

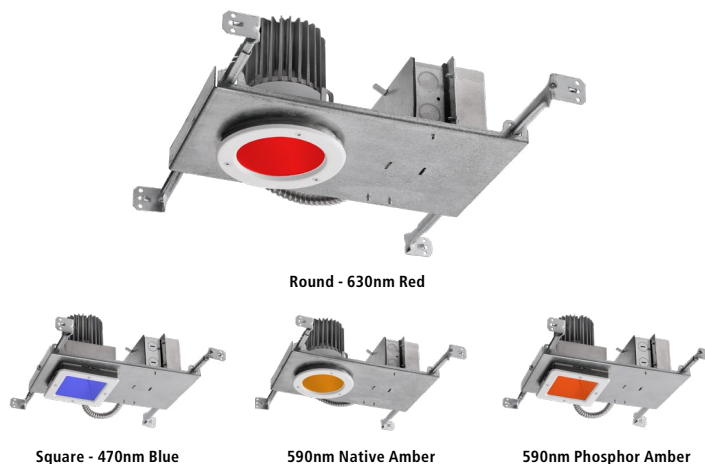
MILLENIUM NARROW SPECTRUM

Luminaires for High Abuse Applications

HADL4 SERIES

PRODUCT FEATURES:

- » 4" sealed, recessed downlight with a flush trim; round or square aperture
- » Native 630nm Red and 590nm Amber options for narrow bandwidth, spectrally sensitive applications requiring robust luminaire construction such as coastal regions, skyglow restricted areas and vivariums
- » Phosphor-converted (PC) Amber lamping option for spectrally sensitive applications where wider bandwidth is allowable and higher lumen output and lifetime are valued
- » Blue light option for public safety applications
- » 1% Dimming via 0-10V or DALI-2 control
- » Peace of Mind Guarantee® against breakage



Round - 630nm Red

Square - 470nm Blue

590nm Native Amber

590nm Phosphor Amber

SPECIFICATIONS

HEAT SINK: Die-cast aluminum with external radial fins for natural convection.

ROUGH-IN FRAME: 18-gauge die-formed, corrosion-resistant steel. Vertically adjustable collar accommodates ceiling thicknesses up to 1.5", adjustable post-installation. Adjustable mounting bars for installation with wood and steel frame joists and T-grid ceiling systems spaced up to 24" on center. Quick-access junction box accessible post-installation from above and below ceiling. Includes (5) 1/2" knock-outs to allow straight conduit runs.

TRIM/HOUSING SECTION: IP-rated housing section incorporates the heat sink, LED module, optics and lower trim. Flush lens trim secured with three (Round) or four (Square) Torx® tamper-resistant, captive fasteners. Closed-cell gasketing at ceiling flange. See Trim Ordering Information for available options.

OPTICAL: Diffused tempered-glass upper lens. 1/8" clear polycarbonate flush lens at ceiling trim with continuous seal to trim ring. Available with various reflector finishes. See Ordering Information for available options.

ELECTRICAL: Native 630nm Red, 590nm Amber, and 470nm Blue LED options (non phosphor-converted). Narrow bandwidth native sources provide optimal control over spectral emissions. Phosphor-converted (PC) Amber option at 590nm nominal peak wavelength. Phosphor-converted InGaN-based Amber source provides a higher output and efficacy as well as longer lifetime compared to the native AlInGaP-based Amber source for applications where a broader spectrum is acceptable. 120-277VAC or 347VAC, 50/60Hz electrical input with serviceable constant current driver (<20% THD, >0.90 PF). Minimum 85% driver efficiency. Standard 0-10V dimming with 1-100% range and dim-to-dark capabilities; 0.2mA maximum source current. Optional eldoLED ECOdrive DALI-2/LEDcode2 driver with 1-100%.

PHOTOMETRICS: Photometry tested to the IESNA LM-79-08 standard by an ILAC/ISO17025 accredited laboratory. For photometric information, go to www.kenall.com.

WARRANTY: Limited five (5) year LED warranty on PC Amber and Blue lamping. Three (3) year LED warranty on Red and Native Amber lamping. Peace of Mind Guarantee against breakage.

LISTINGS: Luminaire is certified to UL standards by Intertek Testing Laboratory for non-IC and Wet Location installations. IP65 rating per IEC60598. Optional CCEA compliance.



