

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: P219615

Luminaire Tested: **MRZ-1-REC-X-2-L40-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219615
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-L40-80-NFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL2
Light Source: (1) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 788.6 lumens
Efficiency: N/A
Efficacy: 89.6 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

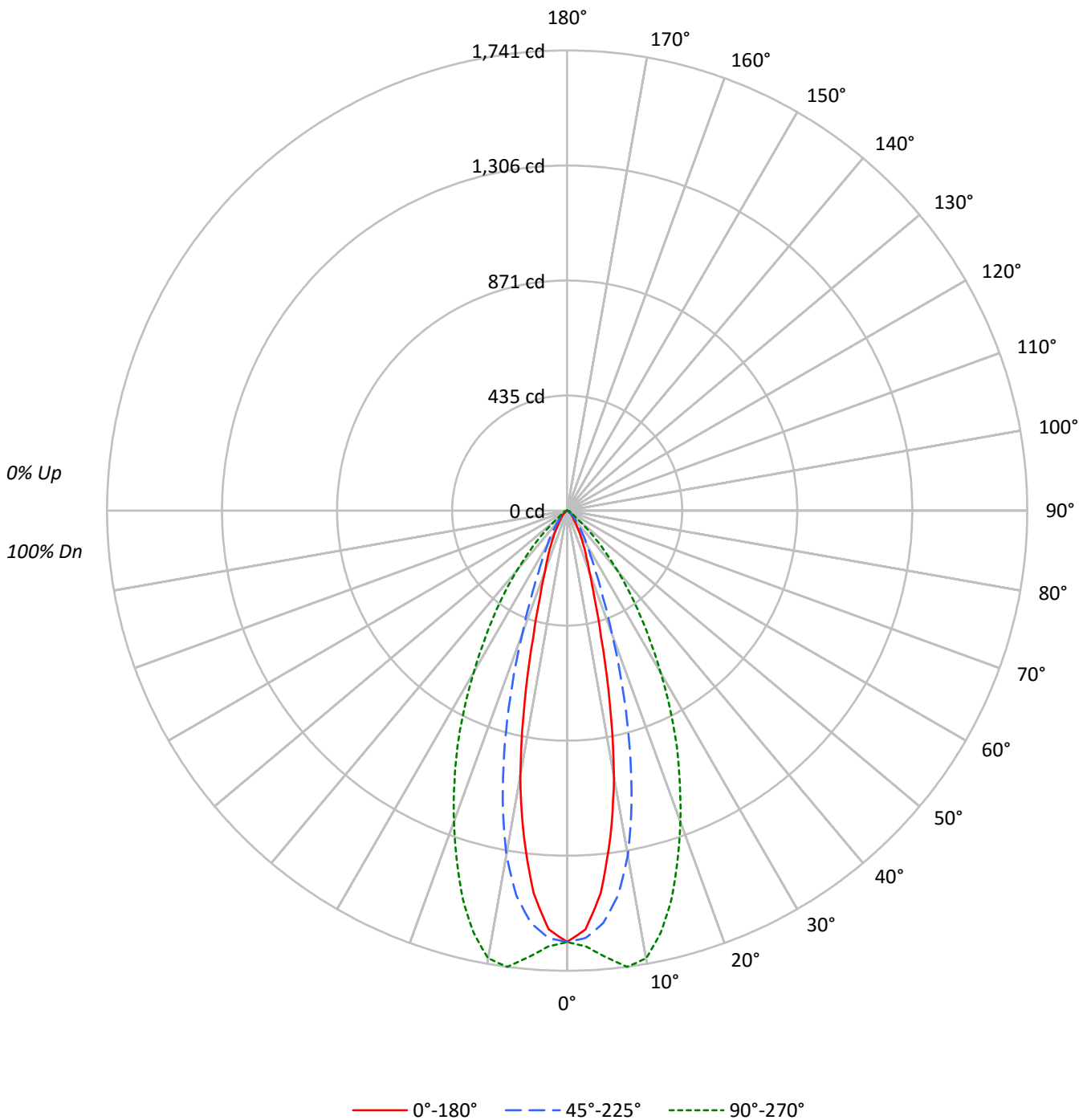
Input Watts (W): 8.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	805195	805195	805195
5°	719421	775732	840265
10°	511211	663011	861704
15°	252634	464303	778384
20°	129266	258531	657985
25°	81277	138872	533660
30°	48881	85057	403010
35°	31561	54990	287842
40°	22220	35874	190127
45°	17095	24840	106476
50°	10285	17117	45286
55°	7656	11526	23913
60°	6611	7697	15393
65°	6538	6538	12959
70°	6491	4760	17743
75°	6291	4194	12772
80°	3125	3125	6251
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.9	18.1
10°-20°	266.5	33.8
20°-30°	200.1	25.4
30°-40°	110.0	14.0
40°-50°	44.6	5.7
50°-60°	14.2	1.8
60°-70°	6.8	0.9
70°-80°	3.3	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°	609.6	77.3
0°-40°	719.6	91.2
0°-60°	778.4	98.7
0°-90°	788.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	788.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1632	1632	1632	1632	1632	
5°	1453	1486	1566	1659	1697	125
15°	495	582	909	1352	1524	145
25°	149	167	255	744	980	70
35°	52	62	91	276	478	34
45°	24	23	36	68	153	18
55°	9	10	13	17	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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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1632.0	1632.0	1632.0	1632.0	1632.0	1632.0	1632.0	1632.0	1632.0	1632.0	1632.0
2.5°	1586.3	1586.3	1585.2	1588.5	1595.2	1595.2	1598.6	1601.9	1605.2	1611.9	1618.6
5°	1452.6	1454.9	1453.7	1466.0	1474.9	1486.0	1489.4	1508.3	1522.8	1545.1	1566.3
