

MEDMASTER™

MMAC 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
- » Ceiling mount – flange, recessed grid or surface; 1'x4', 2'x2' and 2'x4'
- » Heavy-duty one-piece TIG and spot welded housing
- » Doorframe with Polycarbonate lens secured with Torx® fasteners for security
- » Ligature resistant construction



SPECIFICATIONS

HOUSING: Die-formed prime grade material as specified – see Ordering Information. TIG and spot welded construction.

DOOR: One-piece die-formed prime grade material as specified – see Ordering Information. Doorframe supported to housing with two aircraft cables. Corners continuously seam welded and smooth with no post grinding (TIG). Phillips head stainless steel fasteners secure door to housing – eight (8) for (1x4, 2x2) or ten (10) for (2x4). Extruded closed cell gasket seals doorframe to housing. Outer lens sealed to doorframe with a vinyl gasket.

FINISH: TGIC polyester powder coat – 5-stage pre-treatment. Salt spray test: 1,000 hours; Reflectance: 92%. Optional antimicrobial finish.

OPTICS: Extruded high-efficiency frosted DR acrylic inner diffuser. Clear impact-resistant polycarbonate outer lens as specified—see Ordering Information.

GASKET: Closed cell silicone gasket seals door to housing.

FASTENERS: Torx® head with center pin hardened security screws. Fully recessed.

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 MOUNT: Four .312" diameter holes. **GRID MOUNT:** Designed for 1" and 1.5" grid. (Housing includes hanging brackets to secure housing with wire to super structure).

FLANGE MOUNT: Yoke mounting hardware & brackets included. Install Frame and Plaster Frames both positively locates yoke brackets within ceiling opening assures alignment of fixture. Install frame has no need for drywall backing; backing is supplied on the frame brackets.

WARRANTY: Limited five (5) year warranty.

LISTINGS: Luminaire is certified to UL Standards by Intertek Testing Laboratory for Wet Location and non-IC recessed installation. ETL certified IP65 per IEC 60598. NSF2 Splash/Non-Food Zone. Ligature resistant construction.



ORDERING INFORMATION (Ex: MMAC22-F-1/2-9-FA-45B-35K8-DIM1-DV-FS)

Model	Mounting	Door/Housing	Outer Lens	Diffuser Type	Lamp Power	Lamp Color	Driver Type	Voltage	Options	Accessory
		/						DV		
Model					Lamp Power		Input Voltage			
MMAC14	1'x4'				1x4		DV	120-277 VAC, 50/60Hz		
MMAC22	2'x2'				45B	45 Watt BIOS				
MMAC24	2'x4'									
Mounting Options					2'x2'	45 Watt BIOS			Options	
F	Flange				45B	45 Watt BIOS			LEL*	10W LED Emergency Battery Pack
S	Surface								AMF	Antimicrobial Finish on exposed surfaces
G	Grid (1" and 1.5")				2'x4'	45 Watt BIOS			NLW^	2700K White LED Night Light
					45B	45 Watt BIOS			NLA^	Amber LED Night Light
					67B	67 Watt BIOS			FS	Fuse & Holder
					90B	90 Watt BIOS			LVC†	Low Voltage Controller (Click here for specifications)
Door/Housing Material									LVCD†	Low Voltage Controller with Dimming (Click here for specifications)
0	14-Ga CRS (Painted)									
1	16-Ga CRS (Painted)									
2	18-Ga CRS (Painted) (n/a as Door Material)				Lamp Color				Accessory	
A	18-Ga SS (Brushed) (n/a as Door Material)				35K8	3500K SkyBlue / 80CRI min / R9 90+			IF	Install Frame (Flange only; add .375 to each Ceiling Cutout dimension)
B	18-Ga SS (Painted) (n/a as Door Material)				40K8	4000K SkyBlue / 80CRI min / R9 90+			TC	T-Bar Clips (Grid Mount only)
3	14-Ga SS (Painted)									
4	16-Ga SS (Painted)									
6	14-Ga SS (Brushed)									
7	16-Ga SS (Brushed)				Driver Type					
					DIM1	BIOS Biological Static with 0-10V Dimming to 1% with Dim-to-Dark Capabilities				
					BIODIM1	BIOS Biological Dynamic with 0-10V Intensity Dimming to 1% and Dim-to-Dark Capabilities				
Outer Lens Type										
7	.187" Clear Polycarbonate				ATW	BIOS Biological Tunable White with 0-10V Control of Intensity and CCT independently on 2 separate channels				
9	.250" Clear Polycarbonate									
B	.375" Clear Polycarbonate				DTW	BIOS Biological Tunable White with DALI Control of Intensity and CCT independently on 2 separate channels				
Diffuser Type										
FA	Frosted Acrylic									
CAP^	Clear Acrylic with Perforated Insert									

