

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: P219622

Luminaire Tested: **MRZ-1-REC-X-3-L35-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219622
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-L35-80-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) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1062.6 lumens
Efficiency: N/A
Efficacy: 89.3 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

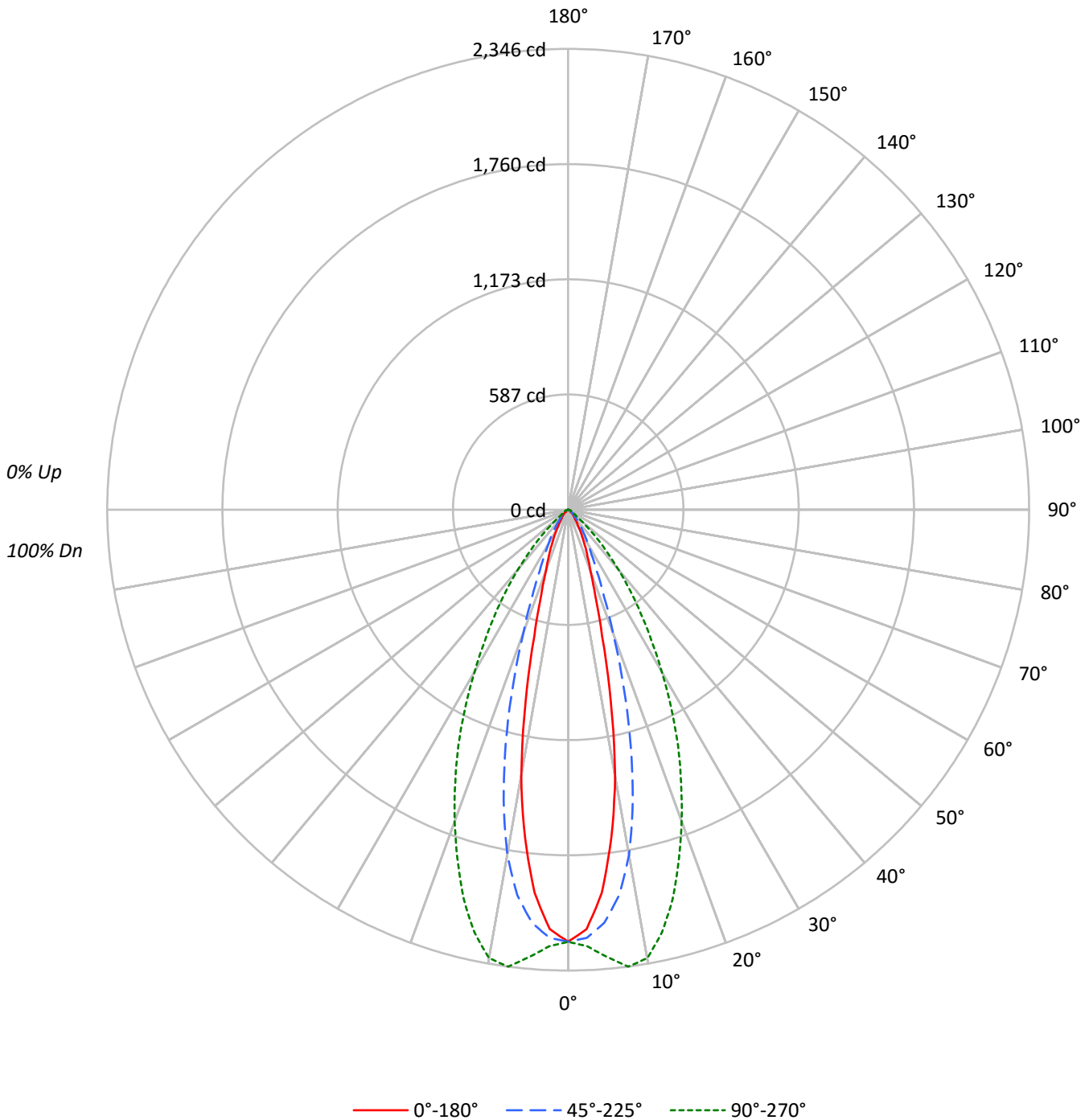
Input Watts (W): 11.9
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1084991	1084991	1084991
5°	969480	1045305	1132273
10°	688862	893417	1161146
15°	340438	625659	1048895
20°	174157	348366	886694
25°	109476	187159	719131
30°	65858	114568	543043
35°	42523	74144	387885
40°	29949	48369	256208
45°	23026	33492	143526
50°	13816	23027	61098
55°	10322	15483	32257
60°	8881	10361	20722
65°	8756	8756	17512
70°	8655	6491	23802
75°	8578	5719	17156
80°	4262	4262	8524
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	192.6	18.1
10°-20°	359.1	33.8
20°-30°	269.7	25.4
30°-40°	148.2	14.0
40°-50°	60.1	5.7
50°-60°	19.1	1.8
60°-70°	9.1	0.9
70°-80°	4.4	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°	821.4	77.3
0°-40°	969.6	91.2
0°-60°	1048.9	98.7
0°-90°	1062.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1062.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2199	2199	2199	2199	2199	
5°	1958	2002	2111	2235	2286	168
15°	666	784	1225	1822	2054	195
25°	201	225	344	1003	1321	94
35°	71	84	123	372	644	46
45°	33	32	48	92	206	25
55°	12	14	18	22	38	11
65°	8	9	8	9	15	8
75°	4	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°	2199.1	2199.1	2199.1	2199.1	2199.1	2199.1	2199.1	2199.1	2199.1	2199.1	2199.1
2.5°	2137.6	2137.6	2136.1	2140.6	2149.6	2149.6	2154.1	2158.6	2163.1	2172.1	2181.1
5°	1957.5	1960.5	1959.0	1975.5	1987.5	2002.5	2007.0	2032.5	2052.0	2082.1	2110.6
7.5°	1684.3	1685.8	1699.3	1718.8	1748.8	1765.3	1787.8	1823.9	1867.4	1924.4	1980.0
