

## **Cooper Lighting**

by **FAT•N** 

## **Innovation** you can rely on<sup>™</sup>



## HALO® LED is a Natural Choice.

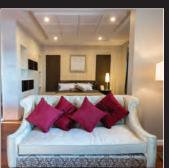
The Halo LED H4 Collection offers small aperture 4-inch downlighting with the latest LED technology for accent, task and general lighting applications. The LED downlights deliver light output and distribution comparable to a halogen lamp, while offering significant energy and maintenance savings. The H4 LED series' efficient performance provides excellent cutoff, smooth beam distribution and superior color quality for better visual comfort. The LED downlights are available in multiple color temperature options and offer full dimming capability to satisfy more application needs in residential and commercial settings.

















- 4" nominal aperture housings designed for H4 LED light engines, incorporating popular Halo customer-friendly installation features
- LED driver integrated in the housing for optimized lumen delivery and superior thermal management

## B LED Light Engine



- Specially designed heat sink conducts heat away from the LED to maintain LED junction temperatures even when installed in insulated ceiling environments.
- Correlated Color Temperature (CCT) options: 2700K, 3000K, 3500K, 4000K
- 90 CRI
- 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
- · Designed for interchangeable trim choices

## C LED Trim



- Available in multiple reflector and baffle styles with deep regressed dome lens or regressed Solite® flat lens models
- Selection includes square trims with square baffles
- Precision trim designs and materials provide high-quality fit, form and finish
- Wide selection of 4" LED trim options allow Halo H4 LED to be used in a variety of interior spaces

### Replaces Halogen and CFL lamps

Halo H4 LED downlights provide light output and distribution comparable to and exceeding that of traditional sources used in small aperture downlights, such as 50W MR16 (dichroic), 39W PAR20 Halogen, 39W R20 Halogen lamps, or 13W and 18W compact fluorescent luminaires. H4 LED provides excellent color rendering and superior optical design with smooth beam distribution.



50W MR16 (dichroic) Halogen reflector lamp



39W PAR20 Halogen (50W replacement) reflector lamp



39W R20 Halogen (50W replacement) reflector lamp



13W or 18W Compact Fluorescent Luminaire

## Halo LED H4 Collection Light Engines

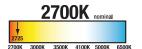
- LED package consists of a chip on board design of multiple LEDs to create one virtual source for a productive cone of light
- Specially designed LED and heat sink integration ensures extended life of the LED package for 70% lumen maintenance (L70 at 50,000 hours projected in accordance with IES TM-21)
- Heat sink features durable die-cast and extruded aluminum construction, which conducts heat away from the LED package and keeps LED junction temperatures at specified level
- LED emits no ultraviolet wave length, minimizing fading of fabrics, paint and artwork as compared to traditional light sources
- Uses 74% less energy, significantly reducing the heat emitted as compared to traditional light sources, which translates to reduced air conditioning costs
- Designed for interchangeable trim choices; select from multiple reflector, baffle and lens trim options



### **Light Engine Performance**

- 450-900 lumens depending upon color temperature and trim selected\*
- Correlated Color Temperature (CCT) options: 2700K, 3000K, 3500K, 4000K
- Less than 13 watts (driver is integral to housing)
- Over 90 CRI
- Lumen maintenance L70 at 50,000 hours projected per IES TM-21
- Up to 70 lumens per watt

<sup>\*</sup> Trim type and color temperature determines the delivered lumen value. Refer to specification sheets and photometric files at www.cooperlighting.com.



Model Number

EL406927

3000K nominal

Model Number

EL406930

3500K nominal 3465 2700K 3000K 3500K 4100K 5000K 6500K

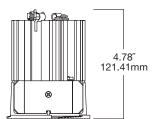
Model Number

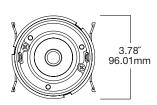
EL406935

4000K nominal

Model Number

EL406940















Qualified and compliant. Refer to ENERGY STAR® Qualified Products List and CEC (T24) Appliance Database for listings, (as used with designated Halo H4 LED trims).

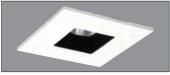
### **Trims**

### 4" LED Square Downlight Baffle Trims





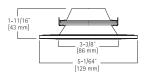
TLS408WHWB - Square baffle trim with Solite® regressed lens, white baffle, and white trim ring



**TLS408WHBB** - Square baffle trim with Solite® regressed lens, black baffle, and white trim ring

TLS408TBZBB - Square baffle trim with Solite® regressed lens, black baffle, and tuscan bronze trim ring

- Compatible with EL4 series (round) downlight light engines
- Consistent O.D. with Halo 4" family
- Square step baffle for controlled aperture brightness
- Regressed Solite® flat glass lens
- Wet Location, shower rated
- Precision-formed aluminum baffles and die-cast trim rings offer high-quality fit and finish
- Trim gasket provides AIR-TITE<sup>TM</sup> seal, and compliance where local codes require a gasket on wet location, shower-rated trims



