

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: P219788

Luminaire Tested: **MRZ-1-REC-X-4-L35-97-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219788
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14877)
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-L35-97-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 4
Light Source: (1) 3500K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 988.0 lumens
Efficiency: N/A
Efficacy: 62.5 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.69 / 0.7
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

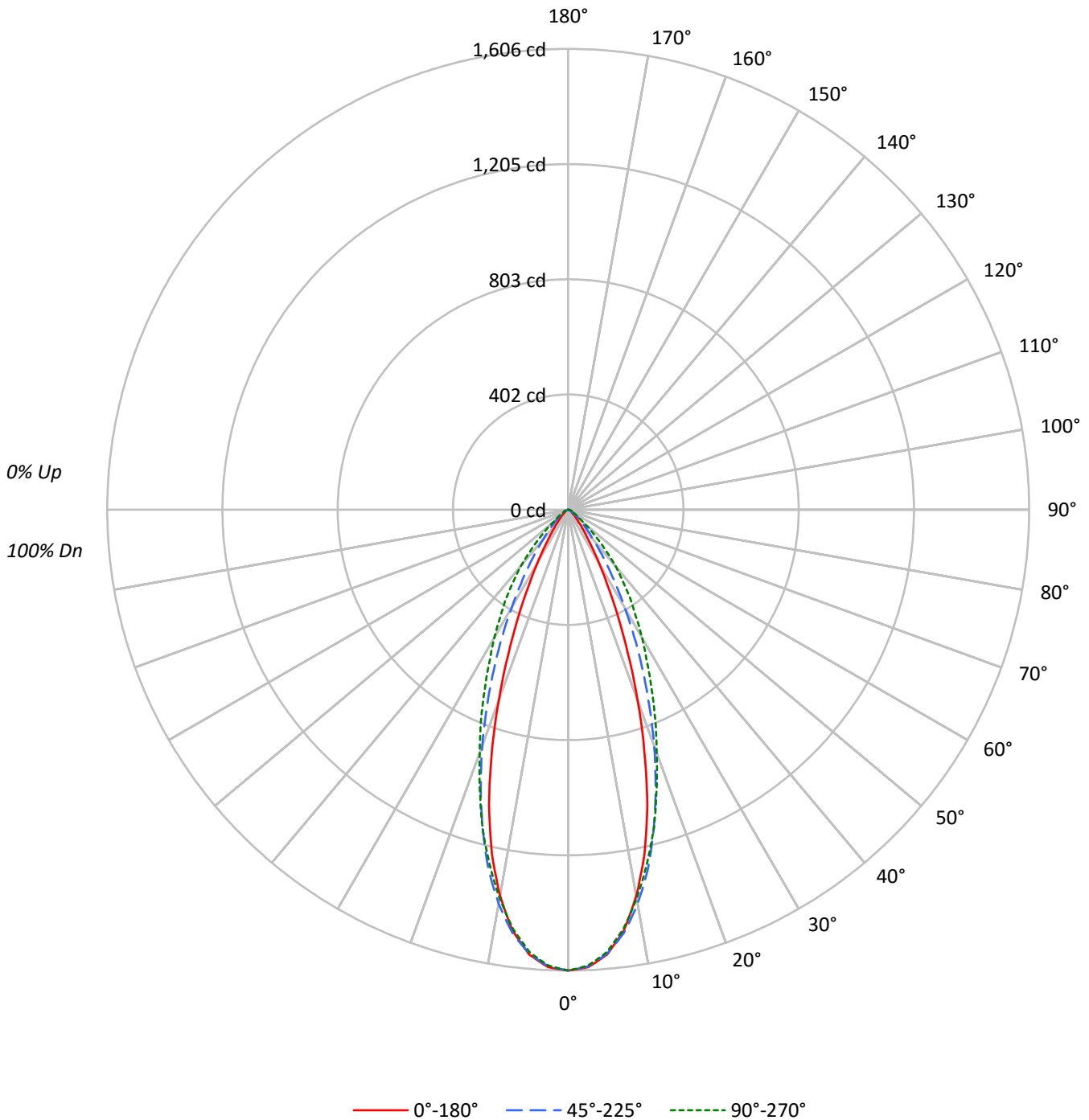
Input Watts (W): 15.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	93
2	108	103	99	96	106	101	98	95	98	95	93	95	93	91	92	90	89	87
3	103	96	91	87	101	95	90	87	92	88	85	90	87	84	88	85	83	81
4	98	90	85	81	96	89	84	80	87	83	79	85	81	78	83	80	77	76
5	93	85	79	75	91	84	78	74	82	77	74	80	76	73	79	75	72	71
6	88	80	74	70	87	79	74	70	78	73	69	76	72	69	75	71	68	67
7	84	75	70	65	83	75	69	65	73	68	65	72	68	65	71	67	64	63
8	81	71	66	62	79	71	65	61	70	65	61	69	64	61	68	64	61	59
9	77	68	62	58	76	67	62	58	66	61	58	65	61	58	65	61	57	56
10	74	64	59	55	73	64	59	55	63	58	55	62	58	55	62	58	55	53

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	792417	792417	792417
5°	770829	769393	766471
10°	684554	698481	688962
15°	544189	588219	588219
20°	371363	459623	473432
25°	221945	332564	373937
30°	122373	223154	292259
35°	64266	143469	226226
40°	36711	87528	165653
45°	23444	56099	102987
50°	16810	36997	53806
55°	13849	21332	33977
60°	11545	13025	21610
65°	10273	10273	17045
70°	8367	8367	23225
75°	8388	5528	13916
80°	4262	4262	8240
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.7	14.4
10°-20°	310.2	31.4
20°-30°	268.3	27.2
30°-40°	155.1	15.7
40°-50°	70.2	7.1
50°-60°	24.8	2.5
60°-70°	11.0	1.1
70°-80°	5.2	0.5
80°-90°	0.4	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°	721.3	73.0
0°-40°	876.3	88.7
0°-60°	971.4	98.3
0°-90°	988.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	988.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1606	1606	1606	1606	1606	
5°	1556	1555	1554	1548	1548	143
15°	1065	1098	1152	1162	1152	289
25°	408	469	611	700	687	191
35°	107	139	238	355	376	72
