

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: P226096

Luminaire Tested: **MRZ-1-REC-X-1-L27-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P226096  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14872)  
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-1-L27-80-NFL-UNV-X-STD-LSL  
Description: MRZ INTEGRAL LED DOWNLIGHT  
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 1  
Light Source: (1) 2700K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 473.8 lumens  
Efficiency: N/A  
Efficacy: 87.7 lumens/watt  
Spacing Criteria (0/90/45): 0.4 / 0.87 / 0.54  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

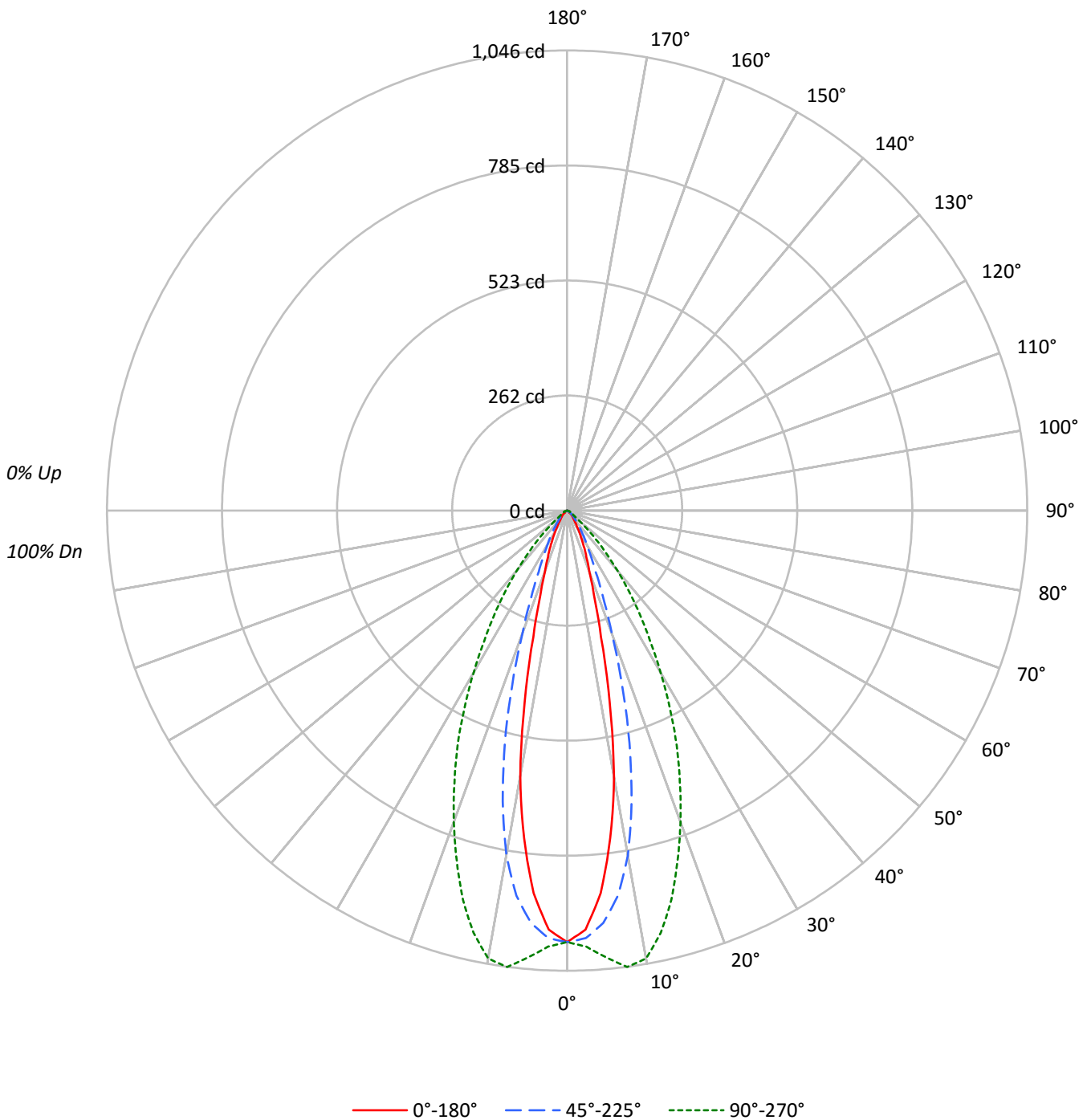
Input Watts (W): 5.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P226096

