EZER^{5,9} nLight® dimming pack controls 0-10V eldoLED drivers. ER controls fixtures on emergency circuit.			
ECOS3^{4,5} Lutron® Hi-lume® 3-wire or EcoSystem® dimming driver. Minimum dimming level 1%. Minimum lumen 1500/Maximum lumen 3000.				

ACCESSORIES order as separate catalog numbers (shipped separately)

ISD BC 0-10V wallbox dimmer. Refer to [ISD-BC](#).

4" EVO SQUARE

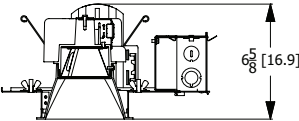
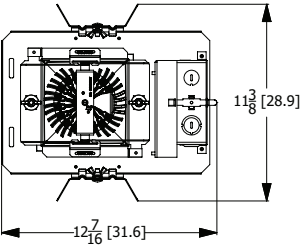
Downlight

Solid-State Lighting



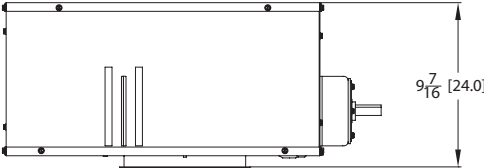
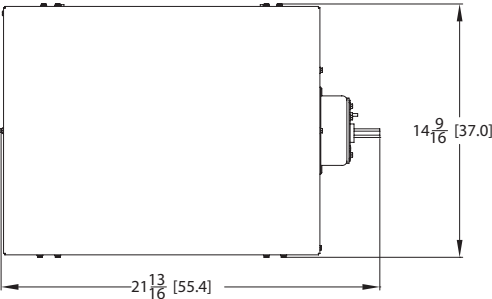
DIMENSIONAL DATA

All dimensions are inches (centimeters) unless otherwise noted.



Aperture: 4-1/2 [11.4]
Ceiling Opening: 5-1/8 [13]
Overlap Trim: 5-1/2 [14]

DIMENSIONS FOR CHICAGO PLENUM



ELECTRICAL

WATTAGE CONSUMPTION MATRIX			
LUMENS	LM ACTUAL	WATTAGE	LUMENS per WATT
750	849	10.3	82.4
1000	1,189	12.8	92.9
1500	1,509	17.3	87.2
2000	2,109	23.5	89.6
2500	2,576	28.9	89.1
3000	3,112	36.9	84.3

EMERGENCY LUMEN OUTPUT		
LUMENS	WATTAGE	INITIAL OUTPUT
750	9.6	1000
1000	9.6	1000
1500	9.6	1000
2000	9.6	1000
2500	9.6	1000
3000	9.6	1000

NOTES

ORDERING NOTES	
1. Not available with finishes.	7. Not available with black reflector.
2. Not available with EL or ELR options.	8. For dimensional changes, refer to TECH-140 . Access above ceiling required. Not available with 347V.
3. Refer to TECH-240 for compatible dimmers.	9. For use with generator supply EM power. Will require an emergency hot feed and normal hot feed.
4. Not available with nLight® and XPoint options.	10. ELR not available. CP, ECOS2/ECOS3 with EL-2000 lumen max.
5. Specify voltage. ECOS2 not available in 277V.	
6. Not available with white reflector.	



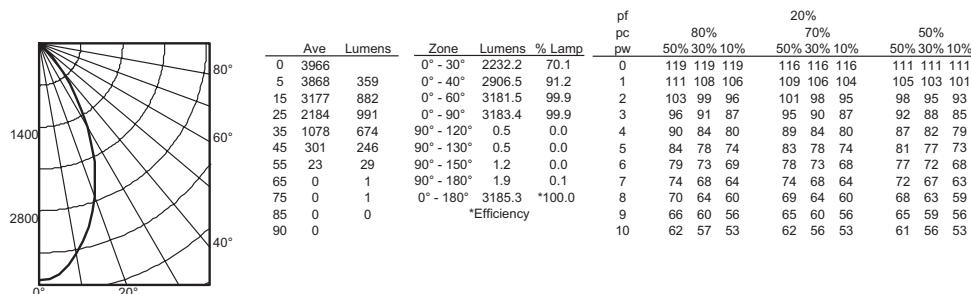
4" EVO SQUARE

Downlight
Solid-State Lighting

Distribution Curve Distribution Data Output Data Coefficient of Utilization Illuminance: Single Luminaire 30" Above Floor

