

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: P219770

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219770
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-2-L40-80-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE 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: 753.1 lumens
Efficiency: N/A
Efficacy: 85.6 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

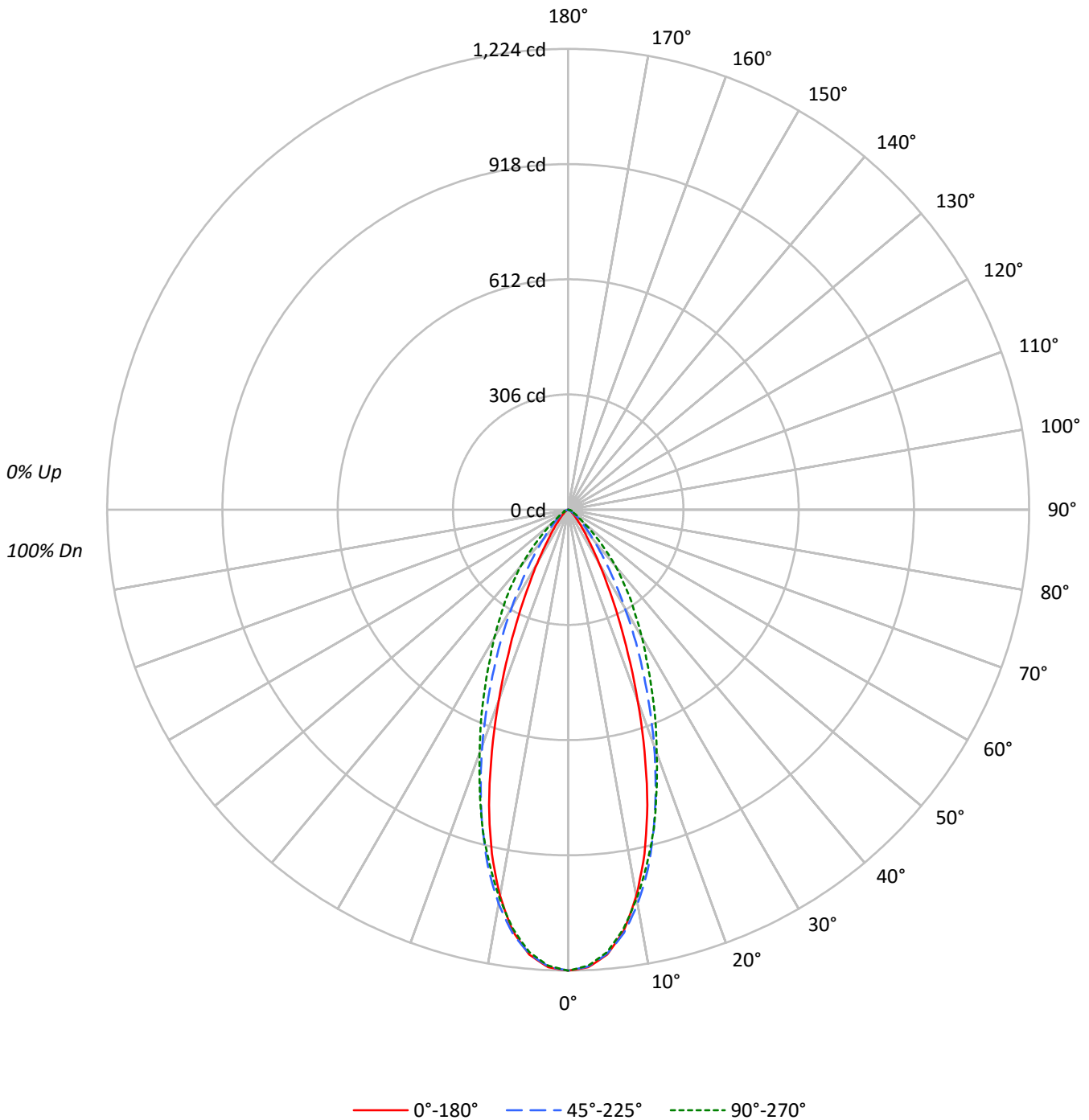
Input Watts (W): 8.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	604045	604045	604045
5°	587581	586492	584263
10°	521832	532403	525138
15°	414808	448366	448366
20°	283103	350362	360862
25°	169195	253465	285040
30°	93318	170057	222755
35°	48967	109379	172440
40°	27952	66725	126300
45°	17862	42772	78496
50°	12818	28246	41065
55°	10580	16257	25891
60°	8782	9868	16479
65°	7822	7822	12959
70°	6491	6491	17743
75°	6291	4194	10675
80°	3125	3125	6251
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	108.8	14.4
10°-20°	236.5	31.4
20°-30°	204.5	27.2
30°-40°	118.2	15.7
40°-50°	53.5	7.1
50°-60°	18.9	2.5
60°-70°	8.4	1.1
70°-80°	4.0	0.5
80°-90°	0.3	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°	549.8	73.0
0°-40°	668.0	88.7
0°-60°	740.5	98.3
0°-90°	753.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	753.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1224	1224	1224	1224	1224	
5°	1186	1185	1184	1180	1180	109
15°	812	837	878	886	878	220
25°	311	358	466	534	524	146
35°	81	106	182	271	286	55
45°	26	31	61	107	112	21
55°	12	12	19	24	30	11
65°	7	8	7	10	11	7
75°	3	3	2	4	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°	1224.3	1224.3	1224.3	1224.3	1224.3	1224.3	1224.3	1224.3	1224.3	1224.3	1224.3
2.5°	1216.5	1214.2	1214.2	1214.2	1215.3	1215.3	1214.2	1214.2	1214.2	1214.2	1214.2
5°	1186.4	1184.2	1184.2	1185.3	1184.2	1185.3	1184.2	1186.4	1185.3	1184.2	1184.2
7.5°	1128.5	1128.5	1128.5	1129.6	1130.7	1130.7	1130.7	1132.9	1132.9	1135.1	1134.0