CATALOG NUMBER: MRZ-1-REC-X-1-L27-80-NFL-UNV-X-STD-LSL

### Luminous Intensity Polar Plot





TEST NUMBER: P226096

CATALOG NUMBER: MRZ-1-REC-X-1-L27-80-NFL-UNV-X-STD-LSL

**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	100	100	100	100	100		
1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94	94	94	94	94	94	94		
2	109	104	100	97	106	102	99	96	99	96	94	96	94	92	93	92	90	88	88	88	88	88	88	88		
3	104	98	93	89	102	96	92	89	94	90	87	91	88	86	89	87	84	83	83	83	83	83	83	83		
4	99	92	87	83	97	91	86	82	89	85	81	87	83	80	85	82	80	78	78	78	78	78	78	78		
5	95	87	81	77	93	86	81	77	84	80	76	83	79	76	81	78	75	74	74	74	74	74	74	74		
6	90	82	77	73	89	81	76	72	80	75	72	79	75	72	77	74	71	70	70	70	70	70	70	70		
7	87	78	73	69	85	77	72	68	76	71	68	75	71	68	74	70	67	66	66	66	66	66	66	66		
8	83	74	69	65	82	74	69	65	73	68	65	72	67	64	71	67	64	63	63	63	63	63	63	63		
9	80	71	65	62	79	70	65	62	69	65	61	69	64	61	68	64	61	60	60	60	60	60	60	60		
10	77	68	62	59	76	67	62	59	66	62	59	66	61	58	65	61	58	57	57	57	57	57	57	57		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	483907	483907	483907
5°	432366	466143	504971
10°	307258	398438	517824
15°	151856	279041	467776
20°	77654	155360	395463
25°	48831	83454	320751
30°	29340	51103	242182
35°	18912	33067	172982
40°	13332	21576	114256
45°	10257	14932	63983
50°	6140	10285	27172
55°	4645	6881	14365
60°	3947	4539	9276
65°	3853	3853	7822
70°	3895	2885	10531
75°	3813	2478	7625
80°	1705	1705	3694
85°	0	0	0



TEST NUMBER: P226096

CATALOG NUMBER: MRZ-1-REC-X-1-L27-80-NFL-UNV-X-STD-LSL

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	85.9	18.1
10°-20°	160.2	33.8
20°-30°	120.3	25.4
30°-40°	66.1	14.0
40°-50°	26.8	5.7
50°-60°	8.5	1.8
60°-70°	4.0	0.9
70°-80°	1.9	0.4
80°-90°	0.1	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°	366.3	77.3
0°-40°	432.4	91.3
0°-60°	467.8	98.7
0°-90°	473.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	473.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	981	981	981	981	981	
5°	873	893	941	997	1020	75
15°	297	350	546	813	916	87
25°	90	100	153	447	589	42
35°	31	38	55	166	287	20
45°	15	14	21	41	92	11
55°	5	6	8	10	17	5
65°	3	4	3	4	7	3
75°	2	1	1	1	4	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



TEST NUMBER: P226096

CATALOG NUMBER: MRZ-1-REC-X-1-L27-80-NFL-UNV-X-STD-LSL

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	980.8	980.8	980.8	980.8	980.8	980.8	980.8	980.8	980.8	980.8	980.8
2.5°	953.3	953.3	952.7	954.6	958.7	958.7	960.7	962.7	964.7	968.7	972.8
5°	873.0	874.3	873.7	881.0	886.3	893.0	895.1	906.4	915.2	928.6	941.2
7.5°	751.1	751.8	757.8	766.5	779.9	787.3	797.3	813.4	832.8	858.2	883.0
10°	613.3	613.3	622.6	635.3	646.0	660.8	668.2	694.2	722.4	757.8	795.3
12.5°	446.5	446.5	462.6	472.0	491.4	504.1	514.8	545.0	581.8	627.3	676.8
15°	297.3	302.6	308.6	321.4	338.8	349.5	356.8	387.6	431.2	482.1	546.3
17.5°	202.2	205.5	209.5	219.6	228.3	233.6	240.3	266.5	297.9	347.4	415.1
20°	147.9	151.3	154.6	159.3	164.7	167.4	172.0	185.4	208.2	243.0	295.9
22.5°	114.4	117.1	119.8	122.5	126.5	128.5	131.2	139.9	151.9	174.1	212.2
25°	89.7	89.7	93.0	95.1	98.4	100.4	103.7	109.8	119.2	131.8	153.3
27.5°	68.3	68.9	71.0	73.6	76.3	78.3	81.7	87.0	93.0	101.8	115.2
30°	51.5	52.8	54.2	56.2	59.5	61.6	63.6	68.3	73.6	80.3	89.7
32.5°	39.5	40.8	41.5	43.5	46.2	47.5	49.5	53.6	58.2	64.9	71.0
35°	31.4	31.4	32.8	33.5	36.2	37.5	38.8	41.5	46.2	50.2	54.9
37.5°	24.7	25.4	26.1	26.8	28.7	29.5	30.1	32.1	34.8	38.8	42.8
40°	20.7	21.4	21.4	21.4	22.0	22.0	22.8	24.1	26.8	29.5	33.5
42.5°	17.4	17.4	17.4	17.4	17.4	17.4	18.0	18.7	20.7	23.4	26.8
45°	14.7	14.0	14.0	14.0	14.0	14.0	14.0	15.4	16.7	18.7	21.4
47.5°	10.7	11.3	11.3	11.3	11.3	11.3	12.1	12.1	13.4	15.4	16.7
50°	8.0	8.7	8.7	9.4	9.4	9.4	9.4	10.0	11.3	12.7	13.4
52.5°	6.7	6.7	6.7	7.3	7.3	7.3	7.3	8.0	9.4	10.0	10.7
55°	5.4	5.4	5.4	5.4	6.0	6.0	6.7	7.3	8.0	8.0	8.0
57.5°	4.6	4.6	4.6	4.6	4.6	5.4	5.4	6.0	6.7	6.0	6.0
60°	4.0	4.0	4.0	4.0	4.0	4.6	4.6	5.4	4.6	4.6	4.6
62.5°	4.0	4.0	3.3	3.3	4.0	4.0	4.0	4.0	4.0	4.0	3.3
65°	3.3	3.3	3.3	3.3	3.3	4.0	4.0	3.3	3.3	2.7	3.3
67.5°	3.3	3.3	2.7	3.3	3.3	3.3	3.3	2.7	2.7	2.7	2.7
70°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.0	2.0	2.0	2.0
72.5°	2.0	2.0	2.0	2.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0
75°	2.0	2.0	2.0	2.0	2.0	1.3	1.3	1.3	1.3	1.3	1.3
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	0.6	0.6
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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