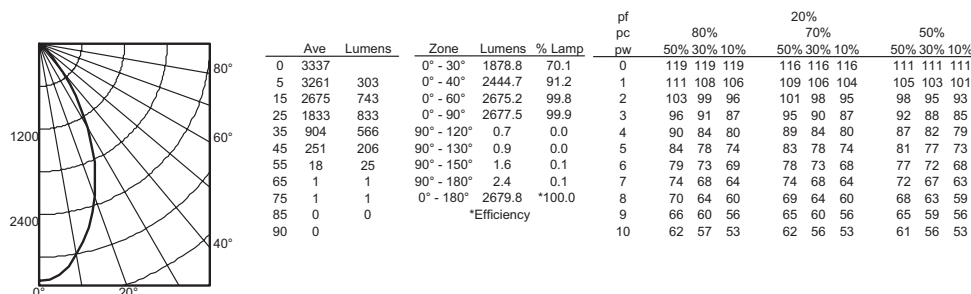
EVO SQ 35/30 4AR LSS

INPUT WATTS: 36.9, DELIVERED LUMENS: 3185, LM/W=86.3 , 0.82 S/MH, TEST NO. LTL27797



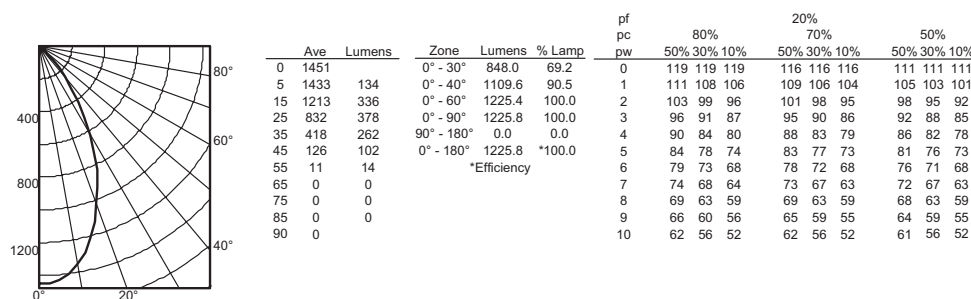
EVO SQ 35/25 4AR LSS

INPUT WATTS: 28.9, DELIVERED LUMENS: 2680, LM/W=92.7, 0.83 S/MH, TEST NO. LTL27796



EVO SQ 35/10 4AR LSS

INPUT WATTS: 12.9, DELIVERED LUMENS: 1226, LM/W=95, 0.86 S/MH, TEST NO. LTL27793



LUMEN OUTPUT MULTIPLIER - CRI

CRI	FACTOR
80 CRI	1
90 CRI	0.79

LUMEN OUTPUT MULTIPLIER - CCT

CRI	FACTOR
4000 K	1.035
3500 K	1
3000 K	0.973
2700 K	0.938

LUMEN OUTPUT MULTIPLIER - TRIM FINISH

FINISH	CLEAR (AR)	PEWTER (PR)	WHEAT (WTR)	GOLD (GR)	WHITE (WR/WRMF)	BLACK (BR)
Specular (LS)	1.00	0.88	0.83	0.95	N/A	N/A
Semi-specular (LSS)	0.95	0.84	0.79	0.90	N/A	N/A
Matte-diffuse (LD)	0.85	0.73	0.69	0.80	N/A	N/A
Paint	N/A	N/A	N/A	N/A	0.87	0.73

PHOTOMETRY NOTES

- Tested in accordance with IESNA LM-79-08.
- Tested to current IES and NEMA standards under stabilized laboratory conditions.
- CRI: 85 typical.

