

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: P219627

Luminaire Tested: **MRZ-1-REC-X-4-L27-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219627
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-4-L27-80-NFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 4
Light Source: (1) 2700K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1268.9 lumens
Efficiency: N/A
Efficacy: 80.3 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

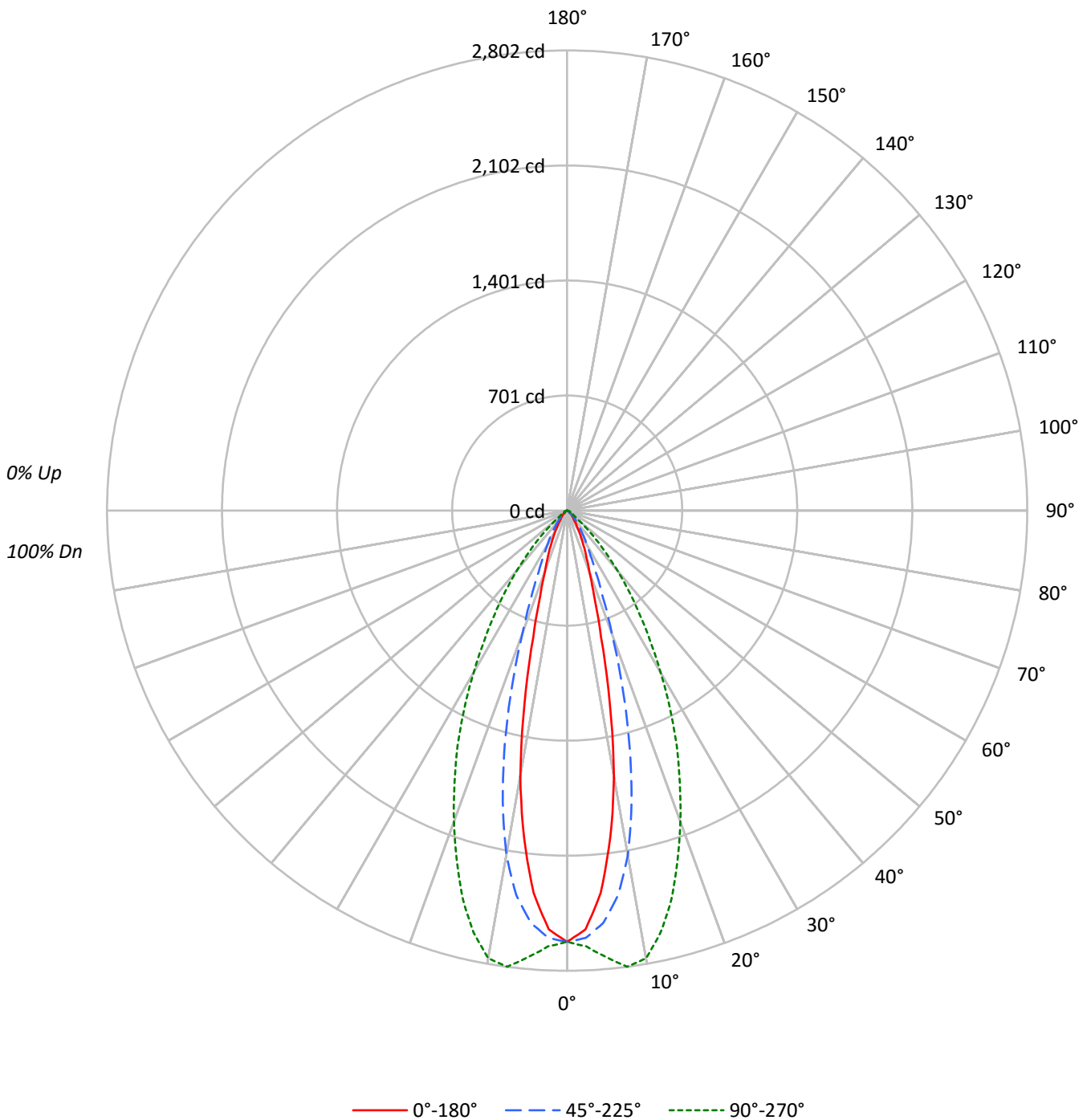
Input Watts (W): 15.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	100	97	106	102	99	96	99	96	94	96	94	92	93	92	90	88
3	104	98	93	89	102	96	92	88	94	90	87	91	88	86	89	87	84	83
4	99	92	87	83	97	91	86	82	89	85	81	87	83	80	85	82	80	78
5	95	87	81	77	93	86	81	77	84	80	76	82	79	76	81	78	75	74
6	90	82	77	73	89	81	76	72	80	75	72	79	75	72	77	74	71	70
7	87	78	72	69	85	77	72	68	76	71	68	75	71	68	74	70	67	66
8	83	74	69	65	82	74	68	65	73	68	65	72	67	64	71	67	64	63
9	80	71	65	62	79	70	65	62	69	65	61	69	64	61	68	64	61	60
10	77	68	62	59	76	67	62	59	66	62	59	66	61	58	65	61	58	57

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1295565	1295565	1295565
5°	1157581	1248115	1352022
10°	822577	1066810	1386492
15°	406482	747073	1252443
20°	207970	415992	1058750
25°	130761	223470	858657
30°	78619	136843	648439
35°	50714	88539	463112
40°	35810	57708	305929
45°	27491	40051	171366
50°	16503	27479	72918
55°	12301	18494	38536
60°	10657	12334	24768
65°	10507	10507	20897
70°	10386	7790	28418
75°	10294	6863	20588
80°	5114	5114	10229
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	230.0	18.1
10°-20°	428.8	33.8
20°-30°	322.0	25.4
30°-40°	177.0	14.0
40°-50°	71.8	5.7
50°-60°	22.9	1.8
60°-70°	10.9	0.9
70°-80°	5.3	0.4
80°-90°	0.3	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°	980.8	77.3
0°-40°	1157.8	91.2
0°-60°	1252.5	98.7
0°-90°	1268.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1268.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2626	2626	2626	2626	2626	
5°	2337	2391	2520	2669	2730	200
15°	796	936	1463	2176	2452	233
25°	240	269	410	1197	1577	112
35°	84	100	147	444	769	54
45°	39	38	57	109	246	29
55°	14	16	22	27	45	14
65°	9	11	9	11	18	9
