

MEDMASTER DOWNLIGHT

Luminaires for Surgical Applications

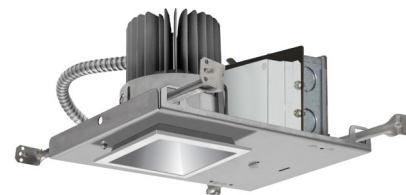
M4DL4 SERIES

PRODUCT FEATURES:

- » 4" sealed, recessed downlight with round or square aperture
- » Regressed or flush lensed trim
- » Conducted emissions controlled as per MIL-STD-461G
- » 890 - 2,500 lm with multiple distribution, lens and color options
- » 1% Dimming via 0-10V or DALI-2 control



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 three (Round) or four (Square) 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. Clear 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: LED source available in multiple CCT and CRI combinations with a maximum 3-step MacAdam variation allowance. See Trim Ordering Information for available options. 120-277VAC or 347VAC, 50/60Hz electrical input with serviceable constant current driver (<20% 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.



ORDERING INFORMATION (EX: M4DL4-NF-DCFW-11L-40K9-CSS-T-RIS4-277-DIM1)

TRIM							ROUGH-IN			
Model	Trim Style	Trim Finish	Lamp Power	Lamp Color	Reflector Finish	Flush Lens Type	Rough-In	Input Voltage	Driver Type	Options
Model				Lamp Color			Rough-In			
M4DL4	4" Surgical - Round			30K8	3000K / 80 CRI min.		RIS4	4" Surgical Rough-In - Round		
M4DL4S	4" Surgical - Square			30K9	3000K / 90 CRI min.		RIS4S	4" Surgical Rough-In - Square		
Trim Style				35K8	3500K / 80 CRI min.		Input Voltage			
R*	Regressed Lens			35K9	3500K / 90 CRI min.		120	120VAC, 50/60Hz		
NF	Flush Lens (Without Fasteners - IP64)			40K8	4000K / 80 CRI min.		277	277VAC, 50/60Hz		
FF	Flush Lens (With Fasteners - IP65)			40K9	4000K / 90 CRI min.		347†	347VAC, 60Hz		
Trim Finish				50K8	5000K / 80 CRI min.		Driver Type			
DCFW	Die-Cast Aluminum in Flat White (R and NF Trim Style)			Reflector Finish			DIM1	0-10V Dimming to 1% with Dim-to-Dark		
2FW	Cold-Rolled Steel in Flat White			FW	Flat White		DALI	DALI-2/LEDcode2 Dimming to 1% without Dim-to-Dark		
5BR	Type 304 Stainless Steel with 4B Brushed Finish			CD	Clear Diffuse		Options			
5FW	Type 304 Stainless Steel in Flat White			CSS	Clear Specular (square only)		FS	Fuse & Holder		
Lamp Power				CSS	Clear Semi-Specular (round only)		CCEA	CCEA Approved		
11L	11 Watt LED			Flush Lens Type (n/a Regressed Trim Style)						
23L*	23 Watt LED			T	1/8" Clear High-Impact Acrylic					

† N/A with DALI Driver Type and CCEA option
 * Must be installed with a minimum 24" on-center spacing, 12" from wall, and have 6" clearance above the Trim/Housing
 ▲ Available with DCFW Trim Finish only



