

# MEDMASTER DOWNLIGHT

## Luminaires for Surgical Applications

### M4DL4 SERIES – TUNABLE WHITE LED

#### PROJECT INFORMATION

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

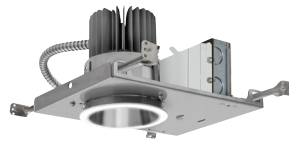
Fixture Type \_\_\_\_\_

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

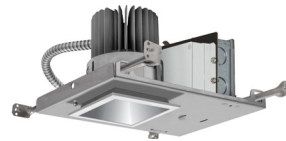
Approved by \_\_\_\_\_

#### PRODUCT FEATURES:

- » 4" sealed, recessed downlight with round or square aperture
- » High-output, high CRI LED lamp sources with 2700K-6500K white tuning capability
- » Conducted emissions controlled as per MIL-STD-461G



Round



Square

#### SPECIFICATIONS

**HEAT SINK:** Die-cast aluminum with external radial fins for natural convection.

**ROUGH-IN FRAME:** 18-gauge die-formed, corrosion-resistant steel. Vertically adjustable collar accommodates ceiling thicknesses up to 2", adjustable post-installation. Adjustable mounting bars for installation with wood and steel frame joists and T-grid ceiling systems spaced up to 24" on center. Quick-access junction box accessible post-installation from above and below ceiling. Includes (5) 1/2" knock-outs to allow straight conduit runs.

**TRIM/HOUSING SECTION:** IP-rated housing section incorporates the heat sink, LED module, optics and lower trim. Regressed lens trim is secured to the Rough-In frame with hidden torsion springs. Anti-microbial finish standard on all exposed painted surfaces.

**OPTICAL:** High-efficiency mixing chamber design with regressed diffused tempered glass lens producing uniform light output. Available with various reflector finishes – see Ordering Information for available options.

**LED MODULE:** Tunable-white LED array provides 2700K through 6500K CCT range with a two-point path. 3-step MacAdam variation allowance on each CCT. Minimum 82 CRI (R9 >20).

**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. Optional DALI (Type 8) driver. Logarithmic intensity profile with 0.1-100% range, with dim-to-dark capabilities. Linear profile on CCT adjustment. Refer to charts on page 2 for further details.

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

**WARRANTY:** Limited five (5) year LED warranty.

**LISTINGS:** Luminaire is certified to UL standards by Intertek Testing Laboratory for non-IC and Wet Location installations. IP64 rating per IEC60598. Conducted emissions controlled as per MIL-STD-461G. NSF2 Splash/Non-Food Zone. Optional CCEA compliance.



#### ORDERING INFORMATION (EX: M4DL4-DCFW-28T-27/65K8-CSS-RIS4-277-ATW-FS)

TRIM					ROUGH-IN			
Model	Trim Finish	Lamp Power	Lamp Color	Reflector Finish	Rough-In	Input Voltage	Driver Type	Options
	<b>DCFW</b>	<b>28T</b>	<b>27/65K8</b>					
<b>Model</b>			<b>Lamp Color</b>		<b>Rough-In</b>			
<b>M4DL4</b>	4" Surgical - Round		<b>27/65K8</b>	2700-6500K CCT Range (82 CRI min)	<b>RIS4</b>	4" Surgical Rough-In - Round		
<b>M4DL4S</b>	4" Surgical - Square				<b>RIS4S</b>	4" Surgical Rough-In - Square		
<b>Trim Finish</b>			<b>Reflector Finish</b>		<b>Input Voltage</b>			
<b>DCFW</b>	Die-Cast Aluminum in Flat White		<b>FW</b>	Flat White	<b>120</b>	120 VAC, 50/60Hz		
			<b>CD</b>	Clear Diffuse	<b>277</b>	277 VAC, 50/60Hz		
			<b>CS</b>	Clear Specular (square only)				
			<b>CSS</b>	Clear Semi-Specular (round only)				
<b>Lamp Power</b>					<b>Driver Type</b>			
<b>28T</b>		28W Tunable White LED			<b>ATW</b>	Analog (0-10V) Dimming Tunable White Driver		
					<b>DTW</b>	DALI Tunable White Driver		
					<b>DMX</b>	DMX Tunable White Driver (Consult Factory)		
					<b>Options</b>			
					<b>FS</b>	Fuse & Holder		
					<b>CCEA</b>	CCEA Approved		



