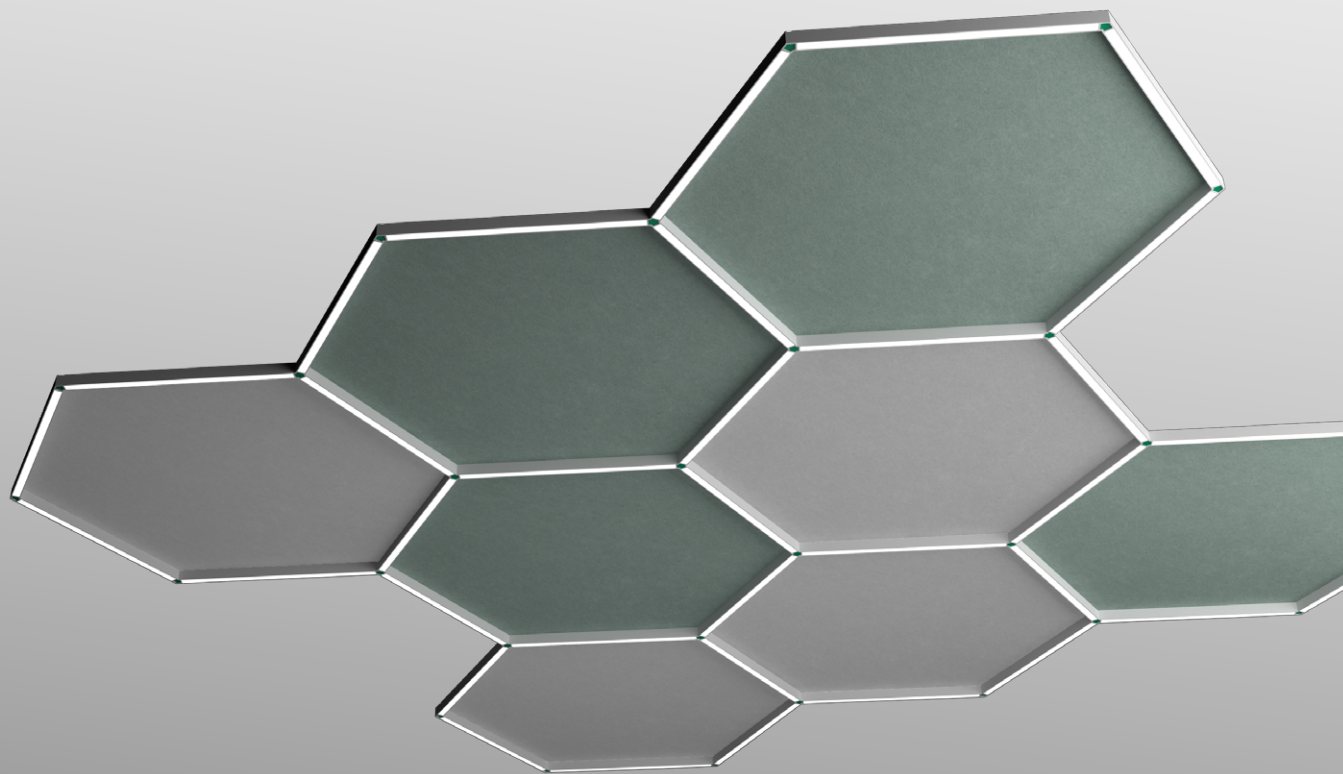


# SQUERO HUBS ACOUSTIX

PENDANT

STATIC WHITE, BIOS



Squero Hubs Acoustix luminaires expand the Lumenwerx Acoustix portfolio, providing enhanced capabilities for improving both visual and auditory environments. Available in various colors and alignments, these fixtures give a sleek geometric style and incorporate sound-absorbing panels that reduce ambient noise and enhance acoustic quality.

## Hub Types

2-way connection



3-way connection



4-way connection



## Acoustic Panels



**SENSORS**  
For latest information on sensors, click [here](#).



# SQUERO HUBS ACOUSTIX

PENDANT

STATIC WHITE, BIOS



Project:

Type:

## Order Guide




































































































Example: SQUHUBACOP-D-12FT-MRO35-4FT-HLO-8FT-BK-NA-SW-80CRI-500LMF-NA-35K-4HCV90-B-120V-D1-1C-ACS-B-1AREC(2FTX4FT)-IVN

A drawing of your configuration is required - anything from a line drawing to an architectural drawing.

LUMINAIRE ID	DISTRIBUTION	TOTAL LUMINAIRE LENGTH <sup>1</sup>	DIRECT OPTICS <sup>3,4</sup> Specify the total length for each required optic.	MRO COLOR
<b>SQUHUBACOP</b>				
<b>SQUHUBACOP</b> - Squero Hubs Acoustix Pendant	<b>DI</b> - Direct/Indirect <b>D</b> - Direct	<b>#FT#IN</b> <sup>2</sup> - Specify the total nominal length (#) in 1' and/or 1" increments  Continuous runs: lengths over 12'  <sup>1</sup> Total luminaire length should equal the sum of all the direct optic lengths. <sup>2</sup> Minimum section length is 2'.	<b>MRO18</b> <sup>5</sup> - 18 degree Miniature Reflector Optic <b>MRO35</b> <sup>5</sup> - 35 degree Miniature Reflector Optic <b>MRO55</b> <sup>5</sup> - 55 degree Miniature Reflector Optic <b>MBPL</b> <sup>6</sup> - Matte Black Parabolic Louver <b>MPL</b> <sup>6</sup> - Matte Parabolic Louver <b>SPL</b> <sup>6</sup> - Specular Parabolic Louver <b>HLO</b> - High-Efficiency Lambertian Optic <b>BLA</b> - Blank  <sup>3</sup> Specify MROs in 6" increments, Parabolic Louvers in 1' increments, HLO in 4" increments, and Blank in 1" increments. <sup>4</sup> The minimum total length per louver/optic must be 2' in each section of the fixture. <sup>5</sup> Not available with BIOS. <sup>6</sup> Not available with BIOSTU.	<b>WH</b> <sup>7</sup> - White <b>BK</b> <sup>7</sup> - Black <b>NA</b> - Not applicable  <sup>7</sup> Only available with MRO optics.

