

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: P219779

Luminaire Tested: **MRZ-1-REC-X-3-L30-97-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219779
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-L30-97-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 3
Light Source: (1) 3000K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 739.1 lumens
Efficiency: N/A
Efficacy: 61.1 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

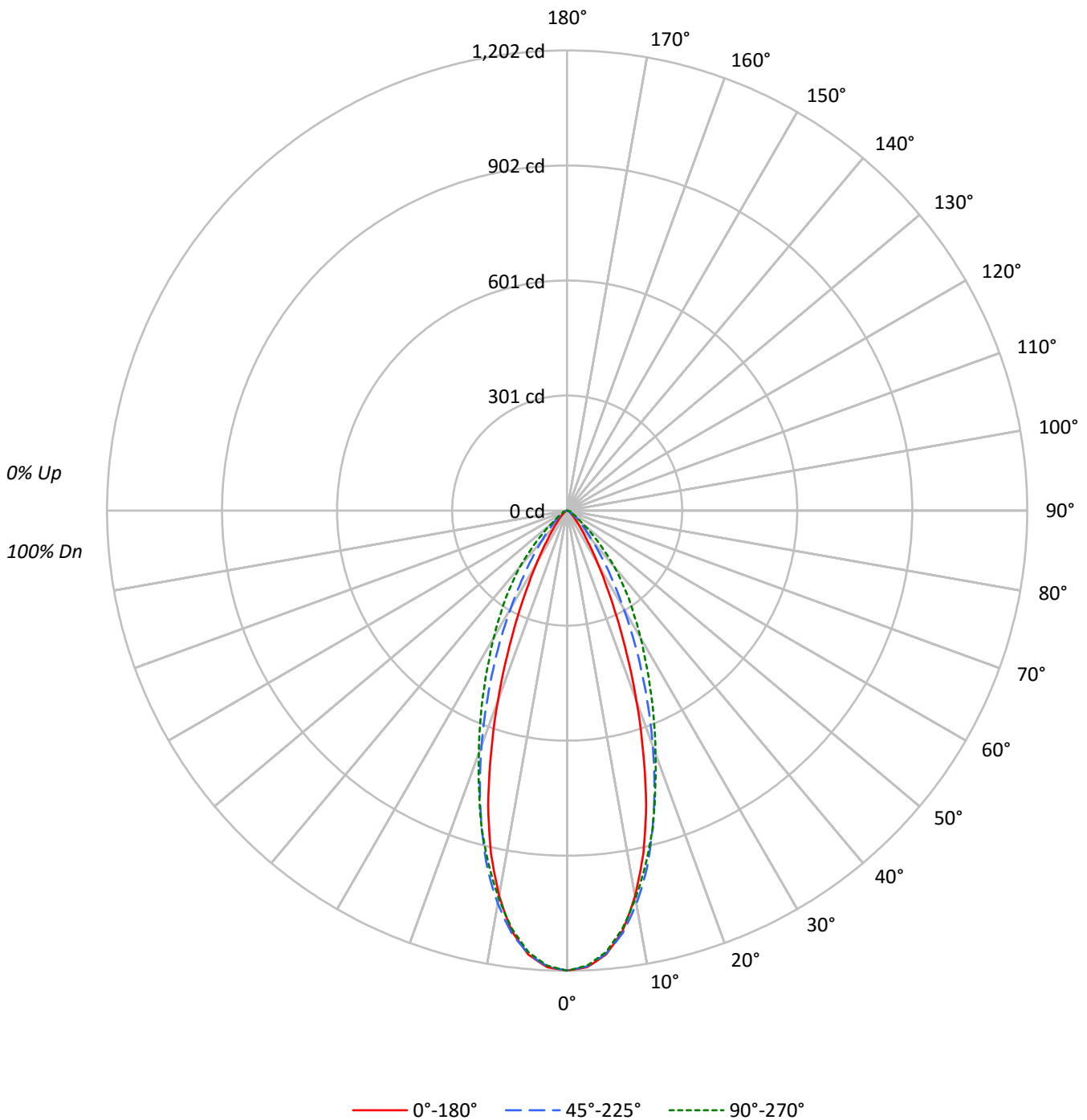
Input Watts (W): 12.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	592796	592796	592796
5°	576636	575547	573417
10°	512113	522533	515419
15°	407095	440040	440040
20°	277801	343851	354142
25°	166037	248784	279705
30°	91552	166924	218596
35°	48064	107331	169248
40°	27437	65501	123917
45°	17513	41934	77031
50°	12588	27709	40297
55°	10322	15999	25375
60°	8585	9670	16183
65°	7705	7705	12725
70°	6347	6347	17311
75°	6291	4194	10484
80°	3125	3125	6251
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	106.8	14.4
10°-20°	232.1	31.4
20°-30°	200.7	27.2
30°-40°	116.0	15.7
40°-50°	52.5	7.1
50°-60°	18.6	2.5
60°-70°	8.2	1.1
70°-80°	3.9	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°	539.6	73.0
0°-40°	655.6	88.7
0°-60°	726.7	98.3
0°-90°	739.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	739.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1202	1202	1202	1202	1202	
5°	1164	1163	1162	1158	1158	107
15°	797	821	862	869	862	216
25°	305	351	457	524	514	143
35°	80	104	178	266	281	54
45°	25	31	60	105	110	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°	1201.5	1201.5	1201.5	1201.5	1201.5	1201.5	1201.5	1201.5	1201.5	1201.5	1201.5
2.5°	1193.9	1191.7	1191.7	1191.7	1192.8	1192.8	1191.7	1191.7	1191.7	1191.7	1191.7
5°	1164.3	1162.1	1162.1	1163.2	1162.1	1163.2	1162.1	1164.3	1163.2	1162.1	1162.1
