

## L4R Linear Recessed

### PRODUCT DESCRIPTION

Ketra's L4R recessed linear enables continuous lines of light with seamless end-to-end connections.

### FEATURES

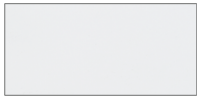
**High Def Palette**—covers a wide range of 16.7 million colors, including pastels, saturated colors and high CRI whites spanning from 1,400K to 10,000K.

**Dynamic Spectrum**—precisely tunes the amount of energy across the visible spectrum to produce Natural Light, Natural Dimming and Vibrancy.

**TruBeam**—produces uniform color across any available beam angle.

**Color Lock**—maintains your desired color point at a one-step MacAdam Ellipse across all Ketra product families and over each product's lifetime.

### Finish



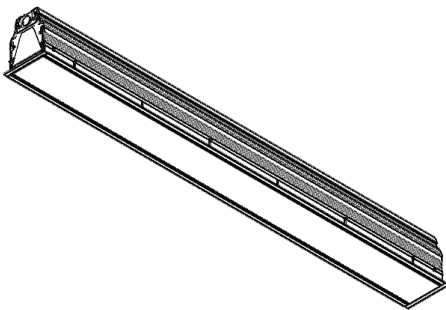
White



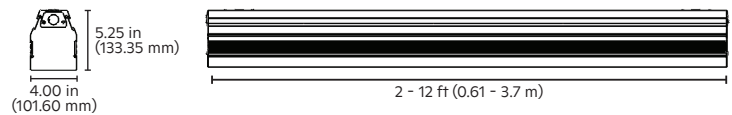
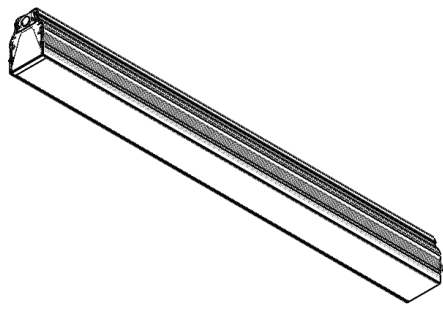
Black

### Options

Flanged Housing



Flangeless Housing



## SPECIFICATIONS<sup>1</sup>

### Optical Performance

Delivered Lumens <sup>2</sup>	<b>L4R.04</b>	<b>400 lm/ft</b>
	<b>L4R.06</b>	<b>600 lm/ft</b>
	<b>L4R.08</b>	<b>800 lm/ft</b>
	<b>L4R.10</b>	<b>1000 lm/ft</b>
CRI (Ra) <sup>3</sup>	<b>&gt;90 (R9 &gt;90)</b>	
Lumen Maintenance <sup>3</sup>	<b>50,000 hours to L70 @ 25 °C Ambient</b>	
Color Spatial Uniformity	<b>One-step MacAdam Ellipse over product lifetime</b>	
Dimming Range	<b>0.1-100%</b>	
Current	<b>82 mA Max</b>	
Surge Protection	<b>2.5 KV</b>	

### Environmental

Ambient Temperature	<b>0 to 50 °C</b>
Storage Temperature	<b>-20 - 80 °C</b>
Humidity	<b>0 - 95%, Non-condensing</b>
Certification	<b>UL, cUL, RoHS, FCC Class B</b>
Location	<b>UL Damp Location, IP20, IC Rated, not for use in outdoor applications</b>

### Mechanical

Fixture Weight	<b>3.7 lbs/ft, 1.7 kg/ft</b>
Housing Material	<b>Powder Coated Aluminum, Corrosion Protected Steel</b>
Lens Material	<b>UL F1 outdoor rating for UV and water contact PMMA</b>

### Electrical

Power Consumption	<b>L4R.04</b>	<b>7.7 W/ft</b>
	<b>L4R.06</b>	<b>10 W/ft</b>
	<b>L4R.08</b>	<b>12.4 W/ft</b>
	<b>L4R.10</b>	<b>15.5 W/ft</b>
Power Factor	<b>&gt;0.9</b>	
Delivered Efficacy	<b>L4R.04</b>	<b>51.9 lm/W</b>
	<b>L4R.06</b>	<b>60 lm/W</b>
	<b>L4R.08</b>	<b>64.5 lm/W</b>
	<b>L4R.10</b>	<b>64.5 lm/W</b>
Voltage	<b>120 V~ 60 Hz, 277 V~ 60 Hz</b>	
Emergency Lighting	<b>Evaluated by UL® for use in emergency lighting systems in accordance with standard UL® 924 and CSA C22.2 No. 141 when paired with the LVS™ model LUT-SHUNT-A-TD (UL® file E206507) and Ketra N3 Satellite<sup>4</sup>.</b>	
Max. Qty of Fixtures Per N3	<b>40<sup>5</sup></b>	
Max Total Run Length, including cable, Per N3	<b>100 ft (30.48 m)<sup>5</sup></b>	