INDIRECT OPTIC Specify NA for Direct fixture	LIGHT SOURCE	CRI	DIRECT LUMEN PACKAGE	INDIRECT LUMEN PACKAGE Specify NA for Direct fixture	COLOR TEMP.
<b>WIO2</b> <sup>8</sup> - Widespread Indirect Optic <b>TIO</b> <sup>9</sup> - Translucent Indirect Optic <b>NA</b> - Not applicable  <sup>8</sup> Not available with BIOSTU. <sup>9</sup> Not available with BIOS.	<b>SW</b> - Static white <b>BIOSSST</b> <sup>10</sup> - BIOS Biological Static <b>BIOSDY</b> <sup>10</sup> - BIOS Biological Dynamic <b>BIOSTU</b> <sup>10</sup> - BIOS Biological Tunable  <sup>10</sup> See page 10 for details.	<b>80CRI</b> - 80+ CRI <b>90CRI</b> <sup>11</sup> - 90+ CRI  <sup>11</sup> Not available with BIOS.	<b>350LMF</b> - Eco low output 350 lm/ft <b>500LMF</b> - Low output 500 lm/ft <b>750LMF</b> - Medium output 750 lm/ft <b>1000LMF</b> <sup>12,13</sup> - High output 1000 lm/ft <b>NA</b> - Not applicable  <sup>12</sup> Not available with MBPL optic. <sup>13</sup> Not available with BIOS.	<b>350LMF</b> - Eco low output 350 lm/ft <b>500LMF</b> - Low output 500 lm/ft <b>750LMF</b> - Medium output 750 lm/ft <b>1000LMF</b> <sup>14,15</sup> - High output 1000 lm/ft <b>NA</b> - Not applicable  <sup>14</sup> For Direct/Indirect, Direct must not exceed 750 lm/ft. <sup>15</sup> Not available with BIOS.	<b>27K</b> <sup>16</sup> - 2700K <b>30K</b> - 3000K <b>35K</b> - 3500K <b>40K</b> - 4000K <b>50K</b> <sup>16</sup> - 5000K  <sup>16</sup> Not available with BIOS.

HUB TYPE, DEGREE AND QUANTITY <sup>17</sup> Specify quantity (#) for each required Hub	ACCENT HUB PLATE COLOR Specify NA for Flush Hubs	VOLTAGE	DRIVER <sup>19</sup>	ELECTRICAL
<b>COLOR ACCENT HUBS</b> <b>#HCV45</b> - Hub "V" 45° <b>#HCV60</b> - Hub "V" 60° <b>#HCV90</b> - Hub "V" 90° <b>#HCV120</b> - Hub "V" 120° <b>#HCS</b> - Hub Straight <b>#HCT</b> - Hub "T" <b>#HCYR</b> - Hub "Y" Right <b>#HCYL</b> - Hub "Y" Left <b>#HCY120</b> - Hub "Y" 120° <b>#HCY135</b> - Hub "Y" 135° <b>#HCPL</b> - Hub "+" <b>#HCX</b> - Hub "X"  <sup>17</sup> Separate codes with a "+" if more than one is specified, e.g. 1HCV90+1HCT.	<b>FLUSH HUBS</b> <b>#HFV45</b> - Hub "V" 45° <b>#HFV60</b> - Hub "V" 60° <b>#HFV90</b> - Hub "V" 90° <b>#HFV120</b> - Hub "V" 120° <b>#HFS</b> - Hub Straight <b>#HFT</b> - Hub "T" <b>#HFYR</b> - Hub "Y" Right <b>#HFYL</b> - Hub "Y" Left <b>#HFY120</b> - Hub "Y" 120° <b>#HFY135</b> - Hub "Y" 135° <b>#HFPL</b> - Hub "+" <b>#HFX</b> - Hub "X"	<b>W</b> - Matte white <b>AL</b> - Aluminum <b>B</b> - Matte black <b>RAL1028</b> - Yellow <b>RAL2004</b> - Orange <b>RAL3020</b> - Red <b>RAL4010</b> - Magenta <b>RAL5002</b> - Blue <b>RAL6018</b> - Green <b>CF#</b> - Custom finish, specify RAL# <b>NA</b> - Not applicable  <sup>18</sup> Available with D1 driver only.	<b>120V</b> - 120V <b>277V</b> - 277V <b>UNV</b> - 120V-277V <b>347V</b> <sup>18</sup> - 347V  <sup>19</sup> PoE (Power-over-Ethernet) compatible. Consult factory for details. <sup>20</sup> Available with 120V only. <sup>21</sup> On-site commissioning is required.	<b>D1</b> - 1% 0-10V <b>ELV</b> <sup>20</sup> - ELV 120V <b>TRI</b> <sup>20</sup> - TRIAC 120V <b>DA</b> <sup>21</sup> - DALI <b>LDE1</b> <sup>21</sup> - Lutron Hi-lume 1% Eco <b>ELD1</b> - eldoLED 1% ECOdrive 0-10V <b>ELDO</b> - eldoLED 0.1% SOLOdrive 0-10V  <sup>22</sup> Available for Direct/Indirect only. Separate direct and indirect circuits. <sup>23</sup> Specify total number of circuits (#). Provide drawing or layout specifications. Minimum 4' section per circuit. <sup>24</sup> Minimum 4' fixture. <sup>25</sup> Not available with 347V.