7.5°	1107.5	1107.5	1107.5	1108.6	1109.7	1109.7	1109.7	1111.9	1111.9	1114.0	1113.0
10°	1022.2	1024.4	1024.4	1027.7	1031.0	1028.8	1029.9	1036.4	1038.6	1040.8	1043.0
12.5°	918.3	921.6	923.8	926.0	929.3	932.6	933.7	944.6	947.9	952.2	959.9
15°	797.0	795.9	802.5	805.7	815.6	821.0	824.3	835.3	846.2	852.8	861.5
17.5°	660.3	663.6	666.9	675.6	687.7	695.3	699.7	712.8	730.3	744.5	757.6
20°	529.1	535.7	539.0	548.8	560.8	565.2	577.2	594.7	617.7	637.4	654.9
22.5°	407.8	411.1	419.8	430.7	443.9	453.7	465.7	483.2	507.3	527.0	551.0
25°	305.0	306.1	317.0	326.9	341.1	350.9	357.5	380.5	405.6	430.7	457.0
27.5°	221.9	224.1	230.7	240.5	255.8	262.4	273.3	293.0	317.0	344.4	371.7
30°	160.7	160.7	165.1	176.0	186.9	195.7	203.3	221.9	244.9	267.9	293.0
32.5°	112.6	113.7	118.1	125.7	136.7	143.2	148.7	166.2	184.8	207.7	229.6
35°	79.8	80.9	85.3	89.6	98.4	103.9	108.2	121.4	137.8	157.4	178.2
37.5°	57.9	59.0	61.2	64.5	71.1	74.3	78.7	89.6	102.8	118.1	136.7
40°	42.6	43.7	44.8	48.1	52.5	54.7	57.9	65.6	75.4	88.6	101.7
42.5°	32.8	32.8	33.9	36.1	38.3	40.5	42.6	48.1	55.8	65.6	77.6
45°	25.1	25.1	26.2	28.4	29.5	30.6	32.8	36.1	41.5	49.2	60.1
47.5°	20.8	20.8	20.8	21.9	23.0	24.1	25.1	28.4	31.7	39.4	45.9
50°	16.4	16.4	17.5	17.5	18.6	18.6	19.7	21.9	26.2	31.7	36.1
52.5°	14.2	14.2	14.2	14.2	14.2	15.3	15.3	17.5	21.9	24.1	26.2
55°	12.0	12.0	12.0	12.0	12.0	12.0	13.1	15.3	17.5	19.7	18.6
57.5°	9.8	9.8	9.8	9.8	9.8	10.9	10.9	13.1	14.2	13.1	13.1
60°	8.7	8.7	7.7	7.7	8.7	8.7	9.8	10.9	10.9	9.8	9.8
62.5°	7.7	6.6	6.6	6.6	7.7	8.7	8.7	8.7	7.7	7.7	7.7
65°	6.6	5.5	5.5	6.6	6.6	7.7	7.7	6.6	6.6	6.6	6.6
67.5°	5.5	5.5	5.5	5.5	6.6	6.6	6.6	5.5	5.5	5.5	5.5
70°	4.4	4.4	4.4	4.4	5.5	5.5	4.4	4.4	4.4	4.4	4.4
72.5°	3.3	3.3	3.3	4.4	4.4	4.4	3.3	3.3	3.3	4.4	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°	1201.5	1201.5	1201.5	1201.5	1201.5	1201.5	1201.5	1201.5	1201.5	1201.5
2.5°	1190.6	1190.6	1189.5	1190.6	1190.6	1190.6	1190.6	1189.5	1190.6	1189.5
