

Project		Catalog #		Type	
Prepared by		Notes		Date	



HALO

HL36SAR

3" Square Shallow Directional Remodeler LED Module and Trims

Typical Applications

Residential, Light Commercial

Interactive Menu

- Order Information page 2
- Product Specifications page 4
- Photometric Data page 5
- Energy & Performance Data page 3
- Dimming Guide
- Product Warranty



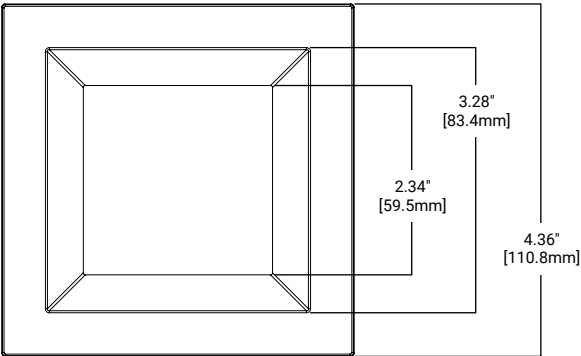
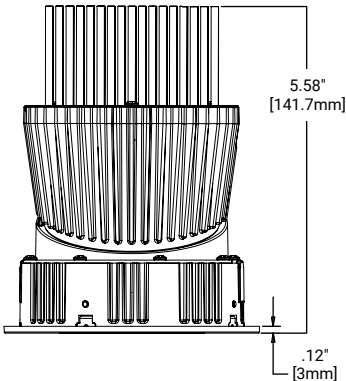
Refer to ENERGY STAR® Certified Products List.  
Can be used to comply with California Title 24 High Efficacy requirements.<sup>1</sup>  
Certified to California Appliance Efficiency Database under JAB.



Top Product Features

- Install from below the ceiling (does not require recessed housing or junction box)
- 2700K, 3000K, 3500K and 4000K fixed CCT; field interchangeable optics
- Delivers up to 1700 lumens; achieves L70 at 50,000 hours in IC and non-IC applications
- Flicker-free dimming down to 1%, available with LE/TE phase cut and 0-10V analog control
- Wet location listed for showers and protected ceilings with select trims

Dimensional and Mounting Details



1. T24 and RoHS are self-tested by Cooper Lighting Solutions. Not a third party certification.

## Order Information




SAMPLE ORDER NUMBER: **HL36SAR20930ED010TAT, TIR45FL40, TLS3RH**

A complete luminaire consists of an LED module, TIR optic, and trim.

Series	Wattage	Distribution	Light Engine	Input / Control	Rating
<b>HL36SAR</b> = 3-Inch square shallow directional remodeler housing	<b>13</b> = 13W <sup>(1)</sup> <b>20</b> = 20W <sup>(2)</sup>	[blank] = Purchase optic separately	<b>927</b> = 90 CRI, 2700K CCT <b>930</b> = 90 CRI, 3000K CCT <b>935</b> = 90 CRI, 3500K CCT <b>940</b> = 90 CRI, 4000K CCT <b>D2W</b> = 90 CRI, 3000K CCT, dim to warm <sup>(4)</sup>	<b>ED010</b> = UNV 120-277V 50/60Hz leading or trailing edge phase cut 1% dimming at 120V only and UNV 120-277V 50/60Hz 0-10V 1% dimming	<b>ICAT</b> = insulation contact and airtight <b>TAT</b> = thermally protected and airtight
<b>Notes</b>	<b>Notes</b> (1) Only available with ICAT rating. (2) Only available with TAT rating.	(3) Add necessary optic as an accessory.	<b>Notes</b> (4) Only available in 13W.	<b>Notes</b>	<b>Notes</b>


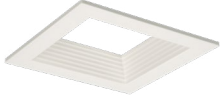

## Accessories (order separately)


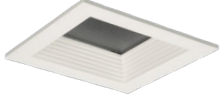


Accessories (order separately)
<b>OTLS3MW</b> = oversized square trim ring for TLS3 trims <b>Optics</b> <b>TIR45SP15</b> = 15° beam <b>TIR45NFL25</b> = 25° beam <b>TIR45FL40</b> = 40° beam <b>TIR45WFL55</b> = 55° beam <b>TIR45MH12PK</b> = replacement media holder, package of 12 <b>L100 Series</b> = 2.0" lens and filters, see spec sheet
<b>Notes</b>

