

SQUERO HUBS

PENDANT

STATIC WHITE, BIOS

LUMENWERX



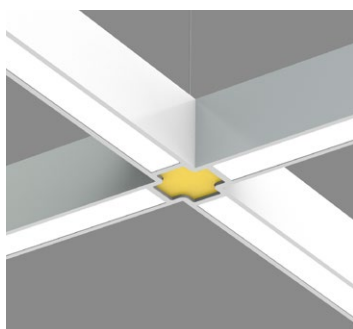
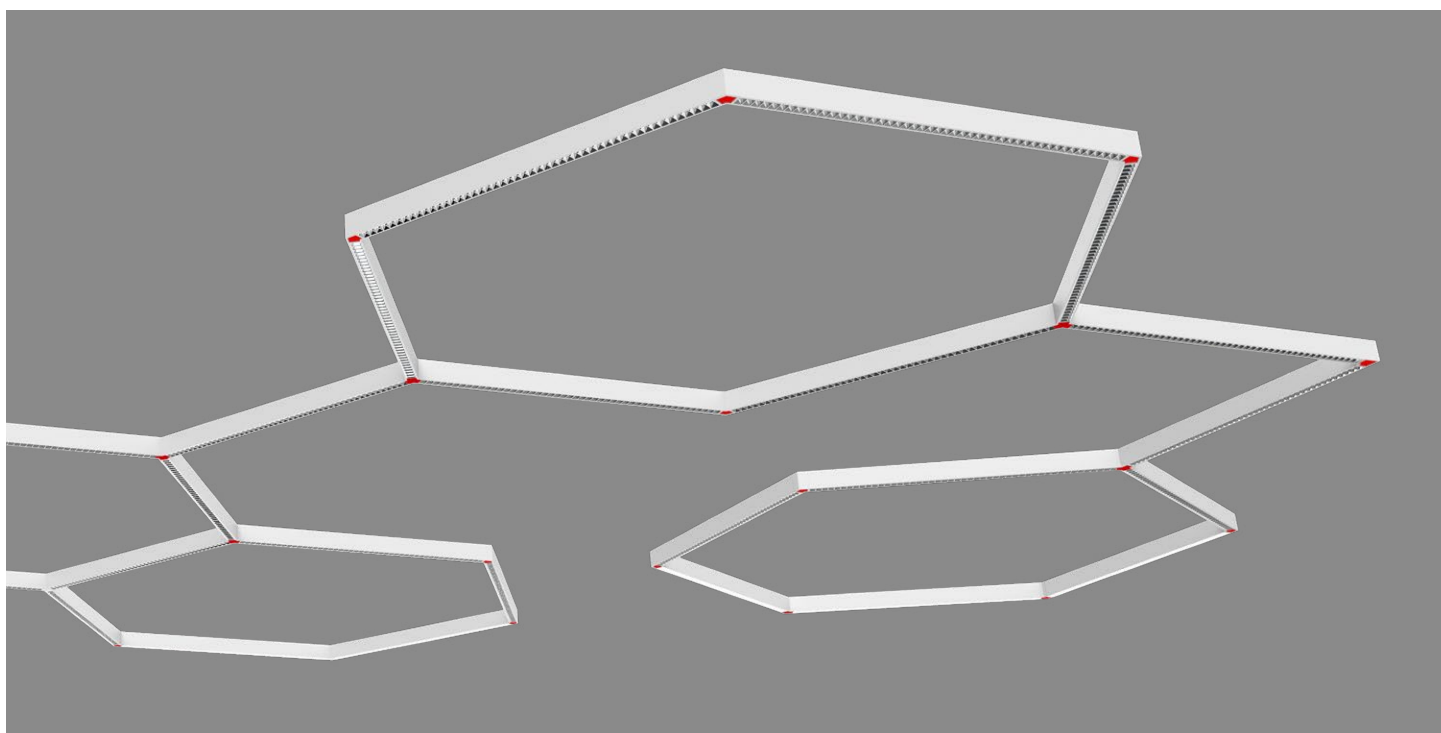
Project: _____

Type: _____

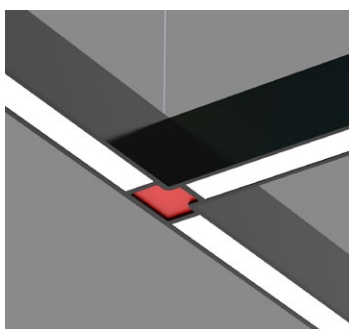
DESCRIPTION

Squero Hubs create fresh luminaire forms with distinctive angles and intersections. Hubs connect standard Squero pendant modules with 12 precise geometric alignment for 2, 3 and 4 way arrangement. With milled aluminum construction, Hubs assure rigid locking to the Squero luminaire modules and provide for cable suspension and through wiring. Concealed fastening, crisp details, and multiple color options add a touch of flair to any pattern.

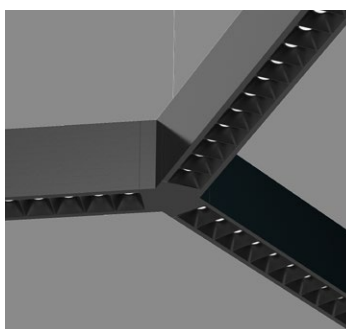
SENSORS
For latest
information
on sensors,
click [here](#).



