

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: P219623

Luminaire Tested: **MRZ-1-REC-X-3-L40-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P219623  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14872)  
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-3-L40-80-NFL-UNV-X-STD-LSL  
Description: MRZ INTEGRAL LED DOWNLIGHT  
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 3  
Light Source: (1) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1077.8 lumens  
Efficiency: N/A  
Efficacy: 89.8 lumens/watt  
Spacing Criteria (0/90/45): 0.4 / 0.87 / 0.54  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

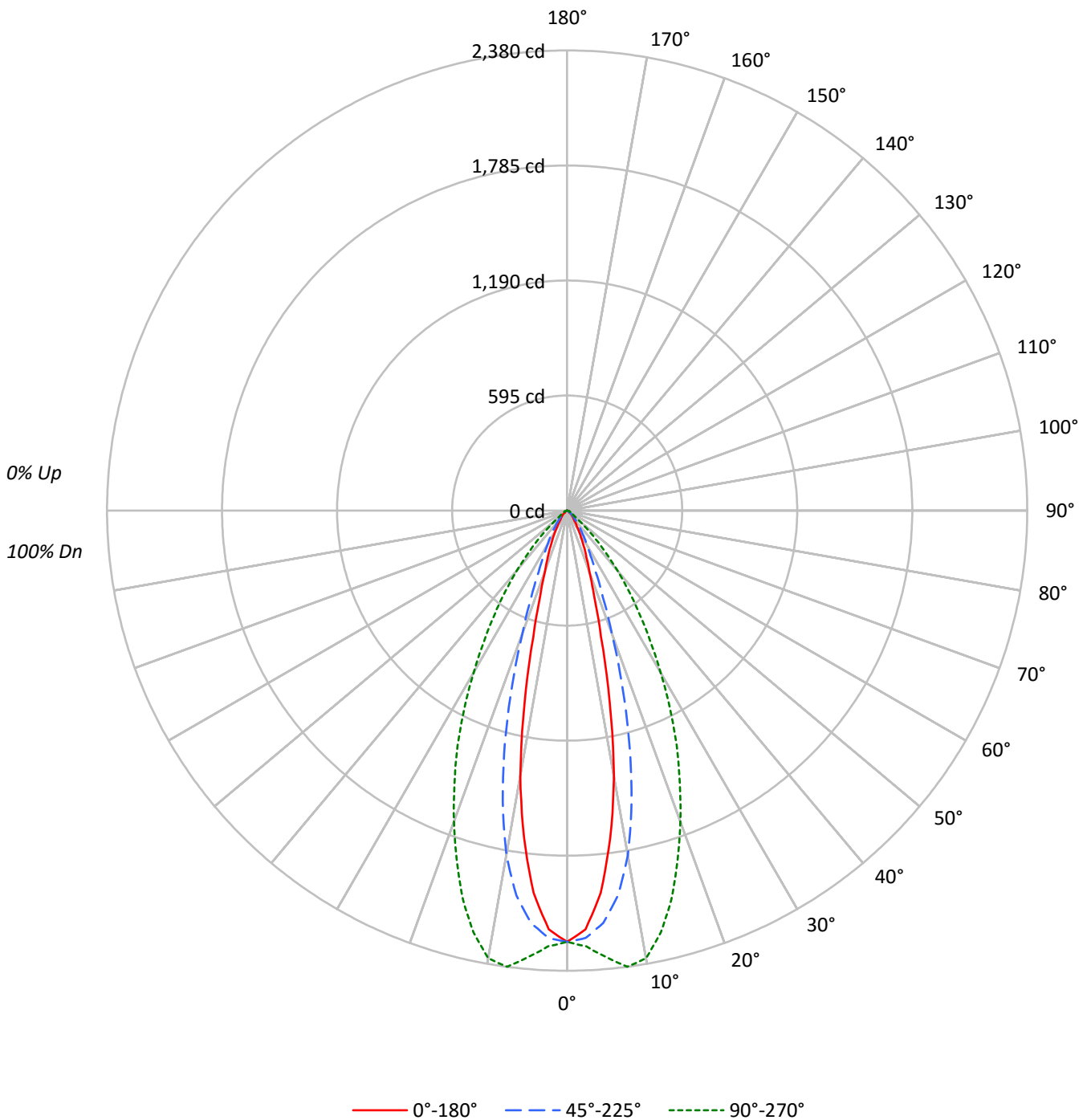
Input Watts (W): 12  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94					94			
2	109	104	100	97	106	102	99	96	99	96	94	96	94	92	93	92	90	88					88			
3	104	98	93	89	102	96	92	89	94	90	87	91	88	86	89	87	84	83					83			
4	99	92	87	83	97	91	86	82	89	85	81	87	83	80	85	82	80	78					78			
5	95	87	81	77	93	86	81	77	84	80	76	83	79	76	81	78	75	74					74			
6	90	82	77	73	89	81	76	72	80	75	72	79	75	72	77	74	71	70					70			
7	87	78	73	69	85	77	72	68	76	71	68	75	71	68	74	70	67	66					66			
8	83	74	69	65	82	74	68	65	73	68	65	72	67	64	71	67	64	63					63			
9	80	71	65	62	79	70	65	62	69	65	61	69	64	61	68	64	61	60					60			
10	77	68	62	59	76	67	62	59	66	62	59	66	61	58	65	61	58	57					57			