75°	5	4	4	4	11	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°	2625.9	2625.9	2625.9	2625.9	2625.9	2625.9	2625.9	2625.9	2625.9	2625.9	2625.9
2.5°	2552.4	2552.4	2550.6	2556.0	2566.7	2566.7	2572.1	2577.5	2582.9	2593.6	2604.4
5°	2337.3	2340.9	2339.1	2358.8	2373.2	2391.1	2396.5	2426.9	2450.2	2486.1	2520.1
7.5°	2011.1	2012.9	2029.0	2052.3	2088.2	2107.9	2134.8	2177.8	2229.8	2297.9	2364.2
10°	1641.9	1641.9	1667.0	1701.0	1729.7	1769.1	1788.8	1858.7	1934.0	2029.0	2129.4
12.5°	1195.5	1195.5	1238.6	1263.7	1315.6	1349.7	1378.4	1459.0	1557.6	1679.5	1812.1
15°	795.8	810.2	826.3	860.4	907.0	935.6	955.4	1037.8	1154.3	1290.5	1462.6
17.5°	541.3	550.3	561.0	587.9	611.2	625.6	643.5	713.4	797.6	930.3	1111.3
20°	396.1	405.1	414.0	426.6	440.9	448.1	460.7	496.5	557.4	650.6	792.3
22.5°	306.5	313.7	320.8	328.0	338.8	344.1	351.3	374.6	406.9	466.0	568.2
25°	240.2	240.2	249.1	254.5	263.5	268.9	277.8	294.0	319.1	353.1	410.5
27.5°	182.8	184.6	190.0	197.2	204.3	209.7	218.7	233.0	249.1	272.4	308.3
30°	138.0	141.6	145.2	150.6	159.5	164.9	170.3	182.8	197.2	215.1	240.2
32.5°	105.8	109.3	111.1	116.5	123.7	127.3	132.6	143.4	155.9	173.9	190.0
35°	84.2	84.2	87.8	89.6	96.8	100.4	104.0	111.1	123.7	134.4	147.0
37.5°	66.3	68.1	69.9	71.7	77.1	78.9	80.7	86.0	93.2	104.0	114.7
40°	55.6	57.4	57.4	57.4	59.1	59.1	60.9	64.5	71.7	78.9	89.6
42.5°	46.6	46.6	46.6	46.6	46.6	46.6	48.4	50.2	55.6	62.7	71.7
45°	39.4	37.6	37.6	37.6	37.6	37.6	37.6	41.2	44.8	50.2	57.4
47.5°	28.7	30.5	30.5	30.5	30.5	30.5	32.3	32.3	35.8	41.2	44.8
50°	21.5	23.3	23.3	25.1	25.1	25.1	25.1	26.9	30.5	34.1	35.8
52.5°	17.9	17.9	17.9	19.7	19.7	19.7	19.7	21.5	25.1	26.9	28.7
55°	14.3	14.3	14.3	14.3	16.1	16.1	17.9	19.7	21.5	21.5	21.5
57.5°	12.5	12.5	12.5	12.5	12.5	14.3	14.3	16.1	17.9	16.1	16.1
60°	10.8	10.8	10.8	10.8	10.8	12.5	12.5	14.3	12.5	12.5	12.5
62.5°	10.8	10.8	9.0	9.0	10.8	10.8	10.8	10.8	10.8	10.8	9.0
65°	9.0	9.0	9.0	9.0	9.0	10.8	10.8	9.0	9.0	7.2	9.0
67.5°	9.0	9.0	7.2	9.0	9.0	9.0	9.0	7.2	7.2	7.2	7.2
70°	7.2	7.2	7.2	7.2	7.2	7.2	7.2	5.4	5.4	5.4	5.4
72.5°	5.4	5.4	5.4	7.2	5.4	5.4	5.4	5.4	5.4	5.4	5.4
75°	5.4	5.4	5.4	5.4	5.4	3.6	3.6	3.6	3.6	3.6	3.6
77.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	1.8	1.8
80°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
