



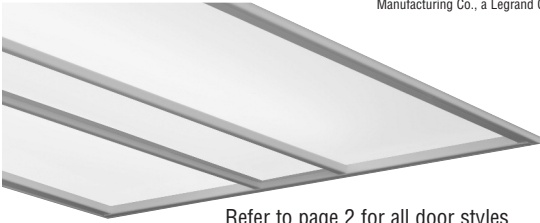
Indigo-Clean is a registered trademark of Kenall Manufacturing Co., a Legrand Company

**Date**

## Project

Type

### Comments



Refer to page 2 for all door styles

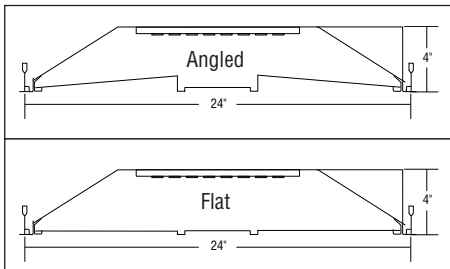
### DESCRIPTION

Indigo-Clean Technology is a Continuous Environmental Disinfection System that emits a narrow spectrum light that kills bacteria, Influenza-A, and SARS-CoV-2 – the virus that causes COVID-19 – and is proven effective by recently conducted independent lab testing. Unlike UV disinfection, Indigo-Clean Technology is designed to safely and continuously disinfect a space while it is fully occupied.

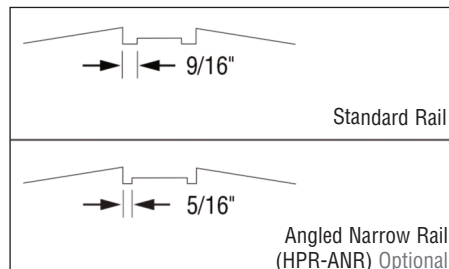
**Single-Mode Indigo-Clean Technology** utilizes a combination of blended white LEDs and 405nm LEDs on a single circuit board design. When the luminaires are on, the disinfection is active.

**Dual-Mode Indigo-Clean Technology** utilizes a mid-power of blended white LEDs and 405nm LEDs on a two circuit board design and full 405nm indigo light using automated controls to disinfect the space. When the space is unoccupied, it utilizes just the 405nm LEDs with increased output to increase disinfection efficacy.

This product is enrolled in the International Living Future Institute (ILFI) Declare 2.0 Program and is third-party verified with options achieving **Red List Approved** and **Declared** status.



## DIMENSIONS



### NARROW RAIL OPTION

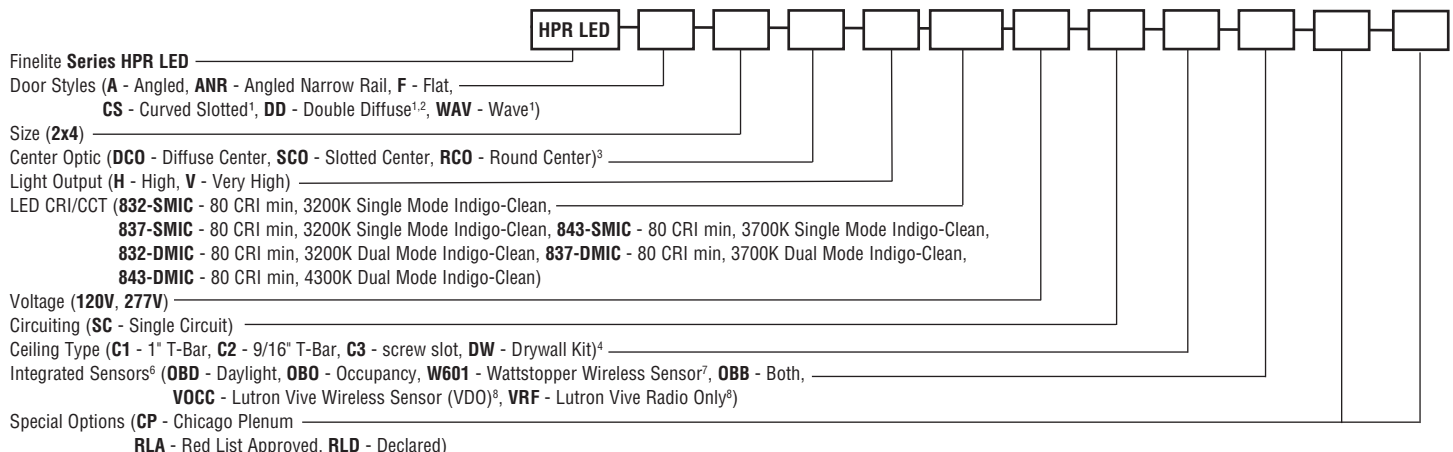
Available in angled door style with the same center optic choices. The optional narrow rails are approximately 5/16" wide. The standard rails are approximately 9/16" wide.



