

# MILLENIUM STRETCH™

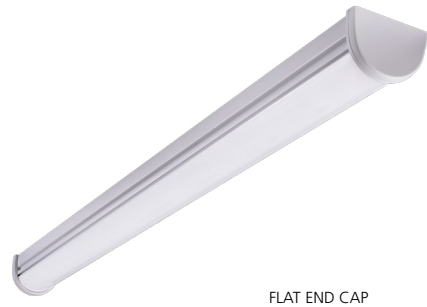
## MLHA3 SERIES with BIOS SkyBlue™



ROUNDED END CAP

### PRODUCT FEATURES:

- » Narrow 3" linear surface mount luminaire
- » Features BIOS SkyBlue Technology to benefit daytime alertness, cognition, mood and circadian rhythms
- » High R9 value and high CRI provide biologically optimized LED spectrum for early detection of cyanosis.
- » Extruded and die-cast aluminum construction
- » Peace of Mind Guarantee® against breakage



FLAT END CAP

### SPECIFICATIONS:

**HOUSING:** Extruded marine grade aluminum body with die-cast aluminum end caps. Two end cap styles available - Flat and Round. Conduit and Wiremold™ ready knockout visible only from interior of end cap. Closed cell EPDM and silicone gasketing along lens channel and end caps.

**OPTIC:** UV-Stabilized, high-efficiency diffused polycarbonate or high-performance, impact-modified diffused acrylic material options. Lens securely positioned in body channels and endcaps, locked into place with concealed, tamper-resistant Torx ® T-20 with center pin fasteners.

**LED MODULE:** Serviceable static, dynamic or tunable mid-power Gen 2 BIOS Biological LED modules. Biological Static, Biological Dynamic, and Biological Tunable LED source with blue spectrum peak at 490nm and higher melanopic ratio. CRI 80+ with R9 > 90. Dynamic features 500K downward CCT shift when dimmed for evening applications requiring lower melanopic ratio. Tunable features 2700K CCT for evening applications. Refer to table for specific melanopic values.

**DRIVER/CONTROL:** 120-277VAC, 50/60Hz electrical input (PF ≥ 0.9, THD < 20%). **Biological Static:** Serviceable, constant-current single channel driver with single analog (0-10V) control input for intensity. 1-100% range with dim to dark capabilities and a linear dimming curve. **Biological Dynamic:** Serviceable constant-current driver with the BIOS Dynamic Bio-Dimming™ module keeps light output constant while reducing melanopic lux. Single analog (0-10V) control input. 1-100% dimming range with dim-to-dark capabilities and a linear dimming curve. Dimming from 100-75% reduces CCT by 500K, dimming below 75% reduces light level. **Biological Tunable:** Serviceable, constant-current multi-channel programmable driver with dual analog (0-10V) control inputs for intensity and CCT. Optional DALI (Type 8) driver. Logarithmic intensity profile with 0.1-100% range, with dim-to-dark capabilities. Linear profile on CCT adjustment.

**INSTALLATION:** Surface ceiling, vertical or horizontal wall, corner mount (CMB) or suspended pendant mounting (PM). Standard four-point mounting required for Peace of Mind Guarantee®. Suitable for installation into -30°C to 40°C ambient environments, unless otherwise noted.

**PHOTOMETRICS:** Photometry tested to the IESNA LM-79-08 standard by an ILAC/ISO17025 accredited laboratory. For additional photometric data, please go to [www.kenall.com](http://www.kenall.com).

**WARRANTY:** five (5) year LED warranty. [Peace of Mind Guarantee against breakage.](#)

**LISTINGS:** Luminaire is certified to UL Standards by Intertek Testing Laboratory for Wet Location – covered ceiling mount. Corner, horizontal wall, vertical wall and pendant mount installation – Damp Location only. ETL certified IP64 in compliance with IEC 60598 – ceiling mount. ADA compliant. Luminaire tested to an IK10 impact protection rating per IEC 60068-2-75:1997-08.



