

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: P219613

Luminaire Tested: **MRZ-1-REC-X-2-L30-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219613
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-L30-80-NFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL2
Light Source: (1) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 737.7 lumens
Efficiency: N/A
Efficacy: 83.8 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

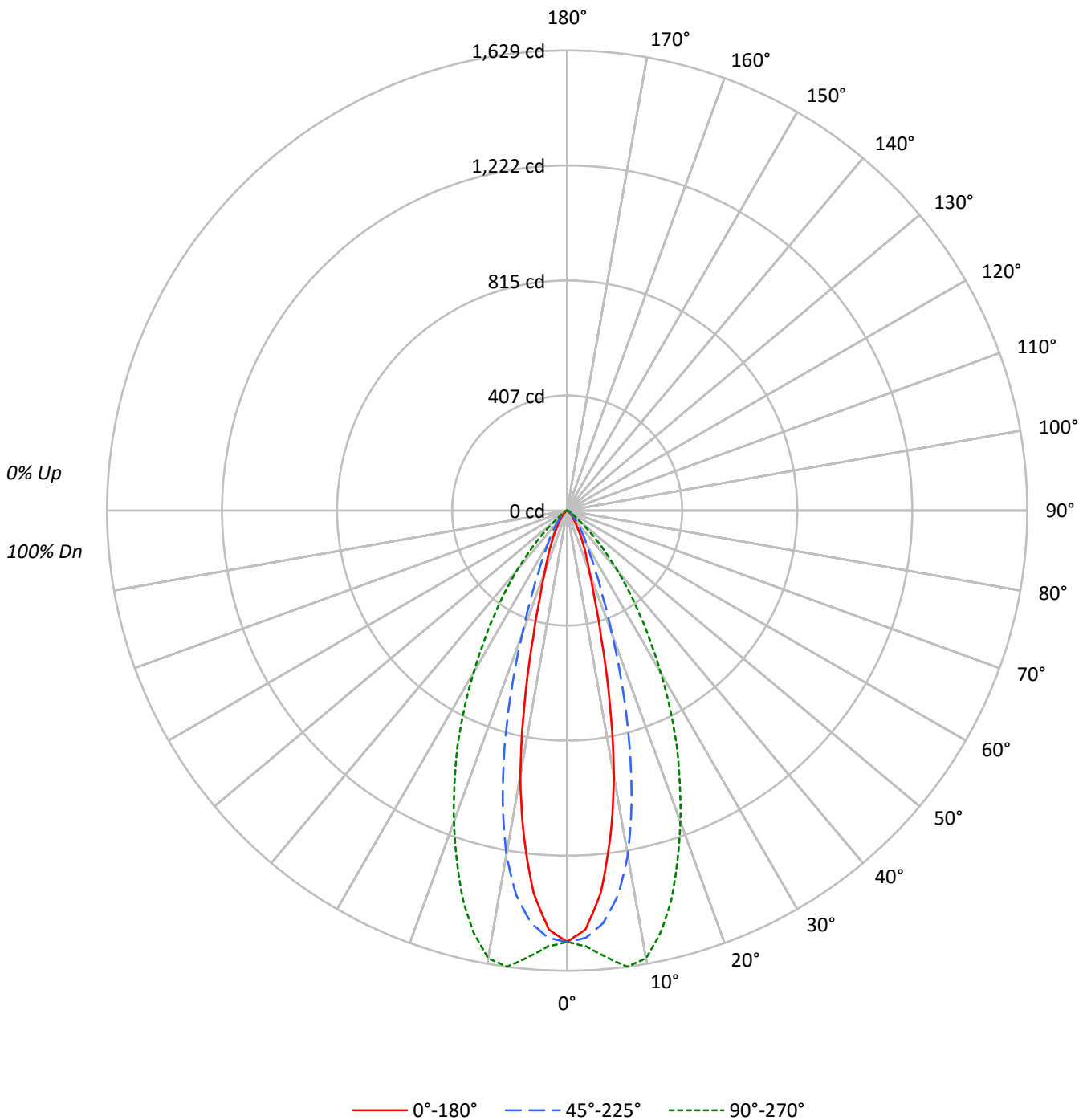
Input Watts (W): 8.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	753193	753193	753193
5°	672965	725612	785984
10°	478196	620227	806044
15°	236340	434320	728123
20°	120918	241835	615509
25°	75996	129890	499200
30°	45690	79531	376974
35°	29513	51437	269230
40°	20803	33556	177825
45°	15978	23235	99638
50°	9595	15965	42369
55°	7140	10752	22451
60°	6217	7203	14407
65°	6071	6071	12141
70°	6059	4472	16589
75°	5909	4003	12010
80°	2841	2841	5967
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.7	18.1
10°-20°	249.3	33.8
20°-30°	187.2	25.4
30°-40°	102.9	14.0
40°-50°	41.7	5.7
50°-60°	13.3	1.8
60°-70°	6.3	0.9
70°-80°	3.1	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°	570.2	77.3
0°-40°	673.1	91.2
0°-60°	728.2	98.7
0°-90°	737.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	737.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1527	1527	1527	1527	1527	
5°	1359	1390	1465	1552	1587	116
15°	463	544	850	1265	1426	136
25°	140	156	239	696	917	65
35°	49	58	85	258	447	32
45°	23	22	33	64	143	17
55°	8	9	12	16	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°	1526.6	1526.6	1526.6	1526.6	1526.6	1526.6	1526.6	1526.6	1526.6	1526.6	1526.6
2.5°	1483.9	1483.9	1482.8	1486.0	1492.2	1492.2	1495.3	1498.5	1501.6	1507.9	1514.1
5°	1358.8	1360.9	1359.9	1371.3	1379.7	1390.1	1393.2	1410.9	1424.5	1445.3	1465.1