4" EVO SQUARE

Downlight

Solid-State Lighting



CONTROLS

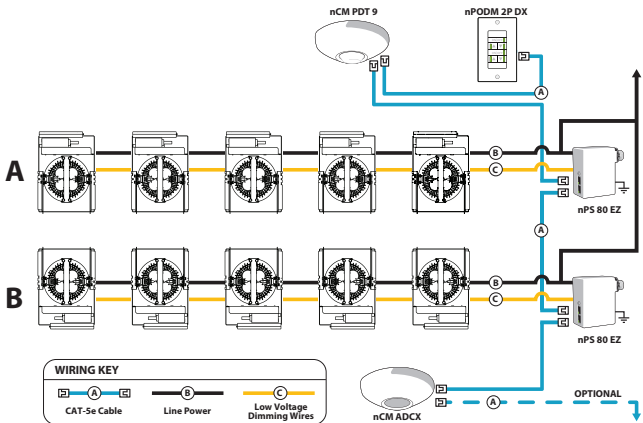
Choose Wall Controls.
nLIGHT offers multiple styles of wall controls – each with varying features and user experience.



Push-Button WallPod
Traditional tactile buttons and LED user feedback



Graphic WallPod
Full color touch screen provides a sophisticated



EXAMPLE
Group Fixture Control*
*Application diagram applies for fixtures with eldoLED drivers only.

- nPS 80 EZ Dimming/Control Pack (qty 2 required)
- nPODM 2P DX Dual On/Off/Dim Push-Button WallPod
- nCM ADCX Daylight Sensor with Automatic Dimming Control
- nCM PTD 9 Dual Technology Occupancy Sensor

Description: This design provides a dual on/off/dim wall station that enables manual control of the fixtures in Row A and Row B separately. Additionally, a daylight harvesting sensor is provided so the lights in row B can be configured to dim automatically when daylight is available. An occupancy sensor turns off all lights when the space is vacant.

nLight® Control Accessories: <i>Order as separate catalog number. Visit www.sensorswitch.com/nLight for complete listing of nLight controls.</i>			
WallPod stations	Model number	Occupancy sensors	Model number
On/Off	nPODM [color]	Small motion 360°, ceiling (PIR / dual tech)	nCM 9 / nCM PDT 9
On/Off & Raise/Lower	nPODM DX [color]	Large motion 360°, ceiling (PIR / dual tech)	nCM 10 / nCM PDT 10
Graphic Touchscreen	nPOD GFX [color]	Wide view (PIR / dual tech)	nWV 16 / nWV PDT 16
Photocell controls	Model number	Wall Switch w/ Raise/Lower (PIR / dual tech)	nWSX LV DX / nWSX PDT LV DX
Dimming	nCM ADCX	Cat-5 cables (plenum rated)	Model number
		10', CAT5 10FT	CAT5 10FT J1
		15', CAT5 15FT	CAT5 15FT J1



ASW1 LED

LED Wall Luminaire



AERIS

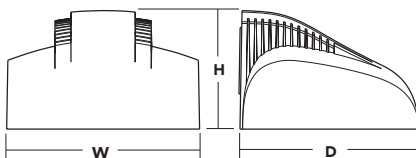
Specifications

Width: 15"
(38.1 cm)

Depth: 13-3/4"
(34.9 cm)

Height: 9-1/4"
(25.5 cm)

Weight (max): 34 lbs
(15.4 kg)

Catalog
Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

The Aeris™ family combines sleek, fluid forms and crisp edges into a striking architectural aesthetic that can be echoed throughout entire sites.

