

HALO LED H4 Series

The Halo H4 LED is a family of 4" aperture recessed downlight housings designed for use with Halo EL4 Series LED Light Engines and compatible 4" LED trims. Halo H4 LED housings have integral LED drivers that offer dimming as a standard feature.

H456ICAT120D is an insulated ceiling, AIR-TITE™ housing offering 120 volt dimming capability with many incandescent or electronic low voltage dimmers. Designed for use with EL4 series LED Light Engines and TL4 LED Series Trims, the H456ICAT120D offers high quality downlighting along with high efficacy – the result being great lighting and significant energy savings.

DESIGN FEATURES

MECHANICAL

Housings

- Box 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 housing can be removed from plaster frame to provide access to the junction box.
- 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 "toolless" 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 Connection

- LED connector is a non-screw base connector offering easy installation with the EL4 Series LED Light Engine.
- LED connector meets California Title-24 high-efficacy luminaire requirement for a non-screw base socket, and where required to qualify as a high-efficacy luminaire.

LED Driver

- LED dimmable driver mounts to the housing.
- Driver is a 120 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 EL4 LED Light Engines, and operates the LED for long life, meeting 50,000 hour / 70% lumen maintenance standard.
- If dimming is not required the fixture can be operated from a standard wall switch.

Dimming

- The HALO H4 LED luminaire is dimmable to 15% with most standard 120V dimmers; including LED-rated and electronic low voltage dimmers (recommended); many

incandescent and magnetic low voltage dimmers; and dims to 5% using dimmers with low end trim adjustment.

- Standard incandescent dimmers require a minimum load of typically over 40 watts on the circuit for full range dimming performance (four LED modules).
- For dimming with digital (smart) multi-location dimmers or when dimming fewer than four LED modules, LED rated or electronic low voltage dimmers are required (ELV dimmers need a neutral connection in the wallbox).

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 Feed Through
- UL/cUL listed for Direct Contact with insulation and combustible material

Compliance

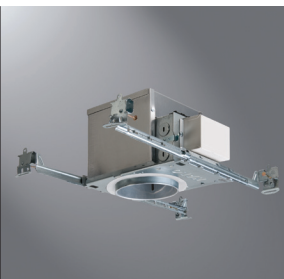
- Use with designated LED light engines and trims for ENERGY STAR® qualification.
- Can be used for State of California Title 24 high efficacy compliance with designated LED light engines and trims.
- Can be used for International Energy Conservation Code (IECC) high efficacy compliance with designated LED light engines and trims.
- Refer to specification sheets online for compliance information.

Qualification

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
- International Energy Conservation Code (IECC)
- New York State Energy Conservation Construction Code (NY-ECCC)
- State of California Title 24 "Recessed Luminaires in Insulated Ceilings."



H456ICAT120D

**4-Inch LED
Recessed Housing
New Construction
Insulated Ceiling -
With 4" LED Light Engines
and 4" LED Trims**

**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%
Rated Wattage: 15W max.
Input Power: 14.0W
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)

H4 Series LED

Summary Lighting Data:

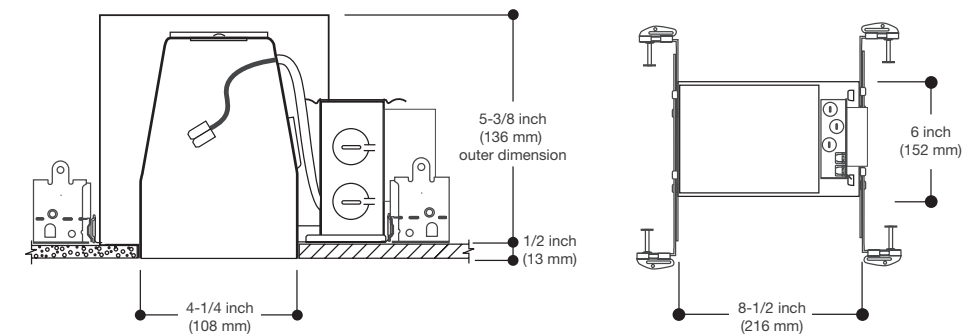
Lumen range: 534-700
Lumens per watt: up to 46

