

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: P219614

Luminaire Tested: **MRZ-1-REC-X-2-L35-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219614
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-L35-80-NFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL2
Light Source: (1) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 777.5 lumens
Efficiency: N/A
Efficacy: 88.4 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

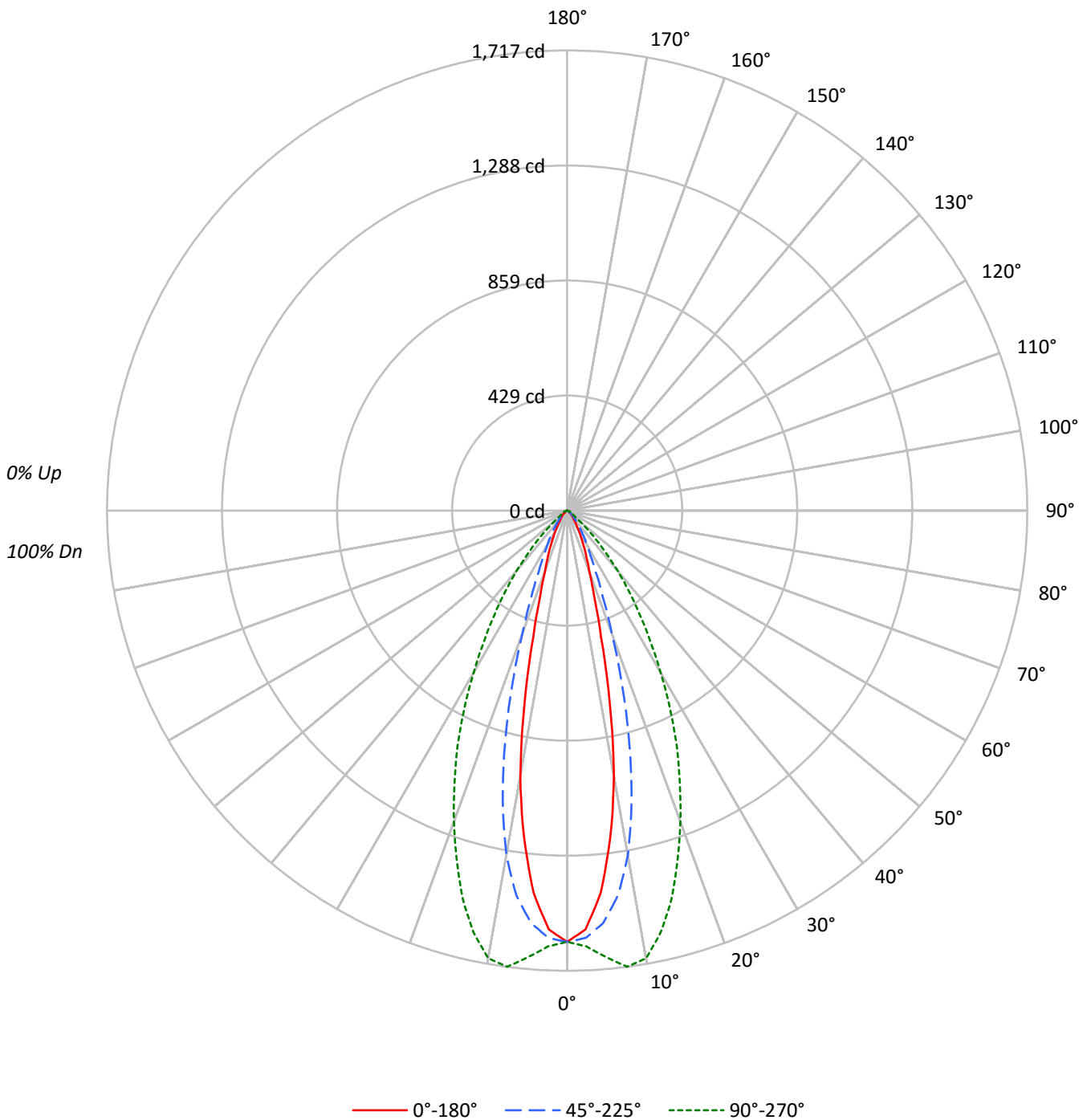
Input Watts (W): 8.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	793848	793848	793848
5°	709317	764787	828428
10°	503997	653693	849530
15°	249058	457765	767453
20°	127428	254856	648744
25°	80133	136913	526147
30°	48197	83861	397313
35°	31079	54268	283806
40°	21898	35359	187422
45°	16885	24491	105010
50°	10132	16886	44672
55°	7570	11354	23655
60°	6513	7598	15196
65°	6421	6421	12842
70°	6347	4760	17455
75°	6291	4194	12581
80°	3125	3125	6251
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.9	18.1
10°-20°	262.8	33.8
20°-30°	197.3	25.4
30°-40°	108.5	13.9
40°-50°	44.0	5.7
50°-60°	14.0	1.8
60°-70°	6.7	0.9
70°-80°	3.2	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°	601.0	77.3
0°-40°	709.4	91.2
0°-60°	767.5	98.7
0°-90°	777.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	777.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1609	1609	1609	1609	1609	
5°	1432	1465	1544	1635	1673	123
15°	488	573	896	1333	1502	143
25°	147	165	252	734	966	69
35°	52	62	90	272	471	33
45°	24	23	35	67	150	18
55°	9	10	13	16	28	8
65°	6	7	6	7	11	6
75°	3	2	2	2	7	3
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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CATALOG NUMBER: MRZ-1-REC-X-2-L35-80-NFL-UNV-X-STD-LSL

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1609.0	1609.0	1609.0	1609.0	1609.0	1609.0	1609.0	1609.0	1609.0	1609.0	1609.0
2.5°	1564.0	1564.0	1562.9	1566.2	1572.7	1572.7	1576.0	1579.3	1582.6	1589.2	1595.8
5°	1432.2	1434.4	1433.3	1445.3	1454.1	1465.1	1468.4	1487.1	1501.4	1523.3	1544.2