## 100% SERVICEABLE FROM BELOW

The replaceable light engine and driver are easy to access from below the ceiling.

**ORDERING GUIDE:** Sample Number: HPR LED - A - 2x4 - DCO - H - 832-SMIC - 277V - SC - C1 - OBO - CP - RLA



<sup>1</sup> Curved Slotted, Double Diffuse and Wave door not available with Center Optic options

<sup>2</sup> Not available with sensors.

<sup>3</sup> Only available with Angled (A), Angled Narrow Rail (ANR) and Flat (F) door options

<sup>4</sup> Surface Mount available

<sup>5</sup> Indigo-Clean Research Reports

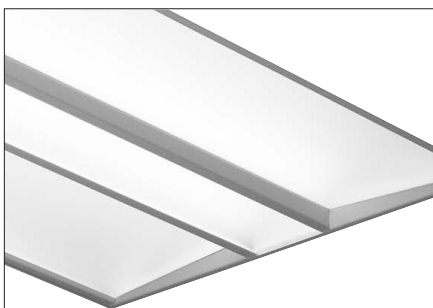
<sup>6</sup> Not available with Dual-Mode

<sup>7</sup> LMFS-601 w/ 0-10V driver(s) and LMFI-111, up to 8 drivers may be connected.

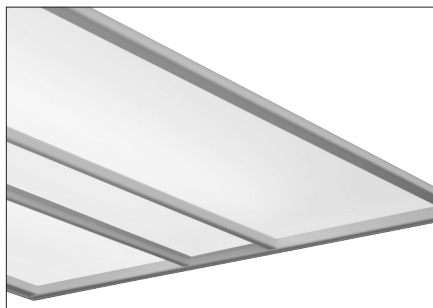
LMFS-601 w/ Dali driver, only 1 driver can be connected

<sup>8</sup> Lutron Vive Integrated Sensors require a DALI driver

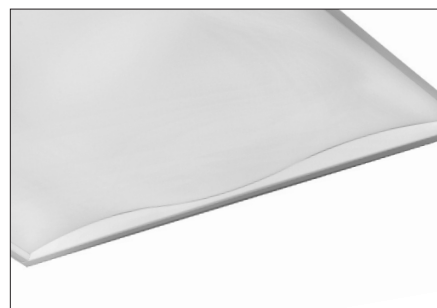
## DOOR STYLES



**A - Angled**  
**ANR - Angled Narrow Rail**

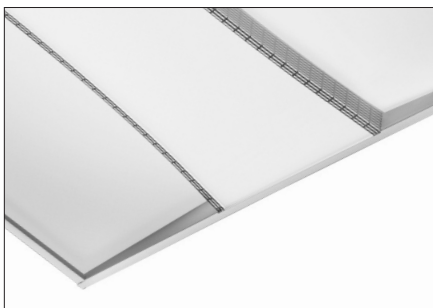


**F - Flat**



**WAV - Wave**

## DOOR STYLES



**CS - Curved Slotted**



**DD - Double Diffuse**

## CENTER OPTICS



**DCO - Diffuse Center**



**SCO - Slotted Center**



**RCO - Round Center**

DCO, SCO, and RCO are only available on Angled (A), Angled Narrow Rail (ANR), and Flat (F) doors.

