

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: P219913

Luminaire Tested: **MRZ-1-REC-X-4-L40-97-WFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P219913  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14882)  
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-4-L40-97-WFL-UNV-X-STD-LSL  
Description: MRZ INTEGRAL LED DOWNLIGHT  
55 DEGREE WIDE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 4  
Light Source: (1) 4000K CCT, 97 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 925.4 lumens  
Efficiency: N/A  
Efficacy: 58.6 lumens/watt  
Spacing Criteria (0/90/45): 0.88 / 0.83 / 0.87  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

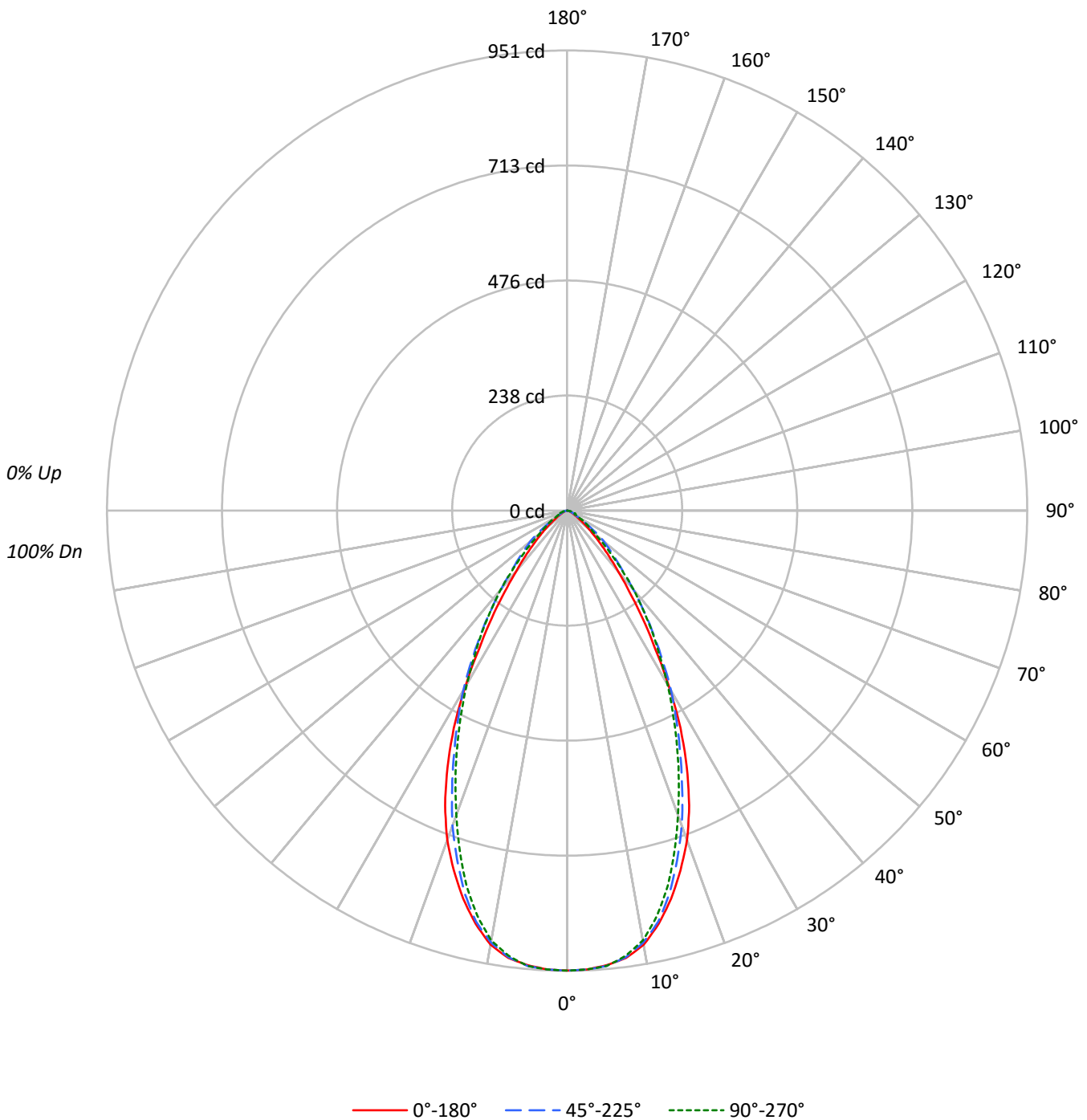
Input Watts (W): 15.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94					92				
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86					84				
3	100	93	88	83	98	92	87	83	89	85	81	87	83	80	84	81	79					77				
4	95	86	80	76	93	85	80	75	83	78	74	81	77	73	79	76	73					71				
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67					65				
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62					61				
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	66	61	58					56				
8	76	66	59	55	75	65	59	55	64	58	54	63	58	54	62	57	54					52				
9	72	62	55	51	71	61	55	51	60	55	51	59	54	51	58	54	50					49				
10	68	58	52	48	67	58	52	48	57	51	48	56	51	47	55	51	47					46				