<sup>1</sup> All performance measurements taken at 3000 K, 25 °C ambient, 100% power input, unless otherwise stated, within CCT range of 2700 - 5000 K.

<sup>2</sup> Lumen measurement complies with IES LM-79-08 testing procedures.

<sup>3</sup> Lumen maintenance values calculated in accordance to TM-21 procedures based on LM-80 compliant measurement data.

<sup>4</sup> See Lutron Application Note 106 (P/N 048106) at [www.lutron.com](http://www.lutron.com) for wiring details. This is only applicable to CCX fixtures used in an Athena system.

<sup>5</sup> The maximum number of N3 systems within a 20 ft (6.1 m) radius is four systems. For additional limitations when multiple N3 links are in close proximity, please see the "Lutron Residential and Commercial Systems Rules" spec (P/N 369821) at [www.lutron.com](http://www.lutron.com). Wiring within an N3 system requires either the Lutron provided cables or wiring should be installed in a metal armored cable or metal conduit.

## ORDERING GUIDE

Please download this PDF to use the full functionality of the ordering guide.

CM	L4R		GT	FO					
Product Line	Model	Lumens/ft	Control System	Lens Option	Region / Voltage	Mounting	Housing Finish	Configuration	Fixture Length

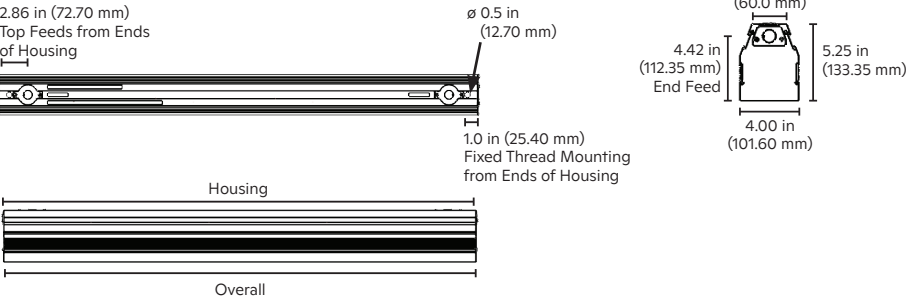
Order code: \_\_\_\_\_

Product Line	Code	Region / Voltage	Code	Configuration	Code
Commercial (Athena compatible)	<b>CM</b>	North America, 120 V~ 60 Hz	<b>11</b>	Standalone	<b>PR1</b>
		North America, 277 V~ 60 Hz	<b>12</b>	Segment Start	<b>SS1</b>
				Segment End	<b>SEN</b>
				Segment MID	<b>SMN</b>
Model		Mounting		Fixture Length	
Linear 4 in (101.6 mm) Wide Recessed	<b>L4R</b>	Flanged, T-Grid	<b>FTG</b>	Continuous Length Available, in 1 ft increments >6 ft (1.83 m)	<b>--</b>
		Flanged, Threaded Rod	<b>FTR</b>	2 ft (0.305 m) NOM	<b>0002</b>
		Flangeless, Aircraft Cable	<b>NAC</b>	3 ft (0.609 m) NOM	<b>0003</b>
		Flangeless, Threaded Rod	<b>NTR</b>	4 ft (1.219 m) NOM	<b>0004</b>
		Flangeless, External Mounting Bracket	<b>NEB</b>	6 ft (1.828 m) NOM	<b>0006</b>
				8 ft (2.438 m) NOM	<b>0008</b>
				10 ft (3.048 m) NOM	<b>0010</b>
				12 ft (3.657 m) NOM	<b>0012</b>
Lumens/ft		Housing Finish			
400 Lumens	<b>04</b>	White	<b>WH</b>		
600 Lumens	<b>06</b>	Black	<b>BK</b>		
800 Lumens	<b>08</b>				
1000 Lumens	<b>10</b>				
Control System					
CCX <sup>1</sup>	<b>GT</b>				
Lens Option					
Flush Opal Lens	<b>FO</b>				

<sup>1</sup> CCX stands for Clear Connect-Type X.