### 4" LED Wall Wash Downlight Trims

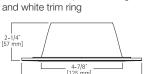


TLS408SNBB - Square baffle trim with

Solite® regressed lens, black baffle,

and satin nickel trim ring

TL409WW - Semi-specular reflector with wall wash optic, diffusing lens, and white trim ring





TL409WHWW - White reflector with wall wash optic, diffusing lens, and white trim ring

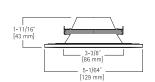
- · Wall wash optics with downlight performance
- Two downlight reflector cone finish options: semi-specular clear and white
- Precision-formed aluminum reflectors and die-cast trim rings offer high-quality fit and finish
- High-reflectance vaccum-metalized specular wall wash kick reflector for high-angle vertical illumination
- Polymer diffusing dome lens for smooth distribution
- Compatible with EL4 Series downlight light engines
- Wet location, shower rated

### 4" LED Polymer "Dead Front" Shower Trim





TL422PS - White polymer baffle and ring with prismatic clear polymer lens



- White polymer baffle and ring
- Prismatic, clear flat polymer lens
- Non-electrically conductive "dead front"
- Non-corrosive front
- · Wet Location, shower rated

### 4" LED Designer Trim Rings



- For use with TL4x round downlight trims only
- Optional accessory
- Die-cast trim ring
- Thin profile provides subtle ceiling appearance (0.120" at OD and 0.180" at ID)

TRM400PC Polished chrome
TRM400BK Black
TRM400WH White

TRM400WH White
TRM400SN Satin nickel
TRM400TBZ Tuscan bronze

### 4" LED Deep Regressed Dome Lens Reflector and Baffle Trims



- Dome lensed trims offer a polymer lens for a diffuse beam with even distribution
- · Wet location, shower rated



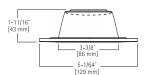
**TL410WH** - White reflector with white trim ring



TL410SBK - Specular black reflector with white trim ring



**TL410SC** - Specular clear reflector with white trim ring





**TL410H** - Haze reflector with white trim ring



**TL410SN** - Satin nickel reflector and trim ring



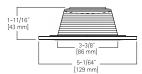
**TL410TBZ** - Tuscan bronze reflector and trim ring



**TL411WB** - White baffle with white trim ring



**TL411BB** - Black baffle with white trim ring



### 4" LED Solite® Regressed Flat Lens Reflector and Baffle Trims



- Solite® lensed trims offer high-clarity glass lenses for high-lumen transmission along with a subtle diffusion of source brightness
- Wet location, shower rated



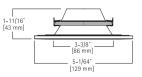
TL402WHS - White reflector with Solite® lens, and white trim ring



TL402SBKS - Specular black reflector with Solite® lens, and white trim ring



**TL402SCS** - Specular clear reflector with Solite® lens, and white trim ring





TL402HS - Haze reflector with Solite® lens, and white trim ring



**TL402SNS** - Satin nickel reflector with Solite® lens, and satin nickel trim ring



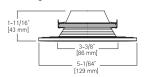
**TL402TBZS** - Tuscan bronze reflector with Solite® lens, and tuscan bronze trim ring



TL403WBS - White baffle with Solite® lens, and white trim ring



TL403BBS - Black baffle with Solite® lens, and white trim ring



### 4" Reflector and Baffle Trims Summary

- Trim designs and dimensions are consistent with Halo 4" series for a true 4" family
- Precision-formed aluminum reflectors and baffles and die-cast trim rings offer high-quality fit and finish
- Standard trim ring provides clearance for remodeler flange and gasket
- Trim gasket provides AIR-TITETM seal and compliance where local codes require a gasket on wet location, shower-rated trims
- Accessory die-cast trim rings in designer finishes; mix and match with baffles and reflectors.







- 4" nominal aperture housings designed for H4 LED light engines, incorporating popular Halo customer-friendly installation features
- LED driver integrated in the housing for optimized lumen delivery and superior thermal management of the LED package





- 4" round and square adjustable gimbal-style trims
- 4" LED gimbal trim is integrated with the LED light engine
- 35° tilt adjustment
- Correlated Color Temperature (CCT) options: 2700K, 3000K, 3500K, 4000K
- 90 CRI
- 25° beam reflector included with interchangeable 35° and 50° reflectors available
- Gimbal trim finish options: white, satin nickel and tuscan bronze
- Specially designed heat sink conducts heat away from the LED to maintain LED junction temperatures, even when installed in insulated ceiling housings.
- 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





## Adjustable Gimbal and Light Engine

- 4" round and square gimbal style trims combined with LED light engine
- Optics are MR16-like with interchangeable reflectors with 25°, 35°, 50° beam
- 25° beam reflector included in all adjustable gimbal trims
- Optional reflector kit with 25°, 35°, 50° reflectors
- Correlated Color Temperatures (CCT) available: 2700K, 3000K, 3500K, 4000K
- · Gimbal trim finishes include white, satin nickel and tuscan bronze
- Front-loading, snap-in media and reflector cover
- Front cover holds one lens media