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

	0°	45°	90°
0°	469007	469007	469007
5°	467034	467777	467777
10°	456453	454148	451894
15°	424257	418077	410313
20°	380289	363540	351569
25°	318247	300881	292606
30°	240473	244803	236143
35°	163707	186594	184727
40°	105626	136927	137894
45°	67821	99568	92172
50°	43137	75758	57107
55°	26150	43095	41805
60°	16479	23978	26939
65°	12375	17745	19496
70°	10963	15291	26254
75°	8769	11628	17347
80°	4262	8524	13070
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	88.9	9.6
10°-20°	226.6	24.5
20°-30°	255.1	27.6
30°-40°	188.7	20.4
40°-50°	100.6	10.9
50°-60°	41.4	4.5
60°-70°	16.1	1.7
70°-80°	7.2	0.8
80°-90°	0.7	0.1
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°	570.7	61.7
0°-40°	759.4	82.1
0°-60°	901.4	97.4
0°-90°	925.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	925.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	951	951	951	951	951	
5°	943	943	944	944	944	89
15°	831	823	818	808	803	231
25°	585	577	553	542	538	265
35°	272	298	310	307	307	172
45°	97	109	143	141	132	78
55°	30	36	50	47	49	29
65°	11	15	15	18	17	11
75°	5	5	6	9	9	5
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°	950.6	950.6	950.6	950.6	950.6	950.6	950.6	950.6	950.6	950.6	950.6
2.5°	949.0	949.0	949.0	949.0	949.0	949.0	949.0	949.0	949.0	949.0	949.0
5°	943.0	943.0	943.0	943.0	943.0	943.0	943.0	944.5	943.0	944.5	944.5
7.5°	932.3	930.8	930.8	930.8	930.8	930.8	930.8	930.8	930.8	930.8	930.8
10°	911.1	909.6	909.6	906.5	908.0	906.5	906.5	906.5	906.5	906.5	906.5
12.5°	874.6	874.6	873.1	871.6	870.1	870.1	870.1	870.1	870.1	870.1	870.1
15°	830.6	830.6	829.1	826.0	824.5	823.0	821.5	821.5	820.0	820.0	818.5
17.5°	779.0	779.0	775.9	772.9	769.9	768.3	765.3	762.3	760.8	759.2	756.2
20°	724.3	724.3	719.8	718.2	712.2	710.6	706.1	701.5	695.5	693.9	692.4
22.5°	659.0	656.0	654.5	654.5	649.9	646.9	643.8	637.8	628.6	625.6	621.1
25°	584.6	583.1	583.1	581.6	580.1	577.0	578.5	574.0	566.4	560.3	552.7
27.5°	507.2	505.7	504.1	505.7	508.7	508.7	507.2	504.1	501.1	493.5	488.9
30°	422.1	422.1	425.2	429.7	434.3	435.8	437.3	435.8	434.3	429.7	429.7
32.5°	338.6	341.7	344.7	355.3	359.9	362.9	364.4	369.0	369.0	369.0	366.0
35°	271.8	271.8	277.9	285.5	291.5	297.6	299.1	305.2	309.8	309.8	309.8
37.5°	211.1	212.6	218.7	224.7	232.3	235.4	238.4	247.5	253.6	256.6	258.1
40°	164.0	167.0	170.1	176.1	183.7	185.3	188.3	195.9	203.5	209.5	212.6
42.5°	127.6	127.6	130.6	135.1	139.7	144.3	147.3	151.8	161.0	165.5	171.6
45°	97.2	98.7	100.2	103.3	107.8	109.3	112.4	118.4	124.5	130.6	142.7
47.5°	74.4	74.4	75.9	77.4	82.0	83.5	85.0	91.1	97.2	109.3	118.4
50°	56.2	56.2	56.2	57.7	60.7	63.8	65.3	69.8	82.0	91.1	98.7
52.5°	41.0	41.0	41.0	44.0	45.6	47.1	48.6	54.7	69.8	71.4	74.4
55°	30.4	30.4	30.4	31.9	34.9	36.4	38.0	48.6	51.6	56.2	50.1