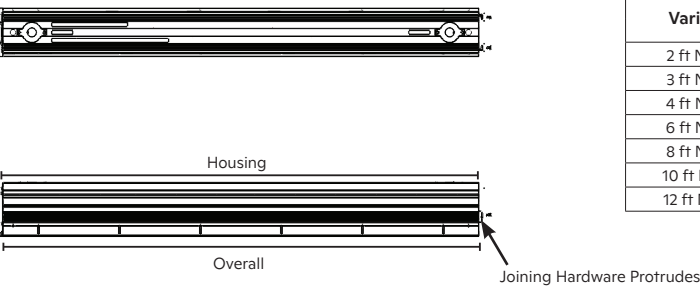
**PRODUCT DIMENSIONS<sup>1</sup>**  
**Flangeless Housing**

**Standalone**



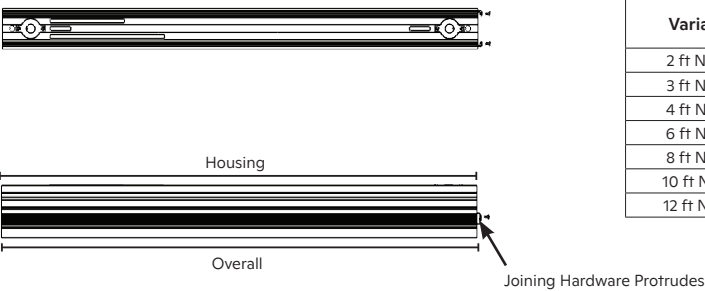
Variant	Housing		Overall	
	in	mm	in	mm
2 ft Nom	24.00	609.60	24.42	620.27
3 ft Nom	36.00	914.40	36.42	925.07
4 ft Nom	48.00	1219.20	48.42	1229.87
6 ft Nom	72.00	1828.80	72.42	1839.47
8 ft Nom	96.00	2438.40	96.42	2449.07
10 ft Nom	120.00	3048.00	120.42	3058.67
12 ft Nom	144.00	3657.60	144.42	3668.27

**Continuous Runs**  
**Starter**



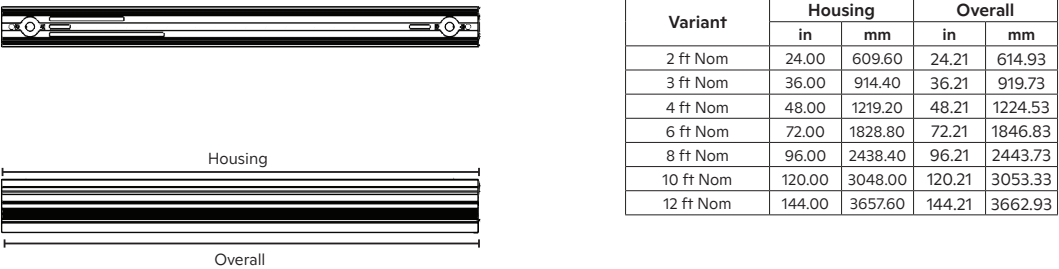
Variant	Housing		Overall	
	in	mm	in	mm
2 ft Nom	24.00	609.60	24.21	614.93
3 ft Nom	36.00	914.40	36.21	919.73
4 ft Nom	48.00	1219.20	48.21	1224.53
6 ft Nom	72.00	1828.80	72.21	1846.83
8 ft Nom	96.00	2438.40	96.21	2443.73
10 ft Nom	120.00	3048.00	120.21	3053.33
12 ft Nom	144.00	3657.60	144.21	3662.93

**Joiner**



Variant	Housing		Overall	
	in	mm	in	mm
2 ft Nom	24.00	609.60	24.00	609.60
3 ft Nom	36.00	914.40	36.00	914.40
4 ft Nom	48.00	1219.20	48.00	1219.20
6 ft Nom	72.00	1828.80	72.00	1828.80
8 ft Nom	96.00	2438.40	96.00	2438.40
10 ft Nom	120.00	3048.00	120.00	3048.00
12 ft Nom	144.00	3657.60	144.00	3657.60

