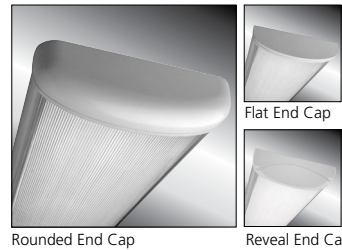


# MILLENIUM STRETCH™

## MLHA12 SERIES with BIOS SkyBlue™

### PRODUCT FEATURES:

- » 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



### SPECIFICATIONS

**HOUSING:** Marine grade aluminum. Extruded body with die-cast end caps. Housing, with end caps, post assembly TGIC polyester powder coat finished – 5-step pre-treatment. See Ordering Information for available finishes.

**END CAPS:** Marine grade die-cast aluminum. Three styles available: Flat, Rounded and Reveal. Conduit and “Wiremold™ ready” knockouts visible only from interior of end cap (Flat and Rounded styles only).

**OPTIC:** UV-stabilized, high-impact extruded pearlescent polycarbonate. Smooth exterior, linear prismatic interior. Nominal thickness .156". Lens securely positioned in body channels and end caps. Lens locked in place with four (4) tamper-resistant stainless steel Torx® T-20 with center pin fasteners and sealed with closed cell gaskets. Full reflector/wire cover with 92% reflectivity.

**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:** Standard six-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:** Limited ten (10) year warranty for LED Lamps. *Peace of Mind Guarantee against breakage.*

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



### ORDERING INFORMATION (Ex: MLHA12-48-F-MW-R-PP-90B-35K8-ATW-DV-FS)

Model	Length	End Cap	Finish	Lens	Lamp Power	Lamp Color	Driver Type	Voltage	Options	Accessories
<b>MLHA12</b>	<b>48</b>									
	<b>Length</b>				<b>Lamp Power</b>			<b>Input Voltage</b>		
	<b>48</b> 4'				<b>45B</b> 45 Watt BIOS			<b>DV</b> 120-277 Volts, 50/60Hz		
					<b>67B</b> 67 Watt BIOS				<b>Options</b>	
					<b>90B</b> 90 Watt BIOS				<b>LEL</b> Integral 10W Emergency Battery Backup (45B lamp max, 0°C minimum operating temperature)	
	<b>End Caps</b>					<b>Lamp Color</b>			<b>CDF</b> Captive Diffuser Fasteners	
	<b>F</b> Flat					<b>35K8</b> 3500K SkyBlue / 80CRI min / R9 90+			<b>DL</b> Damp Location (Interior use NO gasketing)	
	<b>R</b> Rounded					<b>40K8</b> 4000K SkyBlue / 80CRI min / R9 90+			<b>FS</b> Single Fuse & Holder (one per circuit)	
	<b>RV</b> Reveal								<b>PH</b> Phillips Head Fasteners	
									<b>PM</b> § Pendant Mount (Max. 3/8NPT stems by others; damp only)	
	<b>Finish</b>				<b>Driver Type</b>				<b>NLW</b> * 2700K White LED Night Light	
	<b>LG</b> Light Gray				<b>DIM1</b> BIOS Biological Static with 0-10V Dimming to 1% with Dim-to-Dark Capabilities				<b>NLA</b> * Amber LED Night Light	
	<b>MB</b> Matte Black				<b>BIODIM1</b> * BIOS Biological Dynamic with 0-10V Intensity Dimming to 1% and Dim-to-Dark Capabilities					
	<b>MW</b> Matte White				<b>ATW</b> BIOS Biological Tunable White with 0-10V Control of Intensity and CCT independently on 2 separate channels				<b>Accessories</b>	
	<b>CC</b> Custom Color (Consult Factory)				<b>DTW</b> BIOS Biological Tunable White with DALI Control of Intensity and CCT independently on 2 separate channels				<b>CMB</b> § Corner Mount Bracket (Must be ordered with DL Option)	
	<b>Lens Type</b>									
	<b>PP</b> Pearlescent Polycarbonate									

§ PM and CMB not available in conjunction  
\* Not a BIOS source. Powered via second line in.