Trim	Shielding	Finishes	Flange
 <b>TLS3R</b> = 3.25" square aperture reflector	<b>[blank]</b> = open <b>2G</b> = micro-prismatic lens	<b>HWF</b> = semi-specular clear reflector and matte white flange <b>Electroplated Finishes</b> <b>BN</b> = brushed nickel reflector and flange <b>ORB</b> = oil rubbed bronze reflector and flange <b>Painted Finishes</b> <b>MW</b> = matte white reflector and flange <b>MB</b> = matte black reflector and flange <b>BBWF</b> = matte black baffle, matte white flange <b>WBWF</b> = matte white baffle, matte white flange	<b>[blank]</b> = full overlap self-flanged
<b>TLS3PR</b> = 3.25" aperture square polymer reflector, lens, self-flanged	<b>2G</b> = micro-prismatic lens	<b>Painted Finishes</b> <b>MW</b> = matte white reflector and flange	<b>[blank]</b> = full overlap self-flanged
 <b>TLS3LWW</b> = 3.25" square aperture lens wall wash	<b>6G</b> = linear spread lens	<b>H</b> = semi-specular clear reflector and flange <b>HWF</b> = semi-specular clear reflector and matte white flange <b>Painted Finishes</b> <b>MW</b> = matte white reflector and flange	<b>[blank]</b> = full overlap self-flanged
 <b>TLS3PIN</b> = 2.00" square aperture pinhole	<b>[blank]</b> = open <b>2G</b> = micro-prismatic lens	<b>BNBB</b> = brushed nickel flange, black oculus <b>ORBBB</b> = oil rubbed bronze flange, black oculus <b>Painted Finishes</b> <b>MWWB</b> = matte white flange, white oculus <b>MWBB</b> = matte white flange, black oculus <b>MBBB</b> = matte black flange, black oculus	<b>[blank]</b> = full overlap self-flanged
<b>Notes</b>	<b>Notes</b>	<b>Notes</b>	<b>Notes</b>

Lens trims are wet location listed, covered ceilings only and IP44 rated.

## TLS3 Square Trims

Open		
<b>TLS3R*</b> = Square Reflector, Open	<b>TLS3R*B*</b> = Square Baffle, Open	<b>TLS3PIN*</b> = Square Pinhole w/Oculus, Open
		
<b>Finish</b> = HWF, BN, ORB, MW, MB	<b>Finish</b> = WBWF, BBWF	<b>Finish</b> = MWWB, MWBB, MBBB, BNBB, ORBBB

Lens			
<b>TLS3R2G*</b> = Square Reflector, Diffuse Lens	<b>TLS3R2G*B*</b> = Square Baffle, Diffuse Lens	<b>TLS3PR2G*</b> = Square Polymer Reflector, Diffuse Lens	<b>TLS3PIN2G*</b> = Square Pinhole w/Oculus, Lens
			
<b>Finish</b> = H, HWF, BN, ORB, MW, MB	<b>Finish</b> = WBWF, BBWF	<b>Finish</b> = MW	<b>Finish</b> = MWWB, MWBB, MBBB, BNBB, ORBBB

Lens Wall Wash
<b>TLS3LWW6G*</b> = Square Linear Spread Lens Wall Wash

<b>Finish</b> = H, HWF, MW

## Energy and Performance Data

	HL36SAR13FL930ED010ICAT	HL36SAR20FL930ED010TAT
Max. Lumens	1097 @ 3000K	1631 @ 3000K
Input Voltage	120V	120V
Input Frequency	60 Hz	60 Hz
Input Power	12.8W	19.7W
Input Current	0.108A	0.168A
Power Factor	>0.90	>0.90
THD	<20%	<20%
EMI/RFI	FCCTitle 47 CFR, Part 15, Class B (Consumer)	FCCTitle 47 CFR, Part 15, Class B (Consumer)
Sound Rating	Class A	Class A
Minimum Starting Temp	-30°C (-22°F)	-30°C (-22°F)

## Product Specifications

### Module

- Module installs from below with the adjustment mechanism aimed at nadir and allows housing to be articulated
- Module can be removed for service or splice inspection

### Mounting Clamps

- Integral mounting clamps tighten from below using a #2 Philips screwdriver and accommodate 1/2" to 1-1/4" thick ceilings

### Adjustment Mechanism

- Rotates 360°, tilts 35° and locks in position maintaining any aiming angle
- Angle markings assist in repeatable settings
- Translating center beam optics aligns axis of primary reflector with aperture from nadir to 35°

