

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: P219778

Luminaire Tested: **MRZ-1-REC-X-3-L40-80-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219778
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-3-L40-80-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 3
Light Source: (1) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1029.3 lumens
Efficiency: N/A
Efficacy: 85.8 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

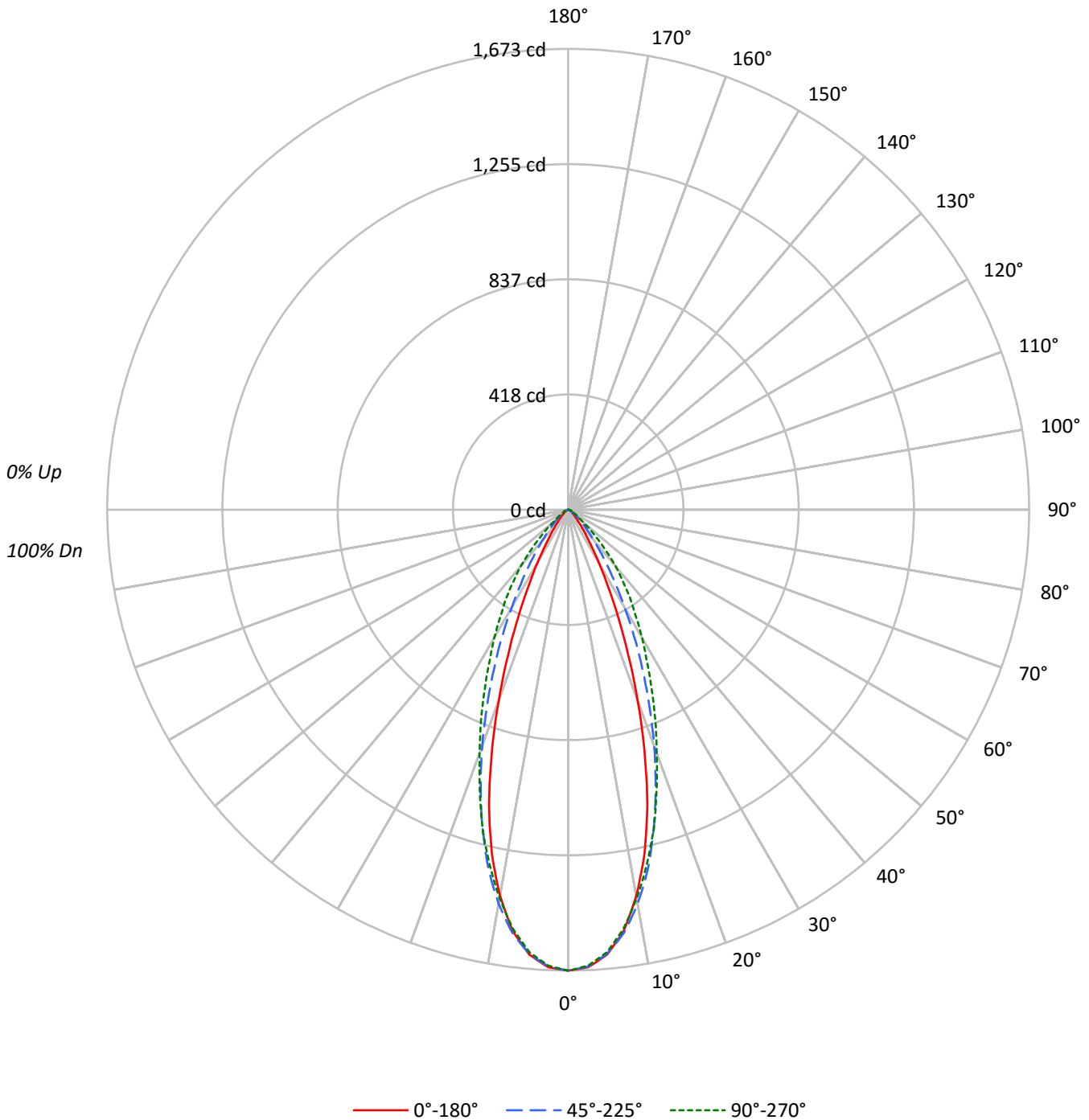
Input Watts (W): 12
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	825572	825572	825572
5°	803071	801585	798564
10°	713210	727689	717769
15°	566919	612839	612839
20°	386905	478840	493226
25°	231254	346446	389561
30°	127500	232440	304451
35°	66916	149492	235682
40°	38257	91199	172608
45°	24421	58401	107313
50°	17500	38532	56109
55°	14365	22279	35353
60°	12038	13519	22498
65°	10624	10624	17745
70°	8800	8800	24091
75°	8769	5719	14488
80°	4262	4262	8524
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	148.7	14.4
10°-20°	323.2	31.4
20°-30°	279.6	27.2
30°-40°	161.5	15.7
40°-50°	73.2	7.1
50°-60°	25.9	2.5
60°-70°	11.4	1.1
70°-80°	5.4	0.5
80°-90°	0.4	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°	751.5	73.0
0°-40°	913.0	88.7
0°-60°	1012.1	98.3
0°-90°	1029.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1029.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1673	1673	1673	1673	1673	
5°	1622	1620	1618	1612	1612	148
15°	1110	1143	1200	1210	1200	301
25°	425	489	636	729	716	199
35°	111	145	248	370	391	75
45°	35	43	84	146	154	29
55°	17	17	26	34	41	15
65°	9	11	9	14	15	9
75°	5	5	3	6	8	4
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°	1673.3	1673.3	1673.3	1673.3	1673.3	1673.3	1673.3	1673.3	1673.3	1673.3	1673.3
2.5°	1662.6	1659.6	1659.6	1659.6	1661.1	1661.1	1659.6	1659.6	1659.6	1659.6	1659.6
5°	1621.5	1618.5	1618.5	1620.0	1618.5	1620.0	1618.5	1621.5	1620.0	1618.5	1618.5
7.5°	1542.4	1542.4	1542.4	1543.9	1545.4	1545.4	1545.4	1548.4	1548.4	1551.5	1550.0