TEST NUMBER: P226096

CATALOG NUMBER: MRZ-1-REC-X-1-L27-80-NFL-UNV-X-STD-LSL

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	980.8	980.8	980.8	980.8	980.8	980.8	980.8	980.8	980.8	980.8
2.5°	976.1	978.7	982.1	985.4	986.8	988.1	990.2	991.5	992.1	992.1
5°	954.6	968.0	980.8	991.5	996.9	1001.5	1009.5	1014.9	1019.6	1019.6
7.5°	909.1	937.2	963.4	986.2	996.1	1006.9	1023.6	1036.3	1043.0	1046.4
10°	834.8	877.0	916.5	951.3	967.4	980.8	1004.9	1021.6	1029.6	1033.6
12.5°	733.7	789.3	839.5	883.0	902.4	918.5	943.3	965.4	976.8	982.8
15°	616.0	681.6	741.1	790.7	812.7	832.8	865.6	892.4	908.5	915.8
17.5°	491.4	572.4	640.1	696.9	717.0	739.1	777.3	808.1	829.5	834.8
20°	376.3	463.9	541.0	599.9	623.3	645.4	688.3	721.0	744.4	753.2
22.5°	273.8	358.9	443.8	506.8	533.6	557.7	600.5	636.0	660.8	669.5
25°	195.5	264.4	348.8	420.5	447.2	471.3	514.2	550.3	575.8	589.2
27.5°	142.6	189.4	263.8	337.4	366.2	391.6	431.2	468.7	492.8	505.4
30°	104.4	135.2	190.8	262.4	293.9	318.7	360.8	392.3	418.4	425.1
32.5°	79.6	97.0	135.2	193.4	225.6	251.7	292.5	322.7	343.4	350.8
35°	60.9	71.6	94.4	138.5	166.0	192.8	231.7	262.4	280.5	287.2
37.5°	47.5	54.9	68.3	97.7	119.2	142.6	180.8	206.2	220.9	229.6
40°	38.1	43.5	52.2	69.6	84.4	101.8	133.9	158.0	172.7	177.4
42.5°	30.8	34.8	39.5	49.5	59.5	72.3	98.4	115.2	127.2	129.9
45°	24.1	26.8	32.1	36.8	40.8	47.5	65.6	81.0	88.4	91.7
47.5°	19.4	22.8	22.8	25.4	28.1	32.8	44.2	52.8	58.2	59.5
50°	14.7	15.4	16.7	18.0	19.4	20.7	26.8	32.1	35.4	35.4
52.5°	10.7	11.3	11.3	12.1	12.7	14.0	17.4	20.1	22.0	22.8
55°	8.0	8.0	8.7	9.4	10.0	10.7	12.7	15.4	16.1	16.7
57.5°	6.0	6.0	6.7	7.3	8.0	8.0	10.0	11.3	12.7	14.0
60°	4.6	4.6	5.4	5.4	6.0	6.7	8.7	9.4	9.4	9.4
62.5°	4.0	4.0	4.0	4.6	4.6	4.6	6.0	8.0	8.7	8.7
65°	3.3	3.3	3.3	3.3	4.0	4.0	4.6	5.4	6.7	6.7
67.5°	2.7	2.7	2.7	2.7	3.3	3.3	4.6	5.4	6.7	7.3
70°	2.0	2.0	2.0	2.7	2.7	3.3	4.0	5.4	6.7	7.3
72.5°	1.3	1.3	2.0	2.0	2.0	2.7	3.3	4.0	4.6	4.6
75°	1.3	1.3	1.3	1.3	1.3	1.3	2.0	3.3	3.3	4.0
77.5°	1.3	1.3	0.6	1.3	1.3	1.3	1.3	2.0	2.7	2.7
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.3
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)