

# MEDMASTER™

## MMAC SERIES - TUNABLE WHITE LED

### PRODUCT FEATURES:

- » High-output, high-CRI LED lamp sources with 2700K-6500K white tuning capability
- » 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



### PROJECT INFORMATION

Job Name \_\_\_\_\_

Fixture Type \_\_\_\_\_

Catalog Number \_\_\_\_\_

Approved by \_\_\_\_\_

### 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 tunable-white, mid-power LED array provides 2700K through 6500K CCT range with a two-point path. Minimum 82 CRI standard (R9 >20) with optional minimum 90 CRI (R9 >50).

**DRIVER:** 120-277VAC, 50/60Hz electrical input (PF ≥ 0.9, THD < 20%). Minimum 85% electrical efficiency. Serviceable, constant-current multi-channel programmable driver with dual analog (0-10V) control inputs for intensity and CCT. Linear intensity and CCT adjustment profiles with 1-100% range and dim-to-dark capabilities on intensity. Optional DALI (Type 8) driver with 1-100% range and dim-to-dark intensity dimming with linear intensity and CCT adjustment profiles.

**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. Approved by the New York State - Office of Mental Health.



### ORDERING INFORMATION (Ex: MMAC22-F-1/2-9-FA-45T-27/65K8-ATW-DV-FS)

Model	Mounting	Door/Housing	Outer Lens	Diffuser Type	Lamp Power	Lamp Color	Driver Type	Voltage	Options	Accessory
<b>Model</b>										
MMAC14	1'x4'									
MMAC22	2'x2'									
MMAC24	2'x4'									
<b>Mounting Options</b>										
F	Flange									
S	Surface									
G	Grid (1" and 1.5")									
<b>Door/Housing Material</b>										
0	14-Ga CRS (Painted)									
1	16-Ga CRS (Painted)									
2	18-Ga CRS (Painted) (n/a as Door Material)									
A	18-Ga SS (Brushed) (n/a as Door Material)									
B	18-Ga SS (Painted) (n/a as Door Material)									
3	14-Ga SS (Painted)									
4	16-Ga SS (Painted)									
6	14-Ga SS (Brushed)									
7	16-Ga SS (Brushed)									
<b>Outer Lens Type</b>										
7	.187" Clear Polycarbonate									
9	.250" Clear Polycarbonate									
B	.375" Clear Polycarbonate									
<b>Diffuser Type</b>										
FA	Frosted Acrylic									
CAP*	Clear Acrylic with Perforated Insert									
<b>Lamp Power</b>										
1x4										
45T	45 Watt Tunable White									
2'x2'										
45T	45 Watt Tunable White									
2'x4'										
45T	45 Watt Tunable White									
67T	67 Watt Tunable White									
90T	90 Watt Tunable White									
<b>Lamp Color</b>										
27/65K8	2700K-6500K CCT Range, 82 CRI									
27/65K9	2700K-6500K CCT Range, 92 CRI									
<b>Driver Type</b>										
ATW	Analog (0-10V) Dimming Tunable White Driver									
DTW	DALI Tunable White Driver									
DMX	DMX Tunable White Driver (Consult Factory)									
<b>Input Voltage</b>										
DV	120-277 Volts									
120	120 Volts									
277	277 Volts									
<b>Options</b>										
LEL*	8.4W LED Emergency Battery Pack									
AMF	Antimicrobial Finish on exposed surfaces									
DLN	LED Night Light w/Light Level Control (100% - 20%) (voltage-specific selection required; n/a 1x4 size)									
DLNA	Amber LED Night Light w/Light Level Control (100% - 20%) (voltage-specific selection required; n/a 1x4 size)									
FS	Fuse & Holder									
LVC†	Low Voltage Controller (n/a with 347V; Click <a href="#">here</a> for specifications)									
LVC‡	Low Voltage Controller with Dimming (n/a with 347V; Click <a href="#">here</a> for specifications)									
<b>Accessory</b>										
IF	Install Frame (Flange only; add .375 to each Ceiling Cutout dimension)									
TC	T-Bar Clips (Grid Mount only)									
* Wired to cool white LED circuit. Option not available in combination with LVC or LVC‡ on 2'x2' model										
† Low Voltage Controller compatible with bed controls; CCT on Ambient controlled separately; not compatible with DTW option. LVC wired to provide ON/OFF control Ambient and Night Light function. LVC‡ wired to provide ON/OFF and dimming control to Ambient function; ON/OFF function capability for DLN/DLNA option when ordered in conjunction.										
‡ Selection results in significant reduction in lighting performance										
<b>ACCESSORIES ORDERED SEPERATELY</b>										
MPWS	Low Voltage Wall Switch (Click <a href="#">here</a> for Specifications)									



