# City of Madison

## Proposed Demolition & Conditional Use

**Location**
1603-1609 Monroe Street

**Project Name**
Sixteen O Three Multi-family

**Applicant**
Gregg Shimanski - Sixteen O Three, LLC/
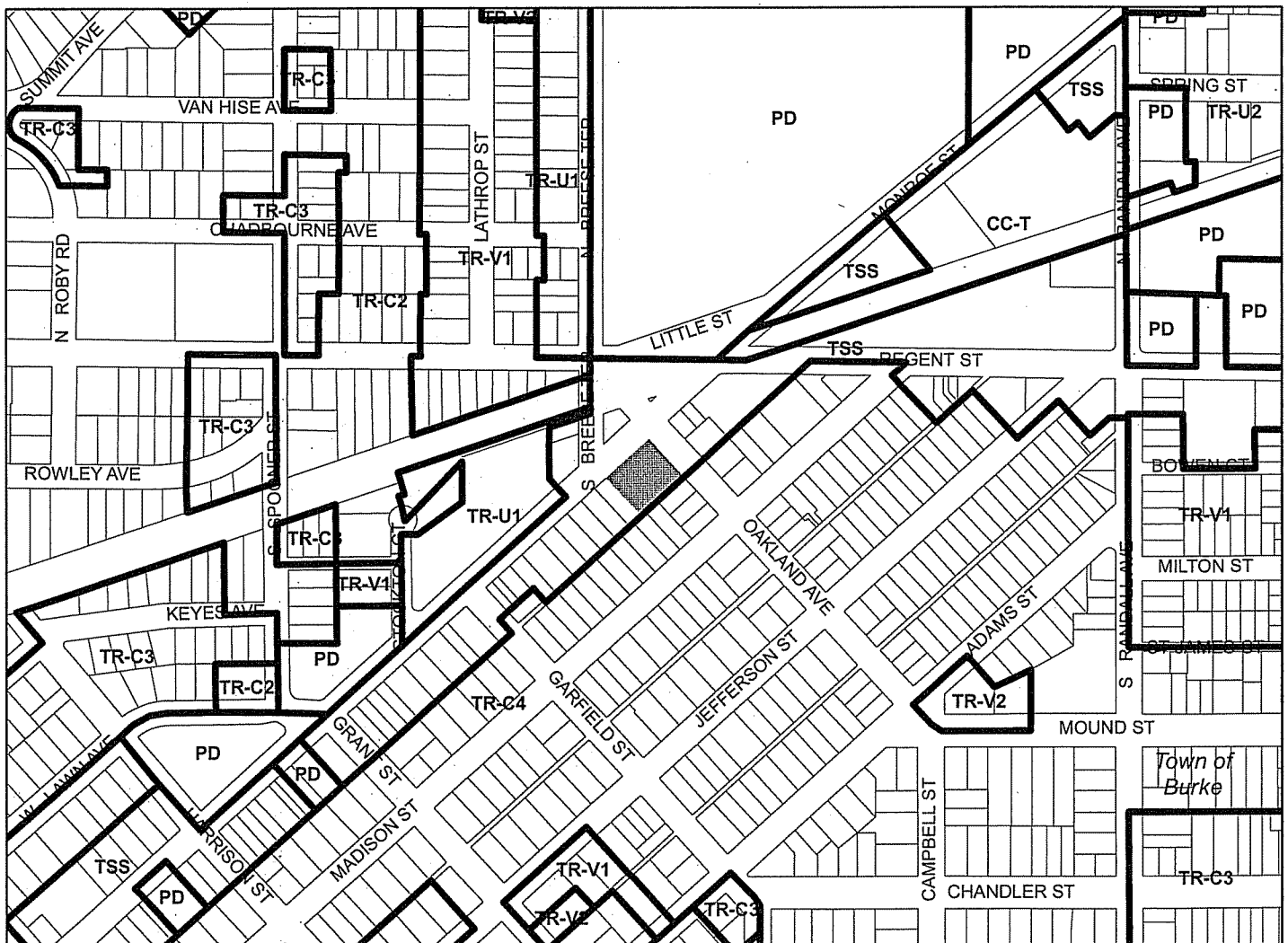Paul Cuta - CaS4 Architecture, LLC

**Existing Use**
Commercial building & single-family residence

**Proposed Use**
Demolish commercial building and single-family residence to construct mixed-use building with 5,200 square feet of commercial space and 48 multi-family dwellings

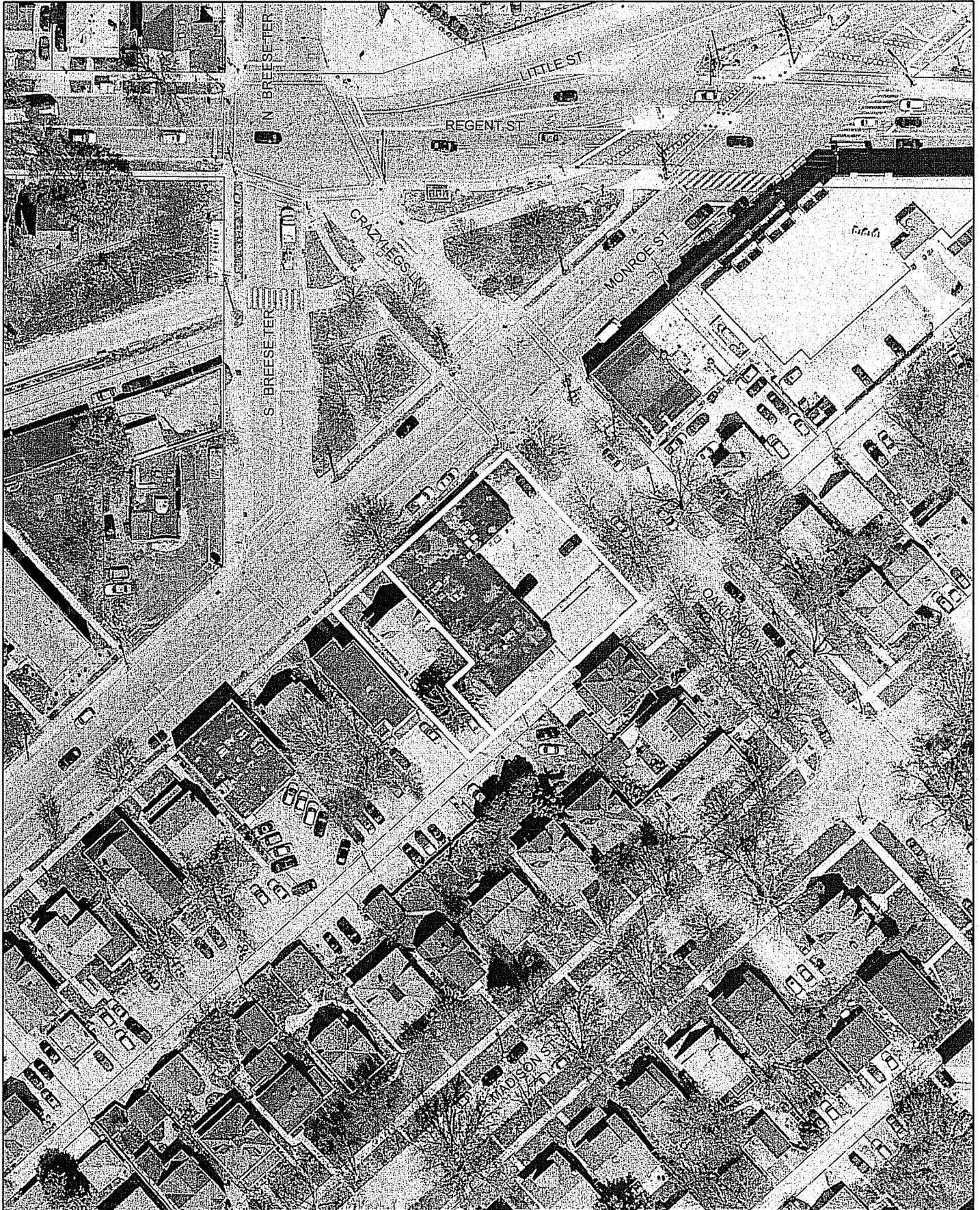**Public Hearing Date**
Plan Commission
23 May 2016
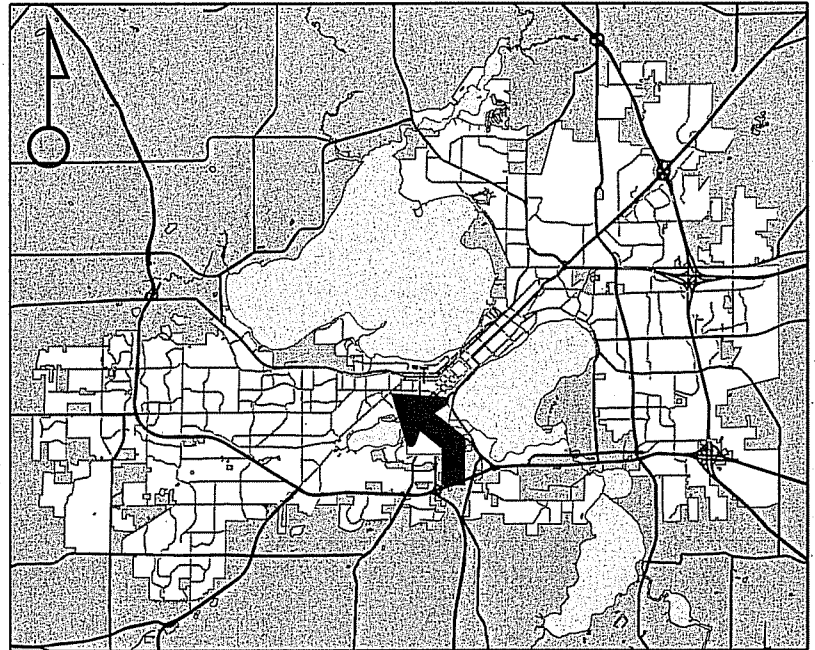
For Questions Contact: Kevin Firchow at: 267-1150 or kfirchow@cityofmadison.com or City Planning at 266-4635

Scale : 1" = 400'     City of Madison, Planning Division : RPJ : Date : 16 May 2016

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LITTLE ST

REGENT ST

N BREESE TER

S BREESE TER

CRAZY LEGS LN

MONROE ST

OAK

MADISON ST

# LAND USE APPLICATION

## CITY OF MADISON

**215 Martin Luther King Jr. Blvd; Room LL-100**
**PO Box 2985; Madison, Wisconsin 53701-2985**
**Phone: 608.266.4635 | Facsimile: 608.267.8739**

- All Land Use Applications should be filed with the Zoning Administrator at the above address.

- The following information is required for all applications for Plan Commission review except subdivisions or land divisions, which should be filed using the Subdivision Application.

- This form may also be completed online at: www.cityofmadison.com/developmentcenter/landdevelopment

1. **Project Address:** 1603-05-09 Monroe Street

   **Project Title (if any):** _____

2. **This is an application for** (Check all that apply to your Land Use Application):

   ☐ **Zoning Map Amendment from** _____ **to** _____

   ☐ **Major Amendment to Approved PD-GDP Zoning**   ☐ **Major Amendment to Approved PD-SIP Zoning**

   ☐ **Review of Alteration to Planned Development (By Plan Commission)**

   ☑ **Conditional Use, or Major Alteration to an Approved Conditional Use**

   ☑ **Demolition Permit**

   ☐ **Other Requests:** _____

3. **Applicant, Agent & Property Owner Information:**

   **Applicant Name:** Paul Cuta     Company: CāS4 Architecture, LLC

   **Street Address:** 303 S. Paterson, Ste. 1     City/State: Madison, WI     Zip: 53703

   **Telephone:** (608) 345-1114     Fax: (___) _____     Email: paul@cass4arch.com

   **Project Contact Person:** Same as noted above     Company: _____

   **Street Address:** _____     City/State: _____     Zip: _____

   **Telephone:** (___) _____     Fax: (___) _____     Email: _____

   **Property Owner (if not applicant):** Sixteen O Three, LLC by: Gregg Shimanski, member

   **Street Address:** 1603 Monroe Street     City/State: Madison, WI     Zip: 53711

4. **Project Information:**

   Provide a brief description of the project and all proposed uses of the site: Demolition of two existing buildings & construction of a new, 80,000 gsf, 5 floor mixed use building with 48 units & 5k of Commercial

   Development Schedule: Commencement July 2016     Completion July 2017

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## 5. Required Submittal Information

All Land Use applications are required to include the following:

☑ **Project Plans** including:*

- Site Plans (fully dimensioned plans depicting project details including all lot lines and property setbacks to buildings; demolished/proposed/altered buildings; parking stalls, driveways, sidewalks, location of existing/proposed signage; HVAC/Utility location and screening details; useable open space; and other physical improvements on a property)
- Grading and Utility Plans (existing and proposed)
- Landscape Plan (including planting schedule depicting species name and planting size)
- Building Elevation Drawings (fully dimensioned drawings for all building sides, labeling primary exterior materials)
- Floor Plans (fully dimensioned plans including interior wall and room location)

### Provide collated project plan sets as follows:

- *Seven (7) copies* of a full-sized plan set drawn to a scale of 1 inch = 20 feet (folded or rolled and stapled)
- *Twenty Five (25) copies* of the plan set reduced to fit onto 11 X 17-inch paper (folded and stapled)
- *One (1) copy* of the plan set reduced to fit onto 8 ½ X 11-inch paper

\* For projects requiring review by the **Urban Design Commission**, provide *Fourteen (14) additional 11x17 copies* of the plan set. In addition to the above information, all plan sets should also include: 1) Colored elevation drawings with shadow lines and a list of exterior building materials/colors; 2) Existing/proposed lighting with photometric plan & fixture cutsheet; and 3) Contextual site plan information including photographs and layout of adjacent buildings and structures. The applicant shall bring samples of exterior building materials and color scheme to the Urban Design Commission meeting.

☑ **Letter of Intent: Provide one (1) Copy per Plan Set** describing this application in detail including, but not limited to:

- Project Team
- Existing Conditions
- Project Schedule
- Proposed Uses (and ft$^2$ of each)
- Hours of Operation

- Building Square Footage
- Number of Dwelling Units
- Auto and Bike Parking Stalls
- Lot Coverage & Usable Open Space Calculations

- Value of Land
- Estimated Project Cost
- Number of Construction & Full-Time Equivalent Jobs Created
- Public Subsidy Requested

☑ **Filing Fee:** Refer to the Land Use Application Instructions & Fee Schedule. Make checks payable to: *City Treasurer.*

☑ **Electronic Submittal:** All applicants are required to submit copies of all items submitted in hard copy with their application as Adobe Acrobat PDF files on a non-returnable CD to be included with their application materials, or by e-mail to *pcapplications@cityofmadison.com.*

☑ **Additional Information** may be required, depending on application. Refer to the Supplemental Submittal Requirements.

## 6. Applicant Declarations

☑ **Pre-application Notification:** The Zoning Code requires that the applicant notify the district alder and any nearby neighborhood and business associations **in writing** no later than **30 days prior to FILING this request.** List the alderperson, neighborhood association(s), and business association(s) AND the dates you sent the notices:

Alder Sara Eskrich, Vilas Neighborhood Association, Demo List Serve - 12/18/16

→ If a waiver has been granted to this requirement, please attach any correspondence to this effect to this form.

☑ **Pre-application Meeting with Staff:** Prior to preparation of this application, the applicant is required to discuss the proposed development and review process with Zoning and Planning Division staff; note staff persons and date.

*Planning Staff:* Kevin Firchow    *Date:* 1/28/16    *Zoning Staff:* Matt Tucker    *Date:* 1/28/16

**The applicant attests that this form is accurately completed and all required materials are submitted:**

Name of Applicant ___Paul Cuta___    Relationship to Property: ___Architect___

Authorizing Signature of Property Owner _____ Date ___4/13/16___

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CaS₄
architecture, llc

Kevin Firchow                                                          4/13/16
City of Madison– Department of Planning
Department of Planning and Economic Development
215 Martin Luther King Jr. Blvd., Suite LL100
Madison, WI 53703

Re      Planning Commission Submittal – Letter of Intent
        Sixteen O Three Monroe– A Gregg Shimanski Development

Dear Kevin and Committee Members,

## Sixteen O Three Monroe

### Action Requested
Approval for demolition & Conditional Use.

### Introduction
1605 Monroe Street is a new, mixed-use building proposed on the corner of Monroe Street and Oakland Street. The building will combine the properties at 1603/1605 & 1609 Monroe Street and will require the complete demolition of the existing structures on the site. The existing buildings include a small, two story, dated office building with an adjacent parking structure and an older, two story, stick-frame house currently maintained as a rental property with student occupants. The proposed, new building is a mixed-use building comprised of two levels of structured parking, first floor commercial space, 44 rental housing units on levels one though four and residential condominiums on level five. One level of parking is completely below grade and served by a speed ramp parallel to the Alley. This parking is for the residential tenants. The upper parking level is partially exposed along Oakland Street and the Alley. This level provides 14 spaces of public use auto and bicycle parking with immediate access off of Oakland Street. This level also provides secured parking for the condominiums plus additional residential parking and commercial tenant with immediate access off of the alley. The first floor commercial space fronts Monroe Street with a modulated, recessed arcade that allows for accessible entry to multiple tenants as the site drops from West to East. This face is also held back from the sidewalk one foot to provide a planting edge and in conjunction with the recessed arcade, help to improve the pedestrian experience and active zone as one moves along the face of the building. The recessed storefront depth increases as it turns the corner, extending down Oakland Street, providing opportunity for an exterior activity or dinning terrace at the corner. The masonry structure is also pulled back at the corner with access to the elevated terrace provided by stairs at this location. This stair and terrace, in concert with the balconies above, help to both soften the corner and highlight its significance as one approaches and passes by the building. The residential entry is located along the West side of the building. This location mirrors residential access of the adjacent apartment building providing addition space to both entries and allowing for opportunities of social engagement. The building is articulated as a masonry structure with large vertical piers resulting in deep punched bays filled with expansive glass. This is indented to provide a strong feel of permanence while allowing significant natural light and visual modulation for tenants and the public. The modulation

also provides depth to the elevation and in addition to breaking the overall mass into scaled proportions more commonly found along Monroe Street. A more significant vertical bay is located at the primary entry location, which is also intended to help terminate the view terminus from Breese Terrace. The masonry mass is capped with a 4th level of gray, flat seam metal panel. The masonry is further eroded as one moves along Oakland Street and around the Alley elevation to reveal the same metal panel and help reduce the presence of the massing as it fronts the existing neighborhood to the South. The fifth level is stepped back to provide exterior terraces for the condominium units while minimizing the impact of the vertical mass on the street and to the adjacent neighborhoods. The building massing is purposely held 20 feet back along the length of the alley with an additional step-back of 18 feet along the Oakland, and extending west approximately 2/3 into the site to help mitigate the massing impact on the most immediate residential neighbors. The West side of the building also steps back from the West lot line, and above the first level, 10 feet to provide more space to the adjoining apartment building.

**Zoning**
The TSS zoning for this site allows for a zero lot line on all sides of the site including the alley and west side frontages. TSS zoning also allows more than three floors but only as a conditional use, which we are pursuing for both the area (exceeding 25,000 GSF) and height exceptions. The Monroe Street Commercial Plan, adopted by the City of Madison on March 27, 2007, identifies this block as in need of redevelopment and suggests heights of 3 to 4 floors with a step back. The authors of the Monroe Street Commercial Plan also recognized and anticipated that there will be unique sites and circumstances as development of the neighborhood progresses, noting specific to height and massing, "There are no absolutes; projects should be considered on a case-by-case basis with the general guidance that compatibility with the surroundings should be an emphasis in rendering approval decisions." Further specifics of this Plan also address considerations related to building height including but not limited to considerations such as: Design, Contextual Impacts (i.e. the resulting public space), Proximity to other Building Forms (i.e. the monumental historic structure) and Important Compensatory Value Added Features (such as public-use parking in our instance). Given this information and after studying this site and surround area, we feel strongly that this site has unique characteristics and opportunity to help shape an underutilized civic space located immediately across the street. Given the various factors, including the urban open space, topography and nearby structures, including the monumental historic structure across the square/park, this site warrants a more significant frontage along Monroe Street to help hold the urban edge and better define the resulting public space. This site is also significant as an urban square that becomes the confluence of many things such as the three neighborhoods coming together with the major civic/educational institution in addition to the multi-modal crossroads that already exists here (bike paths, b-cylce, pedestrian and several bus routes). We feel there is great opportunity to vastly improve the park and square across the street from this site by shaping it into a true civic crossroads, gathering space and activity center. This can be further enhanced by the elimination of Crazy Legs Lane to make the park space whole, which is also supported by the approved Monroe Street Commercial District Plan. We believe this space can become an activated and programmed urban plaza/park that is formed by the structures that help to shape the evolving fabric of our neighborhoods and City.

## Project Team
| | | |
|---|---|---|
| Owner | Sixteen O Three, LLC | Gregg Shimanski |
| Architect | CāS₄ Architecture, LLC | Paul Cuta |
| Contractor | TBD | TBD |

## Existing Conditions
See attached Photos

## Proposed Uses
| | | |
|---|---|---|
| Commercial | 5,020 | Net Square Feet |
| Parking & Storage | 27,976 | Gross Square Feet |
| Residential & General Use | 47'001 | Gross Square Feet |

## Hours of Operation
Typical hours of operation are:
Commercial     7:30 am – 6:00 pm     Monday – Friday
Residential     24 / 7

## Building Square Footage
79,997 Gross Square Feet

## Number of Dwelling Units
Forty Eight (48)
- 18 – Studios
- 4 – Convertible/One Bedroom Units
- 10 – One Bedroom Units
- 12 - Two Bedroom Units
- 4 - Condominium Units

## Auto & Bike Parking Stalls
| | | |
|---|---|---|
| Bicycle Parking | 63 | |
| Moped Parking | 16 | |
| Auto Parking | (62 Total) | |
| Accessible | 2 | |
| Van Accessible | 2 | |
| Non-Accessible | 58 | |

## Lot Coverage and Usable Open Space:
| | |
|---|---|
| Lot Size | 16,786 sf |
| Pervious Area: | |
| Landscape | 120 SF |
| Green Roof | 2,837 SF |
| Total | 2,957 SF |
| Proposed ISR | 82.4% |

Residential Balconies & Terraces      3,904 SF

**Value of Land**
$700,000 - $900,00

**Estimated Project Cost**
$10,500,000 ($8,800,000 construction cost)

**Number of Construction & Full-Time Equivalent Jobs Created**
Commercial Space                12        FTE's
Construction Jobs              15-30      FTE's
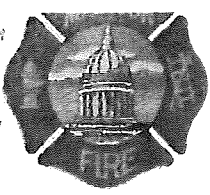
**Public Subsidy Requested**
None.

Paul M. Cuta, AIA
Partner

PMC/mds

Attachments:

Copied      File

# City of Madison Fire Department

30 West Mifflin Street, 8th & 9th Floors, Madison, WI 53703-2579
Phone: 608-266-4420 • Fax: 608-267-1100 • E-mail: *fire@cityofmadison.com*

| Project Address: | 1603 Monroe St. |
|---|---|
| Contact Name & Phone #: | Paul Cuta, 608-345-1114 |

## FIRE APPARATUS ACCESS AND FIRE HYDRANT WORKSHEET

| | Yes | No | N/A |
|---|---|---|---|
| 1. Is the building completely protected by an NFPA 13 or 13R automatic fire sprinkler system? | ☒ Yes | ☐ No | ☐ N/A |
| **If non-sprinklered,** fire lanes extend to within 150-feet of all portions of the exterior wall? | ☐ Yes | ☐ No | ☐ N/A |
| **If sprinklered,** fire lanes are within 250-feet of all portions of the exterior wall? | ☒ Yes | ☐ No | ☐ N/A |

| | Yes | No | N/A |
|---|---|---|---|
| 2. Is the fire lane constructed of concrete or asphalt, designed to support a minimum load of 85,000 lbs? | ☒ Yes | ☐ No | ☐ N/A |
| a) Is the fire lane a minimum unobstructed width of at least 20-feet? | ☒ Yes | ☐ No | ☐ N/A |
| b) Is the fire lane unobstructed with a vertical clearance of at least 13½-feet? | ☒ Yes | ☐ No | ☐ N/A |
| c) Is the minimum inside turning radius of the fire lane at least 28-feet? | ☐ Yes | ☐ No | ☒ N/A |
| d) Is the grade of the fire lane not more than a slope of 8%? | ☒ Yes | ☐ No | ☐ N/A |
| e) Is the fire lane posted as fire lane? (Provide detail of signage.) | ☐ Yes | ☒ No | ☐ N/A |
| f) Is a roll-able curb used as part of the fire lane? (Provide detail of curb.) | ☐ Yes | ☒ No | ☐ N/A |
| g) Is part of a sidewalk used as part of the required fire lane? (Must support +85,000 lbs.) | ☐ Yes | ☒ No | ☐ N/A |

| | Yes | No | N/A |
|---|---|---|---|
| 3. Is the fire lane obstructed by security gates or barricades? If yes: | ☐ Yes | ☒ No | ☐ N/A |
| a) Is the gate a minimum of 20-feet clear opening? | ☐ Yes | ☐ No | ☐ N/A |
| b) Is an approved means of emergency operations installed, key vault, padlock or key switch? | ☐ Yes | ☐ No | ☐ N/A |

| | Yes | No | N/A |
|---|---|---|---|
| 4. Is the Fire lane dead-ended with a length greater than 150-feet? | ☐ Yes | ☒ No | ☐ N/A |
| If yes, does the area for turning around fire apparatus comply with IFC D103? | ☐ Yes | ☐ No | ☐ N/A |

| | Yes | No | N/A |
|---|---|---|---|
| 5. Is any portion of the building to be used for high-piled storage in accordance with IFC Chapter 3206.6 If yes, see IFC 3206.6 for further requirements. | ☐ Yes | ☒ No | ☐ N/A |

| | Yes | No | N/A |
|---|---|---|---|
| 6. Is any part of the building <u>greater than 30-feet</u> above the grade plane? | ☒ Yes | ☐ No | ☐ N/A |
| If yes, answer the following questions: | | | |
| a) Is the aerial apparatus fire lane parallel to one entire side of the building and covering at least 25% of the perimeter? | ☒ Yes | ☐ No | ☐ N/A |
| b) Is the near edge of the aerial apparatus fire lane between 15' and 30' from the building? | ☒ Yes | ☐ No | ☐ N/A |
| c) Are there any overhead power or utility lines located across the aerial apparatus fire lane? | ☐ Yes | ☒ No | ☐ N/A |
| d) Are there any tree canopies expected to grow across the aerial fire lane? (Based on mature canopy width of tree species) | ☐ Yes | ☒ No | ☐ N/A |
| e) Does the aerial apparatus fire lane have a minimum unobstructed width of 26-feet? | ☒ Yes | ☐ No | ☐ N/A |
| f) Is the space between the aerial lane and the building free of trees exceeding 20' in heights? | ☒ Yes | ☐ No | ☐ N/A |

| | Yes | No | N/A |
|---|---|---|---|
| 7. Are all portions of the required fire lanes within 500-feet of at least (2) hydrants? | ☒ Yes | ☐ No | ☐ N/A |
| *Note: Distances shall be measured along the path of the hose lay as it comes off the fire apparatus.* | | | |
| a) Is the fire lane at least 26' wide for at least 20-feet on each side of the hydrants? | ☒ Yes | ☐ No | ☐ N/A |
| b) Is there at least 40' between a hydrant and the building? | ☒ Yes | ☐ No | ☐ N/A |
| c) Are the hydrant(s) setback no less than 5-feet nor more than 10-feet from the curb or edge of the street or fire lane? | ☒ Yes | ☐ No | ☐ N/A |
| d) Are hydrants located in parking lot islands a minimum of 3½-feet from the hydrant to the curb? | ☐ Yes | ☒ No | ☐ N/A |
| e) Are there no obstructions, including but not limited to: power poles, trees, bushes, fences, posts located, or grade changes exceeding 1½-feet, within 5-feet of a fire hydrant? | ☒ Yes | ☐ No | ☐ N/A |

*Note: Hydrants shall be installed and in-service prior to combustible construction on the project site.*

Attach an additional sheet if further explanation is required for any answers.

This worksheet is based on **MGO 34.503** and **IFC 2012 Edition Chapter 5 and Appendix D**; please see the codes for further information.

# HALO

## DESCRIPTION

The Halo Surface LED Downlight (SLD) incorporates WaveStream™ technology to create an ultra-low profile surface mounting luminaire with the performance and look of a traditional downlight. SLD4 is designed for installation in many 3-1/2″ and 4″ round or octagon junction boxes. May also retrofit in 4″ aperture IC and Non-IC recessed housings*. Dedicated LED wiring connector meets high-efficacy code requirement in recessed downlighting. Suitable for residential or commercial installations. Ideal for closets, storage areas, attics and basements. Compliant with NFPA® 70, NEC® Section 410.16 (A)(3) and 410.16 (C)(5).

| Catalog # | |
|---|---|
| Project | |
| Comments | |
| Prepared by | |

| Type | |
|---|---|
| **CL1** | |
| Date | |

## SPECIFICATION FEATURES

### CONSTRUCTION
- Die cast aluminum trim ring and die formed aluminum frame

### OPTICS
- WaveStream™ technology provides uniform luminance from a low profile flat lens
- AccuAim™ optics provide directional control for the "cone-of-light" beam distribution of a traditional downlight
- Precision molded lens features high transmission polymer with UV stabilized protecting film

### DESIGNER TRIMS
**Accessories (sold separately)**
SLD designer trims are accessory rings that attach to the SLD for a permanent finish. Refer to SLD accessories specification sheet for details.
- White (Paintable)
- Satin Nickel
- Tuscan Bronze

### ELECTRICAL JUNCTION BOX MOUNTING
- SLD may be used in compatible electrical junction boxes in direct contact with insulation including spray foam insulation
- Suitable for installation in many 3-1/2″ and 4″ octagon and round electrical junction boxes.
  **Note:** Driver consumes 3 cubic inches of junction box.
- Surface mounting in a fire-rated ceiling using an appropriate electrical box offers a cost-effective alternative to fire-rated recessed housings
  **Note:** Fire-rating is per the rating of the ceiling and applicable junction box, not the SLD.

- Installer must ensure compatibility of fit, wiring and proper mounting in the electrical junction box. This includes all applicable national and local electrical and building codes.
- Proprietary Slot-N-Lock quick installation system for junction box installation
- T-bracket with Slot-N-Lock mounting tabs included.

### RECESSED HOUSING MOUNTING
**Friction Blade**
- Pre-installed precision formed friction blades included
- Friction blade design allows the SLD to be installed in any position within the housing aperture (360 degrees)
* **Note:** Not for use in recessed housings in direct contact with spray foam insulation refer to NEMA LSD 57-2013

### LED
- Trilateral linear LED assembly is integrated in trim perimeter.
- Color Temperature: 2700K, 3000K, 3500K, 4000K
- CRI options: 80 and 90
  - 90 CRI can be used for California Title 24 compliance/certified to Title 20
  - 80 CRI can be used to comply with California Title 24 Non-Residential Lighting Controls as a LED luminaire.
- L70 at 50,000 hours projected in accordance with TM-21

### WARRANTY
Cooper Lighting provides a five year limited warranty on the SLD LED

### LED CHROMATICITY
- A tight chromaticity specification ensures LED color uniformity, sustainable Color Rendering Index (CRI) and Correlated Color Temperature (CCT) over the useful life of the LED
- LED chromaticity of 3 SDCM exceeds ENERGY STAR® color standards per ANSI C78.377-2008
- 90 CRI model features high color performance with R9 greater than 50
- Every Halo LED is quality tested, measured, and serialized in a permanent record to register lumens, wattage, CRI and CCT.
- Halo LED serialized testing and measurement ensures color and lumen consistency on a per-unit basis, and validates long-term product consistency over time

### ELECTRICAL CONNECTIONS
**Junction Box**
- Compatible with many 3-1/2″ x 2″ and 4″ x 1-1/2″ round and octagon boxes (2-1/8″ deep boxes recommended)
- Supply Wire Adapter with LED quick connector included

**Recessed Housings**
- LED connector is compatible with Halo 4″ H995 Series LED Housings.
- LED Connector meets California Title-24 high-efficacy luminaire standard as a non-screw base
- The included E26 Edison screw-base adapter provides capability for retrofit.
- LED connector is a non-screwbase luminaire disconnect for tool-less installation
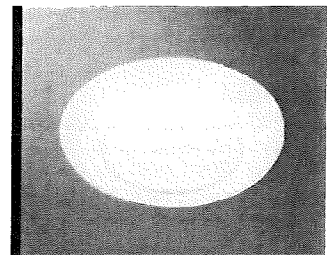
## SLD4058xxWH
### 80CRI
**2700K, 3000K, 3500K, and 4000K**

## SLD4059xxWH
### 90CRI
**2700K, 3000K, 3500K, and 4000K**

**4″ Surface LED Downlight**

**Suitable for ceiling or wall electrical junction boxes**

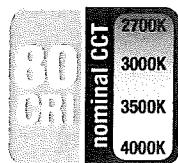**Suitable for 4″ recessed housing retrofit (IC, Non-IC & AIR-TITE™)**

### ENERGY DATA

| | 80 CRI | 90 CRI |
|---|---|---|
| Lumens (4000K models) | 800 | 710 |
| Input Voltage | 120V | 120V |
| Frequency | 50/60 Hz | 50/60 Hz |
| Input Current | 0.10 A | 0.10 A |
| Input Power | 12.2 W | 12 W |
| Efficiency (4000K models) | 66 lm/W | 59 lm/W |
| THD | ≤ 20% | |
| Power Factor | ≥ 0.90 | |
| T Ambient | -30 - +40°C | |
| Sound Rating | Class A | |

### NOMENCLATURE

**S L D 405 8 30 WH**
- **405** = 4″ SLD
- **8** = >80 CRI
- **30** = 3000K
- **WH** = Matte White

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**80 CRI** nominal CCT: 2700K, 3000K, 3500K, 4000K

IECC · T24 California Non-Residential Lighting Controls requirements · WSEC · RoHS Compliant · air-tite · Showerlight

Refer to ENERGY STAR® Certified Products List.
Can be used to comply with California Title 24 Non-Residential Lighting Controls requirements as a LED Luminaire.

