

DESCRIPTION - H4 LED 2nd GENERATION ADJUSTABLE GIMBALS

Halo H4 LED Adjustable Gimbals, ELSG406 series, combine an adjustable gimbal trim and LED light engine for use with H457 series housings. The H4 LED adjustable gimbals feature 35° tilt and offer interchangeable optics with three beam distributions of 25°, 35°, and 50°. H4 LED 2nd Generation offers 90 CRI color rendering index and four color temperatures 2700K, 3000K, 3500K, 4000K. Three high-quality trim finishes of White, Satin Nickel, and Tuscan Bronze are available. Halo LED offers high quality, fit, finish, and performance in an energy-efficient, high-efficacy gimbal.

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

SPECIFICATION FEATURES

MECHANICAL

Heat Sink

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

Gimbal

- Precision designed fit and finish
- Die-cast aluminum with snap-in front loading ring allowing interchange of beam forming reflectors
- Gimbal front ring holds one lens media. Clear glass lens is included. Optional lens media such as L111 soft focus may be used in place of clear glass lens.
- 35° tilt adjustment with friction fit to heat sink.
- Smooth travel from nadir to 35°
- Works with the upper heat sink for thermal conduction away from the LED

MOUNTING

Friction Blades

- Precision formed steel spring blades provide retention of the light engines in the H4 LED series housings.
- Friction blade design allows the light engine to be installed in any position within the housing aperture (360 degrees).

ELECTRICAL

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.

Finish Options

WH = White
SN = Satin Nickel
TBZ = Tuscan Bronze

OPTICS

- Three beam distribution options with interchangeable round beam forming reflectors
- Gimbal is supplied with 25° reflector pre-installed
- Reflector options: 25°, 35°, 50° beam angle (TL412RK kit)
- Clear glass cover lens included with gimbal. One optional accessory lens may be used in place of clear lens.
- Reflector and lens are accessible behind the gimbal's snap-in front ring.

Optical Accessory Reflector Kit -- TL412RK

- Three reflector options
- 25° beam angle reflector (one is included with gimbal)
- 35° beam angle reflector
- 50° beam angle reflector

COLOR SPECIFICATION & QUALITY STANDARDS

- LED is a chip on board design consisting of a multiple LED package with proximity phosphor coating to create one virtual white light source for a productive "cone of light"
- 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 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 then serialized to register lumens, wattage, CRI and CCT.

- Halo LED serialized testing and measurement process further ensures color and lumen consistency to meet stringent specifications and exceed ENERGY STAR® SSL standards.
- Halo LED Modules and light engines include Color Rendering Index and Correlated Color Temperature in the model number.
Example: ELSG406927WH

9 **27**
>90 CRI 2700K nominal CCT

QUALIFICATION

- Halo LED offers the widest choice of four correlated color temperatures in recessed LED downlighting, including: 2700K, 3000K, 3500K, 4000K
- 90 CRI
- ENERGY STAR® Qualified as used with designated LED trims*
- Can be used to meet State of California Title 24 and International Energy Conservation Code – IECC, High Efficacy requirements when used with designated LED trims*
- LED emits no ultraviolet and minimal infrared wavelengths
- ROHS compliant
- Damp location listed with H457 LED housings
- Electrical/Energy Data refer to H457 LED housings (LED driver is fixed in housing)

Dimming

- The HALO H4 LED luminaires are dimmable. Refer to H457 housing specifications and consult dimmer manufacturers for compatibility and loading.

Warranty

Cooper Lighting Solutions 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 Solutions Terms and Conditions of sale. Refer to www.cooperlighting.com)

*Qualified and Compliant. Refer to ENERGY STAR® Qualified Products List and CEC (T24) Appliance Database for listings.