### Optional Gimbal Reflector Kit - TL412RK

- 25° reflector
- 35° flood reflector
- 50° wide flood reflector



25° Reflector (Included)

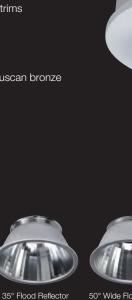




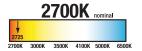


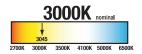


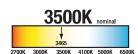
50° Wide Flood Reflector

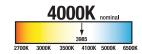












Style	Trim Finish	Model Number	Model Number	Model Number	Model Number
Round	White	ELG406927WH	ELG406930WH	ELG406935WH	ELG406940WH
	Satin nickel	ELG406927SN	ELG406930SN	ELG406935SN	ELG406940SN
	Tuscan bronze	ELG406927TBZ	ELG406930TBZ	ELG406935TBZ	ELG406940TBZ
	Tuscan bronze	ELG4009271BZ	ELG4009301BZ	ELG4009331BZ	ELG400940162
Square	White	ELSG406927WH	ELSG406930WH	ELSG406935WH	ELSG406940WH
	Satin nickel	ELSG406927SN	ELSG406930SN	ELSG406935SN	ELSG406940SN
	Tuscan bronze	ELSG406927TBZ	ELSG406930TBZ	ELSG406935TBZ	ELSG406940TBZ

### Optional Lens Media (Order separately)

One lens media may be used in place of clear lens. For round and square gimbals.

### **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

### **Optional Accessory Reflector Kit**

(Order separately)

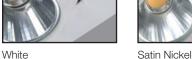
TL412RK includes:

- 25° reflector (included)
- 35° reflector
- 50° reflector

TL412RK is for use with ELGxx and ELSGxx gimbals only.



















Tuscan Bronze

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

### Housings

- Available for insulated ceilings\* (ICAT) and non-insulated ceilings (TAT, TCP)
- ICAT and TAT designated housings are AIR-TITE™ in compliance with restricted airflow requirements per ASTM-E283 standard
- Include standard Halo features:
  - Got Nail!™ Bar hangers with pre-installed nail and integral T-grid clip
  - Slide-N-Side™ wire traps and quick-connects for tool-less wiring outside the junction box
  - Pass-N-Thru™ bar hanger feature for tool-less shortening of bars without removal from frame
- LED driver integral in the housing for optimized lumen delivery and superior thermal management
- LED driver designed for high efficiency and long life operating the LED package for over 50,000 hours
- Dimmable
  - ICAT housings are dimmable to 10% in normal operation with most 120V leading edge (LE) and trailing edge (TE) phase control dimmers. May also dim to 5% using dimmers with low-end trim adjustment. (Consult dimmer manufacturer.)
  - Non-IC housings have two dimming options: phase control and 0-10V control. Phase control is dimmable to 10% in normal operation with most 120V leading edge (LE) and trailing edge (TE) phase control dimmers. 0-10V is dimmable to 10% in typical operation with compatible 0-10V DC low voltage dimmers with two low voltage dimming wires. (Consult dimmer manufacturer.)
- · Can be operated from a standard wall switch if dimming is not required
- Labels
- cULus 1598 Listed Luminaire
- cULus Listed for Damp Location, and wet location with designated trims
- ENERGY STAR® Qualified with designated Halo H4 LED light engines and H4 LED trims\*\*
- May be used to meet State of California Title 24 and International Energy Conservation Code IECC High Efficacy requirements with designated Halo H4 LED light engines and H4 LED trims\*\*

### **Energy Data / ICAT Housings**

- Minimum operating temperature:
  - -30°C / -22°F
- EMI/RFI Emissions FCC 47CFR Part 18, Consumer Limits
- Sound rating: Class A standards
- Input voltage: 120VPower factor: >0.90

- Input frequency: 50/60Hz
- THD: <20%
- Input power: 13.0 W
- Input current: 121mA (120mA Remodel)
- Dimmable: Leading edge (LE) and trailing edge (TE) phase control dimmers



#### H457ICAT1E

### ICAT Rated / New Construction

- For direct contact with insulation in insulated ceilings.\*
   (May also be used in non-insulated ceilings.)
- AIR-TITE™ meets restricted airflow requirements per ASTM E-283
- Driver: 13W, 120V, 50/60Hz
- EMI/RFI: Rated for FCC Consumer Limits, suitable for residential and commercial applications
- Dimmable with most leading edge (LE) and trailing edge (TE) phase control dimmers to 10% (5% on select dimmers with low-end trim adjustment)
- Dimensions: 6"L x 8-1/2"W x 5-3/8"H (with 1/2" plaster lip) Ceiling cutout: 4-1/2"



