

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: P219764

Luminaire Tested: **MRZ-1-REC-X-1H-L30-97-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P219764  
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-1H-L30-97-FL-UNV-X-STD-LSL  
Description: MRZ INTEGRAL LED DOWNLIGHT  
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 1  
Light Source: (1) 3000K CCT, 97 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 395.5 lumens  
Efficiency: N/A  
Efficacy: 58.2 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

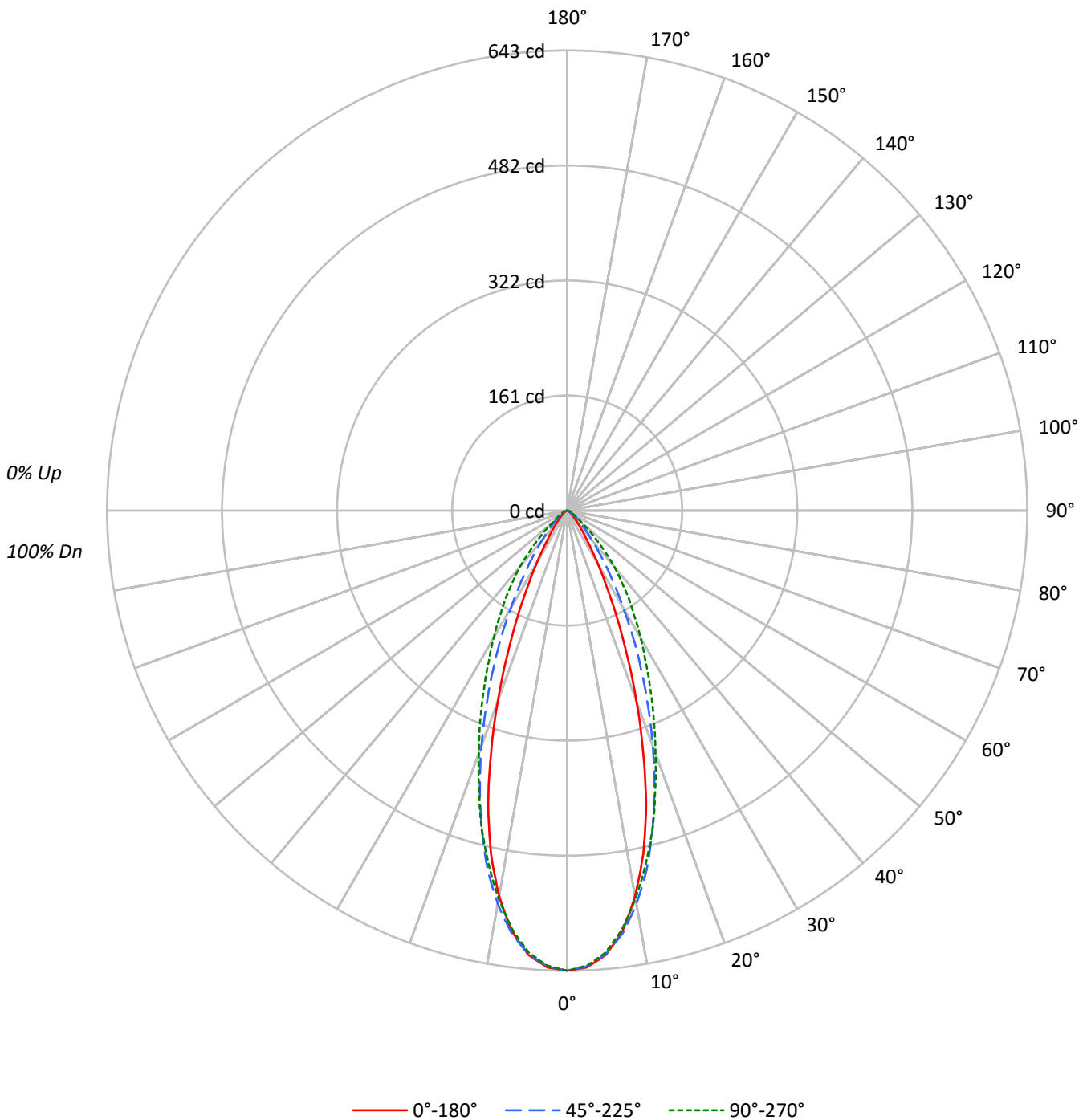
Input Watts (W): 6.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	317194	317194	317194
5°	308550	308005	306816
10°	274042	279603	275795
15°	217849	235471	235471
20°	148640	183975	189488
25°	88843	133102	149651
30°	48995	89330	116961
35°	25718	57460	90526
40°	14685	35037	66338
45°	9420	22467	41237
50°	6755	14814	21569
55°	5505	8516	13591
60°	4638	5230	8683
65°	4086	4086	6771
70°	3318	3318	9232
75°	3431	2288	5528
80°	1705	1705	3410
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	57.1	14.4
10°-20°	124.2	31.4
20°-30°	107.4	27.2
30°-40°	62.1	15.7
40°-50°	28.1	7.1
50°-60°	9.9	2.5
60°-70°	4.4	1.1
70°-80°	2.1	0.5
80°-90°	0.2	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°	288.7	73.0
0°-40°	350.8	88.7
0°-60°	388.8	98.3
0°-90°	395.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	395.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	643	643	643	643	643	
5°	623	622	622	620	620	57
15°	426	439	461	465	461	116
25°	163	188	244	280	275	77
35°	43	56	95	142	150	29
45°	14	16	32	56	59	11
55°	6	6	10	13	16	6
65°	4	4	4	5	6	3
75°	2	2	1	2	3	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°	642.9	642.9	642.9	642.9	642.9	642.9	642.9	642.9	642.9	642.9	642.9
2.5°	638.8	637.6	637.6	637.6	638.2	638.2	637.6	637.6	637.6	637.6	637.6
5°	623.0	621.9	621.9	622.4	621.9	622.4	621.9	623.0	622.4	621.9	621.9
