

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'
- » Center diffuser provides direct/indirect ambient lighting
- » Heavy-duty one-piece TIG and spot welded housing
- » Doorframe with Polycarbonate lens secured with Torx® fasteners for security



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.



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'										
					2'x2'		Options			
Mounting Options					45B 45 Watt BIOS		LEL* 10W LED Emergency Battery Pack			
F Flange							AMF Antimicrobial Finish on exposed surfaces			
S Surface							NLW^ 2700K White LED Night Light			
G Grid (1" and 1.5")							NLA^ Amber LED Night Light			
					2'x4'		FS Fuse & Holder			
Door/Housing Material					45B 45 Watt BIOS		LVC† Low Voltage Controller (Click here for specifications)			
0 14-Ga CRS (Painted)					67B 67 Watt BIOS		LVCD† Low Voltage Controller with Dimming (Click here for specifications)			
1 16-Ga CRS (Painted)					90B 90 Watt BIOS					
2 18-Ga CRS (Painted) (n/a as Door Material)							Accessory			
A 18-Ga SS (Brushed) (n/a as Door Material)					Lamp Color		IF Install Frame (Flange only; add .375 to each Ceiling Cutout dimension)			
B 18-Ga SS (Painted) (n/a as Door Material)					35K8 3500K SkyBlue / 80CRI min / R9 90+		TC T-Bar Clips (Grid Mount only)			
3 14-Ga SS (Painted)					40K8 4000K SkyBlue / 80CRI min / R9 90+					
4 16-Ga SS (Painted)										
6 14-Ga SS (Brushed)					Driver Type					
7 16-Ga SS (Brushed)					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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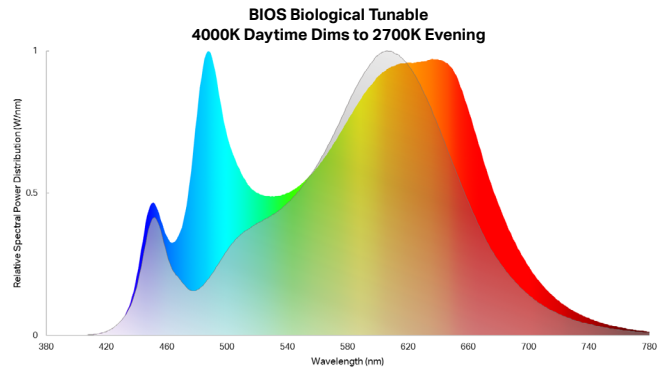
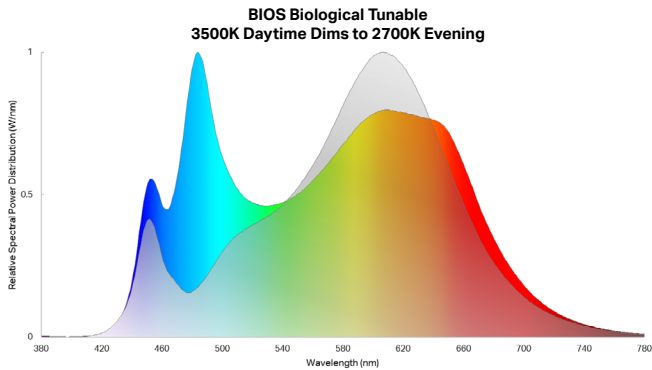
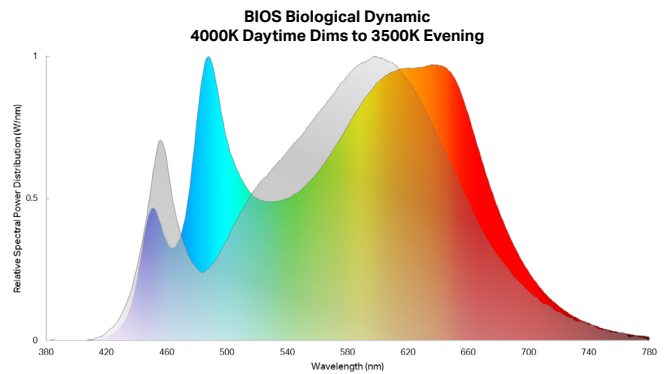
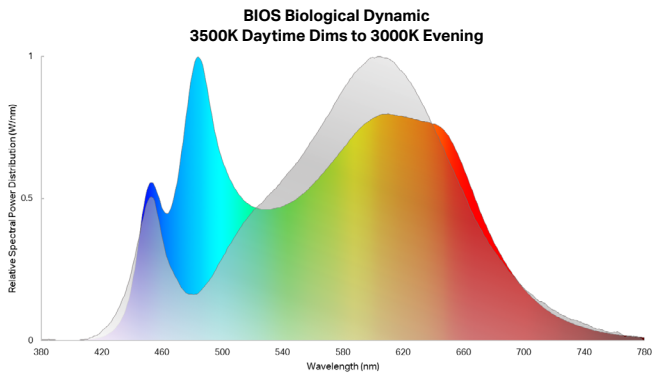
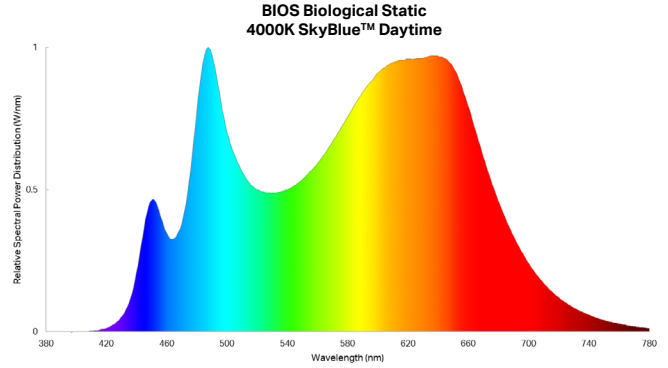
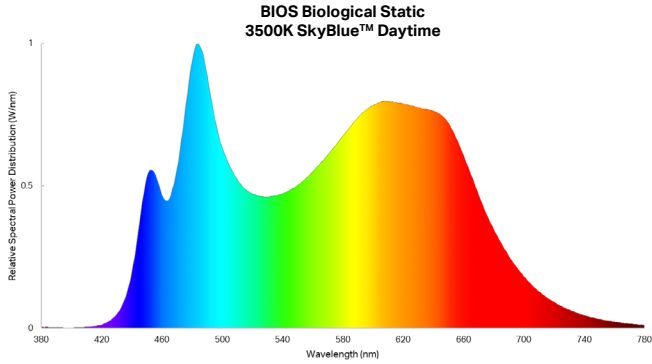
DELIVERED MELANOPIC RATIO OF 35K8 BIOS

