

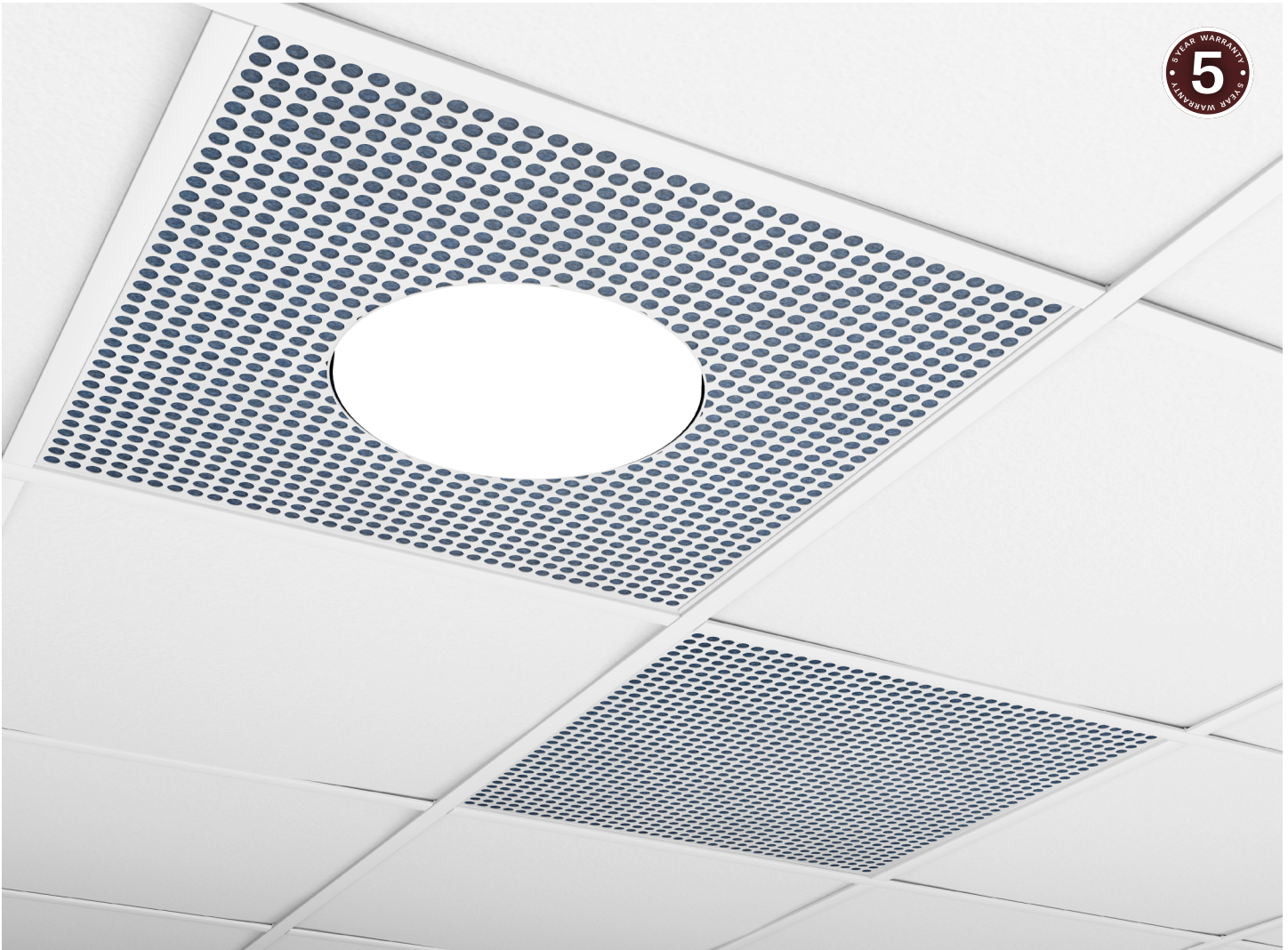
POP ECHOCORE

RECESSED
STATIC WHITE, FULL SPECTRUM

LUMENWERX

Project: _____

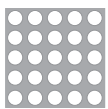
Type: _____



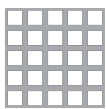
DESCRIPTION

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



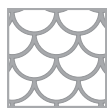
Round



Square



Linear



Scallop



Cubic

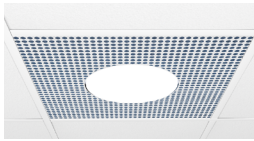
POP ECHOCORE

RECESSED
STATIC WHITE, FULL SPECTRUM

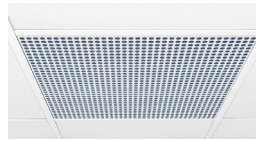
LUMENWERX

Project: _____

Type: _____



Luminaire



Blank

Luminaire code

LUMINAIRE ID	SIZE	DISTRIBUTION	OPTIC	LENS POSITION	LIGHT SOURCE ¹	CRI
	22	D	ULO			
POROECHR - Pop Round EchoCore 2'x2' Recessed POSQECHR - Pop Square EchoCore 2'x2' Recessed	22 - 2ft x 2ft	D - Direct	ULO - Uniform Lambertian Optic	FH - Flush 0.5D - 1/2" drop 1D - 1" drop	SW - Static white FS - Full spectrum	80 ² - 80 CRI 90 ² - 90 CRI 95 ³ - 95 CRI
					¹ Chromawerx Sola, Duo, and Quadro also available. Consult factory.	² Not available with full spectrum. ³ Not available with static white.

LUMEN PACKAGE	COLOR TEMP.	VOLTAGE	DRIVER ⁷	ELECTRICAL	MOUNTING
				1C	
