

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: P219783

Luminaire Tested: **MRZ-1-REC-X-4-L30-80-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219783
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-L30-80-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 4
Light Source: (1) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1231.4 lumens
Efficiency: N/A
Efficacy: 77.9 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

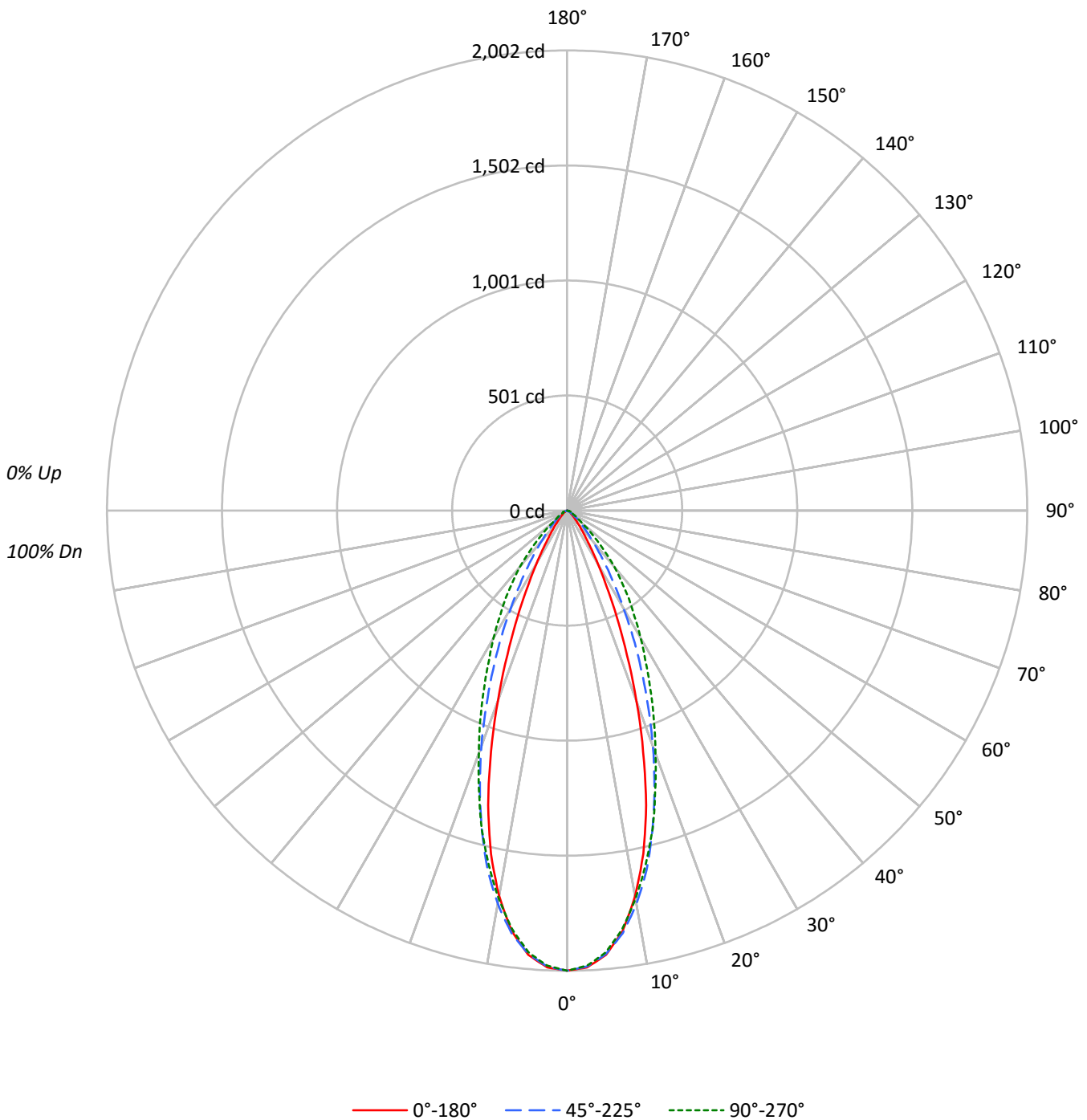
Input Watts (W): 15.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	987647	987647	987647
5°	960763	958931	955315
10°	853237	870572	858698
15°	678219	733128	733128
20°	462878	572875	590044
25°	276656	414494	466047
30°	152567	278130	364213
35°	80107	178824	281939
40°	45728	109104	206486
45°	29235	69914	128385
50°	20954	46130	67085
55°	17204	26666	42321
60°	14407	16183	26939
65°	12725	12725	21247
70°	10531	10531	28851
75°	10484	6863	17347
80°	5114	5114	10229
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	177.9	14.4
10°-20°	386.6	31.4
20°-30°	334.4	27.2
30°-40°	193.3	15.7
40°-50°	87.5	7.1
50°-60°	30.9	2.5
60°-70°	13.7	1.1
70°-80°	6.5	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°	899.0	73.0
0°-40°	1092.3	88.7
0°-60°	1210.7	98.3
0°-90°	1231.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1231.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2002	2002	2002	2002	2002	
5°	1940	1938	1936	1929	1929	178
15°	1328	1368	1435	1448	1435	360
25°	508	585	761	872	856	238
35°	133	173	297	443	468	90
45°	42	51	100	175	184	34
55°	20	20	31	40	49	18
65°	11	13	11	16	18	11
75°	6	6	4	7	9	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°	2001.8	2001.8	2001.8	2001.8	2001.8	2001.8	2001.8	2001.8	2001.8	2001.8	2001.8
2.5°	1989.0	1985.4	1985.4	1985.4	1987.2	1987.2	1985.4	1985.4	1985.4	1985.4	1985.4
5°	1939.9	1936.2	1936.2	1938.0	1936.2	1938.0	1936.2	1939.9	1938.0	1936.2	1936.2
7.5°	1845.1	1845.1	1845.1	1847.0	1848.8	1848.8	1848.8	1852.4	1852.4	1856.1	1854.2
10°	1703.1	1706.7	1706.7	1712.2	1717.6	1714.0	1715.8	1726.7	1730.4	1734.0	1737.7
