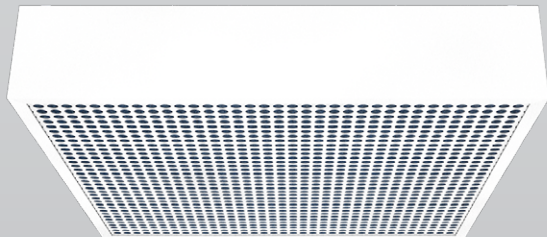


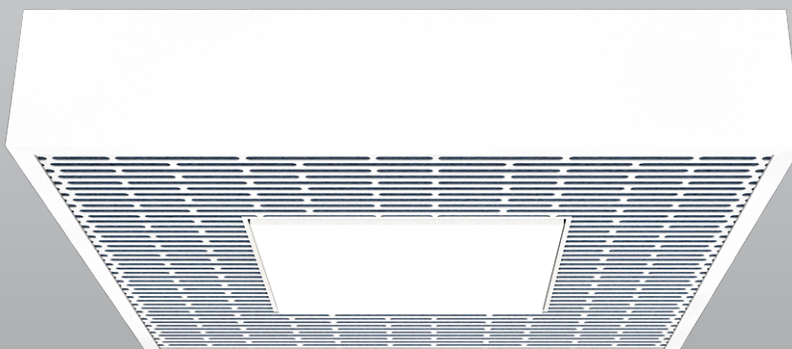
POP ECHOCORE SQUARE

SURFACE

STATIC WHITE, FULL SPECTRUM



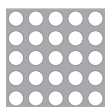
Blank - Square Pattern



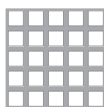
Linear Pattern

Pop Echocore™ acoustic luminaires not only offer lens brightness uniformity enabled by our Unity Pointed (UP) technology, but they also reduce echo and reverberation in their immediate environment. When sound waves meet the lighting fixture, they pass through its aluminum lattice only to be trapped by its core of layered sound-absorbing material. Available in round and square models with pendant, surface, and recessed mounting options.

Patterns



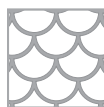
Round



Square



Linear



Scallop



Cubic

POP ECHOCORE SQUARE



SURFACE

STATIC WHITE, FULL SPECTRUM































Project: _____

Type: _____

Luminaire code

LUMINAIRE ID	SIZE	DISTRIBUTION	OPTIC	LENS POSITION	LIGHT SOURCE ¹
POECHSQS		D	ULO		
POECHSQS - Pop Echocore Square Surface	2FTX2FT - 2' x 2' 3FTX3FT - 3' x 3'	D - Direct	ULO - Uniform Lambertian Optic	FH - Flush 0.5D - 0.5" drop 1D - 1" drop	SW - Static white FS - Full spectrum ¹ Chromawerx Sola, Duo, and Quadro also available. Consult factory.

CRI	DIRECT LUMEN PACKAGE				COLOR TEMP.	VOLTAGE	DRIVER ⁷	ELECTRICAL	MOUNTING
								1C	SUR
80CRI ² - 80 CRI 90CRI ² - 90 CRI 95CRI ³ - 95 CRI	2' x 2' 3' x 3'	Low 750LM	Med ⁴ 900LM	High ⁴ 1100LM	27K - 2700K 30K - 3000K 35K - 3500K 40K - 4000K	120V - 120V 277V - 277V UNV - 120V-277V 347V ^{5,6} - 347V	D1 - 1% 0-10V DA ⁸ - DALI LDE1 ⁸ - Lutron Hi-lume 1% Eco ELD1 - eldoLED 1% ECODrive 0-10V ELD0 - eldoLED 0.1% SOLOdrive 0-10V ELV ⁹ - ELV 120V TRI ⁹ - TRIAC 120V ⁷ PoE (Power-over-Ethernet) compatible. Consult factory for details. ⁸ On-site commissioning is required. ⁹ Available with 120V only.	1C - 1 circuit	SUR - Surface

