

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: P219889

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219889
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-L35-97-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) 3500K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 372.6 lumens
Efficiency: N/A
Efficacy: 54.8 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

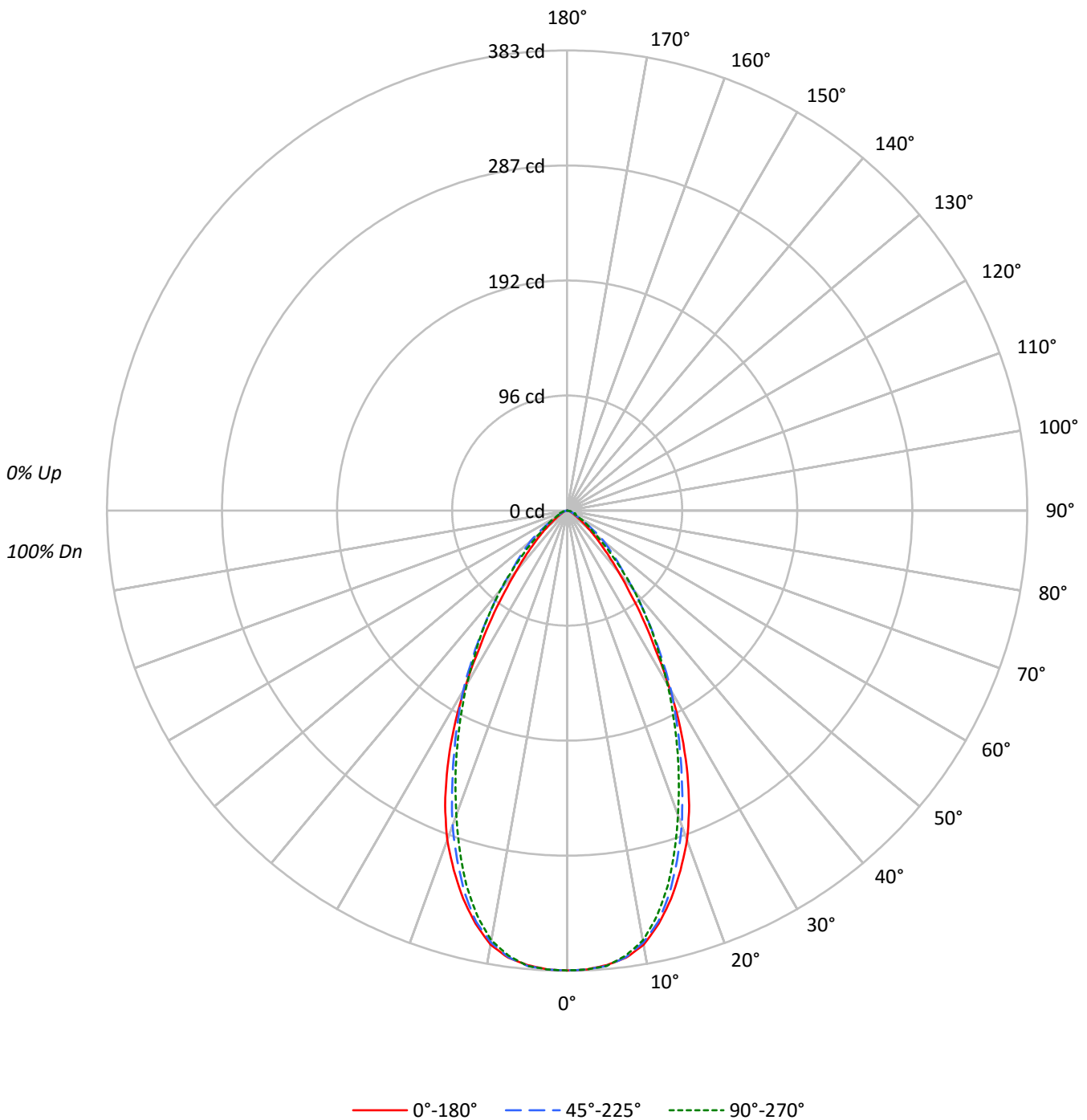
Input Watts (W): 6.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	188866	188866	188866
5°	188052	188349	188349
10°	183813	182862	181960
15°	170857	168354	165239
20°	153155	146382	141604
25°	128148	121180	117859
30°	96850	98559	95084
35°	65952	75107	74385
40°	42508	55132	55518
45°	27282	40120	37120
50°	17347	30472	23027
55°	10494	17376	16860
60°	6611	9670	10854
65°	5020	7121	7822
70°	4472	6203	10531
75°	3431	4575	7053
80°	1705	3410	5114
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.8	9.6
10°-20°	91.3	24.5
20°-30°	102.7	27.6
30°-40°	76.0	20.4
40°-50°	40.5	10.9
50°-60°	16.7	4.5
60°-70°	6.5	1.7
70°-80°	2.9	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°	229.8	61.7
0°-40°	305.8	82.1
0°-60°	363.0	97.4
0°-90°	372.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	372.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	383	383	383	383	383	
5°	380	380	380	380	380	36
15°	334	331	330	325	324	93
25°	235	232	223	218	216	107
35°	110	120	125	124	124	69
45°	39	44	58	57	53	31
55°	12	15	20	19	20	12
65°	4	6	6	7	7	5
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°	382.8	382.8	382.8	382.8	382.8	382.8	382.8	382.8	382.8	382.8	382.8
2.5°	382.2	382.2	382.2	382.2	382.2	382.2	382.2	382.2	382.2	382.2	382.2
5°	379.7	379.7	379.7	379.7	379.7	379.7	379.7	380.3	379.7	380.3	380.3
7.5°	375.4	374.8	374.8	374.8	374.8	374.8	374.8	374.8	374.8	374.8	374.8