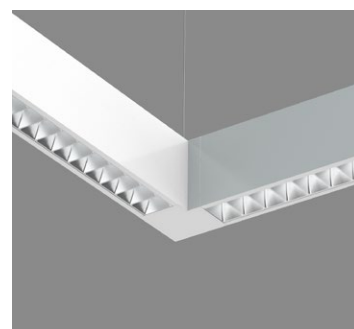
HUB ACCENT
4 WAY CONNECTION



HUB ACCENT
3 WAY CONNECTION



HUB FLUSH
3 WAY CONNECTION



HUB FLUSH
2 WAY CONNECTION

* More Hub types are available. See page 6 for details.

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Project: _____

Type: _____

Order Guide

Example: SQUHUBP-D-MRO18-2FT-HLO-4FT-BLA-6IN-WH-NA-SW-80CRI-350LMF-NA-27K-6FT6IN-1HVF90-NA-120V-D1-1C-NA-ACS-W-NA-NA-1AAM21(80CRI-350LM-27K-W-NA)

A drawing of your combination is required - anything from a line drawing to an architectural drawing. You can also use the grid on page 4 to sketch your layout.

LUMINAIRE ID	DISTRIBUTION	DIRECT OPTICS ^{1,2,3} Specify the total length for each required optic.			MRO COLOR	INDIRECT OPTIC Specify NA for Direct fixture	LIGHT SOURCE ⁸	CRI
SQUHUBP								
SQUHUBP - Squero Hubs Pendant	DI - Direct/Indirect D - Direct	MRO18 - 18 degree Miniature Reflector Optic	FT	IN	WH ⁶ - White	WIO2 - Widespread Indirect Optic	SW - Static white	80CRI - 80 CRI
		MRO35 - 35 degree Miniature Reflector Optic	FT	IN	BK ⁶ - Black	TIO ⁷ - Translucent Indirect Optic	BIOSST ⁹ - BIOS Biological Static	90CRI ¹⁰ - 90 CRI
		MRO55 - 55 degree Miniature Reflector Optic	FT	IN	NA - Not applicable	WAI2 ⁷ - Widespread Asymmetric Indirect Optic	BIOSDY ⁹ - BIOS Biological Dynamic	¹⁰ Not available with BIOS.
		MBPL ⁴ - Matte Black Parabolic Louver	FT			NA - Not applicable	BIOSTU ⁹ - BIOS Biological Tunable	
		MPL ⁴ - Matte Parabolic Louver	FT					
		SPL ⁴ - Specular Parabolic Louver	FT					
		HLO - High-Efficiency Lambertian Optic	FT	IN				
		BLA ⁵ - Blank	FT	IN				
¹ Specify MROs in 6" increments, Parabolic Louvers in 1" increments, HLO in 4" increments, and Blank in 1" increments. ² The minimum total length per louver/optic must be 2' in each section of the fixture. ³ Minimum section length is 2' for Direct and 4' for Direct/Indirect. ⁴ Not available with BIOSTU. ⁵ A minimum 6" blank section must be specified for each AAM or Micro Spot option.								
⁶ Only available with MRO optics. ⁷ Not available with BIOS. ⁸ Chromawerx Sola and Duo also available. Consult other spec sheet. ⁹ See page 9 for details.								

DIR. LUMEN PACK.	IND. LUMEN PACK. Specify NA for Direct fixture	COLOR TEMP.	TOTAL LUMINAIRE LENGTH	HUB TYPE, DEGREE AND QUANTITY ¹⁸ Specify quantity (#) for each required Hub	ACCENT HUB PLATE COLOR Specify NA for Flush Hubs
350LMF - Eco low output 350 lm/ft 500LMF - Low output 500 lm/ft 750LMF - Medium output 750 lm/ft 1000LMF ^{11,12} - High output 1000 lm/ft	350LMF - Eco low output 350 lm/ft 500LMF - Low output 500 lm/ft 750LMF - Medium output 750 lm/ft 1000LMF ^{13,14,15} - High output 1000 lm/ft NA - Not applicable	27K ¹⁶ - 2700K 30K - 3000K 35K - 3500K 40K - 4000K 50K ¹⁶ - 5000K ¹⁶ Not available with BIOS.	#FT#IN ¹⁷ - Specify the total nominal length (#) in 1' and/or 1" increments Minimum length per section: 2' for Direct and 4' for Direct/Indirect Maximum length per section: 12' ¹⁷ Total luminaire length should equal the sum of all the direct optic lengths.	COLOR ACCENT HUBS #HCV45 - Hub "V" 45° #HCV60 - Hub "V" 60° #HCV90 - Hub "V" 90° #HCV120 - Hub "V" 120° #HCS - Hub Straight #HCT - Hub "T" #HCYR - Hub "Y" Right #HCYL - Hub "Y" Left #HCY120 - Hub "Y" 120° #HCY135 - Hub "Y" 135° #HCPL - Hub "+" #HCX - Hub "X" ¹⁸ If more than one option is specified, separate codes with a "+", e.g. 1HCV90+1HCT.	FLUSH HUBS #HFV45 - Hub "V" 45° #HFV60 - Hub "V" 60° #HFV90 - Hub "V" 90° #HFV120 - Hub "V" 120° #HFS - Hub Straight #HFT - Hub "T" #HFYR - Hub "Y" Right #HFYL - Hub "Y" Left #HFY120 - Hub "Y" 120° #HFY135 - Hub "Y" 135° #HFPL - Hub "+" #HFX - Hub "X" W - Matte white AL - Aluminum B - Matte black RAL1028 - Yellow RAL2004 - Orange RAL3020 - Red RAL4010 - Magenta RAL5002 - Blue RAL6018 - Green CF# - Custom finish, specify RAL# NA - Not applicable
¹¹ Not available with MBPL optic. ¹² Not available with BIOS. ¹³ Not available with WAI2. ¹⁴ For Direct/Indirect, Direct must not exceed 750 lm/ft. ¹⁵ Not available with BIOS.					

