

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: P219888

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219888
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14882)
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-WFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
55 DEGREE WIDE 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: 356.5 lumens
Efficiency: N/A
Efficacy: 52.4 lumens/watt
Spacing Criteria (0/90/45): 0.88 / 0.83 / 0.87
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

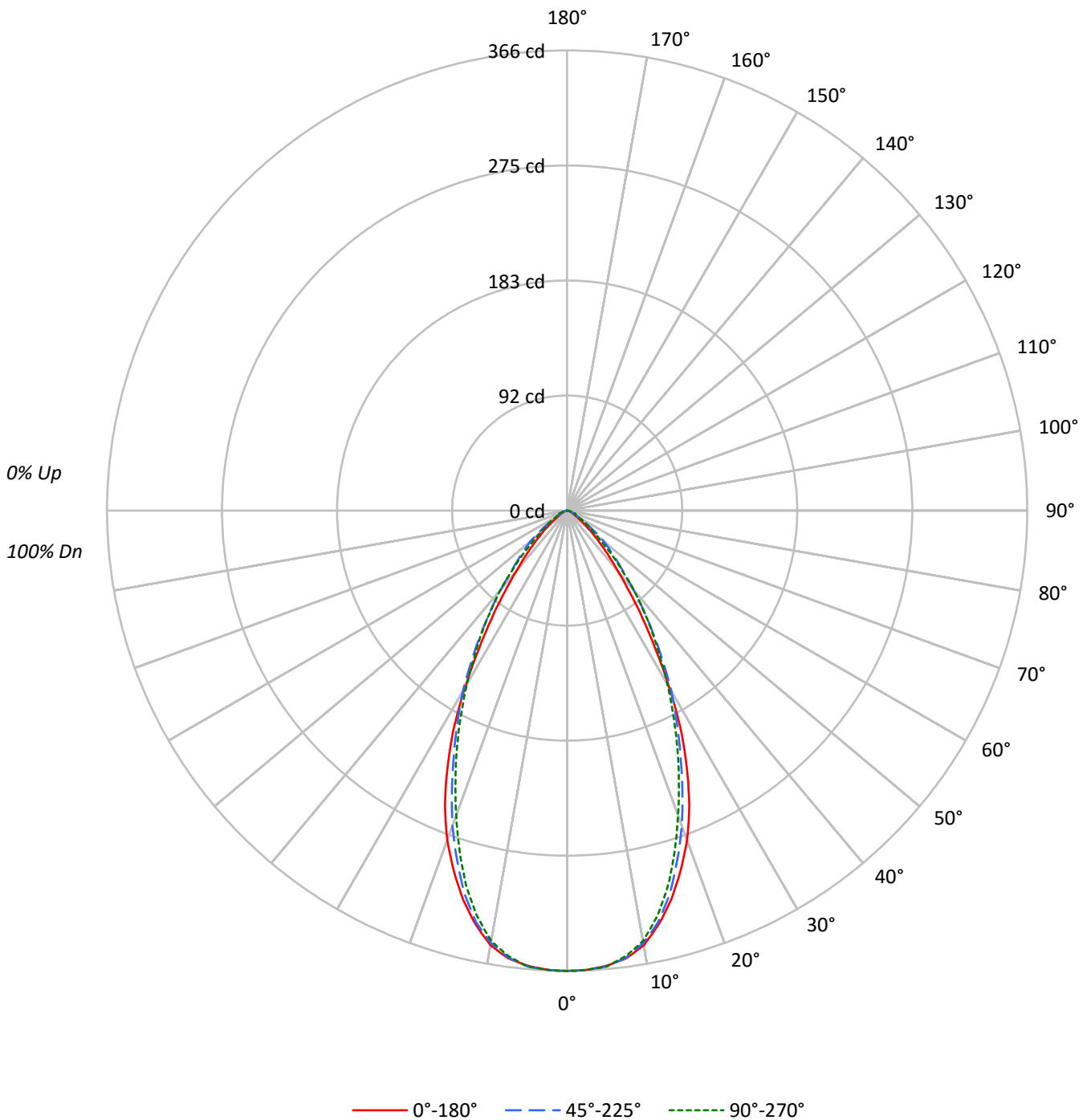
Input Watts (W): 6.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92					92			
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84					84			
3	100	93	88	83	98	92	87	83	89	85	81	87	83	80	84	81	79	77					77			
4	95	86	80	76	93	85	80	75	83	78	74	81	77	73	79	76	73	71					71			
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65					65			
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61					61			
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	66	61	58	56					56			
8	76	66	59	55	75	65	59	55	64	58	54	63	58	54	62	57	54	52					52			
9	72	62	55	51	71	61	55	51	60	55	51	59	54	51	58	54	50	49					49			
10	68	58	52	48	67	58	52	48	57	51	48	56	51	47	55	51	47	46					46			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	180676	180676	180676
5°	179929	180227	180227
10°	175848	174946	174094
15°	163451	161050	158088
20°	146487	140082	135461
25°	122595	115899	112742
30°	92634	94343	90982
35°	63061	71855	71192
40°	40705	52749	53135
45°	26096	38376	35515
50°	16579	29167	22029
55°	10064	16601	16085
60°	6315	9276	10361
65°	4786	6888	7472
70°	4183	5914	10098
75°	3431	4384	6672
80°	1705	3410	5114
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	34.2	9.6
10°-20°	87.3	24.5
20°-30°	98.3	27.6
30°-40°	72.7	20.4
40°-50°	38.8	10.9
50°-60°	15.9	4.5
60°-70°	6.2	1.7
70°-80°	2.8	0.8
80°-90°	0.3	0.1
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°	219.9	61.7
0°-40°	292.6	82.1
0°-60°	347.3	97.4
0°-90°	356.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	356.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	366	366	366	366	366	
5°	363	363	364	364	364	34
15°	320	317	315	311	310	89
