

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: P226161

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P226161  
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-L35-97-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) 3500K CCT, 97 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 386.4 lumens  
Efficiency: N/A  
Efficacy: 71.6 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

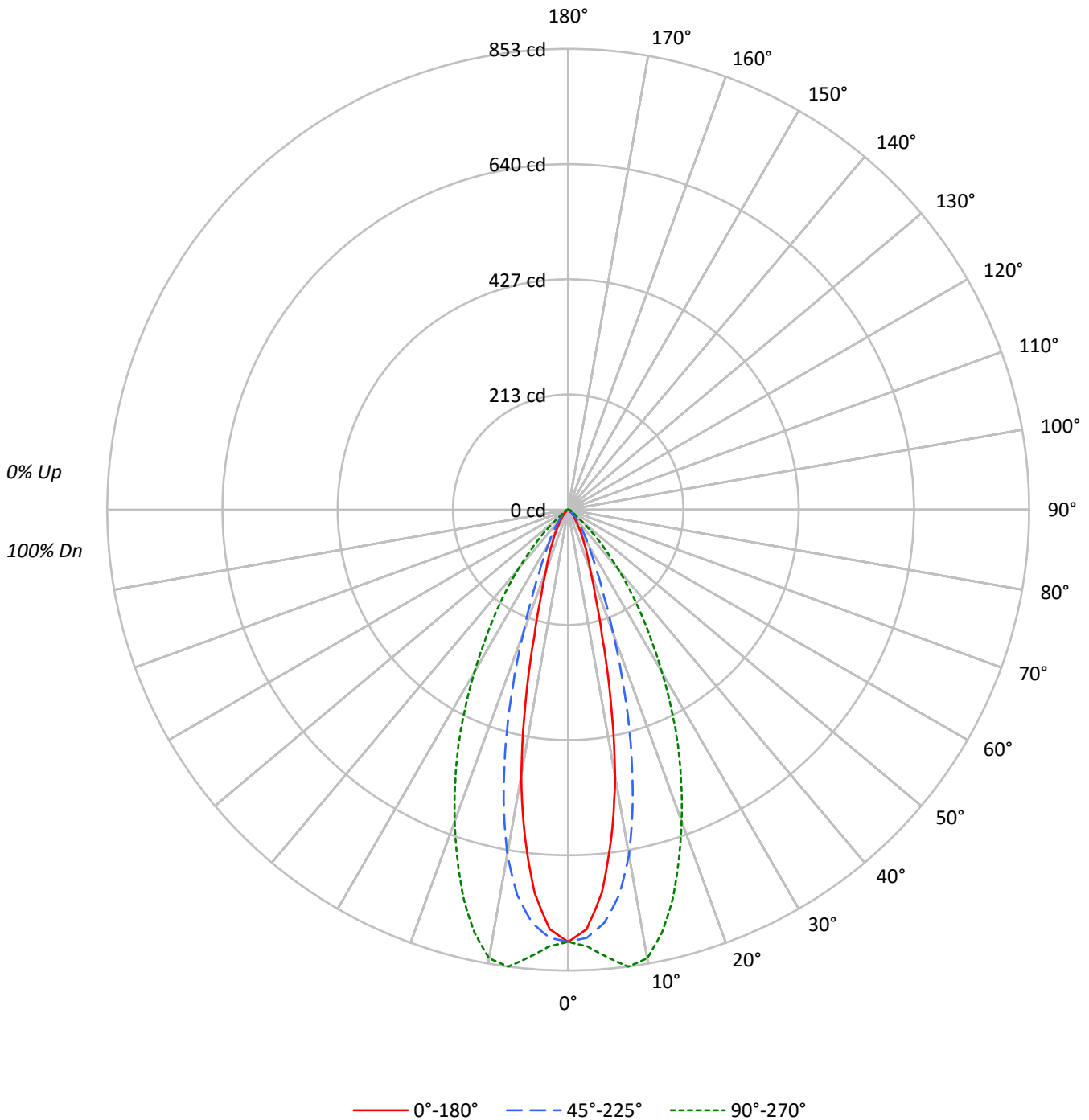
Input Watts (W): 5.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	100	97	106	102	99	96	99	96	94	96	94	92	93	92	90	88
3	104	98	93	89	102	96	92	89	94	90	87	91	88	86	89	87	84	83
4	99	92	87	83	97	91	86	82	89	85	81	87	83	80	85	82	80	78
5	95	87	81	77	93	86	81	77	84	80	76	83	79	76	81	78	75	74
6	90	82	77	73	89	81	76	72	80	75	72	79	75	72	77	74	71	70
7	87	78	73	69	85	77	72	68	76	71	68	75	71	68	74	70	67	66
8	83	74	69	65	82	74	68	65	73	68	65	72	67	64	71	67	64	63
9	80	71	65	62	79	70	65	62	69	65	61	69	64	61	68	64	61	60
10	77	68	62	59	76	67	62	59	66	62	59	66	61	58	65	61	58	57