VOLTAGE	DRIVER ²⁰	ELECTRICAL	ELECTRICAL SECTIONS (optional) ^{26,27}	MOUNTING ³²
120V - 120V 277V - 277V UNV - 120V-277V 347V ¹⁹ - 347V	D1 - 1% 0-10V DA ²¹ - DALI LDE1 ²¹ - Lutron Hi-lume 1% Eco ELD1 - eldoLED 1% ECODrive 0-10V ELDO - eldoLED 0.1% SOLODrive 0-10V ²⁰ PoE (Power-over-Ethernet) compatible. Consult factory for details. ²¹ On-site commissioning is required.	1C - 1 circuit 2C ²² - 2 circuits #MC ²³ - Multi circuit EC - Emergency-powered fixture NL - Night light fixture DL - Daylight fixture GTD ^{24,25} - Generator transfer device fixture ²² Available for Direct/Indirect only. Separate direct and indirect circuits. ²³ Specify total number of circuits (#), including any required for electrical section, AAM, or Micro Spot options. Provide drawing or layout specifications. Minimum 4' section per circuit. ²⁴ Minimum 4' fixture. ²⁵ Not available with 347V.	#EC## ²⁸ - Emergency-powered section #NL## ²⁸ - Night light section #DL## ²⁸ - Daylight section #GTD## ^{28,29,30} - Generator transfer device section #EMB ^{30,31} - Emergency battery NA - None ²⁶ Specify with multi circuit (#MC) electrical option only. ²⁷ Provide drawing or layout specifications. Consult factory for other configurations. Default section length is 4'. ²⁸ Specify quantity (#), and section length in inches (##). ²⁹ Minimum 4' section. ³⁰ Not available with 347V. ³¹ Specify quantity (#). All batteries will be on the same circuit. Each battery powers a 4' section. For Direct/Indirect, minimum 8' fixture.	ACS - Aircraft cable, standard ACC() - Aircraft cable, custom ³² See page 3 for ordering details.
¹⁹ Available with D1 driver only.				

FINISH ³³	CONTROL ³⁴	OPTIONS	MODULES (optional) ^{40,41}
W - Matte white AL - Aluminum B - Matte black CF# - Custom finish, specify RAL# ³³ Blank and Hub finish will match fixture finish.	STANDALONE CONTROLS ^{35,36} Specify the quantity (#) of sensors per fixture. #OMS ³⁷ - Onboard Occupancy #OMS## - Onboard Occupancy with bi-level dimming #ODS - Onboard Daylight #OCS - Onboard Occupancy & Daylight NA - None ³⁴ Standalone and connected control options cannot be combined. ³⁵ Available with D1 driver and 1 circuit options only. ³⁶ Minimum 4' per zone. Provide control zone length.	CONNECTED CONTROLS ³⁹ LU - Lutron AWN - Lutron Athena Wireless Node RF Only AWNS - Lutron Athena Wireless Node Sensor EN - Enlighted ENC - Encelium WL - Cooper Wavelinx AN - Acuity nLight CA - Casambi LG - Legrand ³⁷ Fixture turns off when no occupancy. ³⁸ Fixture dims to specified light level % (##). ³⁹ Consult factory for connected controls.	FU120 - Fuse 120V FU277 - Fuse 277V CTB9 - T-bar caddy clip, 9/16" CTB15 - T-bar caddy clip, 15/16" CTG9 - Tegular caddy clip, 9/16" CTG15 - Tegular caddy clip, 15/16" CST - Screw slot caddy clip NA - None #AAM21() - AAM 21° #AAM30() - AAM 30° #AAM36() - AAM 36° #MS25() - Micro Spot 25° #MS35() - Micro Spot 35° #MS50() - Micro Spot 50° NA - None ⁴⁰ See page 3 for ordering details. ⁴¹ If more than one option is specified, separate codes with a "+", e.g. 1AAM21(...)+1MS25(...).

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Module

For a module, specify the options in the parentheses.

Example: 1AAM21(SW-80CRI-350LM-27K-W-NA)

MODULES (optional)								
MODULES ^{1, 2, 3}		LIGHT SOURCE	CRI	LUMEN PACKAGE		COLOR TEMP.	FINISH	OPTION
<div>#AAM21() - AAM 21° #AAM30() - AAM 30° #AAM36() - AAM 36° NA - None</div> <div>¹Specify quantity (#). ²6" blank per module. ³If more than one option is specified, separate codes with a "+", e.g. 1AAM21(...)+1MS25(...).</div>		SW - Static white	80CRI - 80 CRI 90CRI - 90 CRI	AAM ⁴	MS ⁵	27K - 2700K 30K - 3000K 35K - 3500K 40K - 4000K 50K - 5000K	W - Matte white B - Matte black	HCL ⁶ - Honeycomb louver NA - None
				350LM - 350 lm 600LM - 600 lm	400LM - 400 lm			
				⁴ 5 W for 350 lm and 8 W for 600 lm. Wattages are for reference only. May change based on driver.	⁵ 5 W. Wattage is for reference only. May change based on driver.			⁶ Not available with Micro Spot.