7.5°	1232.3	1233.4	1243.3	1257.5	1279.5	1291.6	1308.1	1334.4	1366.3	1408.0	1448.6
10°	1006.0	1006.0	1021.4	1042.3	1059.8	1084.0	1096.1	1138.9	1185.0	1243.3	1304.8
12.5°	732.6	732.6	758.9	774.3	806.1	827.0	844.6	894.0	954.4	1029.1	1110.4
15°	487.6	496.4	506.3	527.2	555.7	573.3	585.4	635.9	707.3	790.8	896.2
17.5°	331.7	337.2	343.8	360.2	374.5	383.3	394.3	437.1	488.7	570.0	680.9
20°	242.7	248.2	253.7	261.4	270.2	274.6	282.3	304.2	341.6	398.7	485.4
22.5°	187.8	192.2	196.6	201.0	207.6	210.9	215.3	229.5	249.3	285.6	348.2
25°	147.2	147.2	152.7	156.0	161.4	164.7	170.2	180.1	195.5	216.4	251.5
27.5°	112.0	113.1	116.4	120.8	125.2	128.5	134.0	142.8	152.7	166.9	188.9
30°	84.6	86.8	89.0	92.3	97.7	101.0	104.3	112.0	120.8	131.8	147.2
32.5°	64.8	67.0	68.1	71.4	75.8	78.0	81.3	87.9	95.6	106.5	116.4
35°	51.6	51.6	53.8	54.9	59.3	61.5	63.7	68.1	75.8	82.4	90.1
37.5°	40.6	41.7	42.8	43.9	47.2	48.3	49.4	52.7	57.1	63.7	70.3
40°	34.0	35.1	35.1	35.1	36.2	36.2	37.3	39.5	43.9	48.3	54.9
42.5°	28.6	28.6	28.6	28.6	28.6	28.6	29.7	30.8	34.0	38.4	43.9
45°	24.2	23.1	23.1	23.1	23.1	23.1	23.1	25.3	27.5	30.8	35.1
47.5°	17.6	18.7	18.7	18.7	18.7	18.7	19.8	19.8	22.0	25.3	27.5
50°	13.2	14.3	14.3	15.4	15.4	15.4	15.4	16.5	18.7	20.9	22.0
52.5°	11.0	11.0	11.0	12.1	12.1	12.1	12.1	13.2	15.4	16.5	17.6
55°	8.8	8.8	8.8	8.8	9.9	9.9	11.0	12.1	13.2	13.2	13.2
57.5°	7.7	7.7	7.7	7.7	7.7	8.8	8.8	9.9	11.0	9.9	9.9
60°	6.6	6.6	6.6	6.6	6.6	7.7	7.7	8.8	7.7	7.7	7.7
62.5°	6.6	6.6	5.5	5.5	6.6	6.6	6.6	6.6	6.6	6.6	5.5
65°	5.5	5.5	5.5	5.5	5.5	6.6	6.6	5.5	5.5	4.4	5.5
67.5°	5.5	5.5	4.4	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4
70°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	3.3	3.3	3.3	3.3
72.5°	3.3	3.3	3.3	4.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3
75°	3.3	3.3	3.3	3.3	3.3	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	0.0	1.1	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°	1609.0	1609.0	1609.0	1609.0	1609.0	1609.0	1609.0	1609.0	1609.0	1609.0