FIXTURE FINISH	PATTERN	PATTERN FINISH	FELT COLOR		OPTION	
W - Matte white AL - Aluminum B - Matte black CF# - Custom finish, specify RAL# See page 3 for more finish options.	<u>STANDARD</u> ROU - Round SQU - Square LIN - Linear <u>PREMIUM</u> SCP - Scallop CBC - Cubic	W - Matte white AL - Aluminum B - Matte black CF# - Custom finish, specify RAL# See page 3 for more finish options.	<u>STANDARD COLORS</u>		<u>PREMIUM COLORS</u> ¹⁰	FU120 - Fuse 120V FU277 - Fuse 277V NA - None
			 FWN  LVN  FON  LEN  ION  CYN  TBN  PMN  MDN  FGN	 PKN  CDN  IVN  BHN  OGN  LCN  SLN  CFN  LNN  SYN  CNN  GRN  LMN  BLN  GHN  MON  EGN  NVN  CLN  ESN		
¹⁰ Please consult factory for more color options. Lead time may vary.						

Blank code

LUMINAIRE ID	SIZE	MOUNTING	FIXTURE FINISH	PATTERN	PATTERN FINISH	FELT COLOR								
POECHSQBS		SUR												
POECHSQBS - Pop Echocore Square Blank Surface	2FTX2FT - 2' x 2' 3FTX3FT - 3' x 3'	SUR - Surface	W - Matte white AL - Aluminum B - Matte black CF# - Custom finish, specify RAL# See page 3 for more finish options.	STANDARD ROU - Round SQU - Square LIN - Linear PREMIUM SCP - Scallop CBC - Cubic	W - Matte white AL - Aluminum B - Matte black CF# - Custom finish, specify RAL# See page 3 for more finish options.	STANDARD COLORS	PREMIUM COLORS ¹¹							
						<div><div></div>FWN<div></div>LVN</div> <div><div></div>FON<div></div>LEN</div> <div><div></div>ION<div></div>CYN</div> <div><div></div>TBN<div></div>PMN</div> <div><div></div>MDN<div></div>FGN</div>	<div><div></div>PKN<div></div>CDN<div></div>IVN<div></div>BHN</div> <div><div></div>OGN<div></div>LCN<div></div>SLN<div></div>CFN</div> <div><div></div>LNN<div></div>SYN<div></div>CNN<div></div>GRN</div> <div><div></div>LMN<div></div>BLN<div></div>GHN<div></div>MON</div> <div><div></div>EGN<div></div>NVN<div></div>CLN<div></div>ESN</div>							
							¹¹ Please consult factory for more color options. Lead time may vary.							

