## Halo LED Non-IC Housing for New Construction

Recessed 6" sloped ceiling LED Non-IC housing for ceilings from 2/12 to 12/12 pitch. The socket aiming mechanism tilts the lamp straight down regardless of ceiling pitch. Rotational collar allows trim alignment of up to 20 degree rotation. The HL618 system consists of 1) housing with integral LED driver, 2) high-efficacy LED light engine with a section of beam-forming lenses, and 3) slope trim. Housing is suitable for residential or commercial installations in non-insulated ceilings and features airtight code compliant construction.

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

## Design Features

### 1. Housing

- Single wall square aluminum housing construction
- Sealed and gasketed for airtight ASTM-E283 compliance
- Shipped with overspray protector installed
- Mechanism can be removed from the plaster frame to provide access to the junction box.
- CP - Chicago Plenum model is constructed and gasketed in accordance with City of Chicago CCEA requirements.

### Plaster Frame

- Galvanized steel frame. Housing adjusts in plaster frame to accommodate up to 1-3/8" ceiling thickness.
- Regressed locking screw for securing hanger bars.
- Cutouts included for easily crimping hanger bars in position.
- Bar hangers can be repositioned at 90°.

### Aiming Mechanism

- Exclusive socket aiming mechanism tilts and rotates to properly align the LED light engine.
- LED light engine may be tilted and locked to accommodate 2/12 to 12/12 pitch
- LED light engine and trim may be rotated laterally up to 20 degrees for compound slope ceilings or to compensate for off-axis aiming

### Slide-N-Side™ Junction Box

- Positioned to accommodate straight conduit runs.
- Seven ½" trade size conduit knockouts with true pry-out slots.
- Three Slide-N-Side wire traps allow non-metallic sheathed cable to be 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
- Push-wire quick connectors included for field connections.
- CP - Chicago Plenum model features a sealed and gasketed junction box and flex wireway to meet CCEA requirements. CP model box includes seven 1/2" knockouts (Slide-N-Side feature not available with CP).

### GOT NAIL! Pass-N-Thru™ Bar Hangers

- Captive preinstalled bar hangers adjust to 24" wide
- Housing can be positioned at any point within 24" span
- 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.
- Score lines allow tool-free shortening in narrow 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 Driver

- Integral to the housing, 120V-277V 50/60 Hz universal voltage, constant current dimmable driver provides high-efficiency operation.
- Driver meets FCC 47CFR Part 15 EMI/RFI consumer 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 HLM6 LED light engines.
- If dimming is not required the fixture can be operated from a standard wall switch.

### Dimming - Phase Control

- Designed for continuous dimming capability to nominally 5% with many 120V Leading Edge (LE) and Trailing Edge (TE) Phase Control dimmers. (Dimmers with low end trim adjustment offer greater assurance of achieving 5% level.)
- Consult dimmer manufacturer for compatibility and conditions of use. (Note some dimmers require a neutral in the wallbox.)

### Dimming - 0-10V

- Dimmable to 10% in typical operation with compatible 0-10V DC low voltage dimmers.
- 0-10V DC dimmers operate using two low voltage dimming wires (color coded violet and gray). The low voltage dimming wires are separate from the 120V AC or 277V AC power.
- Switching on/off is controlled via the line voltage (120V AC or 277V AC) power, and dimming is controlled via the 2-wire 0-10V DC low voltage wiring.

### 2. Optical LED Light Engines (Order Separately)

- Exclusively designed for the HL6 slope system, the form-factor and performance replicate expected PAR lamp qualities in a high lumen LED light engine
- Turn-to-lock base provides secure retention of the LED light engine to the aiming mechanism, and provides a low-voltage electrical quick-connector.
- Proximity phosphors over chip on board LEDs provide a uniform source with high efficiency and no pixilation.
- See ordering information for available CCT options.
- Passive thermal management achieves L70 at 50,000 hours in IC and Non-IC applications.