750 - Low output 750 lm 900 ⁴ - Medium output 900 lm 1100 ⁴ - High output 1100 lm	27 - 2700K 30 - 3000K 35 - 3500K 40 - 4000K	120 - 120V 277 - 277V UNV - 120V-277V 347 ^{5,6} - 347V	D1 - 1% 0-10V DA ⁸ - DALI LTEA2W - Lutron 1% - 2 wire FP 120V LDE1 ⁸ - Lutron Hi-lume 1% Eco ELD1 - eldoLED 1% ECOdrive 0-10V ELD0 - eldoLED 0.1% SOLOdrive 0-10V	1C - 1 circuit	TG9 - Tegular 9/16" TG15 - Tegular 15/16" TB9 - T-bar 9/16" TB15 - T-bar 15/16" ST - Screw slot t-bar
⁴ Not available with full spectrum.		⁵ Available with D1 only. ⁶ Driver is remote.	⁷ PoE (Power-over-Ethernet) compatible. Consult factory for details. ⁸ On-site commissioning is required.		

FIXTURE FINISH	PATTERN	PATTERN FINISH	FELT COLOR	OPTIONS
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.	STANDARD COLORS FWN LVN FON LEN ION CYN TBN PMN MDN FGN PREMIUM COLORS ⁹ PKN CDN IVN BHN OGN LCN SLN CFN LNN SYN CNN GRN LMN BLN GHN MON EGN NVN CLN ESN	FU120 - Fuse 120V FU277 - Fuse 277V NA - None
				⁹ Please consult factory for more color options. Lead time may vary.

Blank code

LUMINAIRE ID	SIZE	MOUNTING	FIXTURE FINISH	PATTERN	PATTERN FINISH	FELT COLOR
ECHBR	22					
ECHBR - EchoCore Blank 2'x2' Recessed	22 - 2ft x 2ft	TG9 - Tegular 9/16" TG15 - Tegular 15/16" TB9 - T-bar 9/16" TB15 - T-bar 15/16" ST - Screw slot t-bar	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.	STANDARD COLORS FWN LVN FON LEN ION CYN TBN PMN MDN FGN PREMIUM COLORS ¹⁰ 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.

