

# National Grid Small Business Program Rebate Manual



**nationalgrid**

# Rebate Manual

Munro Distributing has prepared this manual to aid you and your clients in taking advantage of available rebate programs offered by National Grid.

The enclosed product guide includes fixtures that apply to local prescriptive utility rebate programs. Use of products indicated does not guarantee a rebate. Please contact your local utility and/or Munro Distributing for any questions or concerns pertaining to your project. In addition to those listed, other products may be eligible for rebates. Please contact your Munro Distributing representative for assistance.

Please visit our website for updated Energy Services information regarding new products, links to informative sites and beneficial analysis tools. Please visit us at [www.munroelectric.com](http://www.munroelectric.com).

Munro Distributing – 800.777.0172

6/27/10

# Specialty Fixtures



# Specialty Fixtures

Description	Manufacturer	Model	Warranty (years)	Page Number
FL T8 FIXTURE, 2L 4FT GLARE REDUCING 2X4 RETROFIT KIT (>80% EFF)	Lithonia	2RT8RT 232 BILP	5/1	95- 96
FL T8 FIXTURE, 2L 4FT PARABOLIC 2X4 RETROFIT KIT (>80% EFF.)	Lithonia	2ES8RT 232 BINP	5/1	97- 98
FL T8 FIXTURE, 2L 4FT GLARE REDUCING 2X2 RETROFIT KIT (>80% EFF)	Lithonia	2RT8RT 217 BILP	5/1	99- 100
FL T8 FIXTURE, 2L 4FT PARABOLIC 2X2 RETROFIT KIT (>80% EFF.)	Lithonia	2ES8RT 217 BILP	5/1	101- 102
8" or less aperture REC LED DOWNLIGHT, ENERGYSTAR (not to exceed 15 watts)	Halo	ML706830	5	103-111

*Note: These prices should not include the cost of the lamps, except for LED Down light fixture.*

## FEATURES & SPECIFICATIONS

**INTENDED USE** — The RT8RT relight assembly is the ideal solution for renovating obsolete parabolic or lensed troffer systems, delivering improved quality of light and refreshing the space. RT8RT volumetric lighting eliminates the “cave effect” by delivering the ideal amount of light to walls, work surfaces, and people.

The RT8RT relight assembly is recommended for schools, offices, hospitals and other general lighting applications. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

**CONSTRUCTION** — Universal end brackets containing the pre-wired ballast and sockets are constructed of 20-gauge powder-painted steel and are secured to the host fixture with provided TEK screws. A splice box is provided to enclose electrical connections, and a ballast disconnect plug system is provided as standard.

The reflector system uses a highly reflective white finish for optimum efficiency and attaches securely to the end brackets with quarter-turn fasteners. A one-piece trim assembly serves as the instrument that delivers the light. Molded and recyclable PETE (polyethylene) reflector is firmly attached to the universal bracket via reliable hinge and latch assembly. Included as part of the trim assembly are two linear prisms acrylic refractors with light-diffusing finish for even illumination and lamp obscuration. Trim kit to cover side reveals (if necessary) is provided as standard.

Splice box replaces the typical wireway by providing a cover for the connections of incoming supply wire and is attached to the host fixture with two TEK screws.

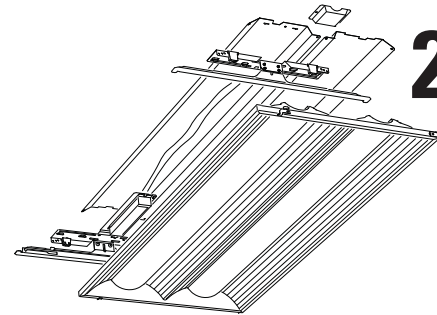
**OPTICS** — Luminous characteristics are carefully managed at high angles, providing just enough intensity to develop the volumetric effect. Regressed, one-piece refractive system obscures and softens the lamp and smoothly washes the reflector with light. Linear faceted reflectors soften and distribute light into the space, and minimize the contrast between the fixture and the ceiling. Mechanical cutoff across the reflector and fresnel refraction along the reflector provide high-angle shielding and a quiet ceiling.

Sloped endplates provide a balanced fixture-to-ceiling ratio while enhancing the perception of the fixture depth.

**ELECTRICAL** — Standard ballast is high-efficiency, CEE (Consortium for Energy Efficiency) qualified, instant start, <10% THD, universal voltage and sound rated A. Suggested lamps are high-lumen, long-life super T8 lamps which contribute to optimizing system performance. Optional program start and step-dim bi-level ballasts are available as well as several ballast factor options to maximize energy savings and to allow the amount of light to be balanced to the application.

**INSTALLATION** — Trim hinges from either side. Lamp access by hinging trim down to 90°, providing hands-free access to lamps. For hands-free ballast

Catalog Number	
Notes	Type



# 2RT8RT

2' x 4' Relight  
2 Lamp  
High-performance T8

### Specifications

Intended to be installed in any existing parabolic recessed fixture or lensed troffer:

Weight: 20 lbs.

access, continue process by removing two quarter-turn latches and remove reflectors.

**LISTINGS** — UL / cUL Classified. Labeled for use in air-handling fixtures. Does not impact existing fixture UL listing. NYC approved (#49192).

**WARRANTY** — Fixture guaranteed for one year against mechanical defects in manufacture. System lamp (24 months) and ballast (60 months) warranty is provided by lamp and ballast manufacturer.

Protected by one or more of US Patent Nos. 7,229,192; D541,467; D541,468; D544,633; D544,634; D544,992; D544,933 and additional patents pending.

*Specifications subject to change without notice.*

## ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: 2RT8RT 232 BSNP

2RT8RT	232			
Series	Lamp type	Voltage	Ballast	Options
<b>2RT8RT Recessed relight</b>	<b>232 Two-lamp, 32W T8 (48")</b>	(blank) <b>MVOLT</b> <sup>1,2</sup> 347 347V	<b>BILP IS, high efficiency, .78 bf (low)</b> <b>BINP IS, high efficiency, .88 bf (normal)</b> BIHP IS, high efficiency, 1.20 bf (high) <sup>3</sup> BSNP PS, step dimming, high efficiency, .88 bf (normal)	<b>JP16 Job packaging-16 kits</b>

### NOTES:

- MVOLT standard for 120V-277V applications.
- Not available in 347V.
- Not available in high-efficiency 347V.

# 2RT8RT Volumetric Recessed Relighting 2' x 4'

## ENERGY AND LIGHT LEVEL COMPARISON

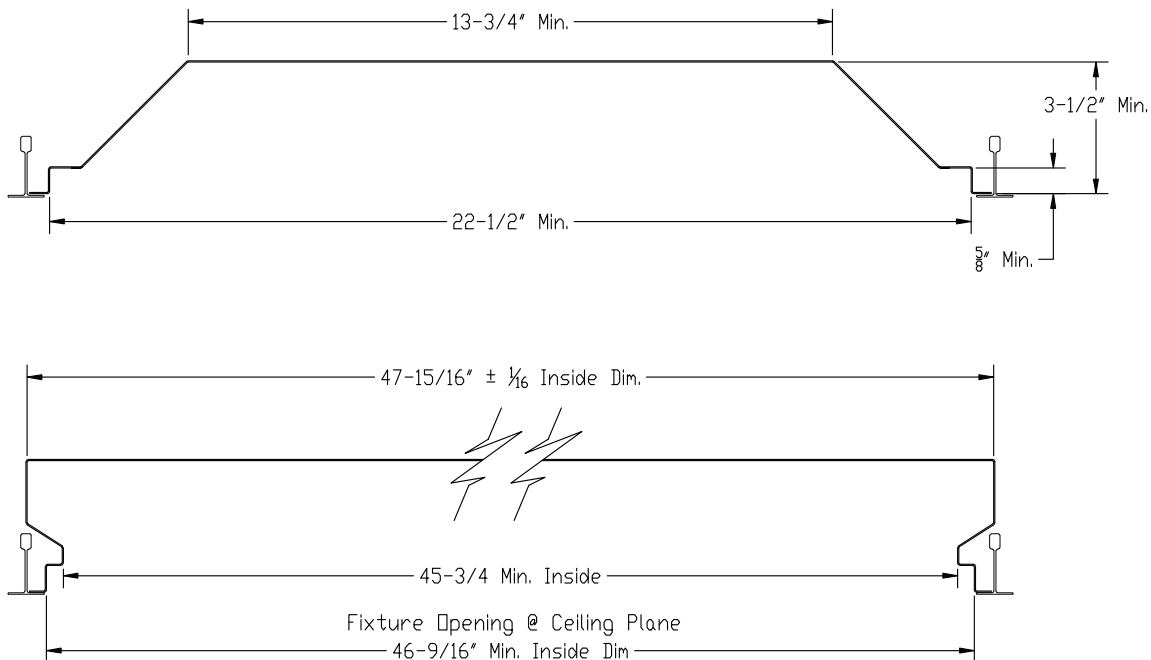
System	Light level	Input watts	Watts/SF	Watts saved	% Savings	\$ Savings per year	LER
Parabolic, (3) 2800 lumen T8 lamps .88 ballast factor	69	88	1.1	Base	Base	Base	65
RT8RT, (2) 3100 lumen T8 lamps, .78 ballast factor	41	48	0.6	40	45%	\$12.80	85

Light level in footcandles is calculated based on 8x10 mounting centers, 9 foot ceilings, 60 x 60 room, 80/50/20 reflectances, .95 LLD, .90 LDD, horizontal light level on 2.5 foot workplane height.

