

HALO LED Module 600 Series For New and Existing Installations

The Halo LED ML7068xx modules are designed for retrofit applications with an Edison screw base adapter (included with the module) for use in existing housings OR may also be used in new construction with the LED dedicated housing Series H750x. Halo LED 600 Series modules deliver in the range of 416-793 lumens (depending upon the trim and selected color temperature); and the 600 Series offers selection of four color temperatures: 2700K, 3000K, 3500K, 4000K. Halo LED offers a superior optical design that yields productive beam lumens, good cutoff and low glare.

SPECIFICATION FEATURES

Exceeds the light output and distribution of a 65W BR30 incandescent lamp or an 18W compact fluorescent luminaire (lamp and reflector trim), while consuming less than 14 watts.

Dimming

The ML7068xx series is designed for dimming capability to 15% in normal operation with standard 120V LED-Rated, electronic low voltage, and many incandescent dimmers. The LED module may also dim to 5% using dimmers with low end trim adjustment. (Consult dimmer manufacturer for application/compatibility. Note, some dimmers require a neutral in the wallbox).

Quality of Light

Halo 600 Series provides excellent color rendering (80 CRI), and a selection of four color temperatures (2700K, 3000K, 3500K and 4000K). CRI and color temperature performance conform to parameters established by ENERGY STAR® SSL standards (refer to ANSI-C78.377 - 2008 for CCT specifications). LED's have virtually no ultraviolet and minimal infrared wavelengths, and they do not emit heat like conventional lamps.

Optical Design

Optical design yields productive beam lumens, 50° cutoff, and low glare.

Life

Rated for 50,000 hours at 70% lumen maintenance.

Compatibility

The Halo ML7068xx LED modules are designed for use in the dedicated H750x series housings OR for retrofit applications in existing Halo or ALL-PRO™ H7/E7/EI7 housings. The Halo LED

module is designed for use in either IC (insulated ceiling) or non-IC construction. Compatible HALO and ALL-PRO housings include model numbers:

- Dedicated LED Housing: H750x Series
- Halo Housings: H7x Series
- ALL-PRO Housings: ET7x and EI7x Series

Screw Base Adapter

Edison screw-base adapter supplied with module allows simple wiring connection to existing housing.

Module Construction

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

Air-Tite™ Rating

The Halo LED module has passed restricted air flow testing, and now qualifies any housing to meet air-tight building codes. Certified under ASTM-E283 standards.

LED Driver

The LED module is controlled by a high efficiency driver with a power factor of >.90 at an input power of 120V, 50/60Hz. Driver has integral thermal protection in the event of over temperature or internal failure.

Warranty

Cooper Lighting provides a three year limited warranty on the Halo LED Luminaire which includes the LED Module, LED Recessed Housing and LED trims.

Catalog #		Type
Project		
Comments		Date
Prepared by		



ML706827 600 Series LED Dimmable Module

2700°K Correlated
Color Temperature

49X_Series Trims

6" LED Module and Trim
For New Construction OR
Retrofit Applications

600 Series Energy Data:

(Values at non-dimming line voltage)
Minimum Starting Temp: -30°C (-22°F)
EMI/RFI: FCC Title 47 CFR, Part 18, Class B (Consumer)
Sound Rating: Class A standards
Input Voltage: 120V
Power Factor: >0.90
Input Frequency: 50/60Hz
THD: <20%
Rated Wattage: 13.8W
Input Power: 13.8W
Input Current: 126mA
Maximum IC (Insulated Ceiling) Ambient Continuous Operating Temperature: 25°C (77°F)
Maximum Non-IC Ambient Continuous Operating Temperature 40°C (104°F)

600 Series

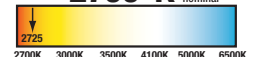
Summary Lighting Data:

Lumen range:	416-793
Lumens per watt:	up to 57
Watts at 120VAC:	13.8

Color

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

2700°K nominal



ML706827

LED Module in New or Existing Construction – Housings other than Halo or All-Pro

If used in recessed housings other than Halo or All-Pro the Cooper Lighting warranty applies to the LED 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 securely retain the LED Module and Trim in a housing at time of installation.