POP ECHOCORE

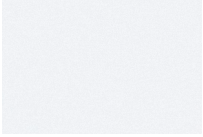
LUMENWERX

RECESSED

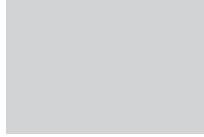
STATIC WHITE, FULL SPECTRUM

Fixture/Pattern Finishes

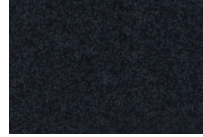
Standard



W - Matte White



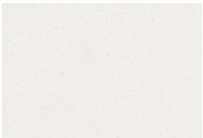
AL - Aluminum



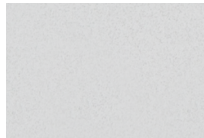
B - Matte Black

Custom

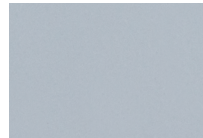
Neutrals



CRM - Cream



GRY - Gray



STG - Steel Gray



SAG - Sage Gray

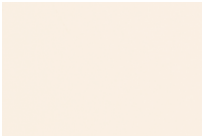


MOG - Moss Gray



BLB - Black Blue

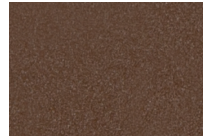
Designer



ALM - Almond



QRZ - Quartzite Texture



RST - Rust Fine Texture



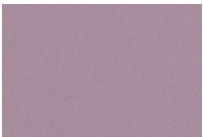
GRB - Green Beige



YLW - Yellow



SLM - Salmon Pink



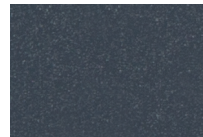
VIO - Pastel Violet



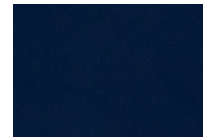
RED - Red



PRR - Purple Red



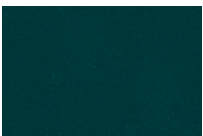
SMB - Storm Blue



DPB - Deep Blue



OCB - Ocean Blue



BLG - Blue Green



GNS - Green Smoke

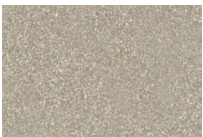


MNG - Mint Green

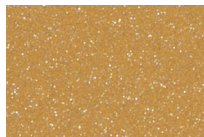


LMG - Lime Green

Metallics



SND - Sand



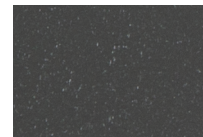
GLD - Gold



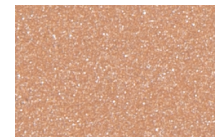
DGD - Dark Gold



IRN - Iron Ore



CNY - Canyon



SBP - Sandblast Copper



SWD - Sandalwood

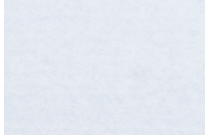
POP ECHOCORE

RECESSED
STATIC WHITE, FULL SPECTRUM

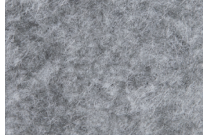
LUMENWERX

Felt Finishes

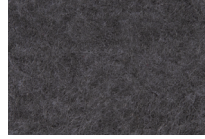
Standard Color Options



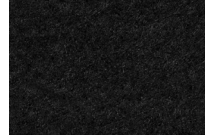
FWN - FROST WHITE



FON - FOG



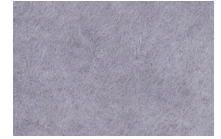
ION - IRON



TBN - TRUE BLACK



MDN - MIDNIGHT BLUE



LVN - LAVENDER



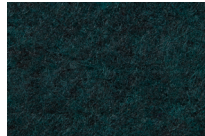
LEN - LATTE



CYN - CHERRY



PMN - PLUM



FGN - FOREST GREEN

Premium Color Options*



PKN - PAPIKA



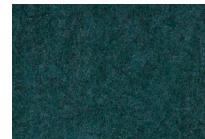
OGN - ORANGE



LNN - LEMON



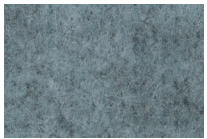
LMN - LIME



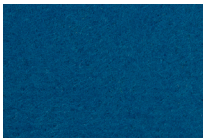
EGN - EVERGREEN



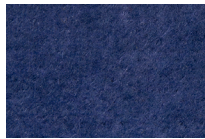
CDN - CLOUDY



LCN - LICHEN



SYN - SKY



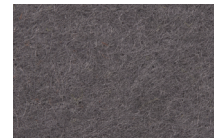
BLN - BLUEBERRY



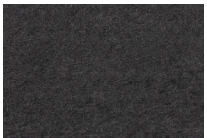
NVN - NAVY



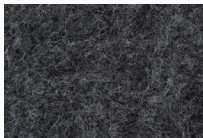
IVN - IVORY



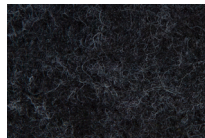
SLN - STEEL



CNN - CARBON



GHN - GRAPHITE



CLN - CHARCOAL



BHN - BLUSH



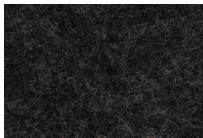
CFN - CAFÉ



GRN - GREIGE



MON - MOCHA



ESN - ESPRESSO

*Please consult factory for more color options.

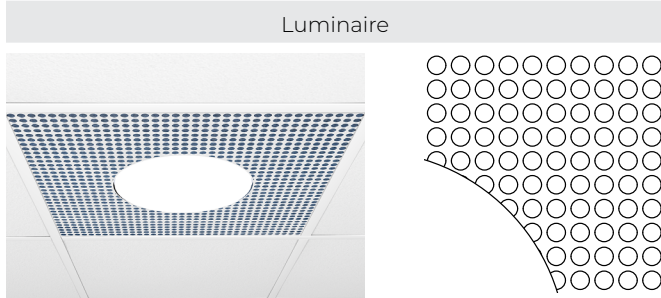
*Lead time may vary.