### 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
- High color performance with 90 CRI minimum, and R9 greater than 50.
- LED color uniformity of 3 SDCM exceeds ENERGY STAR® color standards per ANSI C78.377- 2008.
- 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.

### 3. Beam Forming Lenses (Interchangeable)

- HLM6 LED light engines are designed to accept HL6 series lens optics
- The 40-degree Flood (FL) lens is included with the LED light engine, and may be ordered separately as a replacement
- Alternate beam options are offered in 25-degree Narrow Flood (NFL) and 55-degree Wide Flood (WFL), ordered separately
- The interchangeable lenses feature beam distributions with refined visual shielding to control beam angle and lumen delivery in accommodating various ceiling heights.

*Non-IC only, not to be used in direct contact with any type of insulation

# HL618TAT
# HL618TCP

**1800 Lumen Slope Ceiling LED 6" Non-IC Air-Tite™ Recessed Housing System**

**Compatible with HLM6 LED Modules, HL6 Beam-Forming Lens Optics & Designated Trims**

**High Efficacy LED Housing 27.6W Maximum**

**NON-IC For NON-INSULATED CEILINGS**

**IF INSUALTION IS PRESENT, IT MUST BE KEPT MIN. 3" FROM ALL SIDES AND TOP**

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.

ADV141609
2/20/2015

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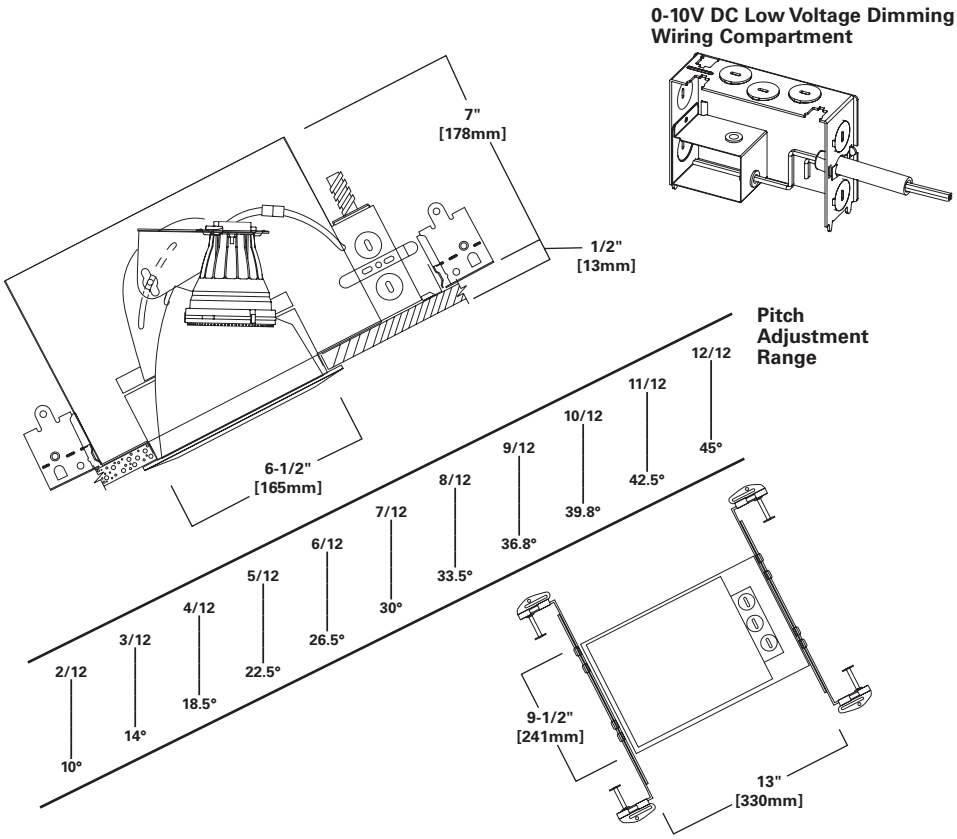
## Code Compliance

