

MEDMASTER DOWNLIGHT

Luminaires for Surgical Applications

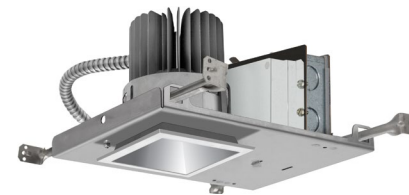
M4DL4 SERIES using Indigo-Clean Technology

PRODUCT FEATURES:

- » 4" sealed, recessed downlight with round or square aperture
- » Provides on-demand environmental disinfection via LED light
- » Single, white disinfection mode
- » Independent laboratory tested to kill harmful bacteria, including Staph*, such as MRSA**
- » Conducted emissions controlled as per MIL-STD-461G
- » 1,494 - 1,948 delivered lumens



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 1.5", 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. Configurable with an IP64-rated Regressed or Flush lens trim that is secured to the Rough-In frame with hidden torsion springs, and an IP65 Flush lens trim secured with four (4) Phillips-head, captive fasteners. Closed-cell gasketing at ceiling flange. Anti-microbial finish standard on all exposed painted surfaces. See Trim Ordering Information for available options.

OPTICAL: Round or Square aperture. Diffused tempered-glass upper lens. Flush lens trim options include a clear impact-resistant acrylic lens continuously sealed to the trim ring. Available with various reflector finishes. See Ordering Information for available options.

ELECTRICAL: Single, white disinfection mode. Serviceable white and 405nm Indigo LED array. Available 3200K, 3700K and 4300K color temperature with 3-step MacAdam variation allowance. Minimum 82 CRI standard. 120, 277 and 347VAC, 50/60Hz electrical input with serviceable high power factor electronic, constant-current drivers (<10% THD, >0.90 PF). Minimum 85% driver efficiency. Standard 0-10V dimming with 1-100% range and dim-to-dark capabilities; 0.2mA maximum source current. Optional eldoLED ECodrive DALI-2/LEDcode2 driver with 1-100% range.

PHOTOMETRICS: Photometry tested to the IESNA LM-79-08 standard by an ILAC/ISO17025 accredited laboratory. For photometric information, go to 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 and IP65 rating per IEC60598. NSF2 Splash/Non-Food Zone. Conducted emissions controlled as per MIL-STD-461G. Optional CCEA compliant. EPA Est. No. 99283-WI-1.

* Per independent lab report #SGS-09517036476. Contact Kenall for a copy of this report.

**Antimicrobial Activity of a Continuous Visible Light Disinfection System by Rutala, et. al, ID Week 2016.



ORDERING INFORMATION (EX: M4DL4-NF-DCFW-22C-37K8-CSS-T-RIS4-277-DALI)

TRIM

Model	Trim Style	Trim Finish	Lamp Power	Lamp Color	Reflector Finish	Flush Lens Type
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22C

Model			Lamp Power			
M4DL4	4" Surgical - Round		22C	22 Watt White & Indigo LED		
M4DL4S	4" Surgical - Square					
Trim Style			Lamp Color			
R	Regressed Lens (IP64)		32K8	3200K / 80 CRI min.		
NF	Flush Lens (Without Fasteners - IP64)		37K8	3700K / 80 CRI min.		
FF	Flush Lens (With Fasteners - IP65)		43K8	4300K / 80 CRI min.		
Trim Finish			Reflector Finish			
DCFW	Die-Cast Aluminum in Flat White (R and NF Trim Style)		FW	Flat White		
2FW	Cold-Rolled Steel in Flat White		CD	Clear Diffuse		
5BR	Type 304 Stainless Steel with 4B Brushed Finish		CSS	Clear Semi-Specular (round only)		
5FW	Type 304 Stainless Steel in Flat White		Flush Lens Type (n/a Regressed Trim Style)			
			T	1/8" Clear High-Impact Acrylic		