45°	34	41	80	140	148	28
55°	16	16	25	32	40	15
65°	9	10	9	13	15	9
75°	4	4	3	6	7	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°	1606.1	1606.1	1606.1	1606.1	1606.1	1606.1	1606.1	1606.1	1606.1	1606.1	1606.1
2.5°	1595.9	1592.9	1592.9	1592.9	1594.4	1594.4	1592.9	1592.9	1592.9	1592.9	1592.9
5°	1556.4	1553.5	1553.5	1554.9	1553.5	1554.9	1553.5	1556.4	1554.9	1553.5	1553.5
7.5°	1480.4	1480.4	1480.4	1481.9	1483.3	1483.3	1483.3	1486.3	1486.3	1489.2	1487.7
10°	1366.4	1369.3	1369.3	1373.7	1378.1	1375.2	1376.7	1385.4	1388.3	1391.3	1394.2
12.5°	1227.6	1232.0	1234.9	1237.8	1242.2	1246.6	1248.0	1262.7	1267.0	1272.9	1283.1
15°	1065.4	1063.9	1072.7	1077.1	1090.2	1097.5	1101.9	1116.5	1131.1	1139.9	1151.6
17.5°	882.7	887.1	891.5	903.2	919.2	929.5	935.3	952.8	976.2	995.2	1012.8
20°	707.3	716.1	720.5	733.6	749.7	755.6	771.6	795.0	825.7	852.0	875.4
22.5°	545.1	549.5	561.2	575.8	593.3	606.5	622.6	645.9	678.1	704.4	736.6
25°	407.7	409.2	423.8	437.0	456.0	469.1	477.9	508.6	542.2	575.8	610.9
27.5°	296.7	299.6	308.4	321.5	342.0	350.7	365.4	391.7	423.8	460.3	496.9
30°	214.8	214.8	220.7	235.3	249.9	261.6	271.8	296.7	327.4	358.0	391.7
32.5°	150.5	152.0	157.8	168.1	182.7	191.4	198.8	222.1	247.0	277.7	306.9
35°	106.7	108.1	114.0	119.8	131.5	138.8	144.7	162.2	184.1	210.4	238.2
37.5°	77.5	78.9	81.8	86.2	95.0	99.4	105.2	119.8	137.4	157.8	182.7
40°	57.0	58.5	59.9	64.3	70.1	73.1	77.5	87.7	100.8	118.4	135.9
42.5°	43.8	43.8	45.3	48.2	51.1	54.1	57.0	64.3	74.5	87.7	103.8
45°	33.6	33.6	35.1	38.0	39.5	40.9	43.8	48.2	55.5	65.8	80.4
47.5°	27.8	27.8	27.8	29.2	30.7	32.2	33.6	38.0	42.4	52.6	61.4
50°	21.9	21.9	23.4	23.4	24.8	24.8	26.3	29.2	35.1	42.4	48.2
52.5°	19.0	19.0	19.0	19.0	19.0	20.5	20.5	23.4	29.2	32.2	35.1
55°	16.1	16.1	16.1	16.1	16.1	16.1	17.5	20.5	23.4	26.3	24.8
57.5°	13.2	13.2	13.2	13.2	13.2	14.6	14.6	17.5	19.0	17.5	17.5
60°	11.7	11.7	10.2	10.2	11.7	11.7	13.2	14.6	14.6	13.2	13.2
62.5°	10.2	8.8	8.8	8.8	10.2	11.7	11.7	11.7	10.2	10.2	10.2
65°	8.8	7.3	7.3	8.8	8.8	10.2	10.2	8.8	8.8	8.8	8.8
67.5°	7.3	7.3	7.3	7.3	8.8	8.8	8.8	7.3	7.3	7.3	7.3
70°	5.8	5.8	5.8	5.8	7.3	7.3	5.8	5.8	5.8	5.8	5.8
72.5°	4.4	4.4	4.4	5.8	5.8	5.8	4.4	4.4	4.4	5.8	4.4
75°	4.4	4.4	4.4	4.4	4.4	4.4	2.9	2.9	4.4	4.4	2.9
