

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: P219780

Luminaire Tested: **MRZ-1-REC-X-3-L35-97-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P219780  
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-L35-97-FL-UNV-X-STD-LSL  
Description: MRZ INTEGRAL LED DOWNLIGHT  
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 3  
Light Source: (1) 3500K CCT, 97 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 772.6 lumens  
Efficiency: N/A  
Efficacy: 64.9 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

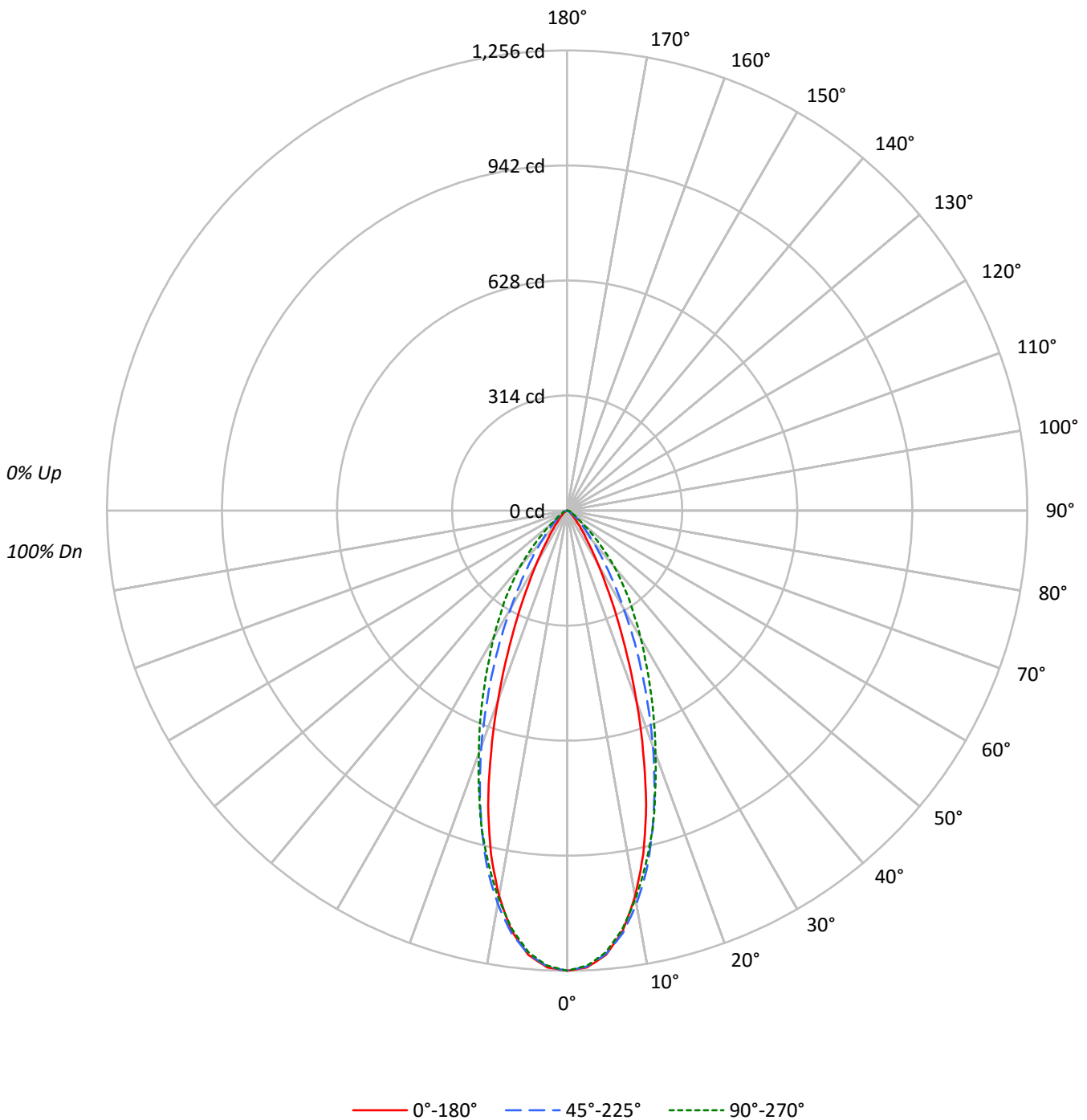
Input Watts (W): 11.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	619635	619635	619635
5°	602737	601597	599319
10°	535309	546180	538715
15°	425483	459961	459961
20°	290402	359392	370208
25°	173550	260052	292389
30°	95711	174501	228509
35°	50232	112209	176897
40°	28725	68464	129521
45°	18351	43888	80520
50°	13125	28937	42139
55°	10838	16688	26580
60°	8980	10164	16874
65°	8055	8055	13309
70°	6636	6636	18176
75°	6481	4384	10866
80°	3125	3125	6535
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	111.6	14.4
10°-20°	242.6	31.4
20°-30°	209.8	27.2
30°-40°	121.2	15.7
40°-50°	54.9	7.1
50°-60°	19.4	2.5
60°-70°	8.6	1.1
70°-80°	4.1	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°	564.0	73.0
0°-40°	685.2	88.7
0°-60°	759.6	98.3
0°-90°	772.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	772.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1256	1256	1256	1256	1256	
5°	1217	1216	1215	1210	1210	111
15°	833	858	900	908	900	226
25°	319	367	478	547	537	150
35°	83	109	186	278	294	56
45°	26	32	63	110	115	22
55°	13	13	19	25	31	11
65°	7	8	7	10	11	7
75°	3	3	2	5	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°	1255.9	1255.9	1255.9	1255.9	1255.9	1255.9	1255.9	1255.9	1255.9	1255.9	1255.9
2.5°	1247.9	1245.6	1245.6	1245.6	1246.7	1246.7	1245.6	1245.6	1245.6	1245.6	1245.6
5°	1217.0	1214.7	1214.7	1215.9	1214.7	1215.9	1214.7	1217.0	1215.9	1214.7	1214.7