10°	1375.0	1375.0	1396.0	1424.6	1448.6	1481.6	1498.1	1556.7	1619.7	1699.3	1783.3
12.5°	1001.2	1001.2	1037.3	1058.3	1101.8	1130.3	1154.4	1221.9	1304.5	1406.5	1517.6
15°	666.5	678.5	692.0	720.5	759.6	783.6	800.1	869.1	966.7	1080.8	1224.9
17.5°	453.3	460.8	469.9	492.4	511.9	523.9	538.9	597.4	668.0	779.1	930.7
20°	331.7	339.3	346.8	357.3	369.3	375.3	385.8	415.8	466.8	544.9	663.5
22.5°	256.7	262.7	268.7	274.7	283.7	288.2	294.2	313.7	340.8	390.3	475.9
25°	201.1	201.1	208.7	213.2	220.7	225.2	232.7	246.2	267.2	295.7	343.8
27.5°	153.1	154.6	159.1	165.1	171.1	175.6	183.1	195.1	208.7	228.2	258.2
30°	115.6	118.6	121.6	126.1	133.6	138.1	142.6	153.1	165.1	180.1	201.1
32.5°	88.6	91.6	93.1	97.6	103.6	106.6	111.1	120.1	130.6	145.6	159.1
35°	70.6	70.6	73.6	75.1	81.1	84.1	87.1	93.1	103.6	112.6	123.1
37.5°	55.5	57.0	58.5	60.0	64.5	66.0	67.6	72.1	78.1	87.1	96.1
40°	46.5	48.0	48.0	48.0	49.5	49.5	51.0	54.0	60.0	66.0	75.1
42.5°	39.0	39.0	39.0	39.0	39.0	39.0	40.5	42.0	46.5	52.5	60.0
45°	33.0	31.5	31.5	31.5	31.5	31.5	31.5	34.5	37.5	42.0	48.0
47.5°	24.0	25.5	25.5	25.5	25.5	25.5	27.0	27.0	30.0	34.5	37.5
50°	18.0	19.5	19.5	21.0	21.0	21.0	21.0	22.5	25.5	28.5	30.0
52.5°	15.0	15.0	15.0	16.5	16.5	16.5	16.5	18.0	21.0	22.5	24.0
55°	12.0	12.0	12.0	12.0	13.5	13.5	15.0	16.5	18.0	18.0	18.0
57.5°	10.5	10.5	10.5	10.5	10.5	12.0	12.0	13.5	15.0	13.5	13.5
60°	9.0	9.0	9.0	9.0	9.0	10.5	10.5	12.0	10.5	10.5	10.5
62.5°	9.0	9.0	7.5	7.5	9.0	9.0	9.0	9.0	9.0	9.0	7.5
65°	7.5	7.5	7.5	7.5	7.5	9.0	9.0	7.5	7.5	6.0	7.5
67.5°	7.5	7.5	6.0	7.5	7.5	7.5	7.5	6.0	6.0	6.0	6.0
70°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	4.5	4.5	4.5	4.5
72.5°	4.5	4.5	4.5	6.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5
75°	4.5	4.5	4.5	4.5	4.5	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°	2199.1	2199.1	2199.1	2199.1	2199.1	2199.1	2199.1	2199.1	2199.1	2199.1
2.5°	2188.6	2194.6	2202.1	2209.6	2212.6	2215.7	2220.2	2223.2	2224.7	2224.7
