

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: P219784

Luminaire Tested: **MRZ-1-REC-X-4-L35-80-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219784
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-L35-80-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, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1297.9 lumens
Efficiency: N/A
Efficacy: 82.1 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

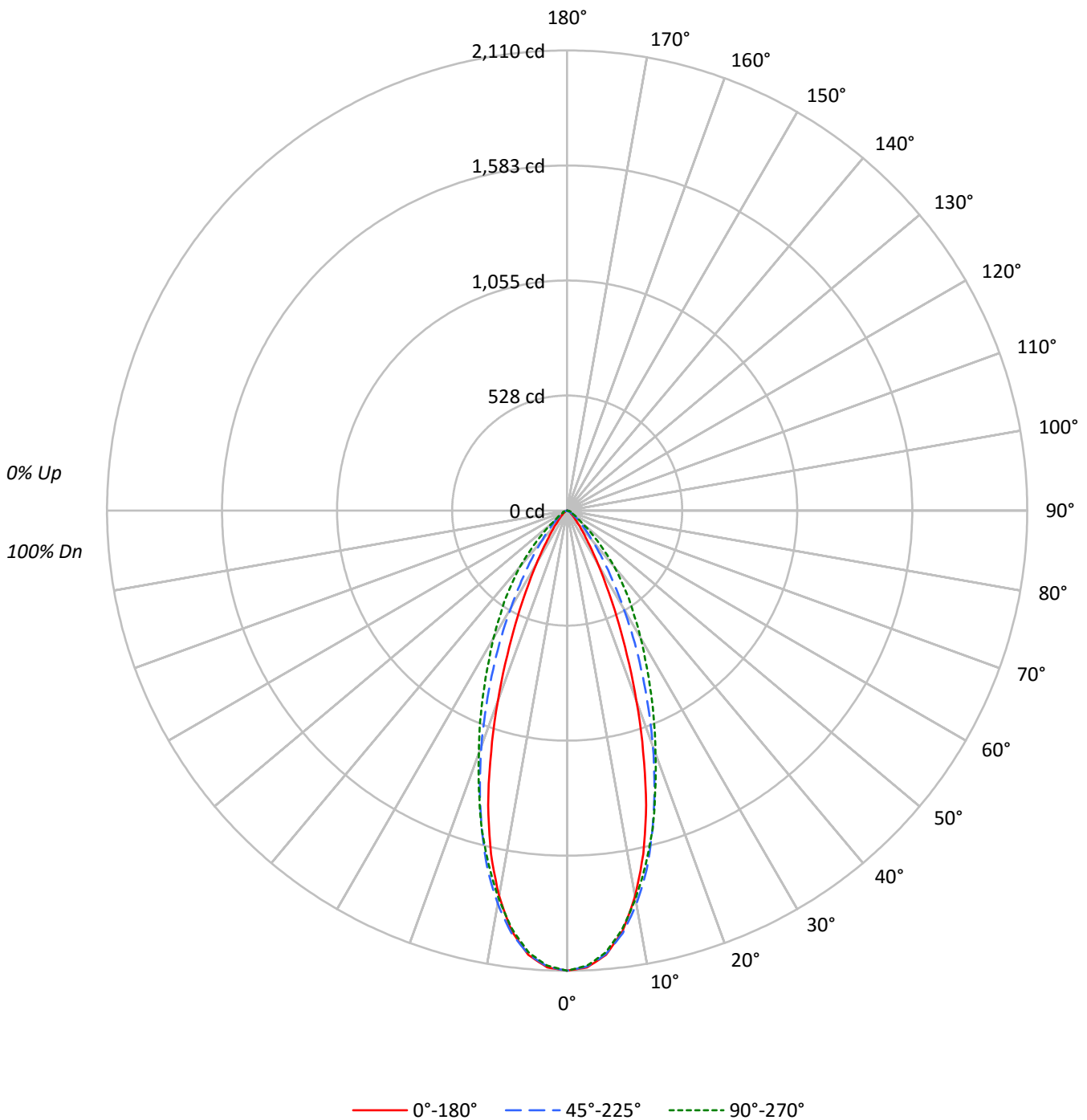
Input Watts (W): 15.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	1040932	1040932	1040932
5°	1012568	1010686	1006872
10°	899278	917514	905040
15°	714842	772714	772714
20°	487870	603748	621914
25°	291572	436868	491198
30°	160771	293114	383868
35°	84383	188461	297177
40°	48240	114965	217628
45°	30840	73682	135293
50°	22106	48663	70692
55°	18150	28042	44557
60°	15196	17071	28419
65°	13426	13426	22415
70°	11108	11108	30438
75°	11056	7244	18300
80°	5398	5398	10797
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	187.5	14.4
10°-20°	407.5	31.4
20°-30°	352.5	27.2
30°-40°	203.7	15.7
40°-50°	92.3	7.1
50°-60°	32.6	2.5
60°-70°	14.4	1.1
70°-80°	6.8	0.5
80°-90°	0.5	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°	947.5	73.0
0°-40°	1151.2	88.7
0°-60°	1276.1	98.3
0°-90°	1297.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1297.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2110	2110	2110	2110	2110	
5°	2044	2043	2041	2033	2033	187
15°	1400	1442	1513	1526	1513	379
25°	536	616	802	920	902	251
35°	140	182	313	466	493	95
45°	44	54	106	184	194	36
55°	21	21	33	42	52	19
65°	12	13	12	17	19	11
75°	6	6	4	8	10	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°	2109.8	2109.8	2109.8	2109.8	2109.8	2109.8	2109.8	2109.8	2109.8	2109.8	2109.8
2.5°	2096.4	2092.5	2092.5	2092.5	2094.4	2094.4	2092.5	2092.5	2092.5	2092.5	2092.5
5°	2044.5	2040.7	2040.7	2042.6	2040.7	2042.6	2040.7	2044.5	2042.6	2040.7	2040.7
7.5°	1944.7	1944.7	1944.7	1946.6	1948.5	1948.5	1948.5	1952.4	1952.4	1956.2	1954.3