## PHOTOMETRY

HPR LED-A-2x4-DC0-V

Very High Output - A/F

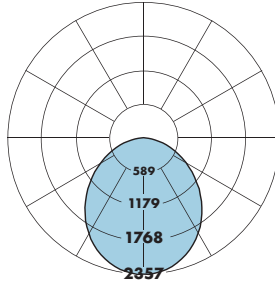
Efficacy: 116 lumens per watt

Total luminaire output: 6002 Lumens  
51.7 Watts

Peak Candela Value: 2357 @ 0°

CCT: 3700K

ITL LM79 Report 85145 (Family Correlated)



CANDLEPOWER SUMMARY						
	0.0	22.5	45	67.5	ACROSS	Flux
0	2357	2357	2357	2357	2357	
5	2348	2346	2346	2345	2345	223
10	2309	2308	2307	2307	2303	
15	2247	2242	2244	2240	2238	632
20	2159	2155	2152	2148	2148	
25	2047	2042	2039	2035	2036	939
30	1912	1906	1903	1900	1901	
35	1757	1751	1748	1746	1748	1093
40	1587	1581	1579	1577	1580	
45	1406	1400	1399	1398	1402	1080
50	1219	1214	1214	1213	1215	
55	1032	1028	1029	1028	1021	920
60	848	846	846	841	838	
65	671	669	666	659	654	659
70	501	501	495	489	486	
75	345	344	338	334	335	361
80	206	203	200	197	197	
85	89	86	83	78	77	96
90	0	0	0	0	0	

Information in charts below are for reference and based on ITL LM79 report 85145 (Family Correlated)

Angled (A) and Flat (F) Total Light Output, 3700K, 80 CRI (Lumens)					
H			V		
4658			6002		
Single Mode Power (Watts)					
H			V		
38.1			51.7		
Dual Mode Power (Watts)					
H			V		
Occupied	LDP	Unoccupied	Occupied	LDP	Unoccupied
41.8	30.5	25.8	51.5	41.4	28.7
Efficacy, 3700, 80 CRI (Lumens per Watt)					
H			V		
122			116		

Angled Narrow Rail (ANR) Total Light Output, 3700K, 80 CRI (Lumens)					
H			V		
4544			5855		
Single Mode Power (Watts)					
H			V		
38.1			51.7		
Dual Mode Power (Watts)					
H			V		
Occupied	LDP	Unoccupied	Occupied	LDP	Unoccupied
41.8	30.5	25.8	51.5	41.4	28.7
Efficacy, 3700, 80 CRI (Lumens per Watt)					
H			V		
119			113		

Wave (WAV) Total Light Output, 3700K, 80 CRI (Lumens)					
H			V		
4718			6079		
Single Mode Power (Watts)					
H			V		
38.1			51.7		
Dual Mode Power (Watts)					
H			V		
Occupied	LDP	Unoccupied	Occupied	LDP	Unoccupied
41.8	30.5	25.8	51.5	41.4	28.7
Efficacy, 3700, 80 CRI (Lumens per Watt)					
H			V		
124			118		

Curved Slotted (CS) Total Light Output, 3700K, 80 CRI (Lumens)					
H			V		
4406			5678		
Single Mode Power (Watts)					
H			V		
38.1			51.7		
Dual Mode Power (Watts)					
H			V		
Occupied	LDP	Unoccupied	Occupied	LDP	Unoccupied
41.7	30.5	25.8	51.5	41.4	28.7
Efficacy, 3700, 80 CRI (Lumens per Watt)					
H			V		
116			110		

Double Diffuse (DD) Total Light Output, 3700K, 80 CRI (Lumens)					
H			V		
3798			4894		
Single Mode Power (Watts)					
H			V		
38.1			51.7		
Dual Mode Power (Watts)					
H			V		
Occupied	LDP	Unoccupied	Occupied	LDP	Unoccupied
41.7	30.5	25.8	51.5	41.4	28.7
Efficacy, 3700, 80 CRI (Lumens per Watt)					
H			V		
100			95		

Lumen Adjustment Factors - 80 CRI	
Indigo-Clean	
3200K	0.98
3700K	1.00
4300K	1.03

