

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: P219777

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P219777  
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-3-L35-80-FL-UNV-X-STD-LSL  
Description: MRZ INTEGRAL LED DOWNLIGHT  
40 DEGREE 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: 1014.8 lumens  
Efficiency: N/A  
Efficacy: 85.3 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

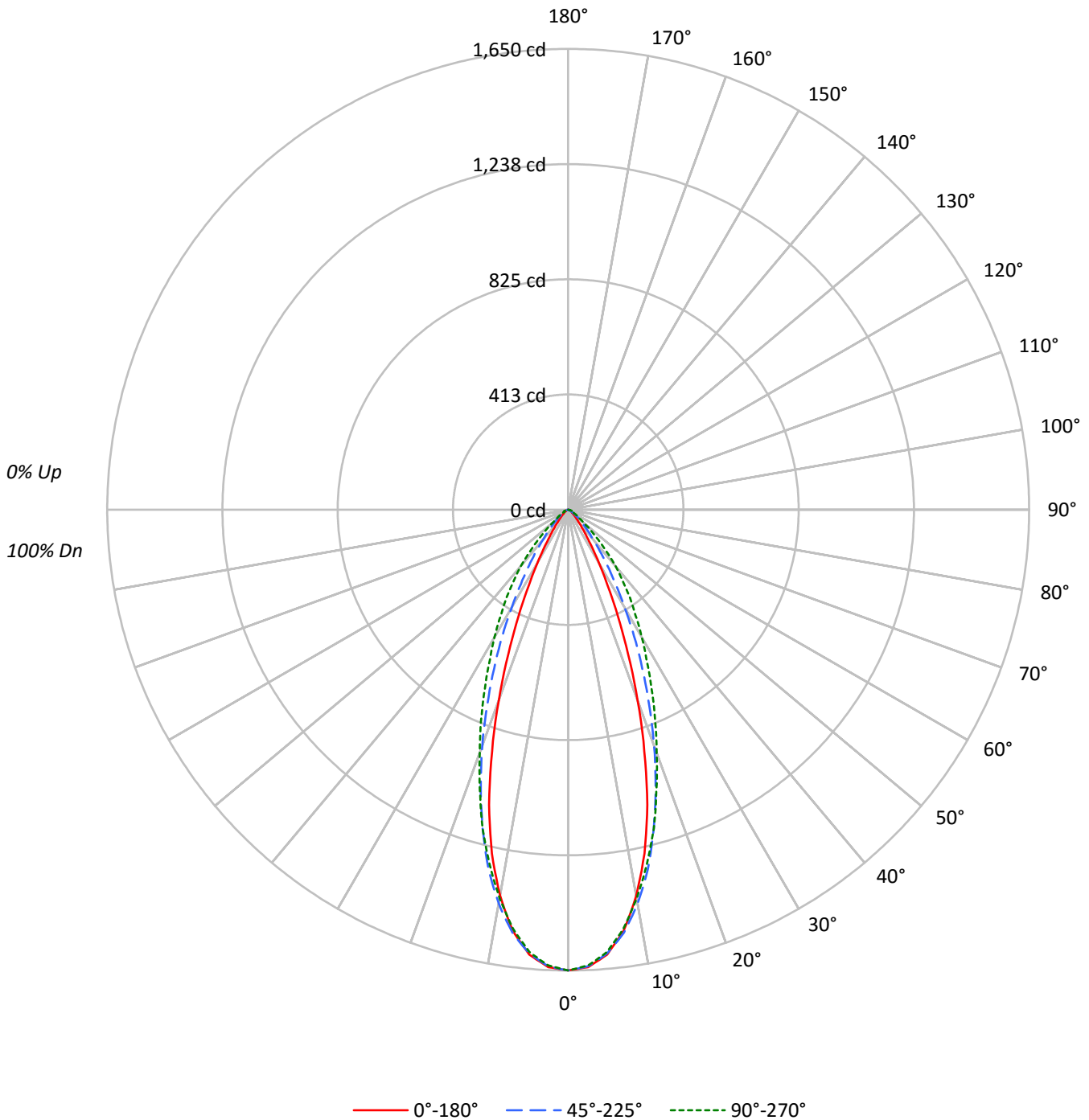
Input Watts (W): 11.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