7.5°	1169.2	1170.2	1179.6	1193.2	1214.0	1225.5	1241.1	1266.1	1296.3	1335.9	1374.5
10°	954.5	954.5	969.1	988.9	1005.6	1028.5	1040.0	1080.6	1124.4	1179.6	1238.0
12.5°	695.0	695.0	720.1	734.6	764.9	784.7	801.3	848.2	905.5	976.4	1053.5
15°	462.7	471.0	480.4	500.2	527.3	544.0	555.4	603.3	671.1	750.3	850.3
17.5°	314.7	319.9	326.2	341.8	355.3	363.7	374.1	414.7	463.7	540.8	646.1
20°	230.3	235.5	240.7	248.0	256.3	260.5	267.8	288.6	324.1	378.3	460.6
22.5°	178.2	182.4	186.5	190.7	196.9	200.1	204.2	217.8	236.5	270.9	330.3
25°	139.6	139.6	144.8	148.0	153.2	156.3	161.5	170.9	185.5	205.3	238.6
27.5°	106.3	107.3	110.5	114.6	118.8	121.9	127.1	135.5	144.8	158.4	179.2
30°	80.2	82.3	84.4	87.5	92.7	95.9	99.0	106.3	114.6	125.0	139.6
32.5°	61.5	63.6	64.6	67.7	71.9	74.0	77.1	83.4	90.7	101.1	110.5
35°	49.0	49.0	51.1	52.1	56.3	58.4	60.4	64.6	71.9	78.2	85.4
37.5°	38.6	39.6	40.6	41.7	44.8	45.9	46.9	50.0	54.2	60.4	66.7
40°	32.3	33.3	33.3	33.3	34.4	34.4	35.4	37.5	41.7	45.9	52.1
42.5°	27.1	27.1	27.1	27.1	27.1	27.1	28.1	29.2	32.3	36.5	41.7
45°	22.9	21.9	21.9	21.9	21.9	21.9	21.9	24.0	26.1	29.2	33.3
47.5°	16.7	17.7	17.7	17.7	17.7	17.7	18.8	18.8	20.8	24.0	26.1
50°	12.5	13.5	13.5	14.6	14.6	14.6	14.6	15.6	17.7	19.8	20.8
52.5°	10.4	10.4	10.4	11.5	11.5	11.5	11.5	12.5	14.6	15.6	16.7
55°	8.3	8.3	8.3	8.3	9.4	9.4	10.4	11.5	12.5	12.5	12.5
57.5°	7.3	7.3	7.3	7.3	7.3	8.3	8.3	9.4	10.4	9.4	9.4
60°	6.3	6.3	6.3	6.3	6.3	7.3	7.3	8.3	7.3	7.3	7.3
62.5°	6.3	6.3	5.2	5.2	6.3	6.3	6.3	6.3	6.3	6.3	5.2
65°	5.2	5.2	5.2	5.2	5.2	6.3	6.3	5.2	5.2	4.2	5.2
67.5°	5.2	5.2	4.2	5.2	5.2	5.2	5.2	4.2	4.2	4.2	4.2
70°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	3.1	3.1	3.1	3.1
72.5°	3.1	3.1	3.1	4.2	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°	1526.6	1526.6	1526.6	1526.6	1526.6	1526.6	1526.6	1526.6	1526.6	1526.6
2.5°	1519.3	1523.5	1528.7	1533.9	1536.0	1538.1	1541.2	1543.3	1544.3	1544.3
