FINELITE®
Better Lighting

High Performance Recessed (HPR LED) 2x2, Surface Mount, Standard Output (S), Boosted Standard Output (B)

Declare. Third Party Verified

Indigo-Clean® A brand of legrand®

IC – RATED

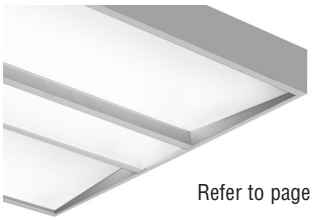
Indigo-Clean is a registered trademark of Kenall Manufacturing Co., a Legrand Company

Date

Project

Type

Comments



Refer to page 2 for all door styles

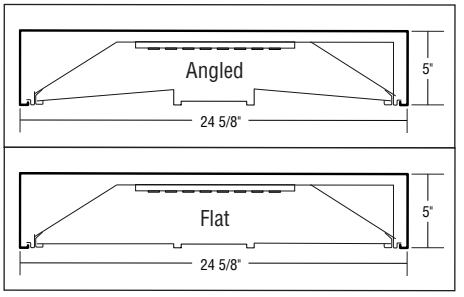
DESCRIPTION

Indigo-Clean Technology is a Continuous Environmental Disinfection System that emits a narrow spectrum light that kills bacteria, Influenza-A[1], and SARS-CoV-2 – the virus that causes COVID-19[1] – 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.

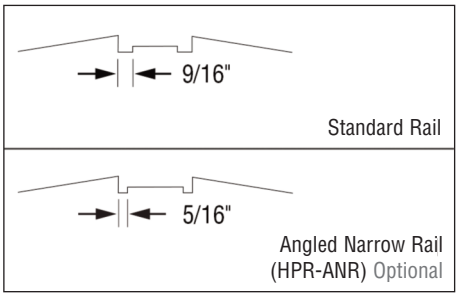
Dual-Mode Indigo-Clean Technology utilizes a mid-power of blended white LEDs and 405nm LEDs on a two circuit board design and full 405nm indigo light using automated controls to disinfect the space. When the space is unoccupied, it utilizes just the 405nm LEDs with increased output to increase disinfection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



Shown with Surface Mount kit

DIMENSIONS



ANGLED 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 center 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 - 2x2 - DCO - S - 837-SMIC - 277V - SC - SM - OBO - CP - RLA

HPR LED								SM			

Finelite **Series HPR LED**
Door Styles (**A** - Angled, **ANR** - Angled Narrow Rail, **F** - Flat,
CS - Curved Slotted[2], **DD** - Double Diffuse[2,3], **WAV** - Wave[2])
Size (**2x2**)
Center Optic (**DCO** - Diffuse Center, **SCO** - Slotted Center, **RCO** - Round Center)[3]
Light Output (**S** - Standard, **B** - Boosted Standard)
LED CRI/CCT (**832-SMIC** - 80 CRI min, 3200K Single Mode Indigo-Clean,
837-SMIC - 80 CRI min, 3200K Single Mode Indigo-Clean, **843-SMIC** - 80 CRI min, 3700K Single Mode Indigo-Clean,
832-DMIC - 80 CRI min, 3200K Dual Mode Indigo-Clean, **837-DMIC** - 80 CRI min, 3700K Dual Mode Indigo-Clean,
843-DMIC - 80 CRI min, 4300K Dual Mode Indigo-Clean)
Voltage (**120V**, **277V**)
Circuiting (**SC** - Single Circuit)
Ceiling Type (**SM** - Surface Mount)
Integrated Sensors[5] (**OBD** - Daylight, **OBO** - Occupancy, **W601** - Wattstopper Wireless Sensor[6], **OBB** - Both,
VOCC - Lutron Vive Wireless Sensor (VDO)[7], **VRF** - Lutron Vive Radio Only[7])
Special Options (**CP** - Chicago Plenum
RLA- Red List Approved, **RLD** - Declared Label)

