

section view

**FEATURES OF TUBES FAMILY**

The Tubes Family, the newest in decorative lighting, allows for optimum creative expression with the capability to create any shape you want while focusing light in any desired direction.

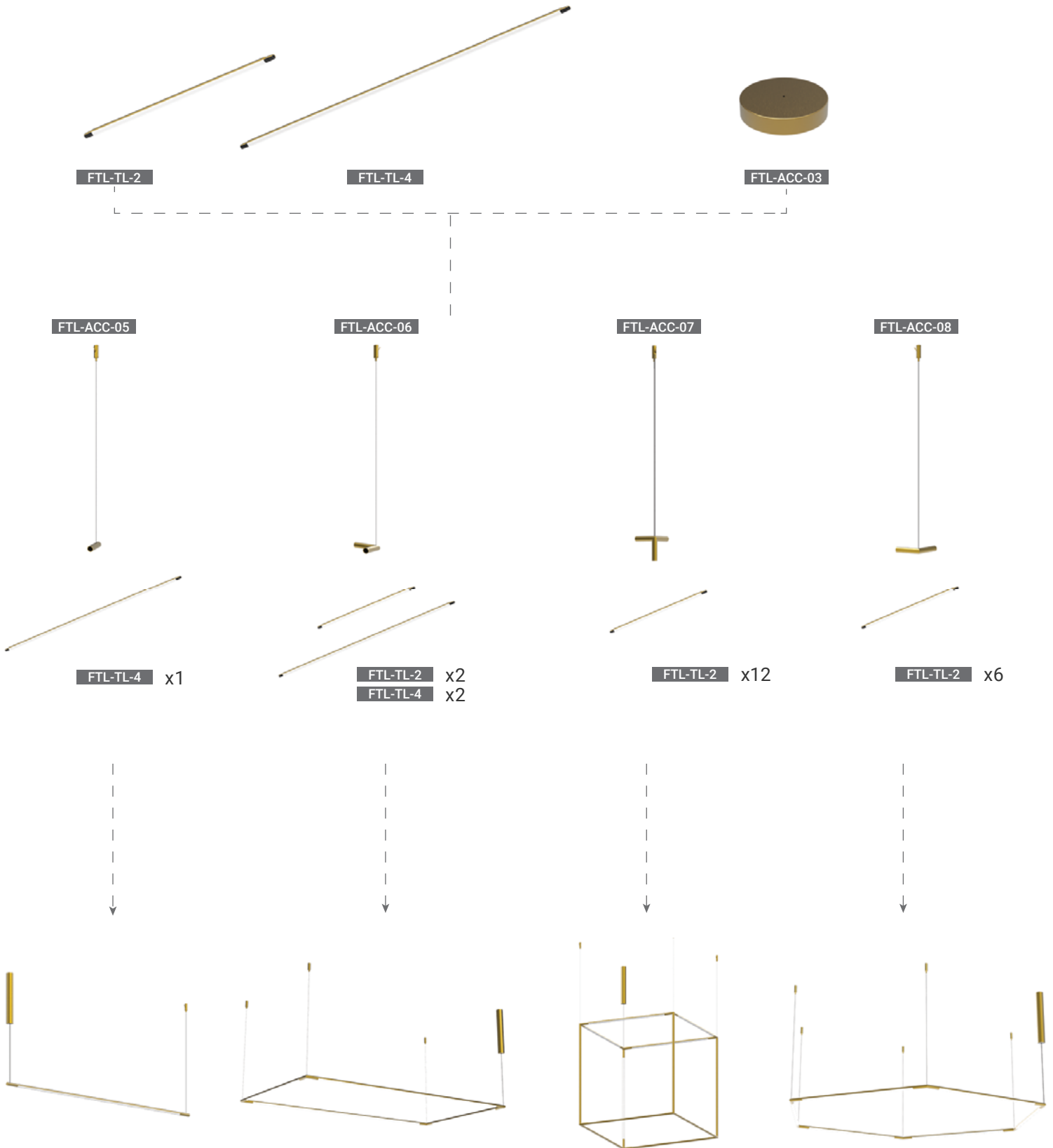
With only a 1/2" in diameter, the Tubes are ideal for bringing a sleek, minimalist, and modern feeling to any space. The Tube Family is designed as suspended mount decorative pieces, which require one remote driver per fixture that fits into the ceiling, for a clean aesthetic without unpleasant bulk. By attaching our slender 23 1/4" or 45" tubes to any of our 9 accessory connectors with eye-catching brass and black finishes, test out infinite positions and combinations of tubes to attain a simple or complex design. There is no limit to your vision with Tubes. Achieve cube, hexagon, pendant, and unlimited other shapes, with rotational capabilities of the half-lit fixture for uplighting, downlighting, wall wash, and even more bold styles to customize your illumination for applications in high-end hospitality spaces, restaurants, retail, corporate offices, and residential spaces.