POP ECHOCORE SQUARE

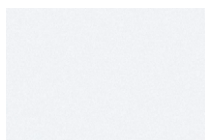


SURFACE

STATIC WHITE, FULL SPECTRUM

Fixture/Pattern Finishes

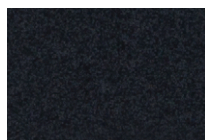
Standard



W - Matte White



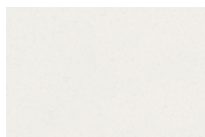
AL - Aluminum



B - Matte Black

Custom

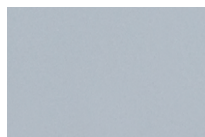
Neutrals



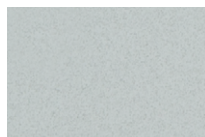
CRM - Cream



GRY - Gray



STG - Steel Gray



SAG - Sage Gray

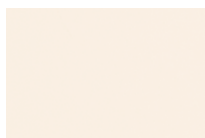


MOG - Moss Gray

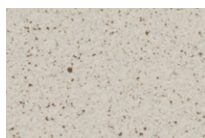


BLB - Black Blue

Designer



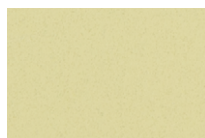
ALM - Almond



QRZ - Quartzite Texture



RST - Rust Fine Texture



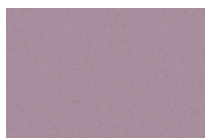
GRB - Green Beige



YLW - Yellow



SLM - Salmon Pink



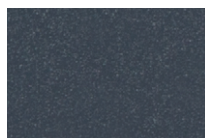
VIO - Pastel Violet



RED - Red



PRR - Purple Red



SMB - Storm Blue



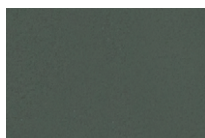
DPB - Deep Blue



OCB - Ocean Blue



BLG - Blue Green



GNS - Green Smoke



MNG - Mint Green



LMG - Lime Green

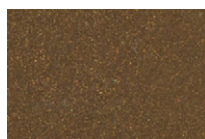
Metallics



CHP - Champagne



GLD - Gold



DBZ - Dark Bronze



IRN - Iron Ore



CNY - Canyon



SBP - Sandblast Copper



SWD - Sandalwood

POP ECHOCORE SQUARE



SURFACE

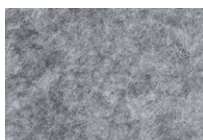
STATIC WHITE, FULL SPECTRUM

Felt Finishes

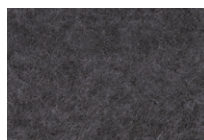
Standard Color Options



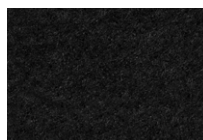
FWN - FROST WHITE



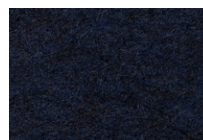
FON - FOG



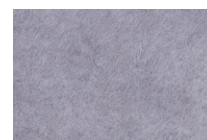
ION - IRON



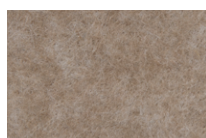
TBN - TRUE BLACK



MDN - MIDNIGHT BLUE



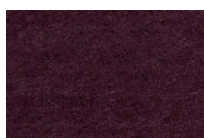
LVN - LAVENDER



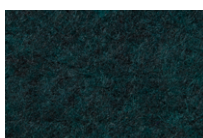
LEN - LATTE



CYN - CHERRY

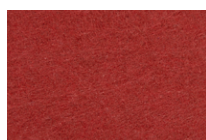


PMN - PLUM



FGN - FOREST GREEN

Premium Color Options*



PKN - PAPRIKA



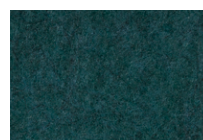
OGN - ORANGE



LNN - LEMON



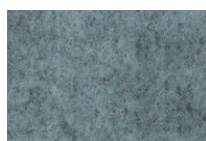
LMN - LIME



EGN - EVERGREEN



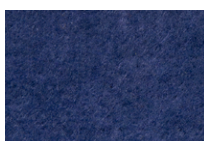
CDN - CLOUDY



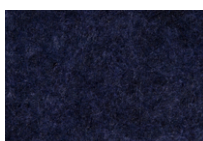
LCN - LICHEN



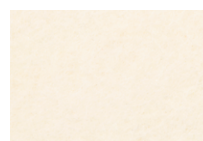
SYN - SKY



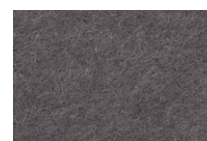
BLN - BLUEBERRY



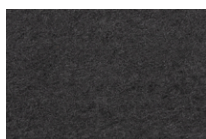
NVN - NAVY



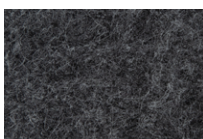
IVN - IVORY



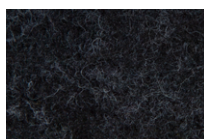
SLN - STEEL



CNN - CARBON



GHN - GRAPHITE



CLN - CHARCOAL



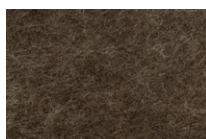
BHN - BLUSH



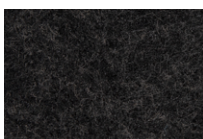
CFN - CAFÉ



GRN - GREIGE



MON - MOCHA



ESN - ESPRESSO

*Please consult factory for more color options.

*Lead time may vary.