5°	1161.1	1161.1	1161.1	1158.9	1157.8	1158.9	1157.8	1156.7	1156.7	1157.8
7.5°	1110.8	1110.8	1109.7	1107.5	1107.5	1106.4	1104.2	1103.1	1102.0	1102.0
10°	1045.2	1044.1	1040.8	1039.7	1039.7	1036.4	1032.0	1032.0	1027.7	1028.8
12.5°	963.2	961.0	959.9	959.9	955.5	955.5	952.2	951.1	949.0	946.8
15°	864.8	868.1	870.2	869.2	869.2	865.9	864.8	862.6	859.3	861.5
17.5°	767.5	775.1	777.3	780.6	781.7	779.5	776.2	770.8	767.5	765.3
20°	671.3	682.2	689.9	692.0	692.0	690.9	689.9	681.1	680.0	674.5
22.5°	571.8	587.1	600.2	604.6	605.7	606.8	602.4	595.8	593.6	592.6
25°	478.9	499.6	512.7	521.5	523.7	527.0	524.8	521.5	514.9	513.8
27.5°	394.7	416.5	434.0	445.0	450.4	452.6	454.8	449.3	447.1	442.8
30°	319.2	344.4	363.0	378.3	381.6	385.9	387.0	388.1	383.7	383.7
32.5°	254.7	275.5	298.5	313.8	320.3	323.6	329.1	328.0	328.0	326.9
35°	200.1	220.8	241.6	258.0	265.7	270.0	276.6	279.9	281.0	281.0
37.5°	154.2	174.9	193.5	213.2	220.8	226.3	230.7	231.8	232.9	231.8
40°	118.1	137.8	156.3	169.5	174.9	179.3	184.8	189.1	191.3	192.4
42.5°	92.9	107.1	119.2	132.3	141.0	147.6	148.7	147.6	147.6	146.5
45°	70.0	80.9	99.5	102.8	105.0	106.0	109.3	110.4	110.4	110.4
47.5°	55.8	67.8	67.8	72.2	74.3	77.6	78.7	78.7	78.7	78.7
50°	41.5	43.7	47.0	50.3	51.4	51.4	52.5	52.5	52.5	52.5
52.5°	27.3	30.6	31.7	32.8	33.9	35.0	37.2	38.3	37.2	37.2
55°	19.7	20.8	21.9	24.1	24.1	25.1	29.5	29.5	29.5	29.5
57.5°	13.1	14.2	16.4	19.7	19.7	20.8	21.9	21.9	23.0	23.0
60°	10.9	12.0	13.1	14.2	15.3	17.5	19.7	16.4	16.4	16.4
62.5°	8.7	9.8	10.9	12.0	10.9	12.0	13.1	13.1	13.1	13.1
65°	7.7	8.7	7.7	8.7	9.8	9.8	8.7	9.8	9.8	10.9
67.5°	6.6	6.6	6.6	6.6	6.6	7.7	9.8	10.9	12.0	12.0
70°	4.4	4.4	4.4	6.6	6.6	7.7	8.7	10.9	10.9	12.0
72.5°	3.3	3.3	4.4	5.5	6.6	6.6	7.7	7.7	8.7	8.7
75°	3.3	3.3	4.4	4.4	4.4	4.4	5.5	5.5	5.5	5.5
77.5°	2.2	2.2	2.2	2.2	3.3	3.3	3.3	4.4	4.4	4.4
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)