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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		30K8	30K9	35K8	35K9	40K8	40K9	50K8					
Round	R	CD	n/a	11L	1,287	1,045	1,317	1,083	1,325	1,105	1,340	78 - 100	13	>55,000	>55,000	
				23L	2,500	2,029	2,558	2,103	2,573	2,146	2,603	74 - 95	27	52,000	>55,000	
		CSS		11L	1,304	1,059	1,335	1,097	1,343	1,120	1,358	79 - 101	13	>55,000	>55,000	
				23L	2,533	2,057	2,592	2,131	2,608	2,175	2,638	75 - 97	27	52,000	>55,000	
		FW		11L	1,222	992	1,250	1,028	1,258	1,049	1,272	74 - 95	13	>55,000	>55,000	
				23L	2,373	1,926	2,428	1,996	2,442	2,037	2,471	71 - 91	27	52,000	>55,000	
	NF / FF	CD		T	11L	1,223	993	1,251	1,029	1,259	1,050	1,273	74 - 95	13	>55,000	>55,000
					23L	2,374	1,928	2,430	1,998	2,444	2,039	2,472	71 - 91	27	52,000	>55,000
		CSS			11L	1,239	1,006	1,268	1,042	1,276	1,064	1,290	75 - 96	13	>55,000	>55,000
					23L	2,406	1,954	2,463	2,024	2,477	2,066	2,506	72 - 92	27	52,000	>55,000
		FW			11L	1,161	942	1,188	976	1,195	997	1,209	70 - 90	13	>55,000	>55,000
					23L	2,254	1,830	2,307	1,896	2,320	1,935	2,347	67 - 86	27	52,000	>55,000
Square	R	CD	n/a	11L	1,121	911	1,148	943	1,154	963	1,168	68 - 87	13	>55,000	>55,000	
				23L	2,178	1,768	2,229	1,832	2,242	1,870	2,268	65 - 83	27	52,000	>55,000	
		CS		11L	1,312	1,065	1,343	1,104	1,350	1,127	1,366	79 - 102	13	>55,000	>55,000	
				23L	2,548	2,069	2,607	2,143	2,622	2,188	2,653	76 - 97	27	52,000	>55,000	
		FW		11L	1,152	936	1,179	969	1,186	990	1,200	70 - 89	13	>55,000	>55,000	
				23L	2,238	1,817	2,290	1,883	2,303	1,922	2,330	67 - 85	27	52,000	>55,000	
	NF / FF	CD		T	11L	1,065	865	1,090	896	1,097	915	1,109	64 - 83	13	>55,000	>55,000
					23L	2,069	1,680	2,117	1,740	2,129	1,776	2,154	62 - 79	27	52,000	>55,000
		CS			11L	1,246	1,012	1,275	1,048	1,283	1,070	1,298	75 - 97	13	>55,000	>55,000
					23L	2,420	1,965	2,477	2,036	2,491	2,078	2,520	72 - 92	27	52,000	>55,000
		FW			11L	1,095	889	1,120	921	1,127	940	1,140	66 - 85	13	>55,000	>55,000
					23L	2,126	1,726	2,175	1,788	2,188	1,825	2,214	63 - 81	27	52,000	>55,000

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

Round Aperture Candela Curve	M4DL4-qF-rrrr-23L-40K8-CSS-T		Distance to illuminated plane (ft)	M4DL4S-qF-rrrr-23L-40K8-CS-T		Square Aperture Candela Curve
	Initial center beam foot-candles	Beam diameter (ft)		Initial center beam foot-candles	Beam diameter (ft)	
	150.1	2.5	5'	196.3	3.5	
	104.3	3.0	6'	136.4	4.2	
	76.6	3.5	7'	100.2	4.9	
	58.6	4.0	8'	76.7	5.6	
	46.3	4.5	9'	60.6	6.3	
	37.5	5.0	10'	49.1	7.0	
Spacing Criteria: 0.72	foot-candle multipliers for 30K8(.96), 30K9(.79), 35K8(.99), 35K9(.82), 40K9(.83), 50K8(1.01)				Spacing Criteria: 0.64	
Beam Angle: 28	Beam diameter is where foot-candles drop to 50% of maximum				Beam Angle: 39	