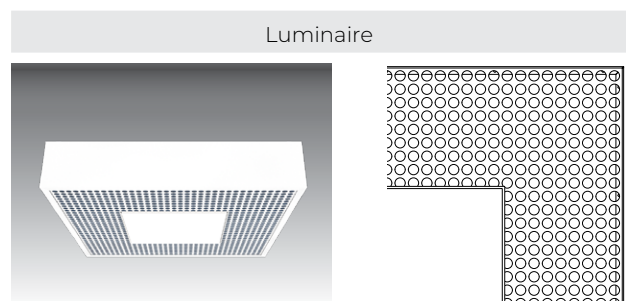
POP ECHOCORE SQUARE



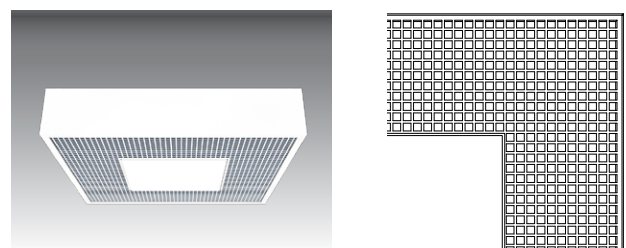
SURFACE

STATIC WHITE, FULL SPECTRUM

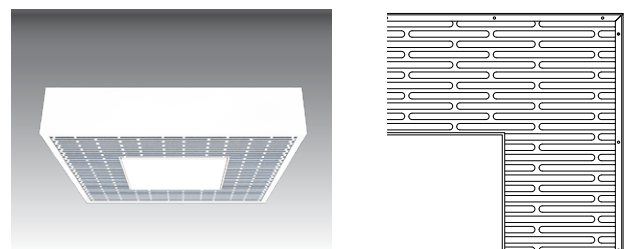
Fixture Patterns



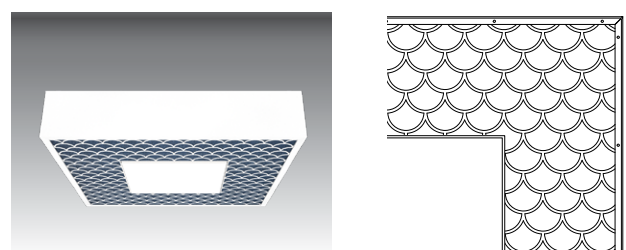
ROU - ROUND



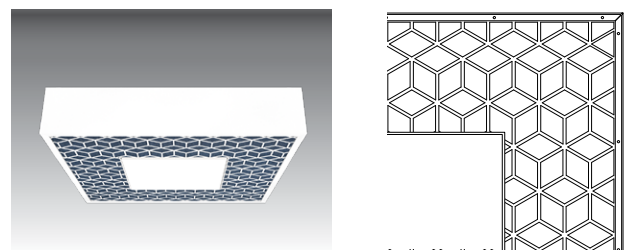
SQU - SQUARE



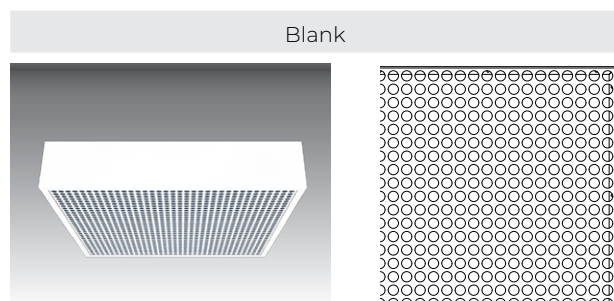
LIN - LINEAR



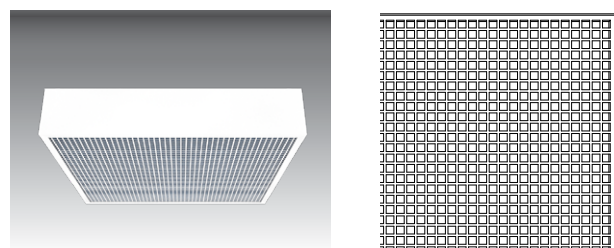
SCP - SCALLOP



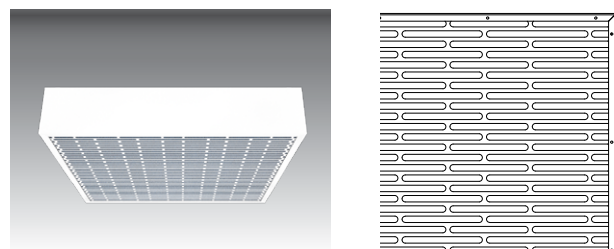
CBC - CUBIC



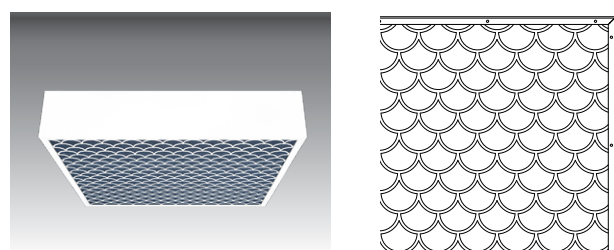
ROU - ROUND