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

	0°	45°	90°
0°	813928	813928	813928
5°	791779	790293	787321
10°	703140	717469	707649
15°	558951	604207	604207
20°	381444	472119	486295
25°	227988	341601	384063
30°	125734	229193	300178
35°	66013	147384	232369
40°	37678	89911	170161
45°	24072	57634	105778
50°	17270	37994	55341
55°	14193	21935	34837
60°	11841	13321	22202
65°	10507	10507	17512
70°	8655	8655	23802
75°	8578	5719	14297
80°	4262	4262	8524
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.6	14.4
10°-20°	318.6	31.4
20°-30°	275.6	27.2
30°-40°	159.3	15.7
40°-50°	72.1	7.1
50°-60°	25.5	2.5
60°-70°	11.2	1.1
70°-80°	5.3	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°	740.9	73.0
0°-40°	900.2	88.7
0°-60°	997.8	98.3
0°-90°	1014.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1014.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1650	1650	1650	1650	1650	
5°	1599	1597	1596	1590	1590	146
15°	1094	1127	1183	1193	1183	297
25°	419	482	628	719	706	196
35°	110	143	245	365	386	74
45°	34	42	83	144	152	28
55°	16	16	26	33	40	15
65°	9	10	9	14	15	9
75°	4	4	3	6	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°	1649.7	1649.7	1649.7	1649.7	1649.7	1649.7	1649.7	1649.7	1649.7	1649.7	1649.7
2.5°	1639.2	1636.2	1636.2	1636.2	1637.7	1637.7	1636.2	1636.2	1636.2	1636.2	1636.2
5°	1598.7	1595.7	1595.7	1597.2	1595.7	1597.2	1595.7	1598.7	1597.2	1595.7	1595.7
7.5°	1520.6	1520.6	1520.6	1522.1	1523.6	1523.6	1523.6	1526.6	1526.6	1529.6	1528.1
10°	1403.5	1406.5	1406.5	1411.0	1415.5	1412.5	1414.0	1423.1	1426.1	1429.1	1432.1
12.5°	1260.9	1265.4	1268.4	1271.4	1275.9	1280.4	1281.9	1297.0	1301.5	1307.5	1318.0
15°	1094.3	1092.8	1101.8	1106.3	1119.8	1127.3	1131.8	1146.8	1161.9	1170.9	1182.9
17.5°	906.7	911.2	915.7	927.7	944.2	954.7	960.7	978.7	1002.7	1022.3	1040.3
20°	726.5	735.5	740.0	753.6	770.1	776.1	792.6	816.6	848.1	875.1	899.2
22.5°	559.9	564.4	576.4	591.4	609.5	623.0	639.5	663.5	696.5	723.5	756.6
25°	418.8	420.3	435.3	448.8	468.3	481.9	490.9	522.4	556.9	591.4	627.5
27.5°	304.7	307.7	316.7	330.2	351.3	360.3	375.3	402.3	435.3	472.8	510.4
30°	220.7	220.7	226.7	241.7	256.7	268.7	279.2	304.7	336.2	367.8	402.3
32.5°	154.6	156.1	162.1	172.6	187.6	196.6	204.2	228.2	253.7	285.2	315.2
35°	109.6	111.1	117.1	123.1	135.1	142.6	148.6	166.6	189.1	216.2	244.7
37.5°	79.6	81.1	84.1	88.6	97.6	102.1	108.1	123.1	141.1	162.1	187.6
40°	58.5	60.0	61.5	66.0	72.1	75.1	79.6	90.1	103.6	121.6	139.6
42.5°	45.0	45.0	46.5	49.5	52.5	55.5	58.5	66.0	76.6	90.1	106.6
45°	34.5	34.5	36.0	39.0	40.5	42.0	45.0	49.5	57.0	67.5	82.6
47.5°	28.5	28.5	28.5	30.0	31.5	33.0	34.5	39.0	43.5	54.0	63.0
50°	22.5	22.5	24.0	24.0	25.5	25.5	27.0	30.0	36.0	43.5	49.5
52.5°	19.5	19.5	19.5	19.5	19.5	21.0	21.0	24.0	30.0	33.0	36.0
