

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: P219890

Luminaire Tested: **MRZ-1-REC-X-1H-L40-97-WFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P219890  
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-L40-97-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) 4000K CCT, 97 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 387.2 lumens  
Efficiency: N/A  
Efficacy: 56.9 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

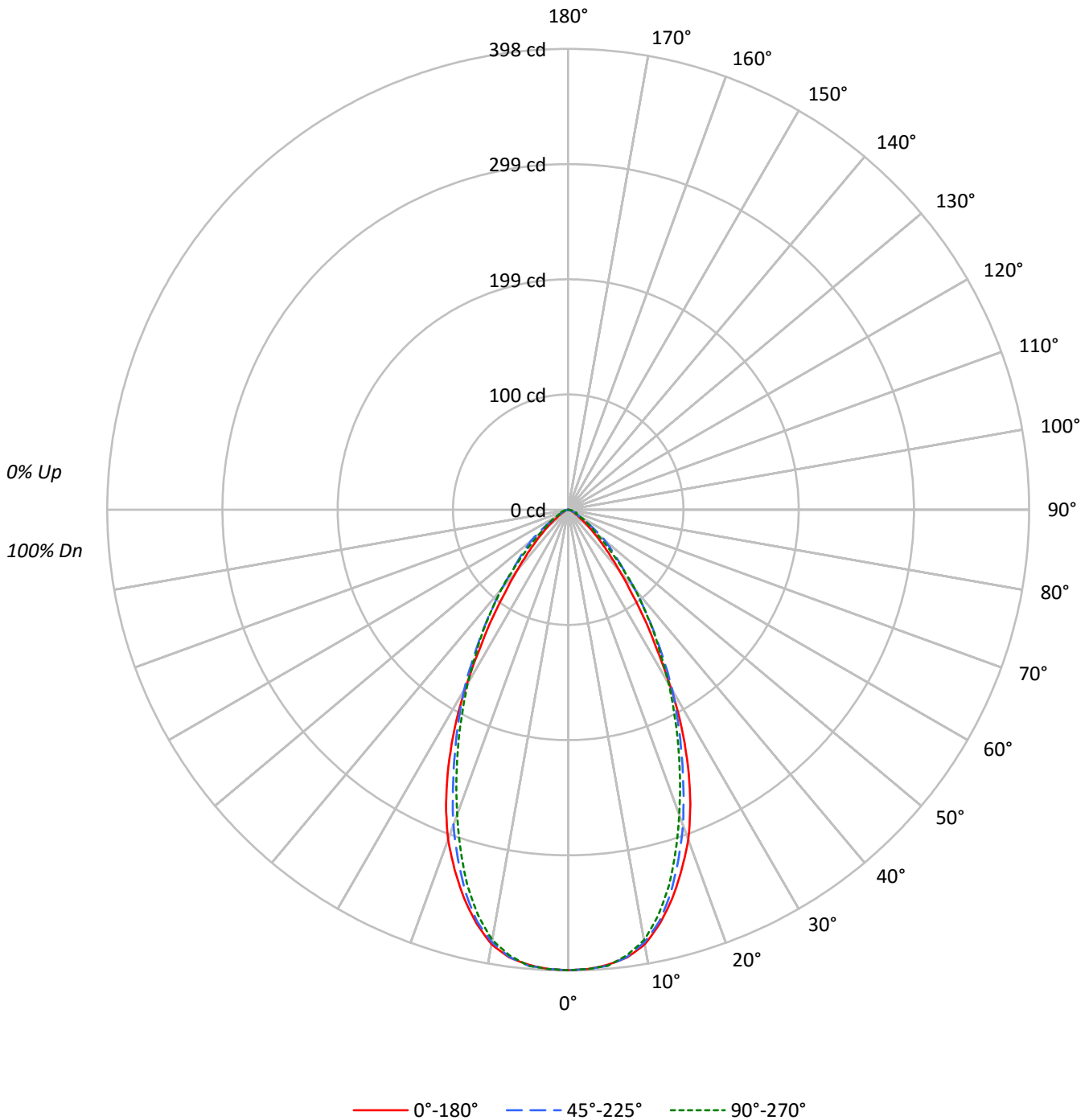
Input Watts (W): 6.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	196217	196217	196217
5°	195382	195728	195728
10°	190978	190026	189074
15°	177497	174892	171675
20°	159141	152105	147117
25°	133156	125916	122432
30°	100610	102433	98787
35°	68482	78059	77276
40°	44183	57257	57708
45°	28398	41655	38585
50°	18038	31700	23871
55°	10924	18064	17462
60°	6907	10065	11249
65°	5137	7472	8172
70°	4616	6347	10963
75°	3622	4766	7244
80°	1705	3694	5398
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.2	9.6
10°-20°	94.8	24.5
20°-30°	106.8	27.6
30°-40°	79.0	20.4
40°-50°	42.1	10.9
50°-60°	17.3	4.5
60°-70°	6.7	1.7
70°-80°	3.0	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°	238.8	61.7
0°-40°	317.7	82.1
0°-60°	377.1	97.4
0°-90°	387.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	387.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	398	398	398	398	398	
5°	394	394	395	395	395	37
15°	348	344	342	338	336	97
25°	245	241	231	227	225	111
35°	114	124	130	128	128	72
45°	41	46	60	59	55	33
55°	13	15	21	20	20	12
65°	4	6	6	8	7	5
75°	2	2	2	4	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°	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7
2.5°	397.1	397.1	397.1	397.1	397.1	397.1	397.1	397.1	397.1	397.1	397.1
5°	394.5	394.5	394.5	394.5	394.5	394.5	394.5	395.2	394.5	395.2	395.2
7.5°	390.1	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5	389.5
