

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: P219610

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P219610  
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-1H-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: 432.9 lumens  
Efficiency: N/A  
Efficacy: 63.7 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

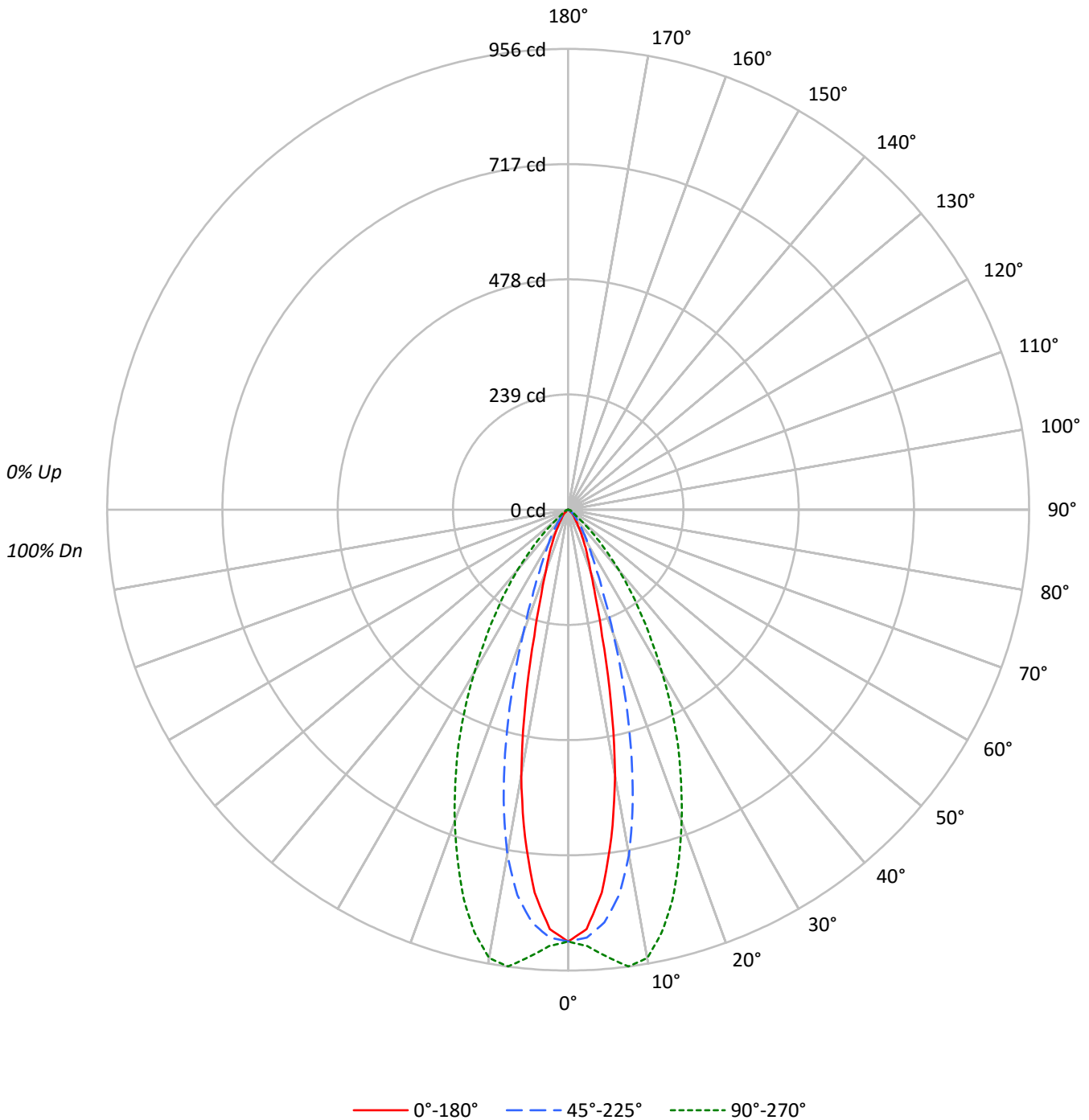
Input Watts (W): 6.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