### LED

- Proximity phosphors over chip on board LEDs provide a uniform source with high efficiency and no pixilation
- Fixed 2700K, 3000K, 3500K and 4000K CCT color temperatures, Color accuracy within 3 SDCM and 90 CRI minimum
- Passive cooling achieves L70 at 50,000 hours

### Primary Optic

- Precision molded optics deliver highly efficient and uniform patterns
- Various patterns are available and can be interchanged without tools

### Media

- Integral media holder accepts up to (2) 2" diameter 3.0mm thick color filters or lens

### Trims

- Die cast aluminum trims are available in open, lens and lens wall wash styles
- Polymer non-conductive trim meets many local code requirements for 'dead front'
- Physical and optical cutoff provides visual comfort
- Light trap eliminates spill light with flange
- Multiple finishes to match many décors

### Shielding

- Micro-prismatic lens standard with lens trims

### Trim Retention

- Attached by (8) rare earth Neodymium magnets, holds trim securely to the ceiling

### Driver

- Constant current driver provides noise free operation
- UNV 120-277VAC 50/60Hz input
- Continuous, flicker-free 1% dimming, available with LE/TE phase cut (at 120V only) and 0-10V analog control

### Remote Junction Box / Driver Housing

- Galvanized steel junction box / driver housing with 18 in3 internal volume
- Listed for (12) #12 AWG 90° C splice conductors
- (2) ½" conduit pry-outs positioned to allow straight conduit runs
- (2) Slide-N-Side™ non-metallic (NM) wire traps
- Accepts 14-2, 14-3, 12-2, 12-3 U.S. and 14-2, 14-3, 12-2 Canadian NM cable
- (3) 4-port push wire nuts mains voltage connections

### Compliance

- Type IC inherently protected (13W only), suitable for direct contact to air permeable insulation and cULus listed for damp locations
- Not for use in direct contact with spray foam insulation, consult NEMA LSD57-2013
- Wet location listed in covered ceilings and IP65 certified with select trims
- Airtight per ASTM-E283-04
- Suitable for use in clothes closets when installed in accordance with the NEC 410.16 spacing requirements
- Suitable for use in plenum spaces per NEC 300.22(C)(2) requirements
- EMI/RFI emissions per FCC 47CFR Part 15 consumer limits
- Contains no mercury or lead and RoHS compliant<sup>1</sup>
- Photometric testing in accordance with IES LM-79-08
- Lumen maintenance projections in accordance with IES LM-80-08 and TM-21-11
- Can be used for State of California Title 24 high efficacy LED compliance under JA8, reference Modernized Appliance Efficiency Database System (MAEDBS) for 2019 JA8 High Efficacy Lighting<sup>1</sup>
- ENERGY STAR® certified, reference certified light fixtures database

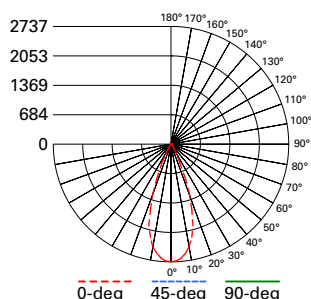
### Warranty

- Five year limited warranty, consult website for details. [www.cooperlighting.com/warranty](http://www.cooperlighting.com/warranty)

## Photometric Data



## HL36SAR13930ED010ICAT with 0° Tilt

**HL36SAR13930ED010ICAT**

Optic: TIR45FL40, 40°

Trim: TLS3RMW

Spacing criterion: (0-180) 0.64  
(90-270) 0.66  
(Diagonal) 0.60

CCT: 3000K

Lumens: 1097

Input Watts: 12.8 W

Efficacy: 86 LPW

Test Report:

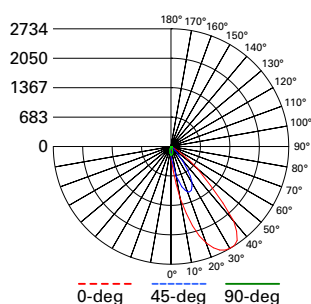
HL36AR13FL930ED010TL3RMW.ies

Zonal Lumen	Lumens	% Lumens
0-30	1045.72	95.30
0-40	1090.36	99.40
0-60	1096.69	100.00
0-90	1096.96	100.00