ORDERING INFORMATION (EX: HADL4S-FF-5FW-12NA-CS-G-RIG4S-277-DIM1-LEL)

TRIM

Model	Trim Style	Trim Finish	Lamp Power/Color	Reflector Finish	Flush Lens Type
	FF				G

Model

HADL4 4" High Abuse - Round
HADL4S 4" High Abuse - Square

Trim Style

FF Flush Lens (With Fasteners)

Trim Finish

2FW Cold-Rolled Steel in Flat White
5BR Type 304 Stainless Steel with 4B Brushed Finish
5FW Type 304 Stainless Steel in Flat White
XBR Type 316 Stainless Steel with 4B Brushed Finish
XFW Type 316 Stainless Steel in Flat White

Lamp Power / Color

10R 10 Watt 630nm Native Red LED
12NA 12 Watt 590nm Native Amber LED
12PA 12 Watt 590nm PC Amber LED
18BL 18 Watt 470nm Native Blue LED

Reflector Finish

FW Flat White
CD Clear Diffuse
CS Clear Specular (square only)
CSS Clear Semi-Specular (round only)

Flush Lens Type

G 1/8" Clear Polycarbonate

ROUGH-IN

Rough-In	Input Voltage	Driver Type	Options
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Rough-In

RIG4 4" High Abuse Rough-In - Round
RIG4S 4" High Abuse Rough-In - Square

Input Voltage

120 120VAC, 50/60Hz
277 277VAC, 50/60Hz
347† 347VAC, 60Hz

Driver Type

DIM1 0-10V Dimming to 1% with Dim-to-Dark
DALI DALI-2/LEDcode2 Dimming to 1% without Dim-to-Dark

Options

LEL Emergency Battery Backup with Remote Test Switch (0°C min. ambient)
FS Fuse & Holder
CCEA CCEA Approved

† N/A with DALI Driver Type. N/A with LEL and CCEA option



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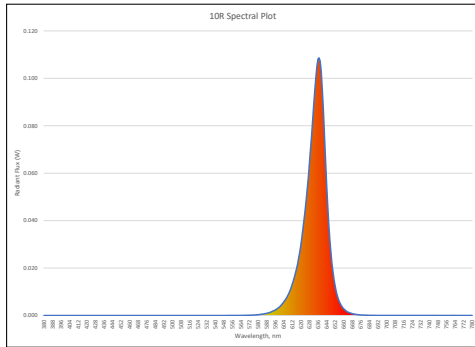
HADL4 SERIES

PERFORMANCE

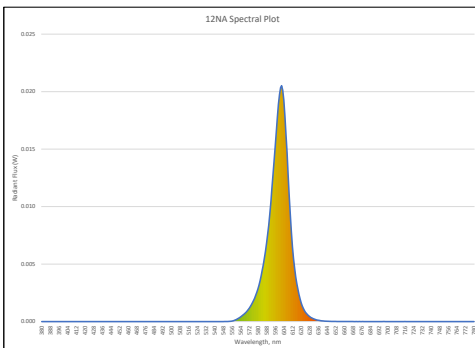
Optic				Lamp Code	Lamp Color	Initial Delivered Lumens	Input Power (W)	Estd. L70 LED Life (hrs)
Aperture	Trim Style	Reflector Finish	Lens Type					
Round	FF	CD	G	8R	630nm Red	339	10	36,000
				12NA	590nm Native Amber	351	14	36,000
				12PA	590nm PC Amber	794	14	72,000
				18BL	470nm Blue	210	21	60,000
		CSS		8R	630nm Red	344	10	36,000
				12NA	590nm Native Amber	356	14	36,000
				12PA	590nm PC Amber	805	14	72,000
				18BL	470nm Blue	213	21	60,000
		FW		8R	630nm Red	322	10	36,000
				12NA	590nm Native Amber	333	14	36,000
				12PA	590nm PC Amber	754	14	72,000
				18BL	470nm Blue	199	21	60,000
Square	FF	CD	G	8R	630nm Red	290	10	36,000
				12NA	590nm Native Amber	300	14	36,000
				12PA	590nm PC Amber	678	14	72,000
				18BL	470nm Blue	179	21	60,000
		CSS		8R	630nm Red	339	10	36,000
				12NA	590nm Native Amber	351	14	36,000
				12PA	590nm PC Amber	794	14	72,000
				18BL	470nm Blue	210	21	60,000
		FW		8R	630nm Red	298	10	36,000
				12NA	590nm Native Amber	308	14	36,000
				12PA	590nm PC Amber	697	14	72,000
				18BL	470nm Blue	184	21	60,000

Subject to change without notice. Visit www.kenall.com for ies files and additional information.