77.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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°	1606.1	1606.1	1606.1	1606.1	1606.1	1606.1	1606.1	1606.1	1606.1	1606.1
2.5°	1591.5	1591.5	1590.0	1591.5	1591.5	1591.5	1591.5	1590.0	1591.5	1590.0
5°	1552.0	1552.0	1552.0	1549.1	1547.6	1549.1	1547.6	1546.2	1546.2	1547.6
7.5°	1484.8	1484.8	1483.3	1480.4	1480.4	1479.0	1476.0	1474.6	1473.1	1473.1
10°	1397.1	1395.7	1391.3	1389.8	1389.8	1385.4	1379.6	1379.6	1373.7	1375.2
12.5°	1287.5	1284.6	1283.1	1283.1	1277.3	1277.3	1272.9	1271.4	1268.5	1265.6
15°	1156.0	1160.4	1163.3	1161.8	1161.8	1157.4	1156.0	1153.1	1148.7	1151.6
17.5°	1025.9	1036.1	1039.1	1043.5	1044.9	1042.0	1037.6	1030.3	1025.9	1023.0
20°	897.3	911.9	922.2	925.1	925.1	923.6	922.2	910.5	909.0	901.7
22.5°	764.3	784.8	802.3	808.2	809.6	811.1	805.2	796.5	793.5	792.1
25°	640.1	667.9	685.4	697.1	700.0	704.4	701.5	697.1	688.3	686.9
27.5°	527.6	556.8	580.2	594.8	602.1	605.0	607.9	600.6	597.7	591.9
30°	426.7	460.3	485.2	505.7	510.0	515.9	517.3	518.8	513.0	513.0
32.5°	340.5	368.3	399.0	419.4	428.2	432.6	439.9	438.4	438.4	437.0
35°	267.4	295.2	323.0	344.9	355.1	361.0	369.7	374.1	375.6	375.6
37.5°	206.1	233.8	258.7	285.0	295.2	302.5	308.4	309.8	311.3	309.8
40°	157.8	184.1	209.0	226.5	233.8	239.7	247.0	252.8	255.7	257.2
42.5°	124.2	143.2	159.3	176.8	188.5	197.3	198.8	197.3	197.3	195.8
45°	93.5	108.1	133.0	137.4	140.3	141.8	146.1	147.6	147.6	147.6
47.5°	74.5	90.6	90.6	96.5	99.4	103.8	105.2	105.2	105.2	105.2
50°	55.5	58.5	62.8	67.2	68.7	68.7	70.1	70.1	70.1	70.1
52.5°	36.5	40.9	42.4	43.8	45.3	46.8	49.7	51.1	49.7	49.7
55°	26.3	27.8	29.2	32.2	32.2	33.6	39.5	39.5	39.5	39.5
57.5°	17.5	19.0	21.9	26.3	26.3	27.8	29.2	29.2	30.7	30.7
60°	14.6	16.1	17.5	19.0	20.5	23.4	26.3	21.9	21.9	21.9
62.5°	11.7	13.2	14.6	16.1	14.6	16.1	17.5	17.5	17.5	17.5
65°	10.2	11.7	10.2	11.7	13.2	13.2	11.7	13.2	13.2	14.6
67.5°	8.8	8.8	8.8	8.8	8.8	10.2	13.2	14.6	16.1	16.1
70°	5.8	5.8	5.8	8.8	8.8	10.2	11.7	14.6	14.6	16.1
72.5°	4.4	4.4	5.8	7.3	8.8	8.8	10.2	10.2	11.7	11.7
75°	4.4	4.4	5.8	5.8	5.8	5.8	7.3	7.3	7.3	7.3
77.5°	2.9	2.9	2.9	2.9	4.4	4.4	4.4	5.8	5.8	5.8
80°	1.5	1.5	1.5	1.5	2.9	2.9	2.9	2.9	2.9	2.9
82.5°	1.5	1.5	1.5	1.5	1.5	0.0	0.0	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)