### H457RICAT1E

### ICAT Rated / Remodel

- Designed for installation from below the finished ceiling
- For direct contact with insulation in insulated ceilings. (May also be used in non-insulated ceilings.)
- AIR-TITE™ meets restricted airflow requirements per ASTM E-283
- Driver: 13W, 120V, 50/60Hz
- EMI/RFI: Rated for FCC Consumer Limits, suitable for residential and commercial applications
- Dimmable with most leading edge (LE) and trailing edge (TE) phase control dimmers to 10% (5% on select dimmers with low-end trim adjustment)
- Dimensions: 14-3/4"L x 5"W x 5-1/2"H Ceiling cutout: 4-1/4"

<sup>\*</sup>ICAT housings are not for direct contact with spray foam insulation. Refer to NEMA LSD 57-2013.

<sup>\*\*</sup>Refer to ENERGY STAR® Qualified Products List and CEC (T24) Appliance Database for listings.

### **Energy Data / Non-IC Housings**

- Minimum operating temperature: -30°C / -22°F
- EMI/RFI Emissions FCC47CFR Part 18, Consumer Limits
- Sound rating: Class A standards
- Input voltage: universal 120V 277V
- Power factor: >0.90Input frequency: 50/60Hz
- THD: <20%
- Input power: 13.0 W

- Input current: 121mA
- Dimmable:
- 120V leading edge (LE) and trailing edge (TE) dimmers
- 0-10V controls



#### H457TATE010

### Non-IC Rated / New Construction

- For non-insulated ceilings
- Insulation must be kept 3" from all sides and top of housing
- AIR-TITE™ meets restricted airflow requirements per ASTM E-283
- Driver: 13W, 120V-277V, 50/60Hz commercial / residential
- EMI/RFI: Rated for the more stringent FCC Consumer Limits
- Dimmable with most 120V leading edge (LE) and trailing edge (TE) dimmers to 10% (5% on dimmers with low-end trim adjustment)
- Dimmable to 10% with 0-10V DC dimming controls (two low voltage control wires required)
- Dimensions: 5-1/2"L x 8"W x 5-1/2"H (with 1/2" plaster lip) Ceiling cutout: 4-1/2"



#### H457TCPE010

### Non-IC Rated / Chicago Plenum New Construction

- Non-IC rated, Chicago Plenum New Construction
- Insulation must be kept 3" from all sides and top of housing
- AIR-TITE™ meets restricted airflow requirements per ASTM E-283
- Driver: 13W, 120V-277V, 50/60Hz Commercial / Residential
- EMI/RFI: Rated for the more stringent FCC Consumer Limits
- Dimmable with most 120V leading edge (LE) and trailing edge (TE) dimmers to 10% (5% on dimmers with low-end trim adjustment)
- Dimmable to 10% with 0-10V DC dimming controls (two low voltage control wires required)
- Dimensions: 5-1/2"L x 8"W x 7-1/8"H (with 1/2" plaster lip) Ceiling cutout: 4-1/2"



### **H457RTATE010**

### Non-IC Rated / Remodel

- Designed for installation from below the finished ceiling
- For non-insulated ceilings
- Insulation must be kept 3" from all sides and top of housing
- AIR-TITE™ meets restricted airflow requirements per ASTM E-283
- Driver: 13W, 120V-277V, 50/60Hz commercial / residential
- EMI/RFI: Rated for the more stringent FCC Consumer Limits
- Dimmable with most 120V leading edge (LE) and trailing edge (TE) dimmers to 10% (5% on dimmers with low-end trim adjustment)
- Dimmable to 10% with 0-10V DC dimming controls (two low voltage control wires required)
- Dimensions: 14-3/4"L x 5"W x 5-1/2"H Ceiling cutout: 4-1/4"

## Halo LED H4 Downlight Collection Photometry

### Halo H4 LED Downlight Photometry - 2nd Generation

H4 LED Downl	ight	H	I4 LED Li		ne	F		ght Engii	ne	Н		ght Engir	ne	Н		ght Engi	ne
Colection				6927				06930				06935				6940	
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, Dif- fuse Polymer Lens	TL410H	650	Yes	Yes	Yes	710	Yes	Yes	Yes	720	Yes	Yes	Yes	800	Yes	Yes	Yes
White Reflector, Dif- fuse 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 Reflec- tor, 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, Dif- fuse Polymer Lens	TL411WB	647	Yes	Yes	Yes	690	Yes	Yes	Yes	700	Yes	Yes	Yes	770	Yes	Yes	Yes
Black Baffle, Dif- fuse 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 Dif- fuse 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

<sup>(1)</sup> Trims are tested with designated LED light engines, in accordance with IES LM-79 Photometric Measurement Standards. Field results may vary.