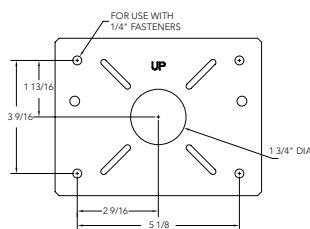
The ASW1 LED integrates the latest LED technology with the designer aesthetic of the Aeris™ family for stylish, high-performance illumination that lasts. The ASW1 LED is ideal for replacing 100-400W metal halide in area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: ASW1 LED 42C 700 40K SR4 MVOLT DDBTXD

ASW1 LED						
Series	LEDs	Drive Current	Color temperature	Distribution	Voltage	Mounting
ASW1 LED	42C 42 LEDs (one engine)	350 350mA 530 530mA 700 700mA	30K 3000 K 40K 4000 K 50K 5000 K	SR2 Type II SR3 Type III SR4 Type IV	MVOLT ¹ 277 ¹ 120 ¹ 347 208 ¹ 480 240 ¹	Shipped included (blank) Surface mount Shipped separately BBW Surface-mounted back box (for conduit entry) ²
Control Options				Other Options		Finish (required)
Shipped installed				Shipped installed		DDBXD Dark bronze
PE	Photoelectric cell, button type ³			SF	Single fuse (120, 277, 347V) ¹	DBLXD Black
BL30	Bi-level switched dimming, 30% ^{4,5}			DF	Double fuse (208, 240, 480V) ¹	DNAXD Natural aluminum
BL50	Bi-level switched dimming, 50% ^{4,5}			DFL	Diffusing lens	DWHXD White
PNMTDD3	Part night, dim till dawn ⁵			Shipped separately ²		DDBTXD Textured dark bronze
PNMT5D3	Part night, dim 5 hrs ⁵			VG	Vandal guard	DBLXD Textured black
PNMT6D3	Part night, dim 6 hrs ⁵			WG	Wire guard	DNATXD Textured natural aluminum
PNMT7D3	Part night, dim 7 hrs ⁵					DWHGXD Textured white
DMG	0-10V dimming driver (no controls) ⁶					

Drilling



Accessories

Ordered and shipped separately.

ASW1BBW DDBXD U	Back box accessory (specify finish)
ASW1WG U	Wire guard accessory
ASW1VG U	Vandal guard accessory

NOTES

- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Single fuse (SF) requires 120 or 277 voltage option. Double fuse (DF) requires 208 or 240 voltage option.
- Also available as a separate accessory; see Accessories information at left.
- Photocontrol (PE) requires 120, 208, 240, 277 or 347 voltage option. Must be ordered with fixture; cannot be field installed.
- Requires an additional switched line.
- Dimming driver standard. Not available with 347V or 480V.
- Not available with 347V, 480V, BL30, BL50 or PNMT options.

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Light Engines	Drive Current (mA)	System Watts	Dist. Type	40 K (4000 K, 70 CRI)				
				Nominal Lumens	B	U	G	LPW
42C (42 LEDs)	350	49W	SR2	4,013	1	0	1	82
			SR3	3,998	1	0	1	82
			SR4	3,971	1	0	1	81
	530	75W	SR2	7,140	2	0	2	95
			SR3	7,114	1	0	2	95
			SR4	7,066	1	0	1	94
	700	98W	SR2	8,564	2	0	2	87
			SR3	8,533	2	0	2	87
			SR4	8,476	2	0	2	86

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.06
10°C	50°F	1.04
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.96

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **ASW1 LED 42C 700** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

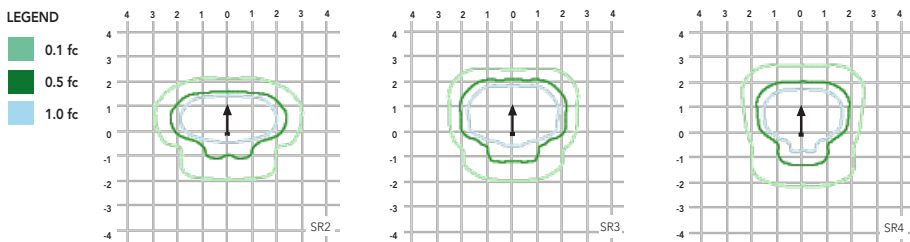
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.96	0.92	0.85

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [ASW1 LED homepage](#).