SPECTROPHOTOMETRIC PERFORMANCE



10R	
Purity	1.0003
UV (<400nm)	0.000%
Radiant Flux (≤560nm)	0.000%
Bandwidth	18.7 nm
Peak Wavelength	630 nm



12NA	
Purity	1.0006
UV (<400nm)	0.000%
Radiant Flux (≤560nm)	0.000%
Bandwidth	17.8 nm
Peak Wavelength	590 nm



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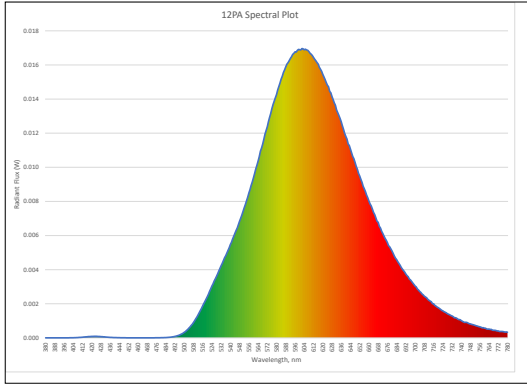
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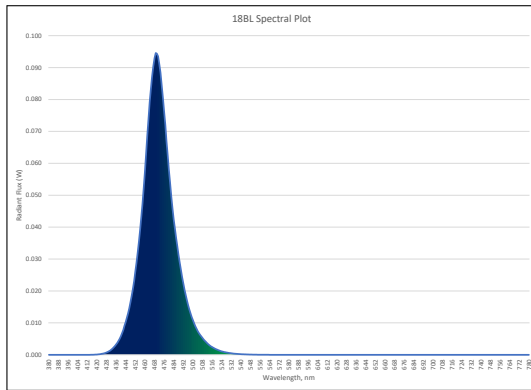
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PERFORMANCE



12PA	
Purity	0.993
UV (<400nm)	0.003%
Radiant Flux (≤560nm)	13.400%
Bandwidth	101.6 nm
Peak Wavelength	590 nm



18BL	
Purity	0.9583
Bandwidth	24.4 nm
Peak Wavelength	470 nm

Round Aperture Candela Curve	HADL4-FF-ssss-12NA-CSS-G		Distance to illuminated plane (ft)	HADL4S-FF-ssss-12NA-CS-G		Square Aperture Candela Curve
	Initial center beam foot-candles	Beam diameter (ft)		Initial center beam foot-candles	Beam diameter (ft)	
	14.3	4.6	5'	25.9	4.0	
	9.9	5.5	6'	18.0	4.8	
	7.3	6.4	7'	13.2	5.6	
	5.6	7.3	8'	10.1	6.4	
	4.4	8.2	9'	8.0	7.2	
	3.6	9.1	10'	6.5	8.0	
Spacing Criteria: 0.93	Beam diameter is where foot-candles drop to 50% of maximum					Spacing Criteria: 0.68
Beam Angle: 49						Beam Angle: 44

Round Aperture Candela Curve	HADL4-FF-ssss-12NA-CD-G		Distance to illuminated plane (ft)	HADL4S-FF-ssss-12NA-CD-G		Square Aperture Candela Curve
	Initial center beam foot-candles	Beam diameter (ft)		Initial center beam foot-candles	Beam diameter (ft)	
	14.5	4.6	5'	14.9	5.2	
	10.1	5.5	6'	10.4	6.3	
	7.4	6.4	7'	7.6	7.3	
	5.7	7.3	8'	5.8	8.4	
	4.5	8.2	9'	4.6	9.4	
	3.6	9.1	10'	3.7	10.4	
Spacing Criteria: 0.92	Beam diameter is where foot-candles drop to 50% of maximum					Spacing Criteria: 0.84
Beam Angle: 49						Beam Angle: 55



