

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: P219774

Luminaire Tested: **MRZ-1-REC-X-2-L40-97-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P219774  
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-L40-97-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, 97 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 587.3 lumens  
Efficiency: N/A  
Efficacy: 66.7 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

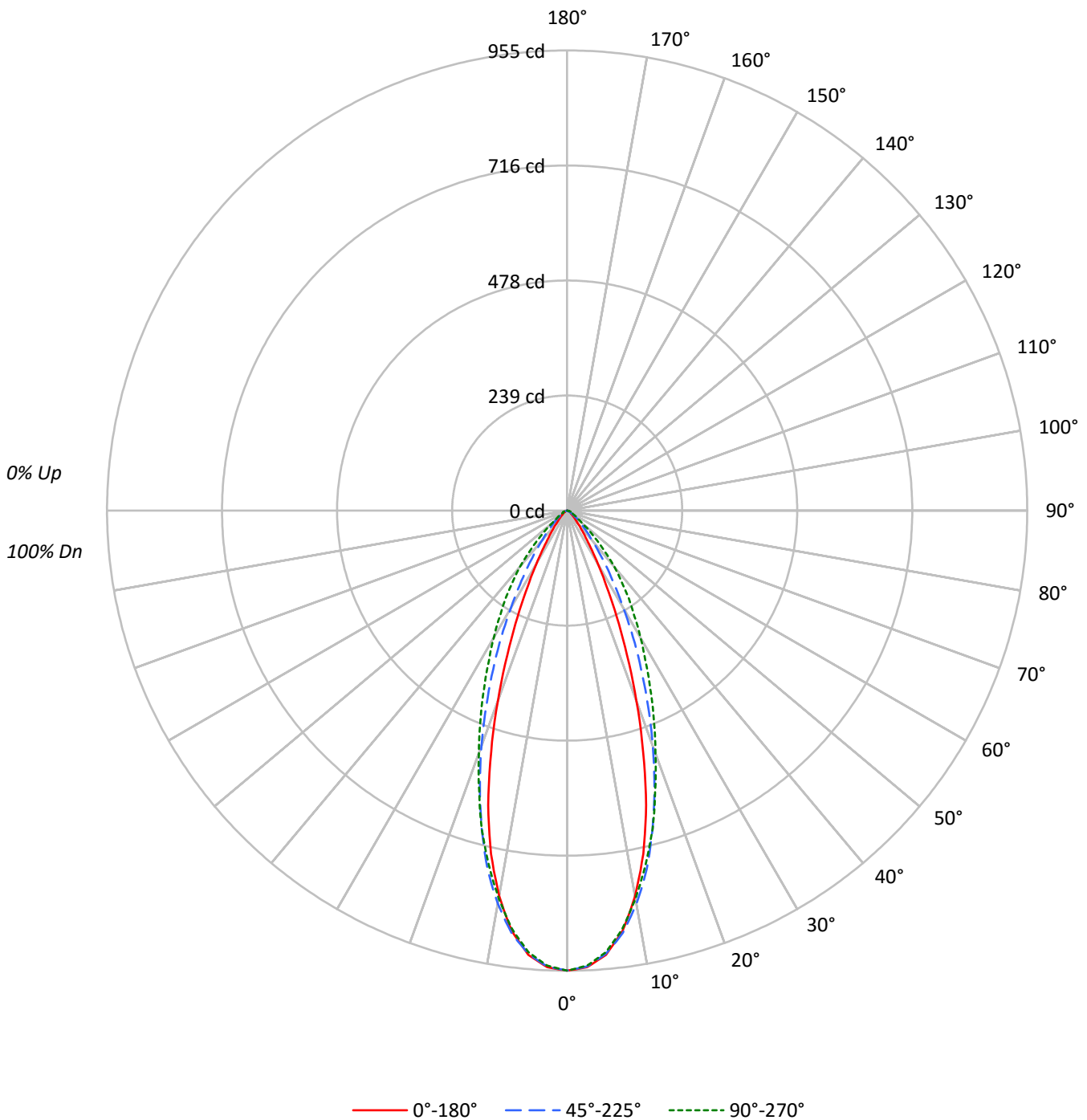
Input Watts (W): 8.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	471029	471029	471029
5°	458218	457327	455643
10°	406905	415171	409510
15°	323480	349632	349632
20°	220781	273233	281423
25°	131959	197666	222272
30°	72751	132627	173703
35°	38186	85286	134495
40°	21834	52040	98477
45°	13955	33352	61192
50°	9978	22029	32007
55°	8258	12731	20214
60°	6809	7697	12828
65°	6071	6071	10157
70°	5049	5049	13848
75°	4956	3241	8197
80°	2557	2557	4830
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	84.9	14.4
10°-20°	184.4	31.4
20°-30°	159.5	27.2
30°-40°	92.2	15.7
40°-50°	41.8	7.1
50°-60°	14.8	2.5
60°-70°	6.5	1.1
70°-80°	3.1	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°	428.8	73.0
0°-40°	520.9	88.7
0°-60°	577.4	98.3
0°-90°	587.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	587.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	955	955	955	955	955	
5°	925	924	923	920	920	85
15°	633	652	684	691	684	172
25°	242	279	363	416	408	114
35°	63	82	142	211	223	43
45°	20	24	48	83	88	16
55°	10	10	15	19	24	9
65°	5	6	5	8	9	5
75°	3	3	2	4	4	2
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°	954.7	954.7	954.7	954.7	954.7	954.7	954.7	954.7	954.7	954.7	954.7
2.5°	948.6	946.9	946.9	946.9	947.8	947.8	946.9	946.9	946.9	946.9	946.9
5°	925.2	923.4	923.4	924.3	923.4	924.3	923.4	925.2	924.3	923.4	923.4
7.5°	880.0	880.0	880.0	880.9	881.7	881.7	881.7	883.5	883.5	885.2	884.3