### ORDERING INFORMATION (Ex: MLHA3-48-R-MW-FA-1200LFB-35K8-DIM1-DV-FS)

Model	Length	End Cap	Finish	Lens	Lumen Output	Lamp Color	Driver Type	Voltage	Options	Accessories
<b>MLHA3</b>										
	<b>Length</b>			<b>Lens Type</b>				<b>Input Voltage</b>		
	48 4' Nominal			PP Pearlescent Polycarbonate				DV 120-277 VAC, 50/60Hz		
	96 8' Nominal			FA Frost DR Acrylic				347 347 VAC, 60Hz		
	<b>End Cap Style</b>			<b>Lumen Output</b>				<b>Options</b>		
	F Flat			800LFB 800 lumens/foot with BIOS				LEL* Integral 10W Emergency Battery Backup (0°C/32°F min ambient temp)		
	R Rounded			1200LFB 1200 lumens/foot with BIOS				CDF Captive Diffuser Fasteners		
	<b>Finish Type</b>			<b>Lamp Color</b>				DL Damp Location		
	MW Matte White			35K8 3500K SkyBlue / 80CRI min / R9 90+				FS Single Fuse & Holder		
	LG Light Gray			40K8 4000K SkyBlue / 80CRI min / R9 90+				PH Phillips Head Fasteners		
	MB Matte Black			<b>Driver Type</b>				PM§ Pendant Mount (max 3/8" NPT stems, by others; Damp Location rated)		
	CC Custom Color (Consult Factory)			DIM1 BIOS Biological Static with 0-10V Dimming to 1% with Dim-to-Dark Capabilities				<b>Accessories</b>		
				BIODIM1 BIOS Biological Dynamic with 0-10V Intensity Dimming to 1% and Dim-to-Dark Capabilities				CMB§ Corner Mount Bracket (Must be ordered with DL Option)		
				ATW* BIOS Biological Tunable White with 0-10V Control of Intensity and CCT independently on 2 separate channels				§ PM and CMB not available in conjunction		
				DTW* BIOS Biological Tunable White with DALI Control of Intensity and CCT independently on 2 separate channels				* n/a 347V input		