**90 CRI** nominal CCT: 2700K, 3000K, 3500K, 4000K

IECC · T24 Certified to comply with California Title 24 High Efficacy requirements · T20 Certified to California Title 20 Appliance Database · WSEC · RoHS Compliant · air-tite · Showerlight

Refer to ENERGY STAR® Certified Products List.
Can be used to comply with California Title 24 High Efficacy requirements.
Certified to California Title 20 Appliance Efficiency Database.

**F·T·N**
*Powering Business Worldwide*

ADV142257
10/07/2015

# HALO
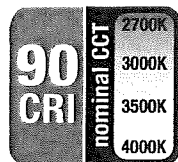
## LED DRIVER
- Driver is a 120V input high efficiency, dimmable electronic power supply providing DC power to the LED array
- Driver features high power factor, low THD, and has integral thermal protection in the event of over temperature or internal failure.
- Driver is replaceable if it should be required

## DIMMING
- Designed for continuous dimming capability to nominally 5% with many 120V Leading Edge (LE) and Trailing Edge (TE) phase control dimmers. Dimming to 5% is best assured using dimmers with low end trim adjustment. Consult dimmer manufacturer for compatibility and conditions of use. (Note some dimmers require a neutral in the wallbox.)

## COMPLIANCE
- cULus Listed ceiling and wall
- cULus Damp Location listed ceiling and wall
- cULus Wet Location Listed, ceiling only (shower rated)
- Suitable for use in closets, compliant with NFPA® 70, NEC® Section 410.16 (A)(3) and 410.16 (C)(5)
- SLD may be used in compatible electrical junction boxes in direct contact with insulation including spray foam insulation
- May be installed in IC recessed housings in direct contact with insulation (Not for use in recessed housings in direct contact with spray foam insulation. Refer to NEMA LSD 57-2013)
- UL Classified when used in retrofit with listed housings (See Housing Compatibility)
- EMI/RFI: meets FCC 47CFR Part 15 Class B limits, and is suitable for use in residential and commercial installations
- Airtight certified per ASTM E283 (not exceeding 2.0 CFM under 57 Pascals pressure difference)
- 90 CRI: Can be used to comply with California Title 24 High Efficacy requirements. Certified to California Title 20 Appliance Efficiency Database.
- 80 CRI: Can be used to comply with California Title 24 Non-Residential Lighting Controls requirements as a LED luminaire.
- Can be used for International Energy Conservation Code (IECC) and Washington State Energy Code high efficiency luminaire compliance
- ENERGY STAR® Certified luminaire - consult ENERGY STAR® Certified Product List
- Contains no mercury or lead and RoHS compliant.
- Photometric testing in accordance with IES LM-79
- Lumen maintenance projections in accordance with IES LM-80 and TM-21
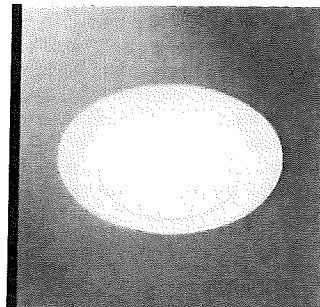


## SLD4058xxWH
### 80CRI
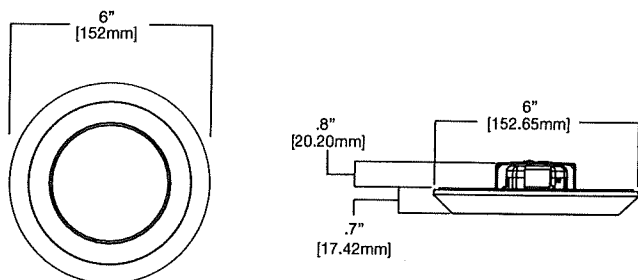**2700K, 3000K, 3500K, and 4000K**

## SLD4059xxWH
### 90CRI
**2700K, 3000K, 3500K, and 4000K**

**4" Surface LED Downlight**

**Suitable for ceiling or wall electrical junction boxes**

**Suitable for 4" recessed housing retrofit (IC, Non-IC & AIR-TITE™)**

## DIMENSIONS



6"
[152mm]

.8"
[20.20mm]

6"
[152.65mm]

.7"
[17.42mm]

## ORDERING INFORMATION

**SAMPLE NUMBER:** SLD405927WH  SLD4TRMSN
**Junction Box Installation:** Order junction box separately, as supplied by others, to complete installation.
**Recessed Installation:** Order Halo recessed housing separately to complete installation.

| Models | Color Rendering Index | Color Temperature (CCT) | Finish | Accessories |
|---|---|---|---|---|
| SLD405= 4" Surface LED Downlight, 120V | 8=80 CRI<br>9=90 CRI | 27=2700K<br>30=3000K<br>35=3500K<br>40=4000K | WH=White | **Designer Trims**<br>Fit over the SLD4 for a designer finish<br>SLD4TRMSN=4" SLD Satin Nickel<br>SLD4TRMTBZ=4" SLD Tuscan Bronze<br>SLD4TRMWH=4" SLD White (paintable)<br><br>**J-Box Spacer Extension Ring**<br>Add 15/16" depth when SLD driver cannot fit into installed junction box<br>SLD4EXT=4" Surface LED J-Box Extender, 7.75" O.D.<br><br>**RAD Adapters**<br>When junction box is mounted flat on a ceiling or beam surface (not recessed in ceiling)<br>SLD4RAD=4" SLD Round Surface J-Box Adapter, 6.15" O.D. (For 4-inch round or octagon junction boxes)<br><br>**Spare Parts**<br>SLD4ACCKIT=4" Accessory Parts Replacement Kit (Screwbase adapter, torsion springs, friction blades)<br>SLD4BRKT=4" Junction Box Bracket & Screws<br><br>Refer to SLD Accessories specification sheet for further information. |

## FAT·N
*Powering Business Worldwide*

## HOUSING COMPATIBILITY

The SLD4 is UL Listed in Halo and All-Pro recessed housings, and is UL Classified for use with <u>any</u> 4 inch diameter recessed housing constructed of steel or aluminum with an internal volume that exceeds 62.3 in³ in addition to those noted below:

| Compatible Halo LED Housings with LED luminaire connector (high-efficacy compliant) | | |
|---|---|---|
| **HALO LED** | **Recessed Can Size** | **Catalog Number** |
| | **4"** | H995ICAT, H995RICAT |

| Compatible Halo Incandescent E26 Screwbase Housings | | |
|---|---|---|
| **HALO** | **Recessed Can Size** | **Catalog Number** |
| | **4"** | H99ICAT, H99TAT, H99RTAT |

| Compatible All-Pro Incandescent E26 Screwbase Housings | | |
|---|---|---|
| **ALL-PRO** | **Recessed Can Size** | **Catalog Number** |
| | **4"** | EI400ATSB, ET400ATSB, ET400RATSB |

## COMPATIBLE WITH EATON'S CROUSE-HINDS JUNCTION BOXES
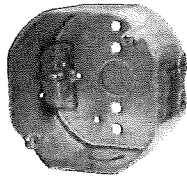


**TP316**
for non-metallic cable
4" x 4" x 2-1/8"
(102mm x 102mm x 54mm)
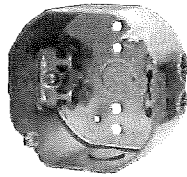


**TP317**
for metal clad cable
4" x 4" x 2-1/8"
(102mm x 102mm x 54mm)

- **TP316** - for non-metallic cable
- **TP317** - for metal clad cable
- UL Listed
- Suitable for two-hour fire-rated ANSI/UL 263 when properly installed in a fire-rated ceiling or wall
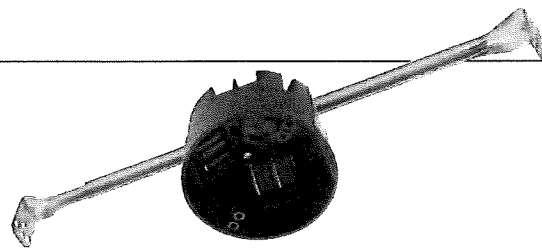- Refer to www.crouse-hinds.com

## COMPATIBLE WITH MANY OTHER JUNCTION BOXES*
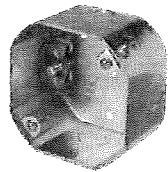


**4" octagon light fixture/fan steel box**
4" x 4" x 2-1/8"
(102mm x 102mm x 54mm)
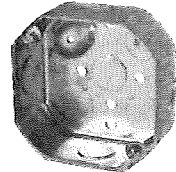


**4" octagon steel box**
4" x 4" x 1-1/2"
(102mm x 102mm x 38mm)



**4" round new work non-metallic box with hanger bar assembly**
4" diameter x 2-3/16" (102mm x 56mm)
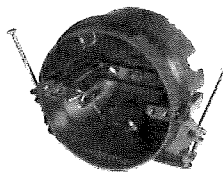


**4" round new work non-metallic light fixture/fan box**
4" diameter x 2-3/16"
(102mm x 56mm)
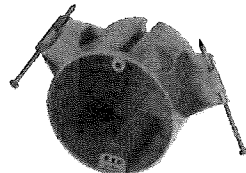


**3-1/2" round new work non-metallic ceiling box**
3-1/2" diameter x 2-3/4"
(89mm x 70mm)



**3-1/2" round old work non-metallic box**
4-1/4" O.D. flange, 3-1/2" I.D. x 2-5/8"
(108mm O.D., 89mm I.D. x 67mm)



**4" round surface mount box**
4" diameter x 1-1/2"
(102mm x 38mm)
Requires SLD4RAD adapter

Surface mounting in a fire-rated ceiling using an appropriate electrical box offers a cost-effective alternative to fire-rated recessed housings.
**Note:** Fire-rating is per the rating of the ceiling and applicable junction box, not the SLD.

*This is a representative list of compatible junction boxes only. Information contained in this literature about other manufacturers' products is from published information made available by the manufacturer and is deemed to be reliable, but has not been verified. Eaton makes no specific recommendation on product selection and there are no warranties of performance or compatibility implied. Installer must determine that site conditions are suitable to allow proper installation of the SLD mounting bracket in the box.

## PRODUCT DATA

| Cat No. | CRI | CCT | Lumens | Power (W) | LPW |
|---------|-----|------|--------|-----------|-----|
| SLD405827WH | 81 | 2700 | 720 | 12.2 | 59 |
| SLD405830WH | 81 | 3000 | 750 | 12.2 | 61 |
| SLD405835WH | 81 | 3500 | 780 | 12.2 | 64 |
| SLD405840WH | 81 | 4000 | 800 | 12.2 | 66 |
| SLD405927WH | 92 | 2700 | 650 | 12 | 54 |
| SLD405930WH | 92 | 3000 | 670 | 12 | 56 |
| SLD405935WH | 92 | 3500 | 690 | 12 | 58 |
| SLD405940WH | 92 | 4000 | 710 | 12 | 59 |

Performance values are presented as typical for the model(s) indicated. Field results may vary.

## LIGHTING FACTS®

### SLD405827WH - 80 CRI

| | |
|---|---|
| Light Output (Lumens) | 720 |
| Watts | 12.2 |
| Lumens per Watt (Efficacy) | 59.02 |
| Color Accuracy / Color Rendering Index (CRI) | 81 |

Light Color / Correlated Color Temperature (CCT): 2700 (Warm White)

Visit www.lightingfacts.com for the Label Reference Guide.

### SLD405830WH - 80 CRI

| | |
|---|---|
| Light Output (Lumens) | 750 |
| Watts | 12.2 |
| Lumens per Watt (Efficacy) | 61.48 |
| Color Accuracy / Color Rendering Index (CRI) | 81 |

Light Color / Correlated Color Temperature (CCT): 3000 (Bright White)

Visit www.lightingfacts.com for the Label Reference Guide.

### SLD405835WH - 80 CRI

| | |
|---|---|
| Light Output (Lumens) | 780 |
| Watts | 12.2 |
| Lumens per Watt (Efficacy) | 63.93 |
| Color Accuracy / Color Rendering Index (CRI) | 81 |

Light Color / Correlated Color Temperature (CCT): 3500 (Bright White)

Visit www.lightingfacts.com for the Label Reference Guide.

### SLD405840WH - 80 CRI

| | |
|---|---|
| Light Output (Lumens) | 800 |
| Watts | 12.2 |
| Lumens per Watt (Efficacy) | 65.57 |
| Color Accuracy / Color Rendering Index (CRI) | 81 |

Light Color / Correlated Color Temperature (CCT): 4000 (Bright White)

Visit www.lightingfacts.com for the Label Reference Guide.

### SLD405927WH - 90 CRI

| | |
|---|---|
| Light Output (Lumens) | 650 |
| Watts | 12 |
| Lumens per Watt (Efficacy) | 54.17 |
| Color Accuracy / Color Rendering Index (CRI) | 92 |

Light Color / Correlated Color Temperature (CCT): 2700 (Warm White)

Visit www.lightingfacts.com for the Label Reference Guide.

### SLD405930WH - 90 CRI

| | |
|---|---|
| Light Output (Lumens) | 670 |
| Watts | 12 |
| Lumens per Watt (Efficacy) | 55.83 |
| Color Accuracy / Color Rendering Index (CRI) | 92 |

Light Color / Correlated Color Temperature (CCT): 3000 (Bright White)

Visit www.lightingfacts.com for the Label Reference Guide.

### SLD405935WH - 90 CRI

| | |
|---|---|
| Light Output (Lumens) | 690 |
| Watts | 12 |
| Lumens per Watt (Efficacy) | 57.5 |
| Color Accuracy / Color Rendering Index (CRI) | 92 |

Light Color / Correlated Color Temperature (CCT): 3500 (Bright White)

Visit www.lightingfacts.com for the Label Reference Guide.

### SLD405940WH - 90 CRI

| | |
|---|---|
| Light Output (Lumens) | 710 |
| Watts | 12 |
| Lumens per Watt (Efficacy) | 59.17 |
| Color Accuracy / Color Rendering Index (CRI) | 92 |

Light Color / Correlated Color Temperature (CCT): 4000 (Bright White)

Visit www.lightingfacts.com for the Label Reference Guide.

Specifications and
dimensions subject to
change without notice.

# HALO®

## HALO LED H4 Series - 2nd Generation

The Halo H4 LED is a family of 4" aperture recessed downlight H457 series of housings designed for exclusive use with Halo EL406, ELG406, ELSG406 Series LED Light Engines and compatible 4" TL4 and TLS4 LED trims. Halo H4 LED housings have integral LED drivers that offer dimming as a standard feature.

This is an insulated ceiling* AIR-TITE™ housing offering 120 volt dimming capability. The H4 LED series offers high quality down-lighting along with high efficacy – the result being great lighting and significant energy savings.

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## DESIGN FEATURES

### MECHANICAL

**Housings**
- Enclosure of formed aluminum construction.
- Openings are gasketed AIR-TITE.
- Designed for insulated ceilings in direct contact with insulation.* (May also be installed in non-insulated ceilings.)

**Plaster Frame**
- Galvanized steel die-formed construction.
- The collar can be removed from plaster frame to provide access to the junction box.
- Collar adjusts for ceilings up to 1-1/2" thick.
- Plaster frame features include:
  - Patented regressed locking screw positioned for securing hanger bars from below the ceiling.
  - Cutouts for easily crimping hanger bars in position.
  - AIR-TITE aperture gasket is pre-installed.
  - HALO identity embossed on plaster frame.

**GOT NAIL! Pass -N-Thru™ Bar Hangers**
- Pre-installed nail easily installs in regular lumber, engineered lumber and laminated beams.
- Safety and guidance system prevents snagging, ensures smooth straight nail penetration and allows bar hangers to be easily removed if necessary.
- Automatic leveling flange aligns the housing and lets you hold the housing in place with one hand while driving nails.
- Housing can be positioned at any point within 24" joist span.
- Pass-N-Thru™ feature allows bar hangers to be shortened without removing from plaster frame.
- Score lines allow "tooless" shortening for 12" joists.
- Bar hangers may be repositioned 90°.
- Integral T-bar clip snaps onto T-bars - no additional clips required.

**Slide-N-Side™ Junction Box**
- Positioned to accommodate straight conduit runs
- Seven 1/2" trade size conduit knockouts with true pry-out slots
- Slide-N-Side™ wire traps allow non-metallic sheathed cable to be installed without tools and without removing knockouts.
- Accepts a wide range of non-metallic (type NM) sheathed cables - the standard cable types used in lighting in both U.S. and Canada.
  - Allows wiring connections to be made outside the junction box
  - Simply insert the cable directly into the trap after connections are made.
  - Accommodates the following standard non-metallic sheathed cable sizes:
    (US) #14/2, #14/3, #12/2, #12/3
    (Canada) #14/2, #14/3, #12/2

**LED Light Engine Connection**
- LED connector is a non-screw base connector offering easy installation with the H4 LED 2nd Generation EL406, ELG406, ELSG406 Series LED Light Engines.
- LED connector meets high-efficacy luminaire requirement for a non-screw base socket, and where required to qualify as a high-efficacy luminaire. (California Title-24)

**LED Driver**
- LED dimmable driver mounts to the housing.
- Driver is a120 Volt, high efficiency, electronic power supply providing low voltage power to EL Series LED Light Engines.
- Driver meets FCC EMI/RFI Consumer Level limits for use in residential and commercial installations.
- Driver features high power factor and low THD and has integral thermal protection in the event of over temperature or internal failure.
- Driver is specifically designed for compatibility with EL406 LED Light Engines, and ELG406, ELSG406 Adjustable Gimbal Light Engine / Trims.
- If dimming is not required the fixture can be operated from a standard wall switch.

**Dimming**
- The HALO H4 LED luminaire is designed for dimming capability to 10% in normal operation with most 120V leading edge (LE) and trailing edge (TE) phase control dimmers. H4 LED may also dim to 5% using dimmers with low end trim adjustment. (Consult dimmer manufacturer for application/compatibility/ loading. Note, some dimmers require a neutral in the wallbox).

**Warranty**
Cooper Lighting provides a five year limited warranty on Halo LED Luminaires which includes the LED Recessed Housing, LED Light Engine, and LED trims.

**Labels**
- UL/cUL Listed 1598 Luminaire
- UL/cUL Listed for Damp Location
- UL/cUL Listed for Wet Location, covered ceiling - with select trims
- UL/cUL listed for Direct Contact with insulation and combustible material*

**Qualifications**
- Use with designated LED light engines and trims for ENERGY STAR® qualification.**
- Can be used for State of California Title 24 high efficacy luminaire compliance**
- Can be used for Washington State Energy Code (WSEC) and International Energy Conservaction Code (IECC) high efficacy luminaire compliance

**IC and AIR-TITE™**
Certified under ASTM-E283 and listed UL/cUL 1598. May be used to meet insulated ceiling and restricted air-flow requirements such as:
- Washington State Energy Code (WSEC)
- International Energy Conservation Code (IECC)
- New York State Energy Conservation Construction Code (NY-ECCC)
- State of California Title 24 "Recessed Luminaires in Insulated Ceilings."

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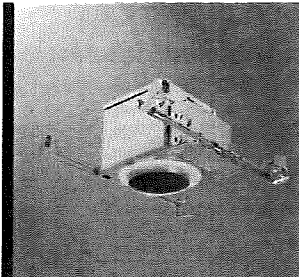
### H457ICAT1E

**4-Inch LED Recessed Housing New Construction Insulated Ceiling**

**High Efficacy LED Housing-Dimmable**

**FOR USE IN INSULATED CEILINGS FOR DIRECT CONTACT WITH INSULATION***

**ALSO SUITABLE FOR NON-IC APPLICATIONS**

**H4 Series LED Energy Data:**
(Values at non-dimming line voltage.)
Minimum Starting Temp: -30°C (-22°F)
EMI/RFI: FCC Title 47 CFR, Part 18 (Consumer)
Sound Rating: Class A standards
Input Voltage: 120V
Power Factor: >0.90
Input Frequency: 50/60Hz
THD: <20%
Input Power: 13W
Input Current: 121mA
Driver Compliance: UL6950, LPS rated
Maximum IC (Insulated Ceiling) Ambient Continuous Operating Room Temperature: 25°C (77°F)
Maximum Non-IC (Non-Insulated Ceiling) Ambient Continuous Operating Room Temperature: 40°C (104°F)

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## COOPER Lighting
www.cooperlighting.com
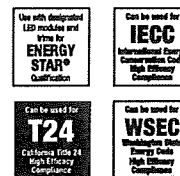
*Not for use with housings in direct contact with spray foam insulation.
**Refer to ENERGY STAR® Qualified Products List and CEC (T24) Appliance Database for listings.

# HALO®

## DIMENSIONS



5-3/8 inch (136 mm) outer dimension

6 inch (152 mm)

4-1/4 inch (108 mm)

1/2 inch (13 mm)

8-1/2 inch (216 mm)
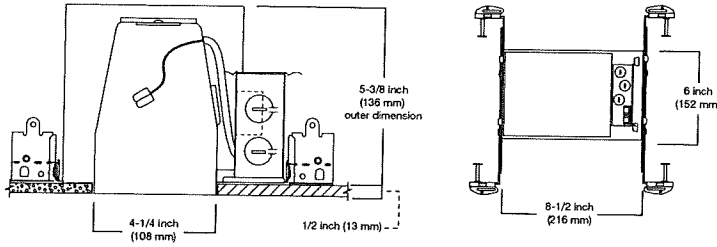
## ORDERING INFORMATION - H4 LED Downlights

**SAMPLE NUMBER:** H457ICAT1E - EL406927 - TL410SC
Complete unit includes LED housing, light engine and trim; ordered separately.

| H4 LED Housing | | | H4 LED Light Engine | | |
|---|---|---|---|---|---|
| | | | **EL406** | **CRI** | **CCT** |
| **H457** = 4" housing H4 LED series downlight, 2nd Generation | **ICAT** = New Construction Insulated Ceiling, AIR-TITE | **1E** = LED driver, 120V, 50/60 Hz, dimmable, LE/TE* phase control dimmers (refer to dimmer manufacturer). | **EL406** = 4" LED Downlight Engine, 2nd Generation | **9** = 90 CRI | **27** = 2700K<br>**30** = 3000K<br>**35** = 3500K<br>**40** = 4000K |

| Trim Options | | Accessories |
|---|---|---|
| **TL410SC** = Specular Clear Reflector, Diffuse Polymer Dome Lens, White Ring, Shower Rated | **TL402TBZS** = Tuscan Bronze Reflector, Solite® Glass Lens, and Tuscan Bronze Ring, Shower Rated | **Thin Profile Designer Trim Rings**<br>*For use with Round TL4 trims (not compatible with Square TLS4 trims, or adjustable gimbals ELG, ELSG trims.)* |
| **TL410H** = Haze Reflector, Diffuse Polymer Dome Lens, White Ring, Shower Rated | **TL402SBKS** = Specular Black Reflector, Solite® Glass Lens, and White Ring, Shower Rated | **TRM400WH** = White |
| **TL410WH** = White Reflector, Diffuse Polymer Dome Lens, White Ring, Shower Rated | **TL403WBS** = White Baffle, Solite® Glass Lens, and White Ring, Shower Rated | **TRM400BK** = Black<br>**TRM400SN** = Satin Nickel |
| **TL410SN** = Satin Nickel Reflector, Diffuse Polymer Dome Lens, Satin Nickel Ring, Shower Rated | **TL403BBS** = Black Baffle, Solite® Glass Lens, and White Ring, Shower Rated | **TRM400TBZ** = Tuscan Bronze<br>**TRM400PC** = Polished Chrome |
| **TL410TBZ** = Tuscan Bronze Reflector, Diffuse Polymer Dome Lens, Tuscan Bronze Ring, Shower Rated | **TLS408WHWB** = Square Baffle Trim, Solite® Glass Lens, White Ring with White Baffle, Shower Rated | |
| **TL410SBK** = Specular Black Reflector, Diffuse Polymer Dome Lens, White Ring, Shower Rated | **TLS408WHBB** = Square Baffle Trim, Solite® Glass Lens, White Ring with Black Baffle, Shower Rated | |
| **TL411WB** = White Baffle, Diffuse Polymer Dome Lens, White Ring, Shower Rated | **TLS408SNBB** = Square Baffle Trim, Solite® Glass Lens, Satin Nickel Ring with Black Baffle, Shower Rated | |
| **TL411BB** = Black Baffle, Diffuse Polymer Dome Lens, White Ring, Shower Rated | **TLS408TBZBB** = Square Baffle Trim, Solite® Glass Lens, Tuscan Bronze Ring with Black Baffle, Shower Rated | |
| **TL402SCS** = Specular Clear Reflector, Solite® Glass Lens, and White Ring, Shower Rated | **TL409WW** = Wall Wash, Semi-Specular Clear Reflector with White Ring, Shower Rated | |
| **TL402HS** = Haze Reflector, Solite® Glass Lens, and White Ring, Shower Rated | **TL409WHWW** = Wall Wash, White Reflector with White Ring, Shower Rated | |
| **TL402WHS** = White Reflector, Solite® Glass Lens, and White Ring, Shower Rated | **TL422PS** = Polymer "Dead Front" White Baffle & Regressed Lens, White Ring, Shower Rated | |
| **TL402SNS** = Satin Nickel Reflector, Solite® Glass Lens, and Satin Nickel Ring, Shower Rated | | |

* LE = Leading Edge (forward phase control) dimming
* TE = Trailing Edge (reverse phase control) dimming

## ORDERING INFORMATION - H4 LED Adjustable Gimbals

**SAMPLE NUMBER:** H457ICAT1E - ELG406930WH
Complete unit includes LED housing, light engine and trim; ordered separately.

| H4 LED Light Engine | | | | Optional Accessory Reflector Kit | Optional Lens Media |
|---|---|---|---|---|---|
| | **CRI** | **CCT** | **Finish** | *(order separately)* | *(order separately)* |
| **ELG406** = Round LED Adjustable Gimbal Light Engine - 2nd Generation<br>**ELSG406** = Square LED Adjustable Gimbal Light Engine - 2nd Generation | **9** = 90 CRI | **27** = 2700K<br>**30** = 3000K<br>**35** = 3500K<br>**40** = 4000K | **WH** = White<br>**SN** = Satin Nickel<br>**TBZ** = Tuscan Bronze | **TL412RK** includes:<br>• 25° reflector (one is included with gimbal)<br>• 35° reflector<br>• 50° reflector<br>TL412RK is for use with ELGxx and ELSGxx gimbals only. | One lens media may be used in place of clear lens.<br>Optical Lenses<br>• L110 Diffuse Sand Blasted Lens<br>• L111 Soft Focus Textured Lens<br>• L113 Prismatic Lens<br>• L115 Linear Spread Lens<br><br>Dichroic Color Films<br>• L114 UV Filter<br>• L120 Red<br>• L121 Amber<br>• L122 Yellow<br>• L123 Green<br>• L124 Daylight<br>• L125 Blue<br>• L127 Cosmetic Color Filters<br>• L130 Yellow |

Solite® is a registered trademark of AGC Flat Glass North America

## H4 LED Downlight Series 2nd Generation – LED Light Engines

The Halo H4 LED is a family of 4″ aperture recessed downlights with H457 series housings designed for use with Halo EL406 Series LED Light Engines and compatible TL4 and TLS4 Series LED trims. Halo H4 LED housings have integral LED drivers that offer dimming as a standard feature.

Halo H4 LED is a three part system: EL406 Light Engines, with TL4/ TLS4 trims and H457 housings. H4 LED 2nd Generation features 90 CRI color rendering index and offers a superior optical design that yields productive beam lumens, good cutoff and low glare.

| Catalog # | | Type |
|---|---|---|
| Project | | DL4 LED |
| Comments | | Date |
| Prepared by | | |

## DESIGN FEATURES

### MECHANICAL

**(A) Upper Heat Sink**

- Durable extruded aluminum construction.
- Conducts heat away from the LED keeping the junction temperatures below specified maximums, even when installed in insulated ceiling environments.

**(B) Lower Heat Sink**

- Durable die-cast aluminum construction.
- Precision keyed flange designed to lock with matching keyed slots in H4 trim rings.
- Works in conjunction with the upper heat sink for heat conduction away from the LED

### MOUNTING

**(C) Friction Blades**

- Precision formed stainless steel spring blades provide retention of the EL406 series of light engines in the H457 series housings.
- Friction blade design allows the light engine to be installed in any position within the housing aperture (360 degrees).

### ELECTRICAL

**(D) LED Connection**

- LED connector is non-screw base offering easy installation with the H457 Series housings.
- LED connector is compliant with high-efficacy luminaire code requirements as a non-screw base socket.
- Separate grounding cable included on the module for attachment to the housing during installation.
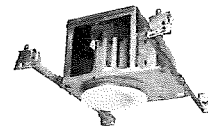
### COLOR SPECIFICATION & QUALITY STANDARDS

- Halo employs a tight chromaticity specification and LED color binning process to ensure LED color uniformity, sustainable Color Rendering Index (CRI) and Correlated Color Temperature (CCT) consistency over the useful life of the LED
- Halo H4 LED chromaticity specification is 3SDCM initial and 5SDCM at rated life, which exceeds ENERGY STAR® SSL color standards (as per ANSI 78.377-2008).
- Every Halo LED Module is quality tested and performance measured on the production line, and serialized to register lumens, wattage, CRI and CCT
- Halo LED's serialized testing and measurement process further ensures color and lumen consistency to meet stringent Cooper Lighting specifications and exceed ENERGY STAR® SSL standards
- Halo LED Modules and light engines include color designation in the model number
- Example: EL406927

  9 27
  └─── 2700°K nominal CCT
  └─── > 90 CRI
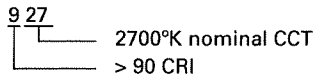
### QUALIFICATION

- Halo LED offers the choice of four correlated color temperatures: 2700°K, 3000°K, 3500°K, 4000°K
- 90 CRI
- LED package consisting of an engineered array of multiple LEDs to create one virtual source, for a productive "cone of light"
- Designed for interchangeable trim choices, with selection from multiple reflector, baffle, and lens trim options
- H4 LED Light Engines are ENERGY STAR® Qualified as used with designated LED trims*
- Can be used to meet State of California Title 24, Washington State Energy Code - WSEC, and International Energy Conservation Code – IECC, High Efficacy requirements when used with designated LED trims*
- LED emits no ultraviolet and only minimal infrared wavelengths
- ROHS compliant

| Can be used for IECC | Can be used for T24 | Can be used for WSEC |
|---|---|---|
| ENERGY STAR | California Title 24 | Washington State |

*Qualified & Compliant as designated with LED Light Engine and Trim. Refer to ENERGY STAR® Qualified Products List and CEC (T24) Appliance Database for listings.
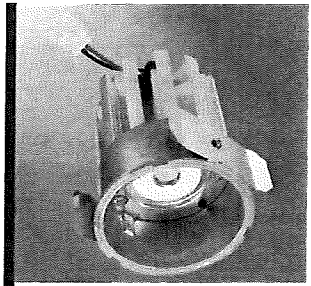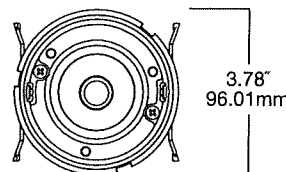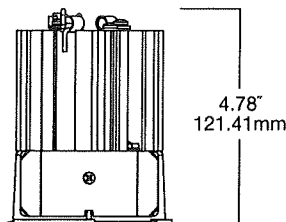
## H4 LED Downlight Series 2nd Generation

### LED Light Engines

**Available in 2700K 3000K 3500K 4000K Correlated Color Temperatures**

**2700 K** nominal

| 2700K | 3000K | 3500K | 4100K | 5000K | 6500K |
|---|---|---|---|---|---|
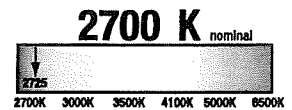
**EL406927**

4″ LED Light Engine, 2700K

**3000 K** nominal

| 2700K | 3000K | 3500K | 4100K | 5000K | 6500K |
|---|---|---|---|---|---|
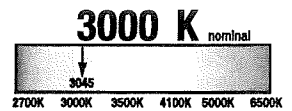
**EL406930**

4″ LED Light Engine, 3000K

**3500 K** nominal

| 2700K | 3000K | 3500K | 4100K | 5000K | 6500K |
|---|---|---|---|---|---|
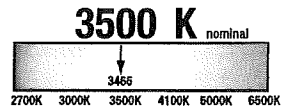
**EL406935**

4″ LED Light Engine, 3500K

**4000 K** nominal

| 2700K | 3000K | 3500K | 4100K | 5000K | 6500K |
|---|---|---|---|---|---|
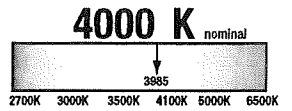
**EL406940**

