

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: P219612

Luminaire Tested: **MRZ-1-REC-X-2-L27-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219612
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-2-L27-80-NFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL2
Light Source: (1) 2700K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 726.0 lumens
Efficiency: N/A
Efficacy: 82.5 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

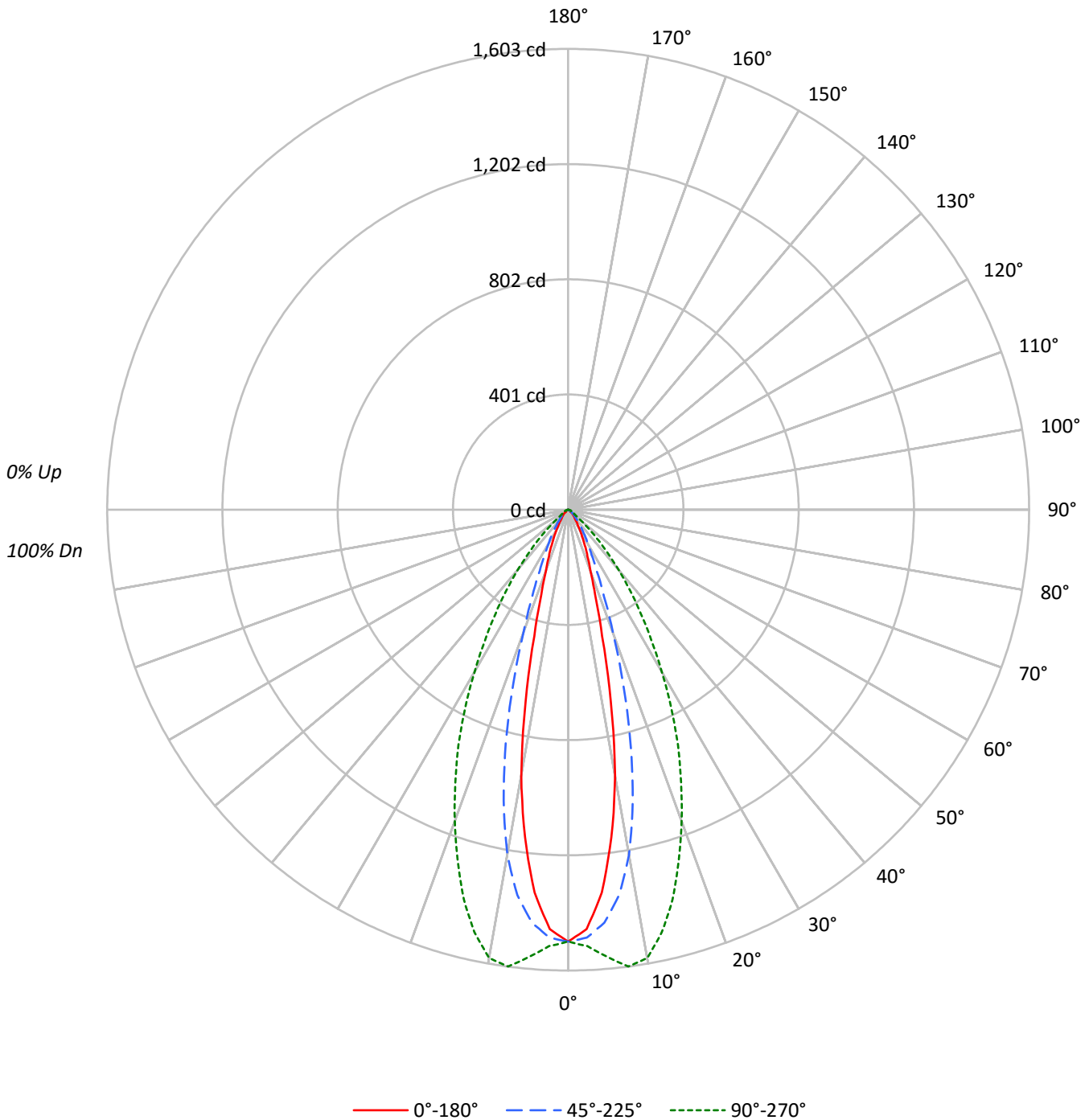
Input Watts (W): 8.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	100	97	106	102	99	96	99	96	94	96	94	92	93	92	90	88
3	104	98	93	89	102	96	92	88	94	90	87	91	88	86	89	87	84	83
4	99	92	87	83	97	91	86	82	89	85	81	87	83	80	85	82	80	78
5	95	87	81	77	93	86	81	77	84	80	76	82	79	76	81	78	75	74
6	90	82	77	73	89	81	76	72	80	75	72	79	75	72	77	74	71	70
7	87	78	72	69	85	77	72	68	76	71	68	75	71	68	74	70	67	66
8	83	74	69	65	82	74	68	65	73	68	65	72	67	64	71	67	64	63
9	80	71	65	62	79	70	65	62	69	65	61	69	64	61	68	64	61	60
10	77	68	62	59	76	67	62	59	66	62	59	66	61	58	65	61	58	57

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	741204	741204	741204
5°	662267	714072	773454
10°	470581	610307	793219
15°	232560	427424	716528
20°	118975	237950	605690
25°	74798	127821	491252
30°	45007	78278	370992
35°	29031	50654	264954
40°	20481	33040	174991
45°	15769	22886	98033
50°	9441	15735	41679
55°	7053	10580	22021
60°	6118	7105	14209
65°	5954	5954	12025
70°	5914	4472	16301
75°	5909	4003	11819
80°	2841	2841	5967
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	131.6	18.1
10°-20°	245.3	33.8
20°-30°	184.2	25.4
30°-40°	101.3	14.0
40°-50°	41.1	5.7
50°-60°	13.1	1.8
60°-70°	6.2	0.9
70°-80°	3.0	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°	561.1	77.3
0°-40°	662.4	91.2
0°-60°	716.5	98.7
0°-90°	726.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	726.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1502	1502	1502	1502	1502	
5°	1337	1368	1442	1527	1562	115
15°	455	535	837	1245	1403	133
25°	137	154	235	685	902	64
35°	48	57	84	254	440	31
45°	23	22	33	63	140	17
55°	8	9	12	15	26	8
65°	5	6	5	6	10	5
75°	3	2	2	2	6	3