- cULus 1598 Type Non-IC, if insulation is present it must be kept 3" from sides and top of housing
  - Listed for damp locations.
  - Wet location listed with designated lens trims
- AIR-TITE™
  - Certified per ASTM E283; not exceeding 2.0 CFM under 75 Pascals pressure difference
- Energy Code compliant
  - ENERGY STAR® certified luminaire - consult ENERGY STAR® Certified Product List
  - Can be used to comply with California Title 24 Non-Residential Lighting Controls requirements as a LED Luminaire
- EMI/RFI per FCC 47CFR Part 15 Class B Consumer limits (residential and commercial compliant)
- Contains no mercury or lead and RoHS compliant.
- Chicago Plenum model (HL618TCP) is specially constructed and marked for Chicago Plenum applications (CCEA)
- Junction box features a seperate compartment for 0-10V DC low voltage dimming connections, to comply with NEC.

## Dimensional Information

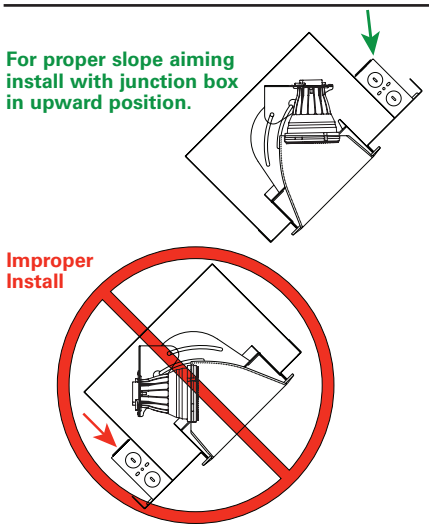



## Energy Data

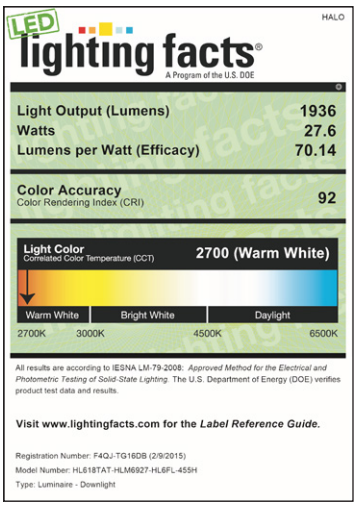
**HL618TAT & HL618TCP (1800 Series)**

| | | |
|---|---|---|
| **Min. operating temperature** | -30C/-22F | |
| **Input Voltage** | 120V | 277V |
| **Input Current (A)** | 0.23 | 0.10 |
| **Input Power (W)** | 27.6 | 27.0 |
| **Input Frequency** | 50/60Hz | |
| **FCC 47CFR Part 15 EMI/RFI** | Consumer Limits (Residential & Commercial) | |
| **THD** | ≤ 20% | |
| **Power Factor** | ≥ 0.9 | |
| **Sound Rating** | Class A | |