Isofootcandle plots are considered to be representative of available optical distributions.



FEATURES & SPECIFICATIONS

INTENDED USE

The ASW1 LED is a high performance, high efficacy, long life luminaire that is ideally suited for lighting building entries, walk ways and surrounding areas adjacent to commercial exteriors.

CONSTRUCTION

Single-piece, die-cast aluminum housing. Die-cast doorframe has impact-resistant, tempered glass lens. Doorframe is fully sealed with a closed-cell silicone gasket.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling.

OPTICS

Precision-molded refractive acrylic lenses housed behind the door frame lens are available in three distributions. Light engines are available in standard 4000 K or optional 3000 K or 5000 K (70 CRI) configurations.

ELECTRICAL

Light engine consists of 42 high-efficacy LEDs mounted to a metal-core circuit board and aluminum heat sink, ensuring optimal thermal management and long life. Class 1 electronic driver has a power factor >90%, THD <20%, and has an expected life of 100,000 hours with <1% failure rate. Easily-serviceable surge protection device meets a minimum Category C Low (per ANSI/IEEE C62.41.2).

INSTALLATION

Universal mounting plate with integral mounting bolts supports the fixture for easy, one-person installation. Suitable for downward orientation only.

LISTINGS

CSA certified to U.S. and Canadian standards. Luminaire is IP65 rated. **US. Patent No. D500,569. Canada Patent No. 107561.**

WARRANTY

Five year limited warranty. Full warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice..

VA4

INDOOR | DAMP | ASSEMBLED IN AMERICA



Job/Location: _____
 Contractor: _____
 Prepared By: _____

Job Type: _____
 Date: _____

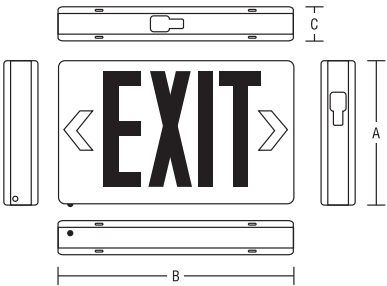


■ specifications: internal

The VA4 comes standard configured with high output LEDs, 120/277V input, available in red or green. AC only and Self powered versions are available. Nickel-cadmium batteries provide a minimum 90 minutes of emergency duration. Electronic cut-off circuit prevents over discharge.

■ specifications: external

The VA4 is constructed from durable corrosion and flame resistant thermoplastic. The VA4 comes standard with a mounting canopy, two (2) stencils, one (1) backplate, removable chevrons and all mounting hardware. The VA4 comes standard finished in white; optional black finish is available. A damp location rating is standard on all VA4 products. An external LED status indicator and test switch is standard on all self-powered models.



Series	A	B	C
VA4	7.5" 191mm	12" 305mm	1.5" 38mm

■ ordering logic

Series	LED	Model	Options
VA4	R (red) G (green)	HT (AC only) SA (self-powered)	AT (autotest) B (black finish)

EXAMPLE: VA4-R-HT-B
 DESCRIPTION: Red LED, AC only, black housing

Technical

HOME



■ specifications: electrical

BATTERY: The VA4 is designed with a maintenance free, sealed Nickel-Cadmium battery providing a minimum emergency duration of 90 minutes. Recharge time of the battery is twenty-four (24) hours. The maximum battery working temperature is 45°C. The minimum working temperature is 10°C.

CIRCUIT: The VA4 has a 120/277V solid state transformer. Low voltage disconnect and brownout protection are standard. Red or green LEDs.

- Red LED - 3.2W
- Green LED - 3.8W

■ specifications: mechanical

The low profile design of the VA4 exit provides a clean, attractive and affordable solution. The durable thermoplastic housing is corrosion and flame resistant. The VA4 stencils include removable chevrons that allow for easy "in the field" installation decisions. The modern and efficient design of the VA4 allows for wall, ceiling or end mounting. Canopy and all installation hardware are included.