Pendant Mounting Code

Standard

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

MOUNTING
ACS - Aircraft cable, standard
Ø5" for power canopy Ø3" for non-power Canopies are white Power cord is white for all fixture finishes (except black fixture is black power cord) Aircraft cable length is 36"

Custom

Aircraft Cable

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

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

MOUNTING					
ACC()					
	NON-POWER CANOPY SIZE	AIRCRAFT CABLE LENGTH	CANOPY FINISH	POWER CORD COLOR	OPTIONS
ACC	3NPC - Ø3" non-power canopy 5NPC - Ø5" non-power canopy	36IN - 36" 72IN - 72" 120IN - 120" #IN ¹ - Other lengths, specify in inches ¹ 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 - Seismic mounting SLC - Sloped ceiling for aircraft cable NA - None

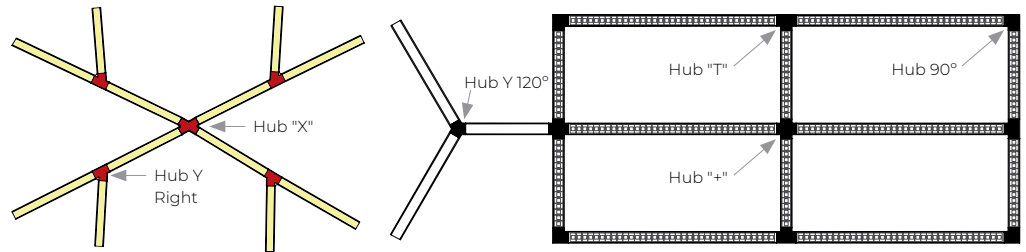
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Form and Shape

Use the grid below to sketch and label the layout of your hubs. 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/AAM/Micro Spot in 6 inch increments;
- Parabolic Louvers in 1 foot increments;
- HLO in 4 inch increments;
- Blank in 1 inch increments.
- The minimum total length per louver/optic must be 2' in each section of the fixture.
- Minimum length per section:
2' for Direct and 4' for Direct/Indirect.
- Maximum length per section: 12'.

This image shows a full page of blank graph paper. The grid consists of small, uniform squares formed by thin, light gray lines. There are no margins, text, or other markings on the page.

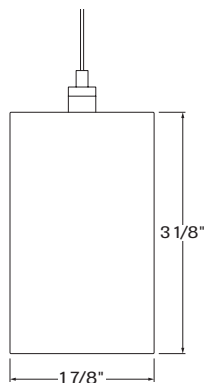
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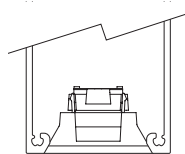
LUMENWERX

Dimensions



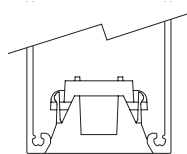
Section Views

DIRECT OPTICS



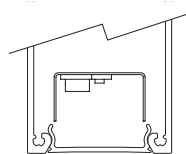
MRO

Miniature Reflector Optic



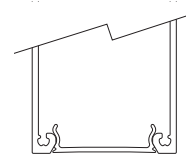
MBPL, MPL & SPL

Matte Black, Matte & Specular
Parabolic Louver



HLO

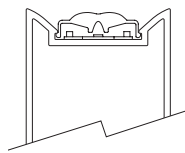
High-Efficiency Lambertian
Optic



BLA

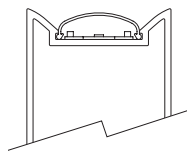
Blank

INDIRECT OPTICS



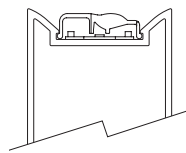
WIO2

Widespread Indirect Optic



TIO

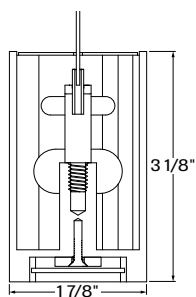
Translucent Indirect Optic



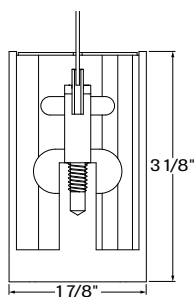
WAI2

Widespread Asymmetric
Indirect Optic

HUBS



Hubs Accent



Hubs Flush



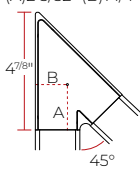






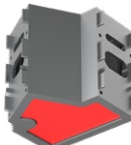
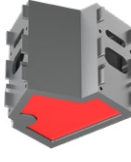
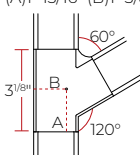


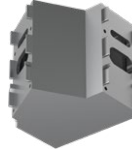




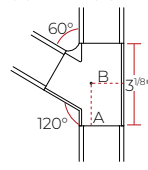
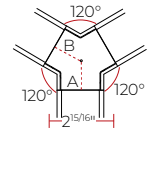
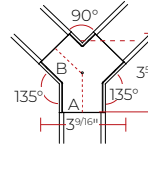