POP ECHOCORE

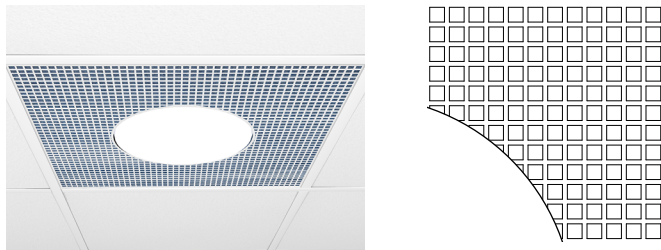
RECESSED
STATIC WHITE, FULL SPECTRUM

LUMENWERX

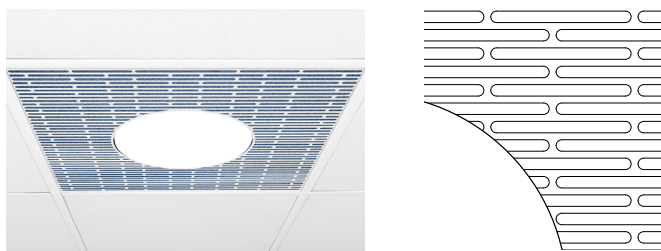
Fixture Patterns



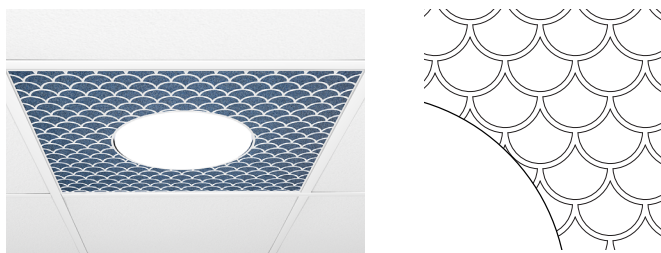
ROU - ROUND



SQU - SQUARE



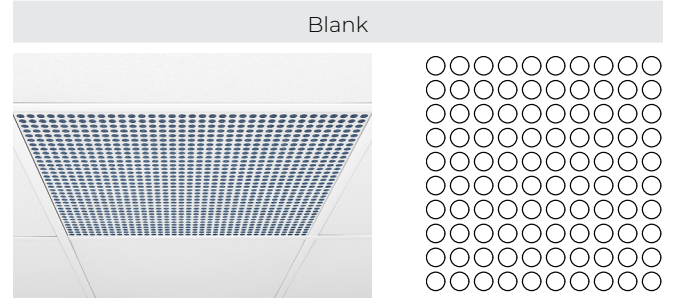
LIN - LINEAR



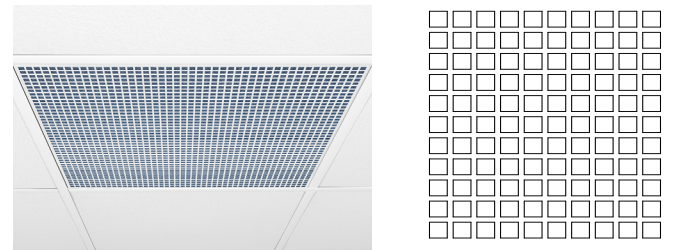
SCP - SCALLOP



CBC - CUBIC



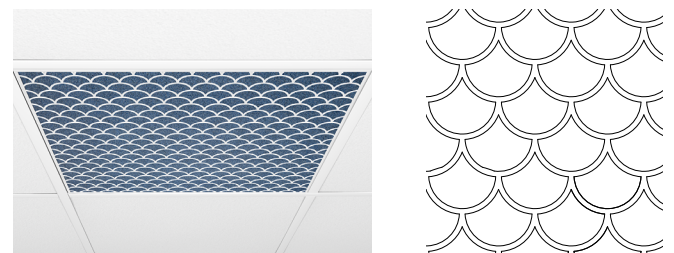
ROU - ROUND