TM-30-15	Rf = 92.5
	Rg = 98.7
CRI/CIE	Ra = 93.6
	R9 = 56.2

Candela Table			
Angle	0°	45°	90°
0	2737.20	2737.20	2737.20
5	2666.80	2664.90	2664.00
15	1973.90	1975.80	1973.00
25	494.60	574.30	505.80
35	53.70	71.30	54.70
45	0.90	9.30	1.90
55	0.90	0.90	0.90
65	0.00	0.00	0.00
75	0.00	0.00	0.00
80	0.00	0.00	0.00

## HL36SAR13930ED010ICAT with 30° Tilt

**HL36SAR13930ED010ICAT**

Optic: TIR45FL40, 40°

Trim: TL3RMW

Spacing criterion: (0-180) 2.66  
(90-270) 0.58  
(Diagonal) 1.26

CCT: 3000K

Lumens: 1040

Input Watts: 12.8 W

Efficacy: 81.0 LPW

Test Report:

HL36SAR13FL930ED010TLS3RMW-TILTED 30D.IES

Zonal Lumen	Lumens	% Lumens
0-30	469.18	45.10
0-40	803.25	77.20
0-60	1030.41	99.10
0-90	1040.02	100.00

TM-30-15	Rf = 92.5
	Rg = 98.7
CRI/CIE	Ra = 93.6
	R9 = 56.2

Candela Table			
Angle	0°	45°	90°
0	210.20	210.20	210.20
5	568.60	392.70	194.50
15	1905.90	964.00	124.10
25	2647.70	1115.90	58.30
35	2664.30	633.40	17.60
45	1287.30	126.90	2.80
55	197.30	13.00	1.90
65	0.90	0.90	2.80
75	0.90	0.90	2.80
80	0.00	0.90	1.90

## Maximum Delivered Lumens

Wattage	D2W	2700K	3000K	3500K	4000K
13W	515	1031	1099	1159	1176
20W	N/A	1533	1634	1724	1749

## Wattage Multiplier

Wattage Multiplier	13W	20W
Multiplier	0.6724	1.0000

## CCT Multipliers

CCT	D2W	2700K	3000K	3500K	4000K
Multiplier	0.4973	0.9384	1.0000	1.0554	1.0704

Multipliers for relative lumen values with other series color temperatures.

## Color Finish Multipliers when tilted at 30°

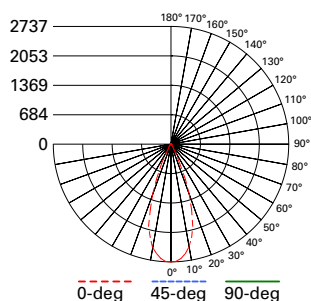
Trim	TL3R			TL3LWW & TLS3PIN
Finish	BN	ORB, MB, BBWF	H, HWF, MW, WBWF	N/A
Multiplier	0.958	0.970	1.000	Trim is not exposed to direct light

Multipliers for relative lumen values with other color finishes.

## Photometric Data



## HL36SAR20930ED010TAT with 0° Tilt



## HL36SAR20930ED010TAT

Optic: TIR45FL40, 40°

Trim: TLS3RMW

Spacing criterion: (0-180) 0.64  
(90-270) 0.66  
(Diagonal) 0.60

CCT: 3000K

Lumens: 1631

Input Watts: 19.7 W

Efficacy: 83 LPW

Test Report:

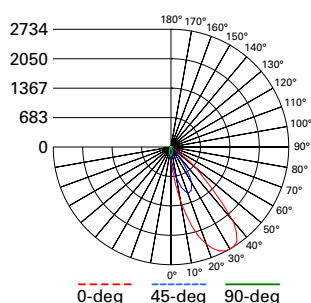
HL36SAR20FL930ED010TLS3RMW.ies

Zonal Lumen	Lumens	% Lumens
0-30	1554.77	95.30
0-40	1621.14	99.40
0-60	1630.62	100.00
0-90	1631.04	100.00

TM-30-15	Rf = 92.5
	Rg = 98.7
CRI/CIE	Ra = 93.6
	R9 = 56.2

Candela Table			
Angle	0°	45°	90°
0	4069.60	4069.60	4069.60
5	3964.90	3962.20	3960.80
15	2934.80	2937.50	2933.40
25	735.40	853.90	751.90
35	79.90	106.00	81.30
45	1.40	13.80	2.80
55	1.40	1.40	1.40
65	0.00	0.00	0.00
75	0.00	0.00	0.00
80	0.00	0.00	0.00