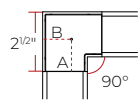


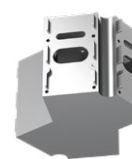
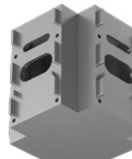
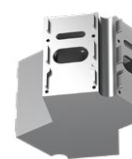
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Hub options

	COLOR ACCENT		FLUSH		COLOR ACCENT		FLUSH			
2 WAY CONNECTION	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		HCYL - Hub "Y" Left		(A) 1" 13/16" (B) 1" 3/8"	HCY120 - Hub "Y" 120°		HCY135 - Hub "Y" 135°		(A) 1" 21/32" (B) 1" 1/2"
	HCYR - Hub "Y" Right		HCYL - Hub "Y" Left		(A) 1" 13/16" (B) 1" 3/8"	HCY120 - Hub "Y" 120°		HCY135 - Hub "Y" 135°		(A) 1" 21/32" (B) 1" 1/2"
	HCYR - Hub "Y" Right		HCYL - Hub "Y" Left		(A) 1" 13/16" (B) 1" 3/8"	HCY120 - Hub "Y" 120°		HCY135 - 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 "+"		HCX - Hub "X"		(A) 1" 9/16" (B) 1" 9/16"	HFX - Hub "X"				(A) 2" 1/4" (B) 2" 1/4"
	HCPL - Hub "+"		HCX - Hub "X"		(A) 1" 9/16" (B) 1" 9/16"					(A) 2" 1/4" (B) 2" 1/4"

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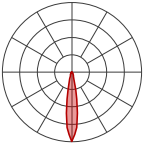
LUMENWERX

Photometrics

Values calculated based on a 4ft fixture at 35K and 80 CRI for all optics.

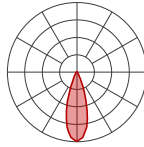
DIRECT OPTICS

MRO18



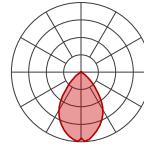
LM/FT	W/FT	LPW
350	2.7	130
500	4.0	125
750	6.4	118
1000	9.1	110

MRO35



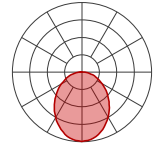
LM/FT	W/FT	LPW
350	2.9	121
500	4.3	116
750	6.9	108
1000	9.9	101

MRO55



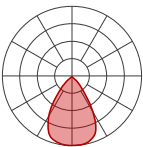
LM/FT	W/FT	LPW
350	3.2	109
500	4.8	104
750	7.7	97
1000	11.0	91

HLO



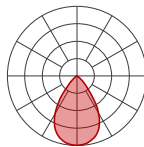
LM/FT	W/FT	LPW
350	3.1	112
500	4.6	108
750	7.3	103
1000	10.2	98

MBPL



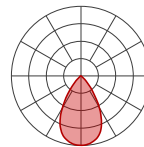
LM/FT	W/FT	LPW
350	5.2	67
500	7.5	66
750	11.7	64

MPL



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

SPL



LM/FT	W/FT	LPW
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 (K)	WATTS		LPW	
	CRI 80	CRI 90	CRI 80	CRI 90
2700	1.04	1.19	0.96	0.84
3000	1.00	1.15	1.00	0.87
3500	1.00	1.12	1.00	0.89
4000	0.99	1.10	1.01	0.91
5000	0.94	1.06	1.06	0.94

MBPL / MPL / SPL

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

HLO

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

SQUERO HUBS

PENDANT

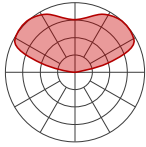
STATIC WHITE, BIOS

LUMENWERX

Values calculated based on a 4ft fixture at 35K and 80 CRI for all optics.

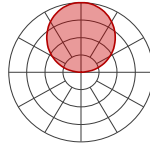
INDIRECT OPTICS

WIO2



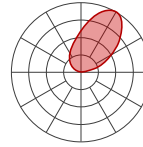
LM/FT	W/FT	LPW
350	2.4	145
500	3.5	141
750	5.5	136
1000	7.7	130

TIO



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

WAI2



LM/FT	W/FT	LPW
350	2.5	139
500	3.7	135
750	5.8	130

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 / WAI2

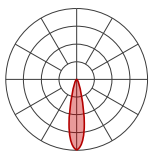
CCT (K)	WATTS		LPW	
	CRI 80	CRI 90	CRI 80	CRI 90
2700	1.05	1.27	0.95	0.79
3000	1.02	1.23	0.98	0.81
3500	1.00	1.19	1.00	0.84
4000	1.00	1.19	1.00	0.84
5000	0.96	1.12	1.04	0.89

DIRECT/INDIRECT - LPW CALCULATION

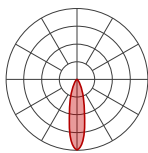
For Direct/Indirect performance values, follow the formula.