7.5°	1249.9	1251.0	1261.0	1275.5	1297.8	1310.0	1326.7	1353.5	1385.8	1428.1	1469.3
10°	1020.4	1020.4	1036.0	1057.2	1075.0	1099.5	1111.8	1155.2	1202.0	1261.0	1323.4
12.5°	743.0	743.0	769.8	785.4	817.7	838.8	856.6	906.8	968.0	1043.8	1126.2
15°	494.6	503.5	513.5	534.7	563.7	581.5	593.8	645.0	717.4	802.1	909.0
17.5°	336.4	342.0	348.7	365.4	379.9	388.8	399.9	443.4	495.7	578.2	690.7
20°	246.2	251.8	257.3	265.1	274.0	278.5	286.3	308.6	346.4	404.4	492.4
22.5°	190.5	194.9	199.4	203.9	210.5	213.9	218.3	232.8	252.9	289.6	353.1
25°	149.3	149.3	154.8	158.2	163.8	167.1	172.7	182.7	198.3	219.5	255.1
27.5°	113.6	114.7	118.1	122.5	127.0	130.3	135.9	144.8	154.8	169.3	191.6
30°	85.8	88.0	90.2	93.6	99.1	102.5	105.8	113.6	122.5	133.7	149.3
32.5°	65.7	68.0	69.1	72.4	76.9	79.1	82.4	89.1	96.9	108.1	118.1
35°	52.4	52.4	54.6	55.7	60.2	62.4	64.6	69.1	76.9	83.5	91.3
37.5°	41.2	42.3	43.4	44.6	47.9	49.0	50.1	53.5	57.9	64.6	71.3
40°	34.5	35.6	35.6	35.6	36.8	36.8	37.9	40.1	44.6	49.0	55.7
42.5°	29.0	29.0	29.0	29.0	29.0	29.0	30.1	31.2	34.5	39.0	44.6
45°	24.5	23.4	23.4	23.4	23.4	23.4	23.4	25.6	27.8	31.2	35.6
47.5°	17.8	18.9	18.9	18.9	18.9	18.9	20.1	20.1	22.3	25.6	27.8
50°	13.4	14.5	14.5	15.6	15.6	15.6	15.6	16.7	18.9	21.2	22.3
52.5°	11.1	11.1	11.1	12.3	12.3	12.3	12.3	13.4	15.6	16.7	17.8
55°	8.9	8.9	8.9	8.9	10.0	10.0	11.1	12.3	13.4	13.4	13.4
57.5°	7.8	7.8	7.8	7.8	7.8	8.9	8.9	10.0	11.1	10.0	10.0
60°	6.7	6.7	6.7	6.7	6.7	7.8	7.8	8.9	7.8	7.8	7.8
62.5°	6.7	6.7	5.6	5.6	6.7	6.7	6.7	6.7	6.7	6.7	5.6
65°	5.6	5.6	5.6	5.6	5.6	6.7	6.7	5.6	5.6	4.5	5.6
67.5°	5.6	5.6	4.5	5.6	5.6	5.6	5.6	4.5	4.5	4.5	4.5
70°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	3.3	3.3	3.3	3.3
72.5°	3.3	3.3	3.3	4.5	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°	1632.0	1632.0	1632.0	1632.0	1632.0	1632.0	1632.0	1632.0	1632.0	1632.0
2.5°	1624.2	1628.6	1634.2	1639.8	1642.0	1644.2	1647.6	1649.8	1650.9	1650.9