7.5°	592.6	592.6	592.6	593.2	593.8	593.8	593.8	594.9	594.9	596.1	595.5
10°	547.0	548.1	548.1	549.9	551.7	550.5	551.1	554.6	555.7	556.9	558.1
12.5°	491.4	493.2	494.3	495.5	497.2	499.0	499.6	505.4	507.2	509.5	513.6
15°	426.5	425.9	429.4	431.1	436.4	439.3	441.1	446.9	452.8	456.3	461.0
17.5°	353.3	355.1	356.8	361.5	368.0	372.1	374.4	381.4	390.8	398.4	405.4
20°	283.1	286.6	288.4	293.7	300.1	302.4	308.9	318.2	330.5	341.1	350.4
22.5°	218.2	220.0	224.6	230.5	237.5	242.8	249.2	258.6	271.4	282.0	294.8
25°	163.2	163.8	169.6	174.9	182.5	187.8	191.3	203.6	217.0	230.5	244.5
27.5°	118.8	119.9	123.4	128.7	136.9	140.4	146.2	156.8	169.6	184.3	198.9
30°	86.0	86.0	88.3	94.2	100.0	104.7	108.8	118.8	131.0	143.3	156.8
32.5°	60.3	60.8	63.2	67.3	73.1	76.6	79.6	88.9	98.9	111.1	122.8
35°	42.7	43.3	45.6	48.0	52.6	55.6	57.9	64.9	73.7	84.2	95.4
37.5°	31.0	31.6	32.8	34.5	38.0	39.8	42.1	48.0	55.0	63.2	73.1
40°	22.8	23.4	24.0	25.7	28.1	29.2	31.0	35.1	40.4	47.4	54.4
42.5°	17.5	17.5	18.1	19.3	20.5	21.6	22.8	25.7	29.8	35.1	41.5
45°	13.5	13.5	14.0	15.2	15.8	16.4	17.5	19.3	22.2	26.3	32.2
47.5°	11.1	11.1	11.1	11.7	12.3	12.9	13.5	15.2	17.0	21.1	24.6
50°	8.8	8.8	9.4	9.4	9.9	9.9	10.5	11.7	14.0	17.0	19.3
52.5°	7.6	7.6	7.6	7.6	7.6	8.2	8.2	9.4	11.7	12.9	14.0
55°	6.4	6.4	6.4	6.4	6.4	6.4	7.0	8.2	9.4	10.5	9.9
57.5°	5.3	5.3	5.3	5.3	5.3	5.8	5.8	7.0	7.6	7.0	7.0
60°	4.7	4.7	4.1	4.1	4.7	4.7	5.3	5.8	5.8	5.3	5.3
62.5°	4.1	3.5	3.5	3.5	4.1	4.7	4.7	4.7	4.1	4.1	4.1
65°	3.5	2.9	2.9	3.5	3.5	4.1	4.1	3.5	3.5	3.5	3.5
67.5°	2.9	2.9	2.9	2.9	3.5	3.5	3.5	2.9	2.9	2.9	2.9
70°	2.3	2.3	2.3	2.3	2.9	2.9	2.3	2.3	2.3	2.3	2.3
72.5°	1.8	1.8	1.8	2.3	2.3	2.3	1.8	1.8	1.8	2.3	1.8
75°	1.8	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.8	1.8	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
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°	642.9	642.9	642.9	642.9	642.9	642.9	642.9	642.9	642.9	642.9