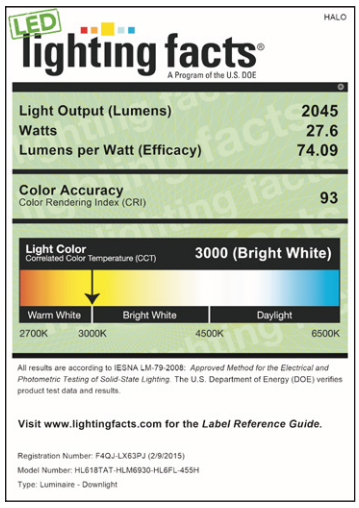
## Installation Details



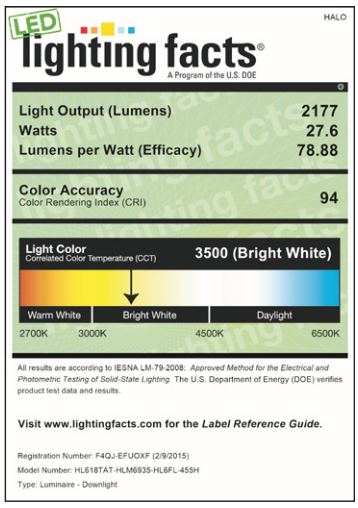

## Lighting Facts



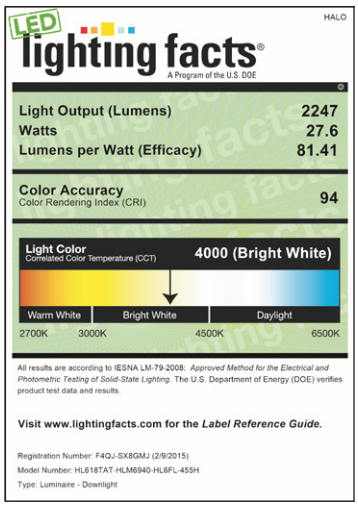

HL618TAT-HLM6927-HL6FL-455H




HL618TAT-HLM6930-HL6FL-455H




HL618TAT-HLM6935-HL6FL-455H




HL618TAT-HLM6940-HL6FL-455H



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## Ordering Information

**Sample Number:** HL618TAT - HLM6930 - 455W
Order LED housing, LED engine with lens optic, and trim separately for a complete luminaire.

### 1. Housing

**HL618TAT** = 6" slope ceiling, non-insulated ceiling rated, Air-Tight, recessed housing, UNV 120V-277V
**HL618TCP** = 6" slope ceiling recessed housing, non-insulated ceiling rated, CCEA marked for Chicago Plenum, UNV 120V-277V

### 2. LED Light Engines

**HLM6927** = 90CRI, 2700K 40˚ Flood Lens
**HLM6930** = 90CRI, 3000K 40˚ Flood Lens
**HLM6935** = 90CRI, 3500K 40˚ Flood Lens
**HLM6940** = 90CRI, 4000K 40˚ Flood Lens

### 2. Lens Optics Beam Forming

**HL6NFL** = 25° Narrow Flood
**HL6FL** = 40° Flood (1 Included with LED light engine)
**HL6WFL** = 55° Wide Flood
**HL6LHRPK** = Replacement lens holder ring

### 3. LED Trims

**Reflector - OD: 7-1/4" [184mm]**
**455SC** = Specular Clear Reflector, White Metal Trim Ring
**455H** = Semi-Specular Haze Reflector, White Metal Trim Ring
**455SN** = Satin Nickel Reflector, Satin Nickel Metal Trim Ring
**455TBZ** = Tuscan Bronze Reflector, Tuscan Bronze Metal Trim Ring

**Baffles - OD: 7-1/4" [184mm]**
**456W** = White Coilex Baffle, White Metal Trim Ring
**456P** = Black Coilex Baffle, White Metal Trim Ring

**Lenses and Diffusers "Dead Front" - OD: 8" [203mm]**
**70P** = Albalite Glass Lens, White Polymer Trim Ring
**70PS** = Albalite Glass Lens, White Polymer Trim Ring, Wet Location - Showerlight
**70SNS** = Albalite Glass Lens, Satin Nickel Polymer Trim Ring, Wet Location - Showerlight
**71P** = Drop Opal Glass Lens, White Polymer Trim Ring
**71PS** = Drop Opal Glass Lens, White Polymer Trim Ring, Wet Location - Showerlight
**73P** = Fresnel Glass Lens, White Polymer Trim Ring
**73PS** = Fresnel Glass Lens, White Polymer Trim Ring, Wet Location - Showerlight
**ERT702** = Drop Opal Plastic Lens, Gloss White Polymer Trim Ring, Wet Location - Showerlight