Annual savings based on 4000 operating hours, \$.08/kwh. Luminaire Efficacy Rating (LER) is fixture lumen output divided by fixture input wattage.

## FIT COMPATIBILITY

The RT8™ relight assembly (RT8RT) was engineered to upgrade recessed 2x4 or 2x2 fixtures, including most parabolic and lensed troffer fixtures from all major manufacturers. Dimensional requirements are below, but **Lithonia Lighting recommends a trial installation prior to purchasing project quantities.**



## FEATURES & SPECIFICATIONS

**INTENDED USE** — The ES8RT relight assembly is the ideal solution for renovating obsolete parabolic or deep-lensed troffer systems when a one-for-one upgrade is desired. ES8RT louvered lighting systems provide exceptional efficiency and energy savings while providing even, glare-free lighting, higher vertical footcandles and reduced ceiling contrast for greater visual comfort.

The ES8RT relight assembly is ideal for retail, educational and other general lighting applications.

**CONSTRUCTION** — The ES8RT delivers more balanced light levels vertically and horizontally while eliminating the "cave effect" produced by traditional parabolic fixtures and the glare associated with lensed troffers. ES8RT provides substantial energy savings of up to 45% compared to a three-lamp T8 electronic ballast system and up to 56% savings compared to a three-lamp ES magnetic system.

The ES8RT assembly consists of six primary components plus hardware.

Universal end brackets containing the pre-wired ballast and sockets are constructed of 20-gauge powder-painted steel and are secured to the host fixture with provided TEK screws. A splice box is provided to enclose electrical connections, and a ballast disconnect plug system is provided as standard. Splice box replaces the typical wireway by providing a cover for the connections of incoming supply wire and is attached to the host fixture with two TEK screws.

The reflector system uses a highly reflective white finish for optimum efficiency and attaches securely to the end brackets with quarter-turn fasteners. Robust design, precision tooling and automated assembly combine to produce the industry's strongest louver. Trim kit to cover side reveals (if necessary) is provided as standard.

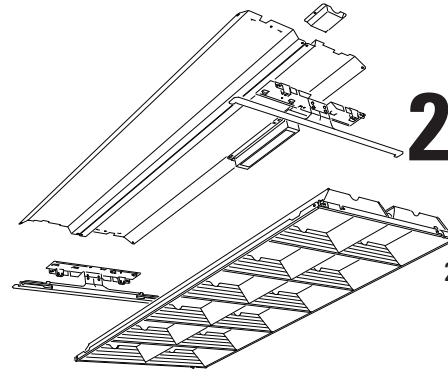
**OPTICS** — Mechanical optical shielding is provided with angled length blades and linear faceted cross baffles. A highly efficient reflector system directs the light downward. Lamp cut-outs maximize the shielding while minimizing overall assembly depth to provide consistent performance in any host fixture application. Vertical light levels are improved, providing a balanced amount of light across all surfaces while minimizing contrast and glare at the ceiling plane.

**ELECTRICAL** — Standard ballast is high-efficiency, CEE (Consortium for Energy Efficiency) qualified, instant start, <10% THD, universal voltage and sound rated A. Suggested lamps are high-lumen, long-life super T8 lamps which contribute to optimizing system performance. Optional program start and step-dim bi-level ballasts are available as well as several ballast factor options to maximize energy savings and to allow the amount of light to be balanced to the application.

Catalog Number	
Notes	Type



# 2ES8RT



2'x4' Louvered Relight  
2 Lamp  
High-performance T8

### Specifications

*Intended to be installed in any existing recessed parabolic or lensed troffer fixture:*

Weight: 21 lbs.

**INSTALLATION** — Louver assembly hinges from either side. Lamp access by hinging trim down to 90°, providing hands-free access to lamps. For hands-free ballast access, continue process by turning two quarter-turn latches to release and remove reflectors.

**LISTINGS** — UL/cUL Classified. Labeled for use in air-handling fixtures. Does not impact existing fixture UL listing. NYC approved (#49192).

**WARRANTY** — Fixture guaranteed for one year against mechanical defects in manufacture. System lamp (24 months) and ballast (60 months) warranty is provided by lamp and ballast manufacturer.

Protected by one or more of US Patent Nos. 6,210,025; 6,231,213 and additional patents pending.

*Specifications subject to change without notice.*

## ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: 2ES8RT 232 BSNP

<b>2ES8RT</b>	<b>232</b>			
Series	Number of lamps/ wattage	Voltage	Ballast	Options
<b>2ES8RT Recessed relight</b>	<b>232 2-lamp, 32W T8 (48")<sup>1</sup></b>	(blank) <b>MVOLT<sup>2</sup></b> 347 347 volts	<b>BILP IS, high efficiency, .78 bf (low)</b> <b>BINP IS, high efficiency, .88 bf (normal)</b> BIHP IS, high efficiency, 1.20 bf (high) <sup>3</sup> BSNP PS, step-dimming, high efficiency, .88 bf (normal) <sup>4</sup>	<b>JP18 Job pack 18</b>

### NOTES:

- Lamps not included. Must be ordered separately.
- MVOLT standard for 120V-277V applications.
- Not available in high efficiency 347V.
- Not available in 347V.



# 2ES8RT Relight Assembly

## ENERGY AND LIGHT LEVEL COMPARISON

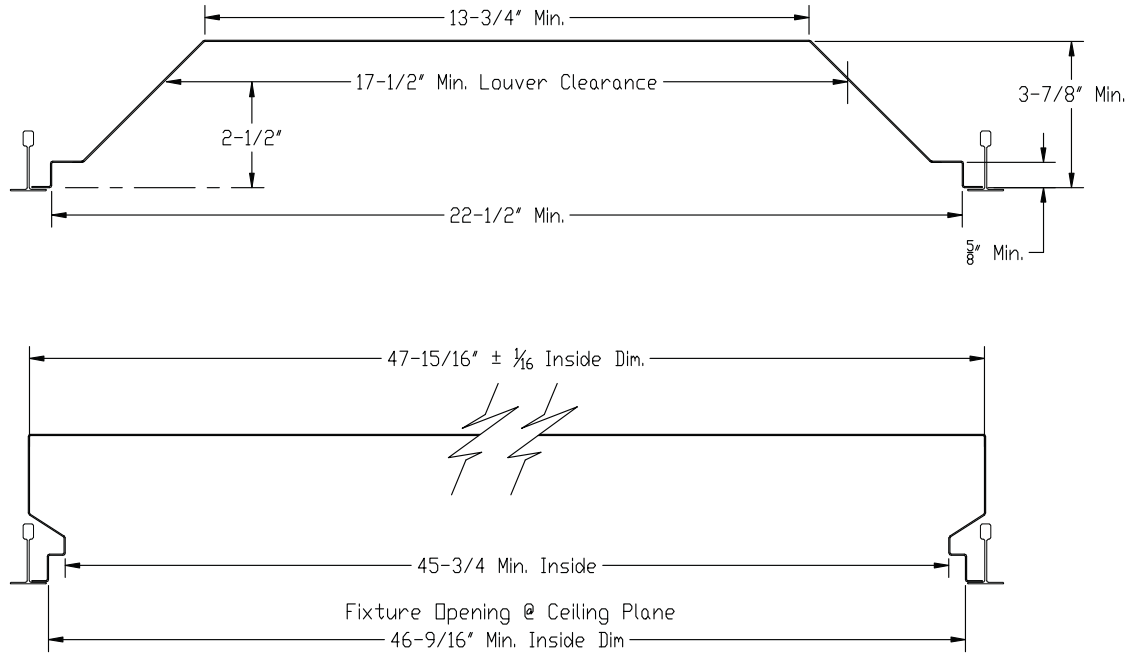
System	Light level	Input watts	Watts/SF	Watts saved	% Savings	\$ Savings per year	LER
Parabolic, (3) 2800 lumen T8 lamps .88 ballast factor	69	88	1.1	Base	Base	Base	65
ES8P, (2) 3100 lumen T8 lamps, .78 ballast factor	51	48	0.60	40	45%	\$12.80	85

Light level in footcandles is calculated based on 8x10 mounting centers 9 foot ceilings, 60 x 60 room, 80/50/20 reflectances, .95 LLD, .90 LDD, horizontal light level on 2.5 foot workplane height.