4″ LED Light Engine, 4000K

**Color Rendering Index (CRI, Ra): 90**

4.78″
121.41mm

3.78″
96.01mm

## Cooper Lighting
by **E:T·N**

## H4 LED 2nd Generation Downlight Collection - Lumen and Compliance Summary

| H4 LED Downlight Collection | | EL406927 - 2700K | | | | EL406930 - 3000K | | | | EL406935 - 3500K | | | | EL406940 - 4000K | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trim Type | Trim Model | LUMENS (1) | ENERGY STAR (2) | California T24 (3) | IECC & WSEC (4) | LUMENS (1) | ENERGY STAR (2) | California T24 (3) | IECC & WSEC (4) | LUMENS (1) | ENERGY STAR (2) | California T24 (3) | IECC & WSEC (4) | LUMENS (1) | ENERGY STAR (2) | California T24 (3) | IECC & WSEC (4) |
| Specular Reflector, Diffuse Polymer Lens | TL410SC | 660 | Yes | Yes | Yes | 720 | Yes | Yes | Yes | 730 | Yes | Yes | Yes | 810 | Yes | Yes | Yes |
| Haze Reflector, Diffuse Polymer Lens | TL410H | 650 | Yes | Yes | Yes | 710 | Yes | Yes | Yes | 720 | Yes | Yes | Yes | 800 | Yes | Yes | Yes |
| White Reflector, Diffuse Polymer Lens | TL410WH | 630 | Yes | Yes | Yes | 690 | Yes | Yes | Yes | 700 | Yes | Yes | Yes | 770 | Yes | Yes | Yes |
| Specular Black Reflector, Diffuse Polymer Lens | TL410SBK | 460 | No | No | No | 500 | No | No | No | 510 | No | No | No | 560 | Yes | No | Yes |
| Satin Nickel Reflector, Diffuse Polymer Lens | TL410SN | 560 | Yes | No | Yes | 610 | Yes | Yes | Yes | 620 | Yes | Yes | Yes | 680 | Yes | Yes | Yes |
| Tuscan Bronze Reflector, Diffuse Polymer Lens | TL410TBZ | 450 | No | No | No | 500 | No | No | No | 510 | No | No | No | 560 | Yes | No | Yes |
| White Baffle, Diffuse Polymer Lens | TL411WB | 647 | Yes | Yes | Yes | 690 | Yes | Yes | Yes | 700 | Yes | Yes | Yes | 770 | Yes | Yes | Yes |
| Black Baffle, Diffuse Polymer Lens | TL411BB | 450 | No | No | No | 490 | No | No | No | 500 | No | No | No | 550 | No | No | Yes |
| Solite® Glass Lens Specular Clear Reflector | TL402SCS | 710 | Yes | Yes | Yes | 770 | Yes | Yes | Yes | 780 | Yes | Yes | Yes | 860 | Yes | Yes | Yes |
| Solite® Glass Lens Haze Reflector | TL402HS | 740 | Yes | Yes | Yes | 810 | Yes | Yes | Yes | 820 | Yes | Yes | Yes | 900 | Yes | Yes | Yes |
| Solite® Glass Lens White Reflector | TL402WHS | 710 | Yes | Yes | Yes | 780 | Yes | Yes | Yes | 790 | Yes | Yes | Yes | 870 | Yes | Yes | Yes |
| Solite® Glass Lens White Baffle | TL403WBS | 700 | Yes | Yes | Yes | 760 | Yes | Yes | Yes | 780 | Yes | Yes | Yes | 850 | Yes | Yes | Yes |
| Solite® Glass Lens Specular Black Reflector | TL402SBKS | 650 | Yes | Yes | Yes | 710 | Yes | Yes | Yes | 720 | Yes | Yes | Yes | 800 | Yes | Yes | Yes |
| Solite® Glass Lens Satin Nickel Reflector | TL402SNS | 660 | Yes | Yes | Yes | 720 | Yes | Yes | Yes | 730 | Yes | Yes | Yes | 800 | Yes | Yes | Yes |
| Solite® Glass Lens Tuscan Bronze Reflector | TL402TBZS | 630 | Yes | Yes | Yes | 690 | Yes | Yes | Yes | 700 | Yes | Yes | Yes | 770 | Yes | Yes | Yes |
| Solite® Glass Lens Black Baffle | TL403BBS | 630 | Yes | Yes | Yes | 690 | Yes | Yes | Yes | 700 | Yes | Yes | Yes | 770 | Yes | Yes | Yes |
| Square Baffle Trim, Solite® Glass Lens, White Ring & White Baffle | TLS408WHWB | 680 | Yes | Yes | Yes | 740 | Yes | Yes | Yes | 750 | Yes | Yes | Yes | 830 | Yes | Yes | Yes |
| Square Baffle Trim, Solite® Glass Lens, White Ring & Black Baffle | TLS408WHBB | 640 | Yes | Yes | Yes | 710 | Yes | Yes | Yes | 720 | Yes | Yes | Yes | 790 | Yes | Yes | Yes |
| Square Baffle Trim, Solite® Glass Lens, Satin Nickel Ring & Black Baffle | TLS408SNBB | 660 | Yes | Yes | Yes | 720 | Yes | Yes | Yes | 730 | Yes | Yes | Yes | 800 | Yes | Yes | Yes |
| Square Baffle Trim, Solite® Glass Lens, Tuscan Bronze Ring & Black Baffle | TLS408TBZBB | 630 | Yes | Yes | Yes | 690 | Yes | Yes | Yes | 700 | Yes | Yes | Yes | 770 | Yes | Yes | Yes |
| Wall Wash, Semi-Specular Reflector with Diffuse Polymer Lens & White Ring | TL409WW | 640 | Yes | Yes | Yes | 700 | Yes | Yes | Yes | 710 | Yes | Yes | Yes | 780 | Yes | Yes | Yes |
| Wall Wash, White Reflector, with Diffuse Polymer Lens & White Ring | TL409WHWW | 640 | Yes | Yes | Yes | 710 | Yes | Yes | Yes | 720 | Yes | Yes | Yes | 790 | Yes | Yes | Yes |
| White Baffle Shower Trim, All Polymer: Lens, Baffle & Ring | TL422PS | 680 | Yes | Yes | Yes | 750 | Yes | Yes | Yes | 760 | Yes | Yes | Yes | 840 | Yes | Yes | Yes |

(1) Trims are tested with designated LED Light Engines in accordance with IES LM-79 Photometric Measurement Standards. Field results may vary.

(2) Tested and qualified to ENERGY STAR® standards, consult the ENERGY STAR® Qualified Products List

(3) May be used for California Title 24 compliance, and registered with State of California; consult the CEC Title 20 Appliance Database

(4) May be used for IECC - International Energy Conservation Code and WSEC - Washington State Energy Code

## Cooper Lighting
by E:T·N

## Halo H4 LED 2nd Generation Downlight Photometry

Representative photometric test report for 3000°K color temperature, 90CRI. Multipliers may be used to determine relative lumen values with other color temperatures

| Correlated Color Temperature (CCT) as tested: 3000°K | | | | |
|---|---|---|---|---|
| Color Temperature | 2700°K | 3000°K | 3500°K | 4000°K |
| Multiplier | 0.913 | 1.000 | 1.014 | 1.118 |

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### EL406930-TL410SC

| | |
|---|---|
| Test Number | P123670 |
| LED Module | EL406930 |
| Trim | 4" Specular Clear Reflector, Polycarbonate Frost Dome Lens, White Ring |
| Lumens | 55.4 Lm/W |
| SC | 1.29 / 1.29 / 1.25 |

**CANDLEPOWER DISTRIBUTION** — Downlight
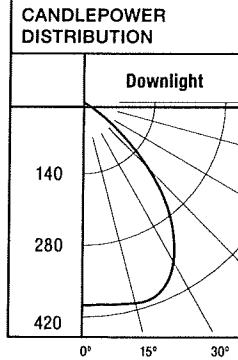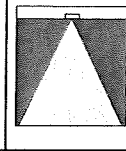


**CONE OF LIGHT**

| D | FC | L | W |
|---|---|---|---|
| 5.5' | 13.1 | 7 | 7 |
| 7' | 8.1 | 9 | 9 |
| 8' | 6.2 | 10.2 | 10.2 |
| 9' | 4.9 | 11.6 | 11.6 |
| 10' | 4 | 12.8 | 12.8 |
| 12' | 2.8 | 15.4 | 15.4 |

**LUMINANCE DATA**

| Angle | 0° |
|---|---|
| 45 | 41329 |
| 55 | 14297 |
| 65 | 1601 |
| 75 | 685 |
| 85 | 0 |

**ZONAL LUMEN SUMMARY**

| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 333 | 46.2 |
| 0-40 | 527 | 73.2 |
| 0-60 | 714 | 99.2 |
| 0-90 | 720 | 100.0 |
| 90-180 | 0 | 0.0 |
| 0-180 | 720 | 100.0 |

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### EL406930-TL411WB

| | |
|---|---|
| Test Number | P123690 |
| LED Module | EL406930 |
| Trim | 4" White Baffle, Polycarbonate Frost Dome Lens, White Ring |
| Lumens | 53.1 Lm/W |
| SC | 1.16 / 1.16 / 1.2 |

**CANDLEPOWER DISTRIBUTION** — Downlight
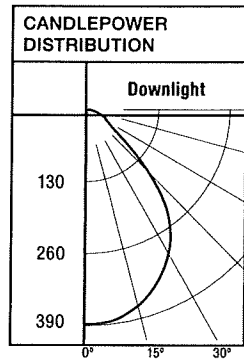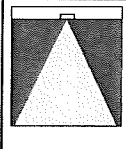
**CONE OF LIGHT**

| D | FC | L | W |
|---|---|---|---|
| 5.5' | 12.8 | 6.2 | 6.2 |
| 7' | 7.9 | 8 | 8 |
| 8' | 6 | 9.2 | 9.2 |
| 9' | 4.8 | 10.4 | 10.4 |
| 10' | 3.9 | 11.4 | 11.4 |
| 12' | 2.7 | 13.8 | 13.8 |

**LUMINANCE DATA**

| Angle | 0° |
|---|---|
| 45 | 48625 |
| 55 | 21600 |
| 65 | 18264 |
| 75 | 16267 |
| 85 | 10819 |

**ZONAL LUMEN SUMMARY**

| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 290 | 42.0 |
| 0-40 | 455 | 66.0 |
| 0-60 | 630 | 91.3 |
| 0-90 | 690 | 100.0 |
| 90-180 | 0 | 0.0 |
| 0-180 | 690 | 100.0 |

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### EL406930-TL402SCS

| | |
|---|---|
| Test Number | P123702 |
| LED Module | EL406930 |
| Trim | 4" Specular Clear Reflector w/ Solite® Glass Lens, White Ring |
| Lumens | 59.2 Lm/W |
| SC | 0.75 / 0.75 / 0.84 |

**CANDLEPOWER DISTRIBUTION** — Downlight
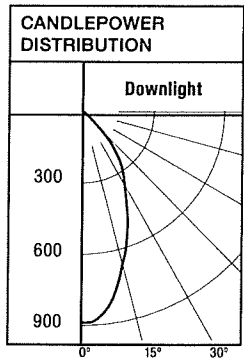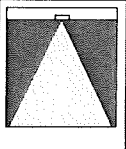
**CONE OF LIGHT**

| D | FC | L | W |
|---|---|---|---|
| 5.5' | 29.3 | 4 | 4 |
| 7' | 18.1 | 5.2 | 5.2 |
| 8' | 13.9 | 6 | 6 |
| 9' | 11 | 6.6 | 6.6 |
| 10' | 8.9 | 7.4 | 7.4 |
| 12' | 6.2 | 9 | 9 |

**LUMINANCE DATA**

| Angle | 0° |
|---|---|
| 45 | 25791 |
| 55 | 4747 |
| 65 | 3240 |
| 75 | 0 |
| 85 | 0 |

**ZONAL LUMEN SUMMARY**

| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 472 | 61.3 |
| 0-40 | 652 | 84.7 |
| 0-60 | 760 | 98.7 |
| 0-90 | 770 | 100.0 |
| 90-180 | 0 | 0.0 |
| 0-180 | 770 | 100.0 |

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### EL406930-TL403WBS

| | |
|---|---|
| Test Number | P123714 |
| LED Module | EL406930 |
| Trim | 4" White Baffle w/ Solite® Glass Lens, White Ring |
| Lumens | 58.5 Lm/W |
| SC | 0.66 / 0.66 / 0.82 |

**CANDLEPOWER DISTRIBUTION** — Downlight
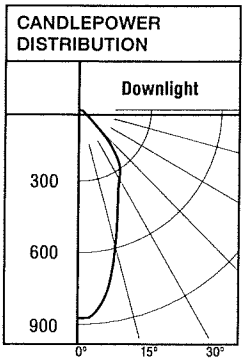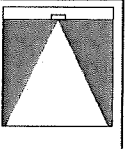
**CONE OF LIGHT**

| D | FC | L | W |
|---|---|---|---|
| 5.5' | 28.9 | 3.6 | 3.6 |
| 7' | 17.8 | 4.6 | 4.6 |
| 8' | 13.6 | 5.2 | 5.2 |
| 9' | 10.8 | 5.8 | 5.8 |
| 10' | 8.7 | 6.6 | 6.6 |
| 12' | 6.1 | 7.8 | 7.8 |

**LUMINANCE DATA**

| Angle | 0° |
|---|---|
| 45 | 28616 |
| 55 | 8005 |
| 65 | 6824 |
| 75 | 3921 |
| 85 | 2033 |

**ZONAL LUMEN SUMMARY**

| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 424 | 55.8 |
| 0-40 | 606 | 79.7 |
| 0-60 | 733 | 96.4 |
| 0-90 | 760 | 100.0 |
| 90-180 | 0 | 0.0 |
| 0-180 | 760 | 100.0 |

# HALO®

## Halo H4 LED 2nd Generation Downlight Photometry

### EL406930-TLS408WHWB

| | |
|---|---|
| Test Number | P123750 |
| LED Module | EL406930 |
| Trim | 4" Square Baffle Trim, Solite Lens, White Ring with White Baffle |
| Lumens | 56.9 Lm/W |
| SC | 0.71 / 0.69 / 0.73 |

**CANDLEPOWER DISTRIBUTION**

Downlight

400
800
1200

0°    15°   30°

90°
75°
60°
45°

**CONE OF LIGHT**

0°    D

| D | FC | L | W |
|---|---|---|---|
| 5.5' | 37.6 | 3.8 | 3.8 |
| 7' | 23.2 | 4.8 | 4.8 |
| 8' | 17.8 | 5.6 | 5.4 |
| 9' | 14 | 6.2 | 6.2 |
| 10' | 11.4 | 7 | 6.8 |
| 12' | 7.9 | 8.4 | 8.2 |

**LUMINANCE DATA**

| Angle | 0° |
|---|---|
| 45 | 16824 |
| 55 | 9999 |
| 65 | 11645 |
| 75 | 6288 |
| 85 | 4891 |

**ZONAL LUMEN SUMMARY**

| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 554 | 74.9 |
| 0-40 | 676 | 91.3 |
| 0-60 | 726 | 98.1 |
| 0-90 | 740 | 100.0 |
| 90-180 | 0 | 0.0 |
| 0-180 | 740 | 100.0 |

### EL406930-TL409WW
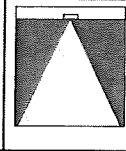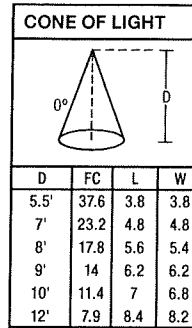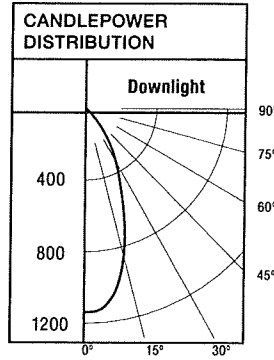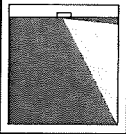
| | |
|---|---|
| Test Number | P123730 |
| Light Module | EL406930 |
| Trim | 4" Wall Wash, Semi-Specular Clear Reflector, White Ring |
| Lumens | 53.8 Lm/W |
| SC | 1.19 / 1.24 / 1.22 |

**CANDLEPOWER DISTRIBUTION**

Downlight

120
240
360

0°    15°   30°

90°
75°
60°
45°

**SINGLE UNIT FOOTCANDLES**

**2.5' FROM WALL**
(Distance From Fixture Along Wall)

| DD | ● | 1' | 2' | 3' | 4' | 5' | 6' |
|---|---|---|---|---|---|---|---|
| 1' | 8.1 | 5.6 | 2.2 | 0.7 | 0.2 | 0.1 | 0 |
| 2' | 14.9 | 12.3 | 6.9 | 3.1 | 1.3 | 0.5 | 0.2 |
| 3' | 9.7 | 8.5 | 5.9 | 3.8 | 2 | 0.9 | 0.4 |
| 4' | 6.2 | 5.7 | 4.4 | 3 | 1.9 | 1.2 | 0.6 |
| 5' | 4 | 3.8 | 3.1 | 2.4 | 1.6 | 1.1 | 0.7 |
| 6' | 2.7 | 2.6 | 2.2 | 1.8 | 1.4 | 1 | 0.7 |
| 7' | 1.9 | 1.8 | 1.6 | 1.4 | 1.1 | 0.8 | 0.6 |
| 8' | 1.3 | 1.3 | 1.2 | 1 | 0.9 | 0.7 | 0.5 |
| 9' | 1 | 0.9 | 0.9 | 0.8 | 0.7 | 0.6 | 0.5 |
| 10' | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 | 0.5 | 0.4 |

**MULTIPLE UNIT FOOTCANDLES**

**2.5' FROM WALL**
(Spacing Between Fixtures)

| DD | --3'-- | | | --4'-- | | |
|---|---|---|---|---|---|---|
| 1' | 8.9 | 7.5 | 8.9 | 8.4 | 4.4 | 8.4 |
| 2' | 18 | 19.5 | 18 | 16.1 | 13.9 | 16.1 |
| 3' | 13.5 | 14.5 | 13.5 | 11.7 | 11.9 | 11.7 |
| 4' | 9.2 | 10.1 | 9.2 | 8.1 | 8.8 | 8.1 |
| 5' | 6.4 | 7 | 6.4 | 5.7 | 6.2 | 5.7 |
| 6' | 4.5 | 4.8 | 4.5 | 4 | 4.4 | 4 |
| 7' | 3.2 | 3.4 | 3.2 | 2.9 | 3.2 | 2.9 |
| 8' | 2.4 | 2.5 | 2.4 | 2.2 | 2.4 | 2.2 |
| 9' | 1.8 | 1.8 | 1.8 | 1.7 | 1.8 | 1.7 |
| 10' | 1.4 | 1.4 | 1.4 | 1.3 | 1.4 | 1.3 |
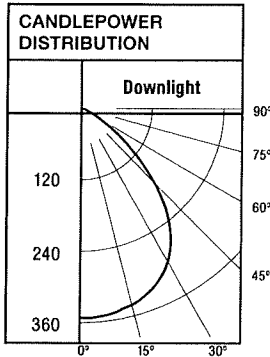
**LUMINANCE DATA**

| Angle | 0° |
|---|---|
| 45 | 48255 |
| 55 | 51372 |
| 65 | 33851 |
| 75 | 13321 |
| 85 | 3882 |

**ZONAL LUMEN SUMMARY**

| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 271 | 38.7 |
| 0-40 | 428 | 61.1 |
| 0-60 | 645 | 92.2 |
| 0-90 | 700 | 100.0 |
| 90-180 | 0 | 0.0 |
| 0-180 | 700 | 100.0 |

# Cooper Lighting
by E:T•N

## Ordering Information - H4 LED 2nd Generation Downlight

**SAMPLE NUMBER:** H457ICAT1E - EL406927 - TL410SC
Complete unit includes LED housing, light engine and trim; ordered separately.

| H4 LED Housing | H4 LED Light Engine | | | Trim Options | Accessories |
|---|---|---|---|---|---|
| | EL406 | CRI | CCT | | See product labels for application information |
| **H457ICAT1E** = 4″ Dedicated LED Insulated Ceiling AIR-TITE™ Housing, 120V Driver with LE/TE* phase control dimming capable | **EL406** = 4″ LED Downlight Engine, 2nd Generation | **9** = 90 CRI | **27** = 2700K<br>**30** = 3000K<br>**35** = 3500K<br>**40** = 4000K | **TL410SC** = Specular Clear Reflector, Diffuse Polymer Dome Lens, White Ring, Shower Rated | **Thin Profile Designer Trim Rings**<br>*For use with Round TL4 trims (not compatible with Square TLS4 trims)*<br>**TRM400WH** = White<br>**TRM400BK** = Black<br>**TRM400SN** = Satin Nickel<br>**TRM400TBZ** = Tuscan Bronze<br>**TRM400PC** = Polished Chrome |
| | | | | **TL410H** = Haze Reflector, Diffuse Polymer Dome Lens, White Ring, Shower Rated | |
| **H457RICAT1E** = 4″ Dedicated LED Insulated Ceiling AIR-TITE™ Remodel Housing, 120V Driver with with LE/TE* phase control dimming capable | | | | **TL410WH** = White Reflector, Diffuse Polymer Dome Lens, White Ring, Shower Rated | |
| | | | | **TL410SN** = Satin Nickel Reflector, Diffuse Polymer Dome Lens, Satin Nickel Ring, Shower Rated | |
| | | | | **TL410TBZ** = Tuscan Bronze Reflector, Diffuse Polymer Dome Lens, Tuscan Bronze Ring, Shower Rated | |
| **H457TATE010** = 4″ Dedicated LED Non-IC AIR-TITE™ Housing, 120V-277V Driver with LE/TE* phase control and 0-10V dimming capable | | | | **TL410SBK** = Specular Black Reflector, Diffuse Polymer Dome Lens, White Ring, Shower Rated | |
| | | | | **TL411WB** = White Baffle, Diffuse Polymer Dome Lens, White Ring, Shower Rated | |
| | | | | **TL411BB** = Black Baffle, Diffuse Polymer Dome Lens, White Ring, Shower Rated | |
| **H457TCPE010** = 4″ Chicago Plenum Dedicated LED Non-IC AIR-TITE™ Housing, 120V-277V Driver with LE/TE* phase control and 0-10V dimming capable | | | | **TL402SCS** = Specular Clear Reflector, Solite® Glass Lens, and White Ring, Shower Rated | |
| | | | | **TL402HS** = Haze Reflector, Solite® Glass Lens, and White Ring, Shower Rated | |
| | | | | **TL402WHS** = White Reflector, Solite® Glass Lens, and White Ring, Shower Rated | |
| | | | | **TL402SNS** = Satin Nickel Reflector, Solite® Glass Lens, and Satin Nickel Ring, Shower Rated | |
| **H457RTATE010** = 4″ Dedicated LED Non-IC AIR-TITE™ Remodel Housing, 120V-277V Driver with LE/TE* phase control and 0-10V dimming capable | | | | **TL402TBZS** = Tuscan Bronze Reflector, Solite® Glass Lens, and Tuscan Bronze Ring, Shower Rated | |
| | | | | **TL402SBKS** = Specular Black Reflector, Solite® Glass Lens, and White Ring, Shower Rated | |
| | | | | **TL403WBS** = White Baffle, Solite® Glass Lens, and White Ring, Shower Rated | |
| | | | | **TL403BBS** = Black Baffle, Solite® Glass Lens, and White Ring, Shower Rated | |
| | | | | **TLS408WHWB** = Square Baffle Trim, Solite® Glass Lens, White Ring with White Baffle, Shower Rated | |
| | | | | **TLS408WHBB** = Square Baffle Trim, Solite® Glass Lens, White Ring with Black Baffle, Shower Rated | |
| | | | | **TLS408SNBB** = Square Baffle Trim, Solite® Glass Lens, Satin Nickel Ring with Black Baffle, Shower Rated | |
| | | | | **TLS408TBZBB** = Square Baffle Trim, Solite® Glass Lens, Tuscan Bronze Ring with Black Baffle, Shower Rated | |
| | | | | **TL409WW** = Wall Wash, Semi-Specular Clear Reflector with White Ring, Shower Rated | |
| | | | | **TL409WHWW** = Wall Wash, White Reflector with White Ring, Shower Rated | |
| | | | | **TL422PS** = Polymer "Dead Front" White Baffle & Regressed Lens, White Ring, Shower Rated | |

\* LE = Leading Edge (forward phase control) dimming

\* TE = Trailing Edge (forward phase control) dimming

Solite® is a registered trademark of AGC Flat Glass North America

## DESCRIPTION - H4 LED DOWNLIGHT TRIMS - UPDATE

Halo H4 LED family consists of 4" recessed downlights with EL4 Series LED Light Engines and TL4 and TLS4 Series LED Trims designed for installation in H4 LED series housings with integral LED dimmable drivers. Halo LED Downlight Trims are offered in lensed baffles and reflectors; and wet location shower rated models. TL4 and TLS4 Series LED Trims are compatible with 1st Gen - EL4058x and 2nd Gen - EL4069x downlight LED light engines. Halo LED offers high quality, fit, finish, and performance in an energy-efficient, high-efficacy downlight.

| Catalog # | | Type | |
|---|---|---|---|
| Project | | **DL4 TRIM** | |
| Comments | | Date | |
| Prepared by | | | |

## SPECIFICATION FEATURES

### MECHANICAL
#### Baffles and Reflectors
- Precision formed aluminum
- Reflector Finishes offered in White, Specular Clear, Haze, Specular Black, Satin Nickel, and Tuscan Bronze
- Baffle Finishes offered in White and Black

#### Trim Rings
- Durable die-cast aluminum
- Precision keyed slots designed to lock with matching keyed bosses in H4 LED Light Engine
- Works with LED Light Engine's heat sink to provide further thermal conduction away from the LED
- Standard finishes offered in White, Black, Satin Nickel, and Tuscan Bronze.
- Optional, thin profile designer trim rings offered in White, Black, Satin Nickel, Tuscan Bronze, and Polished Chrome finishes.
- Thin profile designer trim rings provide subtle ceiling appearance.
  Thickness dimensions:
  0.120" at OD and 0.180" at ID.

### FEATURES
- Superior optical design provides high lumen output, smooth beam distribution, and good visual comfort
- Precision design and materials for a high-quality fit and finish
- Multiple trim options allow Halo H4 LED recessed downlights to be used in a wide range of interior spaces
- High-quality standard and plated finishes
- Diffuse dome polymer lens models offer a familiar "bulb-like" appearance, and are impact resistant
- Solite® lensed trims offer high-clarity glass for high-lumen transmission along with a subtle diffusion of source brightness
- Solite® and Diffuse Dome Lensed models are UL/cUL listed for Wet Location, protected ceilings, and are IP66 Ingress Protection rated for dust and water
- Polymer shower trim features a non-electrically conductive plastic "dead front".
  One piece baffle and ring, and lens are formed from plastics - special polymers to meet Halo performance and quality standards.

- H4 LED trims offer ENERGY STAR® Qualification when used with designated Halo H4 LED Light Engines*
- Can be used to meet State of California Title 24 and International Energy Conservation Code – IECC High Efficacy requirements when used with designated LED Light Engines*

### Warranty
Cooper Lighting provides a five year limited warranty on Halo LED Luminaires which includes the LED Recessed Housing, LED Light Engine, and LED trims. (Subject to all of the limitations set forth in Cooper Lighting Terms and Conditions of sale. Refer to www.cooperlighting.com.)
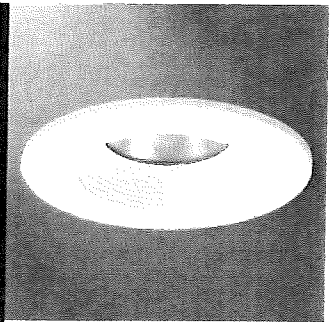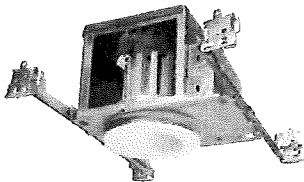


# H4 LED Downlight Trims

TL402, TL403, TL408, TL409, TL410, TL411, TL422

**4-Inch LED Trims**

**FOR USE WITH 1st GEN EL4058xx AND 2ND GEN EL4069xx LED LIGHT ENGINES AND 1ST GEN H455, H456 SERIES AND 2ND GEN H457 SERIES 4" LED HOUSINGS**

**Complete fixture consists of LED Housing, LED Light Engine and LED trim.**

**High Efficacy LED**



| ENERGY STAR | Can be used for IECC International Energy Conservation Code High Efficacy Compliance | Can be used for T24 California Title 24 High Efficacy Compliance | Can be used for WSEC Washington State Energy Code High Efficiency Compliance |

*Qualified & Compliant as designated with LED Light Engine and Trim. Refer to ENERGY STAR® Qualified Products List and CEC (T24) Appliance Database for listings.

## Compatible with H4 LED Light Engines 1st Generation

| Model | Color Temperature |
|---|---|
| EL405827 | 2700K |
| EL405830 | 3000K |
| EL405835 | 3500K |
| EL405840 | 4000K |

## Compatible with H4 LED Light Engines 2nd Generation

| Model | Color Temperature |
|---|---|
| EL406927 | 2700K |
| EL406930 | 3000K |
| EL406935 | 3500K |
| EL406940 | 4000K |

## DEEP REGRESSED REFLECTOR AND BAFFLE TRIMS WITH DIFFUSE POLYMER DOME LENS
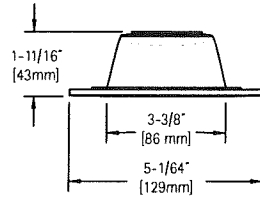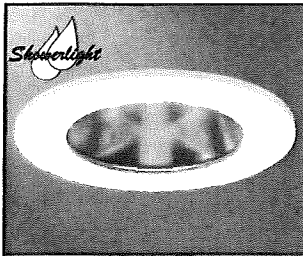
**TL410SC**

Specular Clear Reflector, Diffuse Dome (polymer) Lens, White Ring
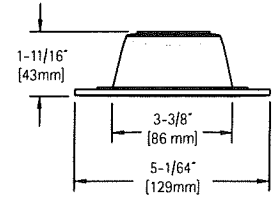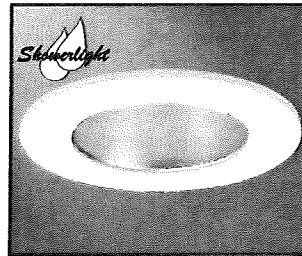
1-11/16" [43mm]
3-3/8" [86 mm]
5-1/64" [129mm]

**TL410H**

Haze Reflector, Diffuse Dome (polymer) Lens, White Ring

1-11/16" [43mm]
3-3/8" [86 mm]
5-1/64" [129mm]

**TL410WH**

White Reflector, Diffuse Dome (polymer) Lens, White Ring

1-11/16" [43mm]
3-3/8" [86 mm]
5-1/64" [129mm]

**TL410SBK**

Specular Black Reflector, Diffuse Dome (polymer) Lens, White Ring

1-11/16" [43mm]
3-3/8" [86 mm]
5-1/64" [129mm]
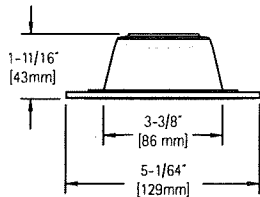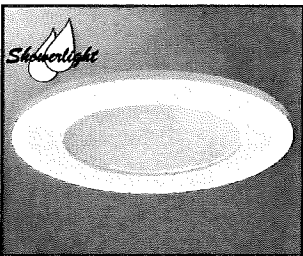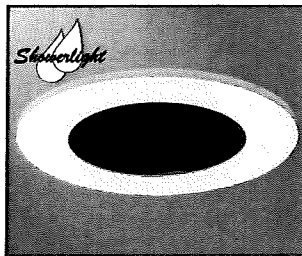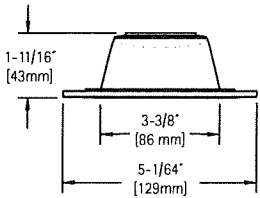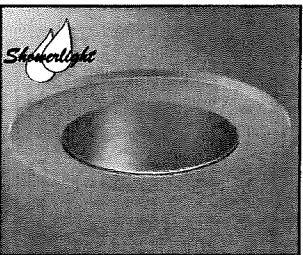
**TL410SN**

Satin Nickel Reflector, Diffuse Dome (polymer) Lens, Satin Nickel Ring

1-11/16" [43mm]
3-3/8" [86 mm]
5-1/64" [129mm]
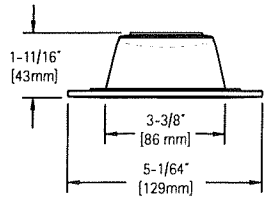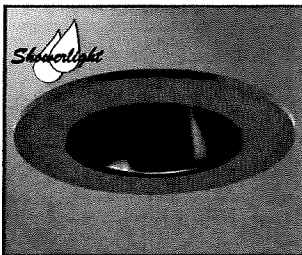
**TL410TBZ**

Tuscan Bronze Reflector, Diffuse Dome (polymer) Lens, Tuscan Bronze Ring

1-11/16" [43mm]
3-3/8" [86 mm]
5-1/64" [129mm]
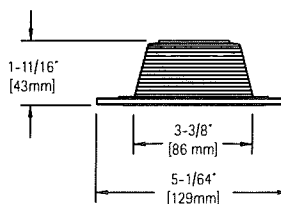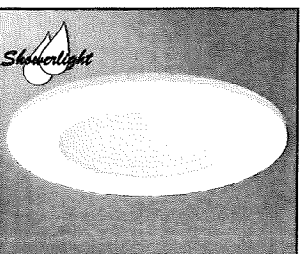
**TL411WB**

White Baffle, Diffuse Dome (polymer) Lens, White Ring

1-11/16" [43mm]
3-3/8" [86 mm]
5-1/64" [129mm]

**TL411BB**

Black Baffle, Diffuse Dome (polymer) Lens, White Ring

1-11/16" [43mm]
3-3/8" [86 mm]
5-1/64" [129mm]

## REFLECTOR AND BAFFLE TRIMS WITH SOLITE® GLASS LENS
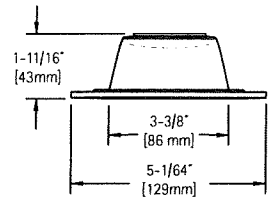
Wet Location Listed For Shower Applications
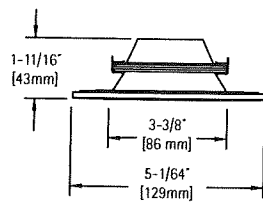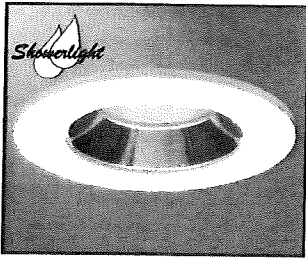
**TL402SCS**