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### PERFORMANCE

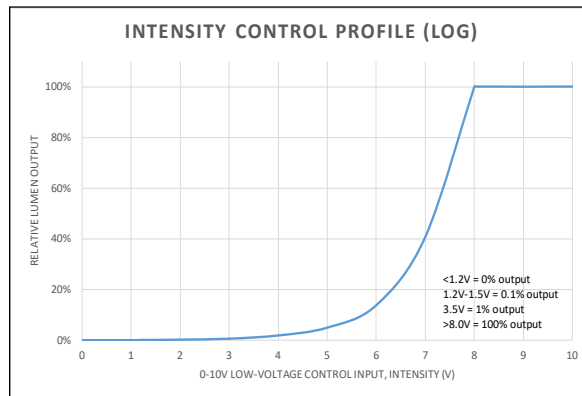
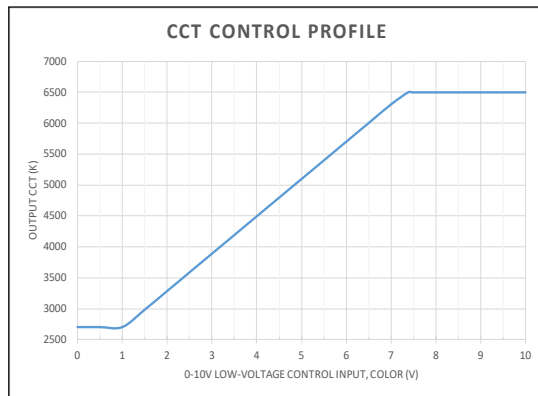
Optic		Lamp Code	Delivered Performance at 4000K			Estd. L70 LED Life (hrs)
Reflector	Reflector Finish		Lumen Output (lm)	Efficacy (lm/W)	Input Power (W)	
Round	CD	28T-27/65K8	2,139	71	30	60,000
	CSS	28T-27/65K8	2,272	76	30	60,000
	FW	28T-27/65K8	2,372	79	30	60,000
Square	CD	28T-27/65K8	2,277	76	30	60,000
	CS	28T-27/65K8	2,469	82	30	60,000
	FW	28T-27/65K8	2,457	82	30	60,000

Subject to change without notice. Visit [www.kenall.com](http://www.kenall.com) for ies files and additional information.

### 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	0.92	83	10	83	97	0.95	92	57	89	98
3000	0.95	84	15	83	98	0.97	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	1.00	86	28	84	98	1.00	96	90	92	100
5000	1.01	86	25	83	98	1.01	96	96	91	101
5700	0.99	85	23	82	98	0.99	96	96	91	100
6500	0.99	84	16	82	96	0.99	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) luminaires or less.



