

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: RSA

Report Number: P226170

Luminaire Tested: **MRZ-1-REC-X-1-L40-80-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P226170  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14877)  
Test Lab: INNOVATION CENTER (G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: RSA  
Catalog Number: MRZ-1-REC-X-1-L40-80-FL-UNV-X-STD-LSL  
Description: MRZ INTEGRAL LED DOWNLIGHT  
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 1  
Light Source: (1) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 491.6 lumens  
Efficiency: N/A  
Efficacy: 91.0 lumens/watt  
Spacing Criteria (0/90/45): 0.61 / 0.69 / 0.7  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

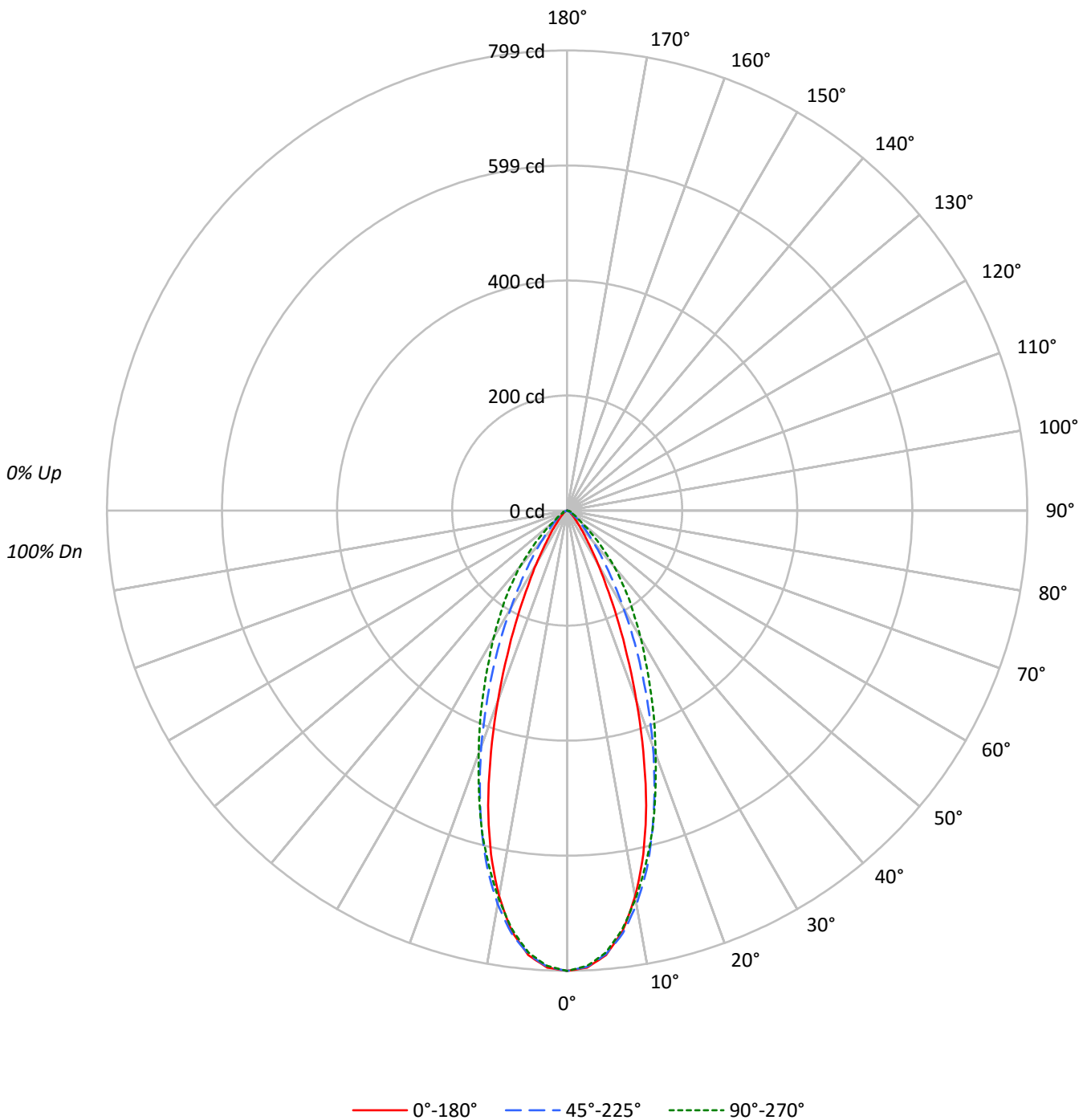
Input Watts (W): 5.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	93					93			
2	108	103	99	96	106	101	98	95	98	95	93	95	93	91	92	90	89	87					87			
3	103	96	91	87	101	95	90	87	92	88	85	90	87	84	88	85	83	81					81			
4	98	90	85	81	96	89	84	80	87	83	79	85	81	78	83	80	77	76					76			
5	93	85	79	75	91	84	78	74	82	77	74	80	76	73	79	75	72	71					71			
6	88	80	74	70	87	79	74	70	78	73	69	76	72	69	75	71	68	67					67			
7	84	75	70	65	83	75	69	65	73	68	65	72	68	65	71	67	64	63					63			
8	81	71	66	62	79	71	65	61	70	65	61	69	64	61	68	64	61	59					59			
9	77	68	62	58	76	67	62	58	66	61	58	65	61	58	65	61	57	56					56			
10	74	64	59	55	73	64	59	55	63	58	55	62	58	55	62	58	55	53					53			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	394358	394358	394358
5°	383632	382889	381452
10°	340674	347587	342828
15°	270818	292730	292730
20°	184815	228709	235640
25°	110456	165493	186070
30°	60902	111036	145446
35°	31982	71373	112571
40°	18291	43603	82440
45°	11652	27910	51284
50°	8366	18421	26788
55°	6881	10580	16860
60°	5723	6414	10756
65°	5137	5137	8406
70°	4183	4183	11540
75°	4003	2669	7053
80°	1989	1989	3978
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	71.0	14.4
10°-20°	154.4	31.4
20°-30°	133.5	27.2
30°-40°	77.2	15.7
40°-50°	35.0	7.1
50°-60°	12.3	2.5
60°-70°	5.5	1.1
70°-80°	2.6	0.5
80°-90°	0.2	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	359.0	73.0
0°-40°	436.1	88.7
0°-60°	483.4	98.3
