

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

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- Dimming Guide
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Product Certification



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

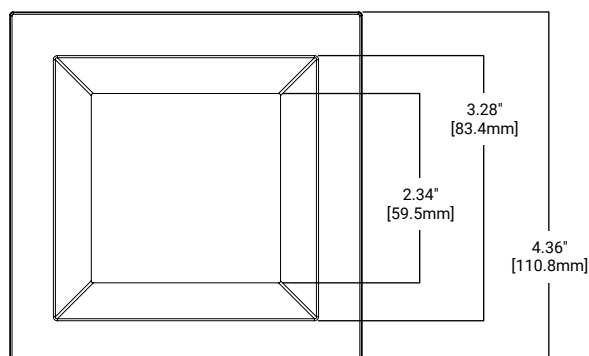
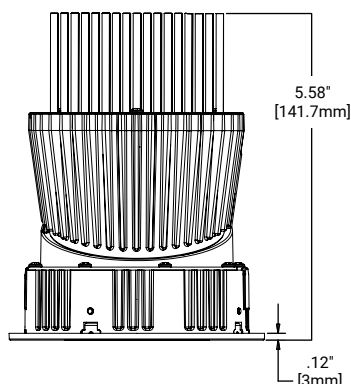
Product Features



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



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
HL36SAR = 3-Inch square shallow directional remodeler housing	13 = 13W ⁽¹⁾ 20 = 20W ⁽²⁾	[blank] = Purchase optic separately	927 = 90 CRI, 2700K CCT 930 = 90 CRI, 3000K CCT 935 = 90 CRI, 3500K CCT 940 = 90 CRI, 4000K CCT D2W = 90 CRI, 3000K CCT, dim to warm ⁽⁴⁾	ED010 = 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	ICAT = insulation contact and airtight TAT = thermally protected and airtight
Notes	Notes (1) Only available with ICAT rating. (2) Only available with TAT rating.	(3) Add necessary optic as an accessory.	Notes (4) Only available in 13W.	Notes	Notes

Accessories (order separately)

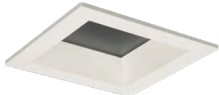
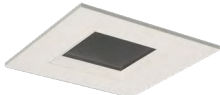
Accessories (order separately)
OTLS3MW = oversized square trim ring for TLS3 trims Optics TIR45SP15 = 15° beam TIR45NFL25 = 25° beam TIR45FL40 = 40° beam TIR45WFL55 = 55° beam TIR45MH12PK = replacement media holder, package of 12 L100 Series = 2.0" lens and filters, see spec sheet
Notes

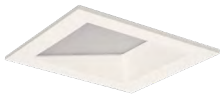
Trim	Shielding	Finishes	Flange
 TLS3R = 3.25" square aperture reflector	[blank] = open 2G = micro-prismatic lens	H = semi-specular clear reflector and flange HWF = semi-specular clear reflector and matte white flange Electroplated Finishes BN = brushed nickel reflector and flange ORB = oil rubbed bronze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

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

TLS3 Square Trims

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

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

Lens Wall Wash
TLS3LWW6G* = Square Linear Spread Lens Wall Wash

Finish = 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	FCC Title 47 CFR, Part 15, Class B (Consumer)	FCC Title 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
- EMI/RFI emissions per FCC 47CFR Part 15 consumer limits
- Contains no mercury or lead and RoHS compliant
- 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 2016 JA8 High Efficacy Lighting
- ENERGY STAR® certified, reference certified light fixtures database

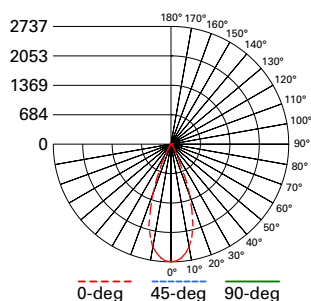
Warranty

- Five year limited warranty, consult website for details. www.halolighting.com

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:

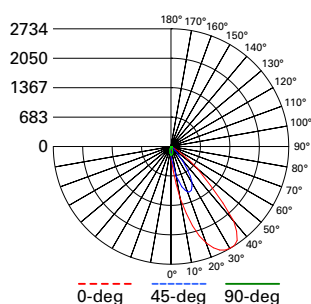
HL36AR13FL930ED010TL3RMW.ies

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°

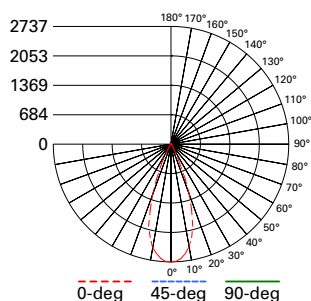
Trim	TL3R			TL3LWW & TLS3PIN
Finish	BN	ORB, MB, BBWF	H, HWF, MW, WBWF	N/A
Multiplier	0.958	0.970	1.000	Trim is not exposed to direct light

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:

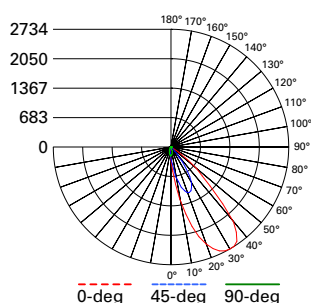
HL36SAR20FL930ED010TLS3RMW.ies

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°

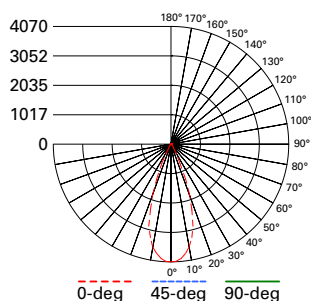
Trim	TL3R			TL3LWW & TLS3PIN
Finish	BN	ORB, MB, BBWF	H, HWF, MW, WBWF	N/A
Multiplier	0.958	0.970	1.000	Trim is not exposed to direct light

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:

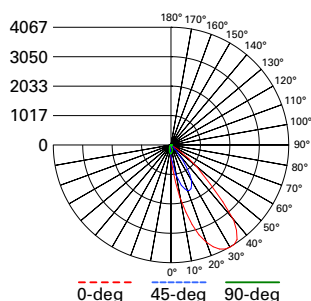
HL36SAR13FLD2WED010TLS3RMW.IES

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

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Angle	0°	45°	90°
0	2737.20	2737.20	2737.20
5	2666.80	2664.90	2664.00
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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

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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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
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Wattage Multiplier

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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.