25°	225	222	213	209	207	102
35°	105	115	119	118	118	66
45°	37	42	55	54	51	30
55°	12	14	19	18	19	11
65°	4	6	6	7	6	4
75°	2	2	2	4	4	2
85°	0	0	0	0	0	0
90°	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°	366.2	366.2	366.2	366.2	366.2	366.2	366.2	366.2	366.2	366.2	366.2
2.5°	365.6	365.6	365.6	365.6	365.6	365.6	365.6	365.6	365.6	365.6	365.6
5°	363.3	363.3	363.3	363.3	363.3	363.3	363.3	363.9	363.3	363.9	363.9
7.5°	359.2	358.6	358.6	358.6	358.6	358.6	358.6	358.6	358.6	358.6	358.6
10°	351.0	350.4	350.4	349.2	349.8	349.2	349.2	349.2	349.2	349.2	349.2
12.5°	337.0	337.0	336.4	335.8	335.2	335.2	335.2	335.2	335.2	335.2	335.2
15°	320.0	320.0	319.4	318.2	317.7	317.1	316.5	316.5	315.9	315.9	315.3
17.5°	300.1	300.1	298.9	297.8	296.6	296.0	294.8	293.7	293.1	292.5	291.3
20°	279.0	279.0	277.3	276.7	274.4	273.8	272.0	270.3	267.9	267.3	266.8
22.5°	253.9	252.7	252.1	252.1	250.4	249.2	248.0	245.7	242.2	241.0	239.3
25°	225.2	224.6	224.6	224.1	223.5	222.3	222.9	221.1	218.2	215.9	212.9
27.5°	195.4	194.8	194.2	194.8	196.0	196.0	195.4	194.2	193.1	190.1	188.4
30°	162.6	162.6	163.8	165.6	167.3	167.9	168.5	167.9	167.3	165.6	165.6
32.5°	130.5	131.6	132.8	136.9	138.6	139.8	140.4	142.2	142.2	142.2	141.0
35°	104.7	104.7	107.1	110.0	112.3	114.7	115.2	117.6	119.3	119.3	119.3
37.5°	81.3	81.9	84.2	86.6	89.5	90.7	91.8	95.4	97.7	98.9	99.5
40°	63.2	64.4	65.5	67.9	70.8	71.4	72.5	75.5	78.4	80.7	81.9
42.5°	49.1	49.1	50.3	52.1	53.8	55.6	56.7	58.5	62.0	63.8	66.1
45°	37.4	38.0	38.6	39.8	41.5	42.1	43.3	45.6	48.0	50.3	55.0
47.5°	28.7	28.7	29.3	29.8	31.6	32.2	32.8	35.1	37.4	42.1	45.6
50°	21.6	21.6	21.6	22.2	23.4	24.6	25.2	26.9	31.6	35.1	38.0
52.5°	15.8	15.8	15.8	17.0	17.6	18.1	18.7	21.1	26.9	27.5	28.7
55°	11.7	11.7	11.7	12.3	13.5	14.0	14.6	18.7	19.9	21.6	19.3
57.5°	8.8	8.8	8.8	9.4	9.9	10.5	11.7	14.6	16.4	14.0	13.5
60°	6.4	6.4	6.4	7.0	8.2	8.8	9.9	11.1	11.1	9.9	9.4
62.5°	5.3	5.3	5.3	5.3	6.4	7.6	7.6	8.8	7.6	7.0	7.0
65°	4.1	4.1	4.1	4.7	5.3	5.9	6.4	5.9	5.3	5.3	5.9
67.5°	3.5	3.5	3.5	3.5	4.7	4.7	4.7	4.1	4.1	4.1	4.7
70°	2.9	2.9	2.9	2.9	3.5	3.5	3.5	2.9	2.9	3.5	4.1
72.5°	2.3	2.3	2.3	2.9	2.9	2.9	2.3	2.3	2.3	2.9	2.9
75°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.8	1.8	1.8
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.2