H4 LED Gimbal 2nd Generation 2700K, 3000K, 3500K, 4000K

4-Inch LED Adjustable
Square Gimbal Trim &
Light Engine

FOR USE WITH H457
Series 4" LED Housings

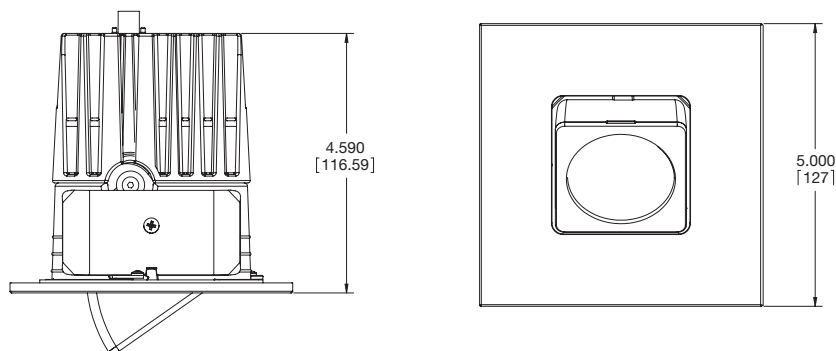
90 CRI

High Efficacy LED



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

Dimensions



H4 LED 2nd Generation Square Gimbal Photometry - Lumen and Compliance Summary

| H4 LED Adjustable Square Gimbal Collection | | H4 LED Square Gimbal ELSG406927 - 2700K | | | | H4 LED Square Gimbal ELSG406930 - 3000K | | | | H4 LED Square Gimbal ELSG406935 - 3500K | | | | H4 LED Square Gimbal ELSG406940 - 4000K | | | |
|---|----------------------|--|------------------------|--------------------------|-------------|--|------------------------|--------------------------|-------------|--|------------------------|--------------------------|-------------|--|------------------------|--------------------------|-------------|
| Trim Type | Trim Model | LUMENS (1) | ENERGY STAR® (2) | California T24 (3) | IECC (4) | LUMENS (1) | ENERGY STAR® (2) | California T24 (3) | IECC (4) | LUMENS (1) | ENERGY STAR® (2) | California T24 (3) | IECC (4) | LUMENS (1) | ENERGY STAR® (2) | California T24 (3) | IECC (4) |
| 4" Square Adjustable Gimbal Trim / Light Engine, White | ELSG4069xxWH | 750 | Yes | Yes | Yes | 840 | Yes | Yes | Yes | 880 | Yes | Yes | Yes | 930 | Yes | Yes | Yes |
| 4" Square Adjustable Gimbal Trim / Light Engine, Satin Nickel & Tuscan Bronze | ELSG4069xxSN/ TBZ | 700 | Yes | Yes | Yes | 790 | Yes | Yes | Yes | 830 | Yes | Yes | Yes | 880 | Yes | Yes | Yes |

- (1) Adjustable gimbal trims are tested with the included 25 degree beam reflector, in accordance with IES LM-79 Photometric Measurement Standards measured at Nadir. 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
- Gimbal Finish Codes
WH = White
SN = Satin Nickel
TBZ = Tuscan Bronze

Ordering Information - H4 LED Adjustable Gimbals

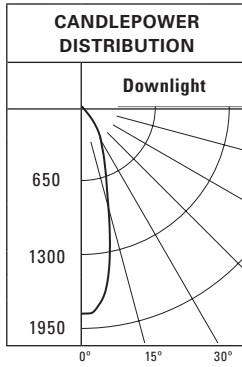
SAMPLE NUMBER: ELSG406927TBZ
Complete unit includes LED housing, light engine and trim; ordered separately.