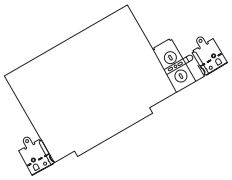
### System Accessories

**Oversize Trim Rings**
**OT400P** = 6" Oversize White Metal Trim Ring, for use with 6" trims (to be used behind standard trim ring) 6.0" I.D., 9.25" O.D.
**OT403P** = Oversize gloss white polymer trim ring, replaces standard ring included with 455 and 456 trims 6.0" I.D., 8.0" O.D.
**TRM690WH** = 6" LED oversize trim ring, white 6.9" I.D., 9.5" O.D.Ring slips over LED trim. Inset design allows 6" trim to fit into oversize ring surface

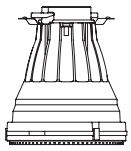
**Designer Trim Rings**
*(O.D. 7-1/4" 184mm)*
**TRM6C** = Chrome Metal
**TRM6MB** = Black Metal
**TRM6P** = White Metal
**TRM6SN** = Satin Nickel Metal
**TRM6TBZ** = Tuscan Bronze Metal
**TRM7MB** = Black Polymer

(6" Designer trim rings, for 455 and 456 trims)

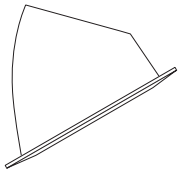
**1. Housing**



**2. Light Engine with Lens Optics**



**3. Trim**



## Lumen & Energy Code Compliance Summary – HL618TAT & HL618TCP (1800 Series)

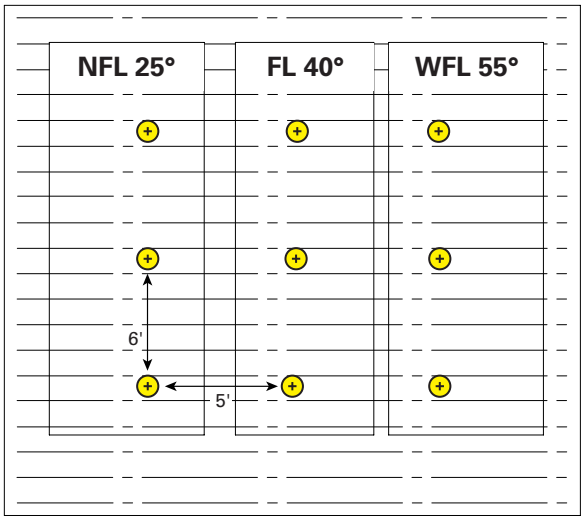
| | HL618TAT - HLM6927 | | | HL618TAT - HLM6930 | | | HL618TAT - HLM6935 | | | HL618TAT - HLM6940 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Trims** | **Lumens** | **LpW** | **Compliance** | **Lumens** | **LpW** | **Compliance** | **Lumens** | **LpW** | **Compliance** | **Lumens** | **LpW** | **Compliance** |
| **70PS** | 971 | 35 | T24NR | 993 | 35 | T24NR | 1114 | 40 | T24NR | 1153 | 41 | T24NR |
| **71PS** | 998 | 36 | T24NR | 1080 | 39 | T24NR | 1145 | 41 | T24NR | 1185 | 42 | T24NR |
| **ERT702** | 1320 | 47 | ES, T24NR | 1413 | 51 | ES, T24NR | 1514 | 54 | ES, T24NR | 1567 | 56 | ES, T24NR |
| **73PS** | 1395 | 50 | ES, T24NR | 1415 | 51 | ES, T24NR | 1600 | 57 | ES, T24NR | 1656 | 60 | ES, T24NR |
| **456P** | 1770 | 64 | ES, T24NR | 1821 | 65 | ES, T24NR | 2030 | 73 | ES, T24NR | 2101 | 76 | ES, T24NR |
| **455TBZ** | 1784 | 64 | ES, T24NR | 1882 | 68 | ES, T24NR | 2047 | 74 | ES, T24NR | 2118 | 76 | ES, T24NR |
| **455SN** | 1828 | 66 | ES, T24NR | 1938 | 70 | ES, T24NR | 2097 | 75 | ES, T24NR | 2170 | 78 | ES, T24NR |
| **455H** | 1936 | 70 | ES, T24NR | 2045 | 74 | ES, T24NR | 2177 | 78 | ES, T24NR | 2247 | 81 | ES, T24NR |
| **456W** | 1908 | 69 | ES, T24NR | 1978 | 71 | ES, T24NR | 2189 | 79 | ES, T24NR | 2265 | 82 | ES, T24NR |
| **455SC** | 1926 | 69 | ES, T24NR | 2069 | 74 | ES, T24NR | 2209 | 80 | ES, T24NR | 2286 | 82 | ES, T24NR |