Compliance Labels

- UL/cUL Listed
- RoHS Compliant
- IC listed

Qualification

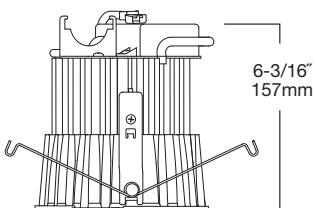
- Can be used to meet High Efficacy luminaire requirements (when used with designated trims):
 - ENERGY STAR® SSL
 - State of California Title 24 High Efficacy LED
 - International Energy Conservation Code (IECC) High Efficacy

AIR-TITE compliant

- Washington State Energy Code
- New York State Energy Conservation Construction Code
- Certified Under ASTM-E283



Qualified and Compliant as designated. Refer to trim selection for compliant models.



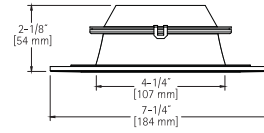


DESCRIPTION: LED Trims

Multiple reflector and baffle options allow the Halo LED recessed luminaire to be used in many interior spaces. Choose the best reflector finish and trim for the interior space. Aesthetically pleasing regressed shower trims are available for applications requiring wet location listings.

493PS06 Solite® Regressed Lens with White Reflector and White Trim Ring

- Halo matte white finish die-cast trim ring
- Halo matte white aluminum reflector
- Solite® glass lens offers diffusion with high lumen transmission
- Wet location listed for use in showers and protected canopy applications; and IP66 Ingress Protection rated

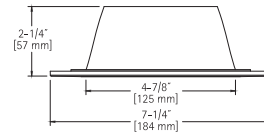


493PS06 Regressed Solite® Lensed White Reflector with White Trim Ring



495WW06 Wall Wash with Semi-Specular Clear Reflector

- Wall wash optics with downlight performance
- Semi-specular clear reflector
- Specular wall wash “Kick” reflector for high-angle vertical illumination
- Diffusing lens for smooth beam
- Halo matte white trim ring

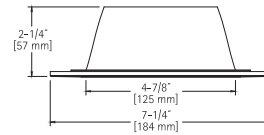


495WW06 Wall Wash with Semi-Specular Clear Reflector and White Trim Ring



495PWW06 Wall Wash with White Reflector Optic, Diffusing Lens with White Trim Ring

- Wall wash optics with downlight performance
- White reflector
- Specular wall wash “Kick” reflector for high-angle vertical illumination
- Diffusing lens for smooth beam
- Halo matte white trim ring



495PWW06 Wall Wash with White Reflector and White Trim Ring

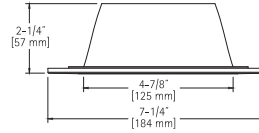


494P06 White Reflector with White Trim Ring

- Halo matte white finish die-cast trim ring
- Halo matte white aluminum reflector
- Trim ring height of .160" at OD and .180" at ID
- Provides clearance for remodeler flange and gasket for AIR-TITE™ seal



Accessory:
494OPTIC - over optic lens



Can be used for
IECC
International Energy Conservation Code High Efficiency Compliance

Can be used for
T24
California Title 24 High Efficiency Compliance



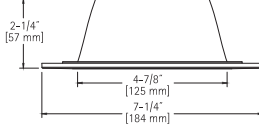
494P06
White Reflector with White Trim Ring

494SC06 Specular Reflector with White Trim Ring

- Halo matte white finish die-cast trim ring
- Specular Clear aluminum reflector
- Trim ring height of .160" at OD and .180" at ID
- Provides clearance for remodeler flange and gasket for AIR-TITE™ seal



Accessory:
494OPTIC - over optic lens



Can be used for
IECC
International Energy Conservation Code High Efficiency Compliance

Can be used for
T24
California Title 24 High Efficiency Compliance



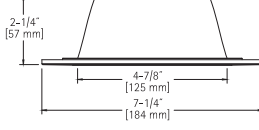
494SC06
Specular Reflector with White Trim Ring