**Ender**



Variant	Housing		Overall	
	in	mm	in	mm
2 ft Nom	24.00	609.60	24.21	614.93
3 ft Nom	36.00	914.40	36.21	919.73
4 ft Nom	48.00	1219.20	48.21	1224.53
6 ft Nom	72.00	1828.80	72.21	1846.83
8 ft Nom	96.00	2438.40	96.21	2443.73
10 ft Nom	120.00	3048.00	120.21	3053.33
12 ft Nom	144.00	3657.60	144.21	3662.93

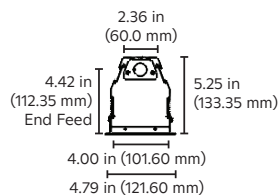
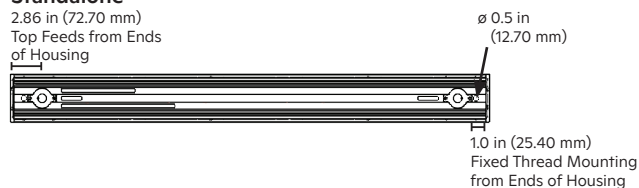
<sup>1</sup> CAD files available upon request

## PRODUCT DIMENSIONS<sup>1</sup>

### Flanged Housing

#### Standalone

2.86 in (72.70 mm)  
Top Feeds from Ends  
of Housing



Variant	Housing		Overall	
	in	mm	in	mm
2 ft Nom	24.00	609.60	24.79	629.67
3 ft Nom	36.00	914.40	36.79	934.47
4 ft Nom	48.00	1219.20	48.79	1239.27
6 ft Nom	72.00	1828.80	72.79	1848.87
8 ft Nom	96.00	2438.40	96.79	2458.47
10 ft Nom	120.00	3048.00	120.79	3068.07
12 ft Nom	144.00	3657.60	144.79	3677.67



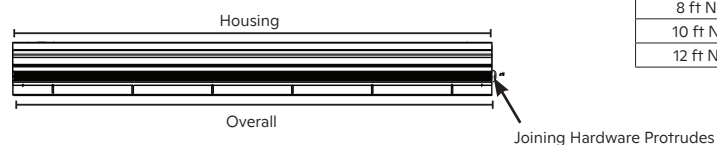
### Continuous Runs

#### Starter



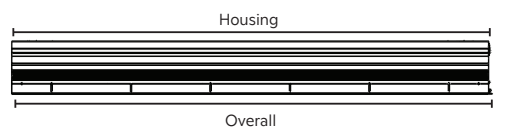
Variant	Housing		Overall	
	in	mm	in	mm
2 ft Nom	24.00	609.60	24.39	619.51
3 ft Nom	36.00	914.40	36.39	924.31
4 ft Nom	48.00	1219.20	48.39	1229.11
6 ft Nom	72.00	1828.80	72.39	1838.71
8 ft Nom	96.00	2438.40	96.39	2448.31
10 ft Nom	120.00	3048.00	120.39	3057.91
12 ft Nom	144.00	3657.60	144.39	3667.51

#### Joiner



Variant	Housing		Overall	
	in	mm	in	mm
2 ft Nom	24.00	609.60	24.00	609.60
3 ft Nom	36.00	914.40	36.00	914.40
4 ft Nom	48.00	1219.20	48.00	1219.20
6 ft Nom	72.00	1828.80	72.00	1828.80
8 ft Nom	96.00	2438.40	96.00	2438.40
10 ft Nom	120.00	3048.00	120.00	3048.00
12 ft Nom	144.00	3657.60	144.00	3657.60

#### Ender



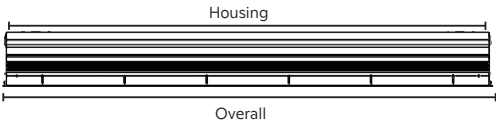
Variant	Housing		Overall	
	in	mm	in	mm
2 ft Nom	24.00	609.60	24.00	609.60
3 ft Nom	36.00	914.40	36.00	914.40
4 ft Nom	48.00	1219.20	48.00	1219.20
6 ft Nom	72.00	1828.80	72.00	1828.80
8 ft Nom	96.00	2438.40	96.00	2438.40
10 ft Nom	120.00	3048.00	120.00	3048.00
12 ft Nom	144.00	3657.60	144.00	3657.60