Wattage 27.6

**LpW** = Lumens per Watt
**ES:** Refer to the ENERGY STAR® Certified Products List
**T24NR:** Can be used to comply with California Title 24 Non-Residential Lighting Controls requirements as a LED Luminaire.
**IECC:** Can be used to comply with International Energy Conservation Code Residential Energy Efficiency, High Efficacy Luminaire
**WSEC** - Washington State Energy Code Residential Energy Efficiency, High Efficacy Luminaire

Tested in accordance with IES LM-79 Photometric Measurement Standards. Field results may vary.

## Application Modeling – (12/12 Pitch – 1800 Series)

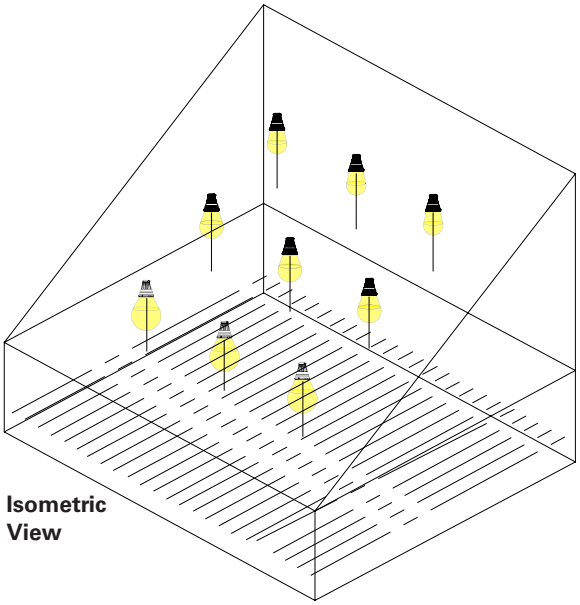



Floor Plan View

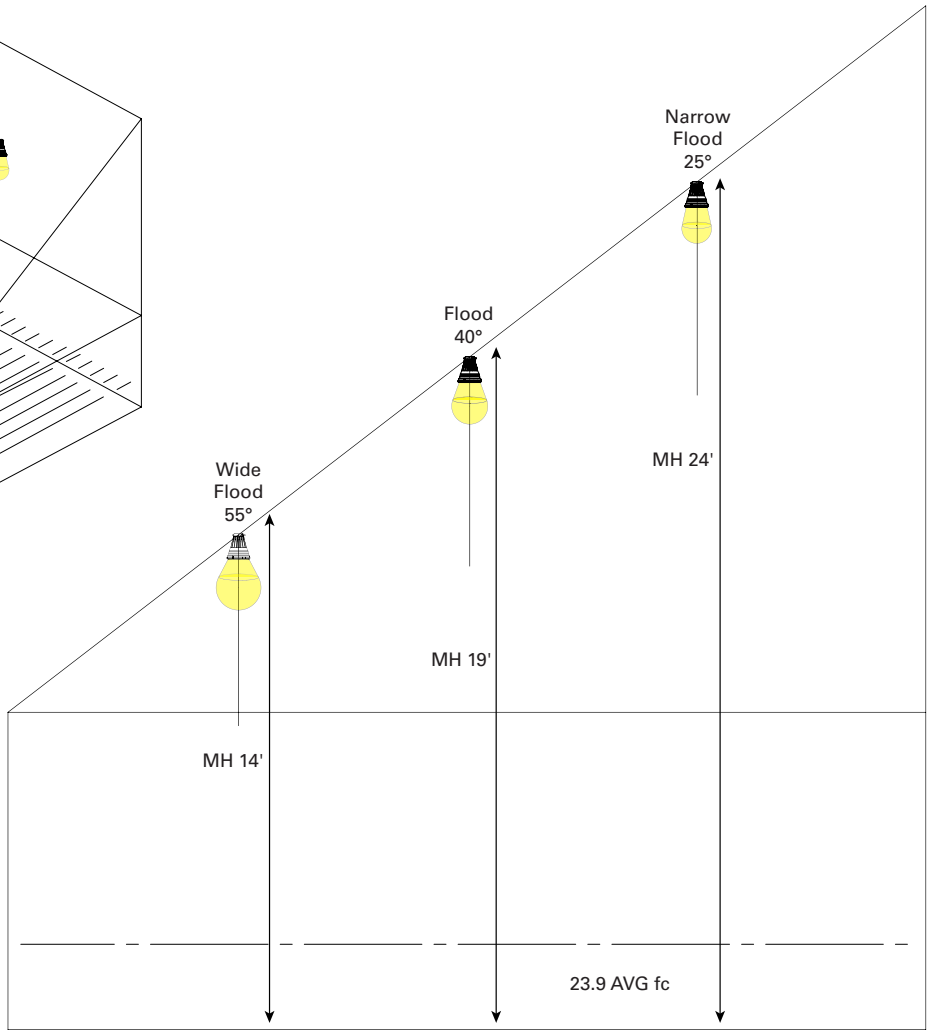
**Steep 12/12 pitch slope ceiling**
Room Data
12/12 Pitch (45° angle)
5' x 6' Spacing
20' X 24' Room

**Luminaire Data**
**HL618TAT** (1800 Series)
2700K HLM6927
Haze trim 455H

| 12/12 Pitch | Value |
|---|---|
| Avg. fc | 23.91 |
| Max. fc | 40.10 |
| Min. fc | 3.60 |
| Avg/Min | 6.64 |
| Max/Min | 11.14 |



Isometric View




Side View 12/12 Pitch