Annual savings based on 4000 operating hours, \$.08/kwh. Luminaire Efficacy Rating (LER) is fixture lumen output divided by fixture input wattage.

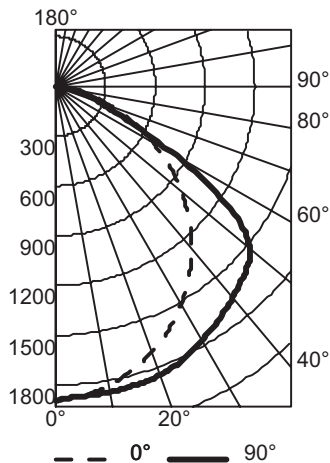
## FIT COMPATIBILITY

The ES8™ relight assembly (ES8R) was engineered to upgrade recessed 2x4 or 2x2 fixtures, including most parabolic and lensed troffers from all major manufacturers. Dimensional requirements are below but **Lithonia Lighting recommends a trial installation prior to purchasing project quantities.**



## PHOTOMETRICS

2ES8R 232, 3100 lumens per lamp, Test No. LTL 16155



CP Summary	Coefficients of Utilization														
	0°		90°		pf	80%			20%			50%			
	pc	pw	70%	50%		30%	50%	30%	10%	50%	30%	10%			
0°	1891	1891	0	101	101	101	99	99	99	94	94	94			
5°	1874	1874	1	93	89	86	87	84	82	84	81	79			
15°	1772	1863	2	85	78	73	77	72	68	74	70	66			
25°	1616	1816	3	78	69	62	68	62	57	65	60	56			
35°	1399	1715	4	71	61	54	60	53	48	58	52	48			
45°	1138	1606	5	65	55	47	54	47	42	52	46	41			
55°	839	1284	6	60	49	42	48	41	36	47	41	36			
65°	524	439	7	56	45	37	44	37	32	43	36	32			
75°	229	183	8	52	41	34	40	33	29	39	33	28			
85°	55	31	9	49	37	30	37	30	26	36	30	25			
90°	0	0	10	46	34	28	34	28	23	33	27	23			

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
0° - 30°	1483	23.9	28.1
0° - 40°	2454	39.6	46.6
0° - 60°	4435	71.5	84.1
0° - 90°	5271	85.0	100.0
90° - 180°	0	0.0	0.0
0° - 180°	5271	85.0	100.0

Efficiency: 85.0%



## FEATURES & SPECIFICATIONS

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The RT8RT relight assembly is recommended for schools, offices, hospitals and other general lighting applications. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

**CONSTRUCTION** — Universal end brackets containing the pre-wired ballast and sockets are constructed of 20-gauge powder-painted steel and are secured to the host fixture with provided TEK screws. A splice box is provided to enclose electrical connections, and a ballast disconnect plug system is provided as standard.

The reflector system uses a highly reflective white finish for optimum efficiency and attaches securely to the end brackets with quarter-turn fasteners. A one-piece trim assembly serves as the instrument that delivers the light. Molded and recyclable PETE (polyethylene) reflector is firmly attached to the universal bracket via reliable hinge and latch assembly. Included as part of the trim assembly are two linear prisms acrylic refractors with light-diffusing finish for even illumination and lamp obscuration. Trim kit to cover side reveals (if necessary) is provided as standard.

Splice box replaces the typical wireway by providing a cover for the connections of incoming supply wire and is attached to the host fixture with two TEK screws.

**OPTICS** — Luminous characteristics are carefully managed at high angles, providing just enough intensity to develop the volumetric effect. Regressed, one-piece refractive system obscures and softens the lamp and smoothly washes the reflector with light. Linear faceted reflectors soften and distribute light into the space, and minimize the contrast between the fixture and the ceiling. Mechanical cutoff across the reflector and fresnel refraction along the reflector provide high-angle shielding and a quiet ceiling.

Sloped endplates provide a balanced fixture-to-ceiling ratio while enhancing the perception of the fixture depth.

**ELECTRICAL** — Standard ballast is high-efficiency, CEE (Consortium for Energy Efficiency) qualified, instant start, <10% THD, universal voltage and sound rated A. Suggested lamps are high-lumen, long-life super T8 lamps which contribute to optimizing system performance. Optional program start and step-dim bi-level ballasts are available as well as several ballast factor options to maximize energy savings and to allow the amount of light to be balanced to the application.

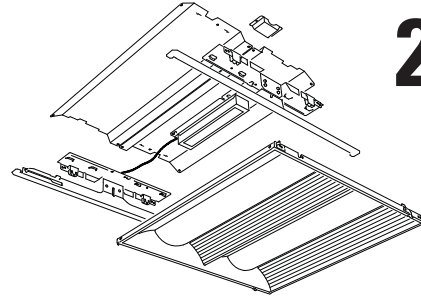
**INSTALLATION** — Trim hinges from either side. Lamp access by hinging trim down to 90°, providing hands-free access to lamps. For hands-free ballast

Catalog Number	
Notes	Type



# 2RT8RT

2' x 2' Relight  
2 Lamp  
High-performance T8



### Specifications

*Intended to be installed in any existing parabolic recessed fixture or lensed troffer:*

Weight: 20 lbs.

access, continue process by removing two quarter-turn latches and remove reflectors.

**LISTINGS** — UL / cUL Classified. Labeled for use in air-handling fixtures. Does not impact existing fixture UL listing. NYC approved (#49192).

**WARRANTY** — Fixture guaranteed for one year against mechanical defects in manufacture. System lamp (24 months) and ballast (60 months) warranty is provided by lamp and ballast manufacturer.

Protected by one or more of US Patent Nos. 7,229,192; D541,467; D541,468; D544,633; D544,634; D544,992; D544,933 and additional patents pending.

*Specifications subject to change without notice.*

## ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: 2RT8RT 217 BSNP

2RT8RT	217			
Series	Lamp type	Voltage	Ballast	Options
<b>2RT8RT Recessed relight</b>	<b>217 Two-lamp, 17W T8 (24"¹)</b>	(blank) <b>MVOLT²</b> 347 347V	BILP IS, high efficiency, .81 bf (low) <b>BINP IS, high efficiency, .90 bf (normal)</b> <b>BIHP IS, high efficiency, 1.24 bf (high)³</b> BSNP PS, step dimming, high efficiency, .90 bf (normal)⁴ GEUM GE UltraMax® ballast	<b>JP16 Job packaging-16 kits</b>

### NOTES:

- Lamps not included. Must be ordered separately.
- MVOLT standard for 120V-277V applications.
- Not available in high-efficiency 347V.
- Not available in 347V.