| H4 LED Housing | H4 LED Light Engine | | | Optional Accessory Reflector Kit | Optional Len Media | |
|---|---|-------------------|--|---|---|---|
| | CRI | CCT | Finish | (order separately) | (order separately) | |
| H457ICAT1E = 4" Dedicated LED Insulated Ceiling AIR-TITE™ Housing, 120V Driver with LE/TE* phase control dimming capable | ELSG406 = Square LED Adjustable Gimbal Light Engine - 2nd Generation | 9 = 90 CRI | 27 = 2700K 30 = 3000K 35 = 3500K 40 = 4000K | WH = White SN = Satin Nickel TBZ = Tuscan Bronze | TL412RK includes: • 25° reflector (one is included with gimbal) • 35° reflector • 50° reflector TL412RK is for use with ELGxx and ELSGxx gimbals only. | One lens media may be used in place of clear lens. Optical Lenses L110 = Diffuse Sand Blasted Lens L111 = Soft Focus Textured Lens L113 = Prismatic Lens L115 = Linear Spread Lens Dichroic Color Films L114 = UV Filter L120 = Red L121 = Amber L122 = Yellow L123 = Green L124 = Daylight L125 = Blue L127 = Cosmetic Color Filters L130 = Yellow |
| H457RICAT1E = 4" Dedicated LED Insulated Ceiling AIR-TITE™ Remodel Housing, 120V Driver with LE/TE* phase control dimming capable | | | | | | |
| H457TATE010 = 4" Dedicated LED Non-IC AIR-TITE™ Housing, 120V-277V Driver with LE/TE* phase control and 0-10V dimming capable | | | | | | |
| H457TCPE010 = 4" Chicago Plenum Dedicated LED Non-IC AIR-TITE™ Housing, 120V-277V Driver with LE/TE* phase control and 0-10V dimming capable | | | | | | |
| H457RTATE010 = 4" Dedicated LED Non-IC AIR-TITE™ Remodel Housing, 120V-277V Driver with LE/TE* phase control and 0-10V dimming capable | | | | | | |

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

H4 LED 2nd Generation Round Gimbal Photometry

| ELG406930WH (White) - (25° BEAM - 0° TILT) | |
|--|-------------------------------------|
| Test Number | P123767 |
| LED Module | ELG406930 |
| Trim | 4" Square gimbal / LED light engine |
| Lumens | 64.6 Lm/W |
| CCT | 3000K |
| SC | 0.5 / 0.5 / 0.56 |



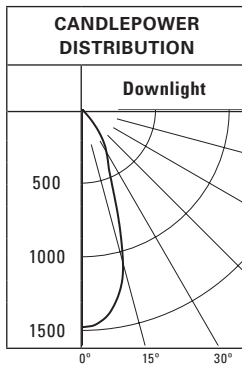
| 0° Horizontal plane | | | | |
|---------------------|------|-----|-----|--|
| D | FC | L | W | |
| 5.5' | 60.2 | 2.6 | 2.6 | |
| 7' | 37.1 | 3.4 | 3.4 | |
| 8' | 28.4 | 4 | 4 | |
| 9' | 22.5 | 4.4 | 4.4 | |
| 10' | 18.2 | 5 | 5 | |
| 12' | 12.6 | 6 | 6 | |

| 30° Vertical plane | | | | | |
|--------------------|------|------|-----|------|--|
| D | FC | L | W | CB | |
| 2' | 93.8 | 2.7 | 1.4 | 3.5 | |
| 3' | 41.7 | 4.1 | 2.2 | 5.2 | |
| 4' | 23.4 | 5.6 | 3 | 6.9 | |
| 5' | 15 | 7 | 3.8 | 8.7 | |
| 6' | 10.4 | 8.4 | 4.6 | 10.4 | |
| 8' | 5.9 | 11.2 | 6.2 | 13.9 | |
| 10' | 3.8 | 14 | 7.6 | 17.3 | |
| 12' | 2.6 | 16.9 | 9.2 | 20.8 | |

| LUMINANCE DATA | |
|----------------|-------|
| Angle | 0° |
| 45 | 24496 |
| 55 | 8107 |
| 65 | 2017 |
| 75 | 1647 |
| 85 | 4891 |

| ZONAL LUMEN SUMMARY | | | |
|---------------------|--------|----------|--|
| Zone | Lumens | %Fixture | |
| 0-30 | 628 | 74.8 | |
| 0-40 | 780 | 92.9 | |
| 0-60 | 835 | 99.5 | |
| 0-90 | 840 | 100.0 | |
| 90-180 | 0 | 0.0 | |
| 0-180 | 840 | 100.0 | |

| ELG406930WH (White) - (35° BEAM - 0° TILT) | |
|--|-------------------------------------|
| Test Number | P123791 |
| LED Module | ELG406930 |
| Trim | 4" Square gimbal / LED light engine |
| Lumens | 63.1 Lm/W |
| CCT | 3000K |
| SC | 0.64 / 0.64 / 0.62 |