ACCESSORIES ORDERED SEPARATELY
MPWS Low Voltage Wall Switch (Click [here](#) for Specifications)



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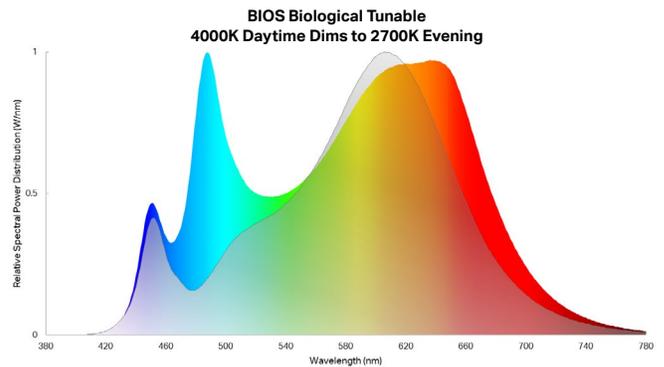
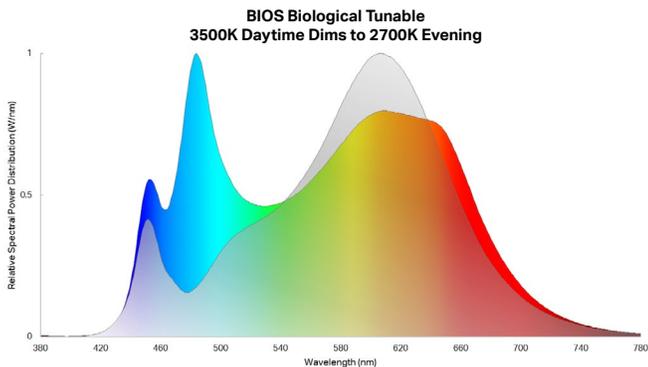
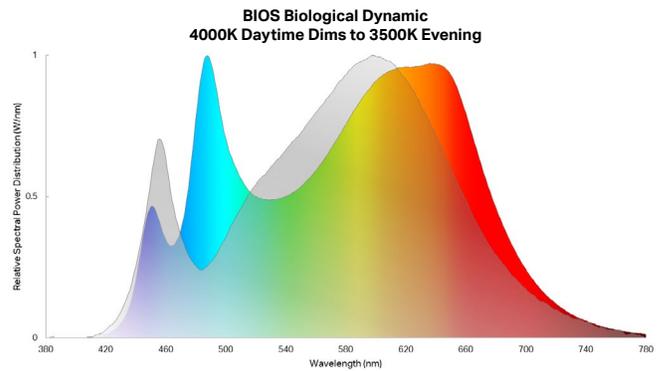
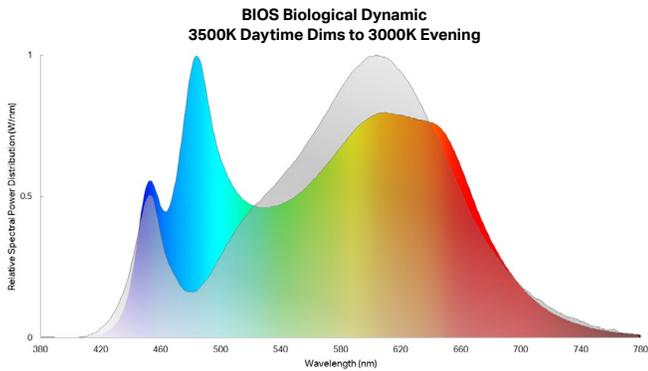
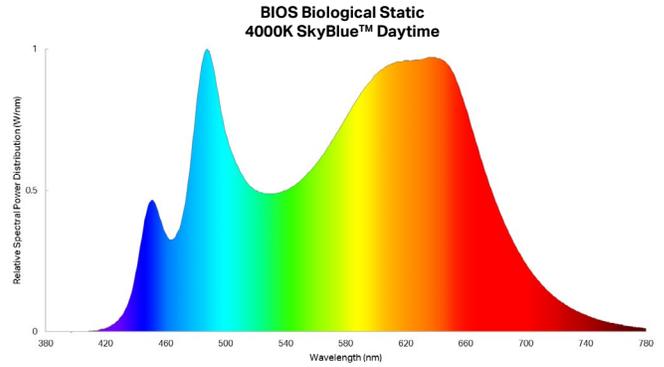
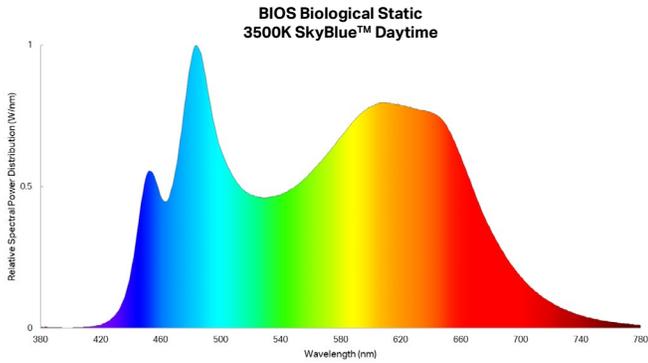
DELIVERED MELANOPIC RATIO OF 35K8 BIOS