494H06 Haze Reflector with White Trim Ring

- Halo matte white finish die-cast trim ring
- Haze aluminum reflector
- Trim ring height of .160" at OD and .180" at ID
- Provides clearance for remodeler flange and gasket for AIR-TITE™ seal



Accessory:
494OPTIC - over optic lens



Can be used for
IECC
International Energy Conservation Code High Efficiency Compliance

Can be used for
T24
California Title 24 High Efficiency Compliance



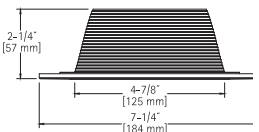
494H06
Haze Reflector with White Trim Ring

494WB06 White Baffle with White Trim Ring

- Halo matte white finish die-cast trim ring
- Halo Matte White die-cast baffle
- Trim ring height of .160" at OD and .180" at ID
- Provides clearance for remodeler flange and gasket for AIR-TITE™ seal



Accessory:
494OPTIC - over optic lens



Can be used for
IECC
International Energy Conservation Code High Efficiency Compliance

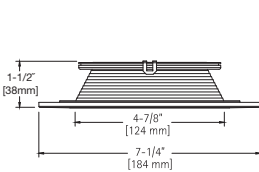
Can be used for
T24
California Title 24 High Efficiency Compliance



494WB06
White Baffle with White Trim Ring

492PS06 Frost Lensed Trim with White Baffle and Trim Ring

- Halo Matte White trim ring and baffle, regressed lens
- Wet location listed for use in showers and protected canopy applications
- Die-cast aluminum baffle and die-cast trim ring
- Frosted glass lens
- Trim height of .160" at OD & .180" at ID
- Provides clearance for remodeler flange and gasket for AIR-TITE™ seal

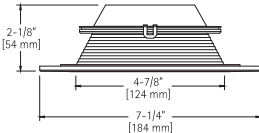
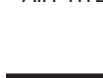


492PS06
Frost Lensed White Baffle with White Trim Ring



493WBS06 Solite® Regressed Lens with White Baffle and White Trim Ring

- Halo matte white trim ring and baffle
- Upper specular aluminum reflector for optical control and enhanced lumen delivery
- Wet location listed for use in showers and protected canopy applications; and IP66 Ingress Protection rated
- Die-cast aluminum baffle and trim ring
- Trim height of .160" at OD & .180" at ID
- Provides clearance for remodeler flange and gasket for AIR-TITE™ seal



Can be used for
IECC
International Energy Conservation Code High Efficiency Compliance



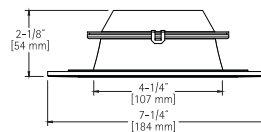
493WBS06
Regressed Solite® Lensed White Baffle with White Trim Ring





493SCS06 Solite® Regressed Lens with Specular Clear Reflector and White Trim Ring

- Halo matte white trim ring with specular clear reflector
- Upper specular aluminum reflector for optical control and enhanced lumen delivery
- Wet location listed for use in showers and protected canopy applications; and IP66 Ingress Protection rated
- Die-cast aluminum reflector and trim ring
- Trim ring height of .160" at OD and .180" at ID
- Provides clearance for remodeler flange and gasket for AIR-TITE™ seal

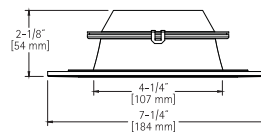


493SCS06
Regressed Solite® Lensed
Specular Reflector
with White Trim Ring



493HS06 Solite® Regressed Lens with Haze Reflector and White Trim Ring

- Halo matte white trim ring with Haze reflector
- Upper specular aluminum reflector for optical control and enhanced lumen delivery
- Wet location listed for use in showers and protected canopy applications; and IP66 Ingress Protection rated
- Die-cast aluminum reflector and trim ring
- Trim ring height of .160" at OD and .180" at ID
- Provides clearance for remodeler flange and gasket for AIR-TITE™ seal

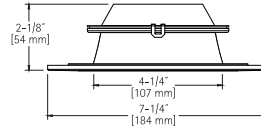


493HS06
Regressed Solite® Lensed
Haze Reflector
with White Trim Ring



493SNS06 Solite® Regressed Lens with Satin Nickel Reflector and Satin Nickel Trim Ring