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

	0°	45°	90°
0°	1100532	1100532	1100532
5°	983298	1060212	1148468
10°	698732	906192	1177779
15°	345290	634598	1063912
20°	176677	353354	899347
25°	111054	189827	729420
30°	66769	116220	550791
35°	43125	75228	393426
40°	30400	49013	259879
45°	23374	33980	145549
50°	14046	23411	61942
55°	10494	15741	32773
60°	8980	10558	21018
65°	8873	8873	17745
70°	8800	6636	24091
75°	8769	5719	17347
80°	4262	4262	8524
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	195.4	18.1
10°-20°	364.3	33.8
20°-30°	273.5	25.4
30°-40°	150.4	14.0
40°-50°	61.0	5.7
50°-60°	19.4	1.8
60°-70°	9.2	0.9
70°-80°	4.5	0.4
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°	833.1	77.3
0°-40°	983.5	91.2
0°-60°	1063.9	98.7
0°-90°	1077.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1077.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2231	2231	2231	2231	2231	
5°	1985	2031	2141	2267	2319	170
15°	676	795	1242	1848	2083	198
25°	204	228	349	1017	1340	95
35°	72	85	125	378	653	46
45°	34	32	49	93	209	25
55°	12	14	18	23	38	12
65°	8	9	8	9	15	8
75°	5	3	3	3	9	4
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°	2230.6	2230.6	2230.6	2230.6	2230.6	2230.6	2230.6	2230.6	2230.6	2230.6	2230.6
2.5°	2168.1	2168.1	2166.6	2171.2	2180.3	2180.3	2184.9	2189.5	2194.0	2203.2	2212.3
5°	1985.4	1988.5	1987.0	2003.7	2015.9	2031.1	2035.7	2061.6	2081.4	2111.8	2140.7
7.5°	1708.3	1709.8	1723.6	1743.3	1773.8	1790.5	1813.4	1849.9	1894.1	1951.9	2008.3
10°	1394.7	1394.7	1416.0	1444.9	1469.3	1502.8	1519.5	1578.9	1642.9	1723.6	1808.8
12.5°	1015.6	1015.6	1052.1	1073.4	1117.6	1146.5	1170.9	1239.4	1323.1	1426.6	1539.3
15°	676.0	688.2	701.9	730.8	770.4	794.8	811.5	881.6	980.5	1096.3	1242.4
17.5°	459.8	467.4	476.6	499.4	519.2	531.4	546.6	606.0	677.5	790.2	944.0
20°	336.5	344.1	351.7	362.4	374.6	380.6	391.3	421.8	473.5	552.7	673.0
22.5°	260.4	266.5	272.5	278.6	287.8	292.3	298.4	318.2	345.6	395.9	482.7
25°	204.0	204.0	211.6	216.2	223.8	228.4	236.0	249.7	271.0	299.9	348.7
27.5°	155.3	156.8	161.4	167.5	173.6	178.1	185.8	197.9	211.6	231.4	261.9
30°	117.2	120.3	123.3	127.9	135.5	140.1	144.6	155.3	167.5	182.7	204.0
32.5°	89.8	92.9	94.4	99.0	105.1	108.1	112.7	121.8	132.5	147.7	161.4
35°	71.6	71.6	74.6	76.1	82.2	85.3	88.3	94.4	105.1	114.2	124.9
37.5°	56.3	57.9	59.4	60.9	65.5	67.0	68.5	73.1	79.2	88.3	97.4
40°	47.2	48.7	48.7	48.7	50.2	50.2	51.8	54.8	60.9	67.0	76.1
42.5°	39.6	39.6	39.6	39.6	39.6	39.6	41.1	42.6	47.2	53.3	60.9
45°	33.5	32.0	32.0	32.0	32.0	32.0	32.0	35.0	38.1	42.6	48.7
47.5°	24.4	25.9	25.9	25.9	25.9	25.9	27.4	27.4	30.5	35.0	38.1
50°	18.3	19.8	19.8	21.3	21.3	21.3	21.3	22.8	25.9	28.9	30.5
52.5°	15.2	15.2	15.2	16.7	16.7	16.7	16.7	18.3	21.3	22.8	24.4
55°	12.2	12.2	12.2	12.2	13.7	13.7	15.2	16.7	18.3	18.3	18.3