10°	812.2	814.0	814.0	816.6	819.2	817.4	818.3	823.5	825.3	827.0	828.7
12.5°	729.7	732.3	734.1	735.8	738.4	741.0	741.9	750.6	753.2	756.6	762.7
15°	633.3	632.4	637.6	640.2	648.1	652.4	655.0	663.7	672.4	677.6	684.5
17.5°	524.7	527.3	529.9	536.9	546.4	552.5	556.0	566.4	580.3	591.6	602.0
20°	420.5	425.7	428.3	436.1	445.6	449.1	458.7	472.6	490.8	506.5	520.4
22.5°	324.0	326.6	333.6	342.3	352.7	360.5	370.1	384.0	403.1	418.7	437.8
25°	242.4	243.2	251.9	259.7	271.0	278.9	284.1	302.3	322.3	342.3	363.1
27.5°	176.3	178.1	183.3	191.1	203.3	208.5	217.2	232.8	251.9	273.6	295.4
30°	127.7	127.7	131.2	139.9	148.5	155.5	161.6	176.3	194.6	212.8	232.8
32.5°	89.5	90.3	93.8	99.9	108.6	113.8	118.1	132.0	146.8	165.1	182.4
35°	63.4	64.3	67.8	71.2	78.2	82.5	86.0	96.4	109.5	125.1	141.6
37.5°	46.0	46.9	48.6	51.3	56.5	59.1	62.5	71.2	81.7	93.8	108.6
40°	33.9	34.7	35.6	38.2	41.7	43.4	46.0	52.1	59.9	70.4	80.8
42.5°	26.1	26.1	26.9	28.7	30.4	32.1	33.9	38.2	44.3	52.1	61.7
45°	20.0	20.0	20.8	22.6	23.5	24.3	26.1	28.7	33.0	39.1	47.8
47.5°	16.5	16.5	16.5	17.4	18.2	19.1	20.0	22.6	25.2	31.3	36.5
50°	13.0	13.0	13.9	13.9	14.8	14.8	15.6	17.4	20.8	25.2	28.7
52.5°	11.3	11.3	11.3	11.3	11.3	12.2	12.2	13.9	17.4	19.1	20.8
55°	9.6	9.6	9.6	9.6	9.6	9.6	10.4	12.2	13.9	15.6	14.8
57.5°	7.8	7.8	7.8	7.8	7.8	8.7	8.7	10.4	11.3	10.4	10.4
60°	6.9	6.9	6.1	6.1	6.9	6.9	7.8	8.7	8.7	7.8	7.8
62.5°	6.1	5.2	5.2	5.2	6.1	6.9	6.9	6.9	6.1	6.1	6.1
65°	5.2	4.3	4.3	5.2	5.2	6.1	6.1	5.2	5.2	5.2	5.2
67.5°	4.3	4.3	4.3	4.3	5.2	5.2	5.2	4.3	4.3	4.3	4.3
70°	3.5	3.5	3.5	3.5	4.3	4.3	3.5	3.5	3.5	3.5	3.5
72.5°	2.6	2.6	2.6	3.5	3.5	3.5	2.6	2.6	2.6	3.5	2.6
75°	2.6	2.6	2.6	2.6	2.6	2.6	1.7	1.7	2.6	2.6	1.7
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
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°	954.7	954.7	954.7	954.7	954.7	954.7	954.7	954.7	954.7	954.7
2.5°	946.0	946.0	945.1	946.0	946.0	946.0	946.0	945.1	946.0	945.1