# 2RT8RT Volumetric Recessed Relighting 2' x 2'

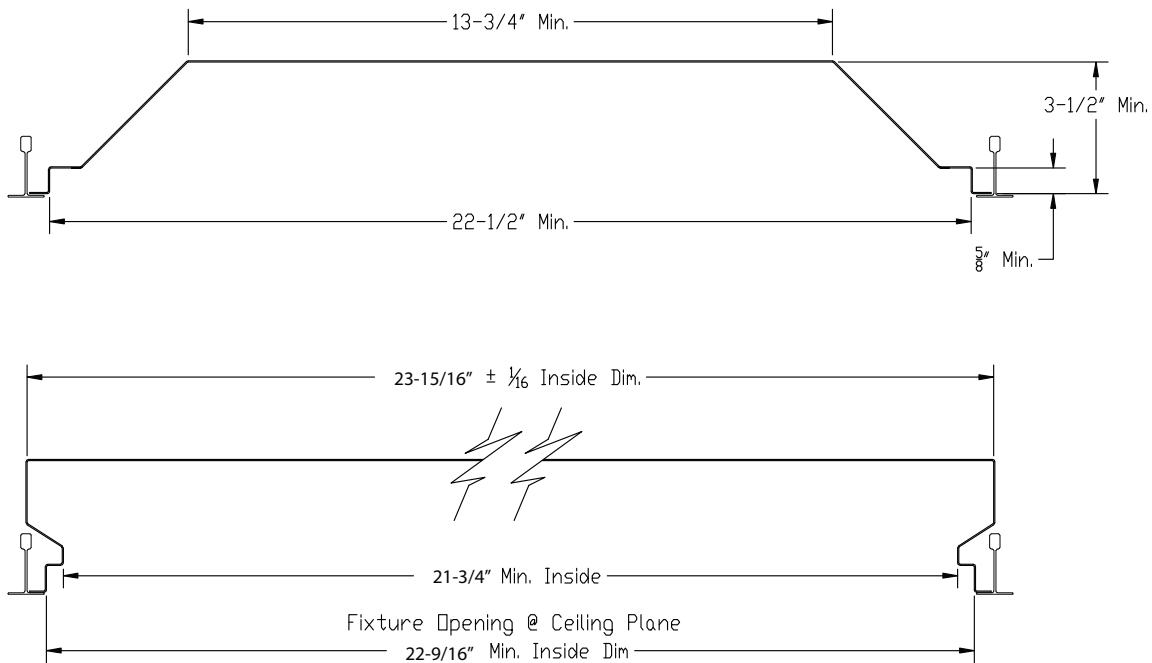
ENERGY AND LIGHT LEVEL COMPARISON							
System	Light level	Input watts	Watts/SF	Watts saved	% Savings	\$ Savings per year	LER
Parabolic, (2) 2700 lumen U31W lamps .88 bf	TBD	60	0.92	Base	Base	Base	52
RT8RT, (2) 1400 lumen T8 lamps, 1.24 bf	TBD	41	0.51	19	32%	\$6.08	71

Light level in footcandles is calculated based on 8x10 mounting centers, 9 foot ceilings, 60 x 60 room, 80/50/20 reflectances, .95 LLD, .90 LDD, horizontal light level on 2.5 foot workplane height.

Annual savings based on 4000 operating hours, \$.08/kwh. Luminaire Efficacy Rating (LER) is fixture lumen output divided by fixture input wattage.

## FIT COMPATIBILITY

The RT8™ relight assembly (RT8RT) was engineered to upgrade recessed 2x4 or 2x2 fixtures, including most parabolic and lensed troffer fixtures from all major manufacturers. Dimensional requirements are below, but **Lithonia Lighting recommends a trial installation prior to purchasing project quantities.**



## FEATURES & SPECIFICATIONS

**INTENDED USE** — The ES8RT relight assembly is the ideal solution for renovating obsolete parabolic or deep-lensed troffer systems when a one-for-one upgrade is desired. ES8RT louvered lighting systems provide exceptional efficiency and energy savings while providing even, glare-free lighting, higher vertical footcandles and reduced ceiling contrast for greater visual comfort.

The ES8RT relight assembly is ideal for retail, educational, commercial and other general lighting applications.

**CONSTRUCTION** — The ES8RT delivers more balanced light levels vertically and horizontally while eliminating the "cave effect" produced by traditional parabolic fixtures and the glare associated with lensed troffers. ES8RT provides substantial energy savings of up to 45% compared to a three-lamp T8 electronic ballast system and up to 56% savings compared to a three-lamp ES magnetic system.

The ES8RT assembly consists of six primary components plus hardware.

Universal end brackets containing the pre-wired ballast and sockets are constructed of 20-gauge powder-painted steel and are secured to the host fixture with provided TEK screws. A splice box is provided to enclose electrical connections, and a ballast disconnect plug system is provided as standard. Splice box replaces the typical wireway by providing a cover for the connections of incoming supply wire and is attached to the host fixture with two TEK screws.

The reflector system uses a highly reflective white finish for optimum efficiency and attaches securely to the end brackets with quarter-turn fasteners. Robust design, precision tooling and automated assembly combine to produce the industry's strongest louver. Trim kit to cover side reveals (if necessary) is provided as standard.

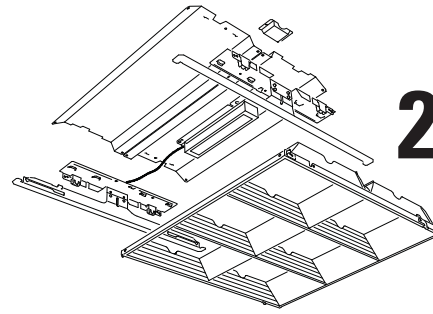
**OPTICS** — Mechanical optical shielding is provided with angled length blades and linear faceted cross baffles. A highly efficient reflector system directs the light downward. Lamp cut-outs maximize the shielding while minimizing overall assembly depth to provide consistent performance in any host fixture application. Vertical light levels are improved, providing a balanced amount of light across all surfaces while minimizing contrast and glare at the ceiling plane.

**ELECTRICAL** — Standard ballast is high-efficiency, CEE (Consortium for Energy Efficiency) qualified, instant start, <10% THD, universal voltage and sound rated A. Suggested lamps are high-lumen, long-life super T8 lamps which contribute to optimizing system performance. Optional program start and step-dim bi-level ballasts are available as well as several ballast factor options to maximize energy savings and to allow the amount of light to be balanced to the application.

Catalog Number	
Notes	Type



# 2ES8RT



2'x2' Louvered Relight  
2 Lamp  
High-performance T8

### Specifications

*Intended to be installed in any existing recessed parabolic or lensed troffer fixture:*

Weight: 11 lbs.

**INSTALLATION** — Louver assembly hinges from either side. Lamp access by hinging trim down to 90°, providing hands-free access to lamps. For hands-free ballast access, continue process by turning two quarter-turn latches to release and remove reflectors.

**LISTINGS** — UL/cUL Classified. Labeled for use in air-handling fixtures. Does not impact existing fixture UL listing. NYC approved (#49192).

**WARRANTY** — Fixture guaranteed for one year against mechanical defects in manufacture. System lamp (24 months) and ballast (60 months) warranty is provided by lamp and ballast manufacturer.

Protected by one or more of US Patent Nos. 6,210,025; 6,231,213 and additional patents pending.

*Specifications subject to change without notice.*

## ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: 2ES8RT 217 **BSNP**

<b>2ES8RT</b>	<b>217</b>			
Series	Number of lamps/ wattage	Voltage	Ballast	Options
<b>2ES8RT Recessed relight</b>	<b>217 2-lamp, 17W T8 (24<sup>h</sup>)<sup>1</sup></b>	(blank) <b>MVOLT<sup>2</sup></b> 347 347 volts	<b>BILP IS, high efficiency, .78 bf (low)</b> <b>BINP IS, high efficiency, .88 bf (normal)</b> BIHP IS, high efficiency, 1.20 bf (high) <sup>3</sup> BSNP PS, step-dimming, high efficiency, .88 bf (normal) <sup>4</sup>	<b>JP18 Job pack 18</b>

**NOTES:**

- 1 Lamps not included. Must be ordered separately.
- 2 MVOLT standard for 120V-277V applications.
- 3 Not available in high efficiency 347V.
- 4 Not available in 347V.