ROUGH-IN

Rough-In	Input Voltage	Driver Type	Options
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Rough-In			
RIS4	4" Surgical Rough-In - Round		
RIS4S	4" Surgical Rough-In - Square		
Input Voltage			
120	120VAC, 50/60Hz		
277	277VAC, 50/60Hz		
347▲	347VAC, 60Hz		
Driver Type			
DIM1	0-10V Dimming to 1% with Dim-to-Dark		
DALI	DALI-2/LEDcode2 Dimming to 1% without Dim-to-Dark		
Options			
FS	Fuse & Holder		
CCEA	CCEA Approved		

▲ N/A with DALI Driver and CCEA Type



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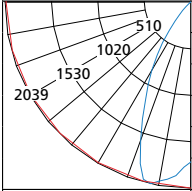
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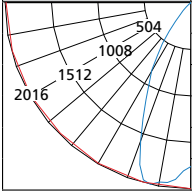
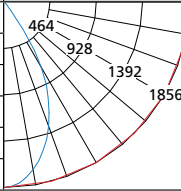
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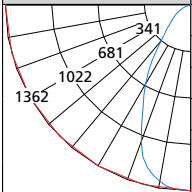
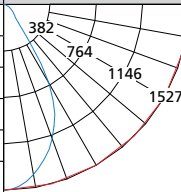
PERFORMANCE

Optic				Lamp Power	Initial Delivered Lumens, By Lamp Color			Efficacy (lm/W)	Input Power (W)	TM-21 Reported L90 (hrs)	TM-21 Reported L70 (hrs)
Aperture	Trim Style	Reflector Finish	Lens Type		32K8	37K8	43K8				
Round	R	CD	n/a	22C	1,805	1,805	1,922	76 - 80	24	>55,000	>55,000
		CSS			1,829	1,829	1,948	77 - 82	24	>55,000	>55,000
		FW			1,713	1,713	1,825	72 - 76	24	>55,000	>55,000
	NF / FF	CD	1,714		1,714	1,826	72 - 76	24	>55,000	>55,000	
		CSS	1,743		1,743	1,857	73 - 78	24	>55,000	>55,000	
		FW	1,627		1,627	1,733	68 - 73	24	>55,000	>55,000	
Square	R	CD	n/a	22C	1,572	1,572	1,675	66 - 70	24	>55,000	>55,000
		FW			1,616	1,616	1,721	68 - 72	24	>55,000	>55,000
	NF / FF	CD	T		1,494	1,494	1,591	63 - 67	24	>55,000	>55,000
		FW			1,535	1,535	1,635	64 - 68	24	>55,000	>55,000

Subject to change without notice. Visit www.kenall.com for ies files and additional information.

Round Aperture Candela Curve	M4DL4-qF-rrrr-22C-37K8-CSS-T		Distance to illuminated plane (ft)
	Initial center beam foot-candles	Beam diameter (ft)	
	70.0	4.6	5'
	48.6	5.5	6'
	35.7	6.4	7'
	27.4	7.3	8'
	21.6	8.2	9'
	17.5	9.1	10'
Spacing Criteria: 0.93			
foot-candle multipliers for 32K8 (1.00), 43K8 (1.07)			
Beam Angle: 49			
Beam diameter is where foot-candles drop to 50% of maximum			

Round Aperture Candela Curve	M4DL4-qF-rrrr-22C-37K8-CD-T		Distance to illuminated plane (ft)	M4DL4S-qF-rrrr-22C-37K8-CD-T		Square Aperture Candela Curve
	Initial center beam foot-candles	Beam diameter (ft)		Initial center beam foot-candles	Beam diameter (ft)	
	70.9	4.6	5'	74.3	5.2	
	49.3	5.5	6'	51.6	6.3	
	36.2	6.4	7'	37.9	7.3	
	27.7	7.3	8'	29.0	8.4	
	21.9	8.2	9'	22.9	9.4	
	17.7	9.1	10'	18.6	10.4	
Spacing Criteria: 0.92						
foot-candle multipliers for 32K8 (1.00), 43K8 (1.07)						
Beam Angle: 49						
Beam diameter is where foot-candles drop to 50% of maximum						
Spacing Criteria: 0.84						
Beam Angle: 55						