2.5°	1601.3	1605.7	1611.2	1616.7	1618.9	1621.1	1624.4	1626.6	1627.7	1627.7
5°	1566.2	1588.1	1609.0	1626.6	1635.3	1643.0	1656.2	1665.0	1672.7	1672.7
7.5°	1491.5	1537.6	1580.4	1617.8	1634.2	1651.8	1679.3	1700.1	1711.1	1716.6
10°	1369.6	1438.8	1503.5	1560.7	1587.0	1609.0	1648.5	1676.0	1689.2	1695.7
12.5°	1203.7	1294.9	1377.2	1448.6	1480.5	1506.8	1547.5	1583.7	1602.4	1612.3
15°	1010.4	1118.1	1215.8	1297.1	1333.3	1366.3	1420.1	1464.0	1490.4	1502.5
17.5°	806.1	939.0	1050.0	1143.3	1176.3	1212.5	1275.1	1325.6	1360.8	1369.6
20°	617.2	761.1	887.4	984.1	1022.5	1058.7	1129.0	1182.9	1221.3	1235.6
22.5°	449.2	588.7	728.2	831.4	875.3	914.9	985.2	1043.4	1084.0	1098.3
25°	320.7	433.8	572.2	689.7	733.7	773.2	843.5	902.8	944.5	966.5
27.5°	233.9	310.8	432.7	553.5	600.8	642.5	707.3	768.8	808.3	829.2
30°	171.3	221.9	313.0	430.5	482.1	522.8	592.0	643.6	686.4	697.4
32.5°	130.7	159.3	221.9	317.4	370.1	413.0	479.9	529.4	563.4	575.5
35°	99.9	117.5	154.9	227.3	272.4	316.3	380.0	430.5	460.2	471.2
37.5°	78.0	90.1	112.0	160.3	195.5	233.9	296.5	338.3	362.4	376.7
40°	62.6	71.4	85.7	114.2	138.4	166.9	219.7	259.2	283.4	291.0
42.5°	50.5	57.1	64.8	81.3	97.7	118.6	161.4	188.9	208.7	213.1
45°	39.5	43.9	52.7	60.4	67.0	78.0	107.6	132.9	145.0	150.5
47.5°	31.9	37.3	37.3	41.7	46.1	53.8	72.5	86.8	95.6	97.7
50°	24.2	25.3	27.5	29.7	31.9	34.0	43.9	52.7	58.2	58.2
52.5°	17.6	18.7	18.7	19.8	20.9	23.1	28.6	32.9	36.2	37.3
55°	13.2	13.2	14.3	15.4	16.5	17.6	20.9	25.3	26.4	27.5
57.5°	9.9	9.9	11.0	12.1	13.2	13.2	16.5	18.7	20.9	23.1
60°	7.7	7.7	8.8	8.8	9.9	11.0	14.3	15.4	15.4	15.4
62.5°	6.6	6.6	6.6	7.7	7.7	7.7	9.9	13.2	14.3	14.3
65°	5.5	5.5	5.5	5.5	6.6	6.6	7.7	8.8	11.0	11.0
67.5°	4.4	4.4	4.4	4.4	5.5	5.5	7.7	8.8	11.0	12.1
70°	3.3	3.3	3.3	4.4	4.4	5.5	6.6	8.8	11.0	12.1
72.5°	2.2	2.2	3.3	3.3	3.3	4.4	5.5	6.6	7.7	7.7
75°	2.2	2.2	2.2	2.2	2.2	2.2	3.3	5.5	5.5	6.6
77.5°	2.2	2.2	1.1	2.2	2.2	2.2	2.2	3.3	4.4	4.4
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.2
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)