# 2ES8RT Relight Assembly

## ENERGY AND LIGHT LEVEL COMPARISON

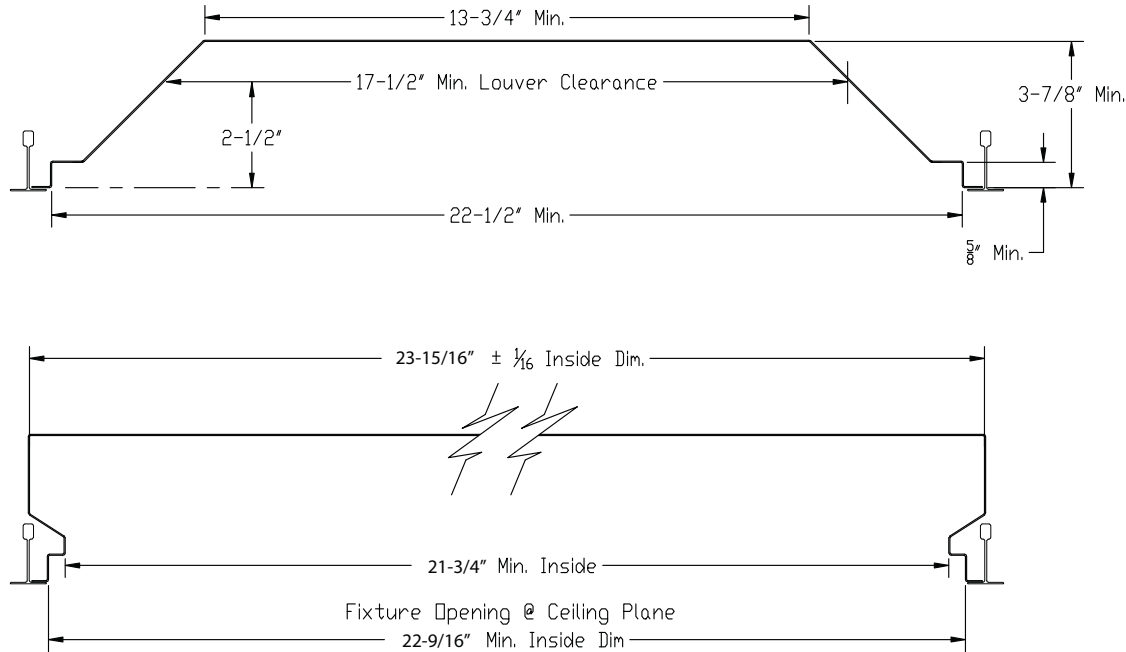
System	Light level	Input watts	Watts/SF	Watts saved	% Savings	\$ Savings per year	LER
Parabolic, (2) 2700 lumen U31W T8 lamps .88 bf	47	60	0.92	Base	Base	Base	52
ES8P, (2) 1400 lumen T8 lamps, 1.24 bf	42	41	0.66	19	32%	\$6.08	71

Light level in footcandles is calculated based on 8x10 mounting centers 9 foot ceilings, 60 x 60 room, 80/50/20 reflectances, .95 LLD, .90 LDD, horizontal light level on 2.5 foot workplane height.

Annual savings based on 4000 operating hours, \$.08/kwh. Luminaire Efficacy Rating (LER) is fixture lumen output divided by fixture input wattage.

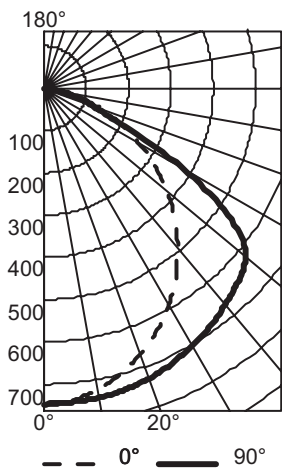
## FIT COMPATIBILITY

The ES8™ relight assembly (ES8R) was engineered to upgrade recessed 2x4 or 2x2 fixtures, including most parabolic and lensed troffers from all major manufacturers. Dimensional requirements are below but **Lithonia Lighting recommends a trial installation prior to purchasing project quantities.**



## PHOTOMETRICS

2ES8R 217, 1400 lumens per lamp, Test No. LTL 16485



### CP Summary

CP	0°	90°
0°	748	748
5°	742	745
15°	700	738
25°	632	718
35°	543	687
45°	437	648
55°	319	541
65°	201	199
75°	94	81
85°	26	16
90°	0	0

### Coefficients of Utilization

pc	Coefficients of Utilization											
	80%			20%			50%					
	70%	50%	30%	50%	30%	10%	50%	30%	10%			
0	92	92	92	90	90	90	86	86	86			
1	85	81	78	80	77	74	76	74	72			
2	77	71	66	70	65	61	67	63	60			
3	71	63	57	62	56	51	59	54	50			
4	65	56	49	55	48	44	53	47	43			
5	60	50	43	49	42	38	47	42	37			
6	55	45	38	44	37	33	43	37	32			
7	51	40	34	40	33	29	39	33	29			
8	47	37	30	36	30	26	35	30	26			
9	44	34	27	33	27	23	32	27	23			
10	41	31	25	31	25	21	30	25	21			

### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0° - 30°	583	21.6	27.8
0° - 40°	963	35.7	46.0
0° - 60°	1745	64.6	83.3
0° - 90°	2094	77.6	100.0
90° - 180°	0	0.0	0.0
0° - 180°	2094	77.6	100.0

Efficiency: 77.6%



An Acuity Brands Company

## HALO LED Module for New Installations

### DESCRIPTION: ML706830 LED Module

The Halo LED module is designed for retrofit applications with an Edison screw base adapter (included with the module) for use in existing HALO or ALL-PRO housings OR may also be used in new construction with the LED dedicated housing Series H750x. Halo LED ML706830 delivers Over 650 lumens with a superior optical design that yields productive beam lumens, good cutoff and low glare. The Halo LED is ENERGY STAR qualified (with designated LED trims). A Halo LED recessed luminaire also exceeds high efficacy requirements for Title 24-2008 and others. Halo LED offers savings in excess of 75% when compared with 65W BR30 incandescent lamps.

### DESIGN FEATURES

Comparable in light output and distribution to a 65W BR30 incandescent lamp or an 18W compact fluorescent luminaire, while consuming less than 14 watts.

#### Dimming

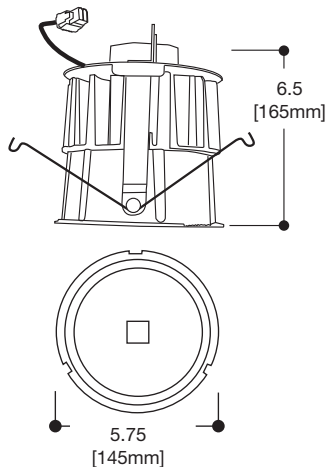
The HALO LED luminaire is dimmable to 15% (nominal) of the total light output with standard AC incandescent dimmers or to 5% (nominal) using standard incandescent dimmers with low end trim adjustment. Standard dimmers require a minimum of three LED modules (minimum 40 watts load) on the circuit for full range (15%) dimming performance. For dimming fewer than three LED modules (less than 40 watts), or with digital "Smart" dimmers use electronic low voltage models which require a neutral connection in the wallbox (minimum circuit load of one LED module).

#### Quality of Light

Provides excellent color rendering (80 CRI typical), and a warm white color temperature (3045°K). LED's have virtually no ultraviolet or infrared wavelengths and they do not direct heat like conventional lamps.

#### Optical Design

Optical design yields over 650 productive beam lumens and 50° cut-off.



#### Life

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

#### Compatibility

The Halo ML706830 LED module is designed for use in the dedicated H750 series housings or for retrofit applications in existing Halo or ALL-PRO™ H7 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 Housings: H750ICAT, H750RICAT, H750T, H750TCP
- Halo Housings: H7ICT, H7ICAT, H7RICT, H7RICAT, H7ICTNB, H7ICATNB, H7T, H7RT, H7TNB,
- ALL-PRO Housings: EI700, EI700R, EI700AT, EI700RAT, EI700ATNB, EI700NB, ET700, ET700R

#### Screw Base Adapter

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

#### Module Construction

Durable die-cast 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 airtight 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 and will shut off 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.

#### 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 3-year 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.

#### Labels

- UL/cUL Listed
- Meets following requirements:
- State of California Title 24 High Efficacy Compliant
- Washington State Energy Code
- International Energy Conservation Code (IECC) High Efficacy Compliant
- New York State Energy Conservation Construction Code

#### Accessories

- Oversize Trim Rings (Goof Rings) - OT400P and OT403P oversize trim rings are installed behind the Halo LED trim ring to aid in masking ceiling irregularities and cut-out errors.
- H277 – The H277 Step-down transformer for use with non-IC housings (H7T, H7TNB, H7RT, H750T, H750TCP) and LED Module.
- H347 – The H347 Step-down transformer for use with non-IC housings (H7T, H7TNB, H7RT, H750T, H750TCP) and LED Module.