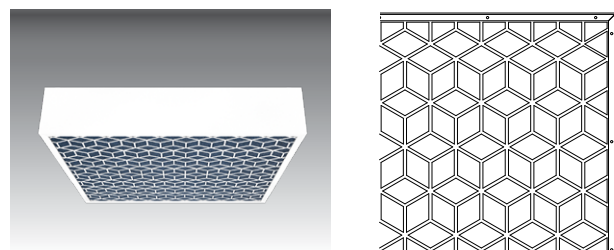
SQU - SQUARE



LIN - LINEAR



SCP - SCALLOP



CBC - CUBIC

POP ECHOCORE SQUARE

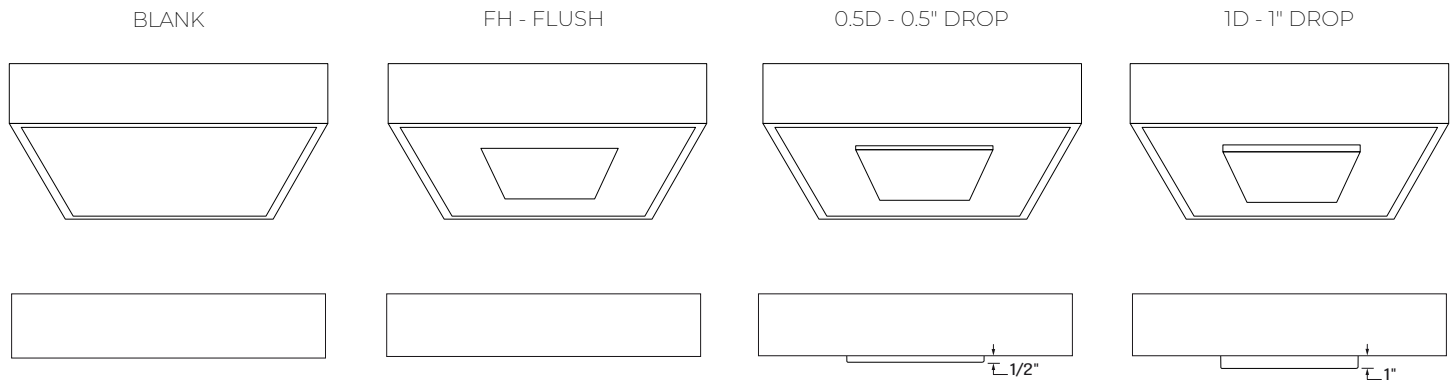


SURFACE

STATIC WHITE, FULL SPECTRUM

Dimensions

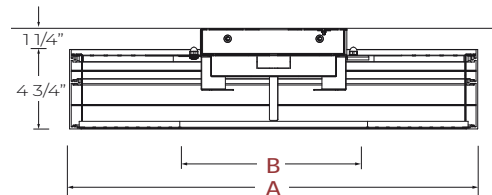
Lens position



Section view

Fixture Dimensions

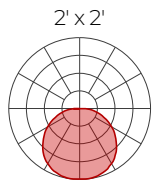
FIXTURE SIZE	A BODY LENGTH	B LENS LENGTH
2' x 2'	24 13/32"	11 15/16"
3' x 3'	36 13/32"	22 15/16"



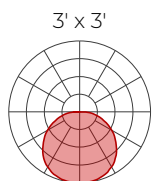
Photometrics

Delivered lumens at 35K at 80 CRI.