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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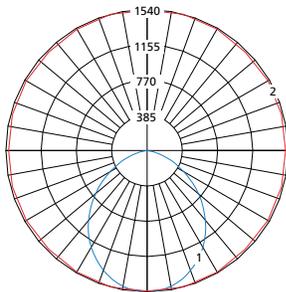
PERFORMANCE

Model	Optic		Lamp Power	Initial Delivered Lumens, by CCT (lm)		Efficacy (lm/W)	Input Power (W)	Estd. L70 LED Life (Hrs)
	Diffuser Type	Outer Lens Type		35K8	40K8			
MMAC14	FA	7	45B	3,233	3,511	66 - 72	49	80,000
		9	45B	3,239	3,517	66 - 72		
		B	45B	3,092	3,358	63 - 69		
MMAC22	FA	7	45B	3,305	3,588	67 - 73	49	80,000
		9	45B	3,311	3,595	68 - 73		
		B	45B	3,160	3,431	64 - 70		
MMAC24	FA	7	45B	4,146	4,502	85 - 92	49	80,000
			67B	6,307	6,849	88 - 95	72	
			90B	8,105	8,800	84 - 91	97	
		9	45B	4,153	4,510	85 - 92	49	
			67B	6,319	6,861	88 - 95	72	
			90B	8,120	8,817	84 - 91	97	
		B	45B	3,965	4,305	81 - 88	49	
			67B	6,032	6,550	84 - 91	72	
			90B	7,751	8,416	80 - 87	97	

Information subject to change without notice. Visit www.kenall.com for IES files and additional information