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PERFORMANCE

Round Aperture Candela Curve	M4DL4-qF-rrrr-23L-40K8-CD-T		Distance to illuminated plane (ft)	M4DL4S-qF-rrrr-23L-40K8-CD-T		Square Aperture Candela Curve
	Initial center beam foot-candles	Beam diameter (ft)		Initial center beam foot-candles	Beam diameter (ft)	
	136.7	5.2	5'	129.0	4.6	
	94.9	6.3	6'	89.6	5.5	
	69.7	7.3	7'	65.8	6.4	
	53.4	8.4	8'	50.4	7.3	
	42.2	9.4	9'	39.8	8.2	
	34.2	10.5	10'	32.3	9.1	
Spacing Criteria: 0.74	foot-candle multipliers for 30K8(.96), 30K9(.79), 35K8(.99), 35K9(.82), 40K9(.83), 50K8(1.01)					Spacing Criteria: 0.79
Beam Angle: 55	Beam diameter is where foot-candles drop to 50% of maximum					Beam Angle: 49

Round Aperture Candela Curve	M4DL4-qF-rrrr-23L-40K8-FW-T		Distance to illuminated plane (ft)	M4DL4S-qF-rrrr-23L-40K8-FW-T		Square Aperture Candela Curve
	Initial center beam foot-candles	Beam diameter (ft)		Initial center beam foot-candles	Beam diameter (ft)	
	98.9	5.4	5'	100.1	4.8	
	68.7	6.5	6'	69.5	5.8	
	50.5	7.6	7'	51.1	6.8	
	38.6	8.7	8'	39.1	7.7	
	30.5	9.7	9'	30.9	8.7	
	24.7	10.8	10'	25.0	9.7	
Spacing Criteria: 0.88	foot-candle multipliers for 30K8(.96), 30K9(.79), 35K8(.99), 35K9(.82), 40K9(.83), 50K8(1.01)					Spacing Criteria: 0.85
Beam Angle: 57	Beam diameter is where foot-candles drop to 50% of maximum					Beam Angle: 52



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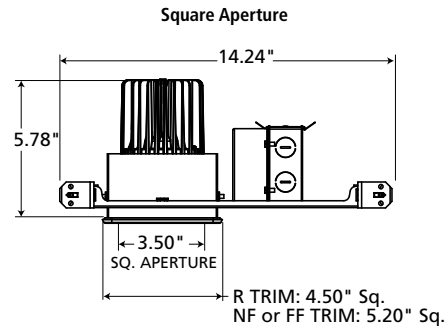
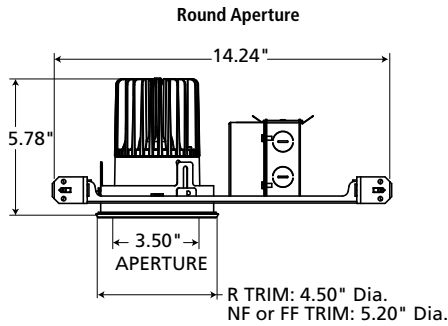
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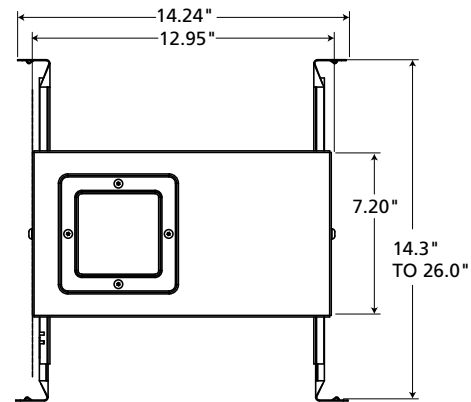
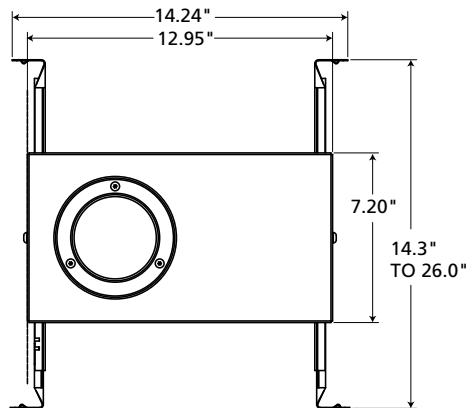
M4DL4 SERIES

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"



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