

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: P219620

Luminaire Tested: **MRZ-1-REC-X-3-L27-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219620
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-L27-80-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) 2700K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 992.1 lumens
Efficiency: N/A
Efficacy: 82.0 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

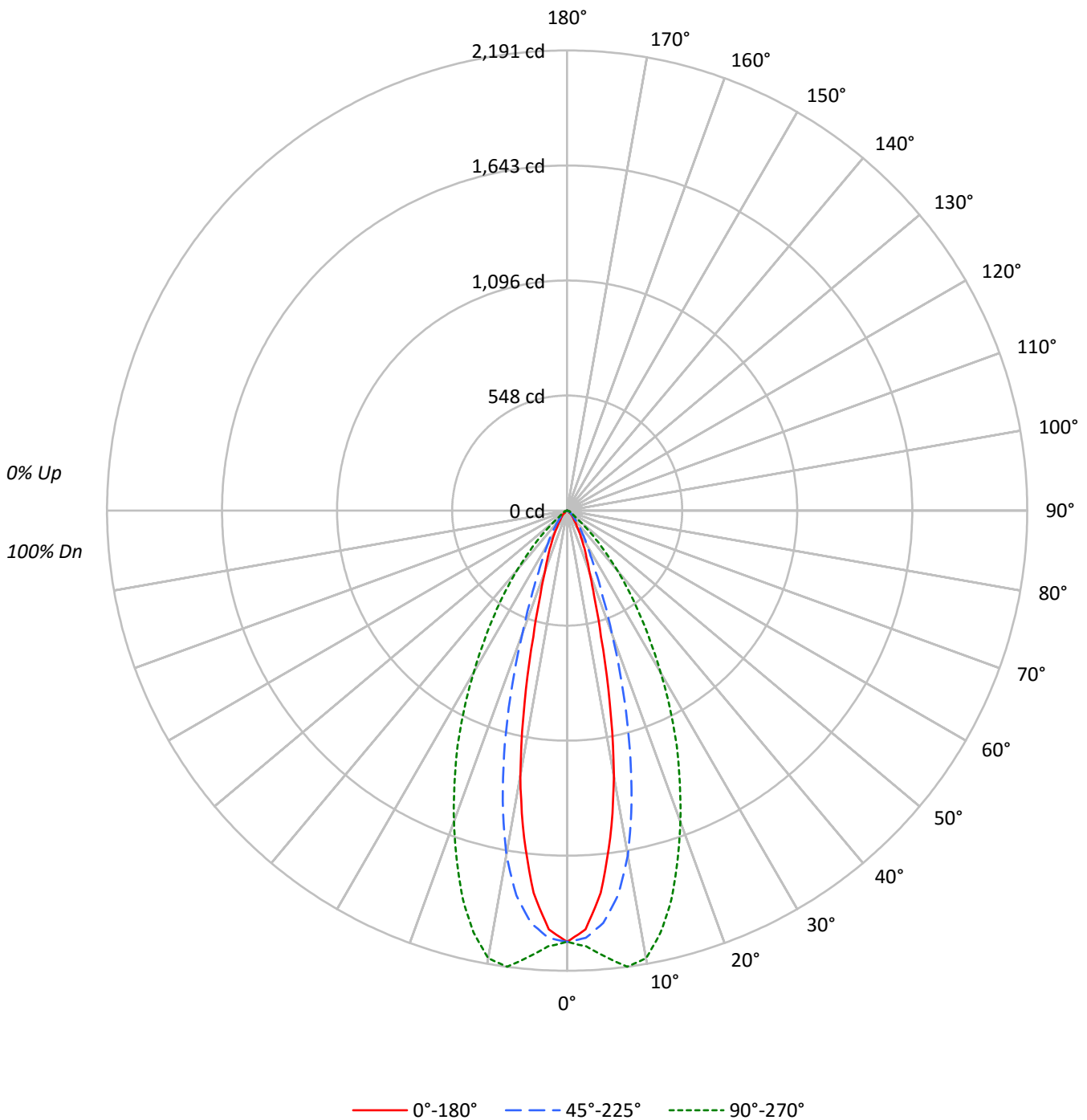
Input Watts (W): 12.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1013056	1013056	1013056
5°	905145	975968	1057191
10°	643172	834150	1084144
15°	317861	584184	979326
20°	162606	325264	827836
25°	102235	174747	671443
30°	61471	106991	507038
35°	39692	69205	362166
40°	27952	45149	239204
45°	21491	31259	133967
50°	12895	21492	57030
55°	9634	14451	30106
60°	8289	9670	19340
65°	8172	8172	16344
70°	8078	6059	22215
75°	8006	5338	16013
80°	3978	3978	7956
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.8	18.1
10°-20°	335.3	33.8
20°-30°	251.8	25.4
30°-40°	138.4	14.0
40°-50°	56.1	5.7
50°-60°	17.9	1.8
60°-70°	8.5	0.9
70°-80°	4.1	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°	766.9	77.3
0°-40°	905.3	91.2
0°-60°	979.3	98.7
0°-90°	992.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	992.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2053	2053	2053	2053	2053	
5°	1828	1870	1971	2087	2135	157
15°	622	732	1144	1702	1917	182
25°	188	210	321	936	1233	87
35°	66	78	115	348	601	43
45°	31	29	45	86	192	23
55°	11	13	17	21	35	11
65°	7	8	7	8	14	7
75°	4	3	3	3	8	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°	2053.3	2053.3	2053.3	2053.3	2053.3	2053.3	2053.3	2053.3	2053.3	2053.3	2053.3
2.5°	1995.8	1995.8	1994.4	1998.6	2007.0	2007.0	2011.2	2015.4	2019.6	2028.0	2036.5
5°	1827.6	1830.4	1829.0	1844.4	1855.7	1869.7	1873.9	1897.7	1915.9	1944.0	1970.6
7.5°	1572.5	1573.9	1586.6	1604.8	1632.8	1648.2	1669.2	1702.9	1743.5	1796.8	1848.6