5°	1486.0	1506.8	1526.6	1543.3	1551.6	1558.9	1571.4	1579.8	1587.0	1587.0
7.5°	1415.1	1458.9	1499.5	1534.9	1550.6	1567.2	1593.3	1613.1	1623.5	1628.7
10°	1299.4	1365.1	1426.6	1480.8	1505.8	1526.6	1564.1	1590.2	1602.7	1608.9
12.5°	1142.1	1228.6	1306.7	1374.5	1404.7	1429.7	1468.3	1502.6	1520.4	1529.7
15°	958.7	1060.8	1153.6	1230.7	1265.1	1296.3	1347.4	1389.1	1414.1	1425.5
17.5°	764.9	891.0	996.2	1084.8	1116.0	1150.4	1209.8	1257.8	1291.1	1299.4
20°	585.6	722.1	842.0	933.7	970.2	1004.5	1071.2	1122.3	1158.8	1172.3
22.5°	426.2	558.5	690.9	788.8	830.5	868.0	934.7	990.0	1028.5	1042.1
25°	304.3	411.6	542.9	654.4	696.1	733.6	800.3	856.6	896.2	917.0
27.5°	222.0	294.9	410.6	525.2	570.0	609.6	671.1	729.4	767.0	786.8
30°	162.6	210.5	297.0	408.5	457.5	496.0	561.7	610.6	651.3	661.7
32.5°	124.0	151.1	210.5	301.2	351.2	391.8	455.4	502.3	534.6	546.0
35°	94.8	111.5	146.9	215.7	258.4	300.1	360.6	408.5	436.6	447.0
37.5°	74.0	85.4	106.3	152.1	185.5	222.0	281.4	321.0	343.9	357.4
40°	59.4	67.7	81.3	108.4	131.3	158.4	208.4	245.9	268.8	276.1
42.5°	47.9	54.2	61.5	77.1	92.7	112.5	153.2	179.2	198.0	202.2
45°	37.5	41.7	50.0	57.3	63.6	74.0	102.1	126.1	137.6	142.8
47.5°	30.2	35.4	35.4	39.6	43.8	51.1	68.8	82.3	90.7	92.7
50°	22.9	24.0	26.1	28.1	30.2	32.3	41.7	50.0	55.2	55.2
52.5°	16.7	17.7	17.7	18.8	19.8	21.9	27.1	31.3	34.4	35.4
55°	12.5	12.5	13.5	14.6	15.6	16.7	19.8	24.0	25.0	26.1
57.5°	9.4	9.4	10.4	11.5	12.5	12.5	15.6	17.7	19.8	21.9
60°	7.3	7.3	8.3	8.3	9.4	10.4	13.5	14.6	14.6	14.6
62.5°	6.3	6.3	6.3	7.3	7.3	7.3	9.4	12.5	13.5	13.5
65°	5.2	5.2	5.2	5.2	6.3	6.3	7.3	8.3	10.4	10.4
67.5°	4.2	4.2	4.2	4.2	5.2	5.2	7.3	8.3	10.4	11.5
70°	3.1	3.1	3.1	4.2	4.2	5.2	6.3	8.3	10.4	11.5
72.5°	2.1	2.1	3.1	3.1	3.1	4.2	5.2	6.3	7.3	7.3
75°	2.1	2.1	2.1	2.1	2.1	2.1	3.1	5.2	5.2	6.3
77.5°	2.1	2.1	1.0	2.1	2.1	2.1	2.1	3.1	4.2	4.2
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)