Specular Clear Reflector with Solite® Glass Lens, White Ring
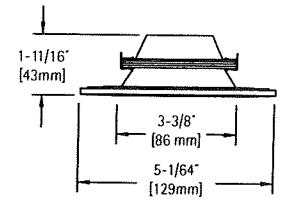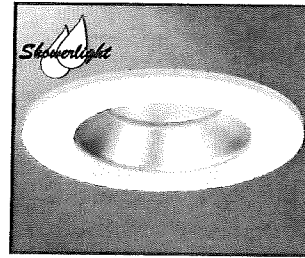
**TL402HS**

Haze Reflector with Solite® Glass Lens, White Ring
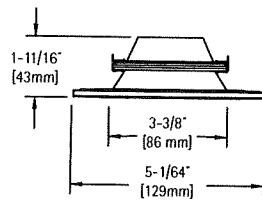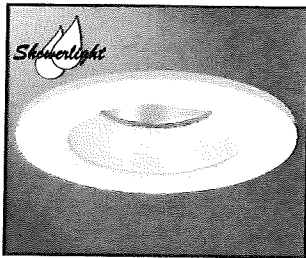
**TL402WHS**

White Reflector with Solite® Glass Lens, White Ring
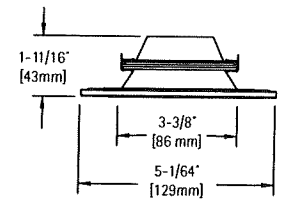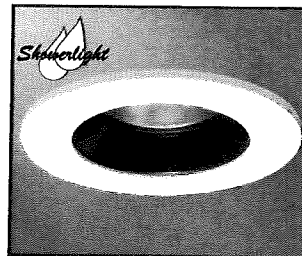
**TL402SBKS**

Specular Black Reflector with Solite® Glass Lens, White Ring
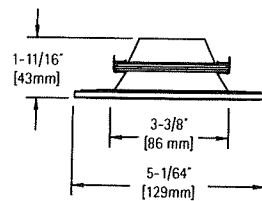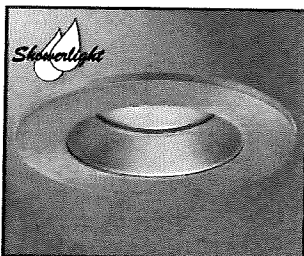
**TL402SNS**

Satin Nickel Reflector with Solite® Glass Lens, Satin Nickel Ring
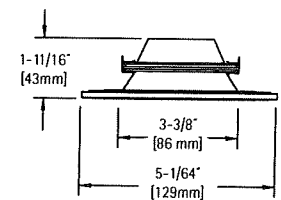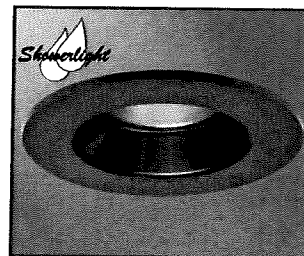
**TL402TBZS**

Tuscan Bronze Reflector with Solite® Glass Lens, Tuscan Bronze Ring
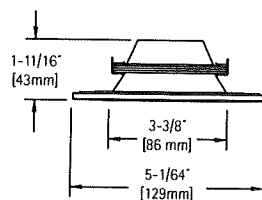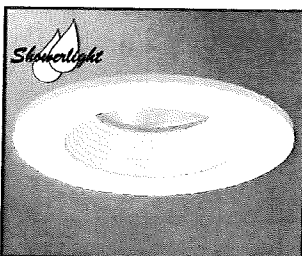
**TL403WBS**

White Baffle with Solite® Glass Lens, White Ring
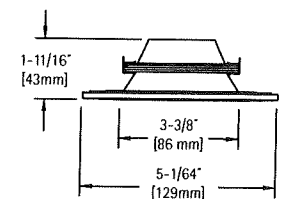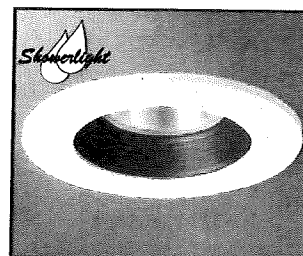
**TL403BBS**

Black Baffle with Solite® Glass Lens, White Ring
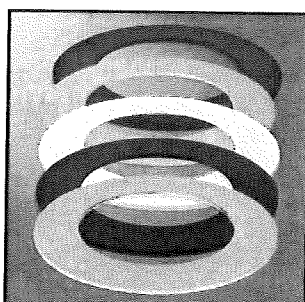
**TRM400**

Designer Trim Rings
- Optional accessory
- Die-cast trim ring
- Thin Profile provides subtle ceiling appearance (.120" at OD and .180 at ID)
- For use with TL4 round trims (not compatible with TLS4 square trims)

| | | | |
|---|---|---|---|
| TRM400TBZ | Tuscan Bronze | TRM400BK | Black |
| TRM400SN | Satin Nickel | TRM400PC | Polished Chrome |
| TRM400WH | White | | |

**H4 LED 2ND GENERATION DOWNLIGHT SERIES – LED TRIMS**

## SQUARE SOLITE® GLASS LENS BAFFLE TRIMS

Wet Location Listed For Shower Applications

1-11/16"
[43mm]
3-3/8"
[86 mm]
5-1/64"
[129mm]
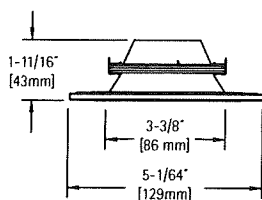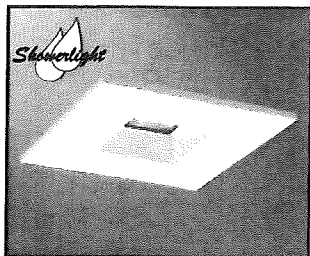
**TLS408WHWB**

Square Baffle Trim with Solite® Glass Lens, White Baffle, White Ring

1-11/16"
[43mm]
3-3/8"
[86 mm]
5-1/64"
[129mm]
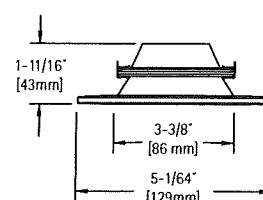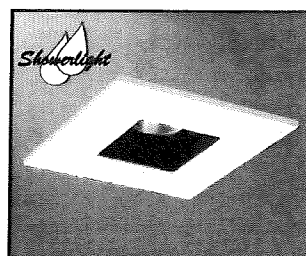
**TLS408WHBB**

Square Baffle Trim with Solite® Glass Lens, Black Baffle, White Ring

1-11/16"
[43mm]
3-3/8"
[86 mm]
5-1/64"
[129mm]
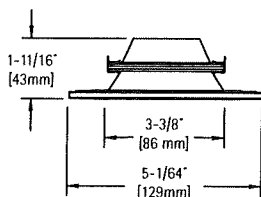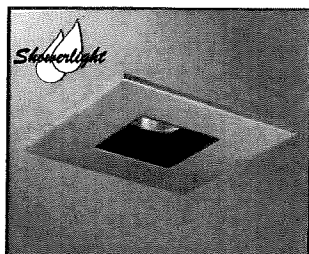
**TLS408SNBB**

Square Baffle Trim with Solite® Glass Lens, Black Baffle, Satin Nickel Ring

1-11/16"
[43mm]
3-3/8"
[86 mm]
5-1/64"
[129mm]
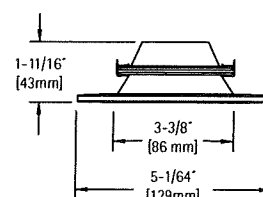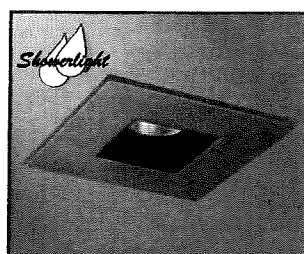
**TLS408TBZBB**

Square Baffle Trim with Solite® Glass Lens, Black Baffle, Tuscan Bronze Ring

## WALL WASH TRIMS

1-11/16"
[43mm]
3-3/8"
[86 mm]
5-1/64"
[129mm]
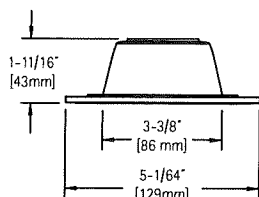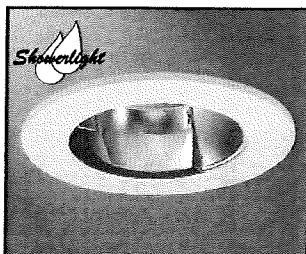
**TL409WW**

Wall Wash Downlight - Semi-Specular Clear Reflector with Specular Wall Wash Optic, Diffuse Polymer Lens and White Ring

1-11/16"
[43mm]
3-3/8"
[86 mm]
5-1/64"
[129mm]
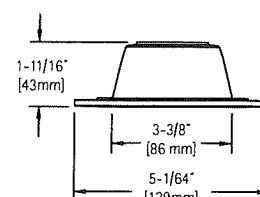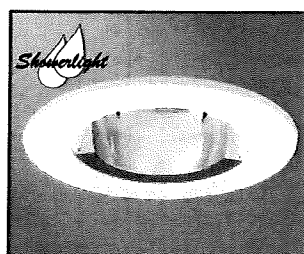
**TL409WHWW**

Wall Wash Downlight - White Reflector with Specular Wall Wash Optic, Diffuse Polymer Lens and White Ring

## POLYMER "DEAD FRONT" SHOWER TRIM

1-11/16"
[43mm]
3-3/8"
[86 mm]
5-1/64"
[129mm]
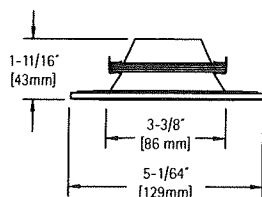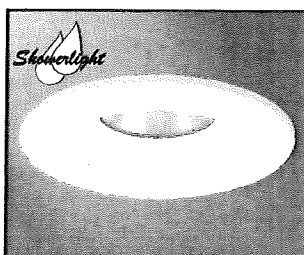
**TL422PS**

One-piece White Polymer (polymer) Baffle, Ring, and Prismatic Lens formed from special polymers. Shower Trim front is Non-Electrically Conductive "Dead-Front".

**COOPER Lighting**
www.cooperlighting.com

# H4 LED 2nd Generation Trims - Lumen and Energy Code Summary

## H4 LED Downlight Collection - 2nd Generation

| Trim Type | Trim Model | EL406927 2700K | | | | EL406930 3000K | | | | EL406935 3500K | | | | EL406940 4000K | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LUMENS (1) | ENERGY STAR (2) | California T24 (3) | IECC & WSEC (4) | LUMENS (1) | ENERGY STAR (2) | California T24 (3) | IECC & WSEC (4) | LUMENS (1) | ENERGY STAR (2) | California T24 (3) | IECC & WSEC (4) | LUMENS (1) | ENERGY STAR (2) | California T24 (3) | IECC & WSEC (4) |
| Specular Reflector, Diffuse Polymer Lens | TL410SC | 660 | YES | YES | YES | 720 | YES | YES | YES | 730 | YES | YES | YES | 810 | YES | YES | YES |
| Haze Reflector, Diffuse Polymer Lens | TL410H | 650 | YES | YES | YES | 710 | YES | YES | YES | 720 | YES | YES | YES | 800 | YES | YES | YES |
| White Reflector, Diffuse Polymer Lens | TL410WH | 630 | YES | YES | YES | 690 | YES | YES | YES | 700 | YES | YES | YES | 770 | YES | YES | YES |
| Specular Black Reflector, Diffuse Polymer Lens | TL410SBK | 460 | NO | NO | NO | 500 | NO | NO | NO | 510 | NO | NO | NO | 560 | YES | NO | YES |
| Satin Nickel Reflector, Diffuse Polymer Lens | TL410SN | 560 | YES | NO | YES | 610 | YES | YES | YES | 620 | YES | YES | YES | 680 | YES | YES | YES |
| Tuscan Bronze Reflector, Diffuse Polymer Lens | TL410TBZ | 450 | NO | NO | NO | 500 | NO | NO | NO | 510 | NO | NO | NO | 560 | YES | NO | YES |
| White Baffle, Diffuse Polymer Lens | TL411WB | 647 | YES | YES | YES | 690 | YES | YES | YES | 700 | YES | YES | YES | 770 | YES | YES | YES |
| Black Baffle, Diffuse Polymer Lens | TL411BB | 450 | NO | NO | NO | 490 | NO | NO | NO | 500 | NO | NO | NO | 550 | NO | NO | NO |
| Solite® Glass Lens Specular Clear Reflector | TL402SCS | 710 | YES | YES | YES | 770 | YES | YES | YES | 780 | YES | YES | YES | 860 | YES | YES | YES |
| Solite® Glass Lens Haze Reflector | TL402HS | 740 | YES | YES | YES | 810 | YES | YES | YES | 820 | YES | YES | YES | 900 | YES | YES | YES |
| Solite® Glass Lens White Reflector | TL402WHS | 710 | YES | YES | YES | 780 | YES | YES | YES | 790 | YES | YES | YES | 870 | YES | YES | YES |
| Solite® Glass Lens White Baffle | TL403WBS | 700 | YES | YES | YES | 760 | YES | YES | YES | 780 | YES | YES | YES | 850 | YES | YES | YES |
| Solite® Glass Lens Specular Black Reflector | TL402SBKS | 650 | YES | YES | YES | 710 | YES | YES | YES | 720 | YES | YES | YES | 800 | YES | YES | YES |
| Solite® Glass Lens Satin Nickel Reflector | TL402SNS | 660 | YES | YES | YES | 720 | YES | YES | YES | 730 | YES | YES | YES | 800 | YES | YES | YES |
| Solite® Glass Lens Tuscan Bronze Reflector | TL402TBZS | 630 | YES | YES | YES | 690 | YES | YES | YES | 700 | YES | YES | YES | 770 | YES | YES | YES |
| Solite® Glass Lens Black Baffle | TL403BBS | 630 | YES | YES | YES | 690 | YES | YES | YES | 700 | YES | YES | YES | 770 | YES | YES | YES |
| Square Baffle Trim, Solite® Glass Lens, White Ring & White Baffle | TLS408WHWB | 680 | YES | YES | YES | 740 | YES | YES | YES | 750 | YES | YES | YES | 830 | YES | YES | YES |
| Square Baffle Trim, Solite® Glass Lens, White Ring & Black Baffle | TLS408WHBB | 640 | YES | YES | YES | 710 | YES | YES | YES | 720 | YES | YES | YES | 790 | YES | YES | YES |
| Square Baffle Trim, Solite® Glass Lens, Satin Nickel Ring & Black Baffle | TLS408SNBB | 660 | YES | YES | YES | 720 | YES | YES | YES | 730 | YES | YES | YES | 800 | YES | YES | YES |
| Square Baffle Trim, Solite® Glass Lens, Tuscan Bronze Ring & Black Baffle | TLS408TBZBB | 630 | YES | YES | YES | 690 | YES | YES | YES | 700 | YES | YES | YES | 770 | YES | YES | YES |
| Wall Wash, Semi-Specular Reflector with Diffuse Polymer Lens & White Ring | TL409WW | 640 | YES | YES | YES | 700 | YES | YES | YES | 710 | YES | YES | YES | 780 | YES | YES | YES |
| Wall Wash, White Reflector, with Diffuse Polymer Lens & White Ring | TL409WHWW | 640 | YES | YES | YES | 710 | YES | YES | YES | 720 | YES | YES | YES | 790 | YES | YES | YES |
| White Baffle Shower Trim, All Polymer: Lens, Baffle & Ring | TL422PS | 680 | YES | YES | YES | 750 | YES | YES | YES | 760 | YES | YES | YES | 840 | YES | YES | YES |

(1) Trims are tested with designated LED Light Engines in accordance with IES LM-79 Photometric Measurement Standards

(2) Tested and qualified to ENERGY STAR® standards, consult the ENERGY STAR®Qualified Products List

(3) May be used for California Title 24 compliance, and registered with State of California; consult the CEC Title 20 Appliance Database

(4) May be used for IECC - International Energy Conservation Code and WSEC - Washington State Energy Code

## ORDERING INFORMATION

**SAMPLE NUMBER:** H457ICAT1E - EL406930 - <u>TL410SC</u>
Complete unit includes H4 LED housing, light engine and trim; ordered separately.
Housing: Refer to housing specification sheets for specification and details.
Light Engine: H4 LED Downlight Light Engines EL406 Series are compatible with this complete collection of H4 LED Downlight Trims.
(Note H4 LED Adjustable Gimbals are available. The H4 Adjustable Gimbals feature an integral trim and light engine, and are not compatible with H4 LED downlight trims. Refer to Adjustable Gimbal Light Engine specification sheets for details.

| Trim Options | Accessories |
|---|---|
| **TL410SC** = Specular Clear Reflector, Diffuse Polymer Dome Lens, White Ring, Shower Rated<br>**TL410H** = Haze Reflector, Diffuse Polymer Dome Lens, White Ring, Shower Rated<br>**TL410WH** = White Reflector, Diffuse Polymer Dome Lens, White Ring, Shower Rated<br>**TL410SN** = Satin Nickel Reflector, Diffuse Polymer Dome Lens, Satin Nickel Ring, Shower Rated<br>**TL410TBZ** = Tuscan Bronze Reflector, Diffuse Polymer Dome Lens, Tuscan Bronze Ring, Shower Rated<br>**TL410SBK** = Specular Black Reflector, Diffuse Polymer Dome Lens, White Ring, Shower Rated<br>**TL411WB** = White Baffle, Diffuse Polymer Dome Lens, White Ring, Shower Rated<br>**TL411BB** = Black Baffle, Diffuse Polymer Dome Lens, White Ring, Shower Rated<br>**TL402SCS** = Specular Clear Reflector, Solite® Glass Lens, and White Ring, Shower Rated<br>**TL402HS** = Haze Reflector, Solite® Glass Lens, and White Ring, Shower Rated<br>**TL402WHS** = White Reflector, Solite® Glass Lens, and White Ring, Shower Rated<br>**TL402SNS** = Satin Nickel Reflector, Solite® Glass Lens, and Satin Nickel Ring, Shower Rated<br>**TL402TBZS** = Tuscan Bronze Reflector, Solite® Glass Lens, and Tuscan Bronze Ring, Shower Rated<br>**TL402SBKS** = Specular Black Reflector, Solite® Glass Lens, and White Ring, Shower Rated<br>**TL403WBS** = White Baffle, Solite® Glass Lens, and White Ring, Shower Rated<br>**TL403BBS** = Black Baffle, Solite® Glass Lens, and White Ring, Shower Rated<br>**TLS408WHWB** = Square Baffle Trim, Solite® Glass Lens, White Ring with White Baffle, Shower Rated<br>**TLS408WHBB** = Square Baffle Trim, Solite® Glass Lens, White Ring with Black Baffle, Shower Rated<br>**TLS408SNBB** = Square Baffle Trim, Solite® Glass Lens, Satin Nickel Ring with Black Baffle, Shower Rated<br>**TLS408TBZBB** = Square Baffle Trim, Solite® Glass Lens, Tuscan Bronze Ring with Black Baffle, Shower Rated<br>**TL409WW** = Wall Wash, Semi-Specular Clear Reflector with White Ring, Shower Rated<br>**TL409WHWW** = Wall Wash, White Reflector with White Ring, Shower Rated<br>**TL422PS** = Polymer "Dead Front" White Baffle & Regressed Lens, White Ring, Shower Rated | **Thin Profile Designer Trim Rings**<br>*For use with Round TL4 trims (not compatible with Square TLS4 trims)*<br>**TRM400WH** = White<br>**TRM400BK** = Black<br>**TRM400SN** = Satin Nickel<br>**TRM400TBZ** = Tuscan Bronze<br>**TRM400PC** = Polished Chrome |

Solite® is a registered trademark of AGC Flat Glass North America

Note: Specifications and Dimensions subject to change without notice.

Visit our web site at www.cooperlighting.com

**COOPER Lighting**
www.cooperlighting.com

# HALO LED ICAT HOUSING for NEW CONSTRUCTION

The H750ICAT is a dedicated LED new construction housing to be used with designated HALO LED modules.The H750ICAT is designed for insulated ceilings and can be in direct contact with ceiling insulation*. This AIRTITE housing design prevents airflow between conditioned and unconditioned spaces and saves on both heating and air conditioning costs. The LED connector system provides high efficacy code compliance when used with designated HALO LED modules and trims.

## HALO®

| Catalog # | | Type |
|---|---|---|
| Project | | DL6 |
| Comments | | Date |
| Prepared by | | |

## DESIGN FEATURES

### Housings
Aluminum construction for greater heat dissipation. H750 ICAT housing is gasketed to prevent airflow from heated or air conditioned spaces.

### Plaster Frame
Galvanized steel frame. Housing adjusts in plaster frame to accommodate up to 1" ceiling thickness. Regressed locking screw for securing hanger bars. Cutouts included for easily crimping hanger bars in position

### Slide-N-Side™ Junction Box
- Positioned to accommodate straight conduit runs.
- Seven ½" trade size conduit knockouts with true pry-out slots.
- Slide-N-Side wire traps allow non metallic sheathed cable to be installed without tools and without removing knockouts.
- Allows wiring connections to be made outside the box.
- Simply insert the cable directly into the trap after connections are made.
- Accommodates the following standard non-metallic sheathed cable type:
- U.S. #14/2, #14/3, #12/2, #12/3
- Canada: #14/2, #14/3, #12/2

### GOT NAIL! Pass -N-Thru™ Bar Hangers
Bar Hanger features include
- Pre-installed nail easily installs in regular lumber, engineered lumber and laminated beams.
- Safety and Guidance system prevents snagging, ensures smooth, straight nail penetration and allows bar hangers to be easily removed if necessary
- Automatic leveling flange aligns the housing and allows holding the housing in place with one hand while driving nails.
- Housing can be positioned at any point within 24" joist spans
- Score lines allow tool-free shortening for 12" joists and bar hangers do not need to be removed for shortening.
- Bar hangers may be repositioned 90° on plaster frame
- Integral T-bar clip snaps onto T-bars – no additional clips are required.

### LED Module Connection
Halo LED modules simply install with a plug-in 120V-277V rated line voltage wiring connector (UL and CSA Listed Luminaire Disconnect). This non-screw-base connection preserves the high efficacy rating and prevents use of low efficacy incandescent sources (see LED Module specifications).

### Caution
Connection is rated for 120V and 277V input. Installer must verify LED module voltage is compatible with the applicable voltage input. If uncertain, consult a qualified electrician.

### Labels
- UL/cUL Listed 1598 Luminaire
- CE Marking - "Conformité Européene" conformity with the Council of European Communities Directives, meeting internationally recognized compliance when used with ML56 Series LED modules
- UL/cUL Listed for Feed Through
- UL/cUL Listed for Damp Location
- UL/cUL Listed for Wet Location with select trims
- UL/cUL Listed for direct contact with insulation and combustible material*
- Rated for 20W maximum

### Qualification
May be used with qualified Halo LED modules and designated trims for High Efficacy Luminaire Compliance:
- State of California Title 24
- International Energy Conservation Code (IECC)
- Washington State Energy Code
- New York State Energy Conservation Construction Code - AIR-TITE™ Compliant
- Certified under ASTM-E283 standard for air-tight construction
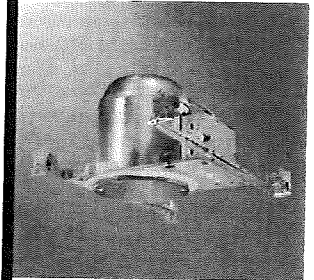
## H750ICAT

**6" New Construction IC AIR-TITE™ Housing For Halo LED Modules and Trims**
- ML56 Series
- RL56 Series
- RA56 Series

**High Efficacy LED Housing**

**FOR USE IN INSULATED CEILINGS**

**FOR DIRECT CONTACT WITH INSULATION***

air tite™

RoHS Compliant · CE
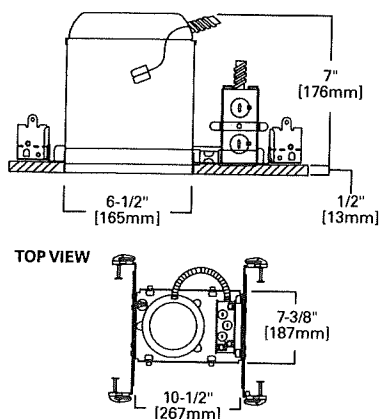
| Can be used with ENERGY STAR® qualified LED modules | Can be used for IECC International Energy Conservation Code High Efficacy Compliance |
|---|---|
| Can be used for T24 California Title 24 High Efficacy Compliance | Can be used for WSEC Washington State Energy Code High Efficacy Compliance |

Qualified and compliant with select trims. Refer to ENERGY STAR® Qualified Products List and CEC (T24) Appliance Database for listings.

7" [176mm]

6-1/2" [165mm]    1/2" [13mm]

**TOP VIEW**

7-3/8" [187mm]

10-1/2" [267mm]

## Cooper Lighting
by E:T·N

\* Not to be used in direct contact with spray foam insulation.

## ORDERING INFORMATION - RL56 SERIES

**SAMPLE NUMBER:** H750ICAT - RL560WH6927
Order housing, light module, trim and separately.

| Housing | RL56 LED - Compatible LED Retrofit Modules |
|---|---|
| **H750ICAT**= 6" Aperture, New Construction, IC AIR-TITE™, High Efficacy LED Housing | **80 CRI**<br>**RL560WH6827**= 5"/6" Retrofit Baffle - Trim LED Module, 80CRI, 2700K, Matte White<br>**RL560SN6827**= 5"/6" Retrofit Baffle - Trim LED Module, 80CRI, 2700K, Satin Nickel<br>**RL560WH6830**= 5"/6" Retrofit Baffle - Trim LED Module, 80CRI, 3000K, Matte White<br>**RL560SN6830**= 5"/6" Retrofit Baffle - Trim LED Module, 80CRI, 3000K, Satin Nickel<br>**RL560WH6835**= 5"/6" Retrofit Baffle - Trim LED Module, 80CRI, 3500K, Matte White<br><br>**90 CRI**<br>**RL560WH6927**= 5"/6" Retrofit Baffle - Trim LED Module, 90CRI, 2700K, Matte White<br>**RL560SN6927**= 5"/6" Retrofit Baffle - Trim LED Module, 90CRI, 2700K, Satin Nickel<br>**RL560WH6930**= 5"/6" Retrofit Baffle - Trim LED Module, 90CRI, 3000K, Matte White<br>**RL560SN6930**= 5"/6" Retrofit Baffle - Trim LED Module, 90CRI, 3000K, Satin Nickel<br>**RL560WH6935**= 5"/6" Retrofit Baffle - Trim LED Module, 90CRI, 3500K, Matte White |

## ORDERING INFORMATION - RA56 SERIES

**SAMPLE NUMBER:** H750ICAT - RA5606927WH
Order housing, light module, trim and separately.

| Housing | RA56 LED - Compatible LED Retrofit Modules |
|---|---|
| **H750ICAT**= 6" Aperture, New Construction, IC AIR-TITE™, High Efficacy LED Housing | **Very Wide Flood - VWFL Models**<br>**RA5606927WH**= 5"/6" LED Adjustable Gimbal, 90CRI, 2700K, White, Very Wide Flood<br>**RA5606930WH**= 5"/6" LED Adjustable Gimbal, 90CRI, 3000K, White, Very Wide Flood<br><br>**Narrow Flood - NFL Models**<br>**RA5606927NFLWH**= 5"/6" LED Adjustable Gimbal, 90CRI, 2700K, White, Narrow Flood<br>**RA5606930NFLWH**= 5"/6" LED Adjustable Gimbal, 90CRI, 3000K, White, Narrow Flood |

## ORDERING INFORMATION - ML56 SERIES

**SAMPLE NUMBER:** H750ICAT - ML5606830 - 693WB
Order housing, light module, trim and separately.

| Housing | ML56 LED Light Modules | ML56 LED Trims | ML56 System Accessories |
|---|---|---|---|
| **H750ICAT**= 6" Aperture, New Construction, IC AIR-TITE™, High Efficacy LED Housing | **600 Series / 80 CRI**<br>**ML5606827**= 5"/6" LED Retrofit Downlight Light Module, 600 lumen, 80CRI, 2700K<br>**ML5606830**= 5"/6" LED Retrofit Downlight Light Module, 600 lumen, 80CRI, 3000K<br>**ML5606835**= 5"/6" LED Retrofit Downlight Light Module, 600 lumen, 80CRI, 3500K<br>**ML5606840**= 5"/6" LED Retrofit Downlight Light Module, 600 lumen, 80CRI, 4000K<br><br>**600 Series / 90 CRI**<br>**ML5606927**= 5"/6" LED Retrofit Downlight Light Module, 600 lumen, 90CRI, 2700K<br>**ML5606930**= 5"/6" LED Retrofit Downlight Light Module, 600 lumen, 90CRI, 3000K<br>**ML5606935**= 5"/6" LED Retrofit Downlight Light Module, 600 lumen, 90CRI, 3500K<br>**ML5606940**= 5"/6" LED Retrofit Downlight Light Module, 600 lumen, 90CRI, 4000K<br><br>**900 Series / 80 CRI**<br>**ML5609827**= 5"/6" LED Retrofit Downlight Light Module, 900 lumen, 80CRI, 2700K<br>**ML5609830**= 5"/6" LED Retrofit Downlight Light Module, 900 lumen, 80CRI, 3000K<br>**ML5609835**= 5"/6" LED Retrofit Downlight Light Module, 900 lumen, 80CRI, 3500K<br>**ML5609840**= 5"/6" LED Retrofit Downlight Light Module, 900 lumen, 80CRI, 4000K<br><br>**900 Series / 90 CRI**<br>**ML5609927**= 5"/6" LED Retrofit Downlight Light Module, 900 lumen, 90CRI, 2700K<br>**ML5609930**= 5"/6" LED Retrofit Downlight Light Module, 900 lumen, 90CRI, 3000K<br>**ML5609935**= 5"/6" LED Retrofit Downlight Light Module, 900 lumen, 90CRI, 3500K<br>**ML5609940**= 5"/6" LED Retrofit Downlight Light Module, 900 lumen, 90CRI, 4000K<br><br>**1200 Series / 80 CRI**<br>**ML5612827**= 5"/6" LED Light Module, 1200 lumen, 80CRI, 2700K<br>**ML5612830**= 5"/6" LED Light Module, 1200 lumen, 80CRI, 3000K<br>**ML5612835**= 5"/6" LED Light Module, 1200 lumen, 80CRI, 3500K<br>**ML5612840**= 5"/6" LED Light Module, 1200 lumen, 80CRI, 4000K<br><br>**1200 Series / 90 CRI**<br>**ML5612927**= 5"/6" LED Light Module, 1200 lumen, 90CRI, 2700K<br>**ML5612930**= 5"/6" LED Light Module, 1200 lumen, 90CRI, 3000K<br>**ML5612935**= 5"/6" LED Light Module, 1200 lumen, 90CRI, 3500K<br>**ML5612940**= 5"/6" LED Light Module, 1200 lumen, 90CRI, 4000K | **690 Series - 6" LED Trims**<br>**Non-Conductive "Dead Front" Baffles**<br>**691WB**=6" LED Trim, Polymer "Dead-Front", Shallow White Baffle & Flange (For use with 600 Series LED Light Modules only)<br><br>**Reflectors**<br>**692SC**=6" LED Downlight Trim, Specular Reflector & White Flange<br>**692H**=6" LED Downlight Trim, Haze Reflector & White Flange<br>**692W**=6" LED Downlight Trim, White Reflector & Flange<br><br>**Baffles**<br>**693WB**=6" LED Downlight Trim, White Micro-Step Baffle & Flange<br>**693BB**=6" LED Downlight Trim, Black Micro-Step Baffle & Flange<br>**693SNB**=6" LED Downlight Trim, Satin Nickel Micro-Step Baffle & Flange<br>**693TBZB**=6" LED Downlight Trim, Tuscan Bronze Micro-Step Baffle & Flange<br><br>**Semi-Regressed Eyeballs**<br>**694WB**=6" LED Directional Trim, White Eyeball, Baffle & Flange<br>**694SNB**=6" LED Directional Trim, Satin Nickel Eyeball, Baffle & Flange<br>**694TBZB**=6" LED Directional Trim, Tuscan Bronze Eyeball, Baffle & Flange<br><br>**Wall Wash**<br>**695WW**=6" LED Downlight Trim, Wall Wash with Specular Kick Reflector & White Flange<br><br>**Shallow Baffle**<br>**696WB**=6" LED Trim, White Shallow Baffle & Flange | **ML56CLIP**= 6" Friction Clip Kit - For use with non-torsion spring housings. 6" clips included.<br>**WW6955C**= Wall Wash Insert - Specular Kick Reflector for 695WW (1 included with trim). For double wall washing or replacement.<br>**TRM690WH**=6" LED Oversize Trim Ring for use with 59* series trims, White  6.9" I.D., 9.5" O.D. Ring slips over LED trim. Inset design allows 6" trim to fit into oversize ring for an even trim surface<br>**EBA560PK**= Replacement screwbase adapter to LED disconnect with cap<br><br>**ML56-1200 Series Beam Forming Optic Media**<br>**BFR56NFL**=Beam forming reflector kit, narrow flood, 25° nominal<br>**BFR56MH**=Media holder, accepts one 3.45" lens. Requires BFR56NFL & L345SF, order separately.<br>**L345SF**=3.45" diameter soft focus lens. Requires BFR56NFL and BFR56MH, order separately. |

## Description

The Halo ML56 LED Downlighting System is a series of modular LED Light Modules for use with designated 5" or 6" ML56 LED trims in new construction, remodel and retrofit installation. Compatible with Halo 5" H550 and 6" H750, H2750 Series LED housings. And in retrofit of existing housings the ML56 Series fits 5" or 6" Halo, All-Pro, and others. ML56 system offers shallow trims for installation in Halo, All-Pro and others shallow housings. ML56 Light Modules are offered in 600 Series, 900 Series, and 1200 Series, 80CRI or 90CRI, and four color temperatures 2700K, 3000K, 3500K, 4000K. ML56 Light Modules are universal voltage 120V – 277V and dimmable at 120V. The ML56 lens provides uniform diffuse illumination standard.