<sup>1</sup> CAD files available upon request

PRODUCT DIMENSIONS<sup>1</sup>

Flanged Housing T-Grid

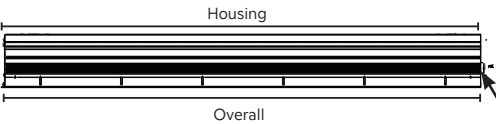
Standalone



Variant	Housing		Overall	
	in	mm	in	mm
2 ft Nom	23.00	584.20	23.79	604.20
4 ft Nom	47.00	1193.80	47.79	1213.80
6 ft Nom	71.00	1803.40	71.79	1823.47
8 ft Nom	95.00	2413.00	95.79	2433.00
10 ft Nom	119.00	3022.60	119.79	3042.67
12 ft Nom	143.00	3632.20	143.79	3652.20

Continuous Runs

Starter



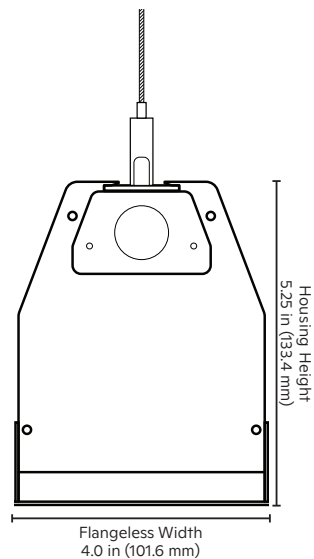
Variant	Housing		Overall	
	in	mm	in	mm
2 ft Nom	23.00	584.20	23.79	604.20
4 ft Nom	47.00	1193.80	47.79	1213.80
6 ft Nom	71.00	1803.40	71.79	1823.47
8 ft Nom	95.00	2413.00	95.79	2433.00
10 ft Nom	119.00	3022.60	119.79	3042.67
12 ft Nom	143.00	3632.20	143.79	3652.20

Joining Hardware Protrudes

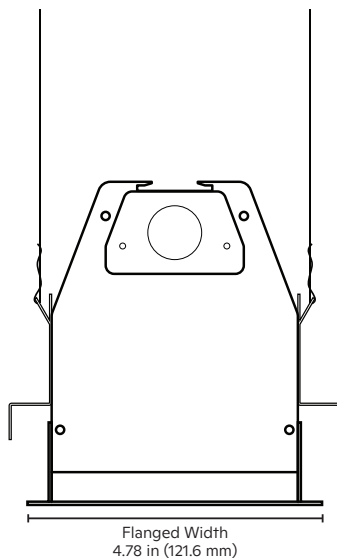
<sup>1</sup> CAD files available upon request

## MOUNTING OPTIONS

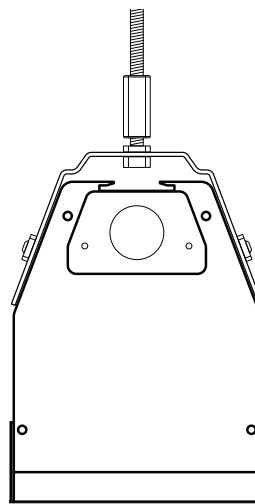
**Aircraft Cable  
Mounting Bracket**



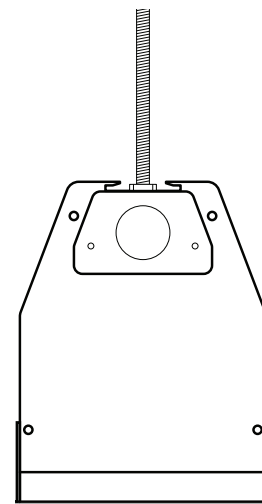
**Adjustable T-Grid  
Mounting Brackets**