12.5°	1530.0	1535.5	1539.1	1542.8	1548.2	1553.7	1555.5	1573.7	1579.2	1586.5	1599.2
15°	1327.8	1326.0	1336.9	1342.4	1358.8	1367.9	1373.4	1391.6	1409.8	1420.7	1435.3
17.5°	1100.2	1105.6	1111.1	1125.7	1145.7	1158.4	1165.7	1187.6	1216.7	1240.4	1262.3
20°	881.6	892.5	898.0	914.4	934.4	941.7	961.7	990.9	1029.1	1061.9	1091.1
22.5°	679.4	684.9	699.4	717.7	739.5	755.9	775.9	805.1	845.2	877.9	918.0
25°	508.2	510.0	528.2	544.6	568.3	584.7	595.6	633.9	675.8	717.7	761.4
27.5°	369.8	373.4	384.3	400.7	426.2	437.1	455.4	488.2	528.2	573.8	619.3
30°	267.8	267.8	275.0	293.3	311.5	326.0	338.8	369.8	408.0	446.3	488.2
32.5°	187.6	189.4	196.7	209.5	227.7	238.6	247.7	276.9	307.8	346.1	382.5
35°	133.0	134.8	142.1	149.4	163.9	173.0	180.3	202.2	229.5	262.3	296.9
37.5°	96.5	98.4	102.0	107.5	118.4	123.9	131.1	149.4	171.2	196.7	227.7
40°	71.0	72.9	74.7	80.1	87.4	91.1	96.5	109.3	125.7	147.5	169.4
42.5°	54.6	54.6	56.5	60.1	63.8	67.4	71.0	80.1	92.9	109.3	129.3
45°	41.9	41.9	43.7	47.4	49.2	51.0	54.6	60.1	69.2	82.0	100.2
47.5°	34.6	34.6	34.6	36.4	38.3	40.1	41.9	47.4	52.8	65.6	76.5
50°	27.3	27.3	29.1	29.1	31.0	31.0	32.8	36.4	43.7	52.8	60.1
52.5°	23.7	23.7	23.7	23.7	23.7	25.5	25.5	29.1	36.4	40.1	43.7
55°	20.0	20.0	20.0	20.0	20.0	20.0	21.9	25.5	29.1	32.8	31.0
57.5°	16.4	16.4	16.4	16.4	16.4	18.2	18.2	21.9	23.7	21.9	21.9
60°	14.6	14.6	12.8	12.8	14.6	14.6	16.4	18.2	18.2	16.4	16.4
62.5°	12.8	10.9	10.9	10.9	12.8	14.6	14.6	14.6	12.8	12.8	12.8
65°	10.9	9.1	9.1	10.9	10.9	12.8	12.8	10.9	10.9	10.9	10.9
67.5°	9.1	9.1	9.1	9.1	10.9	10.9	10.9	9.1	9.1	9.1	9.1
70°	7.3	7.3	7.3	7.3	9.1	9.1	7.3	7.3	7.3	7.3	7.3
72.5°	5.5	5.5	5.5	7.3	7.3	7.3	5.5	5.5	5.5	7.3	5.5
75°	5.5	5.5	5.5	5.5	5.5	5.5	3.6	3.6	5.5	5.5	3.6
77.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
80°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8
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°	2001.8	2001.8	2001.8	2001.8	2001.8	2001.8	2001.8	2001.8	2001.8	2001.8
2.5°	1983.6	1983.6	1981.7	1983.6	1983.6	1983.6	1983.6	1981.7	1983.6	1981.7