82.5°	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.6	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	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°	366.2	366.2	366.2	366.2	366.2	366.2	366.2	366.2	366.2	366.2
2.5°	365.6	365.6	366.2	365.6	365.6	365.6	365.6	365.6	365.6	365.6
5°	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9
7.5°	358.6	358.6	358.6	358.0	358.0	358.0	358.0	358.0	358.0	357.4
10°	349.2	349.2	348.7	348.1	348.7	347.5	347.5	346.9	346.9	347.5
12.5°	334.6	334.0	332.9	332.9	332.3	331.7	331.1	331.1	330.5	330.5
15°	315.3	314.1	313.0	312.4	311.2	311.8	311.2	310.1	310.1	309.5
17.5°	291.9	290.7	289.0	287.2	287.2	286.7	286.7	285.5	284.9	284.3
20°	265.0	264.4	263.8	262.1	261.5	260.3	259.2	259.2	257.4	258.0
22.5°	238.1	237.5	236.3	235.8	234.6	234.6	233.4	233.4	232.2	232.2
25°	212.4	211.8	210.6	210.0	208.8	208.8	207.7	208.3	207.1	207.1
27.5°	186.6	186.0	184.9	185.4	184.3	183.7	183.1	183.1	182.5	182.5
30°	163.2	161.5	161.5	160.9	160.3	160.3	160.3	159.1	159.1	159.7
32.5°	140.4	139.2	138.6	138.6	139.2	138.6	138.1	138.1	137.5	136.9
35°	119.3	118.8	118.2	118.2	118.2	118.2	118.2	118.2	118.2	118.2
37.5°	99.5	100.0	99.5	100.0	100.6	100.0	99.5	98.9	98.9	98.9
40°	82.5	83.7	84.2	83.1	82.5	82.5	81.9	82.5	81.9	82.5
42.5°	69.0	69.6	68.4	69.0	69.6	69.6	68.4	66.7	65.5	64.9
45°	56.2	57.3	60.3	56.2	54.4	53.8	52.1	51.5	50.9	50.9
47.5°	48.0	50.3	44.5	42.7	41.5	41.5	40.4	39.2	39.2	38.6
50°	39.2	34.5	33.3	32.2	31.0	30.4	29.8	29.3	29.3	28.7
52.5°	26.3	25.2	24.0	23.4	22.8	22.8	22.8	22.8	22.8	22.8
55°	18.7	18.1	17.6	18.1	18.1	18.7	19.3	19.3	19.3	18.7
57.5°	12.9	12.9	14.0	15.2	15.2	15.2	15.2	14.6	14.6	14.6
60°	9.9	10.5	11.7	11.7	11.7	12.3	11.7	11.1	10.5	10.5
62.5°	7.6	8.8	9.4	9.4	8.8	8.8	8.2	8.2	8.2	8.2
65°	6.4	7.0	7.0	7.0	7.0	6.4	5.9	5.9	6.4	6.4
67.5°	5.3	5.3	5.3	4.7	4.7	5.3	5.9	6.4	6.4	7.0
70°	4.1	4.1	4.1	4.7	5.3	5.3	6.4	6.4	7.0	7.0
72.5°	2.9	2.9	4.1	4.7	5.3	5.3	5.3	4.7	4.7	4.7
75°	2.3	2.9	4.1	3.5	3.5	3.5	3.5	3.5	3.5	3.5
77.5°	1.8	2.3	2.3	1.8	2.3	2.3	2.3	2.9	2.9	3.5
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.8	1.8	1.8	1.8
82.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	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)