Based on 3000K, 90+ CRI. Actual wattage may vary +/- 5%

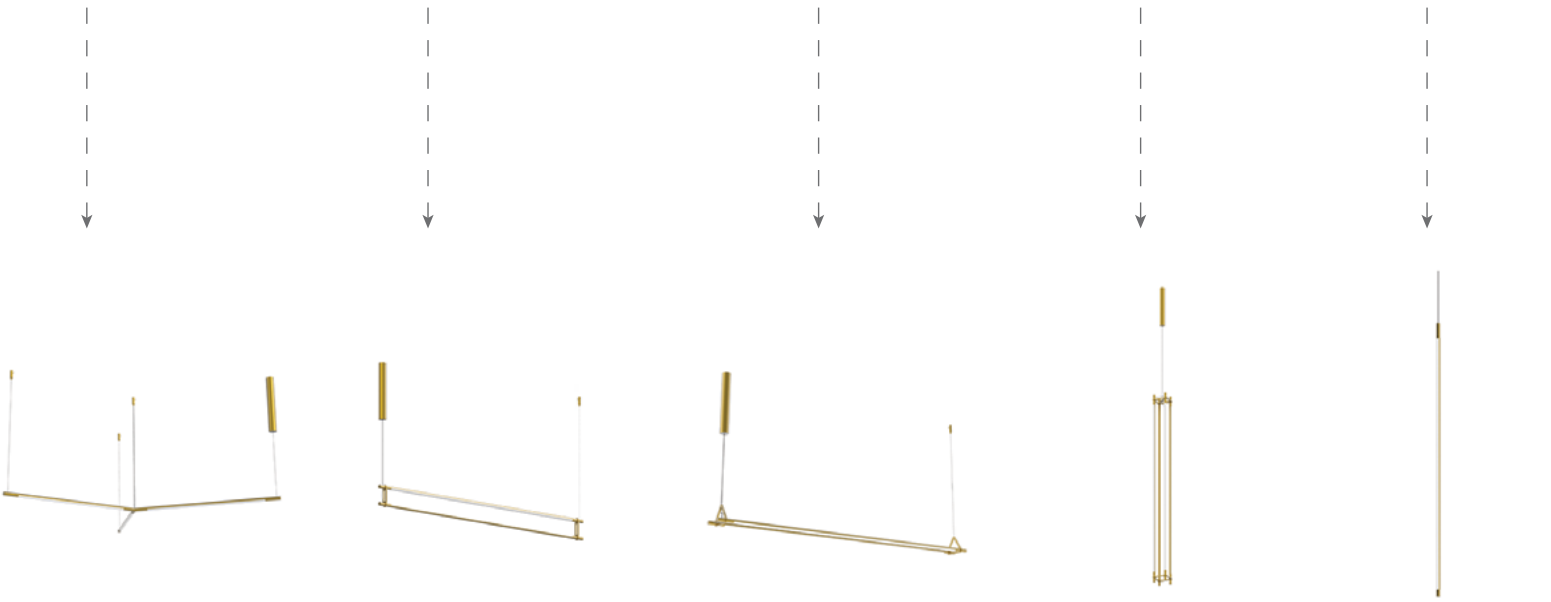
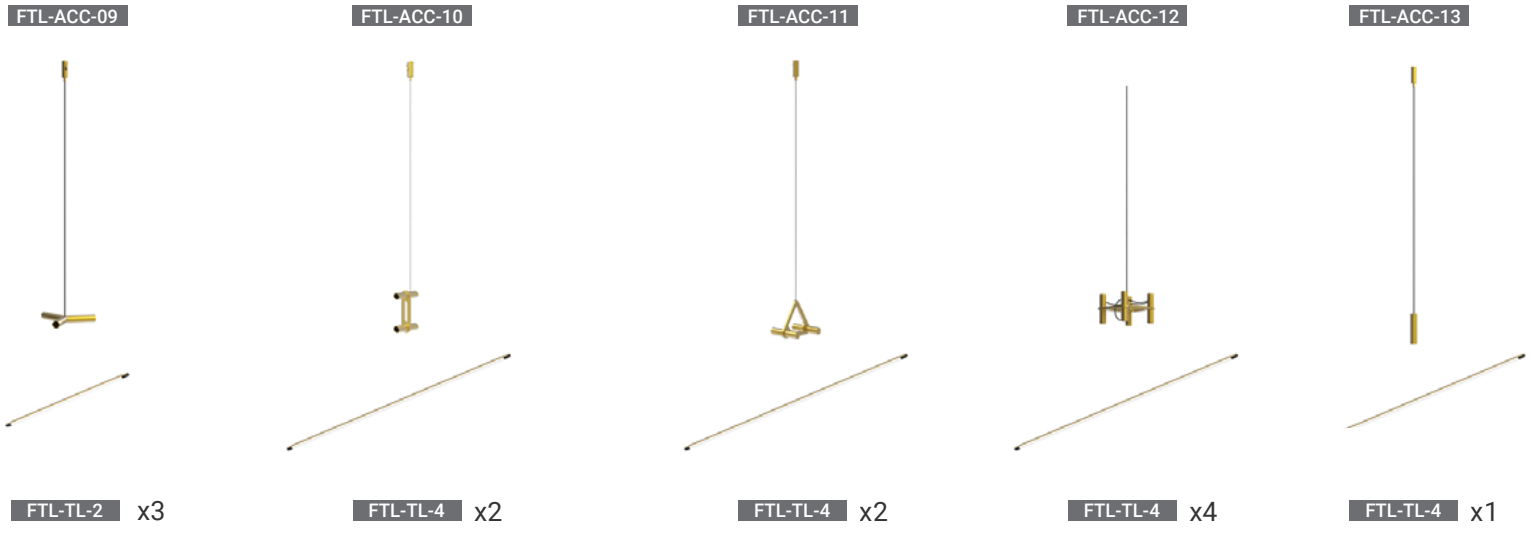
<b>SERIES</b>	Tubes Series
<b>LUMINAIRE SIZE</b>	FTL-TL-2=23", FTL-TL-4=45"
<b>CCT</b>	2700K, 3000K, 3500K, 4000K, 5000K
<b>CRI</b>	90
<b>COLOR QUALITY</b>	2 Step MacAdam Ellipse
<b>FINISH</b>	● BR (Brass) ● BK (Black)
<b>DIMMING</b>	On and Off
<b>BEAM ANGLE</b>	150°
<b>LIFETIME</b>	L70 at 60,000 Hours
<b>PHOTOMETRIC TESTS</b>	In Accordance with IES LM79-08, LM80 and TM-30, TM-21