57.5°	10.7	10.7	10.7	10.7	10.7	12.2	12.2	13.7	15.2	13.7	13.7
60°	9.1	9.1	9.1	9.1	9.1	10.7	10.7	12.2	10.7	10.7	10.7
62.5°	9.1	9.1	7.6	7.6	9.1	9.1	9.1	9.1	9.1	9.1	7.6
65°	7.6	7.6	7.6	7.6	7.6	9.1	9.1	7.6	7.6	6.1	7.6
67.5°	7.6	7.6	6.1	7.6	7.6	7.6	7.6	6.1	6.1	6.1	6.1
70°	6.1	6.1	6.1	6.1	6.1	6.1	6.1	4.6	4.6	4.6	4.6
72.5°	4.6	4.6	4.6	6.1	4.6	4.6	4.6	4.6	4.6	4.6	4.6
75°	4.6	4.6	4.6	4.6	4.6	3.0	3.0	3.0	3.0	3.0	3.0
77.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1.5	1.5
80°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
82.5°	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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°	2230.6	2230.6	2230.6	2230.6	2230.6	2230.6	2230.6	2230.6	2230.6	2230.6
2.5°	2219.9	2226.0	2233.6	2241.2	2244.3	2247.3	2251.9	2254.9	2256.5	2256.5
5°	2171.2	2201.6	2230.6	2254.9	2267.1	2277.8	2296.0	2308.2	2318.9	2318.9
7.5°	2067.7	2131.6	2191.0	2242.7	2265.6	2289.9	2328.0	2356.9	2372.2	2379.8
10°	1898.6	1994.6	2084.4	2163.6	2200.1	2230.6	2285.4	2323.4	2341.7	2350.9
12.5°	1668.7	1795.1	1909.3	2008.3	2052.4	2089.0	2145.3	2195.5	2221.4	2235.1
15°	1400.8	1550.0	1685.5	1798.2	1848.4	1894.1	1968.7	2029.6	2066.1	2082.9
17.5°	1117.6	1301.8	1455.6	1585.0	1630.7	1680.9	1767.7	1837.7	1886.5	1898.6
20°	855.7	1055.1	1230.2	1364.2	1417.5	1467.8	1565.2	1639.8	1693.1	1712.9
22.5°	622.7	816.1	1009.5	1152.6	1213.5	1268.3	1365.7	1446.4	1502.8	1522.6
25°	444.6	601.4	793.3	956.2	1017.1	1071.9	1169.3	1251.6	1309.4	1339.9
27.5°	324.3	430.9	599.9	767.4	832.8	890.7	980.5	1065.8	1120.6	1149.5
30°	237.5	307.6	433.9	596.8	668.4	724.7	820.7	892.2	951.6	966.8
32.5°	181.2	220.8	307.6	440.0	513.1	572.5	665.4	733.9	781.1	797.8
35°	138.6	162.9	214.7	315.2	377.6	438.5	526.8	596.8	638.0	653.2
37.5°	108.1	124.9	155.3	222.3	271.0	324.3	411.1	469.0	502.4	522.2
40°	86.8	99.0	118.8	158.3	191.8	231.4	304.5	359.3	392.8	403.5
42.5°	70.0	79.2	89.8	112.7	135.5	164.4	223.8	261.9	289.3	295.4
45°	54.8	60.9	73.1	83.7	92.9	108.1	149.2	184.2	201.0	208.6
47.5°	44.2	51.8	51.8	57.9	63.9	74.6	100.5	120.3	132.5	135.5
50°	33.5	35.0	38.1	41.1	44.2	47.2	60.9	73.1	80.7	80.7
52.5°	24.4	25.9	25.9	27.4	28.9	32.0	39.6	45.7	50.2	51.8
55°	18.3	18.3	19.8	21.3	22.8	24.4	28.9	35.0	36.5	38.1
57.5°	13.7	13.7	15.2	16.7	18.3	18.3	22.8	25.9	28.9	32.0
60°	10.7	10.7	12.2	12.2	13.7	15.2	19.8	21.3	21.3	21.3
62.5°	9.1	9.1	9.1	10.7	10.7	10.7	13.7	18.3	19.8	19.8
65°	7.6	7.6	7.6	7.6	9.1	9.1	10.7	12.2	15.2	15.2
67.5°	6.1	6.1	6.1	6.1	7.6	7.6	10.7	12.2	15.2	16.7
70°	4.6	4.6	4.6	6.1	6.1	7.6	9.1	12.2	15.2	16.7
72.5°	3.0	3.0	4.6	4.6	4.6	6.1	7.6	9.1	10.7	10.7
75°	3.0	3.0	3.0	3.0	3.0	3.0	4.6	7.6	7.6	9.1
77.5°	3.0	3.0	1.5	3.0	3.0	3.0	3.0	4.6	6.1	6.1
80°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)