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

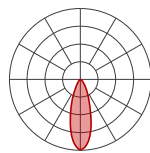
AAM



AAM 21°



AAM 30°

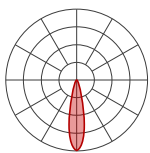


AAM 36°

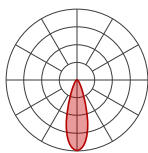
DELIVERED LUMENS

Wattage	5.0									
CRI	80					90				
CCT	2700K	3000K	3500K	4000K	5000K	2700K	3000K	3500K	4000K	5000K
Lumen	323	340	350	357	364	265	279	289	299	312
Wattage	8.0									
CRI	80					90				
CCT	2700K	3000K	3500K	4000K	5000K	2700K	3000K	3500K	4000K	5000K
Lumen	553	583	600	612	624	454	478	495	513	534

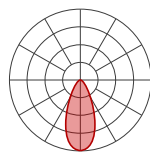
MICRO SPOT



Micro Spot 25°



Micro Spot 35°



Micro Spot 50°

DELIVERED LUMENS

Wattage	5.0									
CRI	80					90				
CCT	2700K	3000K	3500K	4000K	5000K	2700K	3000K	3500K	4000K	5000K
Lumen	373	400	400	432	432	324	344	344	345	372

SQUERO HUBS

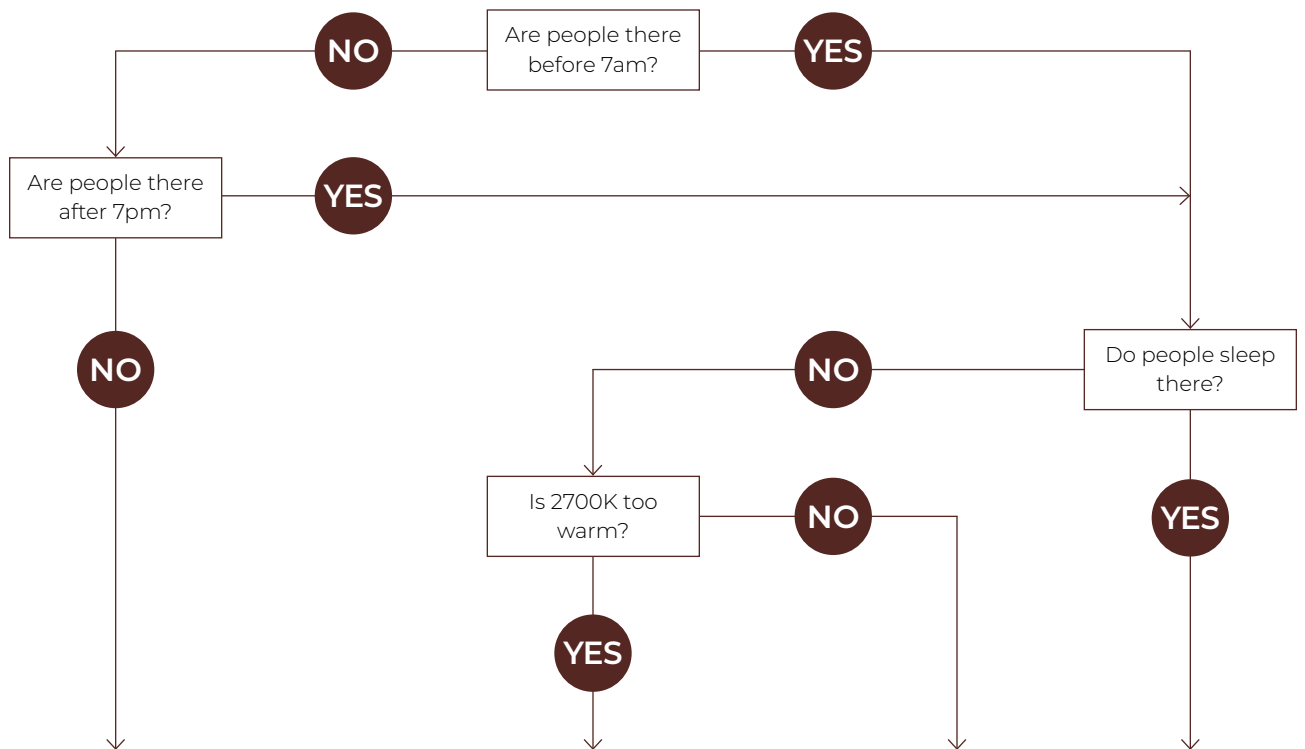
PENDANT

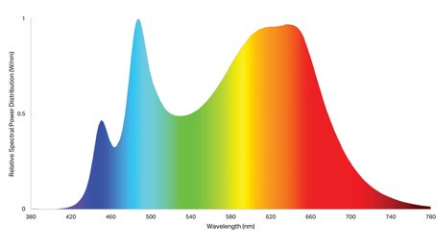
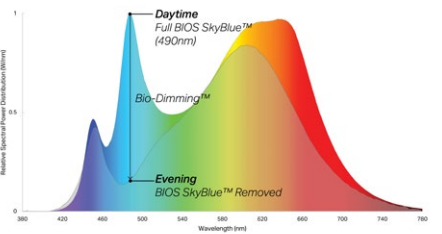
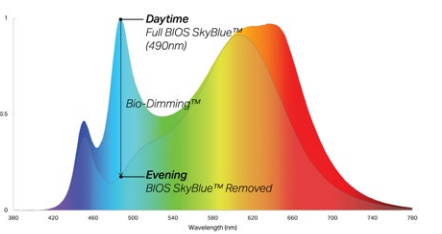
STATIC WHITE, BIOS

LUMENWERX

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.