MOUNTING <sup>26</sup>		FINISH <sup>27</sup>		ACOUSTIC PANEL <sup>28, 29, 30</sup>		FELT COLOR <sup>31, 32</sup>																																																																																										
<b>ACS</b> - Aircraft cable, standard <b>ACC()</b> - Aircraft cable, custom  <small><sup>26</sup>Standard canopies are black for black fixtures, and white for all other finishes. See page 3 for full details on standard and custom options.</small>		<b>W</b> - Matte white <b>AL</b> - Aluminum <b>B</b> - Matte black <b>CF#</b> - Custom finish, specify RAL#  <small><sup>27</sup>Blank and Hub finish will match fixture finish.</small>		<b>#ASQU(X)</b> - Square <b>#AREC(XY)</b> - Rectangle <b>#ATRI(X)</b> - Triangle <b>#AHEX(X)</b> - Hexagon  <small><sup>28</sup>Specify quantity (#), nominal length (X) and width (Y) in 1' and/or 1" increments. <sup>29</sup>Separate codes with a "+" if more than one is specified, e.g. 3ATRI(2FT)+1AREC(2FTX3FT). <sup>30</sup>See page 3 for ordering details.</small>		<table><tr><th colspan="4">STANDARD</th><th colspan="6">PREMIUM <sup>33</sup></th><th>MADERA <sup>33</sup></th></tr><tr><td></td><td>FWN</td><td></td><td>LVN</td><td></td><td>PKN</td><td></td><td>CDN</td><td></td><td>IVN</td><td></td><td>BHN</td><td></td><td>NON</td></tr><tr><td></td><td>FON</td><td></td><td>LEN</td><td></td><td>OGN</td><td></td><td>LCN</td><td></td><td>SLN</td><td></td><td>CFN</td><td></td><td>BEN</td></tr><tr><td></td><td>ION</td><td></td><td>CYN</td><td></td><td>LNN</td><td></td><td>SYN</td><td></td><td>CNN</td><td></td><td>GRN</td><td></td><td>TKN</td></tr><tr><td></td><td>TBN</td><td></td><td>PMN</td><td></td><td>LMN</td><td></td><td>BLN</td><td></td><td>GHN</td><td></td><td>MON</td><td></td><td>GAN</td></tr><tr><td></td><td>MDN</td><td></td><td>FGN</td><td></td><td>EGN</td><td></td><td>NVN</td><td></td><td>CLN</td><td></td><td>ESN</td><td></td><td></td></tr></table> <small><sup>31</sup>Separate codes with a "+" if more than one is specified, e.g. FWN+LMN. <sup>32</sup>See page 4 for felt color details. Consult factory for more color options. <sup>33</sup>Lead time may vary.</small>										STANDARD				PREMIUM <sup>33</sup>						MADERA <sup>33</sup>		FWN		LVN		PKN		CDN		IVN		BHN		NON		FON		LEN		OGN		LCN		SLN		CFN		BEN		ION		CYN		LNN		SYN		CNN		GRN		TKN		TBN		PMN		LMN		BLN		GHN		MON		GAN		MDN		FGN		EGN		NVN		CLN		ESN		
STANDARD				PREMIUM <sup>33</sup>						MADERA <sup>33</sup>																																																																																						
	FWN		LVN		PKN		CDN		IVN		BHN		NON																																																																																			
	FON		LEN		OGN		LCN		SLN		CFN		BEN																																																																																			
	ION		CYN		LNN		SYN		CNN		GRN		TKN																																																																																			
	TBN		PMN		LMN		BLN		GHN		MON		GAN																																																																																			
	MDN		FGN		EGN		NVN		CLN		ESN																																																																																					

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SQUERO-HUBS-ACOUSTIX-PENDANT-SPEC-REV1 April 23, 2025



# SQUERO HUBS ACOUSTIX

PENDANT

STATIC WHITE, BIOS



## Acoustic Panel Options

SQUARE	RECTANGLE	TRIANGLE	HEXAGON
#ASQU(X) Max. 4'	#AREC(XY) X - Max. 4' Y - Max. 8'	#ATRI(X) Max. 4'	#AHEX(X) Max. 2'

## Pendant Mounting Code

### Standard

For a standard mounting, please refer to the information below.

#### MOUNTING

##### ACS - Aircraft cable, standard

- Ø 5" for power canopy
- Ø 3" for non-power canopy
- Canopies are black for black fixtures, and white for all other fixture finishes
- Power cord is black for black fixtures, and white for all other fixture finishes
- Aircraft cable length is 36"

### Custom

#### Aircraft Cable

For a custom mounting, specify the options in the parentheses.

Example: ACC(3NPC-72IN-W-PCB-NA)

#### MOUNTING

##### ACC()

	NON-POWER CANOPY SIZE	AIRCRAFT CABLE LENGTH	CANOPY FINISH	POWER CORD COLOR	OPTION
ACC	3NPC - Ø 3" non-power canopy 5NPC - Ø 5" non-power canopy	36IN - 36" 72IN - 72" 120IN - 120" #IN <sup>1</sup> - Other lengths, specify in inches  <sup>1</sup> Maximum length is 288". For longer lengths, please consult factory.	W - Matte white AL - Aluminum B - Matte black CF# - Custom finish, specify RAL#	PCW - White PCB - Black	SEM <sup>2</sup> - Seismic mounting SLC <sup>2</sup> - Sloped ceiling for aircraft cable NA - None  <sup>2</sup> Not available with the Ø 3" non-power canopy size.