Round Aperture Candela Curve	M4DL4-qF-rrrr-22C-37K8-FW-T		Distance to illuminated plane (ft)	M4DL4S-qF-rrrr-22C-37K8-FW-T		Square Aperture Candela Curve
	Initial center beam foot-candles	Beam diameter (ft)		Initial center beam foot-candles	Beam diameter (ft)	
	54.4	5.7	5'	61.1	5.7	
	37.9	6.8	6'	42.4	6.9	
	27.8	7.9	7'	31.2	8	
	21.3	9.7	8'	23.9	9.2	
	16.8	10.2	9'	18.9	10.3	
	13.6	11.3	10'	15.3	11.5	
Spacing Criteria: 0.88						
foot-candle multipliers for 32K8 (1.00), 43K8 (1.07)						
Beam Angle: 59						
Beam diameter is where foot-candles drop to 50% of maximum						
Spacing Criteria: 0.92						
Beam Angle: 60						



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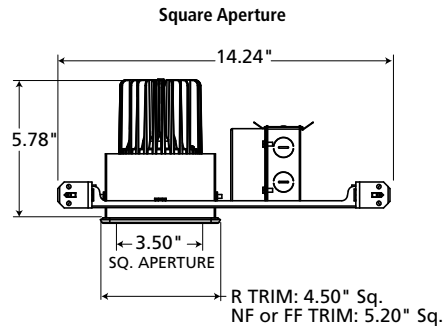
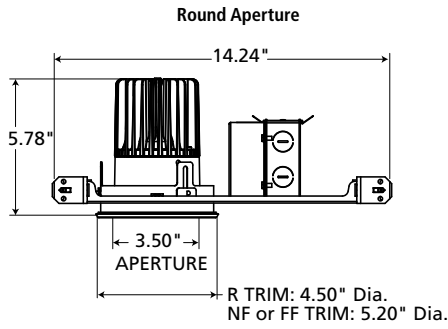
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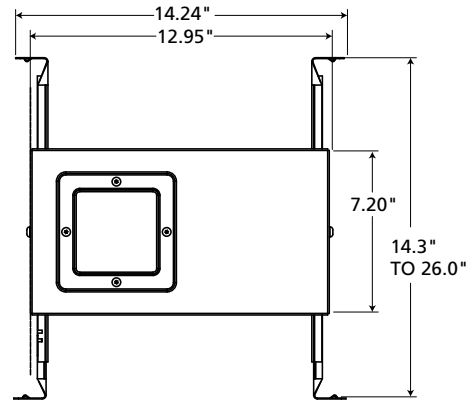
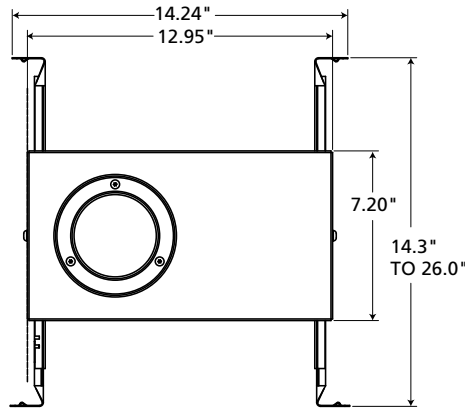
M4DL4 SERIES using Indigo-Clean Technology

DIMENSIONAL DATA

CROSS SECTION



BOTTOM VIEW



RECOMMENDED CEILING CUTOUT: R TRIM: 4.125" DIA.
NF TRIM: 4.750" DIA.

RECOMMENDED CEILING CUTOUT: R TRIM: 4.125" X 4.125"
NF TRIM: 4.750" X 4.750" FF TRIM: 4.875" X 4.875"



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