5°	2140.6	2170.6	2199.1	2223.2	2235.2	2245.7	2263.7	2275.7	2286.2	2286.2
7.5°	2038.5	2101.6	2160.1	2211.1	2233.7	2257.7	2295.2	2323.7	2338.7	2346.2
10°	1871.9	1966.5	2055.0	2133.1	2169.1	2199.1	2253.2	2290.7	2308.7	2317.7
12.5°	1645.2	1769.8	1882.4	1980.0	2023.5	2059.5	2115.1	2164.6	2190.1	2203.6
15°	1381.0	1528.1	1661.7	1772.8	1822.4	1867.4	1940.9	2001.0	2037.0	2053.5
17.5°	1101.8	1283.5	1435.1	1562.7	1607.7	1657.2	1742.8	1811.9	1859.9	1871.9
20°	843.6	1040.3	1212.9	1345.0	1397.5	1447.1	1543.2	1616.7	1669.2	1688.8
22.5°	614.0	804.6	995.2	1136.3	1196.4	1250.4	1346.5	1426.1	1481.6	1501.1
25°	438.3	592.9	782.1	942.7	1002.7	1056.8	1152.9	1233.9	1291.0	1321.0
27.5°	319.7	424.8	591.4	756.6	821.1	878.2	966.7	1050.8	1104.8	1133.3
30°	234.2	303.2	427.8	588.4	659.0	714.5	809.1	879.7	938.2	953.2
32.5°	178.6	217.7	303.2	433.8	505.9	564.4	656.0	723.5	770.1	786.6
35°	136.6	160.6	211.7	310.7	372.3	432.3	519.4	588.4	629.0	644.0
37.5°	106.6	123.1	153.1	219.2	267.2	319.7	405.3	462.3	495.4	514.9
40°	85.6	97.6	117.1	156.1	189.1	228.2	300.2	354.3	387.3	397.8
42.5°	69.1	78.1	88.6	111.1	133.6	162.1	220.7	258.2	285.2	291.2
45°	54.0	60.0	72.1	82.6	91.6	106.6	147.1	181.6	198.1	205.7
47.5°	43.5	51.0	51.0	57.0	63.0	73.6	99.1	118.6	130.6	133.6
50°	33.0	34.5	37.5	40.5	43.5	46.5	60.0	72.1	79.6	79.6
52.5°	24.0	25.5	25.5	27.0	28.5	31.5	39.0	45.0	49.5	51.0
55°	18.0	18.0	19.5	21.0	22.5	24.0	28.5	34.5	36.0	37.5
57.5°	13.5	13.5	15.0	16.5	18.0	18.0	22.5	25.5	28.5	31.5
60°	10.5	10.5	12.0	12.0	13.5	15.0	19.5	21.0	21.0	21.0
62.5°	9.0	9.0	9.0	10.5	10.5	10.5	13.5	18.0	19.5	19.5
65°	7.5	7.5	7.5	7.5	9.0	9.0	10.5	12.0	15.0	15.0
67.5°	6.0	6.0	6.0	6.0	7.5	7.5	10.5	12.0	15.0	16.5
70°	4.5	4.5	4.5	6.0	6.0	7.5	9.0	12.0	15.0	16.5
72.5°	3.0	3.0	4.5	4.5	4.5	6.0	7.5	9.0	10.5	10.5
75°	3.0	3.0	3.0	3.0	3.0	3.0	4.5	7.5	7.5	9.0
77.5°	3.0	3.0	1.5	3.0	3.0	3.0	3.0	4.5	6.0	6.0
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)