55°	16.5	16.5	16.5	16.5	16.5	16.5	18.0	21.0	24.0	27.0	25.5
57.5°	13.5	13.5	13.5	13.5	13.5	15.0	15.0	18.0	19.5	18.0	18.0
60°	12.0	12.0	10.5	10.5	12.0	12.0	13.5	15.0	15.0	13.5	13.5
62.5°	10.5	9.0	9.0	9.0	10.5	12.0	12.0	12.0	10.5	10.5	10.5
65°	9.0	7.5	7.5	9.0	9.0	10.5	10.5	9.0	9.0	9.0	9.0
67.5°	7.5	7.5	7.5	7.5	9.0	9.0	9.0	7.5	7.5	7.5	7.5
70°	6.0	6.0	6.0	6.0	7.5	7.5	6.0	6.0	6.0	6.0	6.0
72.5°	4.5	4.5	4.5	6.0	6.0	6.0	4.5	4.5	4.5	6.0	4.5
75°	4.5	4.5	4.5	4.5	4.5	4.5	3.0	3.0	4.5	4.5	3.0
77.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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°	1649.7	1649.7	1649.7	1649.7	1649.7	1649.7	1649.7	1649.7	1649.7	1649.7
2.5°	1634.7	1634.7	1633.2	1634.7	1634.7	1634.7	1634.7	1633.2	1634.7	1633.2
5°	1594.2	1594.2	1594.2	1591.2	1589.7	1591.2	1589.7	1588.2	1588.2	1589.7
7.5°	1525.1	1525.1	1523.6	1520.6	1520.6	1519.1	1516.1	1514.6	1513.1	1513.1
10°	1435.1	1433.6	1429.1	1427.6	1427.6	1423.1	1417.0	1417.0	1411.0	1412.5
12.5°	1322.5	1319.5	1318.0	1318.0	1312.0	1312.0	1307.5	1306.0	1303.0	1300.0
15°	1187.4	1191.9	1194.9	1193.4	1193.4	1188.9	1187.4	1184.4	1179.9	1182.9
17.5°	1053.8	1064.3	1067.3	1071.8	1073.3	1070.3	1065.8	1058.3	1053.8	1050.8
20°	921.7	936.7	947.2	950.2	950.2	948.7	947.2	935.2	933.7	926.2
22.5°	785.1	806.1	824.1	830.1	831.6	833.1	827.1	818.1	815.1	813.6
25°	657.5	686.0	704.0	716.0	719.0	723.5	720.5	716.0	707.0	705.5
27.5°	541.9	571.9	595.9	611.0	618.5	621.5	624.5	617.0	614.0	607.9
30°	438.3	472.8	498.4	519.4	523.9	529.9	531.4	532.9	526.9	526.9
32.5°	349.8	378.3	409.8	430.8	439.8	444.3	451.8	450.3	450.3	448.8
35°	274.7	303.2	331.7	354.3	364.8	370.8	379.8	384.3	385.8	385.8
37.5°	211.7	240.2	265.7	292.7	303.2	310.7	316.7	318.2	319.7	318.2
40°	162.1	189.1	214.7	232.7	240.2	246.2	253.7	259.7	262.7	264.2
42.5°	127.6	147.1	163.6	181.6	193.6	202.6	204.2	202.6	202.6	201.1
45°	96.1	111.1	136.6	141.1	144.1	145.6	150.1	151.6	151.6	151.6
47.5°	76.6	93.1	93.1	99.1	102.1	106.6	108.1	108.1	108.1	108.1
50°	57.0	60.0	64.5	69.1	70.6	70.6	72.1	72.1	72.1	72.1
52.5°	37.5	42.0	43.5	45.0	46.5	48.0	51.0	52.5	51.0	51.0
55°	27.0	28.5	30.0	33.0	33.0	34.5	40.5	40.5	40.5	40.5
57.5°	18.0	19.5	22.5	27.0	27.0	28.5	30.0	30.0	31.5	31.5
60°	15.0	16.5	18.0	19.5	21.0	24.0	27.0	22.5	22.5	22.5
62.5°	12.0	13.5	15.0	16.5	15.0	16.5	18.0	18.0	18.0	18.0
65°	10.5	12.0	10.5	12.0	13.5	13.5	12.0	13.5	13.5	15.0
67.5°	9.0	9.0	9.0	9.0	9.0	10.5	13.5	15.0	16.5	16.5
70°	6.0	6.0	6.0	9.0	9.0	10.5	12.0	15.0	15.0	16.5
72.5°	4.5	4.5	6.0	7.5	9.0	9.0	10.5	10.5	12.0	12.0
75°	4.5	4.5	6.0	6.0	6.0	6.0	7.5	7.5	7.5	7.5
77.5°	3.0	3.0	3.0	3.0	4.5	4.5	4.5	6.0	6.0	6.0
80°	1.5	1.5	1.5	1.5	3.0	3.0	3.0	3.0	3.0	3.0
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)