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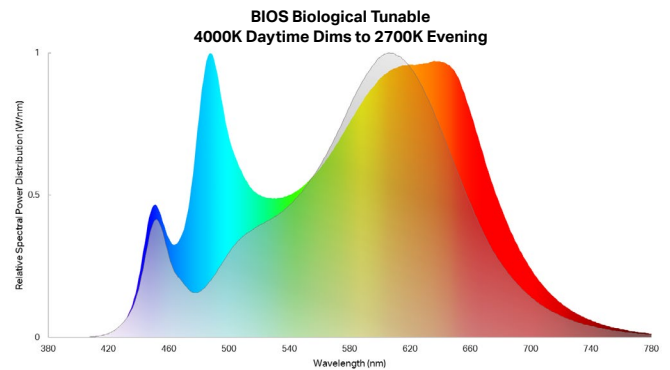
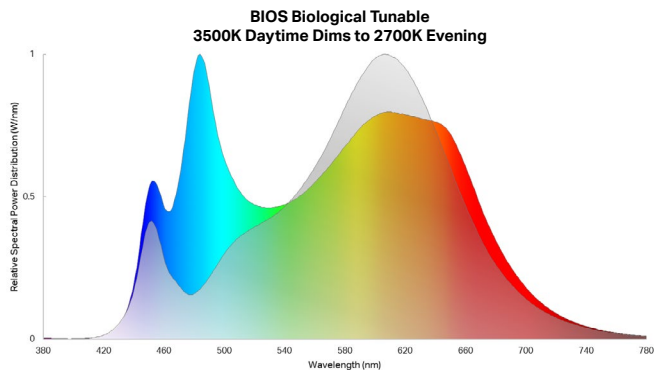
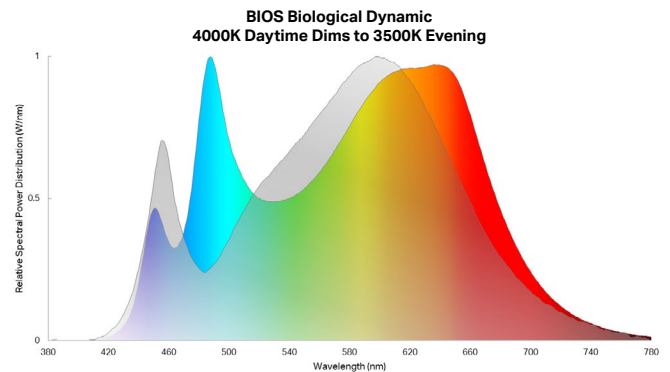
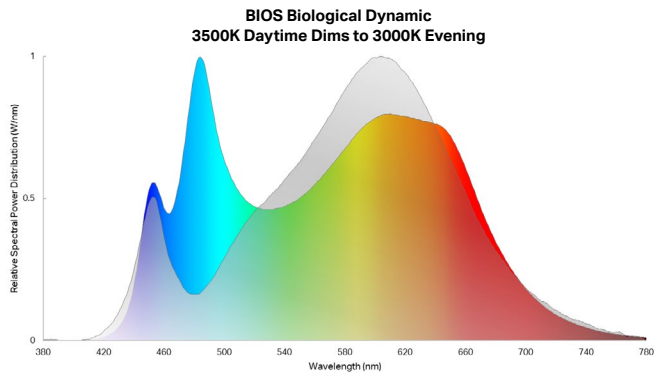
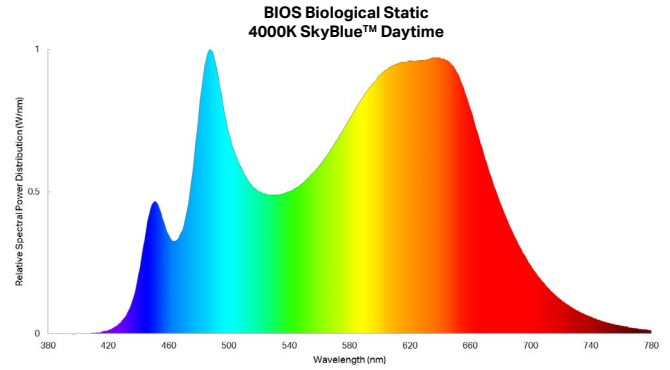
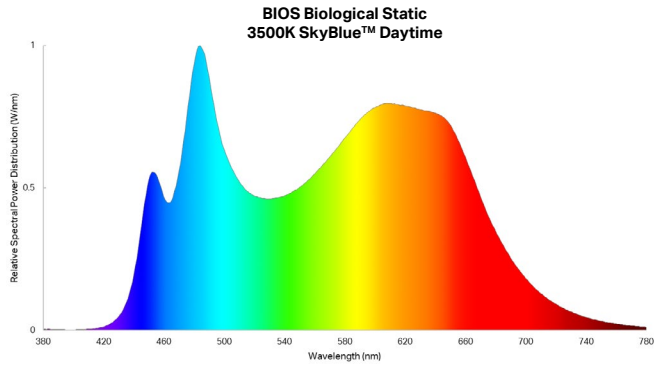
### DELIVERED MELANOPIC RATIO OF 35K8 BIOS

BIOS Type	Spectral Mode	Nominal CCT	Melanopic Ratio*	
			m-EER	m-DER
Biological Static	Daytime	3500K	≥0.80	≥0.72
Biological Dynamic	Daytime	3500K	≥0.80	≥0.72
	Evening	3000K	≤0.49	≤0.44
Biological Tunable	Daytime	3500K	≥0.80	≥0.72
	Evening	2700K	≤0.47	≤0.42

### DELIVERED MELANOPIC RATIO OF 40K8 BIOS

BIOS Type	Spectral Mode	Nominal CCT	Melanopic Ratio*	
			m-EER	m-DER
Biological Static	Daytime	4000K	≥0.90	≥0.81
Biological Dynamic	Daytime	4000K	≥0.90	≥0.81
	Evening	3500K	≤0.57	≤0.51
Biological Tunable	Daytime	4000K	≥0.90	≥0.81
	Evening	2700K	≤0.47	≤0.42

\*Melanopic ratios are provided in two forms: (m-EER) which is calculated using the WELL v2 methodology and the corresponding CIE melanopic Daylight Equivalent Ratio, (m-DER).