5°	922.6	922.6	922.6	920.8	920.0	920.8	920.0	919.1	919.1	920.0
7.5°	882.6	882.6	881.7	880.0	880.0	879.1	877.4	876.5	875.7	875.7
10°	830.5	829.6	827.0	826.1	826.1	823.5	820.1	820.1	816.6	817.4
12.5°	765.3	763.6	762.7	762.7	759.2	759.2	756.6	755.8	754.0	752.3
15°	687.1	689.7	691.5	690.6	690.6	688.0	687.1	685.4	682.8	684.5
17.5°	609.8	615.9	617.6	620.3	621.1	619.4	616.8	612.4	609.8	608.1
20°	533.4	542.1	548.2	549.9	549.9	549.0	548.2	541.2	540.3	536.0
22.5°	454.3	466.5	476.9	480.4	481.3	482.1	478.7	473.4	471.7	470.8
25°	380.5	397.0	407.4	414.4	416.1	418.7	417.0	414.4	409.2	408.3
27.5°	313.6	331.0	344.9	353.6	357.9	359.6	361.4	357.0	355.3	351.8
30°	253.7	273.6	288.4	300.6	303.2	306.7	307.5	308.4	304.9	304.9
32.5°	202.4	218.9	237.2	249.3	254.5	257.1	261.5	260.6	260.6	259.7
35°	159.0	175.5	192.0	205.0	211.1	214.6	219.8	222.4	223.3	223.3
37.5°	122.5	139.0	153.8	169.4	175.5	179.8	183.3	184.2	185.0	184.2
40°	93.8	109.5	124.2	134.6	139.0	142.5	146.8	150.3	152.0	152.9
42.5°	73.8	85.1	94.7	105.1	112.1	117.3	118.1	117.3	117.3	116.4
45°	55.6	64.3	79.1	81.7	83.4	84.3	86.9	87.7	87.7	87.7
47.5°	44.3	53.9	53.9	57.3	59.1	61.7	62.5	62.5	62.5	62.5
50°	33.0	34.7	37.4	40.0	40.8	40.8	41.7	41.7	41.7	41.7
52.5°	21.7	24.3	25.2	26.1	26.9	27.8	29.5	30.4	29.5	29.5
55°	15.6	16.5	17.4	19.1	19.1	20.0	23.5	23.5	23.5	23.5
57.5°	10.4	11.3	13.0	15.6	15.6	16.5	17.4	17.4	18.2	18.2
60°	8.7	9.6	10.4	11.3	12.2	13.9	15.6	13.0	13.0	13.0
62.5°	6.9	7.8	8.7	9.6	8.7	9.6	10.4	10.4	10.4	10.4
65°	6.1	6.9	6.1	6.9	7.8	7.8	6.9	7.8	7.8	8.7
67.5°	5.2	5.2	5.2	5.2	5.2	6.1	7.8	8.7	9.6	9.6
70°	3.5	3.5	3.5	5.2	5.2	6.1	6.9	8.7	8.7	9.6
72.5°	2.6	2.6	3.5	4.3	5.2	5.2	6.1	6.1	6.9	6.9
75°	2.6	2.6	3.5	3.5	3.5	3.5	4.3	4.3	4.3	4.3
77.5°	1.7	1.7	1.7	1.7	2.6	2.6	2.6	3.5	3.5	3.5
80°	0.9	0.9	0.9	0.9	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	0.9	0.9	0.9	0.9	0.9	0.0	0.0	0.9	0.9	0.9
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)