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

	0°	45°	90°
0°	441969	441969	441969
5°	394874	425779	461240
10°	280605	363920	472985
15°	138678	254881	427271
20°	70933	141919	361177
25°	44585	76214	292933
30°	26833	46659	221217
35°	17286	30175	157985
40°	12237	19708	104338
45°	9420	13676	58471
50°	5603	9364	24869
55°	4215	6279	13161
60°	3651	4243	8486
65°	3619	3619	7121
70°	3462	2597	9665
75°	3431	2288	7053
80°	1705	1705	3410
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	78.5	18.1
10°-20°	146.3	33.8
20°-30°	109.8	25.4
30°-40°	60.4	14.0
40°-50°	24.5	5.7
50°-60°	7.8	1.8
60°-70°	3.7	0.9
70°-80°	1.8	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°	334.6	77.3
0°-40°	395.0	91.2
0°-60°	427.3	98.7
0°-90°	432.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	432.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	896	896	896	896	896	
5°	797	816	860	910	931	68
15°	272	319	499	742	836	80
25°	82	92	140	408	538	38
35°	29	34	50	152	262	19
45°	14	13	20	37	84	10
55°	5	6	7	9	15	5
65°	3	4	3	4	6	3
75°	2	1	1	1	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°	895.8	895.8	895.8	895.8	895.8	895.8	895.8	895.8	895.8	895.8	895.8
2.5°	870.7	870.7	870.1	871.9	875.6	875.6	877.5	879.3	881.1	884.8	888.5
5°	797.3	798.6	798.0	804.7	809.6	815.7	817.5	827.9	835.9	848.1	859.7
7.5°	686.1	686.7	692.2	700.1	712.4	719.1	728.3	742.9	760.7	783.9	806.5
10°	560.1	560.1	568.7	580.3	590.1	603.5	610.2	634.1	659.8	692.2	726.4
12.5°	407.8	407.8	422.5	431.1	448.8	460.4	470.2	497.7	531.4	572.9	618.2
15°	271.5	276.4	281.9	293.5	309.4	319.2	325.9	354.0	393.8	440.3	499.0
17.5°	184.7	187.7	191.4	200.6	208.5	213.4	219.5	243.4	272.1	317.4	379.1
20°	135.1	138.2	141.2	145.5	150.4	152.9	157.1	169.4	190.2	222.0	270.3
22.5°	104.6	107.0	109.5	111.9	115.6	117.4	119.8	127.8	138.8	159.0	193.8
25°	81.9	81.9	85.0	86.8	89.9	91.7	94.8	100.3	108.8	120.5	140.0
27.5°	62.4	63.0	64.8	67.3	69.7	71.5	74.6	79.5	85.0	92.9	105.2
30°	47.1	48.3	49.5	51.4	54.4	56.3	58.1	62.4	67.3	73.4	81.9
32.5°	36.1	37.3	37.9	39.7	42.2	43.4	45.2	48.9	53.2	59.3	64.8
35°	28.7	28.7	30.0	30.6	33.0	34.2	35.5	37.9	42.2	45.9	50.1
37.5°	22.6	23.2	23.8	24.5	26.3	26.9	27.5	29.4	31.8	35.5	39.1
40°	19.0	19.6	19.6	19.6	20.2	20.2	20.8	22.0	24.5	26.9	30.6
42.5°	15.9	15.9	15.9	15.9	15.9	15.9	16.5	17.1	19.0	21.4	24.5
45°	13.5	12.8	12.8	12.8	12.8	12.8	12.8	14.1	15.3	17.1	19.6
47.5°	9.8	10.4	10.4	10.4	10.4	10.4	11.0	11.0	12.2	14.1	15.3
50°	7.3	7.9	7.9	8.6	8.6	8.6	8.6	9.2	10.4	11.6	12.2
52.5°	6.1	6.1	6.1	6.7	6.7	6.7	6.7	7.3	8.6	9.2	9.8
55°	4.9	4.9	4.9	4.9	5.5	5.5	6.1	6.7	7.3	7.3	7.3
57.5°	4.3	4.3	4.3	4.3	4.3	4.9	4.9	5.5	6.1	5.5	5.5
60°	3.7	3.7	3.7	3.7	3.7	4.3	4.3	4.9	4.3	4.3	4.3
62.5°	3.7	3.7	3.1	3.1	3.7	3.7	3.7	3.7	3.7	3.7	3.1
65°	3.1	3.1	3.1	3.1	3.1	3.7	3.7	3.1	3.1	2.4	3.1
67.5°	3.1	3.1	2.4	3.1	3.1	3.1	3.1	2.4	2.4	2.4	2.4
70°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.8	1.8	1.8	1.8
72.5°	1.8	1.8	1.8	2.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8
75°	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	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