10°	1423.6	1426.6	1426.6	1431.2	1435.8	1432.7	1434.3	1443.4	1446.4	1449.5	1452.5
12.5°	1279.0	1283.5	1286.6	1289.6	1294.2	1298.7	1300.3	1315.5	1320.1	1326.2	1336.8
15°	1109.9	1108.4	1117.6	1122.1	1135.8	1143.4	1148.0	1163.2	1178.5	1187.6	1199.8
17.5°	919.6	924.2	928.8	940.9	957.7	968.3	974.4	992.7	1017.1	1036.9	1055.1
20°	736.9	746.1	750.6	764.3	781.1	787.2	803.9	828.3	860.2	887.7	912.0
22.5°	567.9	572.5	584.7	599.9	618.2	631.9	648.6	673.0	706.5	733.9	767.4
25°	424.8	426.3	441.5	455.2	475.0	488.7	497.9	529.9	564.9	599.9	636.4
27.5°	309.1	312.1	321.3	335.0	356.3	365.4	380.6	408.0	441.5	479.6	517.7
30°	223.8	223.8	229.9	245.1	260.4	272.5	283.2	309.1	341.1	373.0	408.0
32.5°	156.8	158.3	164.4	175.1	190.3	199.5	207.1	231.4	257.3	289.3	319.7
35°	111.1	112.7	118.8	124.9	137.0	144.6	150.7	169.0	191.8	219.2	248.2
37.5°	80.7	82.2	85.3	89.8	99.0	103.5	109.6	124.9	143.1	164.4	190.3
40°	59.4	60.9	62.4	67.0	73.1	76.1	80.7	91.4	105.1	123.3	141.6
42.5°	45.7	45.7	47.2	50.2	53.3	56.3	59.4	67.0	77.7	91.4	108.1
45°	35.0	35.0	36.5	39.6	41.1	42.6	45.7	50.2	57.9	68.5	83.7
47.5°	28.9	28.9	28.9	30.5	32.0	33.5	35.0	39.6	44.2	54.8	63.9
50°	22.8	22.8	24.4	24.4	25.9	25.9	27.4	30.5	36.5	44.2	50.2
52.5°	19.8	19.8	19.8	19.8	19.8	21.3	21.3	24.4	30.5	33.5	36.5
55°	16.7	16.7	16.7	16.7	16.7	16.7	18.3	21.3	24.4	27.4	25.9
57.5°	13.7	13.7	13.7	13.7	13.7	15.2	15.2	18.3	19.8	18.3	18.3
60°	12.2	12.2	10.7	10.7	12.2	12.2	13.7	15.2	15.2	13.7	13.7
62.5°	10.7	9.1	9.1	9.1	10.7	12.2	12.2	12.2	10.7	10.7	10.7
65°	9.1	7.6	7.6	9.1	9.1	10.7	10.7	9.1	9.1	9.1	9.1
67.5°	7.6	7.6	7.6	7.6	9.1	9.1	9.1	7.6	7.6	7.6	7.6
70°	6.1	6.1	6.1	6.1	7.6	7.6	6.1	6.1	6.1	6.1	6.1
72.5°	4.6	4.6	4.6	6.1	6.1	6.1	4.6	4.6	4.6	6.1	4.6
75°	4.6	4.6	4.6	4.6	4.6	4.6	3.0	3.0	4.6	4.6	3.0
77.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
80°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
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°	1673.3	1673.3	1673.3	1673.3	1673.3	1673.3	1673.3	1673.3	1673.3	1673.3
2.5°	1658.1	1658.1	1656.5	1658.1	1658.1	1658.1	1658.1	1656.5	1658.1	1656.5