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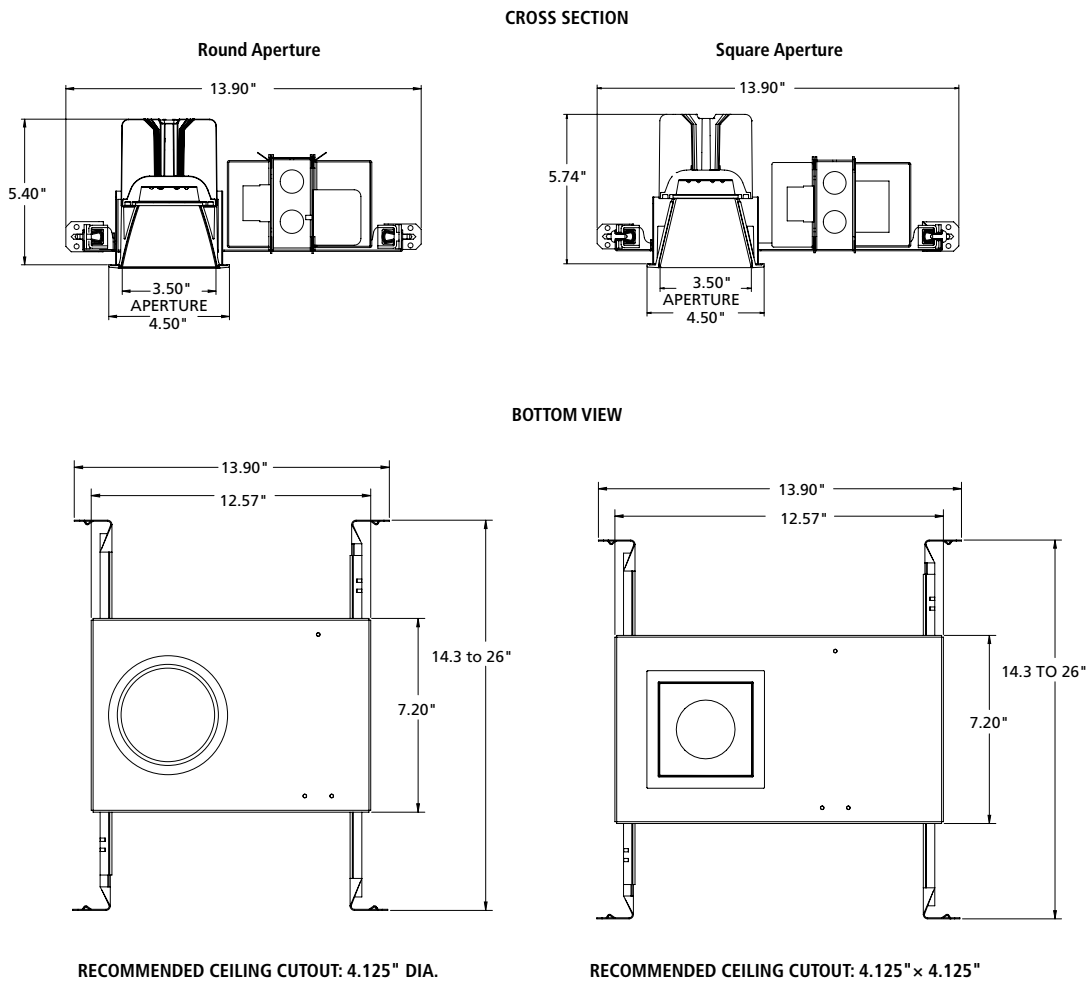
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### PERFORMANCE

Round Aperture Candela Curve	M4DL4-DCFW-28T-27/65K8-FW		Distance to illuminated plane (ft)	M4DL4S-DCFW-28T-27/65K8-FW		Square Aperture Candela Curve
	Initial center beam foot-candles	Beam diameter (ft)		Initial center beam foot-candles	Beam diameter (ft)	
	41.7	4.2	5'	40.2	4.3	
	28.9	5.2	6'	27.9	5.6	
	21.3	6.2	7'	20.5	6.6	
	16.3	7.0	8'	15.7	7.6	
	12.9	8.0	9'	12.4	8.6	
	10.4	8.7	10'	10.0	9.6	
Spacing Criteria: 0.88	foot-candle multipliers for 30K8(.96), 30K9(.80), 35K8(.96), 35K9(.81), 40K9(.81), 50K8(1.0)				Spacing Criteria: 0.92	
Beam Angle: 57.1	Beam diameter is where foot-candles drop to 50% of maximum				Beam Angle: 58.6	

### DIMENSIONAL DATA



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