■ self-powered

The VA4-SA self-powered is designed to operate on battery power in the event of a regular / mains power failure. Both the battery and charger are completely contained within the standard enclosure. There are no external components and no alterations made to the external dimensions of the standard sign. The VA4-SA self-powered utilizes a solid state transformer technology that eliminates the possibility of relay failure due to particle build up on the relay. Status is easily determined via an LED that indicates AC-ON. A push button test switch allows maintenance personnel to quickly confirm the operational status of the exit on AC fail.

■ warranty

The VA4 comes with a 5-year factory warranty. Deliberate damage, misuse, improper installation effectively cancel the warranty.

PACO (PCH)

INDOOR | DAMP 

Job/Location: _____
Contractor: _____
Prepared By: _____

Job Type: _____
Date: _____

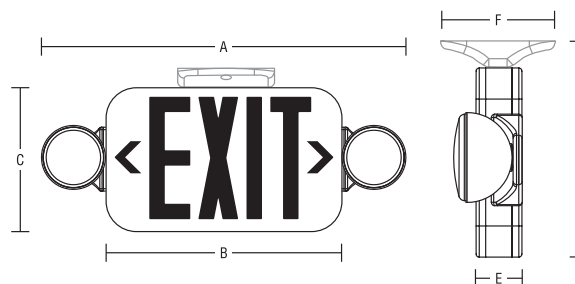


■ specifications: internal

The PACO (PCH) combination exit and emergency unit features performance and reliability in a small and attractive package. The PACO (PCH) uses a rechargeable, maintenance free nickel cadmium battery. Configured with 120/277V input. The circuit board features an onboard solid state transformer, low voltage disconnect and brownout protection. Red or green LEDs totaling less than 2W.

■ specifications: external

The PACO (PCH) is constructed from high impact, injection molded thermoplastic and comes standard in white, black is options. Each emergency head houses a single LED cluster that totals 1.5W. The PACO (PCH) features field adjustable chevrons and can be universally mounted single or double face (extra faceplate included). Integrated test switch/monitor LED gives immediate unit status. Damp location rated.



Series	A	B	C	D	E	F
PCH	17.9"	11.6"	7.2"	8.2"	1.75"	4.33"
	456mm	295mm	183mm	208mm	44mm	110mm

■ ordering logic

Series	LED Color	Options
PCH	R (red)	AT (autotest)
	G (green)	B (black finish)
		RC ¹ (remote capable)

NOTE 1: Max load per unit: 3.4W for 90 minutes

EXAMPLE: PCH-R-RC

DESCRIPTION: Self-powered exit emergency combo, red LED, remote capable, damp location.

Technical

HOME



■ emergency heads

Two fully adjustable lamp heads ensure emergency lighting performance, accurate positioning and reduced maintenance. Each emergency head houses a single LED cluster that totals 1.5W per head. PACO is remote capable of operating 2, single head remotes or 1 double head remote. Max load per unit: 3.4W. Remote heads are available.

■ specifications: electrical

BATTERY: The PACO (PCH) is designed with a 3.6V 900mAH maintenance free sealed nickel cadmium battery that provides minimum emergency duration of 90 minutes. The recharge time of the battery is 24 hours.

CIRCUIT: The PACO (PCH) has a 120/277V solid state transformer. Low voltage disconnect and brownout protection are standard. Red or green LEDs totaling <2W.

■ specifications: mechanical

PACO (PCH) features a modern design, a low profile, rounded corners and an overall reduced size making the PACO (PCH) one of the smaller,

code compliant exit signs available. The quick connect installation system allows for effortless surface mount installation.

■ self-powered

The PACO (PCH) is designed to operate on battery power in the event of regular / mains power failure. Both the battery and charger are completely contained within the standard sign. There are no external components and no alteration made to the external dimensions of the standard sign. Status is easily determined via an LED that indicates AC-ON. A push button test switch allows maintenance personnel to quickly confirm the operational status of the exit at any time.

■ warranty

The PACO (PCH) comes with a 3-year factory warranty. Deliberate damage, misuse, improper installation effectively void the warranty. For complete warranty details see online.