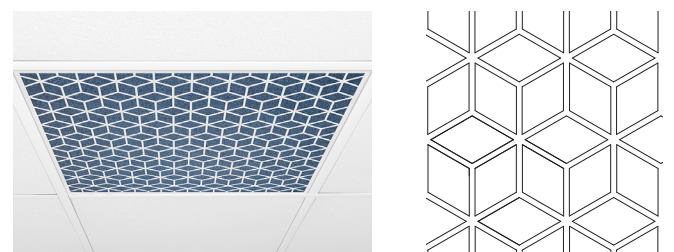
SQU - SQUARE



LIN - LINEAR



SCP - SCALLOP



CBC - CUBIC

POP ECHOCORE

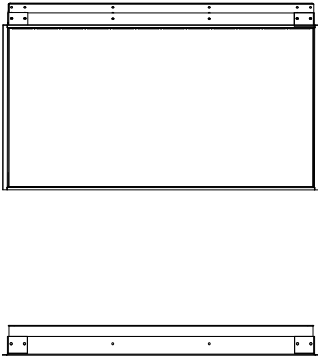
RECESSED
STATIC WHITE, FULL SPECTRUM

LUMENWERX

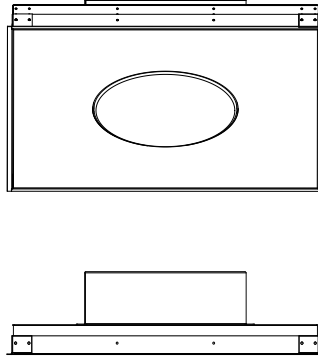
Dimensions

Lens position

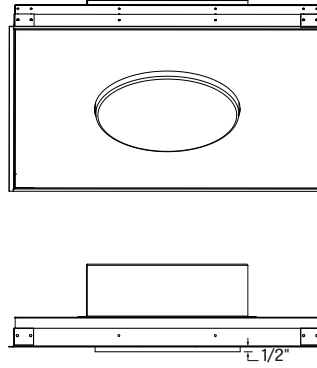
BLANK



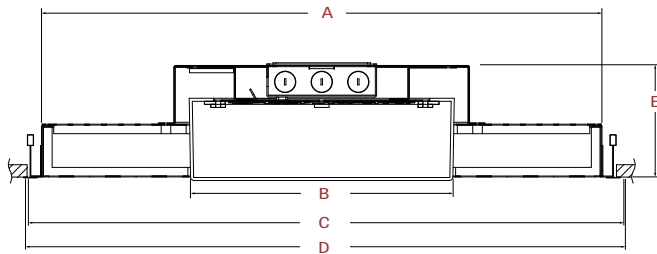
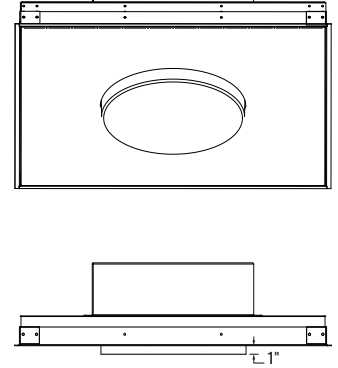
FH - FLUSH