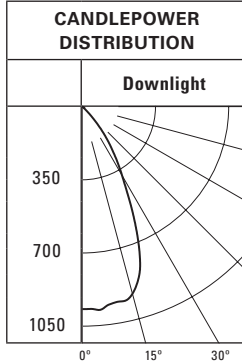
| 0° Horizontal plane | | | | |
|---------------------|------|-----|-----|--|
| D | FC | L | W | |
| 5.5' | 48.9 | 3.4 | 3.4 | |
| 7' | 30.2 | 4.4 | 4.4 | |
| 8' | 23.1 | 5 | 5 | |
| 9' | 18.3 | 5.6 | 5.6 | |
| 10' | 14.8 | 6.2 | 6.2 | |
| 12' | 10.3 | 7.6 | 7.6 | |

| 30° Vertical plane | | | | | |
|--------------------|------|------|------|------|--|
| D | FC | L | W | CB | |
| 2' | 95.5 | 2.4 | 1.6 | 3.5 | |
| 3' | 42.5 | 3.6 | 2.6 | 5.2 | |
| 4' | 23.9 | 4.8 | 3.4 | 6.9 | |
| 5' | 15.3 | 6 | 4.2 | 8.7 | |
| 6' | 10.6 | 7.2 | 5.2 | 10.4 | |
| 8' | 6 | 9.6 | 7 | 13.9 | |
| 10' | 3.8 | 12 | 8.6 | 17.3 | |
| 12' | 2.7 | 14.4 | 10.4 | 20.8 | |

| LUMINANCE DATA | |
|----------------|-------|
| Angle | 0° |
| 45 | 22139 |
| 55 | 3716 |
| 65 | 2017 |
| 75 | 0 |
| 85 | 4891 |

| ZONAL LUMEN SUMMARY | | | |
|---------------------|--------|----------|--|
| Zone | Lumens | %Fixture | |
| 0-30 | 628 | 76.6 | |
| 0-40 | 775 | 94.5 | |
| 0-60 | 817 | 99.7 | |
| 0-90 | 820 | 100.0 | |
| 90-180 | 0 | 0.0 | |
| 0-180 | 820 | 100.0 | |

| ELG406930WH (White) - (50° BEAM - 0° TILT) | |
|--|-------------------------------------|
| Test Number | P123815 |
| LED Module | ELG406930 |
| Trim | 4" Square gimbal / LED light engine |
| Lumens | 62.3 Lm/W |
| CCT | 3000K |
| SC | 0.88 / 0.89 / 0.82 |



| 0° Horizontal plane | | | | |
|---------------------|------|------|------|--|
| D | FC | L | W | |
| 5.5' | 32 | 4.8 | 4.8 | |
| 7' | 19.8 | 6 | 6.2 | |
| 8' | 15.1 | 7 | 7 | |
| 9' | 12 | 7.8 | 7.8 | |
| 10' | 9.7 | 8.8 | 8.8 | |
| 12' | 6.7 | 10.6 | 10.6 | |

| 35° Vertical plane | | | | | |
|--------------------|------|------|----|------|--|
| D | FC | L | W | CB | |
| 2' | 91.3 | 1.8 | 2 | 3.5 | |
| 3' | 40.6 | 2.8 | 3 | 5.2 | |
| 4' | 22.8 | 3.8 | 4 | 6.9 | |
| 5' | 14.6 | 4.7 | 5 | 8.7 | |
| 6' | 10.1 | 5.7 | 6 | 10.4 | |
| 8' | 5.7 | 7.6 | 8 | 13.9 | |
| 10' | 3.7 | 9.6 | 10 | 17.3 | |
| 12' | 2.5 | 11.5 | 12 | 20.8 | |

| LUMINANCE DATA | |
|----------------|-------|
| Angle | 0° |
| 45 | 25189 |
| 55 | 2839 |
| 65 | 2568 |
| 75 | 0 |
| 85 | 0 |

| ZONAL LUMEN SUMMARY | | | |
|---------------------|--------|----------|--|
| Zone | Lumens | %Fixture | |
| 0-30 | 613 | 75.7 | |
| 0-40 | 768 | 94.7 | |
| 0-60 | 808 | 99.7 | |
| 0-90 | 810 | 100.0 | |
| 90-180 | 0 | 0.0 | |
| 0-180 | 810 | 100.0 | |