**CONFIGURATION DRAWINGS**

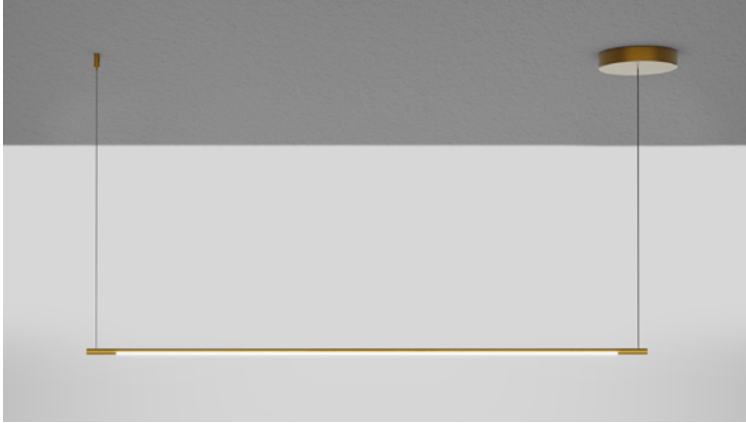


**CONFIGURATION DRAWINGS**

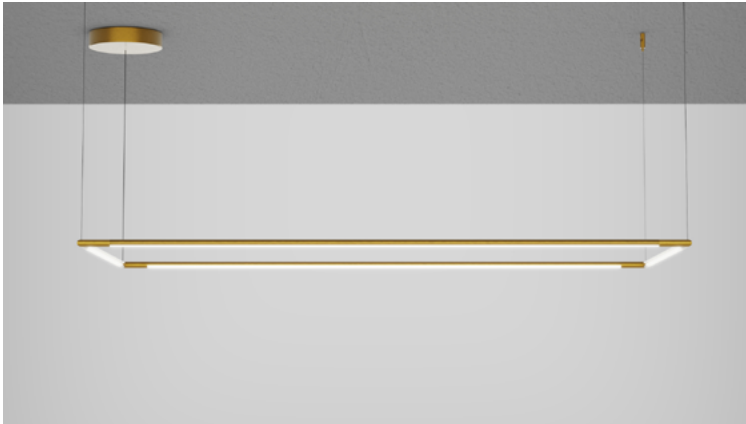


**CONFIGURATION ORDERING GUIDE**

$(FTL-TL-2) \times 1 + (FTL-ACC-03) \times 1 + (FTL-ACC-05) \times 1 =$



$(FTL-TL-2) \times 2 + (FTL-TL-4) \times 2 + (FTL-ACC-03) \times 1 + (FTL-ACC-06) \times 1 =$



$(FTL-TL-2) \times 12 + (FTL-ACC-03) \times 1 + (FTL-ACC-07) \times 1 =$

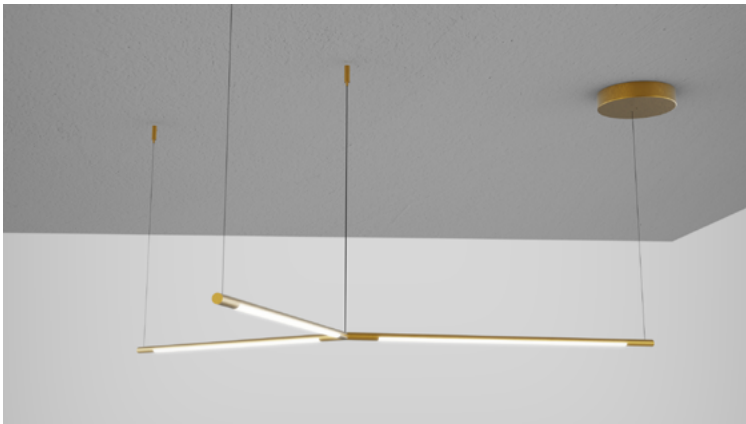


**CONFIGURATION ORDERING GUIDE**

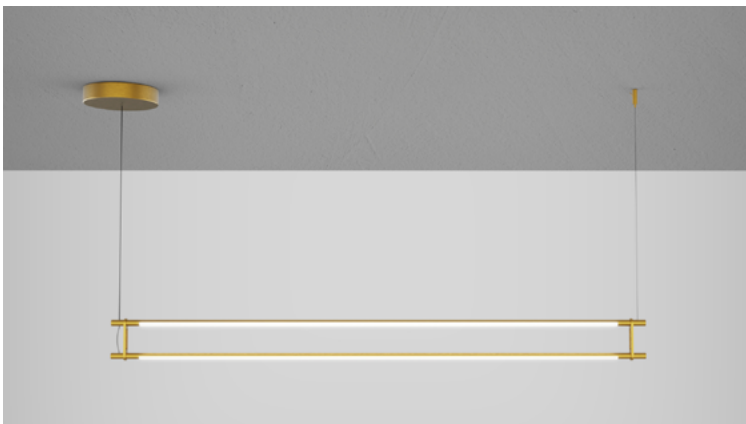
$(FTL-TL-2) \times 6 + (FTL-ACC-03) \times 1 + (FTL-ACC-08) \times 1 =$