82.5°	0.0	1.8	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°	2625.9	2625.9	2625.9	2625.9	2625.9	2625.9	2625.9	2625.9	2625.9	2625.9
2.5°	2613.4	2620.5	2629.5	2638.4	2642.0	2645.6	2651.0	2654.6	2656.4	2656.4
5°	2556.0	2591.8	2625.9	2654.6	2668.9	2681.5	2703.0	2717.3	2729.9	2729.9
7.5°	2434.1	2509.4	2579.3	2640.2	2667.1	2695.8	2740.6	2774.7	2792.6	2801.6
10°	2235.2	2348.1	2453.8	2547.0	2590.1	2625.9	2690.4	2735.2	2756.7	2767.5
12.5°	1964.5	2113.3	2247.7	2364.2	2416.2	2459.2	2525.5	2584.7	2615.1	2631.3
15°	1649.0	1824.7	1984.2	2116.9	2176.0	2229.8	2317.6	2389.3	2432.3	2452.0
17.5°	1315.6	1532.5	1713.6	1865.9	1919.7	1978.8	2081.0	2163.5	2220.8	2235.2
20°	1007.3	1242.1	1448.3	1606.0	1668.7	1727.9	1842.6	1930.4	1993.2	2016.5
22.5°	733.1	960.7	1188.4	1356.9	1428.6	1493.1	1607.8	1702.8	1769.1	1792.4
25°	523.4	708.0	933.9	1125.6	1197.3	1261.9	1376.6	1473.4	1541.5	1577.3
27.5°	381.8	507.3	706.2	903.4	980.5	1048.6	1154.3	1254.7	1319.2	1353.3
30°	279.6	362.1	510.8	702.6	786.9	853.2	966.1	1050.4	1120.3	1138.2
32.5°	213.3	259.9	362.1	518.0	604.0	674.0	783.3	863.9	919.5	939.2
35°	163.1	191.8	252.7	371.0	444.5	516.2	620.2	702.6	751.0	768.9
37.5°	127.3	147.0	182.8	261.7	319.1	381.8	484.0	552.1	591.5	614.8
40°	102.2	116.5	139.8	186.4	225.8	272.4	358.5	423.0	462.4	475.0
42.5°	82.5	93.2	105.8	132.6	159.5	193.6	263.5	308.3	340.6	347.7
45°	64.5	71.7	86.0	98.6	109.3	127.3	175.7	216.9	236.6	245.6
47.5°	52.0	60.9	60.9	68.1	75.3	87.8	118.3	141.6	155.9	159.5
50°	39.4	41.2	44.8	48.4	52.0	55.6	71.7	86.0	95.0	95.0
52.5°	28.7	30.5	30.5	32.3	34.1	37.6	46.6	53.8	59.1	60.9
55°	21.5	21.5	23.3	25.1	26.9	28.7	34.1	41.2	43.0	44.8
57.5°	16.1	16.1	17.9	19.7	21.5	21.5	26.9	30.5	34.1	37.6
60°	12.5	12.5	14.3	14.3	16.1	17.9	23.3	25.1	25.1	25.1
62.5°	10.8	10.8	10.8	12.5	12.5	12.5	16.1	21.5	23.3	23.3
65°	9.0	9.0	9.0	9.0	10.8	10.8	12.5	14.3	17.9	17.9
67.5°	7.2	7.2	7.2	7.2	9.0	9.0	12.5	14.3	17.9	19.7
70°	5.4	5.4	5.4	7.2	7.2	9.0	10.8	14.3	17.9	19.7
72.5°	3.6	3.6	5.4	5.4	5.4	7.2	9.0	10.8	12.5	12.5
75°	3.6	3.6	3.6	3.6	3.6	3.6	5.4	9.0	9.0	10.8
77.5°	3.6	3.6	1.8	3.6	3.6	3.6	3.6	5.4	7.2	7.2
80°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	3.6
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)