[1] Indigo-Clean Research Reports
[2] Curved Slotted, Double Diffuse and Wave door not available with Center Optic options
[3] Not available with sensors
[4] Only available with Angled (A), Angled Narrow Rail (ANR) and Flat (F) door options
[5] Not available with Dual-Mode
[6] 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.
[7] Lutron Vive Ingrated Sensors require a DALI driver

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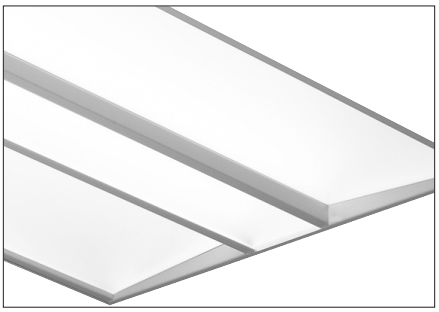
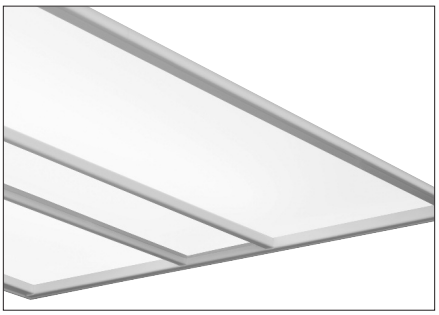
High Performance Recessed (HPR LED) 2x2, Surface Mount, Standard Output (S), Boosted Standard Output (B)

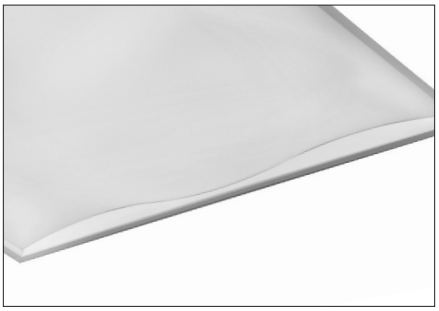
DOOR STYLES



A - Angled
ANR - Angled Narrow Rail

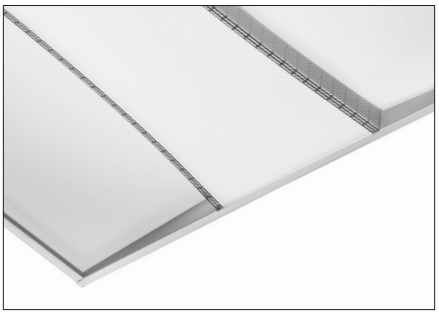


F - Flat

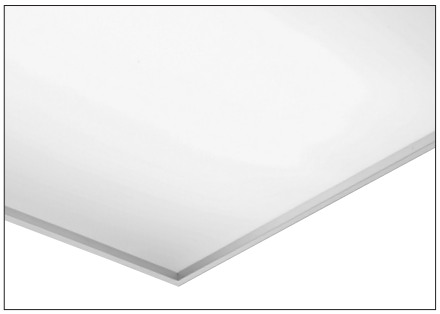


WAV - Wave

DOOR STYLES



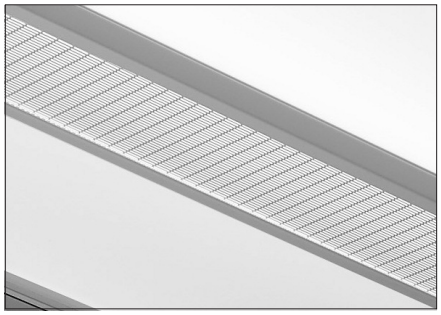
CS - Curved Slotted



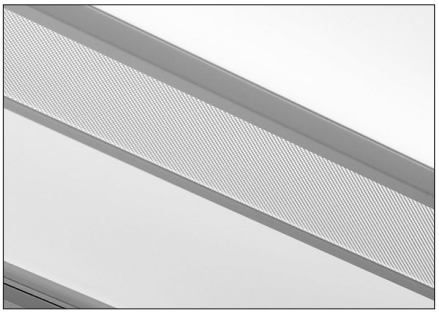
DD - Double Diffuse

CENTER OPTICS

DCO - Diffuse Center



SCO - Slotted Center



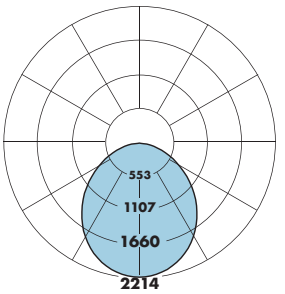
RCO - Round Center

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

High Performance Recessed (HPR LED) 2x2, Surface Mount, Standard Output (S), Boosted Standard Output (B)