$(FTL-TL-2) \times 3 + (FTL-ACC-03) \times 1 + (FTL-ACC-09) \times 1 =$

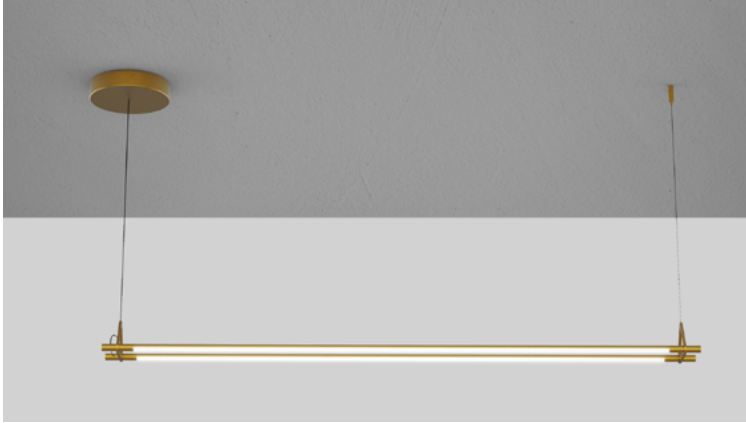


$(FTL-TL-4) \times 2 + (FTL-ACC-03) \times 1 + (FTL-ACC-10) \times 1 =$



**CONFIGURATION ORDERING GUIDE**

(FTL-TL-4)x2 + (FTL-ACC-03)x1 + (FTL-ACC-11)x1 =



(FTL-TL-4)x4 + (FTL-ACC-03)x1 + (FTL-ACC-12)x1 =



(FTL-TL-4)x1 + (FTL-ACC-03)x1 + (FTL-ACC-13)x1 =



Example:					
SERIES	DRIVER	CCT	CRI	ACCESSORY	FINISH
FTL-TL-2	<input type="checkbox"/> FTL-ACC-03	<input type="checkbox"/> 27K <input type="checkbox"/> 30K <input type="checkbox"/> 35K <input type="checkbox"/> 40K <input type="checkbox"/> 50K	<input type="checkbox"/> 90	<input type="checkbox"/> FTL-ACC-05 <input type="checkbox"/> FTL-ACC-06 <input type="checkbox"/> FTL-ACC-07 <input type="checkbox"/> FTL-ACC-08 <input type="checkbox"/> FTL-ACC-09 <input type="checkbox"/> FTL-ACC-10 <input type="checkbox"/> FTL-ACC-11 <input type="checkbox"/> FTL-ACC-12 <input type="checkbox"/> FTL-ACC-13	<input type="checkbox"/> BR (Brass) <input type="checkbox"/> BK (Black)
FTL-TL-4					

**DRIVER INFORMATION**

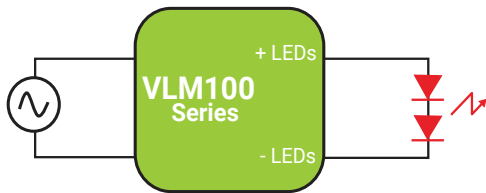
Nominal Input Voltage	ax. Output Power	Nominal Output Voltage	Efficiency	Max. Case Temperature	HD	Power Factor
120 to 277 Vac, 220 to 240 Vac	96W	48 Vdc	up to 92% typical	90°C (measured at the hot spot)	<20%	>0.9

120 TO 277 VAC NOMINAL INPUT VOLTAGE				
VLM60W: 60W				
	Nominal Input Voltage (Vac)	Pout Max (W)V	out Nom (Vdc)	Iout Max (A)
VLM100W-12	120 to 277	96.0	48	2

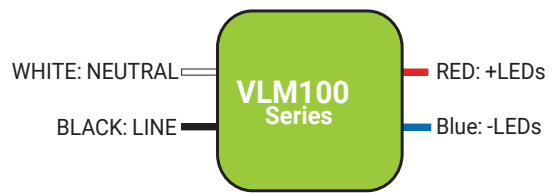
1. Not Class 2 because the over-current protection of this model exceeds the 8A UL Class 2 limit.

For additional options of output current and output voltage, contact your sales representative.