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### PERFORMANCE

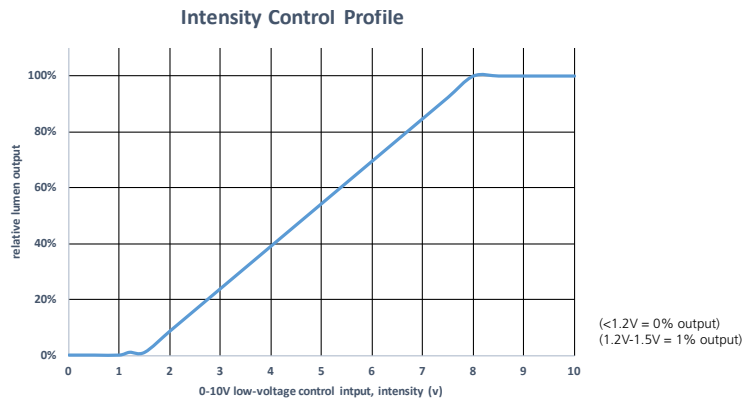
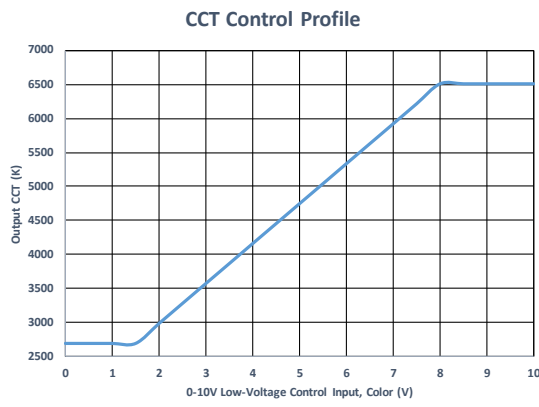
		Performance at 4000K Tuning			
Model	Lamp Type	Lumen Output (lm)	Efficacy (lm/W)	Input Power (W)	Estd. L70 LED Life (Hrs)
MMAC14	45T-27/65K8	4,429	96	46	80,000
	45T-27/65K9	3,570	78	46	80,000
MMAC22	45T-27/65K8	4,231	92	46	80,000
	45T-27/65K9	3,410	74	46	80,000
MMAC24	45T-27/65K8	5,186	113	46	80,000
	45T-27/65K9	4,180	91	46	80,000
	67T-27/65K8	7,760	114	68	80,000
	67T-27/65K9	6,427	95	68	80,000
	90T-27/65K8	10,078	110	92	60,000
	90T-27/65K9	8,123	88	92	60,000

Displayed information is for type 'FA' diffuser. Apply lumen output factor of 1.05 for Type 7 and Type 9 lens. Information subject to change without notice. Photometry tested to the IESNA LM-79-08 standard by an ILAC/ISO17025 accredited laboratory. For photometric data, please go to [www.kenall.com](http://www.kenall.com)

### PERFORMANCE SCALING, BY LAMP COLOR

CCT (K)	27/65K8					27/65K9				
	LUMEN SCALE FACTOR	Ra	R9	Rf	Rg	LUMEN SCALE FACTOR	Ra	R9	Rf	Rg
2700	0.97	83	10	83	97	0.98	92	57	89	98
3000	0.98	84	15	83	98	0.99	94	70	91	99
3500	0.99	86	23	84	98	0.99	95	77	92	99
4000	1.00	86	26	84	98	1.00	96	83	92	99
4600	1.01	86	28	84	98	1.01	96	90	92	100
5000	1.01	86	25	83	98	1.03	96	96	91	101
5700	1.02	85	23	82	98	1.02	96	96	91	100
6500	1.04	84	16	82	96	1.02	96	96	90	100