10°	1041.6	1043.8	1043.8	1047.1	1050.5	1048.2	1049.4	1056.0	1058.3	1060.5	1062.7
12.5°	935.7	939.1	941.3	943.5	946.9	950.2	951.3	962.5	965.8	970.3	978.1
15°	812.1	811.0	817.7	821.0	831.0	836.6	839.9	851.1	862.2	868.9	877.8
17.5°	672.8	676.2	679.5	688.4	700.7	708.5	712.9	726.3	744.1	758.6	772.0
20°	539.2	545.8	549.2	559.2	571.5	575.9	588.2	606.0	629.4	649.4	667.3
22.5°	415.5	418.9	427.8	438.9	452.3	462.3	474.6	492.4	516.9	536.9	561.4
25°	310.8	311.9	323.1	333.1	347.6	357.6	364.3	387.7	413.3	438.9	465.6
27.5°	226.1	228.4	235.0	245.1	260.7	267.4	278.5	298.5	323.1	350.9	378.8
30°	163.8	163.8	168.2	179.3	190.5	199.4	207.2	226.1	249.5	272.9	298.5
32.5°	114.7	115.9	120.3	128.1	139.2	145.9	151.5	169.3	188.3	211.7	233.9
35°	81.3	82.4	86.9	91.3	100.3	105.8	110.3	123.7	140.4	160.4	181.6
37.5°	59.0	60.2	62.4	65.7	72.4	75.8	80.2	91.3	104.7	120.3	139.2
40°	43.4	44.6	45.7	49.0	53.5	55.7	59.0	66.8	76.9	90.2	103.6
42.5°	33.4	33.4	34.5	36.8	39.0	41.2	43.4	49.0	56.8	66.8	79.1
45°	25.6	25.6	26.7	29.0	30.1	31.2	33.4	36.8	42.3	50.1	61.3
47.5°	21.2	21.2	21.2	22.3	23.4	24.5	25.6	29.0	32.3	40.1	46.8
50°	16.7	16.7	17.8	17.8	18.9	18.9	20.1	22.3	26.7	32.3	36.8
52.5°	14.5	14.5	14.5	14.5	14.5	15.6	15.6	17.8	22.3	24.5	26.7
55°	12.3	12.3	12.3	12.3	12.3	12.3	13.4	15.6	17.8	20.1	18.9
57.5°	10.0	10.0	10.0	10.0	10.0	11.1	11.1	13.4	14.5	13.4	13.4
60°	8.9	8.9	7.8	7.8	8.9	8.9	10.0	11.1	11.1	10.0	10.0
62.5°	7.8	6.7	6.7	6.7	7.8	8.9	8.9	8.9	7.8	7.8	7.8
65°	6.7	5.6	5.6	6.7	6.7	7.8	7.8	6.7	6.7	6.7	6.7
67.5°	5.6	5.6	5.6	5.6	6.7	6.7	6.7	5.6	5.6	5.6	5.6
70°	4.5	4.5	4.5	4.5	5.6	5.6	4.5	4.5	4.5	4.5	4.5
72.5°	3.3	3.3	3.3	4.5	4.5	4.5	3.3	3.3	3.3	4.5	3.3
75°	3.3	3.3	3.3	3.3	3.3	3.3	2.2	2.2	3.3	3.3	2.2
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
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°	1224.3	1224.3	1224.3	1224.3	1224.3	1224.3	1224.3	1224.3	1224.3	1224.3
2.5°	1213.1	1213.1	1212.0	1213.1	1213.1	1213.1	1213.1	1212.0	1213.1	1212.0