Biological Static BIOS ST	Biological Dynamic BIOS DY	Biological Tunable BIOS TU
No CCT change when dimmed	500K shift when dimmed	Dims to 2700K
Daytime solution	Daytime + evening solution	Daytime + evening solution
Spaces in operation during daytime hours, between 7am and 7pm	Spaces in operation overnight, after 7pm and before 7am, and when CCT color shift in the evening is not preferred	Suitable for spaces in operation overnight, after 7pm and before 7am, and where people do not sleep (CCT color shift in the evening is preferred)
E.g. offices, medical/dental offices	E.g. hospitals	E.g. offices, shiftwork
		

SQUERO HUBS

PENDANT

STATIC WHITE, BIOS

LUMENWERX

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 highest 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)

Aluminum 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"	6.5	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.

Widespread Asymmetric Indirect Optic (WAI2)

The Widespread Asymmetric Indirect Optic (WAI2) offers an upward grazing effect with a 45° forward throw. It softly highlights the ceiling in the up-light while distributing the required illumination of the rest of an interior space. For avoiding glare and enjoying visual comfort, WAI2 is an ideal solution.

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.

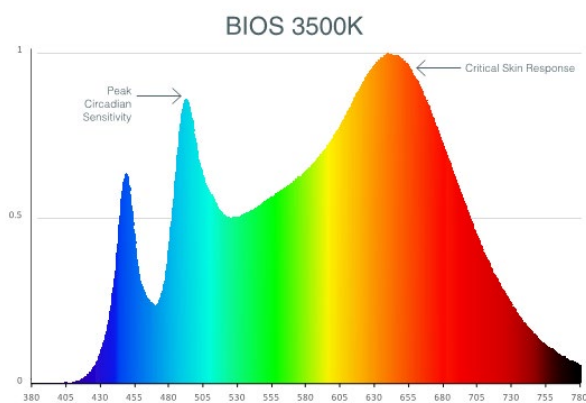
SQUERO HUBS

PENDANT

STATIC WHITE, BIOS

LIGHT SOURCE - 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.



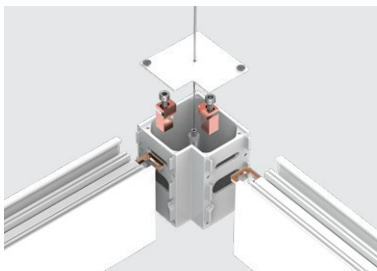
Three BIOS solutions are offered: BIOS Biological Static (BIOSST), BIOS Biological Dynamic (BIOSDY), and BIOS Biological Tunable (BIOSTU). See page 9 for details.

LUMINAIRE LENGTH

Squero Hubs 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' for Direct fixtures, and 4' for Direct/Indirect fixtures.

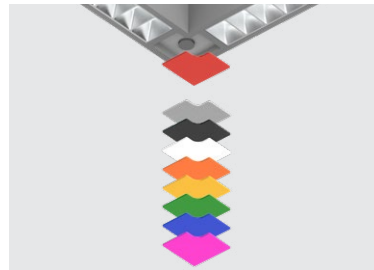
HUBS

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



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 (120-277VAC) 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% Eco, eldoLED 1% ECOdrive 0-10V, eldoLED 0.1% SOLOdrive 0-10V, 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.

ELECTRICAL SECTION OPTIONS

Electrical section options are available for fixtures specified as multi circuit (#MC). With MC, specify the total number of circuits (#), including any circuits required for optional electrical sections. A drawing is required to specify the layout. Please consult factory for custom configurations.

Electrical sections

Options include emergency-powered (#EC##), night light (#NL##), daylight (#DL##), and generator transfer device (#GTD##) sections. Specify the quantity (#), as well as the section length in inches (##).

Example 1: A 32' Direct fixture with two 8' emergency-powered sections on a second circuit.

Code: 2MC-2EC96

SQUERO HUBS

PENDANT

STATIC WHITE, BIOS

Example 2: A 16' Direct/Indirect fixture with separate circuits for direct and indirect, and with one 4' night light section on the direct side on a third circuit.

Code: 3MC-1NL48

Example 3: A 24' Direct fixture with one 4' generator transfer device section.

Code: 1MC-1GTD48

Battery

Each emergency battery (#EMB) powers a 4' section. All batteries will be on the same circuit. Specify the number of batteries (#) required.

Factory installed long life, high temperature, maintenance-free Lithium-Ion battery pack with self-test functionality, test switch and charge indicator. Minimum of 90 minutes operation, up to 1000 lumens per 4' (25°C) emergency lighting output and recharge time of 24 hours.

MOUNTING OPTIONS

Fixtures can be pendant-mounted, using aircraft cables. Unless otherwise specified, Lumenwerx provides the following hardware:

Standard aircraft cable option (ACS) - Canopies are white, Ø5" for power canopy, Ø3" for non-power. Power cord is black for black fixtures, and white for all other fixture finishes. Aircraft cable length is 36".

Caddy clips, if required specify under OPTIONS

For all other options, see the mounting code on page 3.

FINISH

Interior - 95%, reflective matte powder coated white paint

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

CONTROLS

Lumenwerx offers several options for integrating occupancy and daylight harvesting controls in our luminaires.

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



STANDALONE CONTROLS

An integrated standalone sensor controls the luminaire in which it is installed. Depending on the length, more than one sensor may be necessary and may control the entire luminaire, or just a section of it. These controls operate independently. Unless otherwise agreed, sensor location, blank size, and functionality of the sensor within the luminaire are selected by Lumenwerx. See client drawings for details.