7.5°	1157.6	1157.6	1157.6	1158.7	1159.9	1159.9	1159.9	1162.2	1162.2	1164.4	1163.3
10°	1068.5	1070.7	1070.7	1074.2	1077.6	1075.3	1076.5	1083.3	1085.6	1087.9	1090.2
12.5°	959.9	963.3	965.6	967.9	971.3	974.7	975.9	987.3	990.7	995.3	1003.3
15°	833.0	831.9	838.8	842.2	852.5	858.2	861.6	873.0	884.5	891.3	900.5
17.5°	690.2	693.6	697.1	706.2	718.8	726.8	731.3	745.1	763.3	778.2	791.9
20°	553.1	559.9	563.4	573.6	586.2	590.8	603.4	621.6	645.6	666.2	684.5
22.5°	426.2	429.7	438.8	450.2	463.9	474.2	486.8	505.1	530.2	550.8	575.9
25°	318.8	320.0	331.4	341.7	356.5	366.8	373.7	397.7	424.0	450.2	477.7
27.5°	232.0	234.3	241.1	251.4	267.4	274.3	285.7	306.3	331.4	360.0	388.5
30°	168.0	168.0	172.6	184.0	195.4	204.5	212.5	232.0	256.0	280.0	306.3
32.5°	117.7	118.8	123.4	131.4	142.8	149.7	155.4	173.7	193.1	217.1	240.0
35°	83.4	84.6	89.1	93.7	102.8	108.6	113.1	126.8	144.0	164.6	186.3
37.5°	60.6	61.7	64.0	67.4	74.3	77.7	82.3	93.7	107.4	123.4	142.8
40°	44.6	45.7	46.9	50.3	54.9	57.1	60.6	68.6	78.8	92.6	106.3
42.5°	34.3	34.3	35.4	37.7	40.0	42.3	44.6	50.3	58.3	68.6	81.1
45°	26.3	26.3	27.4	29.7	30.9	32.0	34.3	37.7	43.4	51.4	62.9
47.5°	21.7	21.7	21.7	22.9	24.0	25.1	26.3	29.7	33.1	41.1	48.0
50°	17.1	17.1	18.3	18.3	19.4	19.4	20.6	22.9	27.4	33.1	37.7
52.5°	14.9	14.9	14.9	14.9	14.9	16.0	16.0	18.3	22.9	25.1	27.4
55°	12.6	12.6	12.6	12.6	12.6	12.6	13.7	16.0	18.3	20.6	19.4
57.5°	10.3	10.3	10.3	10.3	10.3	11.4	11.4	13.7	14.9	13.7	13.7
60°	9.1	9.1	8.0	8.0	9.1	9.1	10.3	11.4	11.4	10.3	10.3
62.5°	8.0	6.9	6.9	6.9	8.0	9.1	9.1	9.1	8.0	8.0	8.0
65°	6.9	5.7	5.7	6.9	6.9	8.0	8.0	6.9	6.9	6.9	6.9
67.5°	5.7	5.7	5.7	5.7	6.9	6.9	6.9	5.7	5.7	5.7	5.7
70°	4.6	4.6	4.6	4.6	5.7	5.7	4.6	4.6	4.6	4.6	4.6
72.5°	3.4	3.4	3.4	4.6	4.6	4.6	3.4	3.4	3.4	4.6	3.4
75°	3.4	3.4	3.4	3.4	3.4	3.4	2.3	2.3	3.4	3.4	2.3
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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°	1255.9	1255.9	1255.9	1255.9	1255.9	1255.9	1255.9	1255.9	1255.9	1255.9