**External Mounting  
Brackets**

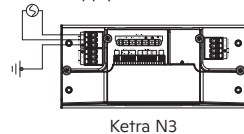


**Thread  
Mount Stud**



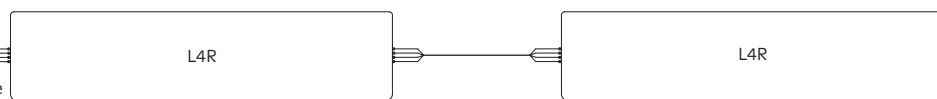
## WIRING DIAGRAMS

Continuous  
120/277 V~, 60 Hz  
Mains Supply



N3 Power &  
Signal Output

16 AWG (1 mm<sup>2</sup>), 4 wire



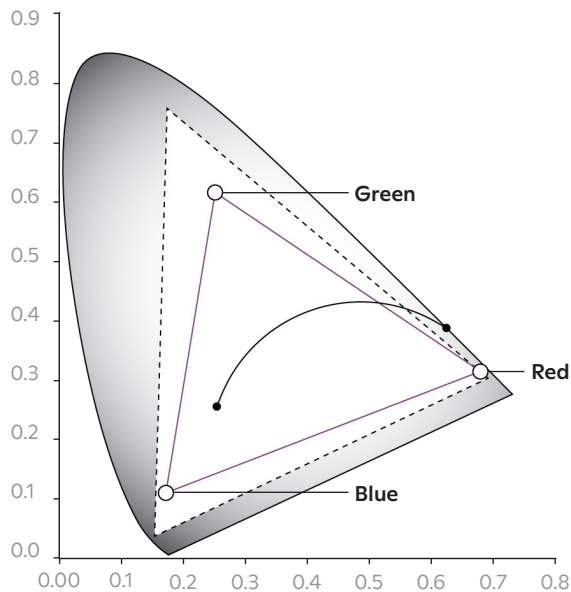
Per N3:  
Max. Fixture Qty: 40 ft (12.192 m) of L4R <sup>1</sup>  
Max Run Length: 100 ft (30.48 m) <sup>1</sup>

Install in accordance with all local and national electrical codes. If the Lutron provided cable is not used, wiring should be installed in a metal armored cable or metal conduit.

<sup>1</sup> For additional limitations when multiple N3 links are in close proximity, please see the "Lutron Residential and Commercial Systems Rules" spec (P/N 369821) at [www.lutron.com](http://www.lutron.com)

## WIDE GAMUT

### CIE 1931 Color Chart



Ketra's L4R Linear Recessed can easily be commissioned into Lutron HomeWorks or Athena systems. The product can reproduce any color point within the triangle shaped gamut indicated in the chart to the left. With Ketra's Color Lock tool, the color point is maintained to an accuracy of one-step MacAdam Ellipse over the lifetime of the product and across operating temperature range.

- **Color Lock**—Color point is maintained to an accuracy of one-step MacAdam Ellipse over the lifetime of the product and across operating temperature range.
- **Expanded Gamut**—Color calibration is relaxed such that each product produces the most saturated color it is capable of.

## General Specifications

**Color Point Maintenance:** Employ closed loop optical and thermal feedback capable of maintaining color point accuracy at a one-step MacAdam ellipse over product lifetime<sup>1</sup>.

**Wireless Capability:** LED light source shall have an integrated wireless control on board.

**Color Rendering Index (CRI):** Capable of CRI greater than 90 at any point along the Black Body Curve from 2,700K to 5,000K.

### Single Source Multi-Dye Modular Emitter/LED Module

**Design:** Employ a single source multi-dye modular emitter/LED module consisting of both monochromatic and phosphor converted blue LED dye.

**LED Estimated Useful Life:** Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

**Warranty:** Ketra's light source is warrantied to be free from material defects in material and workmanship for five ( 5 ) years or 25,000 hours from date of shipment, whichever is less.

### Lighting System Capable of the Following Dimming Functionality:

1. Automatically mimicking natural daylight by shifting Correlated Color Temperature (CCT) and intensity based on time-of-day.
2. Shifting from high CCT at high intensity to low CCT at low intensity, mimicking dimming curve of an incandescent lamp.
3. Changing intensity while maintaining full color spectrum or CCT.
4. Changing full color spectrum or CCT while maintaining intensity.

**Spectral Power Distribution Manipulation:** Light system capable of manipulating the Spectral Power Distribution (SPD) by automatically adjusting distributions of color intensity while maintaining the same Correlated Color Temperature (CCT).

**Dimming Range:** Dimmable from 100 to 0.1 percent measured luminous flux.

**Color Point Range:** Single light source capable of producing 16.7 million colors and white from 1,400K to 10,000K Correlated Color Temperature (CCT).

<sup>1</sup> Color point maintenance not guaranteed while operating at ambient temperatures between -35 °C and 0 °C.