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°	1502.3	1502.3	1502.3	1502.3	1502.3	1502.3	1502.3	1502.3	1502.3	1502.3	1502.3
2.5°	1460.2	1460.2	1459.2	1462.3	1468.4	1468.4	1471.5	1474.6	1477.7	1483.8	1490.0
5°	1337.2	1339.2	1338.2	1349.5	1357.7	1367.9	1371.0	1388.4	1401.8	1422.3	1441.8
7.5°	1150.5	1151.6	1160.8	1174.1	1194.6	1205.9	1221.3	1245.9	1275.6	1314.6	1352.6
10°	939.3	939.3	953.7	973.1	989.5	1012.1	1023.4	1063.4	1106.4	1160.8	1218.2
12.5°	684.0	684.0	708.6	722.9	752.7	772.2	788.6	834.7	891.1	960.8	1036.7
15°	455.3	463.5	472.7	492.2	518.9	535.3	546.6	593.7	660.4	738.3	836.8
17.5°	309.7	314.8	321.0	336.3	349.7	357.9	368.1	408.1	456.3	532.2	635.8
20°	226.6	231.7	236.9	244.1	252.3	256.4	263.5	284.0	318.9	372.2	453.2
22.5°	175.3	179.5	183.6	187.7	193.8	196.9	201.0	214.3	232.8	266.6	325.1
25°	137.4	137.4	142.5	145.6	150.7	153.8	158.9	168.2	182.5	202.0	234.8
27.5°	104.6	105.6	108.7	112.8	116.9	120.0	125.1	133.3	142.5	155.9	176.4
30°	79.0	81.0	83.1	86.1	91.3	94.3	97.4	104.6	112.8	123.1	137.4
32.5°	60.5	62.6	63.6	66.7	70.8	72.8	75.9	82.0	89.2	99.5	108.7
35°	48.2	48.2	50.2	51.3	55.4	57.4	59.5	63.6	70.8	76.9	84.1
37.5°	37.9	39.0	40.0	41.0	44.1	45.1	46.1	49.2	53.3	59.5	65.6
40°	31.8	32.8	32.8	32.8	33.8	33.8	34.9	36.9	41.0	45.1	51.3
42.5°	26.7	26.7	26.7	26.7	26.7	26.7	27.7	28.7	31.8	35.9	41.0
45°	22.6	21.5	21.5	21.5	21.5	21.5	21.5	23.6	25.6	28.7	32.8
47.5°	16.4	17.4	17.4	17.4	17.4	17.4	18.5	18.5	20.5	23.6	25.6
50°	12.3	13.3	13.3	14.4	14.4	14.4	14.4	15.4	17.4	19.5	20.5
52.5°	10.3	10.3	10.3	11.3	11.3	11.3	11.3	12.3	14.4	15.4	16.4
55°	8.2	8.2	8.2	8.2	9.2	9.2	10.3	11.3	12.3	12.3	12.3
57.5°	7.2	7.2	7.2	7.2	7.2	8.2	8.2	9.2	10.3	9.2	9.2
60°	6.2	6.2	6.2	6.2	6.2	7.2	7.2	8.2	7.2	7.2	7.2
62.5°	6.2	6.2	5.1	5.1	6.2	6.2	6.2	6.2	6.2	6.2	5.1
65°	5.1	5.1	5.1	5.1	5.1	6.2	6.2	5.1	5.1	4.1	5.1
67.5°	5.1	5.1	4.1	5.1	5.1	5.1	5.1	4.1	4.1	4.1	4.1
70°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	3.1	3.1	3.1	3.1
72.5°	3.1	3.1	3.1	4.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
75°	3.1	3.1	3.1	3.1	3.1	2.1	2.1	2.1	2.1	2.1	2.1