2.5°	1244.4	1244.4	1243.3	1244.4	1244.4	1244.4	1244.4	1243.3	1244.4	1243.3
5°	1213.6	1213.6	1213.6	1211.3	1210.1	1211.3	1210.1	1209.0	1209.0	1210.1
7.5°	1161.0	1161.0	1159.9	1157.6	1157.6	1156.4	1154.2	1153.0	1151.9	1151.9
10°	1092.4	1091.3	1087.9	1086.7	1086.7	1083.3	1078.7	1078.7	1074.2	1075.3
12.5°	1006.7	1004.5	1003.3	1003.3	998.7	998.7	995.3	994.2	991.9	989.6
15°	903.9	907.3	909.6	908.5	908.5	905.0	903.9	901.6	898.2	900.5
17.5°	802.2	810.2	812.5	815.9	817.1	814.8	811.3	805.6	802.2	799.9
20°	701.6	713.1	721.1	723.3	723.3	722.2	721.1	711.9	710.8	705.1
22.5°	597.6	613.6	627.4	631.9	633.1	634.2	629.6	622.8	620.5	619.4
25°	500.5	522.2	535.9	545.1	547.4	550.8	548.5	545.1	538.2	537.1
27.5°	412.5	435.4	453.7	465.1	470.8	473.1	475.4	469.7	467.4	462.8
30°	333.7	360.0	379.4	395.4	398.8	403.4	404.5	405.7	401.1	401.1
32.5°	266.3	288.0	312.0	328.0	334.8	338.2	344.0	342.8	342.8	341.7
35°	209.1	230.8	252.5	269.7	277.7	282.3	289.1	292.5	293.7	293.7
37.5°	161.1	182.8	202.3	222.8	230.8	236.5	241.1	242.3	243.4	242.3
40°	123.4	144.0	163.4	177.1	182.8	187.4	193.1	197.7	200.0	201.1
42.5°	97.1	112.0	124.6	138.3	147.4	154.3	155.4	154.3	154.3	153.1
45°	73.1	84.6	104.0	107.4	109.7	110.8	114.3	115.4	115.4	115.4
47.5°	58.3	70.8	70.8	75.4	77.7	81.1	82.3	82.3	82.3	82.3
50°	43.4	45.7	49.1	52.6	53.7	53.7	54.9	54.9	54.9	54.9
52.5°	28.6	32.0	33.1	34.3	35.4	36.6	38.9	40.0	38.9	38.9
55°	20.6	21.7	22.9	25.1	25.1	26.3	30.9	30.9	30.9	30.9
57.5°	13.7	14.9	17.1	20.6	20.6	21.7	22.9	22.9	24.0	24.0
60°	11.4	12.6	13.7	14.9	16.0	18.3	20.6	17.1	17.1	17.1
62.5°	9.1	10.3	11.4	12.6	11.4	12.6	13.7	13.7	13.7	13.7
65°	8.0	9.1	8.0	9.1	10.3	10.3	9.1	10.3	10.3	11.4
67.5°	6.9	6.9	6.9	6.9	6.9	8.0	10.3	11.4	12.6	12.6
70°	4.6	4.6	4.6	6.9	6.9	8.0	9.1	11.4	11.4	12.6
72.5°	3.4	3.4	4.6	5.7	6.9	6.9	8.0	8.0	9.1	9.1
75°	3.4	3.4	4.6	4.6	4.6	4.6	5.7	5.7	5.7	5.7
77.5°	2.3	2.3	2.3	2.3	3.4	3.4	3.4	4.6	4.6	4.6
80°	1.1	1.1	1.1	1.1	2.3	2.3	2.3	2.3	2.3	2.3
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)