# SQUERO HUBS ACOUSTIX

PENDANT

STATIC WHITE, BIOS

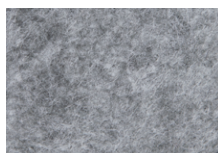


## Felt Color <sup>1</sup>

### STANDARD



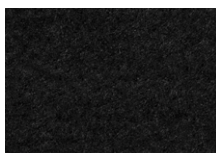
**FWN** - FROST WHITE



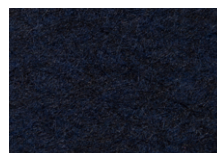
**FON** - FOG



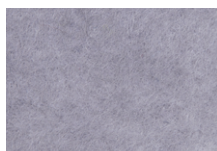
**ION** - IRON



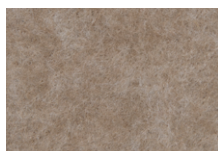
**TBN** - TRUE BLACK



**MDN** - MIDNIGHT BLUE



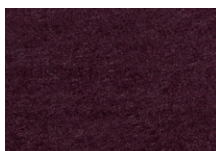
**LVN** - LAVENDER



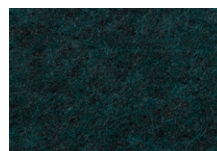
**LEN** - LATTE



**CYN** - CHERRY

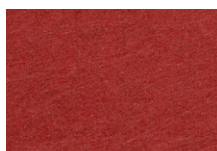


**PMN** - PLUM



**FGN** - FOREST GREEN

### PREMIUM <sup>2</sup>



**PKN** - PAPRIKA



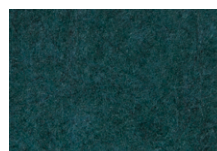
**OGN** - ORANGE



**LNN** - LEMON



**LMN** - LIME



**EGN** - EVERGREEN



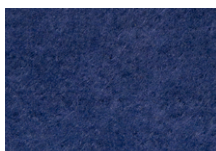
**CDN** - CLOUDY



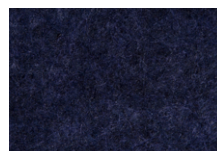
**LCN** - LICHEN



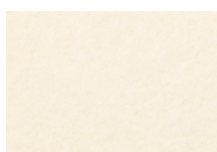
**SYN** - SKY



**BLN** - BLUEBERRY



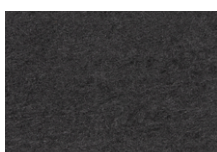
**NVN** - NAVY



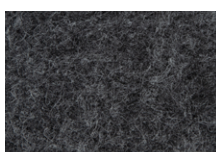
**IVN** - IVORY



**SLN** - STEEL



**CNN** - CARBON



**GHN** - GRAPHITE



**CLN** - CHARCOAL



**BHN** - BLUSH



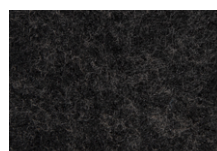
**CFN** - CAFÉ



**GRN** - GREIGE



**MON** - MOCHA

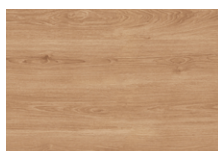


**ESN** - ESPRESSO

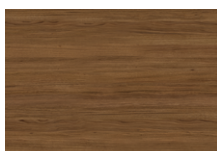
### MADERA <sup>2</sup>



**NON** - NATURAL OAK



**BEN** - BEECH



**TKN** - TEAK



**GAN** - GREY ASH

<sup>1</sup> Consult factory for more color options.

<sup>2</sup> Lead time may vary.



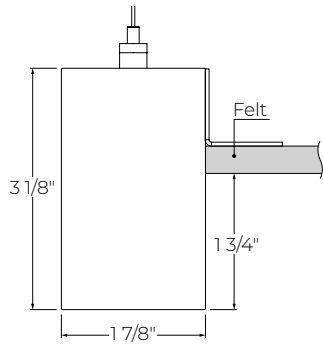
# SQUERO HUBS ACOUSTIX

PENDANT

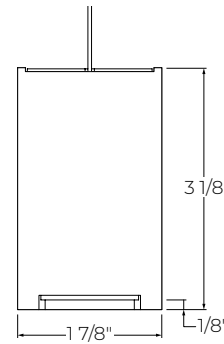
STATIC WHITE, BIOS



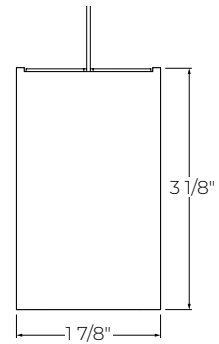
## Dimensions



HUBS



Hubs Accent



Hubs Flush

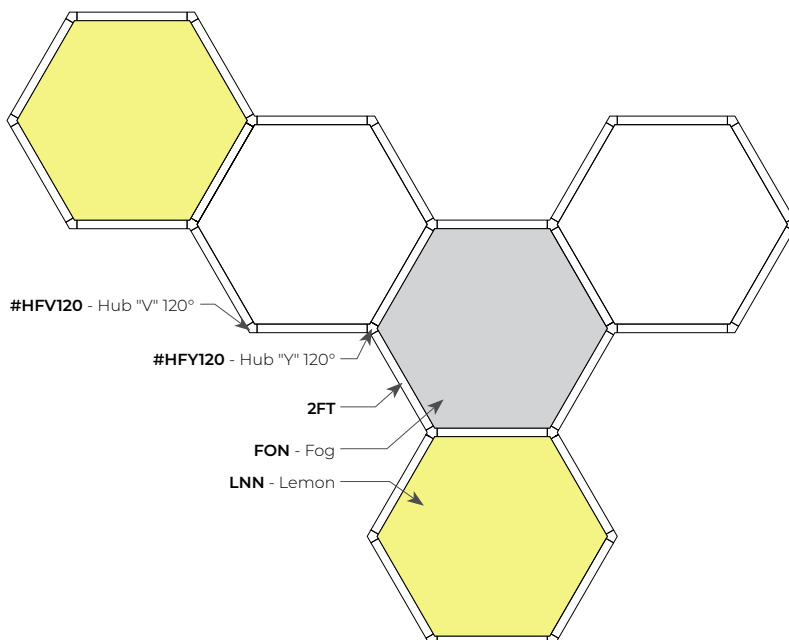
## Form and Shape

A drawing of your configuration is required - anything from a line drawing to an architectural drawing.