# HALO

| Catalog # | | Type | |
|---|---|---|---|
| Project | | DL6 LED | |
| Comments | | Date | |
| Prepared by | | | |

## Specification Features

### Mechanical

**Light Module**
- Module includes LED package, LED driver, heat sink, and lens
- Durable die-cast aluminum construction.
- Heat sink designed to conduct heat away from the LED keeping the junction temperatures below specified maximums, including insulated ceiling environments

**Lens**
- Impact-resistant polycarbonate
- Convex form for lamp-like appearance
- High lumen transmission
- Diffusing for even illumination

**Mounting**
- Light Modules attach to reflector and baffle trims via locking tabs, and attach to eyeballs via keyed twist-to-lock mating bosses
- The complete light module and trim assembly installs into housings with precision formed torsion springs located on the trim
- Friction Blade mounting is an alternate option using the accessory 6" Friction Blade Kit model ML56CLIP (order separately). Friction blades provide alternative to torsion springs for retrofit in 6" housings without torsion mounting tabs. The stainless steel friction blades allow the ML56 to be installed in a wider range of housings, and allow rotation in the housing aperture (360 degrees).

**Housing Compatibility**
A complete ML56 system includes a LED Light Module, LED trim, and a compatible housing (new construction, remodel, or existing retrofit). Housing compatibility in the ML56 System is determined by the ML56 trim dimensions. ML56 trims are available in 5" and 6" aperture (5" = 59xx series and 6" = 69xx series trims). Refer to Housing – Trim Section in this document.

**LED**
- 900 Series = 900 design lumens typical.
- Delivered lumens vary depending upon 5" or 6", color temperature, and trim finish.
- Color Temperature options: 2700K, 3000K, 3500K, 4000K

- CRI: 80
- L70 at 50,000 hours, projected in accordance with IES TM-21
- LED is a chip on board design consisting of a multiple LED package to create one virtual light source for a productive "cone of light"

**Color Specification & Quality Standards**
- A tight chromaticity specification ensures LED color uniformity, sustainable Color Rendering Index (CRI) and Correlated Color Temperature (CCT) over the useful life of the LED
- LED color uniformity of 3 SDCM exceeds ENERGY STAR® color standards per ANSI C78.377- 2008.
- Every Halo LED Light Module is quality tested and performance measured, and then serialized in a permanent record to register lumens, wattage, CRI and CCT.
- Halo LED serialized testing and measurement process ensures color and lumen consistency on a per-unit basis, and validates long-term product consistency over time
- Halo ML56 LED Light Modules include lumen, CRI, and CCT designations in the model number
- Example: **ML5609830**
  **56** = 5" / 6" aperture series
  **09** = 900 lumen series
  **8** = >80 CRI
  **30** = 3000K nominal CCT

**Electrical Power Connections**
- LED connector is a non-screw base luminaire disconnect offering easy installation with the matching Halo 5" H550 series and 6" H750 and H2750 series housings (housing selected depends upon LED trim 5" or 6").
- LED Connector is a non-screw base, and where required to qualify as a high-efficacy luminaire.
- The included E26 medium screw-base Edison adapter provides easy retrofit of incandescent housings (see Housing Section).

**Ground Connection**
Separate grounding cable included on the module for attachment to the housing during installation.

**LED Driver**
- Driver is universal voltage 120V-277V, and may be controlled from a switch in this range of main inputs (switchable at 120V, 220V, 230V, 240V, and 277V)
- Driver is dimmable at 120V operation when connected to a compatible dimmer.
- Driver is a high efficiency, electronic power supply providing DC power to the LED.
- Driver meets FCC EMI/RFI Consumer Level limits on 120V main inputs, and is compliant for use in residential and commercial installations.
- Driver features high power factor, low THD, and has integral thermal protection in the event of over temperature or internal failure.
- Driver is replaceable, if replacement should be required.

**Dimming**
Designed for dimming capability to nominal 5% in normal operation with standard 120V Leading Edge (LE) and Trailing Edge (TE) phase control dimmers. (Consult dimmer manufacturer for dimmer compatibility and details. Note, some dimmers require a neutral in the wallbox.)

**Warranty**
Cooper Lighting provides a (5) five year limited warranty on the Halo ML56 LED Light Module.

**LED Module in New or Retrofit Existing Construction – Housings other than Halo or All-Pro**
- If used in recessed housings other than Halo or All-Pro the Cooper Lighting 5-year limited warranty applies to the LED Light Module and Trim only.
- As with any electrical installation, a qualified electrician must ensure compatibility of use with a particular housing; this includes all applicable national and local electrical and building codes. Installer is responsible to properly and securely retain the LED Module and LED Trim in the housing at time of installation.
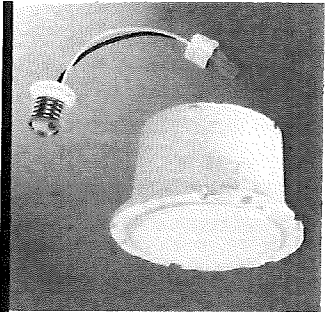
## ML56 LED System

### 900 Series / 80 CRI

**ML5609827**
**ML5609830**
**ML5609835**
**ML5609840**

5-Inch and 6-Inch
900 Lumen LED
Light Module for
New Construction,
Remodel and Retrofit

For use with 59x and 69x
Series Trims

FOR USE IN
INSULATED CEILING
AND NON-INSULATED
CEILING RATED
HOUSINGS

HIGH EFFICACY LED
WITH INTEGRAL
DRIVER - DIMMABLE

**Energy Data**

| ML56 900/80 Series |
|---|
| (Values at non-dimming line voltage) |
| Minimum Starting Temp: -30°C (-22°F) |
| EMI/RFI: FCC Title 47 CFR, Part 15, (Consumer) |
| Sound Rating: Class A |
| Input Voltage: UNV 120V-277V |
| Power Factor: >0.95 @ 120V and >0.9 @277V |
| Input Frequency: 50/60Hz |
| THD: <20% |
| Max. Rated Wattage: 14W |
| Input Power: 13.4W |
| Input Current at 120V: 0.15A |
| Input Current at 277V: 0.08A |
| Driver Compliance: UL8750, Class II rated |
| Maximum IC (Insulated Ceiling) Ambient Continuous Operating Temperature: 25°C (77°F) |
| Maximum Non-IC Ambient Continuous Operating Temperature: 40°C (104°F) |
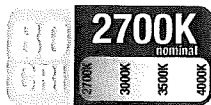
**2700K** nominal
**ML5609827**
5" or 6" LED 900 Series

**3000K** nominal
**ML5609830**
5" or 6" LED 900 Series
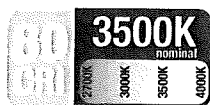
**3500K** nominal
**ML5609835**
5" or 6" LED 900 Series

**4000K** nominal
**ML5609840**
5" or 6" LED 900 Series

## Cooper Lighting
by E:T•N

## Compliance

- cULus listed 1598 Luminaire (Halo and All-Pro housings)
- UL Classified when used in retrofit (refer to housing section)
- cULus listed for damp locations
- cULus Wet location listed with baffle and reflector trims only
- Airtight certified per ASTM E283 (not exceeding 2.0 CFM under 57 Pascals pressure difference)
- IP66 ingress protection rated with baffle and reflector trims only
- RoHS compliant

- May be used in IC (insulated ceiling) housings in direct contact with insulation* and combustible material
- Can be used as a California Title 24 compliant Non-Residential LED Luminaire
- Can be used for International Energy Conservation Code (IECC) high efficiency luminaire compliance.
- Can be used for Washington State Energy Code compliance
- ENERGY STAR® certified luminaire - consult ENERGY STAR® Certified product list

- EMI/RFI per FCC 47CFR Part 15 Class B Consumer limits (commercial and residential compliant)
- Photometric testing in accordance with IES LM-79
- Lumen maintenance projections in accordance with IES LM-80 and TM-21
- CE Mark - "Conformité Européene" conformity with the Council of European Communities Directives, meeting internationally recognized compliance when used with Halo H550, H750, and H2750 Series LED housings only

\* Not for use with housings in direct contact with spray foam insulation.

| ENERGY STAR | Can be used for **IECC** International Energy Conservation Code High Efficacy Compliance | Can be used to comply with **T24** California Non-Residential Lighting Controls requirements | Can be used for **WSEC** Washington State Energy Code High Efficacy Compliance | **RoHS** Compliant | air*tite* | C E | UL | c UL |

Refer to ENERGY STAR® Certified Products List.
Can be used to comply with California Title 24 Non-Residential Lighting Controls requirements as a LED Luminaire

## Dimensions



4-1/2"
[114 mm]

HALO

3"
[76 mm]

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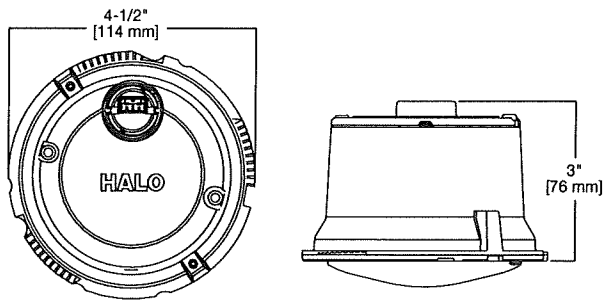
## Ordering Information

Sample Number: **ML5609830  593WB**

Order LED Module and trim separately.

A complete system also includes a compatible housing (new construction, remodel, or existing retrofit). Housing aperture size in the ML56 System is determined by the ML56 trim dimensions. ML56 trims are available in 5" and 6" aperture (5" = 59xx series and 6" = 69xx series trims). Refer to Housing Section in this document.

### ML56 LED Light Modules
### 900 Series / 80 CRI

**ML5609827**= 5"/6" LED light module, 900 lumen, 80CRI, 2700K

**ML5609830**= 5"/6" LED light module, 900 lumen, 80CRI, 3000K

**ML5609835**= 5"/6" LED light module, 900 lumen, 80CRI, 3500K

**ML5609840**= 5"/6" LED light module, 900 lumen, 80CRI, 4000K

### ML56 LED 5" and 6" Trims

**590 Series - 5" LED Trims**

**591WB**=5" LED trim, polymer "dead-front", shallow white baffle & flange – shallow and standard housings (For use with 600 Series LED light modules only)

**592SC**=5" LED trim, specular reflector & white flange

**592H**=5" LED trim, haze reflector & white flange

**592W**=5" LED trim, white reflector & flange

**593WB**=5" LED trim, white micro-step baffle & flange

**593BB**=5" LED trim, black micro-step baffle & white flange

**593SNB**=5" LED trim, satin nickel micro-step baffle & flange

**593TBZB**=5" LED trim, tuscan bronze micro-step baffle & flange

**594WB**=5" LED directional trim, white eyeball, baffle & flange – shallow and standard housings

**594SNB**=5" LED directional trim, satin nickel eyeball, baffle & flange – shallow and standard housings

**594TBZB**=5" LED directional trim, tuscan bronze eyeball, baffle & flange – shallow and standard housings

**595WW**=5" LED trim, wall wash - specular reflector, repositionable specular kick reflector, white flange

**596WB**=5" LED trim, white shallow baffle & flange – shallow and standard housings

**690 Series - 6" LED Trims**

**691WB**=6" LED trim, polymer "dead-front", white shallow baffle & flange – shallow and standard housings (For use with 600 Series LED light modules only)

**692SC**=6" LED trim, specular reflector & white flange

**692H**=6" LED trim, haze reflector & white flange

**692W**=6" LED trim, white reflector & flange

**693WB**=6" LED trim, white micro-step baffle & flange

**693BB**=6" LED trim, black micro-step baffle & white flange

**693SNB**=6" LED trim, satin nickel micro-step baffle & flange

**693TBZB**=6" LED trim, tuscan bronze micro-step baffle & flange

**694WB**=6" LED directional trim, white eyeball, baffle & flange – shallow and standard housings

**694SNB**=6" LED directional trim, satin nickel eyeball, baffle & flange – shallow and standard housings

**694TBZB**=6" LED directional trim, tuscan bronze eyeball, baffle & flange – shallow and standard housings

**695WW**=6" LED trim, wall wash - specular reflector, repositionable specular kick reflector, white flange

**696WB**=6" LED trim, white shallow baffle & flange – for use with shallow and standard housings

### ML56 System Accessories

**ML56CLIP**=Friction clip mounting kit - for retrofitting non-torsion spring housings, 6" clips*

**WW595SC**=5" Wall wash insert - kick reflector for 595WW (1-included with trim) double or corner wall wash**

**WW695SC**=6" Wall wash insert - kick reflector for 695WW (1-included with trim) double or corner wall wash**

**TRM590WH**=5" LED oversize trim ring for use with 59* series trims, white 6.3" I.D., 7.5" O.D. Ring slips over LED trim. Inset design allows 5" trim to fit into oversize ring for an even trim surface

**TRM690WH**=6" LED oversize trim ring for use with 69* series trims, white 6.9" I.D., 9.5" O.D. Ring slips over LED trim. Inset design allows 6" trim to fit into oversize ring for an even trim surface

*ML56CLIP is compatible with 6" baffle and reflector trims only (691, 692, 693, 695, 696 series).
For eyeball trim (694 series) use ML7RAB retrofit adpater band.

**Wall Wash Trims 595WW and 695WW Feature an exclusive Repositionable Kick Reflector for fine-tuning adjustment of the wall wash effect. The WW595SC and WW695SC are Repositionable Kick Reflectors sold separately for addition to the Wall Wash Trim when a double or corner wall wash is needed, or for replacement of original kick reflector included with the trim.

## Lighting Facts

### ML5609827

| PRODUCT SPECIFICATIONS | |
|---|---|
| Lumens (Light Output) | 934 |
| Watts | 13.4 |
| Lumens Per Watt (Efficacy) | 69.7 |
| Color Accuracy (CRI) | 81 |
| Light Color (CCT) Correlated Color Temperature (CCT) | 2700K |

2700K    3000K    4500K    6500K
Soft White    Warm White    Bright White

### ML5609830

| PRODUCT SPECIFICATIONS | |
|---|---|
| Lumens (Light Output) | 1009 |
| Watts | 13.4 |
| Lumens Per Watt (Efficacy) | 75.3 |
| Color Accuracy (CRI) | 82 |
| Light Color (CCT) Correlated Color Temperature (CCT) | 3000K |

2700K    3000K    4500K    6500K
Soft White    Warm White    Bright White

### ML5609835

| PRODUCT SPECIFICATIONS | |
|---|---|
| Lumens (Light Output) | 1024 |
| Watts | 13.4 |
| Lumens Per Watt (Efficacy) | 76.4 |
| Color Accuracy (CRI) | 83 |
| Light Color (CCT) Correlated Color Temperature (CCT) | 3500K |

2700K    3000K    4500K    6500K
Soft White    Warm White    Bright White

### ML5609840

| PRODUCT SPECIFICATIONS | |
|---|---|
| Lumens (Light Output) | 1045 |
| Watts | 13.4 |
| Lumens Per Watt (Efficacy) | 78.0 |
| Color Accuracy (CRI) | 82 |
| Light Color (CCT) Correlated Color Temperature (CCT) | 4000K |

2700K    3000K    4500K    6500K
Soft White    Warm White    Bright White

## Cooper Lighting
by **E:T•N**

## Housing – Trim Compatibility

Housing aperture size in the ML56 System is determined by the ML56 trim dimensions. ML56 trims are available in 5" and 6" aperture (5" = 59xx series and 6" = 69xx series trims). Refer to ML56 TRIMS in this document. (Note "X" in the trim model number denotes finish code.)

## Housing – Compatibility

The ML56 LED light module - trim combination is cULus Listed or UL Classified for use with any 5" or 6" diameter recessed housing constructed of steel or aluminum with an internal volume that exceeds 115 in³ in addition to those noted below.

## Halo and All-Pro UL Listed Compatibility

**6" Trims: 691X, 692X, 693X, 694X, 695X, 696X**
(Note shallow housings for use with 691X, 694X, 696X trims only)

### HALO - LED Housings with LED Luminaire Connector - High-Efficacy Compliant

| Brand | Housing Type | Catalog Number | Description |
|---|---|---|---|
| Halo | Standard Housings | H750ICAT | 6" LED, Insulated Ceiling, Air-Tite, New Construction Housing |
| | | H750RICAT | 6" LED, Insulated Ceiling, Air-Tite, Remodel Housing |
| | | H750T | 6" LED, Non-IC, Air-Tite, New Construction Housing |
| | | H750TCP | 6" LED, Non-IC, New Construction/Remodel Chicago Plenum Housing |
| | | H750TD010 | 6" LED, Non-IC, Air-Tite, New Construction Housing |
| | | H750RTD010 | 6" LED, Non-IC, Air-Tite, Remodel Housing |
| | | H750TCPD010 | 6" LED, Non-IC, New Construction/Remodel Chicago Plenum Housing |
| | | H750RINTD010 | 6" LED, Non-IC, Air-Tite, Remodel Housing (International CE Mark and UL/cUL Listed) |
| Halo | Shallow Housings | H2750ICAT | 6" LED, Shallow, Insulated Ceiling, Air-Tite, New Constr. (use with 691X, 694X, 696X trims only) |

### HALO and All-Pro - Incandescent E26 Screwbase Housings

| Brand | Housing Type | Catalog Number | Description |
|---|---|---|---|
| Halo | Standard Housings | H7ICAT | 6" Insulated Ceiling, Air-Tite New Construction Housing |
| | | H7RICAT | 6" Insulated Ceiling, Air-Tite Remodel Housing |
| | | H7ICT | 6" Insulated Ceiling, New Construction Housing |
| | | H7RICT | 6" Insulated Ceiling, Remodel Housing |
| | | H7ICATNB | 6" Insulated Ceiling, Air-Tite New Construction Housing, No Socket Bracket |
| | | H7ICTNB | 6" Insulated Ceiling, New Construction Housing, No Socket Bracket |
| | | H7T | 6" Non-IC, New Construction Housing |
| | | H7RT | 6" Non-IC, Remodel Housing |
| | | H7TNB | 6" Non-IC, New Construction Housing, No Socket Bracket |
| | | H7TCP | 6" Non-IC, Chicago Plenum, New Construction/Remodel Housing |
| | | H7UICT | 6" Insulated Ceiling, Universal New Construction Housing |
| | | H7UICAT | 6" Insulated Ceiling, Universal, Air-Tite, New Construction Housing |
| All-Pro | Standard Housings | EI700AT | 6" Insulated Ceiling, Air-Tite New Construction Housing |
| | | EI700RAT | 6" Insulated Ceiling, Air-Tite Remodel Housing |
| | | EI700 | 6" Insulated Ceiling, New Construction Housing |
| | | EI700R | 6" Insulated Ceiling, Remodel Housing |
| | | EI700ATNB | 6" Insulated Ceiling, Air-Tite New Construction Housing, No Socket Bracket |
| | | EI700NB | 6" Insulated Ceiling, New Construction Housing, No Socket Bracket |
| | | EI700U | 6" Insulated Ceiling, Universal New Construction Housing |
| | | EI700UAT | 6" Insulated Ceiling, Universal, Air-Tite, New Construction Housing |
| | | ET700 | 6" Non-IC, New Construction Housing |
| | | ET700R | 6" Non-IC, Remodel Housing |
| Halo | Shallow Housings | H27ICAT | 6" Shallow, Insulated Ceiling, Air-Tite New Construction (use with 691X, 694X, 696X trims only) |
| | | H27RICAT | 6" Shallow, Insulated Ceiling, Air-Tite Remodel Housing (use with 691X, 694X, 696X trims only) |
| | | H27ICT | 6" Shallow, Insulated Ceiling, New Construction Housing (use with 691X, 694X, 696X trims only) |
| | | H27RICT | 6" Shallow, Insulated Ceiling, Remodel Housing (use with 691X, 694X, 696X trims only) |
| | | H27T | 6" Shallow, Non-IC, New Construction Housing (use with 691X, 694X, 696X trims only) |
| | | H27RT | 6" Shallow, Non-IC, Remodel Housing (use with 691X, 694X, 696X trims only) |
| All-Pro | Shallow Housings | EI2700AT | 6" Shallow, Insulated Ceiling, Air-Tite New Construction (use with 691X, 694X, 696X trims only) |
| | | EI2700 | 6" Shallow, Insulated Ceiling, New Construction Housing (use with 691X, 694X, 696X trims only) |
| | | EI2700R | 6" Shallow, Insulated Ceiling, Air-Tite Remodel Housing (use with 691X, 694X, 696X trims only) |
| | | ET2700 | 6" Shallow, Non-IC, New Construction Housing (use with 691X, 694X, 696X trims only) |
| | | ET2700R | 6" Shallow, Non-IC, Remodel Housing (use with 691X, 694X, 696X trims only) |

## Halo LED Retrofit Enclosures

| Brand | Type | Catalog Number | Description |
|---|---|---|---|
| Halo | Retrofit | ML7BXRFK | 6" Retrofit Enclosure, Non-IC, BX Whip |
| | | ML7E26RFK | 6" Retrofit Enclosure, Non-IC, E26 Screw base Interface |

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## Housing Compatibility - Continued

**5" Trims: 591X, 592X, 593X, 594X, 595X, 596X**
(Note shallow housings for use with 591X, 594X, 596X trims only)

### HALO - LED Housings with LED Luminaire Connector - High-Efficacy Compliant

| Brand | Housing Type | Catalog Number | Description |
|---|---|---|---|
| Halo | Standard Housings | H550ICAT | 5" LED, Insulated Ceiling, Air-Tite, New Construction Housing |
| | | H550RICAT | 5" LED, Insulated Ceiling, Air-Tite, Remodel Housing |

### HALO and All-Pro - Incandescent E26 Screwbase Housings

| Brand | Housing Type | Catalog Number | Description |
|---|---|---|---|
| Halo | Standard Housings | H5ICAT | 5" Insulated Ceiling, Air-Tite New Construction Housing |
| | | H5RICAT | 5" Insulated Ceiling, Air-Tite Remodel Housing |
| | | H5T | 5" Non-IC, New Construction Housing |
| | | H5RT | 5" Non-IC, Remodel Housing |
| | | H5TM | 5" Non-IC, New Construction Housing (Canada) |
| All-Pro | Standard Housings | EI500AT | 5" Insulated Ceiling, Air-Tite New Construction Housing |
| | | EI500RAT | 5" Insulated Ceiling, Air-Tite Remodel Housing |
| | | ET500 | 5" Non-IC, New Construction Housing |
| | | ET500R | 5" Non-IC, Remodel Housing |
| Halo | Shallow Housings | H25ICAT | 5" Shallow, Insulated Ceiling, Air-Tite New Construction (use with 591X, 594X, 596X trims only) |

## Housings - UL Classified for Retrofit Compatibility

**6" Trims: 691X, 692X, 693X, 694X, 695X, 696X**
(Note shallow housings for use with 691X, 694X, 696X trims only)

| Brand | Housing Type | Description |
|---|---|---|
| Juno | Standard Housings | IC22, IC22R, IC22W, IC22S, IC23, IC23W, TC2, TC2R, IC2 |
| | Shallow Housings | IC21, IC21R (use with 691X, 694X, 696X trims only) |
| Capri | Standard Housings | CR1, PR1, QL1 |
| | Shallow Housings | R9ASIC/PS9RM (use with 691X, 694X, 696X trims only) |
| Elco | | HL7ICA (EL7ICA) |
| Lithonia | Standard Housings | LC6, L7X |
| | Shallow Housings | L7XP (use with 691X, 694X, 696X trims only) |
| Thomas | | PS1 |
| Commercial Electric | | C7ICA, H3 |
| Progress | Standard Housing | P87-AT †* |
| | Shallow Housing | P86TG (use with 691X, 694X, 696X trims only) |
| Lightolier | | 1104ICS †*, 1104ICR †* |

† Requires replacement of torsion springs with Friction Clips. Order Friction Clip Kit separately: ML56CLIP
* ML56CLIP is compatible with only baffle and reflector trims

**5" Trims: 591X, 596X**

| Brand | Housing Type | Catalog Number |
|---|---|---|
| Juno | Standard Housings | IC20, IC25S, IC25W, TC20 |

## Cooper Lighting
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## ML56 900 Series Compliance Table
**80 CRI LED Modules with ML56 Trims**

| | ML5609827 | ML5609830 | ML5609835 | ML5609840 |
|---|---|---|---|---|
| **593BB** | WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **693BB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **593TBZB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **693TBZB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **593SNB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **693SNB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **592H** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **593WB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **592W** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **595WW** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **592SC** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **692H** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **695WW** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **693WB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **692SC** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **596WB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **692W** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **594TBZB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **694TBZB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **594SNB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **696WB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **694SNB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **694WB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **594WB** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **594WB-30** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |
| **694WB-30** | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC | ES, T24NR, WSEC, IECC |

## Code Descriptions:

**ES** = ENERGY STAR® Certified Luminaire

**T24NR** = May be used for California Title 24 Non-Residential LED luminaire

**IECC** = International Energy Conservation Code "High Efficacy"

**WSEC** = Washington State Energy Code - "High Efficacy" Luminaire

## ML56 900 Series Lumen Table
**80 CRI LED Modules with ML56 trims**

| | | ML5609827 | | ML5609830 | | ML5609835 | | ML5609840 | |
|---|---|---|---|---|---|---|---|---|---|
| | **Trim Catalog #** | **Lumens** | **LPW** | **Lumens** | **LPW** | **Lumens** | **LPW** | **Lumens** | **LPW** |
| **0° Tilt Angle** | 593BB | 602.9 | 45.0 | 651.3 | 48.6 | 661.0 | 49.3 | 674.5 | 50.3 |
| | 693BB | 676.2 | 50.5 | 730.5 | 54.5 | 741.3 | 55.3 | 756.5 | 56.5 |
| | 593TBZB | 686.3 | 51.2 | 741.4 | 55.3 | 752.4 | 56.2 | 767.8 | 57.3 |
| | 693TBZB | 714.1 | 53.3 | 771.4 | 57.6 | 782.9 | 58.4 | 799.0 | 59.6 |
| | 593SNB | 757.1 | 56.5 | 817.8 | 61.0 | 830.0 | 61.9 | 847.0 | 63.2 |
| | 693SNB | 789.9 | 58.9 | 853.3 | 63.7 | 866.0 | 64.6 | 883.8 | 66.0 |
| | 592H | 846.8 | 63.2 | 914.8 | 68.3 | 928.4 | 69.3 | 947.4 | 70.7 |
| | 593WB | 887.2 | 66.2 | 958.5 | 71.5 | 972.7 | 72.6 | 992.7 | 74.1 |
| | 592W | 894.8 | 66.8 | 966.7 | 72.1 | 981.0 | 73.2 | 1001.2 | 74.7 |
| | 595WW | 916.3 | 68.4 | 989.9 | 73.9 | 1004.6 | 75.0 | 1025.2 | 76.5 |
| | 592SC | 917.6 | 68.5 | 991.3 | 74.0 | 1006.0 | 75.1 | 1026.6 | 76.6 |
| | 692H | 921.4 | 68.8 | 995.3 | 74.3 | 1010.1 | 75.4 | 1030.9 | 76.9 |
| | 695WW | 922.6 | 68.9 | 996.7 | 74.4 | 1011.5 | 75.5 | 1032.3 | 77.0 |
| | 693WB | 934.0 | 69.7 | 1009.0 | 75.3 | 1024.0 | 76.4 | 1045.0 | 78.0 |
| | 692SC | 946.6 | 70.6 | 1022.7 | 76.3 | 1037.9 | 77.5 | 1059.1 | 79.0 |
| | 596WB | 946.6 | 70.6 | 1022.7 | 76.3 | 1037.9 | 77.5 | 1059.1 | 79.0 |
| | 692W | 947.9 | 70.7 | 1024.0 | 76.4 | 1039.2 | 77.6 | 1060.6 | 79.1 |
| | 594TBZB | 954.2 | 71.2 | 1030.8 | 76.9 | 1046.2 | 78.1 | 1067.6 | 79.7 |
| | 694TBZB | 959.3 | 71.6 | 1036.3 | 77.3 | 1051.7 | 78.5 | 1073.3 | 80.1 |
| | 594SNB | 959.3 | 71.6 | 1036.3 | 77.3 | 1051.7 | 78.5 | 1073.3 | 80.1 |
| | 696WB | 975.7 | 72.8 | 1054.1 | 78.7 | 1069.7 | 79.8 | 1091.7 | 81.5 |
| | 694SNB | 977.0 | 72.9 | 1055.4 | 78.8 | 1071.1 | 79.9 | 1093.1 | 81.6 |
| | 694WB | 1017.4 | 75.9 | 1099.1 | 82.0 | 1115.5 | 83.2 | 1138.3 | 84.9 |
| | 594WB | 1018.7 | 76.0 | 1100.5 | 82.1 | 1116.8 | 83.3 | 1139.7 | 85.1 |
| **30° Tilt Angle** | 594WB-30 | 987.1 | 73.7 | 1066.3 | 79.6 | 1082.2 | 80.8 | 1104.4 | 82.4 |
| | 694WB-30 | 959.3 | 71.6 | 1036.3 | 77.3 | 1051.7 | 78.5 | 1073.3 | 80.1 |

Photometric tests are per IES measurement standards. Tests represent typical fixture performance. Field results may vary.

**Cooper Lighting**
by **F:T•N**

## Photometry 5" Trims • 900 Series • 80 CRI

### Multiplier Table

| CCT Option | 2700 K | 3000 K | 3500 K | 4000 K |
|---|---|---|---|---|
| CCT Multiplier | 0.93 | 1.00 | 1.02 | 1.04 |

Table based upon testing with 3000°K color temperature, 80CRI.
Multipliers may be used to determine relative lumen values with other color temperatures.