10°	366.9	366.3	366.3	365.0	365.7	365.0	365.0	365.0	365.0	365.0	365.0
12.5°	352.2	352.2	351.6	351.0	350.4	350.4	350.4	350.4	350.4	350.4	350.4
15°	334.5	334.5	333.9	332.6	332.0	331.4	330.8	330.8	330.2	330.2	329.6
17.5°	313.7	313.7	312.5	311.2	310.0	309.4	308.2	307.0	306.3	305.7	304.5
20°	291.7	291.7	289.8	289.2	286.8	286.2	284.3	282.5	280.1	279.4	278.8
22.5°	265.4	264.2	263.5	263.5	261.7	260.5	259.3	256.8	253.1	251.9	250.1
25°	235.4	234.8	234.8	234.2	233.6	232.4	233.0	231.1	228.1	225.6	222.6
27.5°	204.2	203.6	203.0	203.6	204.8	204.8	204.2	203.0	201.8	198.7	196.9
30°	170.0	170.0	171.2	173.0	174.9	175.5	176.1	175.5	174.9	173.0	173.0
32.5°	136.4	137.6	138.8	143.1	144.9	146.1	146.8	148.6	148.6	148.6	147.4
35°	109.5	109.5	111.9	115.0	117.4	119.8	120.5	122.9	124.7	124.7	124.7
37.5°	85.0	85.6	88.1	90.5	93.6	94.8	96.0	99.7	102.1	103.3	103.9
40°	66.0	67.3	68.5	70.9	74.0	74.6	75.8	78.9	81.9	84.4	85.6
42.5°	51.4	51.4	52.6	54.4	56.3	58.1	59.3	61.1	64.8	66.6	69.1
45°	39.1	39.7	40.4	41.6	43.4	44.0	45.2	47.7	50.1	52.6	57.5
47.5°	30.0	30.0	30.6	31.2	33.0	33.6	34.2	36.7	39.1	44.0	47.7
50°	22.6	22.6	22.6	23.2	24.5	25.7	26.3	28.1	33.0	36.7	39.7
52.5°	16.5	16.5	16.5	17.7	18.3	19.0	19.6	22.0	28.1	28.7	30.0
55°	12.2	12.2	12.2	12.8	14.1	14.7	15.3	19.6	20.8	22.6	20.2
57.5°	9.2	9.2	9.2	9.8	10.4	11.0	12.2	15.3	17.1	14.7	14.1
60°	6.7	6.7	6.7	7.3	8.6	9.2	10.4	11.6	11.6	10.4	9.8
62.5°	5.5	5.5	5.5	5.5	6.7	7.9	7.9	9.2	7.9	7.3	7.3
65°	4.3	4.3	4.3	4.9	5.5	6.1	6.7	6.1	5.5	5.5	6.1
67.5°	3.7	3.7	3.7	3.7	4.9	4.9	4.9	4.3	4.3	4.3	4.9
70°	3.1	3.1	3.1	3.1	3.7	3.7	3.7	3.1	3.1	3.7	4.3
72.5°	2.4	2.4	2.4	3.1	3.1	3.1	2.4	2.4	2.4	3.1	3.1
75°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.4	2.4	2.4
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°	382.8	382.8	382.8	382.8	382.8	382.8	382.8	382.8	382.8	382.8