- Halo Satin Nickel trim ring with Satin Nickel reflector
- Upper specular aluminum reflector for optical control and enhanced lumen delivery
- Wet location listed for use in showers and protected canopy applications; and IP66 Ingress Protection rated
- Die-cast aluminum reflector and trim ring
- Trim ring height of .160" at OD and .180" at ID
- Provides clearance for remodeler flange and gasket for AIR-TITE™ seal

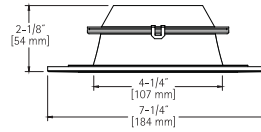


493SNS06
Regressed Solite® Lensed
Satin Nickel Reflector
with Satin Nickel
Trim Ring



493TBZS06 Solite® Regressed Lens with Tuscan Bronze Reflector and Tuscan Bronze Trim Ring

- Halo Tuscan Bronze trim ring with Tuscan Bronze reflector
- Upper specular aluminum reflector for optical control and enhanced lumen delivery
- Wet location listed for use in showers and protected canopy applications; and IP66 Ingress Protection rated
- Die-cast aluminum reflector and trim ring
- Trim ring height of .160" at OD and .180" at ID
- Provides clearance for remodeler flange and gasket for AIR-TITE™ seal

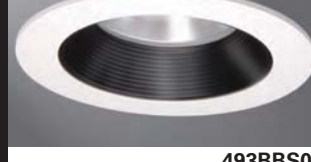
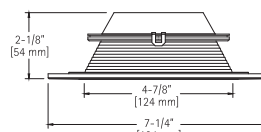


493TBZS06
Regressed Solite® Lensed
Tuscan Bronze Reflector
with Tuscan Bronze
Trim Ring



493BBS06 Solite® Regressed Lens with Black Baffle and White trim Ring

- Halo matte white trim ring with Black Baffle
- Upper specular aluminum reflector for optical control and enhanced lumen delivery
- Wet location listed for use in showers and protected canopy applications; and IP66 Ingress Protection rated
- Die-cast aluminum baffle and trim ring
- Trim ring height of .160" at OD and .180" at ID
- Provides clearance for remodeler flange and gasket for AIR-TITE™ seal



493BBS06
Regressed Solite® Lensed
Black Baffle with
White Trim Ring



494OPTIC Lens Over-Optic for Open LED Trims

Optional accessory - diffusing lens drops into top of open 494 Series LED trims.

Precision formed lens media provides diffusion of LED source brightness.



Compatible with: 494SC06, 494H06, 494P06, 494WB06



494OPTIC Lens Over-Optic for Open LED Trims

ML7RAB Retrofit Adapter Band for Housings without Torsion Spring Receivers

In many retrofit installations the existing (6" nominal aperture) housings have Torsion Spring Receivers that are used to install trims. Many of these housings will allow direct installation of the LED Module. In some existing installations housings do not have torsion spring receivers. The ML7RAB was designed for installation into those housings. The ML7RAB kit can retrofit four non-torsion spring housings; the kit includes:

- 4 – Retrofit Adapter Bands (1 per retrofit housing)
- 16 – Metal-piercing screws (4 per adapter)
- 8 – Retrofit Locking Wire Nuts (2 per adapter)

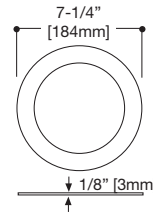


ML7RAB Retrofit Adapter Band (Four Adapters per Box)

TRM490 Thin Profile Trim Ring (Optional Accessory)

- Die-cast trim ring
- Thin trim ring provides a more subtle ceiling appearance
- Purchase as accessory and discard ring supplied with trim
- Trim ring height of .120" at OD and .180" at ID

- TRM490BK = Black
- TRM490PC = Polished Chrome
- TRM490SN = Satin Nickel
- TRM490TBZ = Tuscan Bronze
- TRM490WH = White

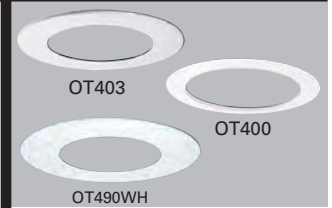


TRM490 Optional Accessory Thin Profile Trim Ring

Oversize Trim Rings

For use when ceiling opening is irregular or cut too large. The oversized trim ring is installed behind the Halo LED trim ring to mask irregularities or cutout errors of the ceiling opening.