10°	1283.8	1283.8	1303.4	1330.1	1352.5	1383.3	1398.8	1453.4	1512.3	1586.6	1665.0
12.5°	934.8	934.8	968.5	988.1	1028.7	1055.4	1077.8	1140.9	1217.9	1313.3	1417.0
15°	622.3	633.5	646.1	672.7	709.2	731.6	747.0	811.5	902.6	1009.1	1143.7
17.5°	423.3	430.3	438.7	459.7	477.9	489.1	503.2	557.8	623.7	727.4	869.0
20°	309.7	316.8	323.8	333.6	344.8	350.4	360.2	388.2	435.9	508.8	619.5
22.5°	239.7	245.3	250.9	256.5	264.9	269.1	274.7	292.9	318.2	364.4	444.3
25°	187.8	187.8	194.8	199.0	206.0	210.2	217.2	229.9	249.5	276.1	321.0
27.5°	143.0	144.4	148.6	154.2	159.8	164.0	171.0	182.2	194.8	213.0	241.1
30°	107.9	110.7	113.5	117.7	124.7	128.9	133.1	143.0	154.2	168.2	187.8
32.5°	82.7	85.5	86.9	91.1	96.7	99.5	103.7	112.1	121.9	136.0	148.6
35°	65.9	65.9	68.7	70.1	75.7	78.5	81.3	86.9	96.7	105.1	114.9
37.5°	51.9	53.3	54.7	56.1	60.3	61.7	63.1	67.3	72.9	81.3	89.7
40°	43.4	44.8	44.8	44.8	46.3	46.3	47.7	50.5	56.1	61.7	70.1
42.5°	36.4	36.4	36.4	36.4	36.4	36.4	37.8	39.2	43.4	49.1	56.1
45°	30.8	29.4	29.4	29.4	29.4	29.4	29.4	32.2	35.0	39.2	44.8
47.5°	22.4	23.8	23.8	23.8	23.8	23.8	25.2	25.2	28.0	32.2	35.0
50°	16.8	18.2	18.2	19.6	19.6	19.6	19.6	21.0	23.8	26.6	28.0
52.5°	14.0	14.0	14.0	15.4	15.4	15.4	15.4	16.8	19.6	21.0	22.4
55°	11.2	11.2	11.2	11.2	12.6	12.6	14.0	15.4	16.8	16.8	16.8
57.5°	9.8	9.8	9.8	9.8	9.8	11.2	11.2	12.6	14.0	12.6	12.6
60°	8.4	8.4	8.4	8.4	8.4	9.8	9.8	11.2	9.8	9.8	9.8
62.5°	8.4	8.4	7.0	7.0	8.4	8.4	8.4	8.4	8.4	8.4	7.0
65°	7.0	7.0	7.0	7.0	7.0	8.4	8.4	7.0	7.0	5.6	7.0
67.5°	7.0	7.0	5.6	7.0	7.0	7.0	7.0	5.6	5.6	5.6	5.6
70°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	4.2	4.2	4.2	4.2
72.5°	4.2	4.2	4.2	5.6	4.2	4.2	4.2	4.2	4.2	4.2	4.2
75°	4.2	4.2	4.2	4.2	4.2	2.8	2.8	2.8	2.8	2.8	2.8
77.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	0.0	1.4	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°	2053.3	2053.3	2053.3	2053.3	2053.3	2053.3	2053.3	2053.3	2053.3	2053.3
2.5°	2043.5	2049.1	2056.1	2063.1	2065.9	2068.7	2072.9	2075.7	2077.1	2077.1