Color

Correlated Color Temperature (CCT): 2700K-4000K
Color Rendering Index (CRI, Ra): ... 80



DIMENSIONS



ORDERING INFORMATION

SAMPLE NUMBER: H456ICAT120D EL405827 TL400SC

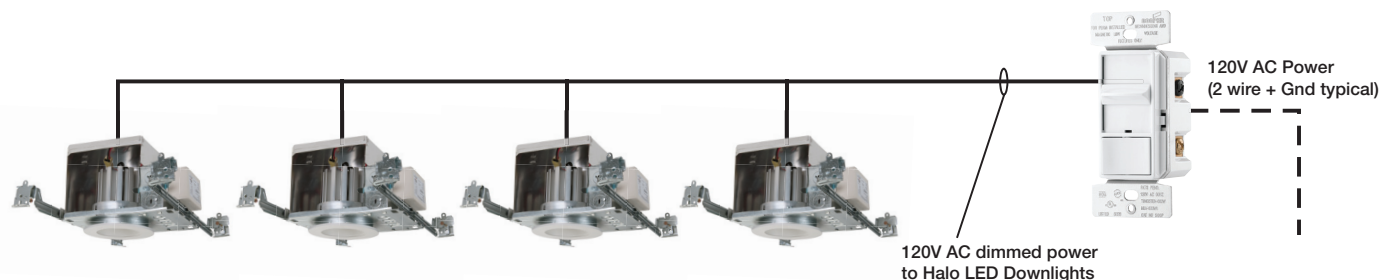
Complete unit includes LED housing, light engine, and trim, ordered separately

H4 LED Housing			H4 LED Light Engine				H4 LED Trim
H456	ICAT	120D	EL4	05	8	27	TL40x
H456= 4" Housing H4 LED Series Downlight	ICAT= New Construction, Insulated Ceiling, AIR-TITE	120D= LED driver, 120V, 50/60Hz, Dimmable - most standard electronic low voltage (recommended) and incandescent/ magnetic low voltage dimmers (see dimming application notes, and refer to dimmer manufacturers for compatibility)	EL4= 4" LED Downlight Light Engine	05= 550 Design Lumens*	8= 80 CRI	27= 2725°K 30= 3045°K 35= 3465°K 40= 3985°K	TL400SC= Specular Clear Refector, White Trim Ring TL400H= Haze Reflector, White Trim Ring TL400WH= White Reflector, White Trim Ring TL400SBK= Specular Black Reflector, White Trim Ring TL400SN= Satin Nickel Reflector, Satin Nickel Trim Ring TL400TBZ= Tuscan Bronze Reflector, Tuscan Bronze Trim Ring TL401WB= White Baffle, White Trim Ring TL401BB= Black Baffle, White Trim Ring TL402SCS= Specular Clear Reflector with Solite® Lens, White Trim Ring TL402HS= Haze Reflector with Solite® Lens, White Trim Ring TL402WHS= White Reflector with Solite® Lens, White Trim Ring TL402SBKS= Specular Black Reflector with Solite® Lens, White Trim Ring TL402SNS= Satin Nickel Reflector with Solite® Lens, Satin Nickel Trim Ring TL402TBZS= Tuscan Bronze Reflector with Solite® Lens, Tuscan Bronze Trim Ring TL403WBS= White Baffle with Solite® Lens, White Trim Ring TL403BBS= Black Baffle with Solite® Lens, White Trim Ring

* Lumen output range of 534-700 lumens (depending upon color temperature and trim)

Accessories

Designer Trim Rings, Thin Profile
TRM400WH=White, die-cast trim ring
TRM400BK=Black, die-cast trim ring
TRM400SN=Satin Nickel, die-cast trim ring
TRM400TBZ=Tuscan Bronze, die-cast trim ring
TRM400PC=Polished Chrome, die-cast trim ring



Dimmer Types & Representative List of Manufacturers*

Reverse Phase Control - 120VAC Dimmers

- Electronic Low Voltage rated dimmers are typically Reverse Phase (Trailing Edge)
 - ELV rated dimmers provide greater assurance of dimming performance compatibility.*
 - Minimum Circuit Load of One LED Module, Dimming to 15% (dimming to 5% with select dimmers as noted)
- Require the neutral terminal on the dimmer connected to a neutral in the wall box.