5°	1617.0	1617.0	1617.0	1613.9	1612.4	1613.9	1612.4	1610.9	1610.9	1612.4
7.5°	1546.9	1546.9	1545.4	1542.4	1542.4	1540.8	1537.8	1536.3	1534.7	1534.7
10°	1455.6	1454.0	1449.5	1448.0	1448.0	1443.4	1437.3	1437.3	1431.2	1432.7
12.5°	1341.4	1338.3	1336.8	1336.8	1330.7	1330.7	1326.2	1324.6	1321.6	1318.5
15°	1204.3	1208.9	1212.0	1210.4	1210.4	1205.9	1204.3	1201.3	1196.7	1199.8
17.5°	1068.8	1079.5	1082.5	1087.1	1088.6	1085.6	1081.0	1073.4	1068.8	1065.8
20°	934.9	950.1	960.7	963.8	963.8	962.3	960.7	948.6	947.0	939.4
22.5°	796.3	817.6	835.9	842.0	843.5	845.0	838.9	829.8	826.8	825.2
25°	666.9	695.8	714.1	726.3	729.3	733.9	730.8	726.3	717.1	715.6
27.5°	549.6	580.1	604.5	619.7	627.3	630.3	633.4	625.8	622.7	616.6
30°	444.6	479.6	505.5	526.8	531.4	537.5	539.0	540.5	534.4	534.4
32.5°	354.8	383.7	415.7	437.0	446.1	450.7	458.3	456.8	456.8	455.2
35°	278.6	307.6	336.5	359.3	370.0	376.1	385.2	389.8	391.3	391.3
37.5°	214.7	243.6	269.5	296.9	307.6	315.2	321.3	322.8	324.3	322.8
40°	164.4	191.8	217.7	236.0	243.6	249.7	257.3	263.4	266.4	268.0
42.5°	129.4	149.2	166.0	184.2	196.4	205.5	207.1	205.5	205.5	204.0
45°	97.4	112.7	138.6	143.1	146.2	147.7	152.3	153.8	153.8	153.8
47.5°	77.7	94.4	94.4	100.5	103.5	108.1	109.6	109.6	109.6	109.6
50°	57.9	60.9	65.5	70.0	71.6	71.6	73.1	73.1	73.1	73.1
52.5°	38.1	42.6	44.2	45.7	47.2	48.7	51.8	53.3	51.8	51.8
55°	27.4	28.9	30.5	33.5	33.5	35.0	41.1	41.1	41.1	41.1
57.5°	18.3	19.8	22.8	27.4	27.4	28.9	30.5	30.5	32.0	32.0
60°	15.2	16.7	18.3	19.8	21.3	24.4	27.4	22.8	22.8	22.8
62.5°	12.2	13.7	15.2	16.7	15.2	16.7	18.3	18.3	18.3	18.3
65°	10.7	12.2	10.7	12.2	13.7	13.7	12.2	13.7	13.7	15.2
67.5°	9.1	9.1	9.1	9.1	9.1	10.7	13.7	15.2	16.7	16.7
70°	6.1	6.1	6.1	9.1	9.1	10.7	12.2	15.2	15.2	16.7
72.5°	4.6	4.6	6.1	7.6	9.1	9.1	10.7	10.7	12.2	12.2
75°	4.6	4.6	6.1	6.1	6.1	6.1	7.6	7.6	7.6	7.6
77.5°	3.0	3.0	3.0	3.0	4.6	4.6	4.6	6.1	6.1	6.1
80°	1.5	1.5	1.5	1.5	3.0	3.0	3.0	3.0	3.0	3.0
82.5°	1.5	1.5	1.5	1.5	1.5	0.0	0.0	1.5	1.5	1.5
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)