77.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.0	1.0	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	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°	1502.3	1502.3	1502.3	1502.3	1502.3	1502.3	1502.3	1502.3	1502.3	1502.3
2.5°	1495.1	1499.2	1504.3	1509.4	1511.5	1513.5	1516.6	1518.7	1519.7	1519.7
5°	1462.3	1482.8	1502.3	1518.7	1526.9	1534.1	1546.4	1554.6	1561.7	1561.7
7.5°	1392.5	1435.6	1475.6	1510.5	1525.8	1542.3	1567.9	1587.4	1597.6	1602.8
10°	1278.7	1343.3	1403.8	1457.1	1481.8	1502.3	1539.2	1564.8	1577.1	1583.3
12.5°	1123.9	1209.0	1285.9	1352.6	1382.3	1406.9	1444.8	1478.7	1496.1	1505.3
15°	943.4	1043.9	1135.2	1211.0	1244.9	1275.6	1325.9	1366.9	1391.5	1402.8
17.5°	752.7	876.7	980.3	1067.5	1098.2	1132.1	1190.5	1237.7	1270.5	1278.7
20°	576.3	710.6	828.6	918.8	954.7	988.5	1054.1	1104.4	1140.3	1153.6
22.5°	419.4	549.6	679.9	776.3	817.3	854.2	919.8	974.2	1012.1	1025.4
25°	299.4	405.0	534.3	644.0	685.0	721.9	787.5	842.9	881.9	902.4
27.5°	218.4	290.2	404.0	516.8	560.9	599.9	660.4	717.8	754.7	774.2
30°	160.0	207.1	292.2	402.0	450.2	488.1	552.7	600.9	640.9	651.2
32.5°	122.0	148.7	207.1	296.4	345.6	385.6	448.1	494.3	526.0	537.3
35°	93.3	109.7	144.6	212.3	254.3	295.3	354.8	402.0	429.7	439.9
37.5°	72.8	84.1	104.6	149.7	182.5	218.4	276.9	315.8	338.4	351.7
40°	58.4	66.7	80.0	106.6	129.2	155.9	205.1	242.0	264.6	271.7
42.5°	47.2	53.3	60.5	75.9	91.3	110.7	150.7	176.4	194.8	198.9
45°	36.9	41.0	49.2	56.4	62.6	72.8	100.5	124.1	135.4	140.5
47.5°	29.7	34.9	34.9	39.0	43.1	50.2	67.7	81.0	89.2	91.3
50°	22.6	23.6	25.6	27.7	29.7	31.8	41.0	49.2	54.3	54.3
52.5°	16.4	17.4	17.4	18.5	19.5	21.5	26.7	30.8	33.8	34.9
55°	12.3	12.3	13.3	14.4	15.4	16.4	19.5	23.6	24.6	25.6
57.5°	9.2	9.2	10.3	11.3	12.3	12.3	15.4	17.4	19.5	21.5
60°	7.2	7.2	8.2	8.2	9.2	10.3	13.3	14.4	14.4	14.4
62.5°	6.2	6.2	6.2	7.2	7.2	7.2	9.2	12.3	13.3	13.3
65°	5.1	5.1	5.1	5.1	6.2	6.2	7.2	8.2	10.3	10.3
67.5°	4.1	4.1	4.1	4.1	5.1	5.1	7.2	8.2	10.3	11.3
70°	3.1	3.1	3.1	4.1	4.1	5.1	6.2	8.2	10.3	11.3
72.5°	2.1	2.1	3.1	3.1	3.1	4.1	5.1	6.2	7.2	7.2
75°	2.1	2.1	2.1	2.1	2.1	2.1	3.1	5.1	5.1	6.2
77.5°	2.1	2.1	1.0	2.1	2.1	2.1	2.1	3.1	4.1	4.1
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.1
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)