# MILLENNIUM STRETCH™

## MLHA12 SERIES with BIOS SkyBlue™

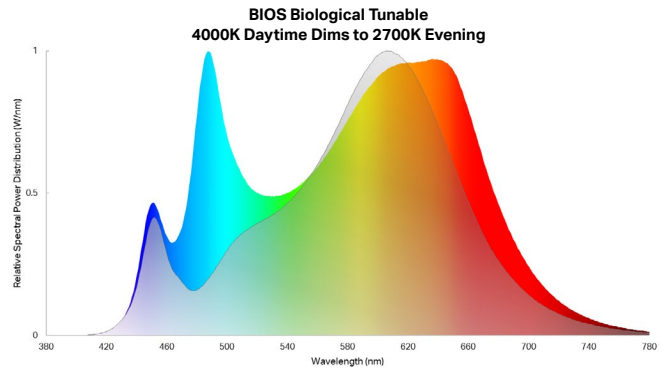
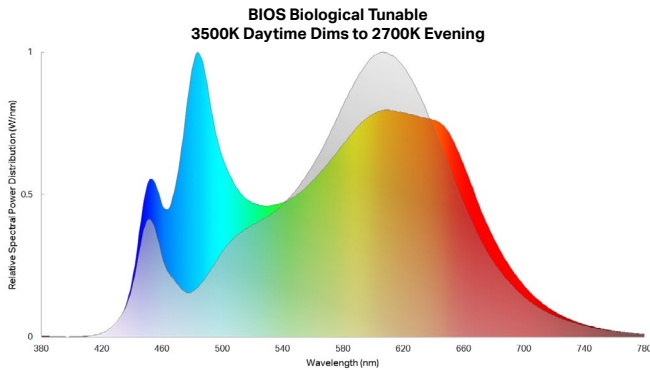
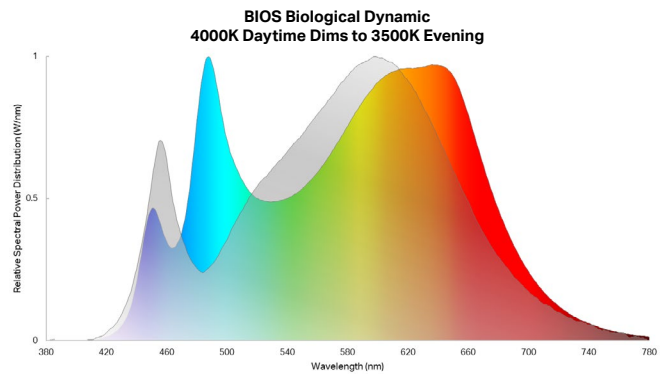
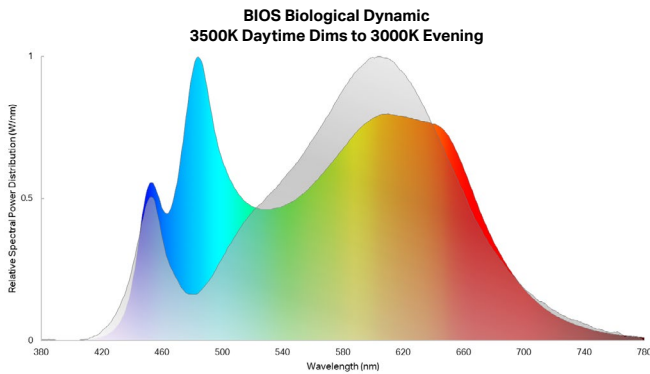
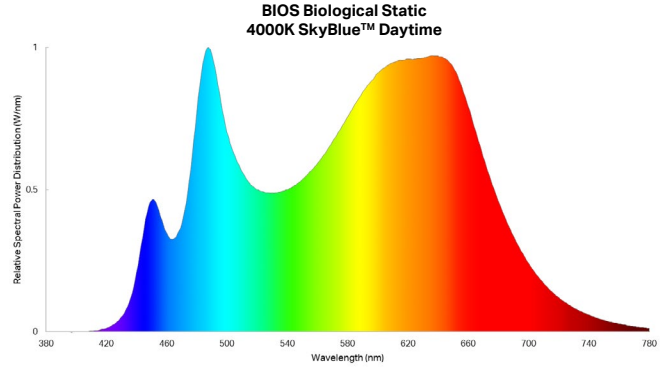
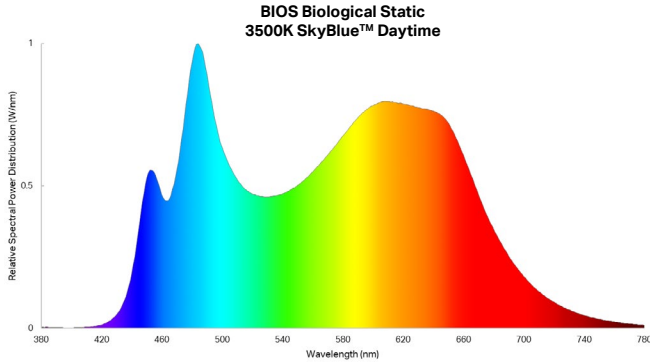
### DELIVERED MELANOPIC RATIO OF 35K8 BIOS

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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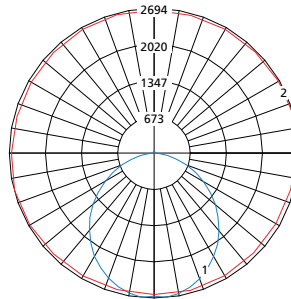
# MILLENNIUM STRETCH™

## MLHA12 SERIES with BIOS SkyBlue™

Lamp Type	Initial Delievered Lumens		Input Power (W)	Drive Current (mA)	Estd. L70 LED Life (Hrs)
	@ 25C (lm)	Efficacy (lm/W)			
45B-35K8	4,011	82	49	100	80,000
45B-40K8	4,490	92			
67B-35K8	6,174	85	73	75	80,000
67B-40K8	6,911	95			
90B-35K8	7,915	81	98	100	60,000
90B-40K8	8,860	90			

Displayed information above is for PP lens type. Information subject to change without notice. Visit [www.kenall.com](http://www.kenall.com) for IES files and additional information.

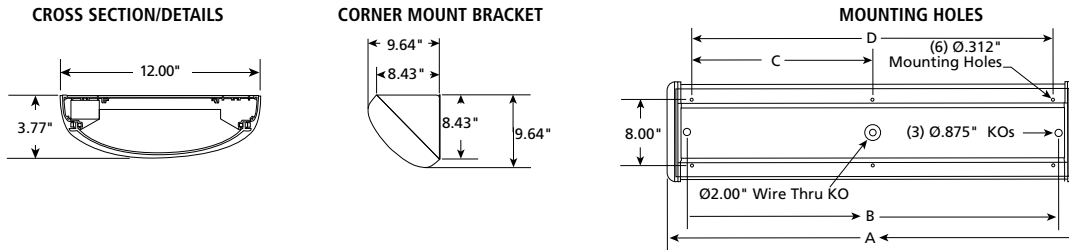
Model: MLHA12-48-F-MW-PP-1-90B-35K8-DIM1-1-DV



Maximum Candela = 2694 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



Nominal Four Foot Fixture Legend				
End Cap	A	B	C	D
R	51.13	46.31	22.50	45.00
F	49.31	46.31	22.50	45.00
RV	53.84	46.31	22.50	45.00