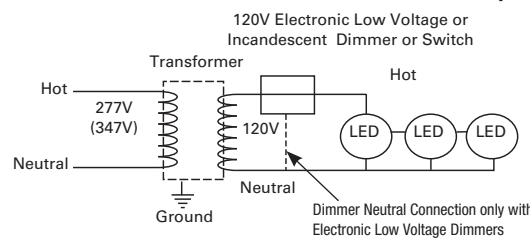
- OT400P = Oversize White Metal Trim Ring 6" ID x 9-1/4" OD
- OT403P = Oversize White Plastic Trim Ring 6" ID x 8" OD
- OT490WH = Oversize White Die-Cast Aluminum Trim Ring 5-1/8" ID x 9-1/4" OD - attaches to LED module, substitute for standard LED trim ring.



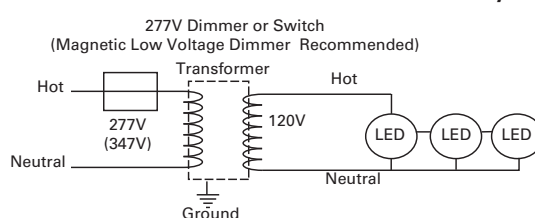
OT400, OT403 Oversize Trim Rings

Application Note - H277 and H347 step-down transformers are qualified to drive multiple Halo LED modules on a single circuit in Non-IC construction. Installation of these transformers on individual fixtures on circuits with multiple LED loads is not recommended. H277 is 300VA and qualified to drive up to 15 Halo LED ML706x modules. H347 is 75VA and qualified to drive up to 3 Halo LED ML706x modules. Installation of individual H277 or H347 transformers on each LED downlight fixture in a multiple LED loaded circuit is not recommended due to resulting multiple inductive currents pulled by each transformer; in this situation the majority of the power would then be reactive (VARS) and not real (WATTS). If H277 or H347 transformers should be used individually on each LED fixture in a single circuit, then that circuit should be sized for lowered power factor as well as increased apparent power on the circuit. H277 and H347 are UL/cUL listed for use with Halo housings: H750T, H750TCP, H7T, H7TNB, H7RT, H750TD010, H750RTD010, H750TCPD010 housings.

Transformer with Dimmer /Switch on Secondary



Transformer with Dimmer /Switch on Primary



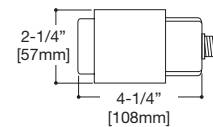
Dimmer or Switch may be on the Primary (277V) OR Secondary (120V) side of the transformer.



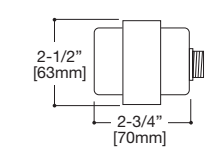
H277 277V Step Down Transformer, 300VA



H347 347V Step Down Transformer, 75VA



H277



H347

Step Down Transformers

H277= Steps 277 line voltage down to 120 volts. Attaches to knockout on first fixture's junction box in a circuit and is 300VA rated (15 modules max.). H277 is a UL recognized Component listed under the luminaire UL/cUL listing for Non-IC housings and LED Module.

H347= Steps 347 line voltage down to 120 volts. Attaches to knockout on first fixture's junction box in a circuit and is 75VA rated (3 modules max.).

H347 is a CSA/UL Listed Component for use under the luminaire UL/cUL listing with Non-IC housings and a LED Module.

Transformer Load - H277 (300VA)

1. H277Transformer at full loading consumes a maximum of 16W of power
2. When dimmer or switch is on the secondary (120V) side of the transformer, power is consumed by the transformer when the dimmer or switch is in "OFF" mode at 6.5W and in "ON" mode at 16W maximum with full loading.
3. When a dimmer or switch is on the primary (277V) side of the transformer, power is consumed only in "ON" mode to a maximum of 16W under full loading.