5°	1183.0	1183.0	1183.0	1180.8	1179.7	1180.8	1179.7	1178.6	1178.6	1179.7
7.5°	1131.8	1131.8	1130.7	1128.5	1128.5	1127.3	1125.1	1124.0	1122.9	1122.9
10°	1065.0	1063.8	1060.5	1059.4	1059.4	1056.0	1051.6	1051.6	1047.1	1048.2
12.5°	981.4	979.2	978.1	978.1	973.6	973.6	970.3	969.2	966.9	964.7
15°	881.2	884.5	886.7	885.6	885.6	882.3	881.2	878.9	875.6	877.8
17.5°	782.0	789.8	792.0	795.4	796.5	794.3	790.9	785.3	782.0	779.8
20°	684.0	695.1	702.9	705.1	705.1	704.0	702.9	694.0	692.9	687.3
22.5°	582.6	598.2	611.6	616.0	617.1	618.3	613.8	607.1	604.9	603.8
25°	487.9	509.1	522.5	531.4	533.6	536.9	534.7	531.4	524.7	523.6
27.5°	402.1	424.4	442.2	453.4	459.0	461.2	463.4	457.8	455.6	451.2
30°	325.3	350.9	369.8	385.4	388.8	393.2	394.3	395.5	391.0	391.0
32.5°	259.6	280.7	304.1	319.7	326.4	329.7	335.3	334.2	334.2	333.1
35°	203.9	225.0	246.2	262.9	270.7	275.2	281.8	285.2	286.3	286.3
37.5°	157.1	178.2	197.2	217.2	225.0	230.6	235.0	236.2	237.3	236.2
40°	120.3	140.4	159.3	172.7	178.2	182.7	188.3	192.7	194.9	196.1
42.5°	94.7	109.2	121.4	134.8	143.7	150.4	151.5	150.4	150.4	149.3
45°	71.3	82.4	101.4	104.7	106.9	108.1	111.4	112.5	112.5	112.5
47.5°	56.8	69.1	69.1	73.5	75.8	79.1	80.2	80.2	80.2	80.2
50°	42.3	44.6	47.9	51.2	52.4	52.4	53.5	53.5	53.5	53.5
52.5°	27.8	31.2	32.3	33.4	34.5	35.6	37.9	39.0	37.9	37.9
55°	20.1	21.2	22.3	24.5	24.5	25.6	30.1	30.1	30.1	30.1
57.5°	13.4	14.5	16.7	20.1	20.1	21.2	22.3	22.3	23.4	23.4
60°	11.1	12.3	13.4	14.5	15.6	17.8	20.1	16.7	16.7	16.7
62.5°	8.9	10.0	11.1	12.3	11.1	12.3	13.4	13.4	13.4	13.4
65°	7.8	8.9	7.8	8.9	10.0	10.0	8.9	10.0	10.0	11.1
67.5°	6.7	6.7	6.7	6.7	6.7	7.8	10.0	11.1	12.3	12.3
70°	4.5	4.5	4.5	6.7	6.7	7.8	8.9	11.1	11.1	12.3
72.5°	3.3	3.3	4.5	5.6	6.7	6.7	7.8	7.8	8.9	8.9
75°	3.3	3.3	4.5	4.5	4.5	4.5	5.6	5.6	5.6	5.6
77.5°	2.2	2.2	2.2	2.2	3.3	3.3	3.3	4.5	4.5	4.5
80°	1.1	1.1	1.1	1.1	2.2	2.2	2.2	2.2	2.2	2.2
82.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	1.1	1.1	1.1
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)