0°-90°	491.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	491.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	799	799	799	799	799	
5°	775	774	773	770	770	71
15°	530	546	573	578	573	144
25°	203	233	304	348	342	95
35°	53	69	118	177	187	36
45°	17	20	40	70	74	14
55°	8	8	12	16	20	7
65°	4	5	4	6	7	4
75°	2	2	1	3	4	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	799.3	799.3	799.3	799.3	799.3	799.3	799.3	799.3	799.3	799.3	799.3
2.5°	794.2	792.7	792.7	792.7	793.4	793.4	792.7	792.7	792.7	792.7	792.7
5°	774.6	773.1	773.1	773.8	773.1	773.8	773.1	774.6	773.8	773.1	773.1
7.5°	736.7	736.7	736.7	737.4	738.2	738.2	738.2	739.7	739.7	741.1	740.4
10°	680.0	681.5	681.5	683.6	685.9	684.3	685.1	689.4	690.9	692.4	693.8
12.5°	611.0	613.1	614.5	616.0	618.2	620.3	621.1	628.4	630.5	633.4	638.5
15°	530.2	529.5	533.8	536.0	542.6	546.1	548.4	555.6	562.9	567.3	573.1
17.5°	439.3	441.4	443.7	449.5	457.4	462.6	465.4	474.2	485.8	495.3	504.0
20°	352.0	356.4	358.5	365.1	373.1	376.0	384.0	395.6	410.9	424.0	435.6
22.5°	271.3	273.4	279.2	286.6	295.3	301.8	309.9	321.5	337.4	350.6	366.5
25°	202.9	203.6	210.9	217.5	226.9	233.4	237.8	253.1	269.9	286.6	304.0
27.5°	147.7	149.1	153.5	160.0	170.1	174.5	181.8	194.9	210.9	229.1	247.3
30°	106.9	106.9	109.8	117.1	124.4	130.2	135.2	147.7	162.9	178.2	194.9
32.5°	74.9	75.6	78.6	83.6	90.9	95.2	98.9	110.5	122.9	138.2	152.7
35°	53.1	53.8	56.7	59.6	65.4	69.1	72.0	80.7	91.7	104.7	118.5
37.5°	38.6	39.3	40.7	42.9	47.3	49.5	52.4	59.6	68.4	78.6	90.9
40°	28.4	29.1	29.8	32.0	34.9	36.3	38.6	43.7	50.2	58.9	67.7
42.5°	21.8	21.8	22.6	24.0	25.4	26.9	28.4	32.0	37.0	43.7	51.6
45°	16.7	16.7	17.5	18.9	19.6	20.4	21.8	24.0	27.7	32.8	40.0
47.5°	13.8	13.8	13.8	14.6	15.3	16.0	16.7	18.9	21.1	26.2	30.5
50°	10.9	10.9	11.6	11.6	12.3	12.3	13.1	14.6	17.5	21.1	24.0
52.5°	9.5	9.5	9.5	9.5	9.5	10.2	10.2	11.6	14.6	16.0	17.5
55°	8.0	8.0	8.0	8.0	8.0	8.0	8.7	10.2	11.6	13.1	12.3
57.5°	6.5	6.5	6.5	6.5	6.5	7.2	7.2	8.7	9.5	8.7	8.7
60°	5.8	5.8	5.1	5.1	5.8	5.8	6.5	7.2	7.2	6.5	6.5
62.5°	5.1	4.4	4.4	4.4	5.1	5.8	5.8	5.8	5.1	5.1	5.1
65°	4.4	3.7	3.7	4.4	4.4	5.1	5.1	4.4	4.4	4.4	4.4
67.5°	3.7	3.7	3.7	3.7	4.4	4.4	4.4	3.7	3.7	3.7	3.7
70°	2.9	2.9	2.9	2.9	3.7	3.7	2.9	2.9	2.9	2.9	2.9