PHOTOMETRY

HPR LED-A-2x2-DCO-V
Very High Output - A/F
Efficacy: 95 lumens per watt
Total luminaire output: 5535 Lumens
58.1 Watts
Peak Candela Value: 2214 @ 0˚
CCT: 3700K
ITL LM79 Report 85142 (Family Correlated)



CANDLEPOWER SUMMARY

	0.0	22.5	45	67.5	ACROSS	Flux
0	2214	2214	2214	2214	2214	
5	2203	2203	2202	2201	2202	209
10	2166	2165	2163	2162	2162	
15	2098	2098	2099	2100	2102	592
20	2006	2006	2010	2016	2018	
25	1891	1891	1898	1907	1913	874
30	1753	1754	1765	1780	1785	
35	1600	1602	1614	1634	1640	1011
40	1434	1437	1453	1473	1480	
45	1269	1268	1284	1305	1315	992
50	1094	1094	1112	1130	1138	
55	925	924	940	954	960	841
60	757	757	769	782	783	
65	596	599	604	612	617	601
70	446	446	451	458	462	
75	306	304	307	311	316	329
80	181	180	181	183	186	
85	77	75	73	71	73	86
90	0	0	0	0	0	

Information in charts below are for reference and based on ITL LM79 report 85142 (Family Correlated)

Angled (A) and Flat (F) Total Light Output, 3700K, 80 CRI (Lumens)

S	B
2921	3756
Single Mode Power (Watts)	
S	B
26.7	34.9
Dual Mode Power (Watts)	
S	B

Occupied	LDP	Unoccupied	Occupied	LDP	Unoccupied
27.6	21.4	16.5	36.1	27.9	21.0

Efficacy, 3700, 80 CRI (Lumens per Watt)	
S	B
109	108

Angled Narrow Rail (ANR) Total Light Output, 3700K, 80 CRI (Lumens)

S	B
2817	3622
Single Mode Power (Watts)	
S	B
26.7	34.9
Dual Mode Power (Watts)	
S	B

Occupied	LDP	Unoccupied	Occupied	LDP	Unoccupied
27.6	21.4	16.5	36.1	27.9	21.0

Efficacy, 3700, 80 CRI (Lumens per Watt)	
S	B
105	104

Wave (WAV) Total Light Output, 3700K, 80 CRI (Lumens)

S	B
2984	3837
Single Mode Power (Watts)	
S	B
26.7	34.9
Dual Mode Power (Watts)	
S	B

Occupied	LDP	Unoccupied	Occupied	LDP	Unoccupied
27.6	21.4	16.5	36.1	27.9	21.0

Efficacy, 3700, 80 CRI (Lumens per Watt)	
S	B
112	110

Curved Slotted (CS) Total Light Output, 3700K, 80 CRI (Lumens)

S	B
2784	3579
Single Mode Power (Watts)	
S	B
26.7	34.9
Dual Mode Power (Watts)	
S	B

Occupied	LDP	Unoccupied	Occupied	LDP	Unoccupied
27.6	21.4	16.5	36.1	27.9	21.0

Efficacy, 3700, 80 CRI (Lumens per Watt)	
S	B
104	103

Double Diffuse (DD) Total Light Output, 3700K, 80 CRI (Lumens)

S	B
2339	3007
Single Mode Power (Watts)	
S	B
26.7	34.9
Dual Mode Power (Watts)	
S	B