Transformer Load - H347 (75VA)

1. H347Transformer at full loading consumes a maximum of 15W of power
2. When dimmer or switch is on the secondary (120V) side of the transformer, power is consumed by the transformer when the dimmer or switch is in "OFF" mode at 2.5W and in "ON" mode at 15W maximum with full loading.
3. When a dimmer or switch is on the primary (347V) side of the transformer, power is consumed only in "ON" mode to a maximum of 15W under full loading.

Protected / Non-insulated Soffits, Porches, and Canopies

Halo LED modules when used with Non-IC recessed housings in Non-Insulated protected soffits, porches or canopies offers a solution for outdoor accent lighting. Halo LED is rated for operation from -30°C to 40°C when used with H7T, H7TNB, H7RT, ET700, ET700R, H750T, H750TCP, H750TD010, H750RTD010, H750TCPD010 Series non-IC housings.



ML706827

ORDERING INFORMATION

SAMPLE NUMBER: ML706827 494P06

Order LED Module and trim separately

600 Series LED Module			Trim Options	Accessories <i>(see product details for application information)</i>
ML706	8	27		
ML706 = 6" LED Module 600 Series LED	8=80 CRI	27 =2725°K 30=3045°K 35=3465°K 40=3985°K	<p>494P06=Matte White Reflector/ white die cast trim ring.</p> <p>494WB06=White Baffle/ white die cast trim ring.</p> <p>494H06=Haze Reflector/ white die cast trim ring.</p> <p>494SC06=Specular Reflector/ white die cast trim ring.</p> <p>492PS06=Regressed Lens, white die-cast baffle and trim ring. Shower rated.</p> <p>493WBS06=Solite® Regressed Lens, upper reflector, White die-cast baffle and White die-cast trim ring with, Shower Rated.</p> <p>493SCS06=Solite® Regressed Lens, upper reflector, Specular Clear die-cast reflector and die-cast white trim ring. Shower Rated.</p> <p>493HS06=Solite® Regressed Lens, upper reflector, Haze die-cast reflector, and white die-cast trim ring. Shower Rated.</p> <p>493SNS06=Solite® Regressed Lens, upper reflector, Satin Nickel die cast reflector and Satin Nickel die-cast trim ring. Shower Rated.</p> <p>493TBZS06=Solite® Regressed Lens, upper reflector, Tuscan Bronze die-cast reflector and Tuscan Bronze die-cast trim ring. Shower Rated.</p> <p>493BBS06=Solite® Regressed Lens, Black die-cast baffle with die-cast white trim ring. Shower Rated.</p> <p>493PS06=Solite® Regressed Lens, upper specular reflector, White reflector and trim ring, Shower rated</p> <p>495WW06=Wall wash with semi-specular clear reflector, specular kick reflector and lens, white trim ring</p> <p>495PWW06=Wall wash with white reflector, specular kick reflector and lens, white trim ring</p>	<p>494OPTIC=6" Over-Optic Diffuse Lens for use with Open LED Trims (494 family), Shower rated.</p> <p>Enlarge Trim Ring OT490WH=6" Enlarge white die-cast trim ring 9-1/4" O.D. Attaches to LED module, substitute for standard trim ring shipped with trims. OT400P=Enlarge White Metal Trim Ring 6" ID x 9-1/4" OD OT403P=Enlarge White Plastic Trim Ring 6" ID x 8" OD</p> <p>Transformer H277=300VA Transformer - Steps 277 line voltage down to 120V (see App. Note) H347=75VA Transformer - Steps 347 line voltage down to 120V (see App. Note)</p> <p>Thin Profile Trim Rings TRM490WH=Thin Profile matte white die-cast trim ring TRM490SN=Thin Profile Satin Nickel die-cast trim ring TRM490TBZ=Thin Profile Tuscan Bronze die-cast trim ring TRM490BK=Thin Profile Black die-cast trim ring TRM490PC=Thin Profile Polished Chrome die-cast trim ring</p> <p>Retrofit ML7RAB=Retrofit Adapter Band for Housings without Torsion Spring Receivers. The ML7RAB kit supplies parts to retrofit four housings; the kit includes: 4 - Retrofit Adapter Bands with screws and locking wire nuts.</p>

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