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## 6/12 Pitch • 1800 Series • 90 CRI

### Multiplier Table

| CCT Option | 2700 K | 3000 K | 3500 K | 4000 K |
|---|---|---|---|---|
| CCT Multiplier | 0.925 | 1.000 | 1.061 | 1.120 |

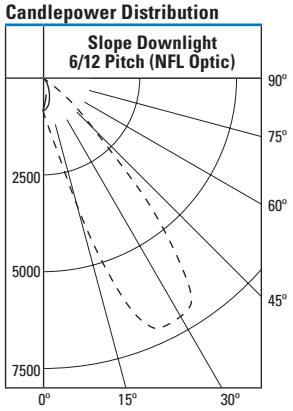
Table based upon testing with 3000°K color temperature, 90CRI.
Multipliers may be used to determine relative lumen values with other color temperatures.

### HL618TAT - HLM6930 - HL6NFL - 455H

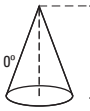
| | |
|---|---|
| Test Number | P130064 |
| Light Module | 1800 Series, 90CRI |
| Lens Optic | 25° Narrow Flood |
| Trim | 6" Aperture, Haze Trim |
| Lumens | 2106 Lm |
| Efficacy | 76.3 Lm/W |
| CCT | 3000K |
| SC (0/90/45) | 1.94 / 0.73 / 1.15 |

Legend
0-deg:
90-deg:
180-deg:

Candlepower Distribution




Cone of Light




| D | FC | L | W |
|---|---|---|---|
| 5.5' | 178.2 | 2.8 | 2.6 |
| 7' | 110 | 3.6 | 3.2 |
| 8' | 84.2 | 4.1 | 3.8 |
| 9' | 66.5 | 4.6 | 4.2 |
| 10' | 53.9 | 5.2 | 4.6 |
| 12' | 37.4 | 6.2 | 5.6 |