57.5°	22.8	22.8	22.8	24.3	25.8	27.3	30.4	38.0	42.5	36.4	34.9
60°	16.7	16.7	16.7	18.2	21.3	22.8	25.8	28.9	28.9	25.8	24.3
62.5°	13.7	13.7	13.7	13.7	16.7	19.7	19.7	22.8	19.7	18.2	18.2
65°	10.6	10.6	10.6	12.1	13.7	15.2	16.7	15.2	13.7	13.7	15.2
67.5°	9.1	9.1	9.1	9.1	12.1	12.1	12.1	10.6	10.6	10.6	12.1
70°	7.6	7.6	7.6	7.6	9.1	9.1	9.1	7.6	7.6	9.1	10.6
72.5°	6.1	6.1	6.1	7.6	7.6	7.6	6.1	6.1	6.1	7.6	7.6
75°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	6.1	6.1	6.1
77.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.6	4.6	4.6
80°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3.0
82.5°	0.0	1.5	1.5	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5
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°	950.6	950.6	950.6	950.6	950.6	950.6	950.6	950.6	950.6	950.6
2.5°	949.0	949.0	950.6	949.0	949.0	949.0	949.0	949.0	949.0	949.0
5°	944.5	944.5	944.5	944.5	944.5	944.5	944.5	944.5	944.5	944.5
7.5°	930.8	930.8	930.8	929.3	929.3	929.3	929.3	929.3	929.3	927.8
10°	906.5	906.5	905.0	903.5	905.0	902.0	902.0	900.5	900.5	902.0
12.5°	868.6	867.0	864.0	864.0	862.5	861.0	859.5	859.5	857.9	857.9
15°	818.5	815.4	812.4	810.9	807.8	809.3	807.8	804.8	804.8	803.3
17.5°	757.7	754.7	750.1	745.6	745.6	744.1	744.1	741.0	739.5	738.0
20°	687.9	686.3	684.8	680.3	678.8	675.7	672.7	672.7	668.1	669.6
22.5°	618.0	616.5	613.5	611.9	608.9	608.9	605.9	605.9	602.8	602.8
25°	551.2	549.7	546.7	545.1	542.1	542.1	539.1	540.6	537.5	537.5
27.5°	484.4	482.9	479.8	481.4	478.3	476.8	475.3	475.3	473.8	473.8
30°	423.7	419.1	419.1	417.6	416.1	416.1	416.1	413.0	413.0	414.5
32.5°	364.4	361.4	359.9	359.9	361.4	359.9	358.4	358.4	356.8	355.3
35°	309.8	308.2	306.7	306.7	306.7	306.7	306.7	306.7	306.7	306.7
37.5°	258.1	259.7	258.1	259.7	261.2	259.7	258.1	256.6	256.6	256.6
40°	214.1	217.1	218.7	215.6	214.1	214.1	212.6	214.1	212.6	214.1
42.5°	179.2	180.7	177.7	179.2	180.7	180.7	177.7	173.1	170.1	168.6
45°	145.8	148.8	156.4	145.8	141.2	139.7	135.1	133.6	132.1	132.1
47.5°	124.5	130.6	115.4	110.8	107.8	107.8	104.8	101.7	101.7	100.2
50°	101.7	89.6	86.6	83.5	80.5	79.0	77.4	75.9	75.9	74.4
52.5°	68.3	65.3	62.3	60.7	59.2	59.2	59.2	59.2	59.2	59.2
55°	48.6	47.1	45.6	47.1	47.1	48.6	50.1	50.1	50.1	48.6
57.5°	33.4	33.4	36.4	39.5	39.5	39.5	39.5	38.0	38.0	38.0
60°	25.8	27.3	30.4	30.4	30.4	31.9	30.4	28.9	27.3	27.3
62.5°	19.7	22.8	24.3	24.3	22.8	22.8	21.3	21.3	21.3	21.3
65°	16.7	18.2	18.2	18.2	18.2	16.7	15.2	15.2	16.7	16.7
67.5°	13.7	13.7	13.7	12.1	12.1	13.7	15.2	16.7	16.7	18.2
70°	10.6	10.6	10.6	12.1	13.7	13.7	16.7	16.7	18.2	18.2
72.5°	7.6	7.6	10.6	12.1	13.7	13.7	13.7	12.1	12.1	12.1
75°	6.1	7.6	10.6	9.1	9.1	9.1	9.1	9.1	9.1	9.1
77.5°	4.6	6.1	6.1	4.6	6.1	6.1	6.1	7.6	7.6	9.1
80°	3.0	3.0	3.0	3.0	3.0	3.0	4.6	4.6	4.6	4.6
82.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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)