## SAMPLE LUMEN ADJUSTMENT CALCULATION

High Output (H) Angled (A) & Flat (F)  
3200K, 80 CRI

Lumen Adjustment Factor = 0.98

Total Light Output = 4658

4658 lm x 0.98 = 4565 lm

$$\text{Efficacy} = \frac{4565 \text{ lm}}{38.1 \text{ W}} = 120 \text{ lm/W}$$

H - High Output, V - Very High Output

A brand of **legrand**

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## SPECIFICATIONS

**CONSTRUCTION:** Die-formed 20-gauge cold-rolled steel housing. All components are hard-tooled to tolerances of +/- 0.010". UV stabilized weather-strip pile gasket with polypropylene backing. Hinged door frame assembly provides easy access to light arrays and driver compartment for servicing from below. Seismic brackets are integrated into the luminaire assembly. Additional wire entrances are positioned on the ends of the housing to allow easy wiring access for the installer.

**REFLECTORS:** Die-formed 20-gauge cold-rolled steel reflectors are finished in 96LG high reflectance matte white powder coat paint.

**AIR RETURN:** Refer to 2x4 Air Return Tech Sheet for more information.

**OPTICAL SYSTEM:** Components include diffuser panels and a central optic element held in place with a frame constructed from die-formed cold-rolled steel. The diffusers are UV-stabilized and impact-resistant frosted virgin acrylic, 0.120" thick. They are either angled toward the central optic or parallel to the ceiling plane. The standard center rails are approximately 9/16" wide. Optional narrow rails are approximately 5/16" wide. Optional wave door includes frosted acrylic panel that undulates from side to side. For optimum performance, continuously provide an average 50-60 footcandles on the work plane (24/7). Dimming generally reduces effectiveness and increases the variation in the disinfecting light's visual appearance.

**INDIGO-CLEAN TECHNOLOGY:** Single-Mode Indigo-Clean Technology utilizes a combination of blended white LEDs, and safe 405nm LEDs to continually disinfect a space and kill bacteria, Influenza-A, and SARS-CoV-2 – the virus that causes COVID-19\*. Unlike UV disinfection, Indigo-Clean Technology is designed to safely and continuously disinfect a space while it is fully occupied. When the Indigo-Clean Technology light is on, disinfection is active. For optimum performance, continuously provide an average 50-60 footcandles on the work plane and high touch surfaces (24/7). Dimming generally reduces effectiveness and increases the variation in the disinfecting light's visual appearance.

**Single-Mode Indigo-Clean Technology:** Continuous environmental disinfection system that uses a blended white LEDs and 405nm Indigo-Clean LEDs. The narrow spectrum light provides a safe visible light that disinfects the space. When the light is on, disinfection is active.

**Dual-Mode Indigo-Clean Technology:** Utilizes a two circuit board design. When the space is occupied it utilizes a combination of blended white LEDs and 405nm LEDs. When the space is unoccupied, it utilizes just the 405nm LEDs with increased output to increase disinfection efficacy.

**Dual-Mode Indigo-Clean Technology Controller:** It is a low voltage internal device that determines the operational mode based on the input received from the external automated controls. An Off manual push will not turn the lights off, but rather turn the lights to Blue Mode. Please refer to Dual-Mode Application Guide for wiring diagram. Dim to Off not available.

**DOUBLE DIFFUSE:** Visible diffuser: UV-stabilized and impact-resistant frosted virgin acrylic, 0.120" thick. Inner diffuser: 0.120" thick with 60% round perforations white/white.

**DOOR STYLE:** Curved Slotted (CS) includes perforated rails that slope inward and a diffuse frosted acrylic center optic.

**CENTER OPTIC OPTIONS:** Only available with Angled (A), Angled Narrow Rail (ANR), and Flat (F) door styles.

**Diffuse Center Optic (DCO):** UV-stabilized and impact-resistant frosted virgin acrylic.

**Slotted Center Optic (SCO):** Die-formed cold-rolled steel panel with a 1/16" x 1/2" rectangular hole pattern. Virgin acrylic overlay.