## 5" Trims • 900 Series • 80 CRI

### ML5609830-592SC

| | |
|---|---|
| Test Number | P130004 |
| Light Module | 900 Series, 80CRI |
| Trim | 5" Aperture, Specular Clear Trim |
| Lumens | 991 |
| Efficacy | 74 Lm/W |
| SC | 1.06 |
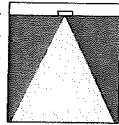
**Cone of Light**
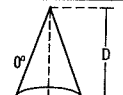
| D | FC | L | W |
|---|---|---|---|
| 5.5 | 23.9 | 5.8 | 5.8 |
| 7 | 14.7 | 7.2 | 7.2 |
| 8 | 11.3 | 8.4 | 8.4 |
| 9 | 8.9 | 9.4 | 9.4 |
| 10 | 7.2 | 10.4 | 10.4 |
| 12 | 5 | 12.6 | 12.6 |

**Candlepower Distribution**

Downlight
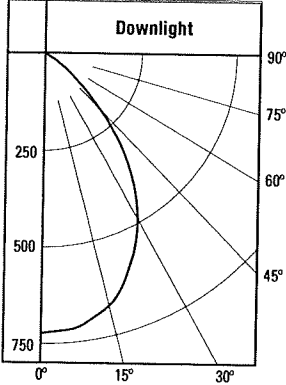
**Zonal Lumen Summary**

| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 513 | 51.8 |
| 0-40 | 765 | 77.2 |
| 0-60 | 979 | 98.8 |
| 0-90 | 991 | 100 |
| 90-180 | 0 | 0 |
| 0-180 | 991 | 100 |

### ML5609830-594WB

| | |
|---|---|
| Test Number | P130060 |
| Light Module | 900 Series, 80CRI |
| Trim | 5" Aperture, Directional Eyeball |
| Lumens | 1100 |
| Efficacy | 82.1 Lm/W |
| SC | 1.22 |
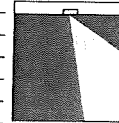
**Candlepower Distribution**

Eyeball at 0-degrees

**30° Horizontal Plane**

| D | FC | L | W | CB |
|---|---|---|---|---|
| 5.5 | 12.3 | 6.6 | 6.6 | 3.2 |
| 7 | 7.6 | 8.3 | 8.6 | 4 |
| 8 | 5.8 | 9.6 | 9.8 | 4.6 |
| 9 | 4.6 | 10.7 | 11 | 5.2 |
| 10 | 3.7 | 11.9 | 12.2 | 5.8 |
| 12 | 2.6 | 14.3 | 14.6 | 6.9 |

**30° Vertical Plane**

| D | FC | L | W | CB |
|---|---|---|---|---|
| 1' | 240.2 | 1.1 | 1.2 | 1.7 |
| 2' | 60.1 | 2.2 | 2.6 | 3.5 |
| 3' | 26.7 | 3.3 | 3.8 | 5.2 |
| 4' | 15 | 4.5 | 5.2 | 6.9 |
| 5' | 9.6 | 5.6 | 6.6 | 8.7 |
| 6' | 6.7 | 6.7 | 7.8 | 10.4 |
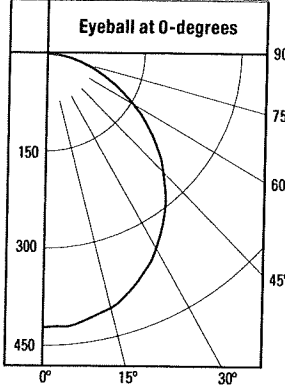
**Zonal Lumen Summary**

| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 324 | 29.5 |
| 0-40 | 523 | 47.6 |
| 0-60 | 892 | 81 |
| 0-90 | 1100 | 100 |
| 90-180 | 0 | 0 |
| 0-180 | 1100 | 100 |

**Candlepower Distribution**

Wall Wash Downlight
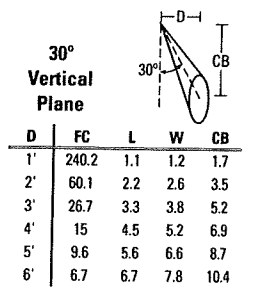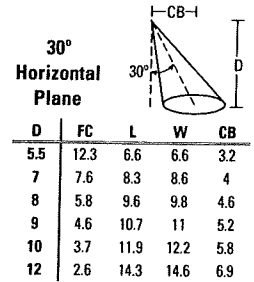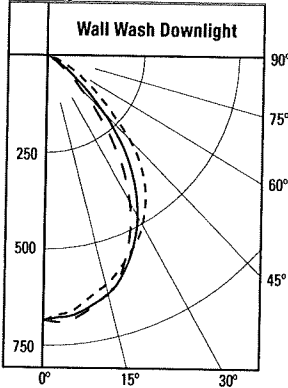
**Legend**

| | |
|---|---|
| 0-deg: — — — — — | Wall |
| 90-deg: ———— | Side |
| 180-deg: — — — | Room |

### ML5609830-595WW

| | |
|---|---|
| Test Number | P130084 |
| Light Module | 900 Series, 80CRI |
| Trim | 5" Aperture, Wall Wash with Specular Clear Trim and Specular Clear Kick Reflector |
| Lumens | 990 |
| Efficacy | 73.9 Lm/W |
| SC | 1.06 |
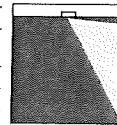
**Zonal Lumen Summary**

| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 486 | 49.1 |
| 0-40 | 732 | 73.9 |
| 0-60 | 964 | 97.4 |
| 0-90 | 990 | 100 |
| 90-180 | 0 | 0 |
| 0-180 | 990 | 100 |

**Single Unit Footcandles**
2.5' From Wall (Distance From Fixture Along Wall)

| DD | ● | 1' | 2' | 3' | 4' | 5' | 6' |
|---|---|---|---|---|---|---|---|
| 1' | 4 | 2.7 | 1 | 0.3 | 0.1 | 0 | 0 |
| 2' | 14.1 | 10.3 | 4.4 | 1.3 | 0.4 | 0.1 | 0 |
| 3' | 16.4 | 13.6 | 7.4 | 2.9 | 1.1 | 0.4 | 0.1 |
| 4' | 11.5 | 10.4 | 7.4 | 4 | 1.8 | 0.8 | 0.3 |
| 5' | 7.6 | 7.1 | 5.7 | 3.8 | 2.2 | 1.1 | 0.5 |
| 6' | 5.1 | 4.9 | 4.2 | 3.1 | 2.2 | 1.3 | 0.7 |
| 7' | 3.5 | 3.4 | 3 | 2.4 | 1.8 | 1.3 | 0.8 |
| 8' | 2.5 | 2.5 | 2.3 | 1.9 | 1.5 | 1.1 | 0.8 |
| 9' | 1.9 | 1.8 | 1.7 | 1.5 | 1.2 | 1 | 0.7 |
| 10' | 1.4 | 1.4 | 1.3 | 1.2 | 1 | 0.8 | 0.7 |

**Multiple Unit Footcandles**
2.5' From Wall (Distance From Fixture Along Wall)

| DD | --3'-- | | | --4'-- | | |
|---|---|---|---|---|---|---|
| 1' | 4.3 | 3.3 | 4.3 | 4.1 | 1.9 | 4.1 |
| 2' | 15.4 | 14 | 15.4 | 14.5 | 8.8 | 14.5 |
| 3' | 19.3 | 20.9 | 19.3 | 17.5 | 14.7 | 17.5 |
| 4' | 15.5 | 17.7 | 15.5 | 13.3 | 14.8 | 13.3 |
| 5' | 11.4 | 12.7 | 11.4 | 9.9 | 11.4 | 9.9 |
| 6' | 8.2 | 9 | 8.2 | 7.3 | 8.3 | 7.3 |
| 7' | 6 | 6.4 | 6 | 5.4 | 6.1 | 5.4 |
| 8' | 4.4 | 4.7 | 4.4 | 4.1 | 4.5 | 4.1 |
| 9' | 3.3 | 3.5 | 3.3 | 3.1 | 3.4 | 3.1 |
| 10' | 2.6 | 2.7 | 2.6 | 2.4 | 2.6 | 2.4 |

Photometric tests are per IES measurement standards. Tests represent typical fixture performance. Field results may vary.

## Cooper Lighting
by E:T•N

## Multiplier Table

| CCT Option | 2700 K | 3000 K | 3500 K | 4000 K |
|---|---|---|---|---|
| CCT Multiplier | 0.93 | 1.00 | 1.02 | 1.04 |

Table based upon testing with 3000°K color temperature, 80CRI.
Multipliers may be used to determine relative lumen values with other color temperatures.

### ML5609830-692SC

| | |
|---|---|
| Test Number | P130100 |
| Light Module | 900 Series, 80CRI |
| Trim | 6" Aperture, Specular Clear Trim |
| Lumens | 1023 |
| Efficacy | 76.3 Lm/W |
| SC | 0.66 |

### Candlepower Distribution

**Downlight**
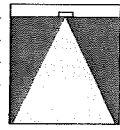
### Cone of Light
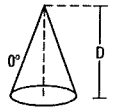
| D | FC | L | W |
|---|---|---|---|
| 5.5 | 39.4 | 3.6 | 3.6 |
| 7 | 24.4 | 4.6 | 4.6 |
| 8 | 18.6 | 5.2 | 5.2 |
| 9 | 14.7 | 5.8 | 5.8 |
| 10 | 11.9 | 6.6 | 6.6 |
| 12 | 8.3 | 7.8 | 7.8 |
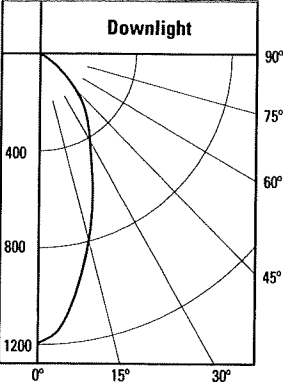
### Zonal Lumen Summary

| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 562 | 54.9 |
| 0-40 | 778 | 76.1 |
| 0-60 | 1009 | 98.7 |
| 0-90 | 1023 | 100 |
| 90-180 | 0 | 0 |
| 0-180 | 1023 | 100 |

### ML5609830-694WB

| | |
|---|---|
| Test Number | P130156 |
| Light Module | 900 Series, 80CRI |
| Trim | 6" Aperture, Directional Eyeball |
| Lumens | 1099 |
| Efficacy | 82 Lm/W |
| SC | 1.21 |
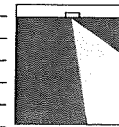
### Candlepower Distribution

**Eyeball at 0-degrees**
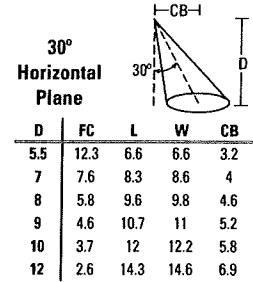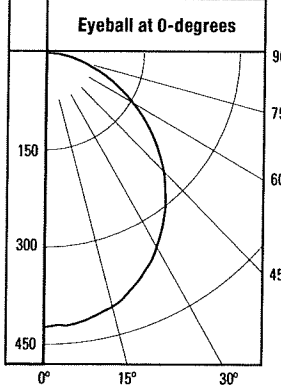
### Zonal Lumen Summary

| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 324 | 29.5 |
| 0-40 | 523 | 47.6 |
| 0-60 | 891 | 81.1 |
| 0-90 | 1099 | 100 |
| 90-180 | 0 | 0 |
| 0-180 | 1099 | 100 |

### 30° Horizontal Plane

| D | FC | L | W | CB |
|---|---|---|---|---|
| 5.5 | 12.3 | 6.6 | 6.6 | 3.2 |
| 7 | 7.6 | 8.3 | 8.6 | 4 |
| 8 | 5.8 | 9.6 | 9.8 | 4.6 |
| 9 | 4.6 | 10.7 | 11 | 5.2 |
| 10 | 3.7 | 12 | 12.2 | 5.8 |
| 12 | 2.6 | 14.3 | 14.6 | 6.9 |

### 30° Vertical Plane

| D | FC | L | W | CB |
|---|---|---|---|---|
| 1' | 240.2 | 1.1 | 1.2 | 1.7 |
| 2' | 60.1 | 2.2 | 2.6 | 3.5 |
| 3' | 26.7 | 3.3 | 3.8 | 5.2 |
| 4' | 15 | 4.5 | 5.2 | 6.9 |
| 5' | 9.6 | 5.6 | 6.6 | 8.7 |
| 6' | 6.7 | 6.7 | 7.8 | 10.4 |

### Candlepower Distribution

**Downlight**

### Legend

| | |
|---|---|
| 0-deg: — — — — — | Wall |
| 90-deg: ———————— | Side |
| 180-deg: —  —  —  — | Room |
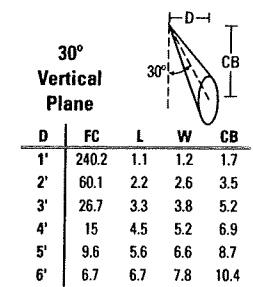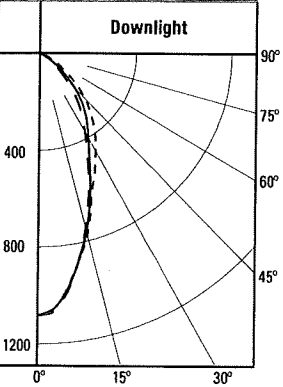
### ML5609830-695WW

| | |
|---|---|
| Test Number | P130180 |
| Light Module | 900 Series, 80CRI |
| Trim | 6" Aperture, Wall Wash with Specular Clear Trim and Specular Clear Kick Reflector |
| Lumens | 997 |
| Efficacy | 74.4 Lm/W |
| SC | 0.69 |
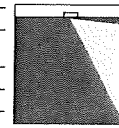
### Zonal Lumen Summary

| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 533 | 53.5 |
| 0-40 | 745 | 74.8 |
| 0-60 | 974 | 97.7 |
| 0-90 | 997 | 100 |
| 90-180 | 0 | 0 |
| 0-180 | 997 | 100 |

### Single Unit Footcandles
2.5' From Wall (Distance From Fixture Along Wall)

| DD | ● | 1' | 2' | 3' | 4' | 5' | 6' |
|---|---|---|---|---|---|---|---|
| 1' | 3 | 1.7 | 0.6 | 0.2 | 0.1 | 0 | 0 |
| 2' | 13 | 9.3 | 4 | 1.3 | 0.3 | 0.1 | 0 |
| 3' | 13.9 | 11.3 | 6.6 | 2.9 | 1.1 | 0.4 | 0.1 |
| 4' | 10.5 | 9 | 6.2 | 3.6 | 1.8 | 0.8 | 0.3 |
| 5' | 7.4 | 6.6 | 5 | 3.3 | 2 | 1.1 | 0.5 |
| 6' | 5.3 | 4.8 | 3.8 | 2.7 | 1.8 | 1.2 | 0.7 |
| 7' | 3.9 | 3.6 | 3 | 2.2 | 1.6 | 1.1 | 0.7 |
| 8' | 3 | 2.8 | 2.3 | 1.8 | 1.3 | 1 | 0.7 |
| 9' | 2.3 | 2.2 | 1.9 | 1.5 | 1.1 | 0.8 | 0.6 |
| 10' | 1.8 | 1.7 | 1.5 | 1.2 | 1 | 0.7 | 0.6 |

### Multiple Unit Footcandles
2.5' From Wall (Distance From Fixture Along Wall)

| DD | --3'-- | | | --4'-- | | |
|---|---|---|---|---|---|---|
| 1' | 3.2 | 2.2 | 3.2 | 3 | 1.2 | 3 |
| 2' | 14.3 | 13 | 14.3 | 13.4 | 8.1 | 13.4 |
| 3' | 16.9 | 18.2 | 16.9 | 15 | 13.2 | 15 |
| 4' | 14.1 | 15.5 | 14.1 | 12.2 | 12.5 | 12.2 |
| 5' | 10.7 | 11.7 | 10.7 | 9.4 | 9.9 | 9.4 |
| 6' | 8 | 8.8 | 8 | 7.1 | 7.7 | 7.1 |
| 7' | 6.2 | 6.7 | 6.2 | 5.5 | 5.9 | 5.5 |
| 8' | 4.8 | 5.2 | 4.8 | 4.4 | 4.6 | 4.4 |
| 9' | 3.8 | 4.1 | 3.8 | 3.5 | 3.7 | 3.5 |
| 10' | 3 | 3.3 | 3 | 2.8 | 3 | 2.8 |

Photometric tests are per IES measurement standards. Tests represent typical fixture performance. Field results may vary.

## DESCRIPTION

692 Series LED Trims - 6-inch Aperture Reflectors - are integral elements in the Halo ML56 LED Downlighting System. ML56 LED System is a series of modular LED Light Modules for use with dedicated 5" or 6" ML56 LED trims. The ML56 LED trims in 5" and 6" aperture sizes are designed to fit Halo, All-Pro and others 5" or 6" recessed housings. The ML56 system is suitable for new construction, remodel or retrofit installation.

| Catalog # | | Type |
|---|---|---|
| Project | | **DL6 TRIM** |
| Comments | | Date |
| Prepared by | | |

## SPECIFICATION FEATURES

692 Series LED trims are 6-inch aperture reflectors offered in Specular Clear, Haze (Semi-Specular Clear), and White (Matte White). 692 Series Reflectors also feature matte white finish flange. The precision spun aluminum reflector provides excellent optical performance. The 692 reflectors may be used in most standard height 6-inch aperture recessed housings; Halo, All-Pro, and more (refer to ML56 LED Light Module specifications for details).

* For use with ML56 Series LED light modules
* For use in standard housings
* Reflectors with self-flange
* Wet location shower listed with ML56 LED Light Modules
* Torsion springs pull trim and light module tight to ceiling
* ML56 downlight trims and modules make any housing AIR-TITE™ (ASTM E283)

**Compatible with ML56 LED System of LED Downlight Light Modules**

**600 Series - 80CRI, 600lm**
**5"/6" LED Retrofit Downlight Engine**
ML5606827 - 2700K
ML5606830 - 3000K
ML5606835 - 3500K
ML5606840 - 4000K

**600 Series - 90CRI, 600lm**
**5"/6" LED Retrofit Downlight Engine**
ML5606927 - 2700K
ML5606930 - 3000K
ML5606935 - 3500K
ML5606940 - 4000K

**900 Series - 80CRI, 900lm**
**5"/6" LED Retrofit Downlight Engine**
ML5609827 - 2700K
ML5609830 - 3000K
ML5609835 - 3500K
ML5609840 - 4000K

**900 Series - 90CRI, 900lm**
**5"/6" LED Retrofit Downlight Engine**
ML5609927 - 2700K
ML5609930 - 3000K
ML5609935 - 3500K
ML5609940 - 4000K

**1200 Series - 80CRI, 1200lm**
**5"/6" LED Retrofit Downlight Engine**
ML5612827 - 2700K
ML5612830 - 3000K
ML5612835 - 3500K
ML5612840 - 4000K

**1200 Series - 90CRI, 1200lm**
**5"/6" LED Retrofit Downlight Engine**
ML5612927 - 2700K
ML5612930 - 3000K
ML5612935 - 3500K
ML5612940 - 4000K
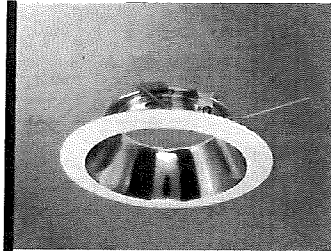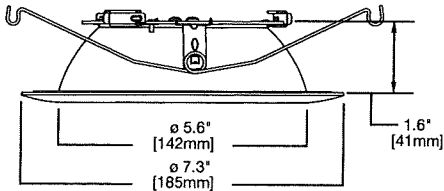

**692SC**
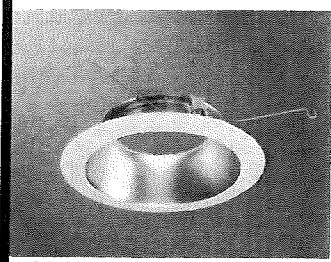

**692H**
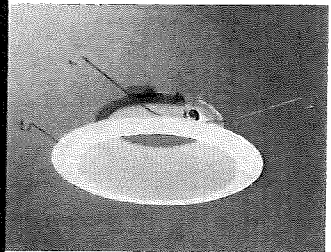

**692W**

**692 Series
LED Trim**

**6-Inch Reflector**

**For use with
Halo ML56
LED System
Light Modules**

ø 5.6" [142mm]
1.6" [41mm]
ø 7.3" [185mm]

## ORDERING INFORMATION

**SAMPLE NUMBER:** 692SC

| Trim | Finish | Accessory |
|---|---|---|
| **692**= 6" Reflector | **SC**=Specular Clear, White Flange<br>**H**=Haze (Semi-Specular), White Flange<br>**W**=White (Matte White), White Flange | **TRM690WH**= 6" LED Oversize Trim Ring for use with 69* series trims, White 6.9" I.D., 9.5" O.D. Ring slips over LED trim. Inset design allows 6" trim to fit into oversize ring for an even trim surface<br>**ML56CLIP**= Friction Clip Mounting Kit - For retrofitting non-torsion spring housings, 6" clips |

Showerlight

air-tite™ trim

## DESCRIPTION

The VT2 Series is an energy efficient industrial Vaportite fixture that features rugged and durable construction. The VT2 incorporates a full metal fixture liner inside a reinforced fiberglass housing with a high impact diffuser. This Vaportite series is suitable for interior and exterior applications and can be surface or chain mounted.

The VT2 Series has been designed for maximum operation in commercial institutional and industrial environments where weathering, high temperature, humidity and dust or corrosive fumes are present.

| Catalog # | | Type | |
|-----------|--|------|--|
| Project | | | |
| Comments | | Date | |
| Prepared by | | | |

## SPECIFICATION FEATURES

### Construction
Fiberglass housing is reinforced polyester and self-extinguishing (ASTM-D635-74) plastic of a permanent pearl gray color. Top of housing has nine embossments (4' unit) and thirteen embossments (8' unit), providing mounting flexibility on uneven surfaces. A watertite hub for 1/2" conduit entry is provided at each end of housing (standard) for continuous feed. Polyurethane gasketing is formed in the housing providing a continuous seamless seal for the diffuser. Six sturdy cam latches (4' unit) and twelve (8' and tandem unit) clamp diffuser tightly for a positive seal between housing, gasketing and diffuser.

### Electrical*
Unit has full metal liner (channel) secured by brass internal/external mounting studs for positive grounding, maximum protection and rigidity. Ballasts are CBM/ETL Class "P" certified suitable to plus 50°F. Spring loaded lampholders. Electrical components and fixtures are UL/CUL listed for Wet Locations.**
IP65 rated and NSF certified (4' only).

### Lens
"DR" - Clear low brightness pattern acrylic with 15% high impact additive.
"DR-100" - Clear low brightness pattern acrylic with 100% high impact additive.
Example: VT2-296DR-100
"LEX" - High impact clear low brightness pattern polycarbonate. LEXAN
Example: VT2-296LEX.

### Reflectors
Optional die formed finished or 95% specular miro reflector.

5-7/8" [149mm]

7" [178mm]
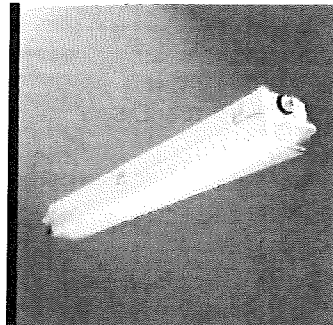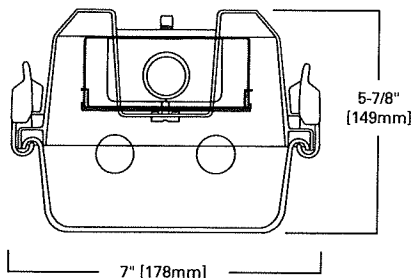
## VT2
## 132
## 232
## 332
## 154T5
## 254T5

**4' OR 8' INDUSTRIAL**
**1, 2 OR 3 LAMP T8**
**1 OR 2 LAMP T5HO**

Vaportite Industrial
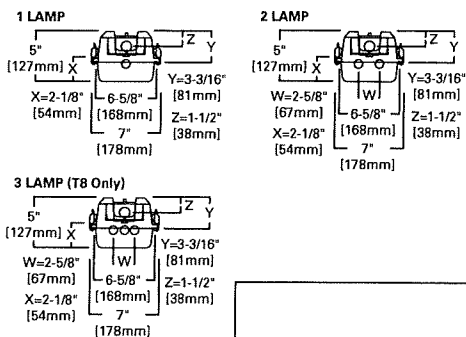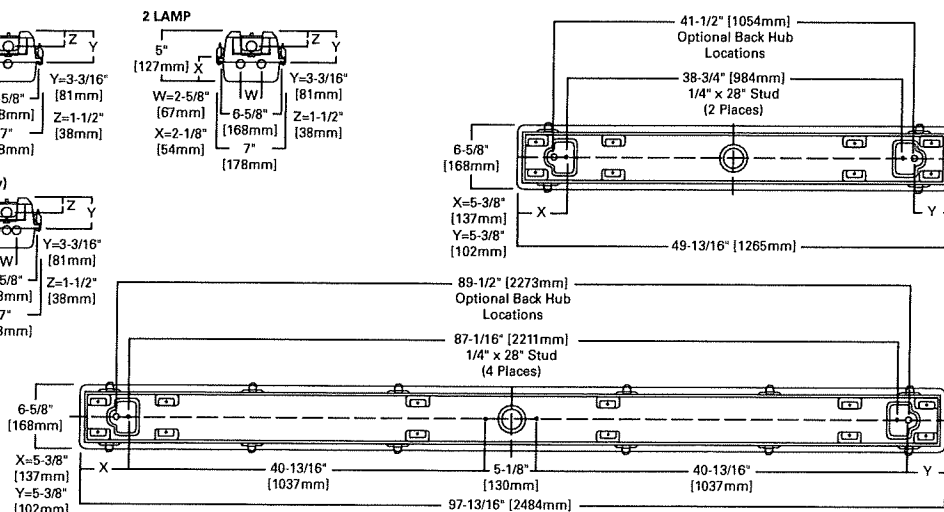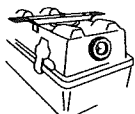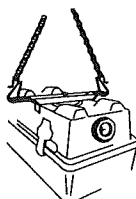
### ENERGY DATA

Input Watts:
**EB Ballast & STD Lamps**
132 (46), 232 (57), 332 (82)

**ES Ballast & T5HO Lamps**
254T5 (121), 8T254T5 (229)

**EB Ballast & T5HO Lamps**
154T5 (62), 254T5 (117)

**EB Plus Ballast & STD Lamps**
132 (46), 232 (73), 332 (108)

Luminaire Efficacy Rating
**LER = FI-73**
**Catalog Number:** VT2-232DR
**Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = $3.29**

*Reference the lamp/ballast data in the Technical Section for specific lamp/ballast requirements.

**Not Suitable for Wet Locations if EL4 Option is added. Consult Pre Sales Technical Support.

LAMPS CONTAIN MERCURY. DISPOSE ACCORDING TO LOCAL, STATE OR FEDERAL LAWS

## LAMP CONFIGURATIONS

**1 LAMP**
5" [127mm]
X=2-1/8" [54mm]
6-5/8" [168mm]
7" [178mm]
Y=3-3/16" [81mm]
Z=1-1/2" [38mm]

**2 LAMP**
5" [127mm]
W=2-5/8" [67mm]
X=2-1/8" [54mm]
6-5/8" [168mm]
7" [178mm]
Y=3-3/16" [81mm]
Z=1-1/2" [38mm]

**3 LAMP (T8 Only)**
5" [127mm]
W=2-5/8" [67mm]
X=2-1/8" [54mm]
6-5/8" [168mm]
7" [178mm]
Y=3-3/16" [81mm]
Z=1-1/2" [38mm]

## MOUNTING DATA

41-1/2" [1054mm]
Optional Back Hub Locations
38-3/4" [984mm]
1/4" x 28" Stud
(2 Places)
6-5/8" [168mm]
X=5-3/8" [137mm]
Y=5-3/8" [102mm]
49-13/16" [1265mm]

89-1/2" [2273mm]
Optional Back Hub Locations
87-1/16" [2211mm]
1/4" x 28" Stud
(4 Places)
6-5/8" [168mm]
X=5-3/8" [137mm]
Y=5-3/8" [102mm]
40-13/16" [1037mm]
5-1/8" [130mm]
40-13/16" [1037mm]
97-13/16" [2484mm]

## INSTALLATION DATA

**MOUNTING BRACKETS**
Furnished
Two per 2' and 4' Unit
Four per 8' Unit

**OPTIONAL CHAN HANGING SET**
(VT2-CHAIN/SET-U)
Includes 6 ft. of chain, 4 large S-Hooks and 4 small S-Hooks
Order One (1) Kit for each 2' or 4' Fixture
Two (2) Kits Recommended For 8' Fixture

**F·T·N**
Powering Business Worldwide

**LINEAR DISCONNECT**
Safe and convenient means of disconnecting power.

ADF071394
2015-10-15 17:00:39

## PHOTOMETRICS

### VT2-254DR-UNV-EB81-WL-M4-U

Electronic Ballast

(2) F54/T5/835 Lamps
4460 Lumens each

Spacing criterion:
(II) 1.2 x mounting height, ($\perp$) 1.6 x mounting height

Efficiency 74.3%

Test Report:
127P111

LER = FI57

Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = $4.24

#### Candlepower

| Angle | Along II | 45° | Across $\perp$ |
|---|---|---|---|
| 0 | 1615 | 1615 | 1615 |
| 5 | 1613 | 1632 | 1648 |
| 10 | 1592 | 1673 | 1723 |
| 15 | 1556 | 1704 | 1781 |
| 20 | 1504 | 1717 | 1820 |
| 25 | 1438 | 1712 | 1839 |
| 30 | 1357 | 1683 | 1815 |
| 35 | 1262 | 1625 | 1743 |
| 40 | 1154 | 1532 | 1635 |
| 45 | 1033 | 1412 | 1499 |
| 50 | 902 | 1263 | 1355 |
| 55 | 762 | 1101 | 1180 |
| 60 | 621 | 944 | 994 |
| 65 | 485 | 775 | 968 |
| 70 | 362 | 667 | 1051 |
| 75 | 253 | 677 | 992 |
| 80 | 158 | 612 | 827 |
| 85 | 74 | 455 | 647 |
| 90 | 26 | 297 | 463 |
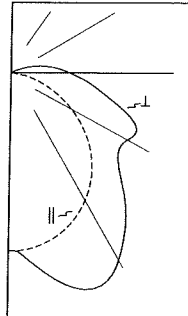
### VT2-232DR-UNV-EB81-WL-M4-U

Electronic Ballast

(2) T8 Lamps
2850 Lumens each

Spacing criterion:
(II) 1.3 x mounting height, ($\perp$) 1.6 x mounting height

Efficiency 81.7%

Test Report:
127P113

LER = FI71

Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = $3.39

#### Candlepower

| Angle | Along II | 45° | Across $\perp$ |
|---|---|---|---|
| 0 | 1036 | 1036 | 1036 |
| 5 | 1036 | 1059 | 1077 |
| 10 | 1023 | 1114 | 1175 |
| 15 | 1000 | 1175 | 1275 |
| 20 | 968 | 1227 | 1344 |
| 25 | 926 | 1255 | 1352 |
| 30 | 876 | 1245 | 1284 |
| 35 | 817 | 1184 | 1182 |
| 40 | 750 | 1080 | 1070 |
| 45 | 674 | 961 | 946 |
| 50 | 591 | 834 | 833 |
| 55 | 501 | 706 | 780 |
| 60 | 408 | 597 | 785 |
| 65 | 317 | 533 | 816 |
| 70 | 233 | 520 | 755 |
| 75 | 160 | 489 | 624 |
| 80 | 97 | 396 | 518 |
| 85 | 45 | 302 | 434 |
| 90 | 16 | 224 | 353 |

### Coefficients of Utilization

Effective floor cavity reflectance 20%

| rc | 80% | | | | 70% | | | | 50% | | | 30% | | | 10% | | | 0% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rw | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 87 | 87 | 87 | 87 | 85 | 85 | 85 | 85 | 80 | 80 | 80 | 76 | 76 | 76 | 72 | 72 | 72 | 70 |
| 1 | 78 | 73 | 70 | 66 | 75 | 71 | 68 | 65 | 67 | 64 | 62 | 64 | 61 | 59 | 60 | 59 | 57 | 55 |
| 2 | 70 | 63 | 57 | 52 | 68 | 61 | 56 | 51 | 58 | 53 | 50 | 52 | 49 | 46 | 49 | 46 | 44 | 44 |
| 3 | 64 | 55 | 48 | 43 | 61 | 53 | 47 | 42 | 51 | 45 | 41 | 48 | 43 | 40 | 45 | 42 | 39 | 37 |
| 4 | 58 | 48 | 41 | 36 | 56 | 47 | 40 | 35 | 45 | 39 | 34 | 42 | 38 | 34 | 40 | 36 | 33 | 31 |
| 5 | 53 | 43 | 36 | 31 | 51 | 42 | 35 | 30 | 40 | 34 | 30 | 38 | 33 | 29 | 36 | 32 | 28 | 26 |
| 6 | 49 | 39 | 32 | 27 | 47 | 38 | 31 | 26 | 36 | 30 | 26 | 34 | 29 | 25 | 33 | 28 | 25 | 23 |
| 7 | 45 | 35 | 28 | 23 | 44 | 34 | 28 | 23 | 32 | 27 | 23 | 31 | 26 | 22 | 30 | 25 | 22 | 20 |
| 8 | 42 | 32 | 25 | 21 | 41 | 31 | 25 | 20 | 30 | 24 | 20 | 28 | 23 | 20 | 27 | 23 | 19 | 18 |
| 9 | 39 | 29 | 23 | 18 | 38 | 28 | 22 | 18 | 27 | 22 | 18 | 26 | 21 | 18 | 25 | 21 | 17 | 16 |
| 10 | 37 | 27 | 21 | 17 | 36 | 26 | 20 | 16 | 25 | 20 | 16 | 24 | 19 | 16 | 23 | 19 | 16 | 14 |

### Coefficients of Utilization

Effective floor cavity reflectance 20%

| rc | 80% | | | | 70% | | | | 50% | | | 30% | | | 10% | | | 0% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rw | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 96 | 96 | 96 | 96 | 93 | 93 | 93 | 93 | 87 | 87 | 87 | 82 | 82 | 82 | 78 | 78 | 78 | 76 |
| 1 | 86 | 81 | 77 | 73 | 83 | 78 | 74 | 71 | 74 | 70 | 68 | 69 | 67 | 64 | 65 | 63 | 61 | 59 |
| 2 | 77 | 69 | 63 | 58 | 74 | 67 | 61 | 57 | 63 | 58 | 54 | 60 | 56 | 52 | 56 | 53 | 50 | 48 |
| 3 | 70 | 60 | 53 | 47 | 67 | 59 | 52 | 46 | 55 | 49 | 45 | 52 | 47 | 43 | 49 | 45 | 42 | 40 |
| 4 | 64 | 53 | 45 | 40 | 61 | 52 | 44 | 39 | 49 | 43 | 38 | 46 | 41 | 37 | 44 | 39 | 35 | 33 |
| 5 | 58 | 47 | 39 | 34 | 56 | 46 | 39 | 33 | 44 | 37 | 32 | 41 | 36 | 31 | 39 | 34 | 31 | 29 |
| 6 | 54 | 42 | 35 | 29 | 52 | 41 | 34 | 29 | 39 | 33 | 28 | 37 | 32 | 27 | 35 | 30 | 27 | 25 |
| 7 | 50 | 38 | 31 | 26 | 48 | 37 | 30 | 25 | 35 | 29 | 25 | 34 | 28 | 24 | 32 | 27 | 24 | 22 |
| 8 | 46 | 35 | 28 | 23 | 45 | 34 | 27 | 22 | 32 | 26 | 22 | 31 | 25 | 21 | 29 | 25 | 21 | 19 |
| 9 | 43 | 32 | 25 | 20 | 42 | 31 | 25 | 20 | 30 | 24 | 20 | 28 | 23 | 19 | 27 | 22 | 19 | 17 |
| 10 | 40 | 29 | 23 | 18 | 39 | 29 | 22 | 18 | 27 | 22 | 18 | 26 | 21 | 17 | 25 | 20 | 17 | 15 |

### Zonal Lumen Summary

| Zone | Lumens | %Lamp | %Fixture |
|---|---|---|---|
| 0-30 | 1411 | 15.8 | 21.3 |
| 0-40 | 2397 | 26.9 | 36.2 |
| 0-60 | 4380 | 49.1 | 66.2 |
| 0-90 | 6268 | 70.3 | 94.8 |
| 0-180 | 6614 | 74.2 | 100.0 |

### Luminance Data

| Angle in Deg | Average 0-Deg cd/sm | Average 45-Deg cd/sm | Average 90-Deg cd/sm |
|---|---|---|---|
| 45 | 7779 | 10632 | 11288 |
| 55 | 7074 | 10221 | 10954 |
| 65 | 6110 | 9764 | 12196 |
| 75 | 5205 | 13928 | 20408 |
| 85 | 4251 | 27797 | 39527 |

### Zonal Lumen Summary

| Zone | Lumens | %Lamp | %Fixture |
|---|---|---|---|
| 0-30 | 985 | 17.3 | 21.1 |
| 0-40 | 1675 | 29.4 | 36.0 |
| 0-60 | 2999 | 52.6 | 64.4 |
| 0-90 | 4316 | 75.7 | 92.7 |
| 0-180 | 4658 | 81.7 | 100.0 |

### Luminance Data

| Angle in Deg | Average 0-Deg cd/sm | Average 45-Deg cd/sm | Average 90-Deg cd/sm |
|---|---|---|---|
| 45 | 4874 | 6095 | 5343 |
| 55 | 4392 | 5171 | 4906 |
| 65 | 3669 | 4791 | 5995 |
| 75 | 2853 | 5921 | 5721 |
| 85 | 1868 | 5874 | 5512 |

## ORDERING INFORMATION

**SAMPLE NUMBER: 8TVT2-254DR-UNV-EB82-M4-U**

**Width**
Blank=4' Length
8T=8' Length

**Series**
VT2=Vapor-Tite

**Number of Lamps** [3]
1=1 lamp (T5 or T8)
2=2 lamps (T5 or T8)
3=3 lamps (T8 only)
(Lamps not included)

**Lamp Type**
32=32W T8 Lamp (4' Long)
54T5=54W T5HO Lamp (4' Long)

**Lens**
DR=Internal Prismatic Lens/15% DR High Impact Additive (Standard)
DR-100%=100% High Impact Additive
LEX=High Impact Clear Polycarbonate LEXAN Lens/Low Brightness Pattern

**Voltage** [1]
120V=120 Volt
277V=277 Volt
347V=347 Volt
480V=480 Volt
UNV=Universal Voltage 120/277V
UNC=Universal Voltage 347/480V (T5 Linear Only)

**Fusing**
GL=Single Element Fuse
GM=Double Element Fuse
VT-REM-__(specify battery)=Remote Emergency Enclosure [4]

**Ballast Type** [1]
**T8 Systems**
EB8__=T8 Electronic Instant Start.
Total Harmonic Distortion < 20%
No. of Ballast 1 or 2
EB8__/PLUS= T8 Electronic Instant Start. High Ballast Factor >1.13. Total Harmonic Distortion < 20%
No. of Ballast 1 or 2
ER8__=T8 Electronic Program Rapid Start. Total Harmonic Distortion < 10%
No. of Ballast 1 or 2
ER8__/PLUS= T8 Electronic Program Start. High Ballast Factor >1.13. Total Harmonic Distortion < 10%
No. of Ballast 1 or 2
EB8__/L= T8 Electronic Instant Start w/0.80 Ballast Factor.
No. of Ballast 1 or 2
**T5 Systems**
EBT__=T5HO Electronic Program Start.
No. of Ballast 1 or 2

**WL**=Wet Location Label

**Options**
TH=(2) Top Watertite Hubs
TEH=(2) Top & (2) End Watertite Hubs (all Watertite Hubs have 1/2" Conduit Entry)
TILW=Tandem In-Line Wiring Option (Consult TILW Option Catalog Page)
PI/CPI=Plug-In Option
DD=Deep Diffuser (4' Length) (Available for 4' Fixture Length) To Complement Deep Diffuser Depth of 8' Fixture 5-7/8" [150mm]
M4=Specular Reflector
SSL=Stainless Steel Latches

**Packaging**
U=Unit Pack
PALC=Job Pack in Carton

**Accessories** (order separately)
**VT2-Chain/Set-U**=Chain Hanging Set Includes 6 ft. of chain, 4 large S-Hooks and 4 small S-Hooks
Order One (1) Kit for each 2' or 4' Fixture
Two (2) Kits Recommended For 8' Fixture
**VT2-SS-MBK**=Stainless Steel Mounting Bracket

**NOTES:** [1] Ballast type used only if ballast & voltage is chosen. [2] Not available when specifying emergencies, voltage must be specific. [3] T5HO is only available in 1 or 2-lamp versions only.