2.5°	382.2	382.2	382.8	382.2	382.2	382.2	382.2	382.2	382.2	382.2
5°	380.3	380.3	380.3	380.3	380.3	380.3	380.3	380.3	380.3	380.3
7.5°	374.8	374.8	374.8	374.2	374.2	374.2	374.2	374.2	374.2	373.6
10°	365.0	365.0	364.4	363.8	364.4	363.2	363.2	362.6	362.6	363.2
12.5°	349.8	349.1	347.9	347.9	347.3	346.7	346.1	346.1	345.5	345.5
15°	329.6	328.4	327.1	326.5	325.3	325.9	325.3	324.1	324.1	323.5
17.5°	305.1	303.9	302.1	300.2	300.2	299.6	299.6	298.4	297.8	297.2
20°	277.0	276.4	275.8	273.9	273.3	272.1	270.9	270.9	269.0	269.7
22.5°	248.9	248.3	247.0	246.4	245.2	245.2	244.0	244.0	242.8	242.8
25°	222.0	221.4	220.1	219.5	218.3	218.3	217.1	217.7	216.5	216.5
27.5°	195.1	194.4	193.2	193.8	192.6	192.0	191.4	191.4	190.8	190.8
30°	170.6	168.8	168.8	168.2	167.5	167.5	167.5	166.3	166.3	166.9
32.5°	146.8	145.5	144.9	144.9	145.5	144.9	144.3	144.3	143.7	143.1
35°	124.7	124.1	123.5	123.5	123.5	123.5	123.5	123.5	123.5	123.5
37.5°	103.9	104.6	103.9	104.6	105.2	104.6	103.9	103.3	103.3	103.3
40°	86.2	87.4	88.1	86.8	86.2	86.2	85.6	86.2	85.6	86.2
42.5°	72.2	72.8	71.5	72.2	72.8	72.8	71.5	69.7	68.5	67.9
45°	58.7	59.9	63.0	58.7	56.9	56.3	54.4	53.8	53.2	53.2
47.5°	50.1	52.6	46.5	44.6	43.4	43.4	42.2	41.0	41.0	40.4
50°	41.0	36.1	34.9	33.6	32.4	31.8	31.2	30.6	30.6	30.0
52.5°	27.5	26.3	25.1	24.5	23.8	23.8	23.8	23.8	23.8	23.8
55°	19.6	19.0	18.3	19.0	19.0	19.6	20.2	20.2	20.2	19.6
57.5°	13.5	13.5	14.7	15.9	15.9	15.9	15.9	15.3	15.3	15.3
60°	10.4	11.0	12.2	12.2	12.2	12.8	12.2	11.6	11.0	11.0
62.5°	7.9	9.2	9.8	9.8	9.2	9.2	8.6	8.6	8.6	8.6
65°	6.7	7.3	7.3	7.3	7.3	6.7	6.1	6.1	6.7	6.7
67.5°	5.5	5.5	5.5	4.9	4.9	5.5	6.1	6.7	6.7	7.3
70°	4.3	4.3	4.3	4.9	5.5	5.5	6.7	6.7	7.3	7.3
72.5°	3.1	3.1	4.3	4.9	5.5	5.5	5.5	4.9	4.9	4.9
75°	2.4	3.1	4.3	3.7	3.7	3.7	3.7	3.7	3.7	3.7
77.5°	1.8	2.4	2.4	1.8	2.4	2.4	2.4	3.1	3.1	3.7
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)