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

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

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

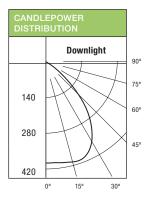
## **Photometry**

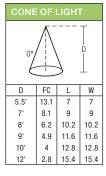
### Halo H4 LED Downlight Photometry - 2nd Generation

Representative photometric test report for  $3000^\circ K$  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					

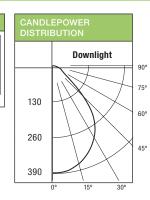
# EL406930-TL410SC Test Number P123670 LED Module EL406930 Trim 4" Specular Clear Reflector, Polycarbonate Frost Dome Lens, White Ring Lumens 55.4 Lm/W SC 1.29 / 1.29 / 1.25

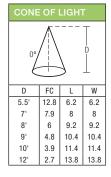




ZONAL LUMEN SUMMARY				
Zone	Lumens	%Fixture		
0-30	333	46.2		
0-40	527	73.2		
0-60	714	99.2		
0-90	720	100.0		
90-180	0	0.0		
0-180	720	100.0		

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	

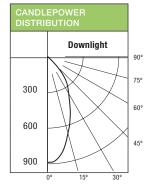




Angle	0°
45	48625
55	21600
65	18264
75	16267
85	10819

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			

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	

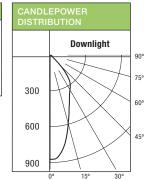


000				
D	FC	L	W	
5.5'	29.3	4	4	
7'	18.1	5.2	5.2	
8'	13.9	6	6	
	1 1		6.6	
9'	11	6.6	0.0	
9' 10'	8.9	6.6 7.4	7.4	

LUMINANCE DATA		ZONA	
Angle	0°	SUMI	ИARY
45	25791	Zone	Lumen
55	4747	0-30	472
65	3240	0-40	652
75	0	0-60	760
85	0	0-90	770
		90-180	0
		0-180	770

SUMI	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				

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	



CONE	CONE OF LIGHT									
000										
D	FC	L	W							
5.5'	28.9	3.6								
7'	17.8	4.6	4.6							
8'	13.6	5.2	5.2							
9'	9' 10.8 5.8 5.8									
10'	10' 8.7 6.6 6.6									
12'	6.1	7.8	7.8							

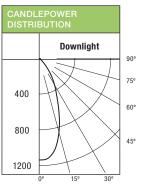
LUMINA	ZONA	L LI	
Angle	0°	SUMN	ИAR
45	28616	Zone	Lume
55	8005	0-30	42
65	6824	0-40	60
75	3921	0-60	73
85	2033	0-90	76
		90-180	0

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					

### **Photometry**

### Halo H4 LED Downlight Photometry - 2nd Generation





CONE OF LIGHT								
000								
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					

2.5' FROM WALL (Spacing Between Fixtures)

--3'--

19.5 18 16.1 13.9 16.1

14.5

10.1

7 6.4 5.7 6.2 5.7 4.8 4.5 4 4.4 4

2.5 2.4 2.2 2.4 2.2 1.8 1.8 1.7 1.8 1.7

13.5 11.7 9.2 8.1

2.9 3.2 2.9

18

13.5

9.2

6.4 4.5

3.2

2.4 1.8 --4'--

11.9

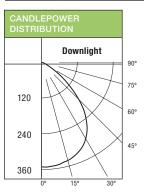
11.7 8.1

DD

2' 3' 4' 5' 6' 7' 8' 9'

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	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \



SIN	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					

LUMINAN		ZON			
Angle	Angle 0°				
45	48255		0-3		
55	51372		0-4		
65	33851		0-6		
75	13321		0-9		
85	85 3882				
			0.19		

ZONAL L	UMEN SU	MMARY
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

## **Halo LED H4 Directional Gimbal Collection**

### **Photometry**

### Halo H4 LED Directional Gimbal Photometry - 2nd Generation

H4 LED Adjusta & Square Gimba			H4 LED Gimbal ELG406930 & ELSG406930			H4 LED Gimbal ELG406935 & ELSG406935			H4 LED Gimbal ELG406940 & ELSG406940								
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)
4" Adjustable Gimbal Trim / Light Engine, White	ELG4069xxWH	750	Yes	Yes	Yes	840	Yes	Yes	Yes	880	Yes	Yes	Yes	930	Yes	Yes	Yes
4" Adjustable Gimbal Trim / Light Engine, Satin Nickel & Tuscan Bronze	ELG4069xxSN/ 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 \ Products \ Products \ List \ Products \ Products \ Products \ List \ Products \$ 