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

	0°	45°	90°
0°	394556	394556	394556
5°	352480	380066	411763
10°	250495	324842	422235
15°	123814	227554	381402
20°	63320	126693	322429
25°	39794	68048	261522
30°	23928	41645	197460
35°	15419	26923	141060
40°	10949	17583	93131
45°	8443	12211	52191
50°	4989	8366	22183
55°	3785	5591	11784
60°	3256	3750	7598
65°	3269	3269	6304
70°	3029	2308	8655
75°	3050	2097	6291
80°	1421	1421	3125
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	70.0	18.1
10°-20°	130.6	33.8
20°-30°	98.1	25.4
30°-40°	53.9	14.0
40°-50°	21.9	5.7
50°-60°	7.0	1.8
60°-70°	3.3	0.9
70°-80°	1.6	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°	298.7	77.3
0°-40°	352.6	91.3
0°-60°	381.4	98.7
0°-90°	386.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	386.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	800	800	800	800	800	
5°	712	728	767	813	831	61
15°	242	285	446	663	747	71
25°	73	82	125	365	480	34
35°	26	30	45	135	234	17
45°	12	11	18	33	75	9
55°	4	5	6	8	14	4
65°	3	3	3	3	5	3
75°	2	1	1	1	3	1
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°	799.7	799.7	799.7	799.7	799.7	799.7	799.7	799.7	799.7	799.7	799.7
2.5°	777.3	777.3	776.7	778.3	781.6	781.6	783.3	784.9	786.5	789.8	793.2
5°	711.7	712.9	712.4	718.3	722.7	728.2	729.8	739.1	746.2	757.1	767.4
7.5°	612.5	613.0	617.9	625.0	635.9	641.9	650.1	663.2	679.1	699.8	720.0
10°	500.0	500.0	507.7	518.0	526.8	538.7	544.7	566.1	589.0	617.9	648.4
12.5°	364.0	364.0	377.2	384.8	400.6	411.0	419.7	444.3	474.4	511.4	551.9
15°	242.4	246.7	251.6	262.0	276.2	284.9	290.9	316.0	351.5	393.0	445.5
17.5°	164.9	167.6	170.9	179.1	186.1	190.5	195.9	217.3	242.9	283.3	338.4
20°	120.6	123.4	126.0	129.9	134.3	136.5	140.2	151.2	169.8	198.2	241.3
22.5°	93.4	95.5	97.7	99.9	103.2	104.8	106.9	114.1	123.9	141.9	173.0
25°	73.1	73.1	75.9	77.5	80.3	81.9	84.6	89.5	97.1	107.6	125.0
27.5°	55.7	56.2	57.8	60.1	62.2	63.8	66.6	71.0	75.9	82.9	93.9
30°	42.0	43.1	44.2	45.9	48.6	50.3	51.9	55.7	60.1	65.5	73.1
32.5°	32.2	33.3	33.8	35.4	37.7	38.7	40.3	43.7	47.5	52.9	57.8
35°	25.6	25.6	26.8	27.3	29.5	30.5	31.7	33.8	37.7	41.0	44.7
37.5°	20.2	20.7	21.2	21.9	23.5	24.0	24.5	26.2	28.4	31.7	34.9
40°	17.0	17.5	17.5	17.5	18.0	18.0	18.6	19.6	21.9	24.0	27.3
42.5°	14.2	14.2	14.2	14.2	14.2	14.2	14.7	15.3	17.0	19.1	21.9
45°	12.1	11.4	11.4	11.4	11.4	11.4	11.4	12.6	13.7	15.3	17.5
47.5°	8.7	9.3	9.3	9.3	9.3	9.3	9.8	9.8	10.9	12.6	13.7
50°	6.5	7.1	7.1	7.7	7.7	7.7	7.7	8.2	9.3	10.4	10.9
52.5°	5.4	5.4	5.4	6.0	6.0	6.0	6.0	6.5	7.7	8.2	8.7
55°	4.4	4.4	4.4	4.4	4.9	4.9	5.4	6.0	6.5	6.5	6.5
57.5°	3.8	3.8	3.8	3.8	3.8	4.4	4.4	4.9	5.4	4.9	4.9
60°	3.3	3.3	3.3	3.3	3.3	3.8	3.8	4.4	3.8	3.8	3.8
62.5°	3.3	3.3	2.8	2.8	3.3	3.3	3.3	3.3	3.3	3.3	2.8
65°	2.8	2.8	2.8	2.8	2.8	3.3	3.3	2.8	2.8	2.1	2.8
67.5°	2.8	2.8	2.1	2.8	2.8	2.8	2.8	2.1	2.1	2.1	2.1
70°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.6	1.6	1.6	1.6
72.5°	1.6	1.6	1.6	2.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6
75°	1.6	1.6	1.6	1.6	1.6	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.0	0.5	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