10°	1795.0	1798.8	1798.8	1804.6	1810.3	1806.5	1808.4	1819.9	1823.8	1827.6	1831.4
12.5°	1612.6	1618.3	1622.2	1626.0	1631.8	1637.5	1639.5	1658.7	1664.4	1672.1	1685.5
15°	1399.5	1397.6	1409.1	1414.9	1432.1	1441.7	1447.5	1466.7	1485.9	1497.4	1512.8
17.5°	1159.5	1165.3	1171.0	1186.4	1207.5	1221.0	1228.6	1251.7	1282.4	1307.3	1330.4
20°	929.2	940.7	946.4	963.7	984.8	992.5	1013.6	1044.3	1084.7	1119.2	1149.9
22.5°	716.1	721.8	737.2	756.4	779.4	796.7	817.8	848.5	890.8	925.3	967.6
25°	535.6	537.5	556.7	574.0	599.0	616.2	627.8	668.1	712.2	756.4	802.5
27.5°	389.7	393.5	405.1	422.3	449.2	460.7	479.9	514.5	556.7	604.7	652.7
30°	282.2	282.2	289.9	309.1	328.3	343.6	357.1	389.7	430.0	470.3	514.5
32.5°	197.7	199.7	207.3	220.8	240.0	251.5	261.1	291.8	324.4	364.8	403.1
35°	140.1	142.1	149.7	157.4	172.8	182.4	190.1	213.1	241.9	276.4	312.9
37.5°	101.7	103.7	107.5	113.3	124.8	130.5	138.2	157.4	180.5	207.3	240.0
40°	74.9	76.8	78.7	84.5	92.1	96.0	101.7	115.2	132.5	155.5	178.5
42.5°	57.6	57.6	59.5	63.4	67.2	71.0	74.9	84.5	97.9	115.2	136.3
45°	44.2	44.2	46.1	49.9	51.8	53.8	57.6	63.4	73.0	86.4	105.6
47.5°	36.5	36.5	36.5	38.4	40.3	42.2	44.2	49.9	55.7	69.1	80.6
50°	28.8	28.8	30.7	30.7	32.6	32.6	34.6	38.4	46.1	55.7	63.4
52.5°	25.0	25.0	25.0	25.0	25.0	26.9	26.9	30.7	38.4	42.2	46.1
55°	21.1	21.1	21.1	21.1	21.1	21.1	23.0	26.9	30.7	34.6	32.6
57.5°	17.3	17.3	17.3	17.3	17.3	19.2	19.2	23.0	25.0	23.0	23.0
60°	15.4	15.4	13.4	13.4	15.4	15.4	17.3	19.2	19.2	17.3	17.3
62.5°	13.4	11.5	11.5	11.5	13.4	15.4	15.4	15.4	13.4	13.4	13.4
65°	11.5	9.6	9.6	11.5	11.5	13.4	13.4	11.5	11.5	11.5	11.5
67.5°	9.6	9.6	9.6	9.6	11.5	11.5	11.5	9.6	9.6	9.6	9.6
70°	7.7	7.7	7.7	7.7	9.6	9.6	7.7	7.7	7.7	7.7	7.7
72.5°	5.8	5.8	5.8	7.7	7.7	7.7	5.8	5.8	5.8	7.7	5.8
75°	5.8	5.8	5.8	5.8	5.8	5.8	3.8	3.8	5.8	5.8	3.8
77.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9
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°	2109.8	2109.8	2109.8	2109.8	2109.8	2109.8	2109.8	2109.8	2109.8	2109.8
2.5°	2090.6	2090.6	2088.7	2090.6	2090.6	2090.6	2090.6	2088.7	2090.6	2088.7