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

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

Gimbal Finish Codes

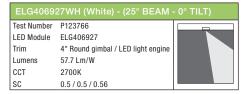
WH = White

SN = Satin Nickel

TBZ = Tuscan Bronze

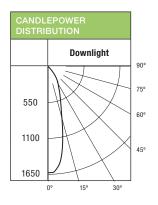
## **Photometry**

### Halo H4 LED Directional Gimbal Photometry - 2nd Generation (2700K)

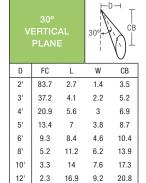


LUMINANCE DATA						
Angle	0°					
45	21865					
55	7229					
65	1742					
75	1497					
85	4446					

ZONAL LUMEN SUMMARY				
Zone	Lumens	%Fixture		
0-30	561	74.8		
0-40	696	92.9		
0-60	746	99.5		
0-90	750	100.0		
90-180	0	0.0		
0-180	750	100.0		



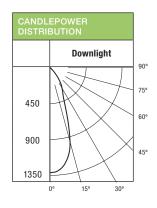
Н		0° RIZON PLAN		30°	
D		FC	L	W	
5.5	5'	53.7	2.6	2.6	
7'		33.2	3.4	3.4	
8'		25.4	4	4	
9'		20.1	4.4	4.4	
10	1	16.3	5	5	
12		11.3	6	6	





LUMINANCE DATA			
Angle 0°			
45	19728		
55	3310		
65	1742		
75	0		
85	4446		

ZONAL LUMEN SUMMARY					
Zone	Lumens	%Fixture			
0-30	559	76.6			
0-40	690	94.5			
0-60	728	99.7			
0-90	730	100.0			
90-180	0	0.0			
0-180	730	100.0			



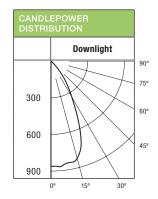
PLANE			30°
D	FC	L	W
5.5'	43.5	3.4	3.4
7'	26.9	4.4	4.4
8'	20.6	5	5
9'	16.3	5.6	5.6
10'	13.2	6.2	6.2
12'	9.1	7.6	7.6

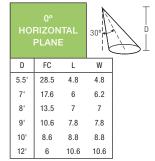
V	ERTIC PLANI		30°	CB
D	FC	L	W	CB
2'	85.1	2.4	1.6	3.5
3'	37.8	3.6	2.6	5.2
4'	21.3	4.8	3.4	6.9
5'	13.6	6	4.2	8.7
6'	9.5	7.2	5.2	10.4
8'	5.3	9.6	7	13.9
10'	3.4	12	8.6	17.3
12'	2.4	14.4	10.4	20.8

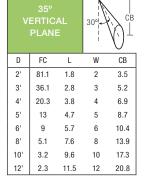
ELG4069:	27WH (White) - (50° BEAM -	- 0° TILT)
Test Number	P123814	
LED Module	ELG406927	
Trim	4" Round gimbal / LED light engine	
Lumens	55.4 Lm/W	
ССТ	2700K	
SC	0.88 / 0.89 / 0.82	

LUMINANCE DATA			
Angle 0°			
45	22398		
55	2495		
65 2218			
75	0		
85	0		

ZONAL LUMEN SUMMARY					
Zone	Lumens	%Fixture			
0-30	545	75.7			
0-40	682	94.8			
0-60	718	99.7			
0-90	720	100.0			
90-180	0	0.0			
0-180	720	100.0			







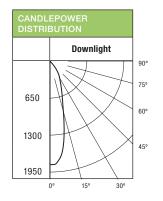
## **Photometry**

### Halo H4 LED Directional Gimbal Photometry - 2nd Generation (3000K)



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			



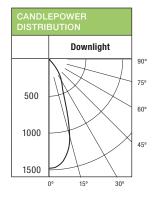
	0° RIZON PLANE		30°	
D	FC	L	W	
5.5'	60.2	2.6	2.6	
7'	37.1	3.4	3.4	
8'	28.4	4	4	
9'	22.5	4.4	4.4	
10'	18.2	5	5	
12'	12.6	6	6	

V	30° ERTIC PLAN		300	CB
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	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		



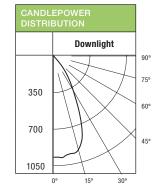
		0° RIZON PLANE		30°	
Ī	D	FC	L	W	
	5.5'	48.9	3.4	3.4	
	7'	30.2	4.4	4.4	
	8'	23.1	5	5	
	9'	18.3	5.6	5.6	
	10'	14.8	6.2	6.2	
	12'	10.3	7.6	7.6	
-					•

	30° ERTIC PLANI		30°	CB CB
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

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

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		



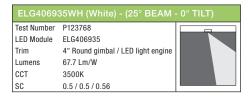
	0° RIZON PLANI		30°	
D	FC	L	W	
5.5'	32	4.8	4.8	
7'	19.8	6	6.2	
8'	15.1	7	7	
9'	12	7.8	7.8	
10'	9.7	8.8	8.8	
12'	6.7	10.6	10.6	

V	35° VERTICAL PLANE		30°	CB
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