10°	381.2	380.6	380.6	379.3	379.9	379.3	379.3	379.3	379.3	379.3	379.3
12.5°	366.0	366.0	365.3	364.7	364.0	364.0	364.0	364.0	364.0	364.0	364.0
15°	347.5	347.5	346.9	345.6	345.0	344.4	343.7	343.7	343.1	343.1	342.4
17.5°	325.9	325.9	324.7	323.4	322.1	321.5	320.2	318.9	318.3	317.7	316.4
20°	303.1	303.1	301.1	300.5	298.0	297.3	295.4	293.5	291.0	290.3	289.7
22.5°	275.7	274.5	273.8	273.8	271.9	270.7	269.4	266.8	263.0	261.8	259.9
25°	244.6	244.0	244.0	243.3	242.7	241.4	242.1	240.2	237.0	234.4	231.3
27.5°	212.2	211.6	210.9	211.6	212.8	212.8	212.2	210.9	209.7	206.5	204.6
30°	176.6	176.6	177.9	179.8	181.7	182.3	183.0	182.3	181.7	179.8	179.8
32.5°	141.7	142.9	144.2	148.7	150.6	151.8	152.5	154.4	154.4	154.4	153.1
35°	113.7	113.7	116.3	119.4	122.0	124.5	125.2	127.7	129.6	129.6	129.6
37.5°	88.3	88.9	91.5	94.0	97.2	98.5	99.7	103.6	106.1	107.4	108.0
40°	68.6	69.9	71.2	73.7	76.9	77.5	78.8	82.0	85.1	87.7	88.9
42.5°	53.4	53.4	54.6	56.5	58.5	60.4	61.6	63.5	67.3	69.3	71.8
45°	40.7	41.3	41.9	43.2	45.1	45.7	47.0	49.6	52.1	54.6	59.7
47.5°	31.1	31.1	31.8	32.4	34.3	34.9	35.6	38.1	40.7	45.7	49.6
50°	23.5	23.5	23.5	24.1	25.4	26.7	27.3	29.2	34.3	38.1	41.3
52.5°	17.2	17.2	17.2	18.4	19.1	19.7	20.3	22.9	29.2	29.9	31.1
55°	12.7	12.7	12.7	13.3	14.6	15.2	15.9	20.3	21.6	23.5	21.0
57.5°	9.5	9.5	9.5	10.2	10.8	11.4	12.7	15.9	17.8	15.2	14.6
60°	7.0	7.0	7.0	7.6	8.9	9.5	10.8	12.1	12.1	10.8	10.2
62.5°	5.7	5.7	5.7	5.7	7.0	8.3	8.3	9.5	8.3	7.6	7.6
65°	4.4	4.4	4.4	5.1	5.7	6.4	7.0	6.4	5.7	5.7	6.4
67.5°	3.8	3.8	3.8	3.8	5.1	5.1	5.1	4.4	4.4	4.4	5.1
70°	3.2	3.2	3.2	3.2	3.8	3.8	3.8	3.2	3.2	3.8	4.4
72.5°	2.5	2.5	2.5	3.2	3.2	3.2	2.5	2.5	2.5	3.2	3.2
75°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.9	1.9	1.9
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.3
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°	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7	397.7