HALO®

Catalog #		Type
Project		
Comments		Date
Prepared by		



## ML706830 LED Module

### 49X \_\_\_\_\_ Trim

### 6" LED Module and Trim For Retrofit Applications

<b>Energy Data:</b>	(Values at non-dim Line Voltage)
Minimum Starting Temp:	-30°C (-22°F)
EMV/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)

#### Lighting Data

494SC06 Specular Trim	
Lumens:	677
Lumens per watt:	50
Watts at 120VAC:	13.8
<b>Color</b>	
Correlated Color Temperature (CCT)	3045K
Color Rendering Index (CRI, R <sub>a</sub> )	80



airTite™  
LED



**ORDERING INFORMATION - SAMPLE NUMBER: ML706830 494P06** Order LED Module and trim separately

LED Module			Trim Options	Accessories (see product details for application information)
ML706	8	30		
ML706=6" LED Module	8=80 CRI	30=3000°K	<p><b>494P06</b>=Matte White Reflector/ white die cast trim ring</p> <p><b>494WB06</b>=White Baffle/ white die cast trim ring</p> <p><b>494H06</b>=Haze Reflector/ white die cast trim ring</p> <p><b>494SC06</b>=Specular Reflector/ white die cast trim ring</p> <p><b>492PS06</b>=Regressed Lens, white die-cast baffle and trim ring. Shower rated.</p> <p><b>493WBS06</b>=Solite Regressed Lens, upper reflector and white die-cast baffle and trim ring with anti-microbial paint (standard). Shower Rated</p> <p><b>493SC06</b>=Solite Regressed Lens, upper reflector, Specular Clear die-cast reflector and die-cast white trim ring. Shower Rated.</p> <p><b>493HS06</b>=Solite Regressed Lens, upper reflector Haze die-cast reflector and die-cast white trim ring. Shower Rated.</p>	<p><b>OT400P</b>=Oversize White Metal Trim Ring 6" ID x 9-1/4" OD</p> <p><b>OT403P</b>=Oversize White Plastic Trim Ring 6" ID x 8" OD</p> <p><b>H277</b>=Transformer - Steps 277 line voltage down to 120V</p> <p><b>H347</b>=Transformer - Steps 347 line voltage down to 120V</p> <p><b>Thin Profile Trim Rings:</b></p> <p><b>TRM490WH</b>=Thin Profile matte white die-cast trim ring with anti-microbial paint finish.</p> <p><b>TRM490SN</b>=Thin Profile Satin Nickel die-cast trim ring</p> <p><b>TRM490TBZ</b>=Thin Profile Tuscan Bronze die-cast trim ring</p> <p><b>TRM490BK</b>=Thin Profile Black die-cast trim ring</p> <p><b>TRM490PC</b>=Thin Profile Polished Chrome die-cast trim ring</p>

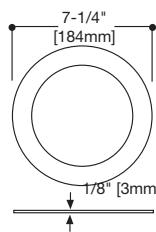
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**TRM490 Thin Profile Trim Ring (Optional Accessory)**

- 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 (Anti-microbial paint finish)

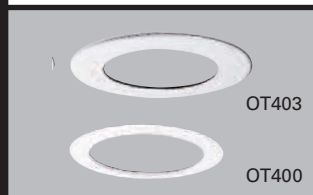


**TRM490WH**  
Optional Accessory  
Thin Profile Trim Ring

**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



**OT400, OT403**  
Oversize Trim Rings

**Step Down Transformer**

**H277**=Transformer - Steps 277 line voltage down to 120 volts. Attaches to knock-out on junction box and is 300VA (18 modules max.) rated. H277 is a UL Recognized Component that is listed for use under the luminaire UL/cUL listing for use with with non-IC housings (H750T, H750TCP, H7T, H7TNB, H7RT and LED Module)

**H347**=Transformer - Steps 347 line voltage down to 120 volts. Attaches to knock-out on junction box and is 75VA (4 modules max.) rated. H347 is a CSA/UL Listed Component that is listed for use under the luminaire UL/cUL listing for use with non-IC housings (H750T, H750TCP, H7T, H7TNB, H7RT and LED Module) (Note: No 347V dimmers currently available)

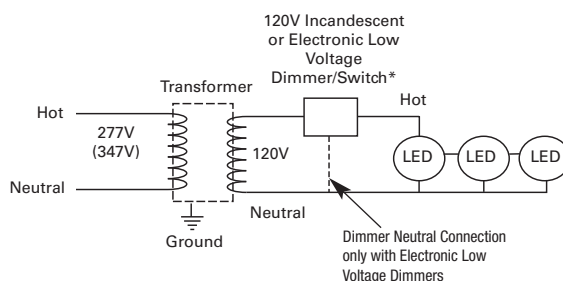
**Transformer Load - H277 (300VA)**

1. H277 Transformer 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.

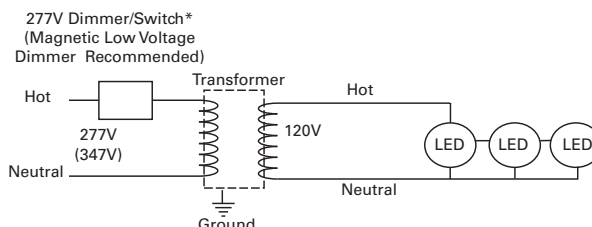
**Transformer Load - H347 (75VA)**

1. H347 Transformer at full loading consumes a maximum of 5W 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.

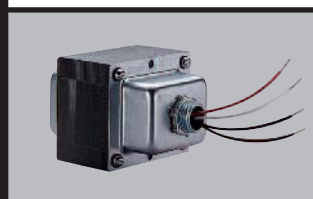
**Transformer with Dimmer /Switch on Secondary**



**Transformer with Dimmer /Switch on Primary**



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



**H277**  
277V Step Down Transformer  
**H347**  
347V Step Down Transformer

**Protected / Non-insulated Soffits, Porches, and Canopies**

Halo LED ML706830 module when used with Non-IC H7T, H7RT, ET700, ET700R, H750T, H750TCP recessed housings in protected soffits, porches or canopies offers a solution for outdoor accent lighting without concern for typical outdoor temperatures found in both cold and warm climates. Halo LED is rated for continuous operation from -30°C to 40°C when used with H7T, ET7 or H750T Series non-IC housings.

Note: Specifications and Dimensions subject to change without notice.

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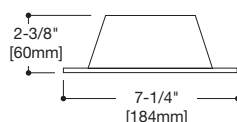


**DESCRIPTION: LED Trims**

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 trim is available for applications requiring wet location listings.

**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

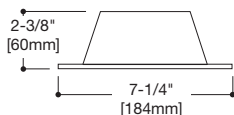


**494P06  
White Reflector  
with White Trim Ring**

Energy Star Qualified: ML706830 with 494P06

**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

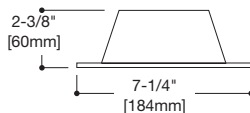


**494SC06  
Specular Reflector  
with White Trim Ring**

Energy Star Qualified: ML706830 with 494SC06

**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

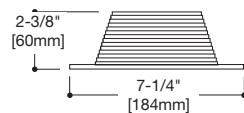


**494H06  
Haze Reflector  
with White Trim Ring**

Energy Star Qualified: ML706830 with 494H06

**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

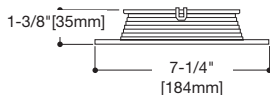


**494WB06  
White Baffle  
with White Trim Ring**

Energy Star Qualified: ML706830 with 494WB06

**492PS06 Regressed 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  
Lensed White Baffle with  
White Trim Ring**  
*Showertight*

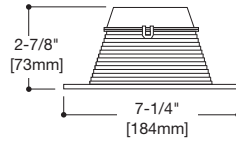
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106

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

- Halo matte white trim ring and baffle with anti-microbial finish standard
- Upper specular aluminum reflector for optical control and enhanced lumen delivery
- Wet location listed for use in showers and protected canopy applications
- Die-cast aluminum baffle and trim ring
- Solite regressed glass lens
- Trim ring height of .160" at OD & .180" at ID
- Trim ring provides clearance for remodeler flange and gasket for AIR-TITE™ seal

Energy Star Qualified: ML706830 with 493WBS06

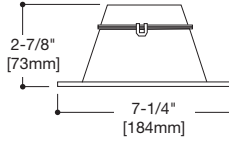


**493WBS06**  
**White Baffle**  
**with Solite Lens White Trim**  
*Showerlight*

## 493SC06 Solite Regressed Lens Trim 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
- Die-cast aluminum reflector and trim ring
- Solite® regressed glass lens
- Trim ring height of .160" at OD and .180" at ID
- Trim ring provides clearance for remodeler flange and gasket for AIR-TITE™ seal

Energy Star Qualified: ML706830 with 493SCS06

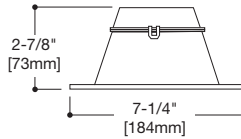


**493SC06**  
**Specular Reflector**  
**with Solite® Lens and**  
**White Trim Ring**  
*Showerlight*

## 493HS06 Solite Regressed Lens Trim 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
- Die-cast aluminum reflector and trim ring
- Solite® regressed glass lens
- Trim ring height of .160" at OD and .180" at ID
- Trim ring provides clearance for remodeler flange and gasket for AIR-TITE™ seal

Energy Star Qualified: ML706830 with 493HS06



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

Note: Specifications and Dimensions subject to change without notice.