2.5°	637.1	637.1	636.5	637.1	637.1	637.1	637.1	636.5	637.1	636.5
5°	621.3	621.3	621.3	620.1	619.5	620.1	619.5	618.9	618.9	619.5
7.5°	594.4	594.4	593.8	592.6	592.6	592.0	590.8	590.3	589.7	589.7
10°	559.3	558.7	556.9	556.3	556.3	554.6	552.2	552.2	549.9	550.5
12.5°	515.4	514.2	513.6	513.6	511.3	511.3	509.5	508.9	507.8	506.6
15°	462.7	464.5	465.7	465.1	465.1	463.3	462.7	461.6	459.8	461.0
17.5°	410.7	414.8	415.9	417.7	418.3	417.1	415.3	412.4	410.7	409.5
20°	359.2	365.0	369.1	370.3	370.3	369.7	369.1	364.5	363.9	360.9
22.5°	306.0	314.1	321.2	323.5	324.1	324.7	322.3	318.8	317.7	317.1
25°	256.2	267.3	274.4	279.0	280.2	282.0	280.8	279.0	275.5	274.9
27.5°	211.2	222.9	232.2	238.1	241.0	242.2	243.4	240.4	239.3	236.9
30°	170.8	184.3	194.2	202.4	204.2	206.5	207.1	207.7	205.3	205.3
32.5°	136.3	147.4	159.7	167.9	171.4	173.2	176.1	175.5	175.5	174.9
35°	107.1	118.2	129.3	138.1	142.2	144.5	148.0	149.8	150.3	150.3
37.5°	82.5	93.6	103.5	114.1	118.2	121.1	123.4	124.0	124.6	124.0
40°	63.2	73.7	83.7	90.7	93.6	95.9	98.9	101.2	102.4	103.0
42.5°	49.7	57.3	63.8	70.8	75.5	79.0	79.6	79.0	79.0	78.4
45°	37.4	43.3	53.2	55.0	56.2	56.7	58.5	59.1	59.1	59.1
47.5°	29.8	36.3	36.3	38.6	39.8	41.5	42.1	42.1	42.1	42.1
50°	22.2	23.4	25.2	26.9	27.5	27.5	28.1	28.1	28.1	28.1
52.5°	14.6	16.4	17.0	17.5	18.1	18.7	19.9	20.5	19.9	19.9
55°	10.5	11.1	11.7	12.9	12.9	13.5	15.8	15.8	15.8	15.8
57.5°	7.0	7.6	8.8	10.5	10.5	11.1	11.7	11.7	12.3	12.3
60°	5.8	6.4	7.0	7.6	8.2	9.4	10.5	8.8	8.8	8.8
62.5°	4.7	5.3	5.8	6.4	5.8	6.4	7.0	7.0	7.0	7.0
65°	4.1	4.7	4.1	4.7	5.3	5.3	4.7	5.3	5.3	5.8
67.5°	3.5	3.5	3.5	3.5	3.5	4.1	5.3	5.8	6.4	6.4
70°	2.3	2.3	2.3	3.5	3.5	4.1	4.7	5.8	5.8	6.4
72.5°	1.8	1.8	2.3	2.9	3.5	3.5	4.1	4.1	4.7	4.7
75°	1.8	1.8	2.3	2.3	2.3	2.3	2.9	2.9	2.9	2.9
77.5°	1.2	1.2	1.2	1.2	1.8	1.8	1.8	2.3	2.3	2.3
80°	0.6	0.6	0.6	0.6	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.6	0.6	0.6
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)