List the optics for each section and identify the Hub type, degree and quantity, as well as all other specifications in the code.

Make sure to follow the guidelines specified in the order code:

- MROs in 6" increments;
- Parabolic Louvers in 1' increments;
- HLO in 4" increments;
- Blank in 1" increments.
- The minimum total length per louver/optic must be 2' in each section of the fixture.
- Minimum length per section: 2'.
- Maximum length per section: 12'.



Ex: TOTAL LUMINAIRE LENGTH: 52FT  
HUBS: 8HFX120+14HFV120  
ACOUSTIC PANEL: 3AHEX(2FT)  
FELT COLOR: LNN+FON

# SQUERO HUBS ACOUSTIX

PENDANT

STATIC WHITE, BIOS



## Hub Options

2-WAY CONNECTION	COLOR ACCENT	FLUSH		COLOR ACCENT	FLUSH	
	HCV45 - Hub "V" 45°	HFV45 - Hub "V" 45°	(A) 2 3/32" (B) 1 1/4"	HCV90 - Hub "V" 90°	HFV90 - Hub "V" 90°	(A) 1" 11/32" (B) 1" 1/8"
	HCV60 - Hub "V" 60°	HFV60 - Hub "V" 60°	(A) 1" 21/32" (B) 1" 9/32"	HCV120 - Hub "V" 120°	HFV120 - Hub "V" 120°	(A) 1" 1/16" (B) 1" 3/32"
	HCS - Hub Straight	HFS - Hub Straight	(A) 1" 1/2" (B) 1" 5/16"			
3-WAY CONNECTION	HCYR - Hub "Y" Right	HFYR - Hub "Y" Right	(A) 1" 13/16" (B) 1" 3/8"	HCYL - Hub "Y" Left	HFYL - Hub "Y" Left	(A) 1" 13/16" (B) 1" 3/8"
	HCV120 - Hub "Y" 120°	HFY120 - Hub "Y" 120°	(A) 1" 3/16" (B) 1" 3/16"	HCV135 - Hub "Y" 135°	HFY135 - Hub "Y" 135°	(A) 1" 21/32" (B) 1" 1/2"
	HCT - Hub "T"	HFT - Hub "T"	(A) 1" 9/16" (B) 1" 5/16"			
4-WAY CONNECTION	HCPL - Hub "+"	HFPL - Hub "+"	(A) 1" 9/16" (B) 1" 9/16"	HGX - Hub "X"	HFX - Hub "X"	(A) 2" 1/4" (B) 2" 1/4"

# SQUERO HUBS ACOUSTIX

PENDANT

STATIC WHITE, BIOS

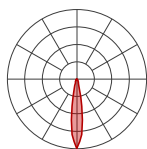


## Photometrics

Values calculated based on a 4' fixture at 3500K and 80+ CRI for all optics.

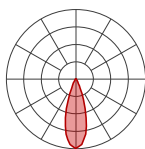
### DIRECT OPTICS

MRO18



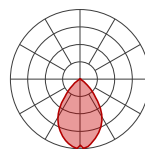
LM/FT	W/FT	LM/W
350	2.7	130
500	4.0	125
750	6.4	118
1000	9.1	110

MRO35



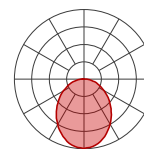
LM/FT	W/FT	LM/W
350	2.9	121
500	4.3	116
750	6.9	108
1000	9.9	101

MRO55



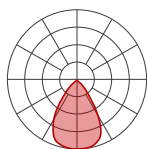
LM/FT	W/FT	LM/W
350	3.2	109
500	4.8	104
750	7.7	97
1000	11.0	91

HLO



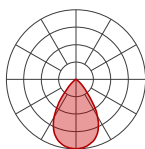
LM/FT	W/FT	LM/W
350	3.1	112
500	4.6	108
750	7.3	103
1000	10.2	98

MBPL



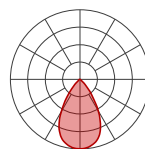
LM/FT	W/FT	LM/W
350	5.2	67
500	7.5	66
750	11.7	64

MPL



LM/FT	W/FT	LM/W
350	3.5	99
500	5.1	98
750	7.7	98
1000	10.6	95

SPL



LM/FT	W/FT	LM/W
350	3.1	113
500	4.4	113
750	6.7	112
1000	9.1	109

### MULTIPLIER TABLES - CCT/CRI

Use these tables to get results for different color temperatures and CRI for all Direct and Indirect photometric tables.