**Round Center Optic (RCO):** Die-formed cold-rolled steel panel with precision-punched 3/32" round hole pattern arranged in staggered formation. Virgin acrylic overlay.

**LIGHT OUTPUT:** Two lumen packages available, High (H), and Very High (V). A separate chart summarizes lumen distribution and wattage. Light engines are replaceable.

**LUMEN MAINTENANCE:** White LEDs: 90% of initial light output (L90) at 100,000+ hours; 70% of initial light output (L70) at 200,000+ hours. 405nm LEDs: 70% of initial output at L70 @ 60,000 hours.

**DRIVER:** Replaceable 120V/277V Constant Current Reduction dimming driver standard. Can be wired dimming or non-dimming. 0-10V dimming controls with a range of 10%- 100%. Dimming to 1% available, consult factory. Driver is fully accessible from below the ceiling. Power Factor: 0.9. Total Harmonic Distortion (THD): <20%. Expected driver lifetime: 100,000 hours.

**LUTRON DRIVER OPTIONS:** LUT-ES1 (Hi-lume 1% EcoSystem with Soft-On, Fade to Black dimming (LDE1 series)); LUT-2W (Hi-lume 1% 2-wire, 120V forward phase dimming (LTEA series)); Contact factory for availability of discontinued Lutron drivers, L3DA-3-wire and L3DA EcoSystem.

**ELECTRICAL:** Optional emergency to generator/inverter wiring, internal generator transfer switch, nightlight wiring, step-dimming driver, backup battery. Chicago

Plenum option. Factory-choice low-profile backup battery available. Bodine BSL722 battery pack also available. Backup batteries deliver 2305 lumens. One quarter of the 2x4 will be illuminated in emergency mode.

**INTEGRATED SENSORS:** Integrated PIR (Passive Infrared) occupancy and/or daylight sensors available. Refer to Occupancy Sensor and Daylight Sensor tech sheets for more info. Integrated Sensors not available with Dual-Mode.

**MOUNTING:** Standard flange design works with most lay-in ceiling types. Integral pry-out tabs secure the luminaire to the ceiling grid from above. Tie-in locations for tie-wire on all corners. Consult local code for appropriate tie-wire recommendations. Drywall Kit available. Surface mount and air return versions available; refer to separate tech sheets.

**PATENT:** Indigo-Clean products and technology covered by U.S. Patent No. US 9,039,966 and US 8,398,264. Product may also be covered by patents found at [www.kenall.com/patents](http://www.kenall.com/patents).

**FINISH:** Housing and door assembly painted with 96 LG high reflectance matte white powder coat paint. Optional adder: Anti-microbial paint. Contact factory.

**FEED:** Optional whips (with flex connectors) supplied in a maximum of 11' lengths. Lead Wires

**LABELS:** Luminaire and electrical components are ETL-listed conforming to UL 1598 in the U.S.A. and CAN/CSA C22.2 No. 250.0 in Canada. In accordance with NEC Code 410.130 (G), this luminaire contains an internal driver disconnect. UL 924 and UL 2108 PoE options available on request. These fixtures are rated for Damp Location, IC-rated and Chicago Plenum options available. Finelite products use electronic components that are RoHS compliant, and the mechanical components of the luminaire have been verified to not knowingly contain any restricted substances listed per RoHS Directive 2015/863. HPR can be used to comply with 2016 Title 24, Part 6 (JA8); high efficacy LED light source requirements. Consult factory for tailored lighting options. Finelite makes the specification process easy when putting healthier products on your projects. Simply add - **RLA** (Red List Approved) or - **RLD** (Declared Label) to your part number.