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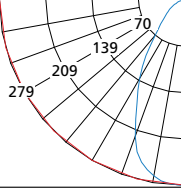
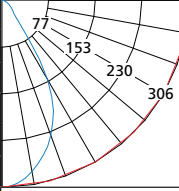
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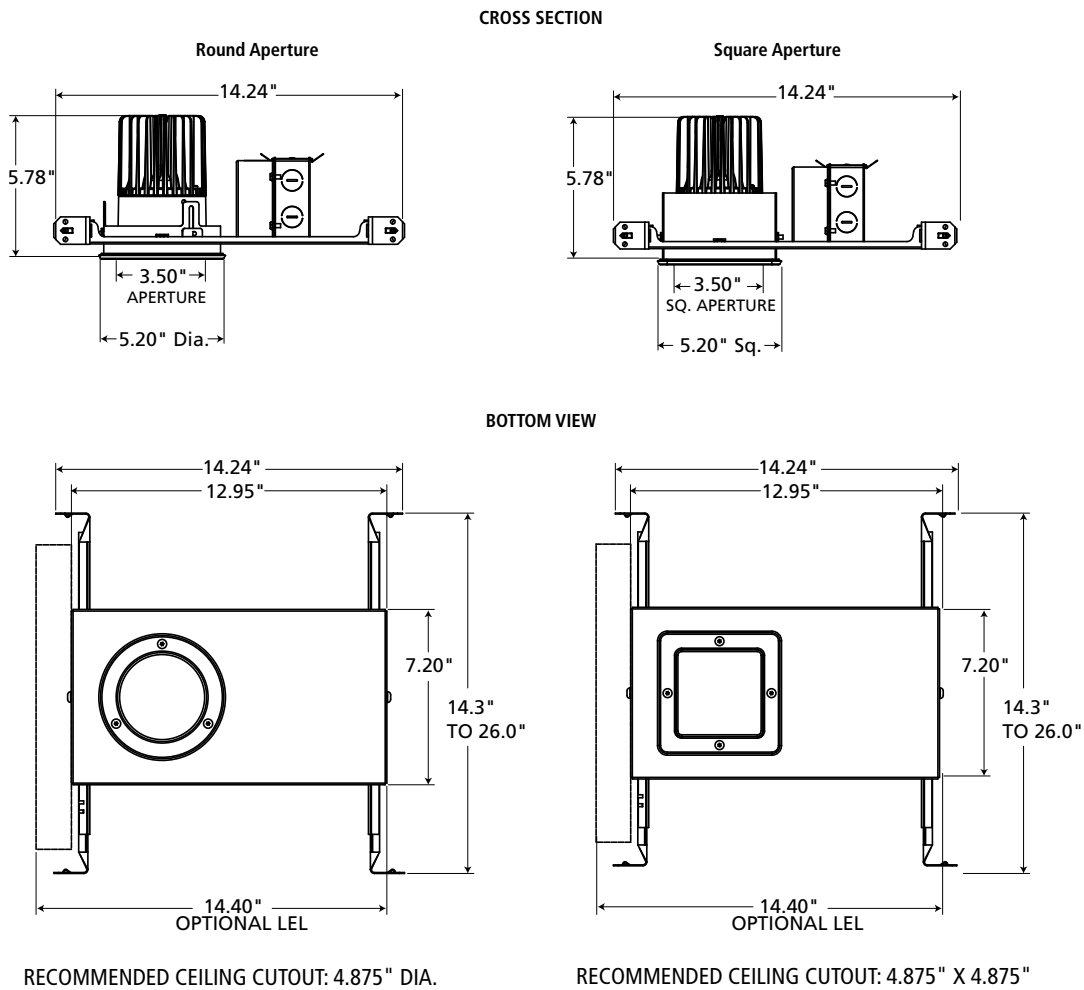
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HADL4 SERIES

PERFORMANCE

Round Aperture Candela Curve	HADL4-FF-ssss-12NA-FW-G		Distance to illuminated plane (ft)	HADL4S-FF-ssss-12NA-FW-G		Square Aperture Candela Curve
	Initial center beam foot-candles	Beam diameter (ft)		Initial center beam foot-candles	Beam diameter (ft)	
	11.2	5.7	5'	12.3	5.7	
	7.8	6.8	6'	8.5	6.9	
	5.7	7.9	7'	6.3	8.0	
	4.4	9.1	8'	4.8	9.2	
	3.4	10.2	9'	3.8	10.3	
	2.8	11.3	10'	3.1	11.5	
Spacing Criteria: 0.88 Beam Angle: 59	Beam diameter is where foot-candles drop to 50% of maximum					Spacing Criteria: 0.92 Beam Angle: 60

DIMENSIONAL DATA



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