DIRECT OPTICS



LUMEN OUTPUT	INPUT WATTS	LPW
750	7.5	100
900	9.5	97
1100	11	100



LUMEN OUTPUT	INPUT WATTS	LPW
2500	23.5	106
3500	33.5	104
4500	44.5	101

MULTIPLIER TABLES

Use these tables to get results for different color temperatures, CRI, and drop lenses, for all photometric tables.

Multiplier - CCT/CRI

CCT (K)	Watts		LPW	
	CRI 80	CRI 90	CRI 80	CRI 90
2700	1.05	1.26	0.95	0.79
3000	1.01	1.23	0.99	0.81
3500	1.00	1.20	1.00	0.84
4000	1.00	1.17	1.00	0.85

Multiplier - Drop Lens

DIRECT LENS	WATTS MULTIPLIER	LPW MULTIPLIER
Flush Lens	1.00	1.00
Drop Lens 0.5"	0.86	1.16
Drop Lens 1.5"	0.84	1.19

POP ECHOCORE SQUARE



SURFACE

STATIC WHITE, FULL SPECTRUM

ACOUSTIC CALCULATOR

Using the Lumenwerx Acoustix Value Calculator table, you can determine the number of acoustic luminaires required in a space by fixture type. We have three levels of recommended sound reduction: good, better, and best. Choosing one of these options will reduce the sound accordingly. The best option indicates the best acoustic improvement. Calculations are based on a standard ceiling height of 9 feet.



- 1 Calculate the square feet of your room (L x W).
- 2 Choose the level of acoustical improvement you are looking for, and find the corresponding value based on your room dimension and luminaire configuration.

% in reduction in reverberation time		
😊	GOOD	25%
😊😊	BETTER	40%
😊😊😊	BEST	50%

SIZE	Room dimensions under 300 sq ft			Room dimensions over 300 sq ft		
	GOOD 😊	BETTER 😊😊	BEST 😊😊😊	GOOD 😊	BETTER 😊😊	BEST 😊😊😊
LUMINAIRE						
2' x 2'	24	14	11	38	21	17
3' x 3'	41	23	18	63	35	28
BLANK						
2' x 2'	33	18	14	50	28	22
3' x 3'	75	42	33	116	65	51

- 3 Use the Lumenwerx Acoustix Value Formula to determine the number of luminaires needed in the room.

$$\text{Square feet} \div \text{Value} = \text{Number of luminaires}$$

Example:

Luminaires: Pop Echocore Square Surface (luminaire) 2' x 2'
Room square feet: L: 20 ft x W: 18 ft = 360 sq ft
Desired acoustical improvement: Better = 21
Number of luminaires needed in the room: $360 \div 21 = 17$ luminaires

NOTES:

- You can mix lit and blank fixtures.
- Lumenwerx acoustic calculators were developed to act as a guide. For precise acoustic performance in a space, please consult an acoustician.

POP ECHOCORE SQUARE



SURFACE

STATIC WHITE, FULL SPECTRUM

Technical Specifications

OPTIC

Uniform Efficiency Lambertian Optic (ULO)

Made of formed impact modified white PMMA, the optic provides an even light distribution with up to 88% transmission. Its unique enclosed shell design protects LEDs against Electrostatic Discharge and dust while its back surface project a soft glow on the mounting surface.

LIGHT SOURCE

Custom array of mid-flux LEDs are mounted directly to the housing for optimal thermal performance. Available in 2700K, 3000K, 3500K and 4000K with a minimum 80 CRI and an option for 90 CRI and, 95 CRI with elevated R9 value. Color consistency maintained to within 3 SDCM. LEDs operated at reduced drive current to optimize efficacy and lumen maintenance. All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated. Optional full spectrum LEDs can be incorporated in the fixture to increase Cyanosis Observation Index (COI) and assist in regulating circadian rhythms.