MRO18 / MRO35 / MRO55

CCT	WATTS		LPW	
	80+ CRI	90+ CRI	80+ CRI	90+ CRI
2700K	1.04	1.19	0.96	0.84
3000K	1.00	1.15	1.00	0.87
3500K	1.00	1.12	1.00	0.89
4000K	0.99	1.10	1.01	0.91
5000K	0.94	1.06	1.06	0.94

MBPL / MPL / SPL

CCT	WATTS		LPW	
	80+ CRI	90+ CRI	80+ CRI	90+ CRI
2700K	1.04	1.19	0.96	0.84
3000K	1.00	1.15	1.00	0.87
3500K	1.00	1.12	1.00	0.89
4000K	0.99	1.10	1.01	0.91
5000K	0.94	1.06	1.06	0.94

HLO

CCT	WATTS		LPW	
	80+ CRI	90+ CRI	80+ CRI	90+ CRI
2700K	1.05	1.27	0.95	0.79
3000K	1.02	1.23	0.98	0.81
3500K	1.00	1.19	1.00	0.84
4000K	1.00	1.19	1.00	0.84
5000K	0.96	1.12	1.04	0.89

# SQUERO HUBS ACOUSTIX

PENDANT

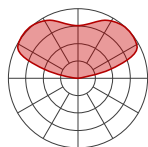
STATIC WHITE, BIOS



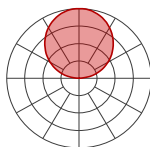
Values calculated based on a 4' fixture at 3500K and 80+ CRI for all optics.

## INDIRECT OPTICS

WIO2



TIO



LM/FT	W/FT	LM/W
350	2.4	145
500	3.5	141
750	5.5	136
1000	7.7	130

LM/FT	W/FT	LM/W
350	2.8	127
500	4.0	124
750	6.3	119
1000	8.8	114

## MULTIPLIER TABLES - CCT/CRI

Use these tables to get results for different color temperatures and CRI for all Direct and Indirect photometric tables.

WIO2 / TIO

CCT	WATTS		LPW	
	80+ CRI	90+ CRI	80+ CRI	90+ CRI
2700K	1.05	1.27	0.95	0.79
3000K	1.02	1.23	0.98	0.81
3500K	1.00	1.19	1.00	0.84
4000K	1.00	1.19	1.00	0.84
5000K	0.96	1.12	1.04	0.89

## DIRECT/INDIRECT - LPW CALCULATION

For Direct/Indirect performance values, follow the formula.

$$\frac{\left( \begin{array}{c} \text{DIRECT} \\ \text{LM/FT} \end{array} + \begin{array}{c} \text{INDIRECT} \\ \text{LM/FT} \end{array} \right)}{\left( \begin{array}{c} \text{DIRECT} \\ \text{W/FT} \end{array} + \begin{array}{c} \text{INDIRECT} \\ \text{W/FT} \end{array} \right)} = \text{LPW}$$



# SQUERO HUBS ACOUSTIX

PENDANT

STATIC WHITE, BIOS



## Acoustic Calculator

Use the Lumenwerx Acoustix Value Calculator table to 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'.



- 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%

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

**Square feet ÷ Value  
= Number of acoustic panels**

Example:

**Luminaires:** Squero Hubs Acoustix, Hexagon 2'  
**Room square feet:** L: 20 ft x W: 18 ft = 360 sq ft  
**Desired acoustical improvement:** Better = 8  
**Number of acoustic panels needed in the room:** 360 ÷ 8 = **45 acoustic panels**

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.

		Room dimensions under 300 sq ft			Room dimensions over 300 sq ft		
ACOUSTIC PANEL		GOOD 😊	BETTER 😊😊	BEST 😊😊😊	GOOD 😊	BETTER 😊😊	BEST 😊😊😊
Square	2' x 2'	29	14	8	45	22	14
	3' x 3'	13	6	4	20	10	6
	4' x 4'	7	4	2	11	6	4
	4' x 4'	7	4	2	11	6	4
Rectangle	2' x 3'	19	9	5	30	15	9
	2' x 4'	15	7	4	23	11	7
	2' x 5'	12	6	3	18	9	6
	2' x 6'	10	5	3	15	7	5
	2' x 7'	8	4	2	13	6	4
	2' x 8'	7	4	2	11	6	4
	3' x 4'	10	5	3	15	7	5
	3' x 5'	8	4	2	12	6	4
	3' x 6'	6	3	2	10	5	3
	3' x 7'	6	3	2	9	4	3
	3' x 8'	5	2	1	8	4	2
	4' x 5'	6	3	2	9	4	3
	4' x 6'	5	2	1	8	4	2
	4' x 7'	4	2	1	6	3	2
	4' x 8'	4	2	1	6	3	2
Triangle	2'	67	32	18	104	51	32
	3'	30	14	8	46	23	14
	4'	17	8	5	26	13	8
Hexagon	2'	11	5	3	17	8	5