Specifications & dimensions subject to change without notice. Consult your Cooper Lighting Representative for availability and ordering information.

### SHIPPING DATA

| Catalog No. | Wt. |
|---|---|
| VT2-132DR-WL | 35 lbs. |
| VT2-232DR-WL | 35 lbs. |

## DESCRIPTION

The Vaportite LED Series is an energy efficient industrial Vaportite fixture that features rugged and durable construction. The Vaportite LED incorporates a full metal fixture liner inside a reinforced fiberglass housing with a high impact diffuser. This Vaportite series is suitable for interior and exterior applications and can be surface or chain mounted.

The Vaportite LED Series has been designed for maximum operation in commercial institutional and industrial environments and can operate in a wide range of temperatures (-20°C to 25°C) and is ideal for cold storage environments.

| Catalog # | | Type | |
|---|---|---|---|
| Project | | | |
| Comments | | Date | |
| Prepared by | | | |

## SPECIFICATION FEATURES

### Construction
Fiberglass housing is reinforced polyester and self-extinguishing (ASTM-D635-74) plastic of a permanent pearl gray color. A watertite hub for 1/2" conduit entry is provided at each end of housing (standard) for continuous feed. Polyurethane gasketing is formed in the housing providing a continuous seamless seal for the diffuser. Four sturdy cam latches clamp diffuser tightly for a positive seal between housing, gasketing and diffuser. Electrical components and fixtures are UL/ cUL listed for Wet Locations.

### Electrical
Long-Life LED system coupled with electrical driver to deliver optimal performance. LED's available in 3500, 4000 and 5000K with a CRI ≥ 85. Projected life is 60,000 hours at 91% lumen output. cULus listed. Electronic drivers are available for 120-277V applications. A 0-10V dimming control is available (standard).  IP65 rated and NSF certified (4' only).
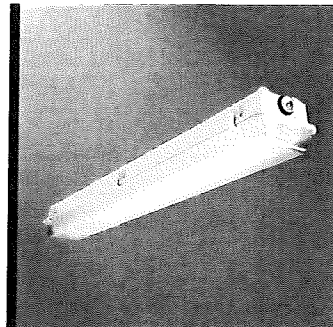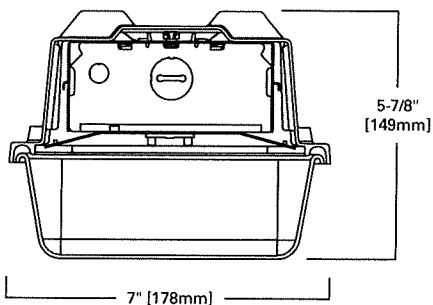
### Lens
DR=Internal Prismatic Lens/15% DR High Impact Additive.
DR100=Internal Prismatic Lens/100% DR High Impact Additive.

### Warranty
Vaportite LED features a five year limited warranty.

### Compliance
DesignLights Consortium™ Qualified and classified for DLC Standard (some models are not DLC qualified), refer to www. designlights.org for details.
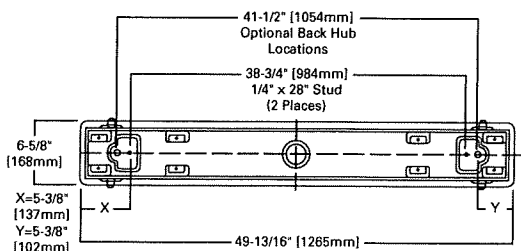
## VAPORTITE
## LED

**4' INDUSTRIAL LED LAMP**

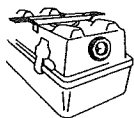Vaportite Industrial Refrigerated Case



5-7/8" [149mm]

7" [178mm]

## MOUNTING DATA



41-1/2" [1054mm]
Optional Back Hub Locations

38-3/4" [984mm]
1/4" x 28" Stud
(2 Places)

6-5/8" [168mm]

X=5-3/8" [137mm]
Y=5-3/8" [102mm]

49-13/16" [1265mm]
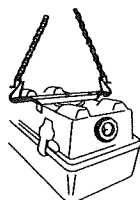
## INSTALLATION DATA



**MOUNTING BRACKETS**
Furnished
Two per 2' and 4' Unit
Four per 8' Unit



**OPTIONAL CHAN HANGING SET**
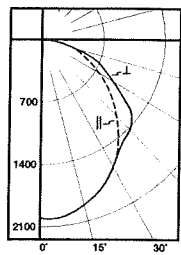(VT2-CHAIN/SET-U)
Includes 6 ft. of chain, 4 large S-Hooks and 4 small S-Hooks
Order One (1) Kit for each 2' or 4' Fixture

### ENERGY DATA

Input Watts:
4VT2-LD4-4 (4,000 lumens)=38W
4VT2-LD4-6 (6,000 lumens)=57.3W
4VT2-LD4-8 (8,000 lumens)=81.1W

## LINEAR DISCONNECT

Safe and convenient means of disconnecting power

**F:T•N**
Powering Business Worldwide
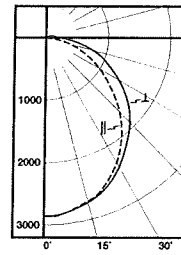
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2015-11-30 14:54:55

## PHOTOMETRICS



### 4VT2-LD4-6-DR-UNV-L835-CD1-U

Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.2 x mounting height, (⊥) 1.2 x mounting height
Lumens: 5882
Input Watts: 56W
Efficacy: 104.7 lm/W
Test Report: 4VT2-LD4-6-DR-UNV-L835-CD1-U.IES

**Candlepower**

| Angle | Along II | 45° | Across ⊥ |
|---|---|---|---|
| 0 | 2000 | 2000 | 2000 |
| 5 | 2007 | 1979 | 1980 |
| 10 | 1981 | 1951 | 1956 |
| 15 | 1930 | 1900 | 1903 |
| 20 | 1857 | 1836 | 1844 |
| 25 | 1764 | 1748 | 1765 |
| 30 | 1645 | 1646 | 1660 |
| 35 | 1511 | 1522 | 1534 |
| 40 | 1375 | 1393 | 1468 |
| 45 | 1221 | 1271 | 1438 |
| 50 | 1062 | 1207 | 1343 |
| 55 | 903 | 1175 | 1148 |
| 60 | 749 | 1048 | 933 |
| 65 | 600 | 1151 | 771 |
| 70 | 461 | 591 | 600 |
| 75 | 332 | 398 | 426 |
| 80 | 206 | 249 | 255 |
| 85 | 94 | 137 | 127 |
| 90 | 34 | 75 | 63 |

### Coefficients of Utilization

Effective floor cavity reflectance 20%

| rc | 80% | | | | 70% | | | | 50% | | | 30% | | | 10% | | | 0% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rw | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 110 | 110 | 110 | 105 | 105 | 105 | 101 | 101 | 101 | 99 |
| 1 | 108 | 103 | 98 | 94 | 105 | 101 | 96 | 93 | 96 | 93 | 90 | 92 | 89 | 87 | 88 | 86 | 84 | 82 |
| 2 | 98 | 89 | 82 | 76 | 95 | 87 | 81 | 75 | 84 | 78 | 73 | 80 | 75 | 71 | 77 | 73 | 70 | 67 |
| 3 | 89 | 78 | 70 | 63 | 86 | 76 | 69 | 62 | 73 | 67 | 61 | 70 | 65 | 60 | 68 | 63 | 59 | 56 |
| 4 | 81 | 69 | 60 | 53 | 79 | 68 | 59 | 53 | 65 | 58 | 52 | 62 | 56 | 51 | 60 | 55 | 50 | 48 |
| 5 | 75 | 62 | 52 | 46 | 73 | 60 | 52 | 45 | 58 | 51 | 45 | 56 | 49 | 44 | 54 | 48 | 44 | 41 |
| 6 | 69 | 55 | 46 | 40 | 67 | 54 | 46 | 40 | 52 | 45 | 39 | 51 | 44 | 39 | 49 | 43 | 38 | 36 |
| 7 | 64 | 50 | 41 | 35 | 62 | 49 | 41 | 35 | 48 | 40 | 35 | 46 | 39 | 34 | 45 | 38 | 34 | 32 |
| 8 | 59 | 46 | 37 | 31 | 58 | 45 | 37 | 31 | 44 | 36 | 31 | 42 | 35 | 31 | 41 | 35 | 30 | 28 |
| 9 | 56 | 42 | 34 | 28 | 54 | 41 | 33 | 28 | 40 | 33 | 28 | 39 | 32 | 28 | 38 | 32 | 27 | 25 |
| 10 | 52 | 39 | 31 | 25 | 51 | 38 | 31 | 25 | 37 | 30 | 25 | 36 | 30 | 25 | 35 | 29 | 25 | 23 |

### Zonal Lumen Summary

| Zone | Lumens | % Fixture |
|---|---|---|
| 0-30 | 1536 | 26.1 |
| 0-40 | 2490 | 42.3 |
| 0-60 | 4463 | 75.9 |
| 0-90 | 5804 | 98.7 |
| 0-180 | 5882 | 100.0 |



### 4VT2-LD4-8-FR50-UNV-L835-CD1-WL-U

Electronic Driver
Linear LED 3500K
Spacing criterion: (II) 1.2 x mounting height, (⊥) 1.3 x mounting height
Lumens: 8553
Input Watts: 81W
Efficacy: 105.5 lm/W
Test Report: 4VT2-LD4-8-FR50-UNV-L835-CD1-WL-U.IES

**Candlepower**

| Angle | Along II | 45° | Across ⊥ |
|---|---|---|---|
| 0 | 2854 | 2854 | 2854 |
| 5 | 2857 | 2829 | 2842 |
| 10 | 2811 | 2790 | 2804 |
| 15 | 2733 | 2723 | 2742 |
| 20 | 2626 | 2629 | 2658 |
| 25 | 2484 | 2508 | 2545 |
| 30 | 2316 | 2365 | 2408 |
| 35 | 2120 | 2195 | 2253 |
| 40 | 1904 | 2011 | 2086 |
| 45 | 1678 | 1819 | 1914 |
| 50 | 1451 | 1622 | 1736 |
| 55 | 1222 | 1422 | 1558 |
| 60 | 1009 | 1229 | 1368 |
| 65 | 810 | 1034 | 1171 |
| 70 | 622 | 843 | 959 |
| 75 | 446 | 659 | 748 |
| 80 | 287 | 487 | 555 |
| 85 | 148 | 341 | 392 |
| 90 | 45 | 228 | 271 |

### Coefficients of Utilization

Effective floor cavity reflectance 20%

| rc | 80% | | | | 70% | | | | 50% | | | 30% | | | 10% | | | 0% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| rw | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 109 | 109 | 109 | 104 | 104 | 104 | 99 | 99 | 99 | 96 |
| 1 | 107 | 102 | 97 | 93 | 104 | 99 | 95 | 91 | 94 | 91 | 87 | 90 | 87 | 84 | 85 | 83 | 81 | 79 |
| 2 | 97 | 88 | 81 | 75 | 94 | 86 | 79 | 74 | 82 | 76 | 72 | 78 | 73 | 69 | 74 | 71 | 67 | 65 |
| 3 | 88 | 77 | 69 | 62 | 85 | 75 | 68 | 61 | 72 | 65 | 60 | 69 | 63 | 58 | 66 | 61 | 57 | 54 |
| 4 | 81 | 68 | 59 | 53 | 78 | 67 | 58 | 52 | 64 | 57 | 51 | 61 | 55 | 50 | 59 | 53 | 49 | 46 |
| 5 | 74 | 61 | 52 | 45 | 72 | 60 | 51 | 45 | 57 | 50 | 44 | 55 | 48 | 43 | 53 | 47 | 42 | 40 |
| 6 | 69 | 55 | 46 | 39 | 66 | 54 | 45 | 39 | 52 | 44 | 38 | 50 | 43 | 38 | 48 | 42 | 37 | 35 |
| 7 | 64 | 50 | 41 | 35 | 62 | 49 | 41 | 35 | 47 | 40 | 34 | 45 | 39 | 34 | 44 | 38 | 33 | 31 |
| 8 | 59 | 46 | 37 | 31 | 57 | 45 | 37 | 31 | 43 | 36 | 30 | 42 | 35 | 30 | 40 | 34 | 30 | 28 |
| 9 | 55 | 42 | 34 | 28 | 54 | 41 | 33 | 28 | 40 | 32 | 27 | 38 | 32 | 27 | 37 | 31 | 27 | 25 |
| 10 | 52 | 39 | 31 | 25 | 50 | 38 | 30 | 25 | 37 | 30 | 25 | 36 | 29 | 25 | 34 | 29 | 24 | 23 |

### Zonal Lumen Summary

| Zone | Lumens | % Fixture |
|---|---|---|
| 0-30 | 2200 | 25.7 |
| 0-40 | 3573 | 41.8 |
| 0-60 | 6232 | 96.4 |
| 0-90 | 8248 | 100.0 |
| 0-180 | 8553 | 100.0 |

## ORDERING INFORMATION

**SAMPLE NUMBER: 4VT2-LD4-4-DR-UNV-L840-CD1-WL-U**

**Series [2]**
4VT2=4' Vaportite

**Lamp Type**
LD4=LED 4.0

**LED Lumens Output**
4=4000 Lumens
6=6000 Lumens
8=8000 Lumens

**Lens**
DR=Internal Prismatic Lens/15% DR High Impact Additive
DR100=Internal Prismatic Lens/100% DR High Impact Additive
FR50=Frosted Lens/15% DR High Impact Additive [1]

**Distribution**
[Blank]=Medium (Standard)
W=Wide Distribution

**Voltage**
UNV=Universal Voltage 120-277

**Remote Emergency Enclosure**
VT-REM-EL=Emergency Installed, 700 lumens

**Lamps**
L835=3500K, LED
L840=4000K, LED
L850=5000K, LED

**Driver Type**
CD1=1 Dimming Driver
5LTD1=Fifth Light DALI

**WL**=Wet Location Label

**Options**
SSL=Stainless Steel Latches
TH=(2) Top Watertite Hubs
TEH=(2) Top and (2) End Watertite Hubs (all Watertite Hubs have 1/2" Conduit Entry)

**Accessories** (order separately)
VT2-Chain/Set-U=Chain Hanging Set
Includes 6 ft. of chain, 4 large S-Hooks and 4 small S-Hooks
Order One (1) Kit for each 2' or 4' Fixture

VT2-SS-MBK=Stainless Steel Mounting Bracket

**Packaging**
U=Unit Pack



NOTES: [1] Not available in wide distribution. [2] DesignLights Consortium™ Qualified and classified for DLC Standard (some models are not DLC qualified), refer to www.designlights.org for details.

Specifications & dimensions subject to change without notice. Consult your Eaton Representative for availability and ordering information.

### SHIPPING DATA

| Catalog No. | Wt. |
|---|---|
| 4VT2-LD4 | 18 lbs. |

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**FATON** Powering Business Worldwide

**FC lighting**

## FCSL550 Series

Exterior Die-Cast Mini Step Light with
Die-Cast or 316 Stainless Steel Faceplate.

FCSL550    FCSL552    FCSL553

## ORDERING

GO GREEN SPEED
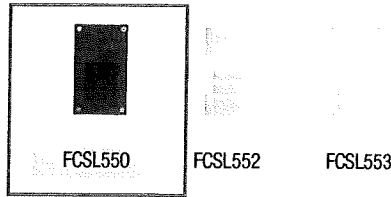
75 pcs or Less / ships in 2 weeks

**EXAMPLE:** FCSL550-120V-4K-95-SL

| SERIES | VOLTAGE | SOURCE/TEMPERATURE/LAMP | | | FINISH | | ACCESSORIES | |
|--------|---------|------|------|-----------|------|-------|------|-------|
| FCSL550 | 120V | LED | 3K | 95 Lumens min (2W) | BK | Black | EC | E-Coat (on SL550 only) |
| FCSL552 | 277V | | 4K | 190 Lumens min (3W) | BZ | Bronze | | |
| FCSL553 | 347V△ | | | | CC | Custom Color | | |
| | | | | | SL | Silver | | |
| | | | | | WH | White | | |
| | | | | | SS | Stainless Steel ▲ | | |

△ contact factory

▲ SL552 & SL553 only

## SPECIFICATION

### MOUNTING

• Concrete pour standard.

### CONSTRUCTION

• Marine grade, corrosion resistant, heavy walled, high pressure die-cast aluminum construction.
• Clear (FCSL550) or opal, tempered lens.
• 316 stainless steel (FCSL552, FCSL553 - opal lens standard).
• Precision formed semi-specular aluminum reflector.
• Neoprene continuous closed cell urethane 'O' ring gasket. Captive stainless steel, tamper resistant hex socket screws.

### LED

• Lumens stated are the minimum delivered out of the luminaire. LED lifetime is greater than or equal to 70,000 hours with the lumen depreciation greater than L70. All of our luminaires are tested to LM 80 with a minimum CRI of 80 and color consistency of step 4 MacAdam Ellipse. Integral power supply standard. Input voltage 120V or 277V. Consult factory for non-white static color LED options; Red, Green, Blue or Amber.

### FINISH

• Six stage chemical pre-treatment process that includes iron phosphate, to prepare the substrate for a UV stable, super durable standard polyester powder coat. Optional e-coat process is added to the standard finish including zinc phosphate for a 5 year limited warranty on the finish. Brushed 316 stainless steel faceplate (FCSL552, FCSL553 only).

### ELECTRICAL

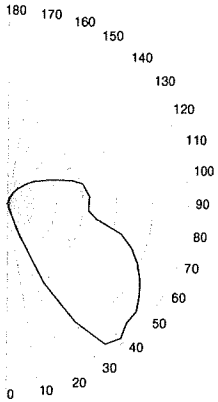• **Ballast** UL listed electronic driver standard with 5 year manufacturers warranty.

### LISTING

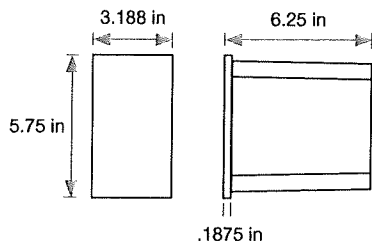• UL & cUL listed for interior and exterior wet locations. IP65 rating.
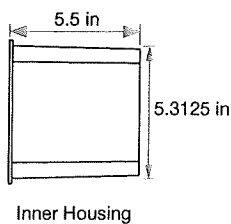
## PHOTOMETRY

**FCSL550**



## PVC - DIMENSIONS

3.188 in    6.25 in
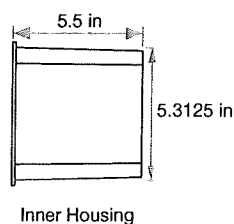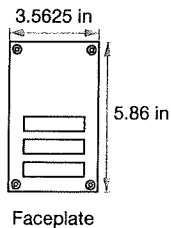
5.75 in

.1875 in

PVC Outer Housing

## DIMENSIONS

### FCSL550

.5 in    3.5625 in    5.5 in

5.86 in    5.3125 in

Faceplate    Inner Housing

### FCSL552

3.5625 in    5.5 in

5.86 in    5.3125 in

Faceplate    Inner Housing

### FCSL553

3.5625 in    5.5 in

5.86 in    5.3125 in

Faceplate    Inner Housing

![FC lighting logo]
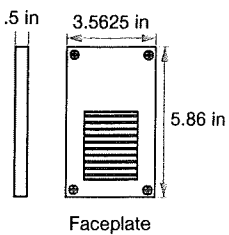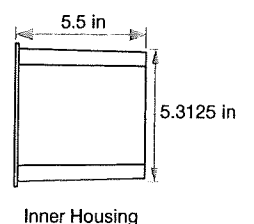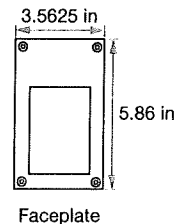
# FCSL500

Exterior Die-Cast Aluminum Uplight Steplight
with Die-Cast Construction and Faceplate.



FCSL500

## ORDERING

**GO GREEN SPEED**   30 pcs or Less / ships in 2 weeks

**EXAMPLE:** FCSL500-120V-4K-1500

| SERIES | VOLTAGE | SOURCE/TEMPERATURE/LAMP | | FINISH | | ACCESSORIES | |
|--------|---------|-------------------------|---|--------|---|-------------|---|
| FCSL500 | 120V | PL | 26Q  32T  42T | BK | Black | DWR | Drywall wings *(for remodeling applications)* |
| | 277V | HID | 39W MH G12 | BZ | Bronze | LD | LED Dimming *(0–10V)* |
| | 347V△ | | 70W MH G12 | CC | Custom Color | EMR | Emergency Backup, Remote *(PL & LED)* |
| | | LED  3K | 1100 LUMEN | SL | Silver | PCL | Polycarbonate Lens *(LED and PL only)* |
| | | 4K | 20 WATTS | WH | White | QR | Quartz Re-Strike (HID integral ballast) |
| | | | | | | SLH | Spread Lens, Horizontal |
| △contact factory | | | | | | SCL | Non-White Static Color LED |
| | | | | | | EC | E-Coat |

## SPECIFICATION

### MOUNTING

- Concrete pour standard. Use **DWR** accessory for drywall applications.

### CONSTRUCTION

- Marine grade, corrosion resistant, heavy walled, high pressure die-cast aluminum construction.

### LED

- Lumens stated are the minimum delivered out of the luminaire. LED lifetime is greater than or equal to 70,000 hours with the lumen depreciation greater than L70. All of our luminaires are tested to LM 80 with a CRI of 80+ and color consistency of step 4 MacAdam Ellipse. Integral power supply standard. Input voltage 120V or 277V. Consult factory about Non-White Static LED Colors; Amber, Blue, Green or Red.

### FINISH

- Six stage chemical pre-treatment process that includes iron phosphate, to prepare the substrate for a UV stable, super durable standard polyester powder coat. Optional e-coat process is added to the standard finish including zinc phosphate for a 5 year limited warranty on the product finish.

### ELECTRICAL

- **Socket** PL: Four pin plug-in type compact fluorescent lamp holder *(lamp by others)*. HID: G12 Socket
- **Ballast** PL: Fluorescent electronic, UL listed ballast standard. HID: Electronic ballast standard. Ballast has a manufacturer issued warranty up to 5 years. Please consult factory for other voltage options.
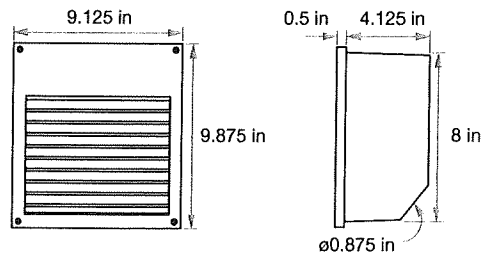
### LISTING

- UL & cUL listed for interior and exterior wet locations. IP65 rating.

## PHOTOMETRY

## DIMENSIONS

## FCSL500

9.125 in

9.875 in

0.5 in    4.125 in

8 in

ø0.875 in

## DESCRIPTION

The Impact Elite family of wall luminaires is the ideal complement to site design. Incorporating modular LightBAR™ technology, the Impact Elite luminaire provides outstanding uniformity and energy-conscious illumination. Combined with a rugged construction, the Impact Elite luminaire is the ideal facade and security luminaire for zones surrounding schools, office complexes, apartments and recreational facilities. UL/cUL listed for wet locations.

| | | |
|---|---|---|
| Catalog # | | **Type** |
| Project | | W1 |
| Comments | | **Date** |
| Prepared by | | |

## SPECIFICATION FEATURES

### Construction
Heavy-wall, die-cast aluminum housing and removable hinged door frame for precise tolerance control and repeatability. Hinged door inset for clean mating with housing surface and secured via two captive fasteners. Optional tamper-resistant Torx™ head fasteners offer vandal resistant access to the electrical chamber.

### Optics
Choice of six patented, high-efficiency AccuLED Optics™ distributions. Optics are precisely designed to shape the light output, maximizing efficiency and application spacing. AccuLED Optics technology creates consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 3000K CCT, 5000K CCT and 5700K CCT.

### Electrical
LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz operation, greater than 0.9 power factor, less than 20% harmonic distortion, and are suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard with 10kV/10kA common – and differential – mode surge protection. LightBARs feature an IP66 enclosure rating and maintain greater than 95% lumen maintenance at 60,000 hours per IESNA TM-21. Emergency egress options for -20°C ambient environments and occupancy sensor available.

### Mounting
Gasketed and zinc plated rigid steel mounting attachment fits directly to 4" j-box or wall with the Impact Elite "Hook-N-Lock" mechanism for quick installation. Secured with two captive corrosion resistant black oxide coated allen head set screws concealed but accessible from bottom of fixture.

### Finish
Cast components finished in a five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.
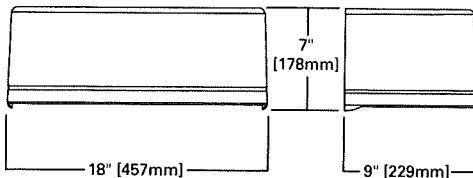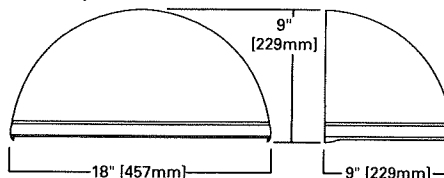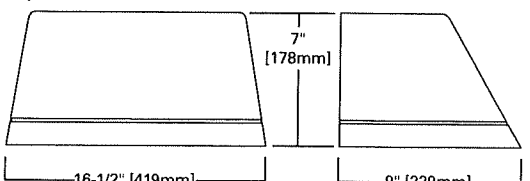
### Warranty
Five-year warranty.
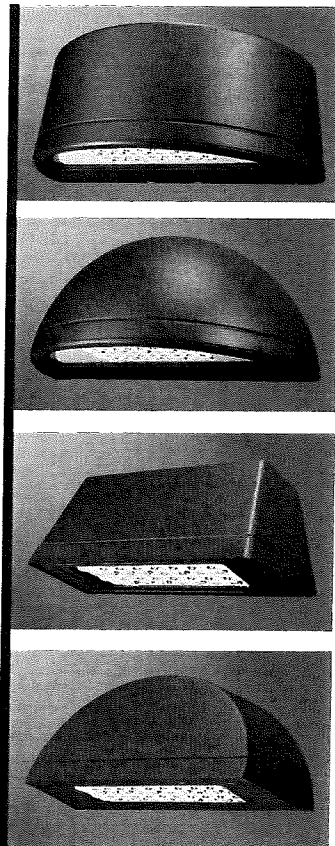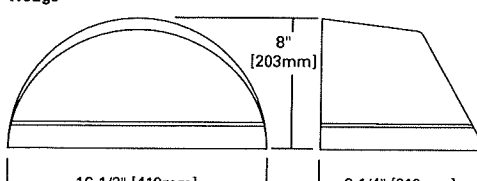
## ISC/ISS/IST/ISW
## IMPACT ELITE LED

**1 - 2 LightBARs**
**Solid State LED**

**WALL MOUNT LUMINAIRE**

### CERTIFICATION DATA
UL/cUL Listed
LM79 / LM80 Compliant
IP66 LightBARs
ISO 9001
DesignLights Consortium® Qualified*

### ENERGY DATA
**Electronic LED Driver**
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60Hz, 347V/60Hz, 480V/60Hz
-40°C Minimum Temperature
40°C Ambient Temperature Rating

### SHIPPING DATA
**Approximate Net Weight:**
18 lbs. (8 kgs.)

## DIMENSIONS

**Cylinder**
7" [178mm]
18" [457mm]
9" [229mm]

**Quarter Sphere**
9" [229mm]
18" [457mm]
9" [229mm]

**Trapezoid**
7" [178mm]
16-1/2" [419mm]
9" [229mm]

**Wedge**
8" [203mm]
16-1/2" [419mm]
8-1/4" [210mm]

## HOOK-N-LOCK MOUNTING

## F·T·N
*Powering Business Worldwide*

## THRUWAY BACK BOX

**Cylinder**

2"
[51mm]

1-3/4"
[44mm]

12" [305mm]

**Quarter Sphere**

2"
[51mm]

1-3/4"
[44mm]

12" [305mm]

**Trapezoid**

2"
[51mm]

1-3/4"
[44mm]

12-1/4" [311mm]

**Wedge**

2"
[51mm]

1-3/4"
[44mm]

12" [305mm]
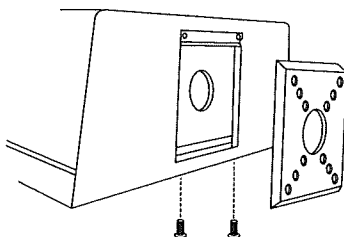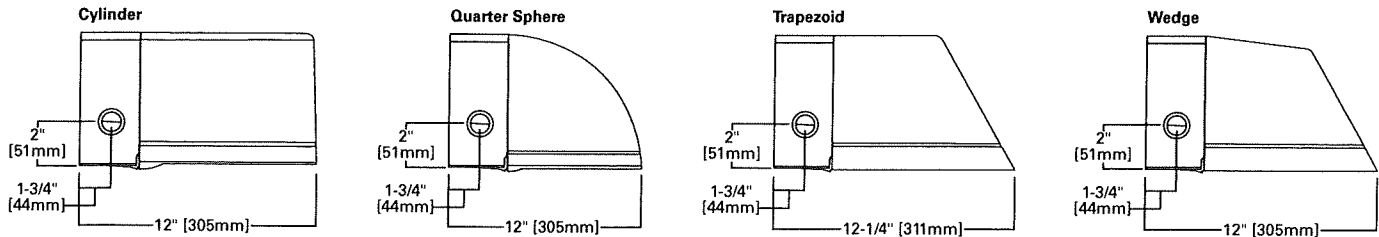
## POWER AND LUMENS BY BAR COUNT

| Number of LightBARs | | E01 | E02 | F01 | F02 |
|---|---|---|---|---|---|
| | | 21 LED LightBAR | | 7 LED LightBAR | |
| Drive Current | | 350mA | | 1A | |
| Power (Watts) | 120-277V | 25W | 47W | 26W | 50W |
| Current (A) | 120V | 0.22 | 0.40 | 0.22 | 0.42 |
| | 277V | 0.10 | 0.18 | 0.10 | 0.19 |
| Power (Watts) | 347V or 480V | 31W | 52W | 32W | 55W |
| Current (A) | 347V | 0.11 | 0.16 | 0.11 | 0.17 |
| | 480V | 0.16 | 0.18 | 0.16 | 0.18 |
| Optics | | | | | |
| BL2 | Lumens | 2,738 | 5,476 | 2,260 | 4,521 |
| | Bug Rating | B1-U0-G1 | B1-U0-G1 | B1-U0-G1 | B1-U0-G1 |
| BL3 | Lumens | 2,702 | 5,405 | 2,231 | 4,462 |
| | Bug Rating | B1-U0-G1 | B1-U0-G2 | B1-U0-G1 | B1-U0-G1 |
| BL4 | Lumens | 2,613 | 5,225 | 2,157 | 4,313 |
| | Bug Rating | B1-U0-G1 | B1-U0-G2 | B1-U0-G1 | B1-U0-G1 |
| GZW | Lumens | 2,785 | 5,570 | 2,299 | 4,598 |
| | Bug Rating | B2-U0-G2 | B3-U0-G3 | B1-U0-G1 | B2-U0-G2 |
| SLR/SLL | Lumens | 2,435 | 4,869 | 2,010 | 4,020 |
| | Bug Rating | B1-U0-G1 | B1-U0-G2 | B1-U0-G1 | B1-U0-G2 |

## LUMEN MAINTENANCE

| Ambient Temperature | 25,000 Hours* | 50,000 Hours* | 60,000 Hours* | 100,000 Hours | Theoretical L70 (Hours) |
|---|---|---|---|---|---|
| 25°C | > 99% | > 97% | > 96% | > 93% | > 450,000 |
| 40°C | > 98% | > 97% | > 96% | > 92% | > 425,000 |
| 50°C | > 97% | > 96% | > 95% | > 91% | > 400,000 |

* Per IESNA TM-21 data.