72.5°	2.1	2.1	2.1	2.9	2.9	2.9	2.1	2.1	2.1	2.9	2.1
75°	2.1	2.1	2.1	2.1	2.1	2.1	1.4	1.4	2.1	2.1	1.4
77.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
80°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	799.3	799.3	799.3	799.3	799.3	799.3	799.3	799.3	799.3	799.3
2.5°	792.0	792.0	791.3	792.0	792.0	792.0	792.0	791.3	792.0	791.3
5°	772.4	772.4	772.4	770.9	770.2	770.9	770.2	769.5	769.5	770.2
7.5°	738.9	738.9	738.2	736.7	736.7	736.0	734.6	733.8	733.1	733.1
10°	695.3	694.5	692.4	691.7	691.7	689.4	686.6	686.6	683.6	684.3
12.5°	640.8	639.3	638.5	638.5	635.7	635.7	633.4	632.7	631.3	629.8
15°	575.2	577.5	578.9	578.2	578.2	576.0	575.2	573.8	571.7	573.1
17.5°	510.5	515.6	517.1	519.3	520.0	518.6	516.3	512.8	510.5	509.1
20°	446.5	453.8	458.9	460.4	460.4	459.6	458.9	453.1	452.3	448.8
22.5°	380.4	390.6	399.3	402.2	402.9	403.7	400.7	396.4	394.9	394.2
25°	318.5	332.3	341.1	346.9	348.3	350.6	349.1	346.9	342.5	341.8
27.5°	262.5	277.1	288.7	296.0	299.7	301.1	302.5	298.9	297.4	294.6
30°	212.4	229.1	241.5	251.6	253.8	256.7	257.5	258.2	255.3	255.3
32.5°	169.4	183.3	198.5	208.7	213.1	215.3	218.9	218.2	218.2	217.5
35°	133.1	146.9	160.7	171.7	176.8	179.6	184.0	186.2	186.9	186.9
37.5°	102.6	116.4	128.7	141.8	146.9	150.5	153.5	154.2	154.9	154.2
40°	78.6	91.7	104.0	112.7	116.4	119.3	122.9	125.8	127.3	128.0
42.5°	61.8	71.2	79.3	88.0	93.8	98.2	98.9	98.2	98.2	97.5
45°	46.5	53.8	66.1	68.4	69.8	70.5	72.8	73.5	73.5	73.5
47.5°	37.0	45.1	45.1	48.0	49.5	51.6	52.4	52.4	52.4	52.4
50°	27.7	29.1	31.2	33.5	34.2	34.2	34.9	34.9	34.9	34.9
52.5°	18.2	20.4	21.1	21.8	22.6	23.3	24.7	25.4	24.7	24.7
55°	13.1	13.8	14.6	16.0	16.0	16.7	19.6	19.6	19.6	19.6
57.5°	8.7	9.5	10.9	13.1	13.1	13.8	14.6	14.6	15.3	15.3
60°	7.2	8.0	8.7	9.5	10.2	11.6	13.1	10.9	10.9	10.9
62.5°	5.8	6.5	7.2	8.0	7.2	8.0	8.7	8.7	8.7	8.7
65°	5.1	5.8	5.1	5.8	6.5	6.5	5.8	6.5	6.5	7.2
67.5°	4.4	4.4	4.4	4.4	4.4	5.1	6.5	7.2	8.0	8.0
70°	2.9	2.9	2.9	4.4	4.4	5.1	5.8	7.2	7.2	8.0
72.5°	2.1	2.1	2.9	3.7	4.4	4.4	5.1	5.1	5.8	5.8
75°	2.1	2.1	2.9	2.9	2.9	2.9	3.7	3.7	3.7	3.7
77.5°	1.4	1.4	1.4	1.4	2.1	2.1	2.1	2.9	2.9	2.9
80°	0.7	0.7	0.7	0.7	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.7	0.7	0.7
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)