5°	1934.4	1934.4	1934.4	1930.7	1928.9	1930.7	1928.9	1927.1	1927.1	1928.9
7.5°	1850.6	1850.6	1848.8	1845.1	1845.1	1843.3	1839.7	1837.9	1836.0	1836.0
10°	1741.3	1739.5	1734.0	1732.2	1732.2	1726.7	1719.5	1719.5	1712.2	1714.0
12.5°	1604.7	1601.1	1599.2	1599.2	1592.0	1592.0	1586.5	1584.7	1581.0	1577.4
15°	1440.8	1446.2	1449.9	1448.1	1448.1	1442.6	1440.8	1437.1	1431.7	1435.3
17.5°	1278.7	1291.4	1295.1	1300.5	1302.3	1298.7	1293.2	1284.1	1278.7	1275.0
20°	1118.4	1136.6	1149.3	1153.0	1153.0	1151.2	1149.3	1134.8	1132.9	1123.8
22.5°	952.6	978.1	1000.0	1007.3	1009.1	1010.9	1003.6	992.7	989.1	987.2
25°	797.8	832.4	854.3	868.8	872.5	877.9	874.3	868.8	857.9	856.1
27.5°	657.5	694.0	723.1	741.3	750.4	754.1	757.7	748.6	745.0	737.7
30°	531.9	573.8	604.7	630.2	635.7	643.0	644.8	646.6	639.3	639.3
32.5°	424.4	459.0	497.3	522.8	533.7	539.2	548.3	546.4	546.4	544.6
35°	333.3	367.9	402.5	429.9	442.6	449.9	460.8	466.3	468.1	468.1
37.5°	256.8	291.4	322.4	355.2	367.9	377.0	384.3	386.1	388.0	386.1
40°	196.7	229.5	260.5	282.3	291.4	298.7	307.8	315.1	318.8	320.6
42.5°	154.8	178.5	198.5	220.4	235.0	245.9	247.7	245.9	245.9	244.1
45°	116.6	134.8	165.8	171.2	174.9	176.7	182.1	184.0	184.0	184.0
47.5°	92.9	112.9	112.9	120.2	123.9	129.3	131.1	131.1	131.1	131.1
50°	69.2	72.9	78.3	83.8	85.6	85.6	87.4	87.4	87.4	87.4
52.5°	45.5	51.0	52.8	54.6	56.5	58.3	61.9	63.8	61.9	61.9
55°	32.8	34.6	36.4	40.1	40.1	41.9	49.2	49.2	49.2	49.2
57.5°	21.9	23.7	27.3	32.8	32.8	34.6	36.4	36.4	38.3	38.3
60°	18.2	20.0	21.9	23.7	25.5	29.1	32.8	27.3	27.3	27.3
62.5°	14.6	16.4	18.2	20.0	18.2	20.0	21.9	21.9	21.9	21.9
65°	12.8	14.6	12.8	14.6	16.4	16.4	14.6	16.4	16.4	18.2
67.5°	10.9	10.9	10.9	10.9	10.9	12.8	16.4	18.2	20.0	20.0
70°	7.3	7.3	7.3	10.9	10.9	12.8	14.6	18.2	18.2	20.0
72.5°	5.5	5.5	7.3	9.1	10.9	10.9	12.8	12.8	14.6	14.6
75°	5.5	5.5	7.3	7.3	7.3	7.3	9.1	9.1	9.1	9.1
77.5°	3.6	3.6	3.6	3.6	5.5	5.5	5.5	7.3	7.3	7.3
80°	1.8	1.8	1.8	1.8	3.6	3.6	3.6	3.6	3.6	3.6
82.5°	1.8	1.8	1.8	1.8	1.8	0.0	0.0	1.8	1.8	1.8
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)