### CCT AND INTENSITY ADJUSTMENT PROFILE - ATW DRIVER TYPE



NOTE: The provided information is the typical expected performance of a single luminaire. Additional luminaires on the same 0-10V line may result in different control profiles. Fine tuning of system performance should be completed after installation is complete. To avoid CCT shift between luminaires, care should be taken to minimize voltage drop on the CCT Control line. It is recommended to limit the load on the CCT control circuit to twenty (20) 45T or ten (10) 67T/90T luminaires or less.



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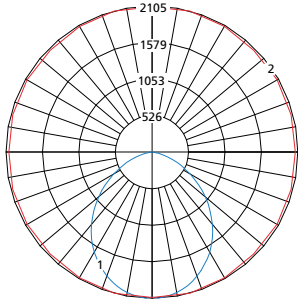
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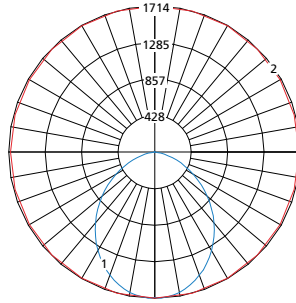
### PERFORMANCE

Model: MMAC14-F-1/1-FA-9-45T-27/65K8-ATW-DV



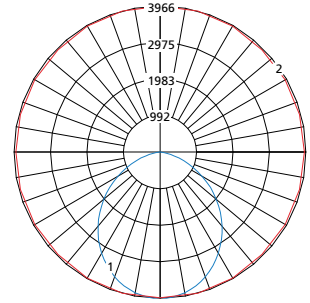
Max Candela = 2105 Located At Horizontal Angle = 75, Vertical Angle = 2.5  
 1 - Vertical Plane Through Horizontal Angles (75 - 255) (Through Max. Cd.)  
 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)

Model: MMAC22-F-1/1-FA-9-45T-27/65K8-ATW-DV



Max Candela = 1714 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-F-1/1-FA-9-90T-27/65K8-ATW-DV



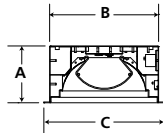
Max Candela = 3966 Located At Horizontal Angle = 75, Vertical Angle = 2.5  
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 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)

### DIMENSIONAL DATA

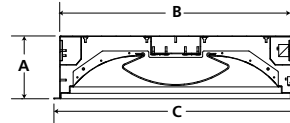
#### GRID DIMENSIONAL DATA (IN INCHES)

	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

#### CROSS SECTION



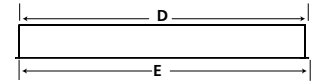
MAC14



MAC22 & MAC24

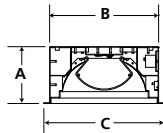
#### GRID MOUNT

#### SIDE VIEW

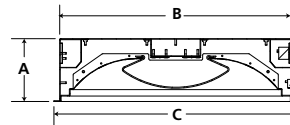


#### FLANGE MOUNT

#### CROSS SECTION

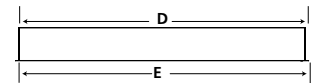


MAC14



MAC22 & MAC24

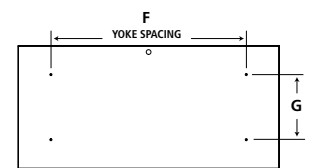
#### SIDE VIEW



#### 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"							

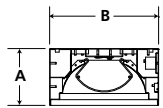
#### TOP VIEW



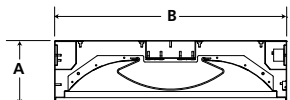
#### SURFACE DIMENSIONAL DATA (IN INCHES)

	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

#### CROSS SECTION

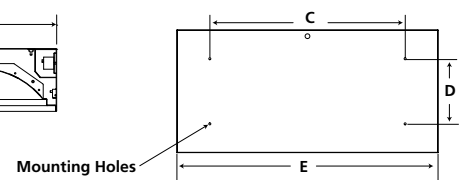


MAC14



MAC22 & MAC24

#### TOP VIEW



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