# SQUERO HUBS ACOUSTIX

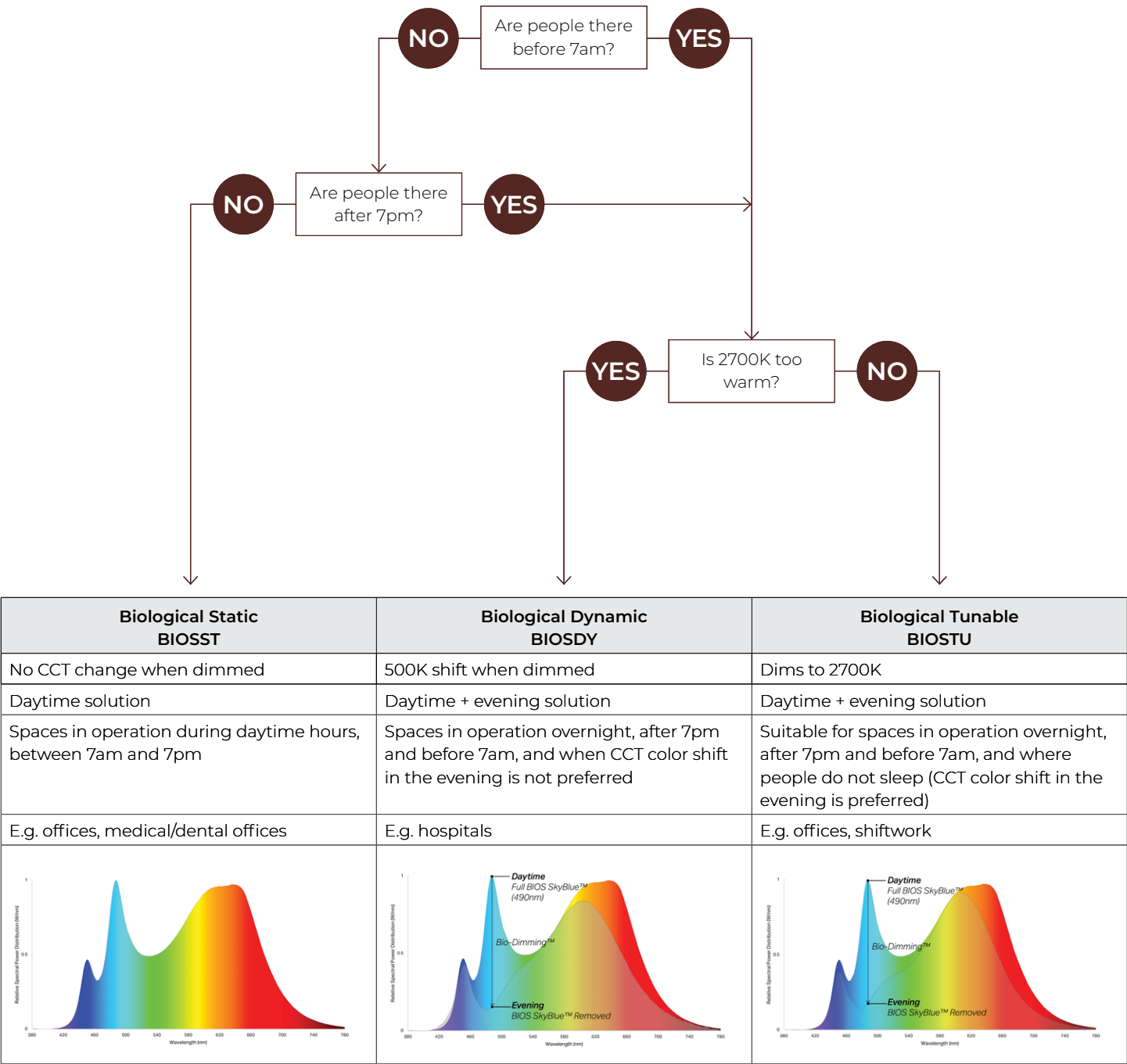
PENDANT

STATIC WHITE, BIOS



## BIOS

Three BIOS Circadian LED solutions are offered – Biological Static, Biological Dynamic, and Biological Tunable. Use the decision tree below to identify when and where to use BIOS Wellness LED Lighting Solutions.



# SQUERO HUBS ACOUSTIX

PENDANT

STATIC WHITE, BIOS



## Technical Specifications

### DIRECT OPTICS

#### Miniature Reflector Optic (MRO)

Locates individual, precisely molded TIR elements over each LED emitter, and further shield the source with precise parabolic reflectors. The controlled beam is remarkably comfortable – especially in a small LED luminaire.

MRO is available in a specular black or gloss white finish and creates a distinctive visual texture.

Different TIR elements offer a choice of beam spreads: narrow (18° with SC of 0.3), medium (35° with SC of 0.6), and wide (55° with SC of 0.9). These concentrated distributions can provide effective task illumination in a variety of applications.

Each MRO module is 6" long with five optical chambers.



#### Parabolic Louvers (MBPL, MPL & SPL)

Parabolic Louver Optics provide excellent shielding and a pleasing crisp visual texture. The precisely molded louvers consist of 1" deep blades and side reflectors with shielding of 50° lengthwise and 45° crosswise.

The parabolic contour of the blades and side reflectors direct light into a comfortable downlight distribution with a spacing criterion of 1.1, while minimizing shadows from the LED array above each cell.

Three finishes are available: matte black, matte, and specular. Specular (SPL) provides higher efficacy, sharper cut-off, and an ultra quiet appearance at shallow viewing angles. Matte (MPL) offers a softer appearance, a wider beam spread, and gentle brightness transition at cut-off. Matte black (MBPL) offers the lowest UGR in Squero as the black parabolic louver is very quiet and glare free. The UGR is the best in class rating of under 10.



#### High-Efficiency Lambertian Optic (HLO)

The High-Efficiency Lambertian Optic (HLO) shielding of diffusing 0.075" thick acrylic with up to 88% transmission and good source obscuration is combined with matte white side reflectors to create an efficient optical chamber with uniform luminosity.

Luminaire brightness is controlled by the flux-to-shielding area ratio. For visual comfort, avoid high lumen output unless Squero is installed in a high ceiling application. Spacing criteria: 1.2 (longitudinal) x 1.1 (lateral).



#### Blank (BLA)

Blank covers provide spacing – functional or rhythmic – in the direct component of a Squero Combination luminaire. Covers are sized according to the Combination design, finished to match the luminaire housing, and snap into the aperture.



### INDIRECT OPTICS

#### Widespread Indirect Optic (WIO2)

The Widespread Indirect Optic (WIO2) is a horizontal LED array with a widespread indirect micro prismatic optic that offers an impressive 160° spread. WIO2 creates an even illumination for smooth brightness on the ceiling that can achieve uniformity ratios of up to 2:1.