5°	2038.8	2038.8	2038.8	2034.9	2033.0	2034.9	2033.0	2031.1	2031.1	2033.0
7.5°	1950.5	1950.5	1948.5	1944.7	1944.7	1942.8	1938.9	1937.0	1935.1	1935.1
10°	1835.3	1833.4	1827.6	1825.7	1825.7	1819.9	1812.2	1812.2	1804.6	1806.5
12.5°	1691.3	1687.5	1685.5	1685.5	1677.9	1677.9	1672.1	1670.2	1666.3	1662.5
15°	1518.5	1524.3	1528.1	1526.2	1526.2	1520.4	1518.5	1514.7	1508.9	1512.8
17.5°	1347.7	1361.1	1364.9	1370.7	1372.6	1368.8	1363.0	1353.4	1347.7	1343.8
20°	1178.7	1197.9	1211.4	1215.2	1215.2	1213.3	1211.4	1196.0	1194.1	1184.5
22.5°	1004.0	1030.9	1053.9	1061.6	1063.5	1065.5	1057.8	1046.3	1042.4	1040.5
25°	840.8	877.3	900.4	915.7	919.6	925.3	921.5	915.7	904.2	902.3
27.5°	693.0	731.4	762.1	781.3	790.9	794.8	798.6	789.0	785.2	777.5
30°	560.6	604.7	637.4	664.2	670.0	677.7	679.6	681.5	673.8	673.8
32.5°	447.3	483.8	524.1	551.0	562.5	568.2	577.8	575.9	575.9	574.0
35°	351.3	387.8	424.3	453.1	466.5	474.2	485.7	491.5	493.4	493.4
37.5°	270.7	307.2	339.8	374.3	387.8	397.4	405.1	407.0	408.9	407.0
40°	207.3	241.9	274.5	297.6	307.2	314.8	324.4	332.1	336.0	337.9
42.5°	163.2	188.1	209.3	232.3	247.6	259.2	261.1	259.2	259.2	257.2
45°	122.9	142.1	174.7	180.5	184.3	186.2	192.0	193.9	193.9	193.9
47.5°	97.9	119.0	119.0	126.7	130.5	136.3	138.2	138.2	138.2	138.2
50°	73.0	76.8	82.5	88.3	90.2	90.2	92.1	92.1	92.1	92.1
52.5°	48.0	53.8	55.7	57.6	59.5	61.4	65.3	67.2	65.3	65.3
55°	34.6	36.5	38.4	42.2	42.2	44.2	51.8	51.8	51.8	51.8
57.5°	23.0	25.0	28.8	34.6	34.6	36.5	38.4	38.4	40.3	40.3
60°	19.2	21.1	23.0	25.0	26.9	30.7	34.6	28.8	28.8	28.8
62.5°	15.4	17.3	19.2	21.1	19.2	21.1	23.0	23.0	23.0	23.0
65°	13.4	15.4	13.4	15.4	17.3	17.3	15.4	17.3	17.3	19.2
67.5°	11.5	11.5	11.5	11.5	11.5	13.4	17.3	19.2	21.1	21.1
70°	7.7	7.7	7.7	11.5	11.5	13.4	15.4	19.2	19.2	21.1
72.5°	5.8	5.8	7.7	9.6	11.5	11.5	13.4	13.4	15.4	15.4
75°	5.8	5.8	7.7	7.7	7.7	7.7	9.6	9.6	9.6	9.6
77.5°	3.8	3.8	3.8	3.8	5.8	5.8	5.8	7.7	7.7	7.7
80°	1.9	1.9	1.9	1.9	3.8	3.8	3.8	3.8	3.8	3.8
82.5°	1.9	1.9	1.9	1.9	1.9	0.0	0.0	1.9	1.9	1.9
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)