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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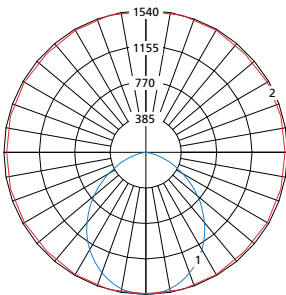
PERFORMANCE

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	

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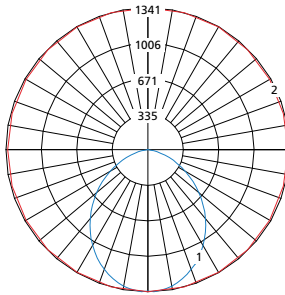
PERFORMANCE

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



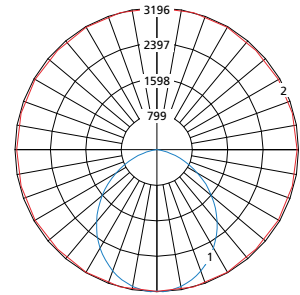
Max Candela = 1540 Located At Horizontal Angle = 75, Vertical Angle = 2.5
 1 - Vertical Plane Through Horizontal Angles (75 - 255) (Through Max. Cd.)
 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)

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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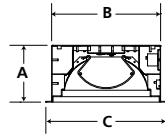
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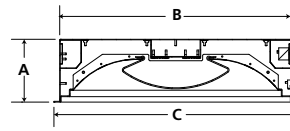
DIMENSIONAL DATA

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

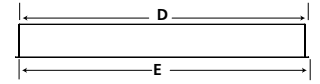


MAC22 & MAC24

GRID MOUNT

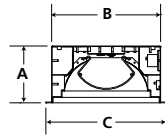
CROSS SECTION

SIDE VIEW

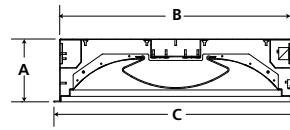


FLANGE DIMENSIONAL DATA (IN INCHES)

	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" × 46.88"							
2x2	6.10	22.60	23.75	22.60	23.75	12.00	12.00
Recommended Ceiling Cutout: 22.88" × 22.88"							
2x4	6.10	22.60	23.75	46.60	47.75	30.00	12.00
Recommended Ceiling Cutout: 22.88" × 46.88"							



MAC14

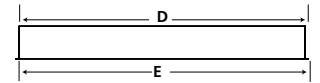


MAC22 & MAC24

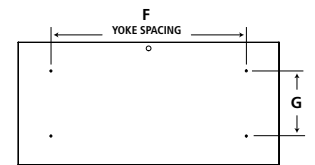
FLANGE MOUNT

CROSS SECTION

SIDE VIEW

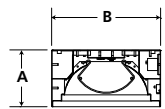


TOP VIEW

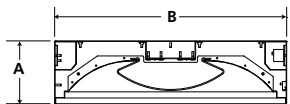


SURFACE DIMENSIONAL DATA (IN INCHES)

	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



MAC14

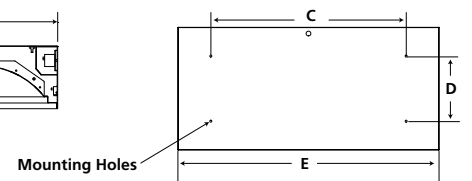


MAC22 & MAC24

SURFACE MOUNT

CROSS SECTION

TOP VIEW



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