Lutron

Diva® DVELV Series

Maestro® MAELV Series

Nova® NLV Series

Nova T® NTELV & NTLV Series

Skylark® SELV Series

Vierti® VTELV Series

Leviton

Minimum Brightness Adjustment (Low End Trim), Dimming to 5%

Acenti® ACE Series (Programmable trim)

IllumiTech® IPE Series (Manual trim)

Vizia + VPE Series (Programmable trim)

Forward Phase Control Dimmers - 120VAC

- Incandescent and Magnetic Low Voltage rated dimmers are typically Forward Phase (Leading Edge) Dimmers
- Circuit Load of 4 LED Modules or More, Dimming to 15%
- Forward phase control dimmers are generally compatible and typically provide acceptable dimming results.*

Cooper Controls

iLumin SC-UN Universal Source Controller Series - Lighting Control Panel System

Cooper Wiring Devices

ASPIRE RF® N/A

ASPIRE® 9530, 9532, 9538, 9540

Decorator Slide® DI06P, DI10P

Decorator Full-Slide® SI061, SI06P, SI10P

Toggle® 6441, 6443, 6453

Rotary® 6001, 6013, 6000, 6003, 6020, 6023

Architectural Rotary® RAI10, RAI15, RAI20

Cooper Wiring Devices - LED Dimmers (Low End Trim)

ASPIRE 9573

Skye SLC03P

Devine DLC03P

Lutron

Ariadni® AY/TG Series

Ceana® CN Series

Centurion® C Series

Dalia® DL Series

Diva® DV Series

Glyder® GL Series

Lumea® LG Series

Lyneo® LX Series

Nova® N Series

Nova T® NT/NTB/NTA Series

Qoto® Q Series

Skylark® S Series

Leviton

Illumitech® IPI/RPI Series

Sureslide® 663 Series

Trimatron® 6681/6683/6602

TrueTouch® 6606-ILM

Minimum Brightness Adjustment (Low End Trim), Dimming to 5%

Illumitech® IP10/IP40/IPM406/IPM10 Series dimmers (Manual trim)

Acenti® ACI/ACE/ACX/ATI Series (Programmable trim)

Vizia + VPI/VPE/VPX Series (Programmable trim)

Lutron - Commercial

Commercial Panel Systems LP-RPM-4A120 Remote Power Module - Adaptive Dimming

Lutron - Whole House

Homeworks HW-RPM-4A-120 Remote Power Module-Adaptive Dimming

HW-RPM-4V-120 Remote Power Module-Dimming

HWD-5NE, HRD-5NE Wired Maestro and RF Maestro Local Controls

Watt Stopper

Miro Universal DRD4 Series Dimmers

DCD267 Series Dimmers

DCD68 Series Multilocation - When used with DRD4 or DCD267 series master dimmers

- Universal Wireless Dimmers (Incandescent, Magnetic Low Voltage, Electronic Low Voltage)
- Minimum Circuit Load of Two LED Modules, Dimming to 15%

Watt Stopper

Miro Incandescent DRD2 Series Dimmers

DCD26 Series Dimmers

DCD68 Series Multilocation - When used with DRD2 or DCD26 series master dimmers

- Incandescent Wireless Dimmers
- Minimum Circuit Load of Five LED Modules, Dimming to 15%

A 15W minimum incandescent load or a neutral in the wall box may be required to reliably dim

LiteTouch, Inc.