2.5°	397.1	397.1	397.7	397.1	397.1	397.1	397.1	397.1	397.1	397.1
5°	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2	395.2
7.5°	389.5	389.5	389.5	388.8	388.8	388.8	388.8	388.8	388.8	388.2
10°	379.3	379.3	378.7	378.0	378.7	377.4	377.4	376.8	376.8	377.4
12.5°	363.4	362.8	361.5	361.5	360.9	360.2	359.6	359.6	359.0	359.0
15°	342.4	341.2	339.9	339.3	338.0	338.6	338.0	336.7	336.7	336.1
17.5°	317.0	315.8	313.9	311.9	311.9	311.3	311.3	310.0	309.4	308.8
20°	287.8	287.2	286.5	284.6	284.0	282.7	281.5	281.5	279.5	280.2
22.5°	258.6	257.9	256.7	256.0	254.8	254.8	253.5	253.5	252.2	252.2
25°	230.6	230.0	228.7	228.1	226.8	226.8	225.5	226.2	224.9	224.9
27.5°	202.7	202.0	200.8	201.4	200.1	199.5	198.9	198.9	198.2	198.2
30°	177.3	175.4	175.4	174.7	174.1	174.1	174.1	172.8	172.8	173.4
32.5°	152.5	151.2	150.6	150.6	151.2	150.6	149.9	149.9	149.3	148.7
35°	129.6	129.0	128.3	128.3	128.3	128.3	128.3	128.3	128.3	128.3
37.5°	108.0	108.6	108.0	108.6	109.3	108.6	108.0	107.4	107.4	107.4
40°	89.6	90.9	91.5	90.2	89.6	89.6	88.9	89.6	88.9	89.6
42.5°	75.0	75.6	74.3	75.0	75.6	75.6	74.3	72.4	71.2	70.5
45°	61.0	62.3	65.4	61.0	59.1	58.5	56.5	55.9	55.3	55.3
47.5°	52.1	54.6	48.3	46.4	45.1	45.1	43.8	42.6	42.6	41.9
50°	42.6	37.5	36.2	34.9	33.7	33.0	32.4	31.8	31.8	31.1
52.5°	28.6	27.3	26.0	25.4	24.8	24.8	24.8	24.8	24.8	24.8
55°	20.3	19.7	19.1	19.7	19.7	20.3	21.0	21.0	21.0	20.3
57.5°	14.0	14.0	15.2	16.5	16.5	16.5	16.5	15.9	15.9	15.9
60°	10.8	11.4	12.7	12.7	12.7	13.3	12.7	12.1	11.4	11.4
62.5°	8.3	9.5	10.2	10.2	9.5	9.5	8.9	8.9	8.9	8.9
65°	7.0	7.6	7.6	7.6	7.6	7.0	6.4	6.4	7.0	7.0
67.5°	5.7	5.7	5.7	5.1	5.1	5.7	6.4	7.0	7.0	7.6
70°	4.4	4.4	4.4	5.1	5.7	5.7	7.0	7.0	7.6	7.6
72.5°	3.2	3.2	4.4	5.1	5.7	5.7	5.7	5.1	5.1	5.1
75°	2.5	3.2	4.4	3.8	3.8	3.8	3.8	3.8	3.8	3.8
77.5°	1.9	2.5	2.5	1.9	2.5	2.5	2.5	3.2	3.2	3.8
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.9	1.9	1.9	1.9
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)