Zonal Lumen Summary

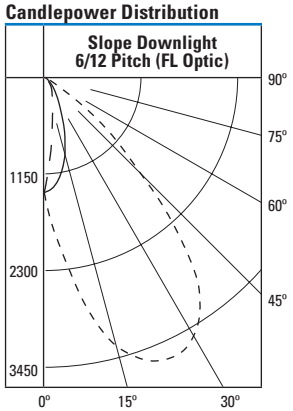
| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 1044 | 49.6 |
| 0-40 | 1702 | 80.8 |
| 0-60 | 2086 | 99.1 |
| 0-90 | 2106 | 100 |
| 90-180 | 0 | 0 |
| 0-180 | 2106 | 100 |

### HL618TAT - HLM6930 - HL6FL - 455H

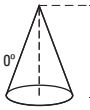
| | |
|---|---|
| Test Number | P130027 |
| Light Module | 1800 Series, 90CRI |
| Lens Optic | 40° Flood |
| Trim | 6" Aperture, Haze Trim |
| Lumens | 2032 Lm |
| Efficacy | 73.6 Lm/W |
| CCT | 3000K |
| SC (0/90/45) | 1.6 / 0.65 / 1.06 |

Legend
0-deg:
90-deg:
180-deg:

Candlepower Distribution




Cone of Light




| D | FC | L | W |
|---|---|---|---|
| 5.5' | 99.4 | 4 | 3.6 |
| 7' | 61.4 | 5.1 | 4.6 |
| 8' | 47 | 5.8 | 5.4 |
| 9' | 37.1 | 6.6 | 6 |
| 10' | 30.1 | 7.4 | 6.6 |
| 12' | 20.9 | 8.8 | 8 |

Zonal Lumen Summary

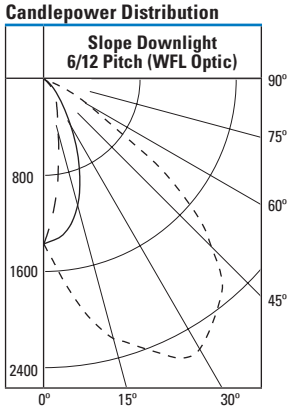
| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 1062 | 52.3 |
| 0-40 | 1592 | 78.3 |
| 0-60 | 2007 | 98.8 |
| 0-90 | 2032 | 100 |
| 90-180 | 0 | 0 |
| 0-180 | 2032 | 100 |

### HL618TAT - HLM6930 - HL6WFL - 455H

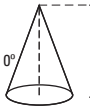
| | |
|---|---|
| Test Number | P130104 |
| Light Module | 1800 Series, 90CRI |
| Lens Optic | 55° Wide Flood |
| Trim | 6" Aperture, Haze Trim |
| Lumens | 2137 Lm |
| Efficacy | 77.4 Lm/W |
| CCT | 3000K |
| SC (0/90/45) | 1.45 / 0.76 / 1.17 |

Legend
0-deg:
90-deg:
180-deg:

Candlepower Distribution




Cone of Light




| D | FC | L | W |
|---|---|---|---|
| 5.5' | 66.6 | 5.1 | 5 |
| 7' | 41.1 | 6.5 | 6.4 |
| 8' | 31.5 | 7.5 | 7.2 |
| 9' | 24.9 | 8.4 | 8.2 |
| 10' | 20.1 | 9.4 | 9 |
| 12' | 14 | 11.3 | 11 |

Zonal Lumen Summary

| Zone | Lumens | %Fixture |
|---|---|---|
| 0-30 | 959 | 44.9 |
| 0-40 | 1490 | 69.7 |
| 0-60 | 2091 | 97.9 |
| 0-90 | 2137 | 100 |
| 90-180 | 0 | 0 |
| 0-180 | 2137 | 100 |

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

Cooper Lighting by EATON

**Eaton**
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

**Eaton's Cooper Lighting Business**
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.cooperlighting.com