## HL36SAR20930ED010TAT with 30° Tilt



## HL36SAR20930ED010TAT

Optic: TIR45FL40, 40°

Trim: TLS3RMW

Spacing criterion: (0-180) 2.66  
(90-270) 0.58  
(Diagonal) 1.26

CCT: 3000K

Lumens: 1547

Input Watts: 19.7 W

Efficacy: 79.0 LPW

Test Report:

HL36SAR20FL930ED010TLS3RMW-TILTED 30D.IES

Zonal Lumen	Lumens	% Lumens
0-30	697.9	45.10
0-40	1194.83	77.20
0-60	1532.73	99.10
0-90	1547.05	100.00

TM-30-15	Rf = 92.5
	Rg = 98.7
CRI/CIE	Ra = 93.6
	R9 = 56.2

Candela Table			
Angle	0°	45°	90°
0	312.70	312.70	312.70
5	845.80	584.10	289.30
15	2835.00	1434.00	184.60
25	3938.40	1659.90	86.80
35	3963.20	942.20	26.20
45	1914.80	188.70	4.10
55	293.40	19.30	2.80
65	1.40	1.40	4.10
75	1.40	1.40	4.10
80	0.00	1.40	2.80

## Maximum Delivered Lumens

Wattage	D2W	2700K	3000K	3500K	4000K
13W	515	1031	1099	1159	1176
20W	N/A	1533	1634	1724	1749

## Wattage Multiplier

Wattage Multiplier	13W	20W
Multiplier	0.6724	1.0000

## CCT Multipliers

CCT	D2W	2700K	3000K	3500K	4000K
Multiplier	0.4973	0.9384	1.0000	1.0554	1.0704

Multipliers for relative lumen values with other series color temperatures.

## Color Finish Multipliers when tilted at 30°

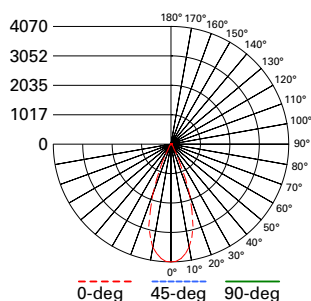
Trim	TL3R			TL3LWW & TLS3PIN
Finish	BN	ORB, MB, BBWF	H, HWF, MW, WBWF	N/A
Multiplier	0.958	0.970	1.000	Trim is not exposed to direct light

Multipliers for relative lumen values with other color finishes.

## Photometric Data



## HL36SAR13D2WED010ICAT with 0° Tilt



## HL36SAR13D2WED010ICAT

Optic: TIR45FL40, 40°

Trim: TLS3RMW

Spacing criterion: (0-180) 0.64  
(90-270) 0.66  
(Diagonal) 0.60

CCT: 3000K, D2W

Lumens: 1097

Input Watts: 14.4 W

Efficacy: 76.0 LPW

Test Report:

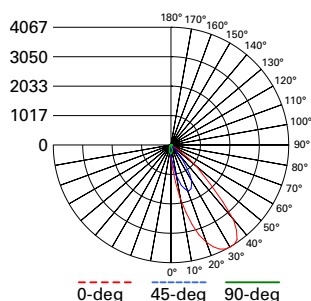
HL36SAR13FLD2WED010TLS3RMW.IES

Zonal Lumen	Lumens	% Lumens
0-30	1045.72	95.30
0-40	1090.36	99.40
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45	0.90	9.30	1.90
55	0.90	0.90	0.90
65	0.00	0.00	0.00
75	0.00	0.00	0.00
80	0.00	0.00	0.00

## HL36SAR13D2WED010ICAT with 30° Tilt



## HL36SAR13D2WED010ICAT

Optic: TIR45FL40, 40°

Trim: TLS3RMW

Spacing criterion: (0-180) 2.66  
(90-270) 0.58  
(Diagonal) 1.26

CCT: 3000K, D2W

Lumens: 1040

Input Watts: 14.4 W

Efficacy: 72.0 LPW

Test Report:

HL36SAR13FLD2WED010TLS3RMW-TILTED 30D.IES

Zonal Lumen	Lumens	% Lumens
0-30	469.18	45.10
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65	0.90	0.90	2.80
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Multipliers for relative lumen values with other series color temperatures.

## Color Finish Multipliers when tilted at 30°

Trim	TL3R			TL3LWW & TLS3PIN
Finish	BN	ORB, MB, BBWF	H, HWF, MW, WBWF	N/A
Multiplier	0.958	0.970	1.000	Trim is not exposed to direct light

Multipliers for relative lumen values with other color finishes.