WELL for Light - The WELL building standard focuses on light quality in several features. There are three categories that are fully attributed to the construction and features of a luminaire. In WELL V1, it's Feature 54 Circadian Lighting, Feature 55 Glare Control, and Feature 58 Color Quality. In WELL V2, it's Feature L03 Circadian Lighting, Feature L04 Glare Control, and Feature L07 Electric Light Quality.

This fixture meets Features:

- Feature 54 or L03 when full spectrum is selected
- Feature 55 or L04 meets WELL glare category (c-d)
- Feature 58 or L07 when 90 CRI or above is selected

All LED drivers used at Lumenwerx are deemed to have a low risk level of flicker, of 5 % or less below 90Hz operational as defined by IEEE standard 1789-2015 LED.



WELL for Sound - This luminaire is recommended for use as an acoustical absorption surface to limit reverberation times (RT) in a given space. This luminaire contributes to noise reduction and vibration dampening to promote focus and concentration. Reverberation needs to be calculated in each space based on the materials used.



WELL for Mind - This luminaire meets WELL for mind as it is a human centric luminaire offering quality light, excellent color, smooth optics, and a sound diminishing element. If any of these features are incorporated in a luminaire, it can improve the ability to focus, concentrate, and persist longer on a given task. This fixture harmoniously operates in a space to assist the mind.

For more information please contact well@lumenwerx.com.

ELECTRICAL

Factory-set, adjustable output current LED driver with universal (120-277 VAC) input. Dimmable from 100% to 1% with 0-10V dimming control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. At maximum driver load: Efficiency > 84%, PF > 0.9, THD < 20%. Other specifiable options include Lutron Hi-Lume 1% Eco, eldoLED 1% ECoDrive 0-10V, eldoLED 0.1% SOLOdrive 0-10V, ELV, TRIAC, and DALI protocol drivers. All of our standard 0-10V drivers are NEMA 410 compliant.

PoE

Depending on the PoE manufacturer selected, Lumenwerx will install the node in factory as either integral to the luminaire or as a remote module. Factory programming of the PoE node may or may not enable the following functionalities: lumen package, Duo (tunable white) emergency battery backup, and sensor integration. These must be addressed and evaluated on a case-by-case basis.

MOUNTING

Fixtures can be mounted directly to drywall and hard surface ceilings, hardware supplied by others.

FINISH

Interior - 95%, reflective, matte white powder coating

Exterior - Side trim is offered in a range of vibrant color powder coating.

ACOUSTIC FINISH

Material is 100% polyester containing up to 50% of recycled plastic bottles (PET) with an ASTM E-84 Class A fire rating and is moisture resistant.

CARE

Remove dust and debris with a clean, dry, soft, lint-free cloth, or vacuum.

POP ECHOCORE SQUARE



SURFACE

STATIC WHITE, FULL SPECTRUM

CONSTRUCTION

Housing - Rolled and seamlessly welded aluminum extrusion 0.125" thick

Mounting housing - 16 gauge cold rolled steel, painted white

Interior brackets - Die formed cold rolled sheet steel 18 gauge thick

Reflectors - Cold rolled steel 0.0246" thick precisely die formed, 95% reflective matte white painted

Lens - Uniform Lambertian Optic, thermoformed impact-modified acrylic, completely enclosed

Perforated panel - Die cut aluminum panel (18 gauge aluminum sheet)

WEIGHT

Size	Luminaire	Blank
2' x 2'	18.74 lbs - 8.5 kg	13.23 lbs - 6 kg
3' x 3'	28.11 lbs - 12.75 kg	22.05 lbs - 10 kg

ENVIRONMENT

Ambient temperature at fixture location shall be within 0°C/32°F - 25°C/77°F, indoor dry or damp as well as outdoor damp use (canopies or marquees).

CERTIFICATION

ETL - Rated for Indoor Dry/Damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0.

WARRANTY

Lumenwerx provides a five-year limited warranty of electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. Lumenwerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications. Other limitations apply, please refer to the full warranty on our website.