Occupied	LDP	Unoccupied	Occupied	LDP	Unoccupied
27.6	21.4	16.5	36.1	27.9	21.0

Efficacy, 3700, 80 CRI (Lumens per Watt)	
S	B
88	86

Lumen Adjustment Factors - 80 CRI

Indigo-Clean	
3200K	0.98
3700K	1.00
4300K	1.03

SAMPLE LUMEN ADJUSTMENT CALCULATION

Standard Output (S) Angled (A) & Flat (F)
3200K, 80 CRI

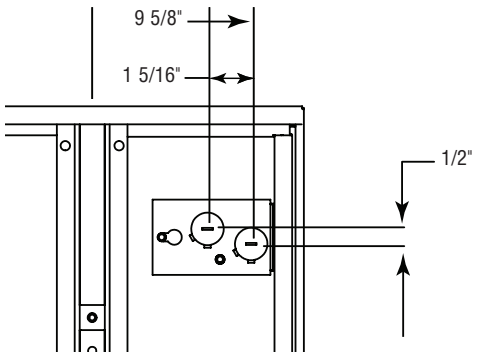
Lumen Adjustment Factor = 0.98
Total Light Output = 2921
2921 lm x 0.98 = 2863 lm

$$\textit{Efficacy} = \frac{2863\ \text{lm}}{26.7\ \text{W}} = 107\ \text{lm/W}$$

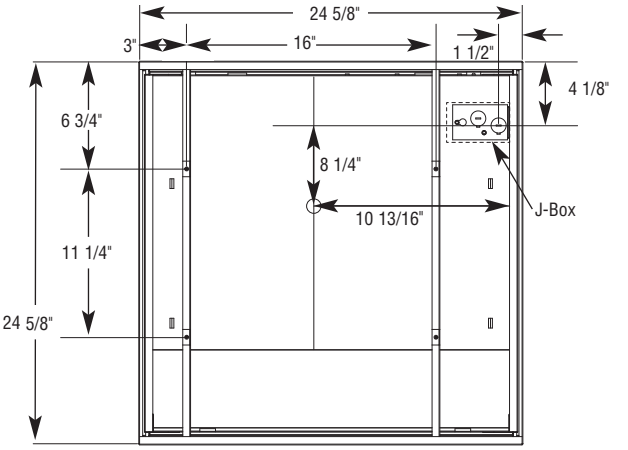
S - Standard Output, B - Boosted Standard Output

High Performance Recessed (HPR LED) 2x2, Surface Mount, Standard Output (S), Boosted Standard Output (B)

WIRING ACCESS DETAIL



MOUNTING INFORMATION



SPECIFICATIONS

CONSTRUCTION: Die-formed 20-gauge cold-rolled steel housing. All components are hard-tooled to tolerances of +/- 0.010". Driver compartment is accessible from below. 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.

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

AIR RETURN: Refer to 2x2 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 center optical element is held in place by sleek steel rails. 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[1], and SARS-CoV-2 – the virus that causes COVID-19[1]. 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.

[1] Indigo-Clean Research Reports

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. Standard with Wave.

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, Standard (**S**), Boosted Standard (**B**). 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: LUTES1 (Hi-lume 1% EcoSystem with Soft-On, Fade to Black dimming (LDE1 series)); **LUT2W** (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: Factory-choice low-profile backup battery available. Chicago Plenum option. Bodine BSL722 battery pack also available. Backup batteries deliver 2199 lumens. One half of the 2x2 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 for Dual-Mode.

MOUNTING: Luminaire is compatible with recessed junction boxes. Electrical connections can be made directly to wiring access plate shown above. Junction boxes can also be placed between mounting bars. Maximum center of feed location from luminaire center is 8 3/4" along the dimension parallel to the mounting bars, and 14" along dimension perpendicular to the mounting bars.

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.

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.