Three types are available:

OMS: An integral Passive InfraRed (PIR) sensor turns luminaires on and off automatically with field-adjustable time out period. No wall control is used. Coverage pattern for large motion has a 12' diameter with the sensor mounted 8' above the floor; for small motion, the pattern has an 8' diameter. Typically, one sensor is required for every 10' of a continuous luminaire run.

ODS: An integral, daylight harvesting sensor with closed-loop operation dims the luminaire in which it is installed in order to compensate for available daylight. The sensor measures the combination of daylight and luminaire light reflected from horizontal surfaces below the luminaire. Initial onsite calibration is required via the use of provided remote control.

OCS: Both an occupancy and a daylight sensor are installed in the luminaire.

CONNECTED CONTROLS

With connected controls, sensors or nodes installed in the luminaire form part of a larger control system infrastructure from manufacturers such as: Lutron, Enlighted, Encelium, Cooper Wavelinx, Acuity nLight, Casambi, Legrand, and others. These connected controls allow for a scalable system providing features like occupancy and daylight control, manual control, scheduling and configuration of various zones and scenes. Energy reporting and system monitoring are also possible. Specific capabilities depend on the control system being used.

Lumenwerx installs the components (sensors, nodes, power packs, etc) which may be supplied to us by a third party, or procured directly by Lumenwerx, depending on the control system manufacturer.

Lumenwerx is solely responsible for the installation of specified components; the controls manufacturer is responsible for performance of the control system.

To indicate a Lumenwerx luminaire with connected controls, identify the specific onsite control system to be integrated into the luminaires using the ordering code. Due to the diversity of components, you must contact factory to assure complete compatibility with intended control system and to fully specify the luminaire.

Complete control specifications, sensor/node/power pack layout, and narrative for the control system are required for Lumenwerx to create shop drawings and submittals.

SQUERO HUBS

PENDANT

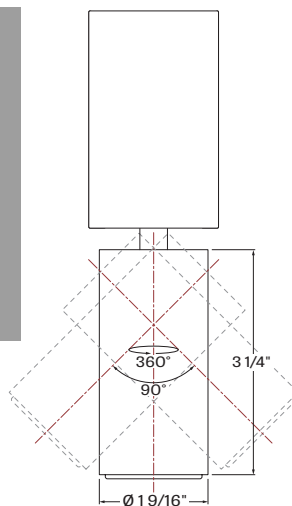
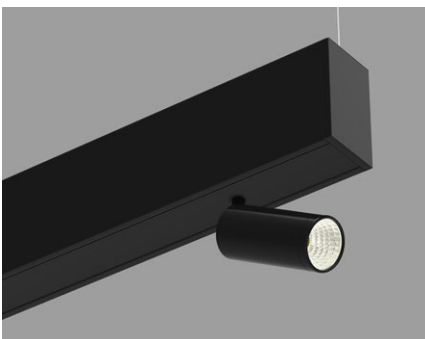
STATIC WHITE, BIOS

LUMENWERX

ADJUSTABLE LED ACCENT MODULE (AAM)

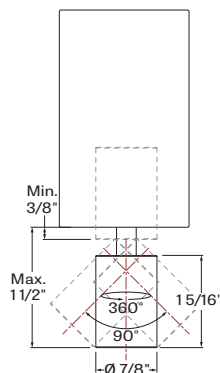
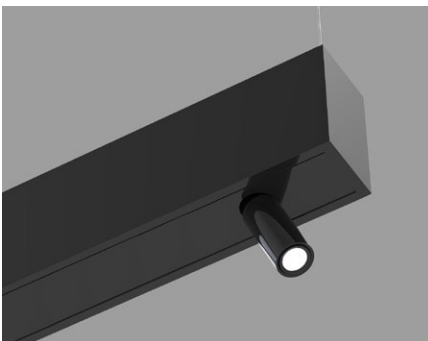
The Adjustable Accent Module (AAM) features a $\varnothing 19/16"$ x $3\ 1/4"$ cylinder that rotates 360° and tilts 90° . The LED light source is coupled with TIR optics to provide beam angles of 21° , 30° , and 36° while producing up to 600 lumens. LED light source CCT options are 2700K, 3000K, 3500K, 4000K, and 5000K, available in either 80 CRI or 90 CRI.

The AAM module can be selected in either a white or black finish and a honeycomb louver accessory is also available. The AAM driver is mounted above the cylinder, inside the SQUERO housing and accepts universal input voltage (120-277VAC) while providing 0-10V dimming control.



MICRO SPOT (MS)

The Micro Spot is a $\varnothing 7/8"$ x $1\ 5/16"$ adjustable spotlight that extends, retracts, rotates 360° , and tilts 90° . Its LED light source is coupled with a TIR refractor to provide beam angles of 25° , 35° , and 50° , while producing up to 400 lumens. LED light source CCT options are 2700K, 3000K, 3500K, 4000K, and 5000K, available in either 80 CRI or 90 CRI. The Micro Spot is offered in a white or black finish. The Micro Spot driver is mounted within the luminaire housing and accepts universal input voltage (120-277VAC) with 0-10 V dimming control.



CONSTRUCTION

Housing - Extruded aluminum (0.100" nominal) up to 90% recycled content

Interior brackets - Die formed cold rolled sheet steel 10 gauge thick

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 (0.100" nominal) up to 95% reflective

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

End caps - Die cast aluminum (0.125" nominal)

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

Aircraft cable suspension - 7x7 braids stainless steel air craft cable 0.05" thick

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.