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	799.7	799.7	799.7	799.7	799.7	799.7	799.7	799.7	799.7	799.7
2.5°	795.8	798.1	800.7	803.5	804.6	805.6	807.3	808.4	809.0	809.0
5°	778.3	789.3	799.7	808.4	812.8	816.6	823.1	827.5	831.4	831.4
7.5°	741.3	764.2	785.5	804.0	812.3	820.9	834.6	844.9	850.5	853.1
10°	680.7	715.0	747.3	775.7	788.8	799.7	819.3	833.0	839.5	842.8
12.5°	598.3	643.5	684.5	720.0	735.8	748.9	769.1	787.1	796.4	801.3
15°	502.1	555.7	604.3	644.6	662.6	679.1	705.8	727.6	740.8	746.7
17.5°	400.6	466.7	521.9	568.2	584.6	602.7	633.7	658.8	676.3	680.7
20°	306.7	378.2	441.1	489.1	508.2	526.2	561.1	587.8	606.9	614.1
22.5°	223.3	292.5	361.9	413.2	435.0	454.6	489.6	518.6	538.7	545.9
25°	159.3	215.6	284.4	342.8	364.7	384.3	419.2	448.7	469.5	480.4
27.5°	116.2	154.4	215.0	275.1	298.6	319.3	351.5	382.1	401.7	412.2
30°	85.2	110.2	155.6	214.0	239.6	259.9	294.2	319.8	341.2	346.6
32.5°	65.0	79.2	110.2	157.7	184.0	205.2	238.5	263.1	280.0	286.0
35°	49.6	58.4	76.9	113.0	135.3	157.2	188.9	214.0	228.7	234.2
37.5°	38.7	44.7	55.7	79.7	97.1	116.2	147.4	168.1	180.1	187.2
40°	31.2	35.4	42.6	56.8	68.7	82.9	109.2	128.8	140.9	144.6
42.5°	25.1	28.4	32.2	40.3	48.6	58.9	80.3	93.9	103.7	105.9
45°	19.6	21.9	26.2	30.0	33.3	38.7	53.5	66.1	72.0	74.8
47.5°	15.8	18.6	18.6	20.7	22.9	26.8	36.1	43.1	47.5	48.6
50°	12.1	12.6	13.7	14.7	15.8	17.0	21.9	26.2	28.9	28.9
52.5°	8.7	9.3	9.3	9.8	10.4	11.4	14.2	16.3	18.0	18.6
55°	6.5	6.5	7.1	7.7	8.2	8.7	10.4	12.6	13.1	13.7
57.5°	4.9	4.9	5.4	6.0	6.5	6.5	8.2	9.3	10.4	11.4
60°	3.8	3.8	4.4	4.4	4.9	5.4	7.1	7.7	7.7	7.7
62.5°	3.3	3.3	3.3	3.8	3.8	3.8	4.9	6.5	7.1	7.1
65°	2.8	2.8	2.8	2.8	3.3	3.3	3.8	4.4	5.4	5.4
67.5°	2.1	2.1	2.1	2.1	2.8	2.8	3.8	4.4	5.4	6.0
70°	1.6	1.6	1.6	2.1	2.1	2.8	3.3	4.4	5.4	6.0
72.5°	1.1	1.1	1.6	1.6	1.6	2.1	2.8	3.3	3.8	3.8
75°	1.1	1.1	1.1	1.1	1.1	1.1	1.6	2.8	2.8	3.3
77.5°	1.1	1.1	0.5	1.1	1.1	1.1	1.1	1.6	2.1	2.1
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.1
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)