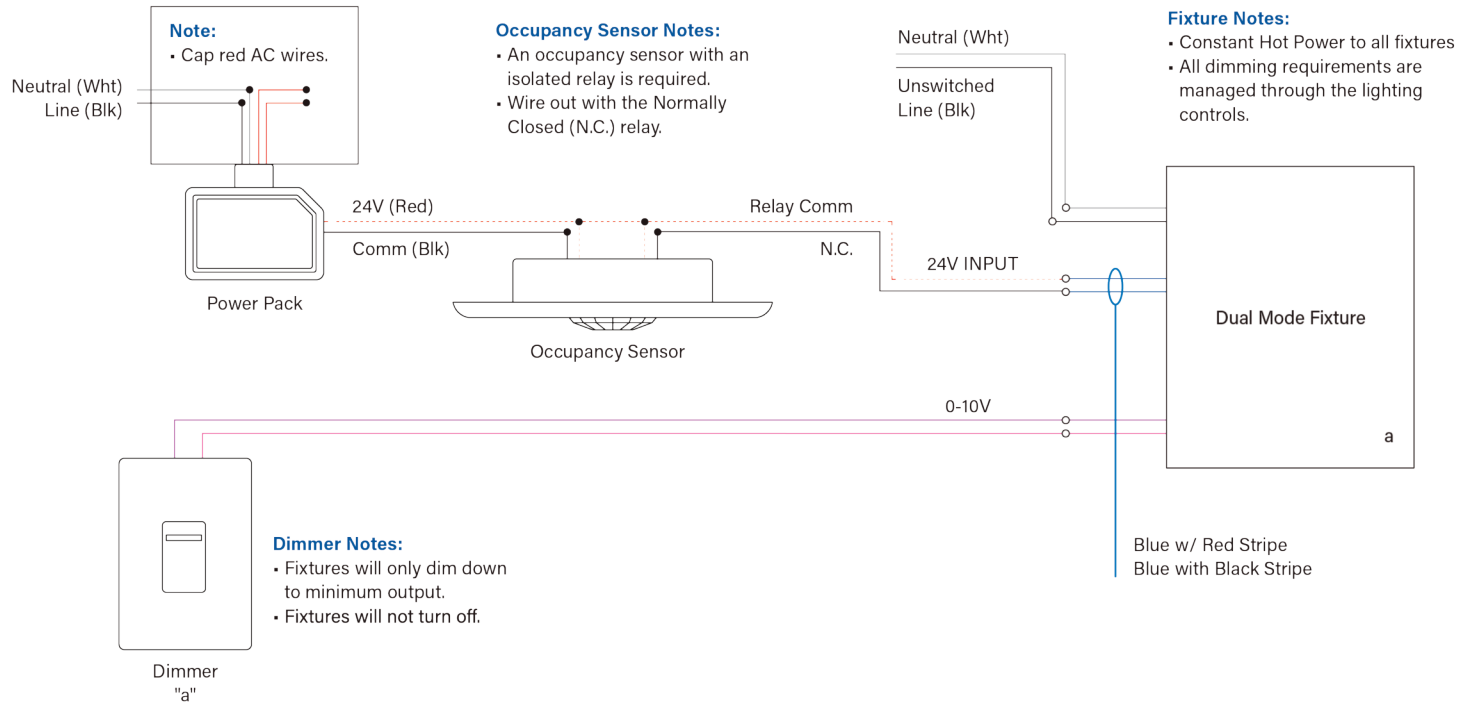
**WEIGHT:** 33 lbs maximum.

**WARRANTY:** 5-year performance-based warranty on all standard components. Optional accessories such as emergency battery packs are covered by their individual manufacturer warranties.

\* Indigo-Clean Research Reports

\* LutVDO & LutVRF can be provided with 1% DALI Sensor Ready Driver (Osram Dexas), 5% DALI Sensor Ready Driver (Philips SR DALI) or any Lutron EcoSystem 1% or 5% LED driver. Customer to specify driver required.

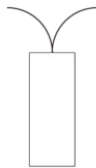
## WIRING DIAGRAM



## DUAL FEED DETAIL

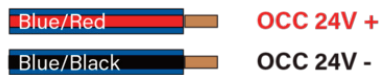
### CONTROL FEED

Blue / Red  
Blue / Black



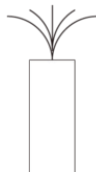
### 24V Dual Mode Control Pair

Each Indigo-Clean Dual Mode fixture will have a pair of #18awg low voltage wires



### POWER FEED

Black, White, Green,  
Purple, Pink



WIRING LEGEND	
Black	Hot
White	Neutral
Green	Ground
Purple	0-10V +
Pink	0-10V -