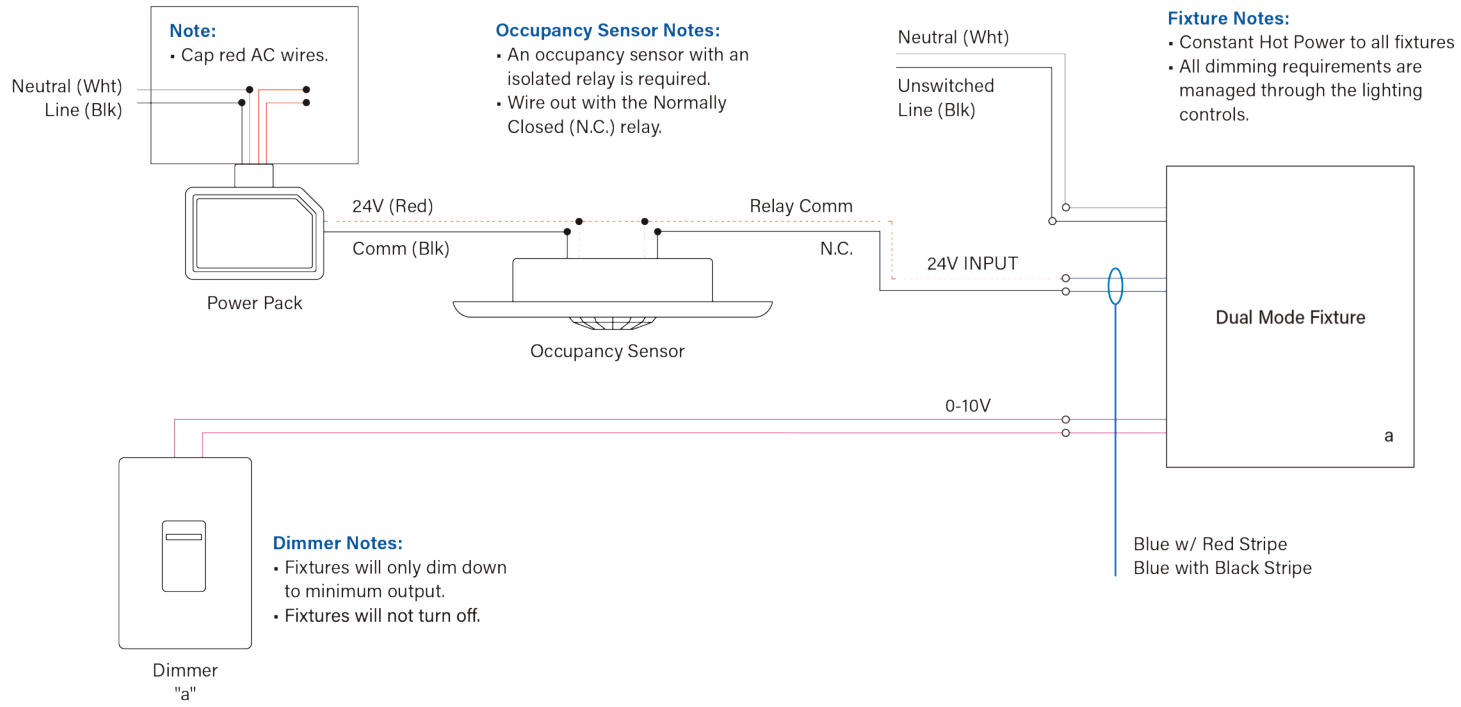
LABELS: Luminaire and electrical components are ETL-listed conforming to UL 1598 in the U.S.A. and CAN/CSA C22.2 No. 250.0 in Canada. In accordance with NEC Code 410.130 (G), this luminaire contains an internal driver disconnect. UL 924 and UL 2108 PoE options available on request. EPA Est.No. 99530-CA-1. 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: 16 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.

High Performance Recessed (HPR LED) 2x2, Surface Mount, Standard Output (S), Boosted Standard Output (B)

WIRING DIAGRAM



DUAL FEED DETAIL

CONTROL FEED
Blue / Red
Blue / Black

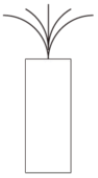
24V Dual Mode Control Pair

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

OCC 24V +

OCC 24V -

POWER FEED
Black, White, Green,
Purple, Pink



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