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	895.8	895.8	895.8	895.8	895.8	895.8	895.8	895.8	895.8	895.8
2.5°	891.5	894.0	897.0	900.1	901.3	902.5	904.4	905.6	906.2	906.2
5°	871.9	884.2	895.8	905.6	910.5	914.8	922.1	927.0	931.3	931.3
7.5°	830.4	856.1	879.9	900.7	909.9	919.6	934.9	946.5	952.7	955.7
10°	762.5	801.0	837.1	868.9	883.6	895.8	917.8	933.1	940.4	944.1
12.5°	670.2	720.9	766.8	806.5	824.3	838.9	861.6	881.7	892.1	897.6
15°	562.5	622.5	676.9	722.1	742.3	760.7	790.6	815.1	829.8	836.5
17.5°	448.8	522.8	584.6	636.5	654.9	675.1	709.9	738.0	757.6	762.5
20°	343.6	423.7	494.1	547.9	569.3	589.5	628.6	658.5	679.9	687.9
22.5°	250.1	327.7	405.4	462.9	487.3	509.3	548.5	580.9	603.5	611.5
25°	178.5	241.5	318.6	384.0	408.5	430.5	469.6	502.6	525.9	538.1
27.5°	130.2	173.0	240.9	308.2	334.5	357.7	393.8	428.0	450.0	461.7
30°	95.4	123.5	174.3	239.7	268.4	291.1	329.6	358.3	382.2	388.3
32.5°	72.8	88.7	123.5	176.7	206.1	229.9	267.2	294.7	313.7	320.4
35°	55.6	65.4	86.2	126.6	151.6	176.1	211.6	239.7	256.2	262.3
37.5°	43.4	50.1	62.4	89.3	108.8	130.2	165.1	188.3	201.8	209.7
40°	34.9	39.7	47.7	63.6	77.0	92.9	122.3	144.3	157.8	162.0
42.5°	28.1	31.8	36.1	45.2	54.4	66.0	89.9	105.2	116.2	118.6
45°	22.0	24.5	29.4	33.6	37.3	43.4	59.9	74.0	80.7	83.8
47.5°	17.7	20.8	20.8	23.2	25.7	30.0	40.4	48.3	53.2	54.4
50°	13.5	14.1	15.3	16.5	17.7	19.0	24.5	29.4	32.4	32.4
52.5°	9.8	10.4	10.4	11.0	11.6	12.8	15.9	18.3	20.2	20.8
55°	7.3	7.3	7.9	8.6	9.2	9.8	11.6	14.1	14.7	15.3
57.5°	5.5	5.5	6.1	6.7	7.3	7.3	9.2	10.4	11.6	12.8
60°	4.3	4.3	4.9	4.9	5.5	6.1	7.9	8.6	8.6	8.6
62.5°	3.7	3.7	3.7	4.3	4.3	4.3	5.5	7.3	7.9	7.9
65°	3.1	3.1	3.1	3.1	3.7	3.7	4.3	4.9	6.1	6.1
67.5°	2.4	2.4	2.4	2.4	3.1	3.1	4.3	4.9	6.1	6.7
70°	1.8	1.8	1.8	2.4	2.4	3.1	3.7	4.9	6.1	6.7
72.5°	1.2	1.2	1.8	1.8	1.8	2.4	3.1	3.7	4.3	4.3
75°	1.2	1.2	1.2	1.2	1.2	1.2	1.8	3.1	3.1	3.7
77.5°	1.2	1.2	0.6	1.2	1.2	1.2	1.2	1.8	2.4	2.4
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.2
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)