⊢D⊣ <sub>+</sub>

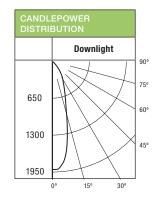
## **Photometry**

## Halo H4 LED Directional Gimbal Photometry - 2nd Generation (3500K)

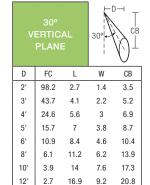


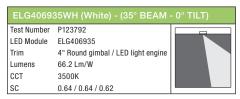
LUMINANCE DATA		
Angle	0°	
45	25702	
55	8512	
65	2109	
75	1647	
85	4891	

ZONAL LUMEN SUMMARY				
Zone	Lumens	%Fixture		
0-30	658	74.8		
0-40	817	92.9		
0-60	875	99.5		
0-90	880	100.0		
90-180	0	0.0		
0-180	880	100.0		



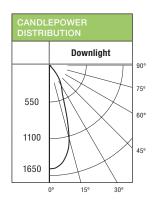
НС	0° HORIZONTAL PLANE			
D	FC	L	W	
5.5'	63	2.6	2.6	
7'	38.9	3.4	3.4	
8'	29.8	4	4	
9'	23.5	4.4	4.4	
10'	19.1	5	5	
12'	13.2	6	6	

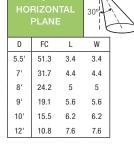




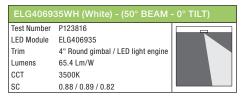
LUMINANCE DATA			
Angle 0°			
45	23235		
55	3851		
65	2109		
75	0		
85 4891			

ZONAL LUMEN SUMMARY					
Zone	Lumens	%Fixture			
0-30	659	76.6			
0-40	813	94.5			
0-60	857	99.7			
0-90	860	100.0			
90-180	0	0.0			
0-180	860	100.0			



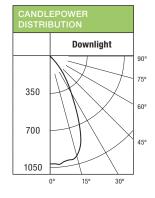


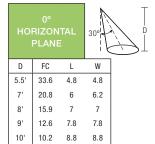
30° VERTICAL PLANE		300	CB CB	
D	FC	L	W	CB
2'	100.2	2.4	1.6	3.5
3'	44.5	3.6	2.6	5.2
4'	25	4.8	3.4	6.9
5'	16	6	4.2	8.7
6'	11.1	7.2	5.2	10.4
8'	6.3	9.6	7	13.9
10'	4	12	8.6	17.3
12'	2.8	14.4	10.4	20.8



LUMINANCE DATA				
Angle	0°			
45	26375			
55	2925			
65	2685			
75	0			
85	0			

ZONAL LUMEN SUMMARY					
Zone	Lumens	%Fixture			
0-30	644	75.7			
0-40	805	94.8			
0-60	848	99.7			
0-90	850	100.0			
90-180	0	0.0			
0-180	850	100.0			





12' 7.1 10.6 10.6

VERTICAL PLANE			300	CB
D	FC	L	W	CB
2'	95.8	1.8	2	3.5
3'	42.6	2.8	3	5.2
4'	23.9	3.8	4	6.9
5'	15.3	4.7	5	8.7
6'	10.6	5.7	6	10.4
8'	6	7.6	8	13.9
10'	3.8	9.6	10	17.3
12'	2.7	11.5	12	20.8

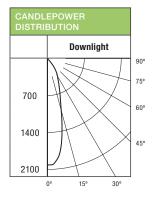
### **Photometry**

### Halo H4 LED Directional Gimbal Photometry - 2nd Generation (4000K)

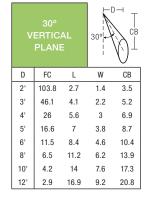


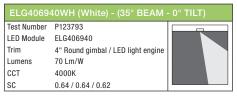
LUMINANCE DATA					
Angle 0°					
45	27126				
55	8985				
65	2201				
75	1797				
85	5335				

ZONAL LUMEN SUMMARY					
Zone	Lumens	%Fixture			
0-30	696	74.8			
0-40	864	92.9			
0-60	925	99.5			
0-90	930	100.0			
90-180	0	0.0			
0-180	930	100.0			

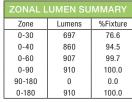


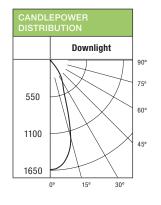
	0° HORIZONTAL PLANE		30°	
D	FC	L	W	
5.5'	66.6	2.6	2.6	
7'	41.1	3.4	3.4	
8'	31.5	4	4	
9'	24.9	4.4	4.4	
10'	20.2	5	5	
12'	14	6	6	
				•

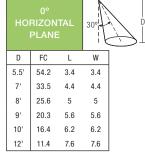




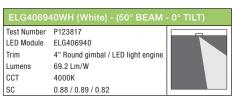
LUMINANCE DATA				
Angle 0°				
45	24606			
55	4121			
65	2201			
75	0			
85 5335				