LiteTouch 08-2108-01 Quad dimmer

LiteTouch 08-2134-01 Hybrid dimmer

(LiteTouch recommends the fade times be set for at least 2 seconds on and off for the FIVEk in the load group parameters. Consult LiteTouch for additional technical application).

Crestron*

CLS-C6(M), CLS-EXP-DIM, CLS-EXP-DIMU, CLX-1DIM4, CLX-1DIM8, CLX-2DIM8, CLX-1DELV4, DIN-1DIM4, DIN-1DIMU4, GLX-DIM6, GLXX-2DIM8 (Crestron recommends if more than 1 fixture is connected, set MIN LEVEL=3% to ensure all fixtures turn on simultaneously at low end).

CLW-DIMSWEX, CLW-DIMSWCN, CLW-DIMEX, CLW-DIMCN, P-DIMEX (Consult Crestron for LED compatibility and technical application. Require Neutral wire connection at dimmer and custom firmware).

*Consult Crestron for Control System Min-Max % level Intensity recommendations.

*Applications Notes

- LED Dimming performance may vary from incandescent dimming. Performance results may vary based upon dimmer model, manufacturer, circuit wiring and circuit loading.
- Dimmer maximum load rating with LED may differ from published Incandescent and Electronic Low Voltage dimmer ratings. Consult dimmer manufacturer for maximum dimmer load with LED.
- For special dimming applications consult dimmer manufacturer or controls specialist (e.g. large multiple circuit installations, many LEDs per circuit, sequenced fades, 277V or 347V circuits powered by step-down transformers, etc.).
- There are no warranties of performance or compatibility implied.
- This is a representative list of dimmers. Refer to dimmer manufacturers for further information on LED compatibility and finish codes.

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SPECIAL NOTE: Incandescent Digital Dimmers

Incandescent Digital Dimmers (also called Smart or Multi-Location) require an incandescent load. For circuit loads with LED modules only - use reverse phase control (electronic low voltage rated) dimmers.

3 YEAR PRODUCT LIMITED WARRANTY

Cooper Lighting (The Company) warrants the HALO H4x Series LED housings, Halo EL4x, ELG4x, ELSGx Series LED Light Engines, and HALO TL4x, TLS4x Series LED Trims against defects in material or workmanship for a period of three years from date of original purchase, and agrees to repair or, at the company's option, replace a defective product without charge for either replacement parts or labor during such time. This does not include labor to remove or install fixtures.

This warranty is extended only to the original purchaser of the product. A purchaser's receipt or other proof of date of original purchase acceptable to the Company is required before warranty performance shall be rendered. This warranty only covers product failure due to defects in materials or workmanship which occurs in normal use. It does not cover the failure of product caused by accident, misuse, abuse, lack of reasonable care, alteration, or faulty installation, subjecting the product to any but the specified electrical service or any other failure not resulting

from defects in materials or workmanship. Damage to the product caused by separately purchased, non-Company supplied components and corrosion or discoloration of components are not covered by this warranty. There are no express warranties except as described above.

THE COMPANY SHALL NOT BE LIABLE FOR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. ALL IMPLIED WARRANTIES, IF ANY, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE DURATION OF THIS EXPRESS WARRANTY. Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

No other warranty, written or verbal, is authorized by the Company. This war-

ranty gives you specific legal rights, and you may also have other rights which vary from state to state. To obtain warranty service, please write to Cooper Lighting, 1121 Highway 74 South, Peachtree City, Georgia 30269. Enclose product model number and problems you are experiencing, along with address and telephone number. You will then be contacted with a solution or a Return Goods Authorization number and full instructions for returning the product. All returned products must be accompanied by a Return Goods Authorization Number issued by the Company and must be returned freight prepaid. Any product received without a Return Goods Authorization Number from the Company will be refused. Cooper Lighting is not responsible for merchandise damaged in transit. Repaired or replaced products shall be subject to the terms of this warranty and are inspected when packed. Evident or concealed damage that is made in transit should be reported at once to the carrier making the delivery and a claim filed with them.