0.5D - 0.5" DROP



1D - 1" DROP



	FIXTURE LENGTH	LENS	WITH FLANGES	BETWEEN T-BARS	FIXTURE HEIGHT
	A	B	C	D	E
ROUND		Ø 10 7/8"			5"
SQUARE	23"	11"	23 13/16"	23 31/32"	
BLANK		X			2 5/32"

POP ECHOCORE

LUMENWERX

RECESSED

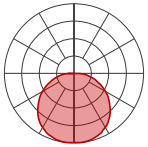
STATIC WHITE, FULL SPECTRUM

Photometrics

Delivered lumens at 35K at 80 CRI for all optics.

Round

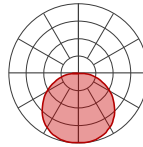
ULO (Flush Lens)



LUMEN OUTPUT	INPUT WATTS	LPW
750	7.5	98
900	9.5	96
1100	11.5	97

Square

ULO (Flush Lens)



LUMEN OUTPUT	INPUT WATTS	LPW
750	7.5	100
900	9	100
1100	11	100

MULTIPLIER TABLES

Use these tables to get results for different color temperatures, CRI, and drop lenses, for all Direct 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 1.0"	0.84	1.19

POP ECHOCORE

LUMENWERX

RECESSED

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%

	Room dimensions under 300 sq ft			Room dimensions over 300 sq ft		
	GOOD 😊	BETTER 😊😊	BEST 😊😊😊	GOOD 😊	BETTER 😊😊	BEST 😊😊😊
LUMINAIRE						
Round EchoCore	24	14	11	38	21	17
Square EchoCore	24	14	11	38	21	17
BLANK						
EchoCore Blank	33	18	14	50	28	22

- 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 Round EchoCore 2 ft x 2 ft Recessed
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 ÷ 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

RECESSED

STATIC WHITE, FULL SPECTRUM

LUMENWERX

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

In static white, custom arrays of mid-flux LED are available in 2700K, 3000K, 3500K, and 4000K with a minimum 80 CRI and an option for 90 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 BIOS or 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, and smooth optics. 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

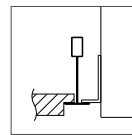
Factory-set, adjustable output current LED driver with universal (120-277VAC) input. Dimmable from 100% to 1% with 0-10V dimming control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. At maximum driver load: Efficiency>84%, PF>0.9, THD<20%. Other specifiable options include Lutron Hi-Lume 1% (specify 2-wire, or Ecosystem Dim-to-Off), and DALI protocol drivers. All of our standard 0-10V drivers are NEMA 410 compliant.

PoE

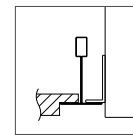
Depending on the PoE manufacturer selected, Lumenwerx will install the node in factory as either integral to the luminaire, or as a remote module. Factory programming of the PoE node may or may not enable the following functionalities: lumen package, Duo (tunable white), emergency battery backup, and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

MOUNTING OPTIONS

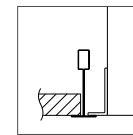
Recess mount into exposed or concealed T-Bar or Tegular grid ceiling.



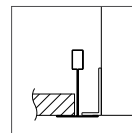
TG9
Tegular 9/16"



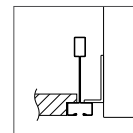
TG15
Tegular 15/16"



TB9
T-bar 9/16"



TB15
T-bar 15/16"



ST
Screw slot T-bar

FINISH

Standard powder-coat paint available in textured matte white, aluminum and black. Custom colors are also available in over 30 colors.

POP ECHOCORE

RECESSED

STATIC WHITE, FULL SPECTRUM

LUMENWERX

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 by wiping down with a clean, dry or damp, soft, lint-free cloth, or vacuum.

CONSTRUCTION

Housing - 20 gauge cold rolled steel housing with perforated cover and felt box with a white painted 18 gauge enclosure

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

POP Round & Square - 17.6 lbs - 8 kg

POP Blank - 12 lbs - 5.4 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).

CERTIFICATIONS

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 on 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