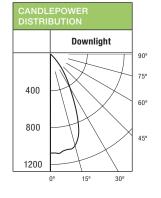


30° VERTICAL PLANE			30°	CB CB
D	FC	L	W	СВ
2'	106	2.4	1.6	3.5
3'	47.1	3.6	2.6	5.2
4'	26.5	4.8	3.4	6.9
5'	17	6	4.2	8.7
6'	11.8	7.2	5.2	10.4
8'	6.6	9.6	7	13.9
10'	4.2	12	8.6	17.3
12'	2.9	14.4	10.4	20.8

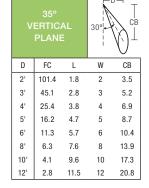


LUMINANCE DATA	
Angle	0°
45	27980
55	3097
65	2802
75	0
85	0

ZONAL LUMEN SUMMARY			
Zone	Lumens	%Fixture	
0-30	682	75.7	
0-40	853	94.8	
0-60	898	99.7	
0-90	900	100.0	
90-180	0	0.0	
0-180	900	100.0	



	0° RIZON PLANI		30°	
D	FC	L	W	
5.5'	35.6	4.8	4.8	
7'	22	6	6.2	
8'	16.8	7	7	
9'	13.3	7.8	7.8	
10'	10.8	8.8	8.8	
12'	7.5	10.6	10.6	



## **Complete Lighting Controls Solutions**

Eaton's AL Series dimmers offer versatile options to set the mood and reduce energy consumption.

Visit www.cooperwiringdevices.com/ALSeries for more information.











Dimmer Features	ACCELL (AAL06)	DEVINE (DAL06P)	SKYE (SAL06P)	TRACE (TAL06P)
Rapid Start feature	Selectable ON or OFF	Fully adjustable	Fixed ON	Fully adjustable
Adjustable high-end trim	•			
Adjustable low-end trim	•	•	•	•
Wiring configurations	Single-pole or multi-location	Single-pole or three-way	Single-pole or three-way	Single-pole or three-way
Color change kits	•	•		•

Note: The Rapid Start feature is used to ensure the right amount of power boost during start-up. When a dimmer with Rapid Start is turned on from a low dimmer setting, the LED lighting may exhibit a momentary flash. Select dimmer models offer an adjustment of the Rapid Start feature. The user may wish to adjust this setting to reduce the boost and resulting momentary flash. If this capability is desired, the user should select dimmer models designated as "fully adjustable" or "selectable ON or OFF".





## Sustainability



Halo LED offers environmental and sustainable solutions that reduce carbon emissions and hazardous materials to improve the environment.

Halo LED is mercury-free, PCB-free and lead-free and thus does not need special handling for disposal. The Halo LED downlight solution contributes to reduction of carbon emissions and conserves natural resources. Halo provides solutions with LEDs that make it easy to be environmentally responsible.

## **Long Life**



LEDs are solid state devices that do not have filaments or glass components that could break. The light source is not susceptible to vibration, thus reducing the risk of premature failure. The Halo H4 LED design delivers over 70% of the initial light output long after 50,000 hours of projected operation. The long service life of Halo LED fixtures dramatically reduce maintenance and service costs over traditional sources.

## **Energy Saving**



### Save over \$400\* in Energy Costs

Changing one traditional lamp to a Halo H4 LED recessed downlight will save you hundreds of dollars over the life of the fixture. Changing multiple fixtures will significantly lower your electric bill and change how you view lighting.

The Halo H4 LED fixture is more efficient than traditional light sources. For example, the H4 consumes 74% less energy than a 50W MR16 lamp.

H4 LED Gen 2 Versus 50W MR16 (Dich	roic) Halogen Lamp
Annual Electricity Savings	\$11.91

Add Up Your Lifetime Savings*	
Lifetime Electricity Savings*	\$271.61
Lifetime Lamp Replacement Savings*	\$166.17
Total Savings*	\$437.78

\* Savings based on \$0.115 per Kilowatt Hour and 6 Hours average use per day and comparable 50,000 hours LED of lamp life, 50W lumen equivalent MR16 (dichroic) halogen lamp.



In the kitchen pictured, the downlighting energy load could be reduced 74% with Halo H4 LED luminaire (compared to 50W MR16 lamps). Additionally, LED luminaires dramatically lower the impact on the air conditioning system compared to incandescent and halogen lamps.



### Eaton's Cooper Lighting Business

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### Our Lighting Product Brands

Halo

Halo Commercial

Portfolio IRiS RSA Metalux Corelite Neo-Ray

Fail-Safe MWS Ametrix Shaper

Lumark

io

McGraw-Edison

Invue Lumière Streetworks AtLite Sure-Lites

### **Our Controls Product Brands**

Greengate iLumin Zero 88

Fifth Light Technology iLight (International Only)