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**Tests in IC Housings**

**Housing: H750ICAT, Module: ML706830,  
Trim: 494P06 White Reflector Lumens: 647**

**Test**

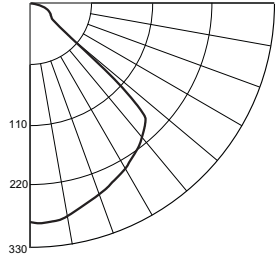
Test No:	A10067
Spacing Criteria:	1.3
Unit LPW:	47.5
Watts:	13.6

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Foot Candles	Nadir Beam Diameter
5'5"	10	7.2
7'0"	6	9.1
8'0"	5	10.4
9'0"	4	11.7
10'0"	3	13.0

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	238	36.7
0-40	397	61.4
0-60	592	91.5
0-90	647	100.0



**Housing: H750ICAT, Module: ML706830,  
Trim: 494SC06 Specular Reflector Lumens: 649**

**Test**

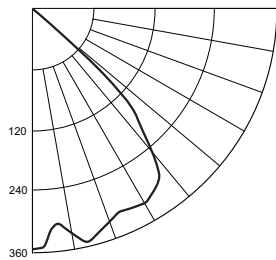
Test No:	A10085
Spacing Criteria:	1.3
Unit LPW:	47.7
Watts:	13.6

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Foot Candles	Nadir Beam Diameter
5'5"	12	7.6
7'0"	7	9.7
8'0"	6	11.1
9'0"	4	12.5
10'0"	4	13.9

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	285	44.0
0-40	487	75.1
0-60	645	99.5
0-90	649	100.0



**Housing: H750ICAT, Module: ML706830,  
Trim: 494H06 Haze Reflector Lumens: 623**

**Test**

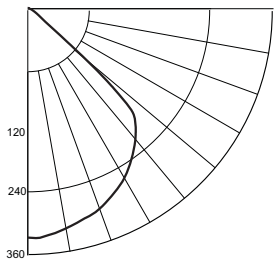
Test No:	A10071
Spacing Criteria:	1.3
Unit LPW:	45.8
Watts:	13.6

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Foot Candles	Nadir Beam Diameter
5'5"	11	6.9
7'0"	7	8.8
8'0"	5	10.1
9'0"	4	11.4
10'0"	3	12.6

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	266	42.7
0-40	436	70.0
0-60	612	98.2
0-90	623	100.0



**Housing: H750ICAT, Module: ML706830,  
Trim: 494WB06 White Baffle Lumens: 644**

**Test**

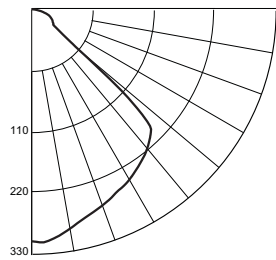
Test No:	A10068
Spacing Criteria:	1.3
Unit LPW:	47.3
Watts:	13.6

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Foot Candles	Nadir Beam Diameter
5'5"	10	7.0
7'0"	6	9.0
8'0"	5	10.2
9'0"	4	11.5
10'0"	3	12.8

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	235	36.5
0-40	393	61.0
0-60	589	91.4
0-90	644	100.0



**Tests in Non-IC Housings**

**Housing: H750T, Module: ML706830,  
Trim: 494P06 White Reflector Lumens: 659**

**Test**

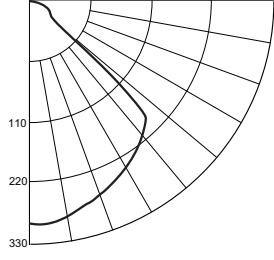
Test No:	A10076
Spacing Criteria:	1.3
Unit LPW:	47.7
Watts:	13.8

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Foot Candles	Nadir Beam Diameter
5'5"	10	7.1
7'0"	6	9.1
8'0"	5	10.4
9'0"	4	11.7
10'0"	3	13.0

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	245	37.2
0-40	409	62.1
0-60	603	91.5
0-90	659	100.0



**Housing: H750T, Module: ML706830,  
Trim: 494SC06 Specular Reflector Lumens: 677**

**Test**

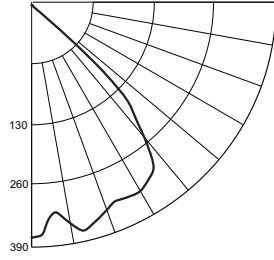
Test No:	A10084
Spacing Criteria:	1.3
Unit LPW:	49.7
Watts:	13.8

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Foot Candles	Nadir Beam Diameter
5'5"	12	7.6
7'0"	8	9.7
8'0"	6	11.1
9'0"	5	12.5
10'0"	4	13.8

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	298	44.1
0-40	509	75.2
0-60	673	99.5
0-90	677	100.0



**Housing: H750T, Module: ML706830,  
Trim: 494H06 Haze Reflector Lumens: 653**

**Test**

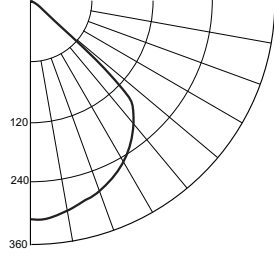
Test No:	A10074
Spacing Criteria:	1.3
Unit LPW:	47.3
Watts:	13.8

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Foot Candles	Nadir Beam Diameter
5'5"	12	7.0
7'0"	7	8.9
8'0"	6	10.1
9'0"	4	11.4
10'0"	4	12.6

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	278	42.6
0-40	457	70.0
0-60	641	98.2
0-90	653	100.0



**Housing: H750T, Module: ML706830,  
Trim: 494WB06 White Baffle Lumens: 652**

**Test**

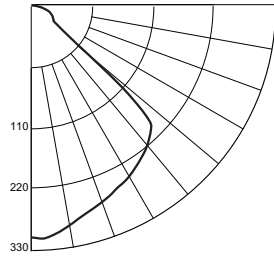
Test No:	A10075
Spacing Criteria:	1.3
Unit LPW:	47.2
Watts:	13.8

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Foot Candles	Nadir Beam Diameter
5'5"	11	7.0
7'0"	7	8.8
8'0"	5	10.1
9'0"	4	11.4
10'0"	3	12.6

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	241	37.0
0-40	403	61.8
0-60	597	91.5
0-90	652	100.0



**Tests in IC Housings**

**Housing: H750ICAT, Module: ML706830,  
Trim: 492PS06 Lensed Baffle white Baffle Lumens: 458**

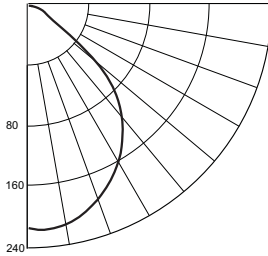
**Test**  
Test No: A10066  
Spacing Criteria: 1.2  
Unit LPW: 33.6  
Watts: 13.6

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Nadir Foot Candles	Beam Diameter
5'5"	8	6.6
7'0"	5	8.4
8'0"	4	9.6
9'0"	3	10.8
10'0"	2	12.0

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	176	38.4
0-40	281	61.4
0-60	423	92.3
0-90	458	100.0



**Housing: H750ICAT, Module: ML706830,  
Trim: 493WBS06 White Baffle Glass Lens Lumens: 593**

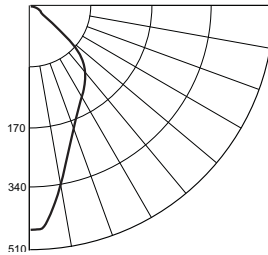
**Test**  
Test No: A10064  
Spacing Criteria: 0.7  
Unit LPW: 43.6  
Watts: 13.6

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Nadir Foot Candles	Beam Diameter
5'5"	17	3.8
7'0"	10	4.8
8'0"	8	5.5
9'0"	6	6.2
10'0"	5	6.9

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	258	43.5
0-40	392	66.2
0-60	553	93.2
0-90	593	100.0



**Housing: H750ICAT, Module: ML706830,  
Trim: 493SCS06 Specular Reflector, Glass Lens Lumens: 586**

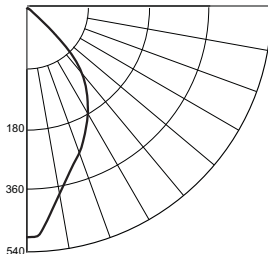
**Test**  
Test No: A10065  
Spacing Criteria: 0.8  
Unit LPW: 43.0  
Watts: 13.6

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Nadir Foot Candles	Beam Diameter
5'5"	17	4.5
7'0"	11	5.8
8'0"	8	6.6
9'0"	7	7.4
10'0"	5	8.2