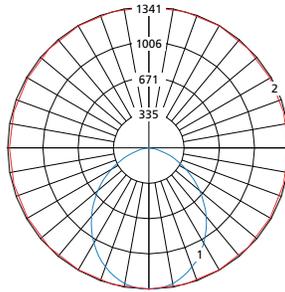
PERFORMANCE

Model: MMAC14-x-y-z-9-FA-45B-35K8-DIM1-120



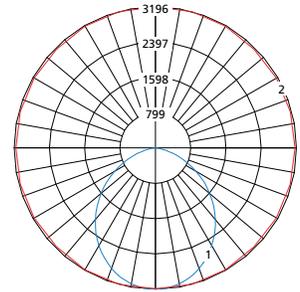
Max Candela = 1540 Located At Horizontal Angle = 75, Vertical Angle = 2.5
 1 - Vertical Plane Through Horizontal Angles (75 - 255) (Through Max. Cd.)
 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)

Model: MMAC22-x-y-z-9-FA-45B-35K8-DIM1-120



Max Candela = 1341 Located At Horizontal Angle = 90, Vertical Angle = 2.5
 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)
 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)

Model: MMAC24-x-y-z-9-FA-90B-35K8-DIM1-120



Max Candela = 3196 Located At Horizontal Angle = 75, Vertical Angle = 2.5
 1 - Vertical Plane Through Horizontal Angles (75 - 255) (Through Max. Cd.)
 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)



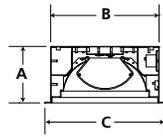
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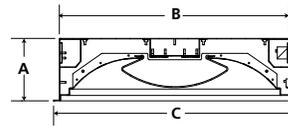
DIMENSIONAL DATA

GRID DIMENSIONAL DATA (IN INCHES)

	A	B	C	D	E
1x4	5.56	10.60	11.75	46.60	47.75
2x2	6.10	22.60	23.75	22.60	23.75
2x4	6.10	22.60	23.75	46.60	47.75

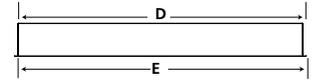


MAC14



MAC22 & MAC24

SIDE VIEW

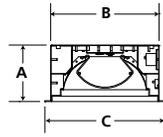


GRID MOUNT

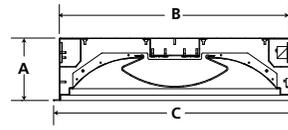
CROSS SECTION

FLANGE MOUNT

CROSS SECTION

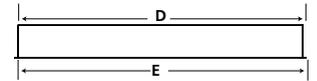


MAC14



MAC22 & MAC24

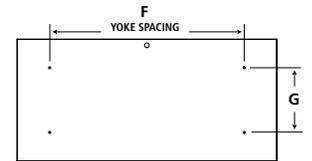
SIDE VIEW



FLANGE DIMENSIONAL DATA (IN INCHES)

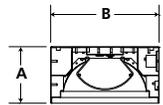
	A	B	C	D	E	F	G
1x4	5.56	10.60	11.75	46.60	47.75	30.00	5.25
Recommended Ceiling Cutout: 10.88" x 46.88"							
2x2	6.10	22.60	23.75	22.60	23.75	12.00	12.00
Recommended Ceiling Cutout: 22.88" x 22.88"							
2x4	6.10	22.60	23.75	46.60	47.75	30.00	12.00
Recommended Ceiling Cutout: 22.88" x 46.88"							

TOP VIEW

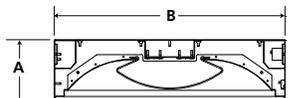


SURFACE MOUNT

CROSS SECTION

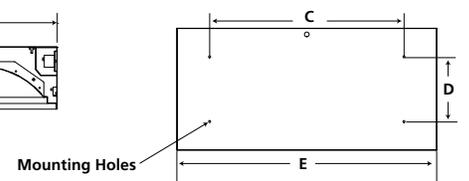


MAC14



MAC22 & MAC24

TOP VIEW



SURFACE DIMENSIONAL DATA (IN INCHES)

	A	B	C	D	E
1x4	5.56	10.60	30.00	5.25	46.60
2x2	6.13	22.60	12.00	12.00	22.60
2x4	6.13	22.60	30.00	12.00	46.60



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