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## MLHA3 SERIES with BIOS SkyBlue™

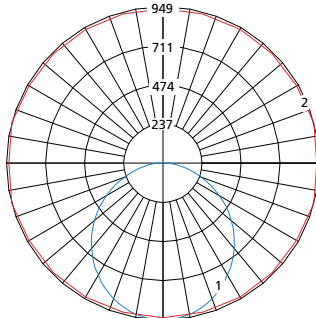
For additional photometry, go to [www.kenall.com](http://www.kenall.com)

### PERFORMANCE

Length	Lens Type	Nominal Lumen Output	Initial Delivered Lumens, By CCT		Efficacy (lm/W)	Input Power (W)	TM-21 Reported L70 (hrs)
			35K8	40K8			
48"	PP	800LFB	3,066	3,227	93 - 98	33	>60,000
		1200LFB	4,580	4,821	87 - 92	53	
96"		800LFB	6,131	6,454	93 - 98	66	
		1200LFB	9,160	9,642	87 - 92	105	
48"	FA	800LFB	3,067	3,228	103 - 108	30	>60,000
		1200LFB	4,558	4,798	96 - 101	47	
96"		800LFB	6,134	6,456	103 - 108	60	
		1200LFB	9,116	9,596	96 - 101	95	

NOTE: Information subject to change without notice. Visit [www.kenall.com](http://www.kenall.com) for IES files and additional information.

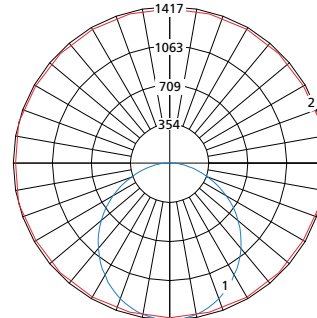
Model: MLHA3-48-s-tt-PP-800LFB-40K8-DIM1-yyy-zzz



Maximum Candela = 949 Located At Horizontal Angle = 15, Vertical Angle = 2.5

- 1 - Vertical Plane Through Horizontal Angles (15-195) (Through Max. Cd.)
- 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)

Model: MLHA3-48-s-tt-PP-1200LFB-40K8-DIM1-yyy-zzz

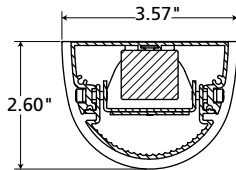


Maximum Candela = 1417 Located At Horizontal Angle = 15, Vertical Angle = 5

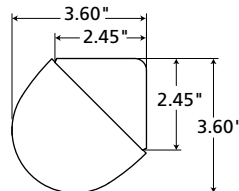
- 1 - Vertical Plane Through Horizontal Angles (15-195) (Through Max. Cd.)
- 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)

### DIMENSIONAL DATA

#### CROSS SECTION/DETAILS

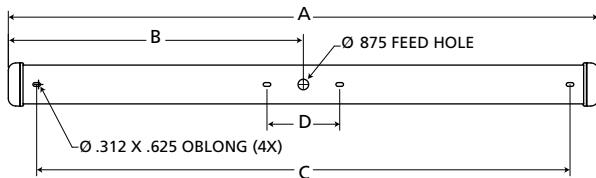


#### CORNER MOUNT BRACKET (OPTIONAL)

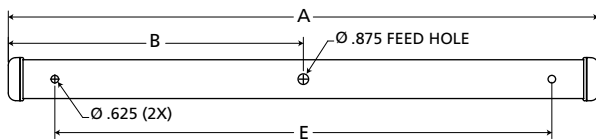


Length	End Cap	A	B	C	D	E
4 Ft	F	47.528	23.764	44.00	6.00	41.00
	R	48.680	24.340	44.00	6.00	41.00
8 Ft	F	91.778	45.889	84.00	20.00	84.00
	R	92.930	46.465	84.00	20.00	84.00

#### SURFACE MOUNTING HOLES



#### PM OPTION



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