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	303	51.7
0-40	455	77.5
0-60	576	98.2
0-90	586	100.0



**Housing: H750ICAT, Module: ML706830,  
Trim: 493HS06 Haze Reflector, Glass Lens Lumens: 583**

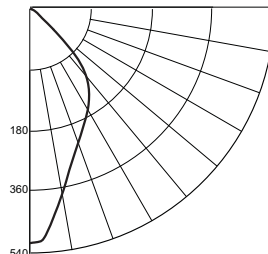
**Test**  
Test No: A10063  
Spacing Criteria: 0.8  
Unit LPW: 42.8  
Watts: 13.6

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Nadir Foot Candles	Beam Diameter
5'5"	18	4.2
7'0"	11	5.3
8'0"	8	6.1
9'0"	7	6.8
10'0"	5	7.6

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	289	49.6
0-40	439	75.2
0-60	569	97.5
0-90	583	100.0



**Tests in Non-IC Housings**

**Housing: H750T, Module: ML706830,  
Trim: 492PS06 Lensed Baffle white Baffle Lumens: 466**

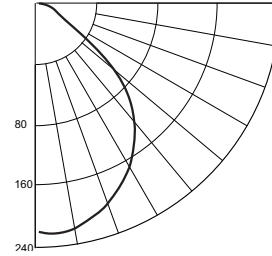
**Test**  
Test No: A10077  
Spacing Criteria: 1.2  
Unit LPW: 33.7  
Watts: 13.8

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Nadir Foot Candles	Beam Diameter
5'5"	8	6.6
7'0"	5	8.4
8'0"	4	9.6
9'0"	3	10.8
10'0"	2	12.0

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	180	38.8
0-40	288	61.9
0-60	430	92.4
0-90	466	100.0



**Housing: H750T, Module: ML706830,  
Trim: 493WBS06 White Baffle Glass Lens Lumens: 603**

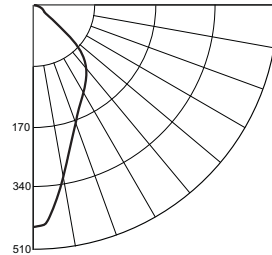
**Test**  
Test No: A10078  
Spacing Criteria: 0.7  
Unit LPW: 43.6  
Watts: 13.8

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Nadir Foot Candles	Beam Diameter
5'5"	18	3.7
7'0"	11	4.7
8'0"	8	5.4
9'0"	7	6.0
10'0"	5	6.7

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	265	44.0
0-40	403	66.8
0-60	562	93.2
0-90	603	100.0



**Housing: H750T, Module: ML706830,  
Trim: 493SCS06 Specular Reflector, Glass Lens Lumens: 596**

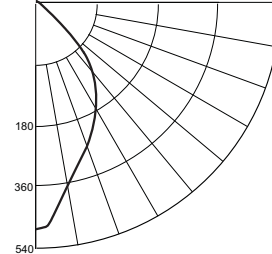
**Test**  
Test No: A10080  
Spacing Criteria: 0.8  
Unit LPW: 43.1  
Watts: 13.8

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Nadir Foot Candles	Beam Diameter
5'5"	18	4.6
7'0"	11	5.8
8'0"	9	6.6
9'0"	7	7.4
10'0"	5	8.3

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	311	52.1
0-40	466	78.1
0-60	585	98.2
0-90	596	100.0



**Housing: H750T, Module: ML706830,  
Trim: 493HS06 Haze Reflector, Glass Lens Lumens: 593**

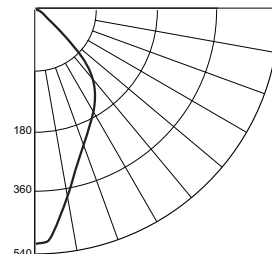
**Test**  
Test No: A10079  
Spacing Criteria: 0.7  
Unit LPW: 42.9  
Watts: 13.8

**CONE OF LIGHT**

Distance to Illuminated Plane	Initial Nadir Foot Candles	Beam Diameter
5'5"	18	4.1
7'0"	11	5.2
8'0"	9	5.9
9'0"	7	6.6
10'0"	6	7.4

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Fixt
0-30	296	49.9
0-40	449	75.7
0-60	579	97.6
0-90	593	100.0



Note: Specifications and Dimensions subject to change without notice.

Visit our web site at [www.cooperlighting.com](http://www.cooperlighting.com)

Customer First Center 1121 Highway 74 South Peachtree City, GA 30269 770.486.4800 FAX 770.486.4801  
Cooper Lighting 5925 McLaughlin Rd. Mississauga, Ontario, Canada L5R 1B8 905.507.4000 FAX 905.568.7049

**Dimmer Matrix Halo LED Module ML706830**

**Incandescent Analog Standard Dimmers with Circuit Load of 3 LED Modules or More, Dimming to 15%**

**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	RA110, RA115, RA120

**Lutron**

Ariadni . . . . .AY/TG Series	Lyneo . . . . .LX Series
Ceana . . . . .CN Series	Nova . . . . .N Series
Centurion . .C Series	Nova T . . . . .NT/NTB/NTA Series
Dalia . . . . .DL Series	Qoto . . . . .Q Series
Diva . . . . .DV Series	Rotary . . . . .D Series
Glyder . . . . .GL Series	Skylark . . . . .S Series
Lumea . . . . .LG Series	

**Leviton**

Illumitech	IPI/RPI.Series	Trimatron	6681/6683/6602
Sureslide	663.Series		

**Electronic Low Voltage Digital and Analog Dimmers, Minimum Circuit Load of One LED Module, Dimming to 15% Requires a neutral in the wall box**

**Lutron**

Dalia	DLELV Series	Lyneo	LXELV Series	Nova T	NTELV Series
Diva	DLELV Series	Maestro	MAELV Series	Skylark	SELV Series
Faedra	FAELV Series	Nova	NELV Series	Spacer	SPSELV Series
				Vierti	VTELV Series

**Leviton**

Acenti	ACE.Series (Electronic low voltage dimmer with low end programmable trim from control panel for dimming to less than 5%)
Illumitech	IPE.Series (Electronic low voltage dimmer with low end manual trim behind face plate for dimming to less than 5%)
Vizia +	VPE.Series (Electronic low voltage dimmer with low end programmable trim from control panel for dimming to less than 5%)

**Incandescent Dimmers with Minimum Brightness Adjustment (Low End Trim), Circuit Load of 3 LED Modules or More, Dimming to 5%**

**Leviton**

Illumitech	IP10/IP40/IPM406/IPM10 Series dimmers
Acenti	ACI/ACE/ACX/ATI Series (Programmable trim)
Vizia +	VPI/VPE/VPX.Series (Programmable trim)

1. Performance results may vary based upon dimmer model and manufacturer. 2. There are no warranties of compatibility implied. 3. Refer to dimmer manufacturer for further details.

**SPECIAL NOTE: Incandescent Digital Dimmers (also called Smart or Multi-Location) require a 15W minimum incandescent load OR for circuit loads with LED modules only - use electronic low voltage dimmers, Dimming to 15%**

**Cooper Wiring Devices**

ASPIRE RF	RF9534-N, RF9534 (no neutral), RF9536-N, RF9536 (no neutral)
ASPIRE	9534, 9536
Smart	SM600, SM1000

**Lutron**

Abella . . . . .AB Series	Maestro . . .MA Series
Faedra . . . . .FA Series	Spacer . . . . .SPS Series
Glyder . . . . .GL Series	Vareo . . . . .V Series
	Vierti . . . . .VT Series

**Leviton**

Acenti	ACI.Series	TrueTouch	6606/TTI.Series
Mural	MDI/MSI.Series	Vizia +	VPI.Series
ToggleTouch	TGI.Series		

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

**Watt Stopper**

Miro Universal	DRD4 Series Dimmers
	DCD267 Series Dimmers
	DCD68 (series multilocation - When used with DRD4 or DCD267 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 are recommended to reliably dim

**Watt Stopper**

Miro Incandescent	DRD2 Series Dimmers
	DCD26 Series Dimmers
	DCD68 (series multilocation - When used with DRD2 or DCD26 series master dimmers)

**3 YEAR LIMITED LED WARRANTY****Energy Star SSL Labeled Recessed Lighting**

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Cooper Lighting (The Company) warrants this product ("the product") 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 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 warranty 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.

Note: Specifications and Dimensions subject to change without notice.

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Cooper Lighting 5921 McLaughlin Rd. Mississauga, Ontario, Canada L5R 1B8 905.507.4000 FAX 905.568.7049