Lumen Maintenance (Percent) vs Hours (Thousands) graph — 25°C, 40°C, 50°C curves.

## LUMEN MULTIPLIER

| Ambient Temperature | Lumen Multiplier |
|---|---|
| 10°C | 1.02 |
| 15°C | 1.01 |
| 25°C | 1.00 |
| 40°C | 0.99 |
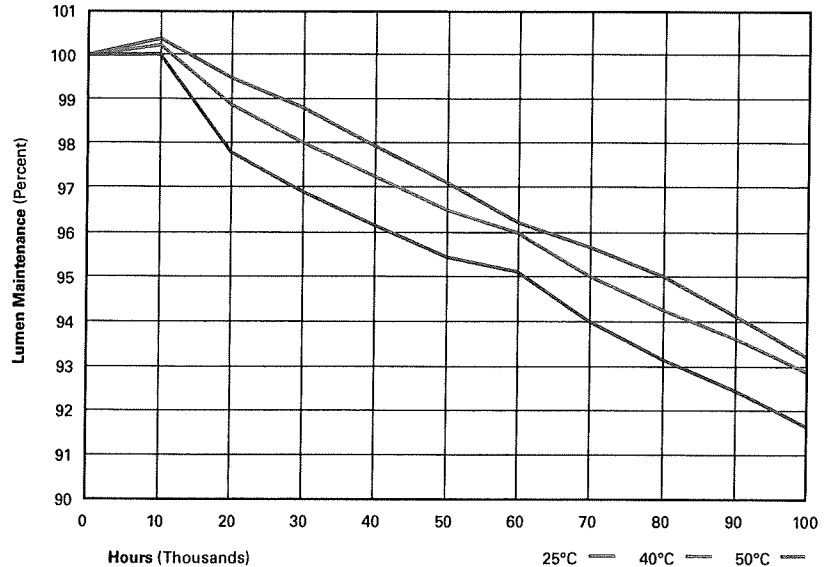
## ORDERING INFORMATION

Sample Number: ISC-E02-LED-E1-BL3-GM

| Product Family [1] | Number of LightBARs [2,3] | Lamp Type | Voltage | Distribution | Color [5] |
|---|---|---|---|---|---|
| ISC=Impact Elite LED Small Cylinder<br>ISS=Impact Elite LED Small Quarter Sphere<br>IST=Impact Elite LED Small Trapezoid<br>ISW=Impact Elite LED Small Wedge | E01=(1) 21 LED LightBAR<br>E02=(2) 21 LED LightBARs<br>F01=(1) 7 LED LightBAR<br>F02=(2) 7 LED LightBARs | LED=Solid State Light Emitting Diodes | E1=Electronic (120-277V)<br>347=347V<br>480=480V [4] | BL2=Type II w/Back Light Control<br>BL3=Type III w/Back Light Control<br>BL4=Type IV w/Back Light Control<br>GZW=Wall Grazer Wide<br>SLL=90° Spill Light Eliminator Left<br>SLR=90° Spill Light Eliminator Right | AP=Grey<br>BZ=Bronze<br>BK=Black<br>DP=Dark Platinum<br>GM=Graphite Metallic<br>WH=White |

| Options (Add as Suffix) | Accessories (Order Separately) [11] |
|---|---|
| 2L=Two Circuits [6]<br>7030=70 CRI / 3000K CCT [7]<br>7050=70 CRI / 5000K CCT [7]<br>7060=70 CRI / 5700K CCT [7]<br>8030=80 CRI / 3000K CCT [7]<br>P=Button Type Photocontrol (Available in 120, 208, 240 or 277V. Must Specify Voltage)<br>OSB=Occupancy Sensor with Back Box (Specify 120V or 277V) [8]<br>BBB-XX=Battery Pack with Back Box (Specify 120V or 277V) [9]<br>CWB-XX=Cold Weather Battery Pack with Back Box (Specify 120V or 277V) [10]<br>DIM=0-10V Dimming Drivers<br>LCF=LightBAR Cover Plate Matches Housing Finish<br>ULG=Uplight Glow<br>TR=Tamper Resistant Hardware | MA1253=10kV Circuit Module Replacement<br>MA1254-XX=Thruway Back Box - Impact Elite Trapezoid<br>MA1255-XX=Thruway Back Box - Impact Elite Cylinder<br>MA1256-XX=Thruway Back Box - Impact Elite Quarter Sphere<br>MA1257-XX=Thruway Back Box - Impact Elite Wedge |

NOTES:
1. DesignLights Consortium® Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details.
2. Standard 4000K CCT and greater than 70 CRI. LightBARs for downlight use only.
3. 21 LED LightBAR powered by 350mA and 7 LED LightBAR powered by 1A.
4. Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
5. Custom and RAL color matching available upon request. Consult your lighting representative at Eaton for more information.
6. Low-level output varies by bar count. Consult factory. Not available with 347V or 480V. Available with two bars (E02 or F02) only.
7. Extended lead times apply.
8. Available with E02 or F02, only one bar on street side will be wired to sensor. Time delay factory setting 15-minutes. When ordered with PC option, both bars are connected to photocontrol as primary switching means. Standard sensor lens covers 8' mounting height, 360° coverage, maximum 48' diameter. Not available in all configurations or with BBB or CWB options.
9. Specify 120V or 277V. LED standard integral battery pack is rated for minimum operating temperature 32°F (0°C). Operates one bar for 90-minutes. Not available in all configurations or with OSB option. Consult factory.
10. Specify 120V or 277V. LED cold weather integral battery pack is rated for minimum operating temperature -4°F (-20°C). Operates one bar for 90-minutes. Not available in all configurations or with OSB option. Consult factory.
11. Replace XX with color suffix.

# VENTED SHADES

**PREPARED BY:** _____

**TYPE:** _____

**JOB NAME:** _____

**DATE:** _____

**CERTIFICATION:** UL LISTED

| MODEL# | D" | H" |
|--------|----|----|
| **V212** | 12 | 8 |
| **V214** | 14 | 9 |
| **V216** | 16 | 9 |



**FINISH**-Five stage pretreatment process, coated with a lead free TGI C polyester powder coat finish. White is standard inside reflectors, Except #49-Galvanized, #62-Anodized Bronze and #63-Iron Rust, Unless specified. Custom colors and Marine are available upon request.

**MOUNTING**- 1/2" or 3/4" tapped hub is supplied. Top or side mount available. Fixtures are pre-wired with 48" or 96" leads. Available with cord or stem sets.

**REFLECTOR**- Spun from heavy gauge 1100-0 aluminum, ranging in thickness from .050 to .125. Galvanized is from 20 gauge sheets. Copper is spun from .040 gauge and 110 soft alloy.

**LAMP HOLDERS**- Accommodates **Incandescent** medium base porcelain socket, copper shell with nicked plate, rated 250V, 660W. **Compact Fluorescent** 4 pin heat resistant thermoplastic socket accommodates 26/32W (Gx24q-3 base) and 42W (Gx24q-4 base). Twist lock design provides for vibration and earthquake resistance, rated 75W, 600V. **High Intensity Discharge (H.I.D.)** medium base, 4KV pulse start socket, rated 660W/600V. **LED.** A minimum of 60,000 hours to 100,000 expected life depending on installation location and ambient temperature.

| MODEL# | FINISH | | LIGHT SOURCE | | | | MOUNTING OPT. |
|--------|--------|--|------|-----|------|-----|---------------|
| | | | INC | CF[1] | HID[1] | LED | |
| **V212** | **40**-copper w/ coat<br>**41**-black<br>**42**-dr. green<br>**43**-red | **53**-rust<br>**54**-stucco<br>**55**-sage<br>**57**-polish alum w/ coat | 100W | 26W 32w | 35W, 50W | 10W | -Arm extension<br>-Post Mts & Pole<br>-Stem<br>-Cord[2]<br>-Cable & Chain<br>-Hub |
| **V214** | **44**-white<br>**45**-med. blue<br>**46**-yellow<br>**48**-polish alum. | **58**-satin alum. clear coat<br>**59**-coppertone<br>**60**-canal green | 150W | 26W, 32W, 42W, | 35W, 50W, 70W, 100W | | |
| **V216** | **49**-galvanized<br>**50**-navy blue<br>**51**-arch. Bronze<br>**52**-patina | **61**-anod. charcoal<br>**62**-anod. bronze<br>**63**-iron rust | 200W | | | | |

[1]REMOTE BALLAST/DRIVER
[2]INC MAX WATTAGE 150W
CALL FACTORY FOR HIGHER WATTAGE

**Baselite CORPORATION**

# VENTED SHADES

**CERTIFICATION:** UL LISTED



| MODEL# | D" | H" |
|--------|-----|-----|
| V218 | 18 | 10 |
| V220 | 20 | 10 |

**FINISH**-Five stage pretreatment process, coated with a lead free TGI C polyester powder coat finish. White is standard inside reflectors, Except #49-Galvanized, #62-Anodized Bronze and #63-Iron Rust, Unless specified. Custom colors and Marine are available upon request.

**MOUNTING**- 1/2" or 3/4" tapped hub is supplied. Top or side mount available. Fixtures are pre-wired with 48" or 96" leads. Available with cord or stem sets.

**REFLECTOR**- Spun from heavy gauge 1100-0 aluminum, ranging in thickness from .050 to .125. Galvanized is from 20 gauge sheets. Copper is spun from .040 gauge and 110 soft alloy.

**LAMP HOLDERS**- Accommodates **Incandescent** medium base porcelain socket, copper shell with nicked plate, rated 250V, 660W. **Compact Fluorescent** 4 pin heat resistant thermoplastic socket accommodates 26/32W (Gx24q-3 base) and 42W (Gx24q-4 base). Twist lock design provides for vibration and earthquake resistance, rated 75W, 600V. **High Intensity Discharge (H.I.D.)** medium base, 4KV pulse start socket, rated 660W/600V. **LED**. A minimum of 60,000 hours to 100,000 expected life depending on installation location and ambient temperature.

| MODEL# | FINISH | | LIGHT SOURCE | | | | MOUNTING OPT. |
|--------|--------|--------|------|------|------|------|---------------|
| | | | **INC** | **CF[1]** | **HID[1]** | **LED** | |
| **V218** | 40-copper w/ coat<br>41-black<br>42-dr. green<br>43-red<br>44-white<br>45-med. blue | 53-rust<br>54-stucco<br>55-sage<br>57-polish alum. w/ coat<br>58-satin alum. clear coat | 300w | 26W,<br><br>32W,<br><br>42W, | 35W,<br><br>50W,<br><br>70W, | 10W | -Arm extension<br>-Post Mts & Pole<br>-Stem<br>-Cord[2]<br>-Cable & Chain<br>-Hub |
| **V220** | 46-yellow<br>48-polish alum.<br>49-galvanized<br>50-navy blue<br>51-arch. Bronze<br>52-patina | 59-coppertone<br>60-canal green<br>61-anod. charcoal<br>62-anod. bronze<br>63-iron rust | | | 100W | | |

[1]REMOTE BALLAST
[2]INC MAX WATTAGE 150W
CALL FACTORY FOR HIGHER WATTAGE

# ✝PROGRESS LIGHTING

# DISTRICT LED

Wall mounted · Wet location listed

PROGRESS LED

## Specifications:

P5623-8230K9

### Description:

The one-light large LED outdoor wall lantern from the District Collection features metal shade that offers an industrial-inspired design. The versatile vintage form can be used in indoor and outdoor applications.

### Images:



### Construction:

- Metallic Gray (-82) (painted)
- Aluminum construction
- LED Module is replaceable (Part # 93054049)
- Flicker-free dimming to 10% brightness with most ELV type dimmers (See Dimming Notes)
- CA Title 24 compliant
- Back plate covers a standard 4" hexagonal recessed outlet box
- Mounting strap for outlet box included
- 6" of wire supplied
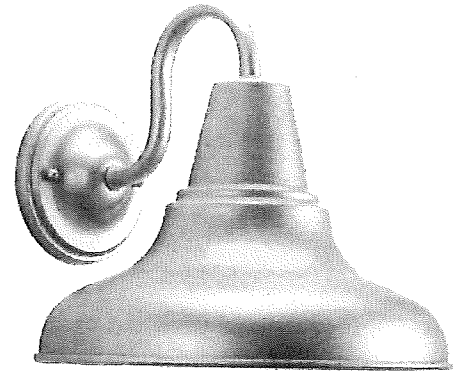
### Performance:

| | |
|---|---|
| Number of Modules | 1 |
| Input Power | 9W |
| Input Voltage | 120V |
| Input Frequency | 60Hz |
| Lumens/LPW | 623/69.2 (LM-79) per module |
| CCT | 3000K |
| CRI | 90 |
| Life | 60000 (L70/TM-21) |
| EMI/RFI | FCC Title 47, Part 15, Class B |
| Min. Start Temp | -30 |
| Max. Operating Temp | 30 |
| Warranty | 5 year warranty |
| Labels | cCSAus Wet location listed |
| | ENERGY STAR® qualified |

### Dimensions:

Width: 12"
Height: 10-1/2"
Depth: 13-1/4"
H/CTR: 5"

### Catalog number:

| Base | | Finish | | Color Temp | | CRI |
|---|---|---|---|---|---|---|
| P5623 | - | 20 - Metallic Gray | - | 30K - 3000K | - | 9 - 90 CRI |

## Dimming Notes:

P5623 is designed to be compatible with many Electronic Low Voltage (ELV-Reverse Phase) controls.

The following is a partial list of known compatible dimmer controls:

### Electronic Low Voltage ELV Reverse Phase Controls

| Lutron | Diva Series | (Part Number DVELV-300P) |
|--------|-------------|--------------------------|

Digital type dimmers are not recommended.

Dimming capabilities will vary depending on the dimmer control, load, and circuit installation.
Always refer to dimmer manufacturer instructions or a controls specialist for specific requirements.

Dimmer control brand names where identified above are trade names or registered trademarks of each respective company.

## DESCRIPTION

The Invue Arbor post top brings architectural style to area/site and pedestrian scale applications. Its dayform appearance brings a desired organic look into the urban environment. WaveStream™ LED Optics provide a uniform pixelation free image, managing glare while providing high levels of visibility.

| Catalog # | | Type |
|---|---|---|
| Project | | W3 |
| Comments | | Date |
| Prepared by | | |

## SPECIFICATION FEATURES

### Construction
Two-piece IP66 rated housing is cast from low copper content corrosion resistant aluminum, maintaining strength and precision to sustain long term dayform appearance. ANSI C136.31 testing compliance prevents damage from installation generated vibration. External hardware and casting seams are minimized to enhance appearance.

### Optics
Specifically designed for pedestrian applications, WaveStream LED optical waveguide technology produces both symmetric NEMA type V and asymmetric NEMA II, III, IV distributions. The waveguide is manufactured from precision injection molded acrylic resulting in a pixelation free optical image for improved glare control and visual comfort. Luminaire efficacy's measure up to 100 lm/w for 4000K (+/- 275K) CCT at 70 CRI (min), optional 3000K CCT at 80 CRI is also available.

### Electrical
LED driver(s) are directly mounted to upper housing thermal pad for optimal thermal performance. Standard 0-10V dimming drivers and Eaton's proprietary surge protection module are designed to withstand 10kV of transient line surge. Drivers operate at 120-277V 50/60Hz with 347V/60Hz or 480V/60Hz operation optional. Suitable for ambient temperature applications from -30°C (-22°F) to 40°C (104°F). Limited high ambient options allow for 50°C operation.

### Controls
Photo, motion detection and dimming on occupancy functions are managed through Integral sensors, or the LumaWatt™ wireless control and monitoring system.

### Finish
Eaton utilizes premium ultra-weatherable TGIC based polyester powder coatings that are specifically formulated to with-stand extended outdoor exposure. The powders are formulated exclusively for Eaton to serve functionally as well as decorative. Good film appearance combinded with excellent mechanical an exterior exposure qualities display greater than twice as much gloss retention. RAL and custom color matches available. Finish is compliant with ASTM B117 3000hr salt spray standard.
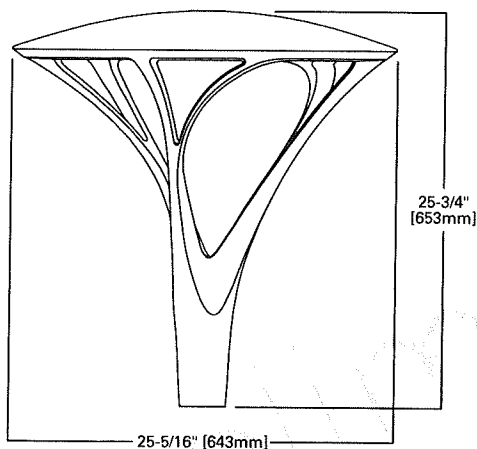
### Warranty
Five-year warranty.
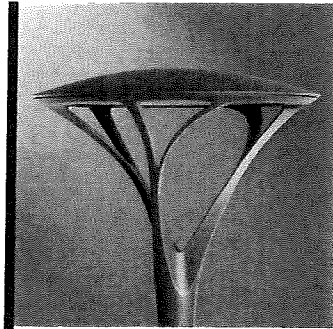
## ARB ARBOR POST TOP

### DECORATIVE LUMINAIRE

## DIMENSIONS

25-3/4" [653mm]

25-5/16" [643mm]

### CERTIFICATION DATA
UL/cUL Listed
IP66 Housing
ANSI C136.31
1.5 / 3G Vibration Tested
ISO 9001
DesignLights Consortium™ Qualified*

### ENERGY DATA
**Electronic LED Driver**
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V 50/60Hz, 347V/60Hz, 480V/60Hz
-30°C Minimum Temperature
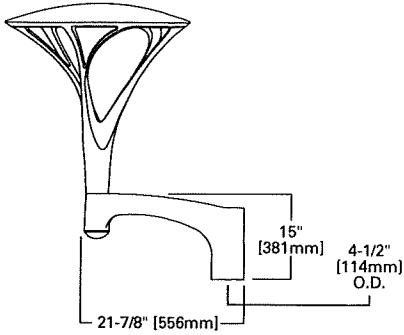40°C Ambient Temperature Rating

### EPA
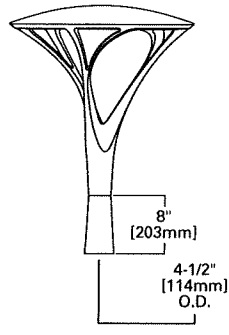**Effective Projected Area: (Sq. Ft.) 0.9**

### SHIPPING DATA
**Approximate Net Weight:**
37 lbs. [16.8 kgs.]

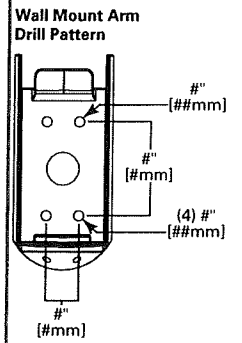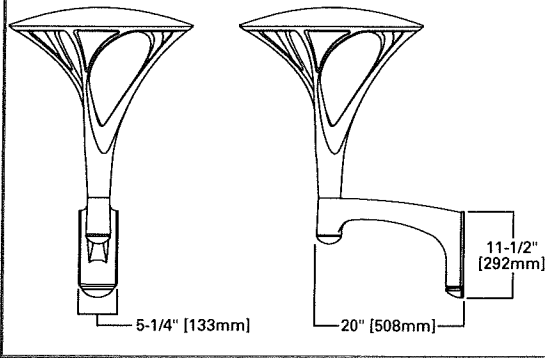## MOUNTING CONFIGURATIONS (WEIGHT AND EPAS INCLUDES FIXTURE)

**Single Arm Mount**
Weight: 56 lbs. [25.45 kgs.]
EPA: 1.7 sq/ft

15"
[381mm]

4-1/2"
(114mm)
O.D.

21-7/8" [556mm]

**Post Top Adapter**
Weight: 41 lbs. [18.63 kgs.]
EPA: 1.2 sq/ft

8"
[203mm]

4-1/2"
(114mm)
O.D.

**Wall Mount Arm**
Weight: 57 lbs. [25.91 kgs.]
EPA: 1.8 sq/ft

11-1/2"
[292mm]

5-1/4" [133mm]

20" [508mm]

**Wall Mount Arm
Drill Pattern**

#"
[##mm]

#"
[#mm]

(4) #"
[##mm]

#"
[#mm]

**Twin Arm Mount - 3G**
Weight: 114 lbs. [51.81 kgs.]
EPA: 3.45 sq/ft

15"
[381mm]

4-1/2"
[114mm]
O.D.

12"
[305mm]

39" [991mm]
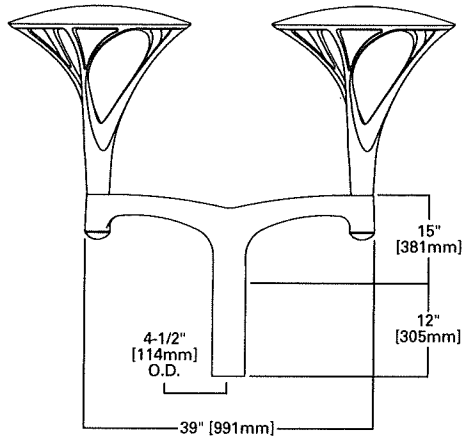
**Twin Arm Mount - 1.5G**
Weight: 106 lbs. [48.18 kgs.]
EPA: 3.25 sq/ft

15"
[381mm]

4-1/2"
[114mm]
O.D.

39" [991mm]

## POLE CONFIGURATIONS

22'

18'

14'

10'

8'

Wall Mount

Single Post Top

Single Mount w/Arm

Twin Arm Mount
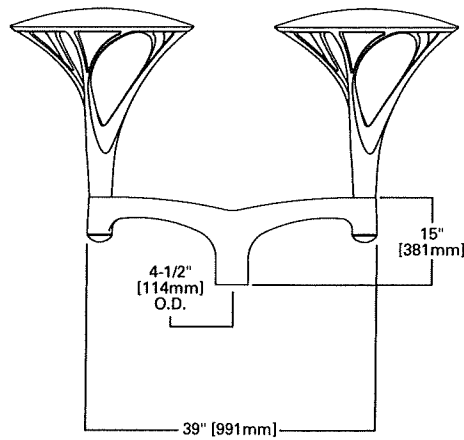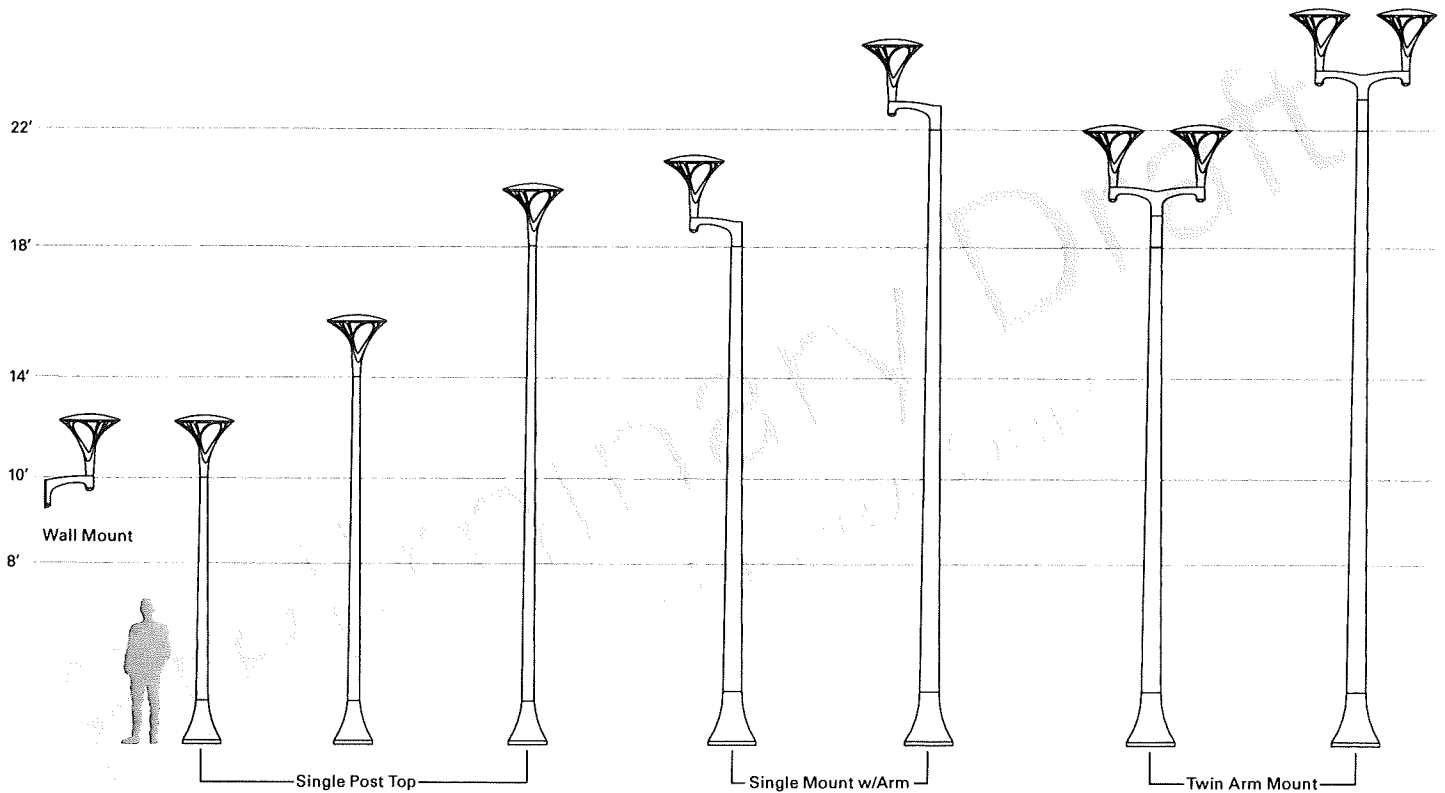
## POWER AND LUMENS

| Lumen Package | B1 | B2 | B3 | B4 |
|---|---|---|---|---|
| **Drive Current** | | | | |
| **Power Wattage (Watts)** | 24W | 48W | 96W | 99W |
| Input Current (mA) @ 120V | 200 | 400 | 800 | 830 |
| Input Current (mA) @ 208V | 120 | 240 | 470 | 480 |
| Input Current (mA) @ 240V | 100 | 200 | 400 | 420 |
| Input Current (mA) @ 277V | 90 | 180 | 350 | 360 |
| **Power Wattage (Watts)** | 26W | 53W | 107W | 108W |
| Input Current (mA) @ 347V | 79 | 161 | 325 | 328 |
| Input Current (mA) @ 480V | 58 | 117 | 235 | 237 |
| **Optics** | | | | |
| Type II — Lumens | 2,045 | 3,994 | 7,362 | # |
| Type II — BUG Rating | B1-U1-G1 | B1-U2-G2 | B1-U0-G2 | # |
| Type III — Lumens | 2,324 | 4,534 | 8,451 | # |
| Type III — BUG Rating | B1-U1-G1 | B1-U2-G2 | B1-U0-G2 | # |
| Type IV — Lumens | 2,408 | 4,691 | 8,740 | # |
| Type IV — BUG Rating | B1-U1-G1 | B1-U2-G2 | B1-U0-G2 | # |
| Type V — Lumens | 2,311 | 4,529 | 8,511 | 9,464 |
| Type V — BUG Rating | B2-U1-G1 | B3-U2-G2 | B1-U0-G1 | B3-U2-G3 |

## COLOR TEMPERATURE

| Color Temperature (CCT) | CRI (Nominal) | Multiplier (Hours) |
|---|---|---|
| 4000 | 70 | 1.00 |
| 3000 | 80 | 0.91 |

## LUMEN MAINTENANCE

| Ambient Temperature | TM-21 Lumen Maintenance (60,000 Hours) | Calculated L70 (Hours) |
|---|---|---|
| 25°C | >91% | >230,000 |
| 40°C | >88% | >172,000 |
| 50°C | >86% | >142,000 |

**NOTE:** Maintenance data applies to the highest drive current and represents the worst case at the highest wattage.

## LUMEN MULTIPLIER

| Ambient Temperature | Lumen Multiplier |
|---|---|
| 0°C | 1.02 |
| 10°C | 1.01 |
| 25°C | 1.00 |
| 40°C | 0.99 |
| 50°C | 0.97 |

## ORDERING INFORMATION

**Sample Number:** ARB-B2-LED-D1-T2-GM

| Product Family [1,2,3] | Lumens [4] | Lamp Type [6] | Voltage | Distribution | Color |
|---|---|---|---|---|---|
| **ARB**=Arbor Post Top | **B1**=Nominal 2,300 Lumens<br>**B2**=Nominal 4,500 Lumens<br>**B3**=Nominal 8,500 Lumens<br>**B4**=Nominal 9,500 Lumens [5] | **LED**=Solid State Light Emitting Diodes | **D1**=Dimming Driver (120-277V)<br>**347**=347V<br>**480**=480V [7] | **T2**=Type II<br>**T3**=Type III<br>**T4**=Type IV<br>**T5**=Type V | **AP**=Grey<br>**BZ**=Bronze<br>**BK**=Black<br>**DP**=Dark Platinum<br>**GM**=Graphite Metallic<br>**WH**=White<br>**CC**=Custom Color [8] |

| Options (Add as Suffix) | Accessories (Order Separately) [16] |
|---|---|
| **7030**=70 CRI / 3000K CCT [9]<br>**8030**=80 CRI / 3000K CCT [9]<br>**PC**=Button Type Photocontrol<br>**PER**=Standard 3-PIN Photocontrol Receptacle<br>**PER7**=NEMA 7-PIN Twistlock Photocontrol Receptacle [10]<br>**HA**=50°C High Ambient<br>**MS-LXX**=Photo/Motion Sensor for On/Off Operation [11,12]<br>**MS/DIM-LXX**=Programmable Photo/Motion Sensor [11,12,13]<br>**DIMRF-LX**=LumaWatt Wireless Sensor [11,14]<br>**5LTD**=Fifth Light Dali Driver<br>**DIM**=0-10V External Dimming Leads [15]<br>**VS**=Tempered Glass Vandal Shield | **ARSA-XX**=Single Pole Mount Arm<br>**ARWM-XX**=Wall Mount Arm<br>**ARTA15-XX**=Twin Mount Bracket - 1.5G<br>**ARTA30-XX**=Twin Mount Bracket - 3G<br>**ARPA4-XX**=Pole Adapter 4"<br>**FSIR-100**=Wireless Configuration Tool for Occupancy Sensor [13] |

**NOTES:**
1. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional information.
2. DesignLights Consortium™ Qualified. Refer to the www.designlights.org Qualified Products List under Family Models for details.
3. Fixture slipfits over standard 2-3/8" or 3" O.D. tenon.
4. Lumens are nominal. See lumen table for more information.
5. B4 only available with Type V distribution.
6. Standard 4000K CCT, nominal 70 CRI.
7. Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
8. Custom and RAL color matching available upon request. Consult your lighting representative at Eaton for more information.
9. Extended lead times apply. Use dedicated IES files when performing layouts. These files are published on the Arbor luminaire product page on the website.
10. Compatible with standard 3-PIN photocontrols and 5-PIN or 7-PIN ANSI controls.
11. Not available with HA option.
12. Replace XX with mounting height in feet for proper lens selection, L8, L20 and L40 are available options.
13. This tool enables adjustment of parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Eaton for more information
14. Requires the use of a step down transformer.
15. Low voltage control leads brought out 18" outside fixture.
16. Replace XX with color designation.

1. Replace X with PIR lens type, (e.g., DIMRF-LN where: W=wide Lens, 8' - 16' mounting height, N=narrow lens, 16' - 40' mounting height). LumaWatt wireless sensors are factory installed only requiring network components RF-EM-1, RF-GW-1 and RF-ROUT-1 in appropriate quantities. See www.eaton.com/lighting for LumaWatt application information.
1. LumaWatt wireless sensors are factory installed and require network components RF-EM-1, RF-GW-1 and RF-ROUT-1 in appropriate quantities. See www.eaton.com/lighting for LumaWatt application information.