5°	1998.6	2026.6	2053.3	2075.7	2086.9	2096.7	2113.5	2124.8	2134.6	2134.6
7.5°	1903.3	1962.2	2016.8	2064.5	2085.5	2107.9	2143.0	2169.6	2183.6	2190.6
10°	1747.7	1836.0	1918.7	1991.6	2025.2	2053.3	2103.7	2138.8	2155.6	2164.0
12.5°	1536.1	1652.4	1757.5	1848.6	1889.3	1922.9	1974.8	2021.0	2044.9	2057.5
15°	1289.4	1426.8	1551.5	1655.2	1701.5	1743.5	1812.2	1868.3	1901.9	1917.3
17.5°	1028.7	1198.3	1339.9	1459.0	1501.1	1547.3	1627.2	1691.7	1736.5	1747.7
20°	787.7	971.3	1132.5	1255.8	1304.8	1351.1	1440.8	1509.5	1558.5	1576.7
22.5°	573.2	751.2	929.2	1061.0	1117.0	1167.5	1257.2	1331.5	1383.3	1401.6
25°	409.3	553.6	730.2	880.2	936.2	986.7	1076.4	1152.1	1205.3	1233.4
27.5°	298.5	396.6	552.2	706.4	766.6	819.9	902.6	981.1	1031.5	1058.2
30°	218.6	283.1	399.4	549.4	615.3	667.1	755.4	821.3	876.0	890.0
32.5°	166.8	203.2	283.1	405.0	472.3	527.0	612.5	675.5	719.0	734.4
35°	127.5	150.0	197.6	290.1	347.6	403.6	484.9	549.4	587.3	601.3
37.5°	99.5	114.9	143.0	204.6	249.5	298.5	378.4	431.7	462.5	480.7
40°	79.9	91.1	109.3	145.8	176.6	213.0	280.3	330.8	361.6	371.4
42.5°	64.5	72.9	82.7	103.7	124.7	151.4	206.0	241.1	266.3	271.9
45°	50.5	56.1	67.3	77.1	85.5	99.5	137.4	169.6	185.0	192.0
47.5°	40.6	47.7	47.7	53.3	58.9	68.7	92.5	110.7	121.9	124.7
50°	30.8	32.2	35.0	37.8	40.6	43.4	56.1	67.3	74.3	74.3
52.5°	22.4	23.8	23.8	25.2	26.6	29.4	36.4	42.0	46.3	47.7
55°	16.8	16.8	18.2	19.6	21.0	22.4	26.6	32.2	33.6	35.0
57.5°	12.6	12.6	14.0	15.4	16.8	16.8	21.0	23.8	26.6	29.4
60°	9.8	9.8	11.2	11.2	12.6	14.0	18.2	19.6	19.6	19.6
62.5°	8.4	8.4	8.4	9.8	9.8	9.8	12.6	16.8	18.2	18.2
65°	7.0	7.0	7.0	7.0	8.4	8.4	9.8	11.2	14.0	14.0
67.5°	5.6	5.6	5.6	5.6	7.0	7.0	9.8	11.2	14.0	15.4
70°	4.2	4.2	4.2	5.6	5.6	7.0	8.4	11.2	14.0	15.4
72.5°	2.8	2.8	4.2	4.2	4.2	5.6	7.0	8.4	9.8	9.8
75°	2.8	2.8	2.8	2.8	2.8	2.8	4.2	7.0	7.0	8.4
77.5°	2.8	2.8	1.4	2.8	2.8	2.8	2.8	4.2	5.6	5.6
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.8
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)