5°	1588.5	1610.8	1632.0	1649.8	1658.7	1666.5	1679.9	1688.8	1696.6	1696.6
7.5°	1512.8	1559.6	1603.0	1640.9	1657.6	1675.4	1703.3	1724.4	1735.6	1741.1
10°	1389.1	1459.3	1525.0	1583.0	1609.7	1632.0	1672.1	1699.9	1713.3	1720.0
12.5°	1220.9	1313.4	1396.9	1469.3	1501.6	1528.4	1569.6	1606.4	1625.3	1635.3
15°	1024.9	1134.0	1233.2	1315.6	1352.4	1385.8	1440.4	1484.9	1511.7	1523.9
17.5°	817.7	952.5	1065.0	1159.7	1193.1	1229.8	1293.3	1344.6	1380.2	1389.1
20°	626.1	772.0	900.1	998.1	1037.1	1073.9	1145.2	1199.8	1238.7	1253.2
22.5°	455.6	597.1	738.6	843.3	887.8	927.9	999.2	1058.3	1099.5	1114.0
25°	325.3	440.0	580.4	699.6	744.1	784.2	855.5	915.7	958.0	980.3
27.5°	237.3	315.3	438.9	561.4	609.3	651.7	717.4	779.8	819.9	841.1
30°	173.8	225.0	317.5	436.7	489.0	530.3	600.4	652.8	696.2	707.4
32.5°	132.6	161.5	225.0	321.9	375.4	418.9	486.8	536.9	571.5	583.7
35°	101.4	119.2	157.1	230.6	276.3	320.8	385.4	436.7	466.8	477.9
37.5°	79.1	91.3	113.6	162.6	198.3	237.3	300.8	343.1	367.6	382.1
40°	63.5	72.4	86.9	115.9	140.4	169.3	222.8	262.9	287.4	295.2
42.5°	51.2	57.9	65.7	82.4	99.1	120.3	163.8	191.6	211.7	216.1
45°	40.1	44.6	53.5	61.3	68.0	79.1	109.2	134.8	147.0	152.6
47.5°	32.3	37.9	37.9	42.3	46.8	54.6	73.5	88.0	96.9	99.1
50°	24.5	25.6	27.8	30.1	32.3	34.5	44.6	53.5	59.0	59.0
52.5°	17.8	18.9	18.9	20.1	21.2	23.4	29.0	33.4	36.8	37.9
55°	13.4	13.4	14.5	15.6	16.7	17.8	21.2	25.6	26.7	27.8
57.5°	10.0	10.0	11.1	12.3	13.4	13.4	16.7	18.9	21.2	23.4
60°	7.8	7.8	8.9	8.9	10.0	11.1	14.5	15.6	15.6	15.6
62.5°	6.7	6.7	6.7	7.8	7.8	7.8	10.0	13.4	14.5	14.5
65°	5.6	5.6	5.6	5.6	6.7	6.7	7.8	8.9	11.1	11.1
67.5°	4.5	4.5	4.5	4.5	5.6	5.6	7.8	8.9	11.1	12.3
70°	3.3	3.3	3.3	4.5	4.5	5.6	6.7	8.9	11.1	12.3
72.5°	2.2	2.2	3.3	3.3	3.3	4.5	5.6	6.7	7.8	7.8
75°	2.2	2.2	2.2	2.2	2.2	2.2	3.3	5.6	5.6	6.7
77.5°	2.2	2.2	1.1	2.2	2.2	2.2	2.2	3.3	4.5	4.5
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)