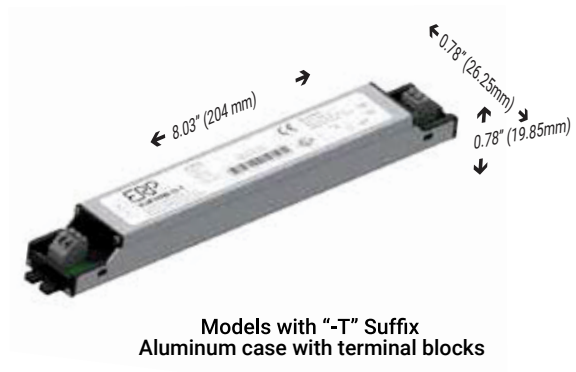
**Typical Application Diagram**



**Wiring Diagram**



**Other Mounting Option**



**FEATURES:**

- Very high power density of 24 W/in<sup>3</sup>
- IP20-rated case with silicone-based potting
- Complies with ENERGY STAR® Luminaire specification and DLC (DesignLight Consortium®) technical requirements
- 90°C maximum case hot spot temperature
- Lifetime: 50,000 hours min at 70°C case temperature
- UL Class P

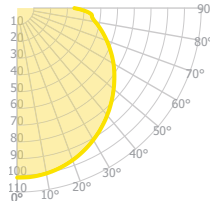


**FTL-TL-2-30K-90**

TEST NO.: **220080**

INPUT WATTS: **6.7**      LUMENS: **357**      EFFICACY: **53**      BEAM ANGLE: **150**      SPACING CRITERIA: **1.34**

**CANDELA DISTRIBUTION**



**LUMINANCE (cd/sq.m)**

	0.00°	90.00°
0.00°	92433	92433
45.00°	102648	84846
55.00°	112836	80791
65.00°	133305	74272
75.00°	184117	62453
85.00°	467214	41865

**LUMENS PER ZONE**

ZONE	LUMENS
0° - 10°	10
10° - 20°	28
20° - 30°	42
30° - 40°	52
40° - 50°	56
50° - 60°	54
60° - 70°	48
70° - 80°	39
80° - 90°	29

**CONE OF LIGHT**

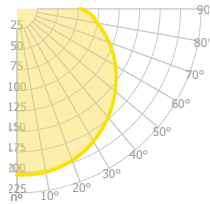
MOUNTING HEIGHT	FC AT BEAM CENTER		BEAM DIA.	BEAM DIA.
	0°-180°	90°-270°	0°-180°	90°-270°
6.0 ft	2.8 fc	2.8 fc	45.7 ft	17.3 ft
8.0 ft	1.6 fc	1.6 fc	61.0 ft	23.1 ft
10.0 ft	1.0 fc	1.0 fc	76.2 ft	28.8 ft
12.0 ft	0.7 fc	0.7 fc	91.4 ft	34.6 ft
14.0 ft	0.5 fc	0.5 fc	106.7 ft	40.4 ft
16.0 ft	0.4 fc	0.4 fc	121.9 ft	46.1 ft
18.0 ft	0.3 fc	0.3 fc	137.1 ft	51.9 ft
20.0 ft	0.3 fc	0.3 fc	152.4 ft	57.7 ft

**FTL-TL-4-30K-90**

TEST NO.: **220080**

INPUT WATTS: **11.8**      LUMENS: **713**      EFFICACY: **60**      BEAM ANGLE: **149**      SPACING CRITERIA: **1.36**

**CANDELA DISTRIBUTION**



**LUMINANCE (cd/sq.m)**

	0.00°	90.00°
0.00°	95676	95676
45.00°	110056	88197
55.00°	121446	84119
65.00°	144473	77347
75.00°	199589	64827
85.00°	498233	38080

**LUMENS PER ZONE**

ZONE	LUMENS
0° - 10°	19
10° - 20°	55
20° - 30°	84
30° - 40°	104
40° - 50°	112
50° - 60°	109
60° - 70°	96
70° - 80°	77
80° - 90°	57

**CONE OF LIGHT**

MOUNTING HEIGHT	FC AT BEAM CENTER		BEAM DIA.	BEAM DIA.
	0°-180°	90°-270°	0°-180°	90°-270°
6.0 ft	5.6 fc	5.6 fc	47.0 ft	17.4 ft
8.0 ft	3.2 fc	3.2 fc	62.6 ft	23.2 ft
10.0 ft	2.0 fc	2.0 fc	78.3 ft	29.0 ft
12.0 ft	1.4 fc	1.4 fc	94.0 ft	34.8 ft
14.0 ft	1.0 fc	1.0 fc	109.6 ft	40.6 ft
16.0 ft	0.8 fc	0.8 fc	125.3 ft	46.4 ft
18.0 ft	0.6 fc	0.6 fc	140.9 ft	52.2 ft
20.0 ft	0.5 fc	0.5 fc	156.6 ft	58.0 ft