#### Uniformity [max/min]

Based on 18' continuous runs, in a 20' x 40' room, 10' wall height

Mounting height from ceiling	Spacing (Center to center)		
	8'	10'	12'
12"	5.5	10.0	9.0
18"	3.5	6.0	6.0
24"	2.5	4.0	4.5

#### Translucent Indirect Optic (TIO)

The Translucent Indirect Optic (TIO) is composed of a horizontal LED array that has a translucent lens to mask pixilation from the diodes. TIO has a 100° spread in the indirect that is ideal when the fixture is mounted farther away from the ceiling.

### LIGHT SOURCE

#### Static white

Custom linear array of high-flux LEDs mounted onto aluminum-backed circuitry with quick-connect wiring to facilitate service and optimize thermal management. Available in 2700K, 3000K, 3500K, 4000K, and 5000K with a minimum 80+ CRI and an option for 90+ CRI with elevated R9 value. Color consistency maintained to within 3 SDCM.

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.

# SQUERO HUBS ACOUSTIX

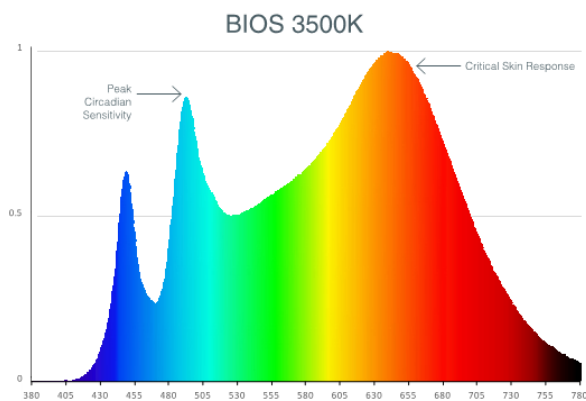
## PENDANT

### STATIC WHITE, BIOS



#### BIOS

BIOS SkyBlue™ Technology is designed to provide the specific circadian stimulus to improve overall sleep quality, recovery during the night, and overall feelings of well-being. The non-visual light signals that stimulate our circadian system have peak intensity in the "sky blue" region. As the diagram below illustrates, BIOS SkyBlue technology shifts the peak LED spectral intensity (490 nm) to align better with the peak response of circadian stimulus. Also note the enhanced deep-red (near 660 nm) spectrum.



Three BIOS solutions are offered: BIOS Biological Static (BIOSST), BIOS Biological Dynamic (BIOSDY), and BIOS Biological Tunable (BIOSTU). See page 10 for details.

#### WELL BUILDING STANDARD



**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 BIOS LED is selected
- Feature 55 or L04 meets WELL glare category (b-c-d)
- Feature 58 or L07 when 90+ CRI 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.

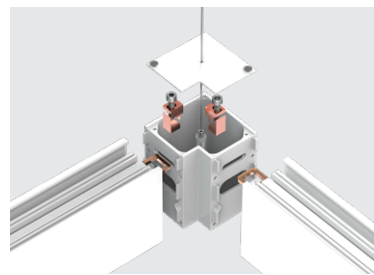
For more information, please contact [well@lumenwerx.com](mailto:well@lumenwerx.com)

#### LUMINAIRE LENGTH

Squero Hubs Acoustix can create an endless variety of forms and shapes, from geometric simplicity to organic networks. Hubs provide the vertices between Squero luminaires. Luminaire sections are available in 1' and/or 1" increments, from 2' to 12'; they can be joined to create longer runs. The minimum length is 2'.

#### HUBS

Digitally milled aluminum with draw-tight cleat of machined steel provides easy and clean installation. Cable suspension at each Hub, power feed where specified.



# SQUERO HUBS ACOUSTIX

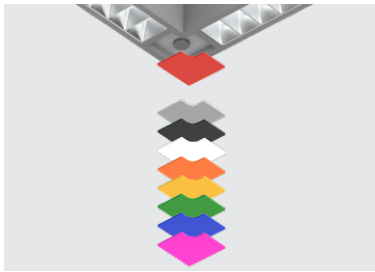
PENDANT

STATIC WHITE, BIOS



## COLOR ACCENT HUBS

Optional; gloss-finished steel plate in choice of nine colors, retained by neodymium magnet, no visible fasteners, and regressed 1/8". Custom finishes are also available.



## 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), QUADRO (RGBW), emergency battery backup, and sensor integration. These must be addressed and evaluated on a case-by-case basis.

## MOUNTING

Pendant fixtures can be mounted with aircraft cable. See page 3 for details.

## FINISH

**Interior:** 95%, reflective matte powder coated white paint

**Exterior:** Matte white, matte black, or aluminum powder coating. Custom finishes are also available.

## 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:** Extruded aluminum, up to 90% recycled content

**Interior brackets:** Die-formed cold rolled steel sheet

**Hubs:** Digitally milled from solid aluminum

**Locking:** Draw-tight french cleat of machined-steel with screw fastening

**Top panel:** Removable for access to wiring and cable; finished to match luminaire modules

**Bottom panel:** Milled in place, flush to the bottom of luminaire modules

**Color accent plate:** Gloss-finished steel plate

**Louvers:** Injection molded optical grade polycarbonate, up to 95% reflective

**Light guide:** Clear PMMA laminated with microstructure film formed into optical TIR/extraction form

**End caps:** Die-cast aluminum

**Hanger:** Chromed griplock securely attached in end caps and/or joiners with stainless steel hardware

**Aircraft cable suspension:** Ø 1/16" stainless steel aircraft cable

## ENVIRONMENT

Ambient temperature at fixture location shall not exceed 30°C/86°F. For indoor use only.

## 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 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.