

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: P219886

Luminaire Tested: **MRZ-1-REC-X-1H-L40-80-WFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219886
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-L40-80-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, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 496.5 lumens
Efficiency: N/A
Efficacy: 73.0 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

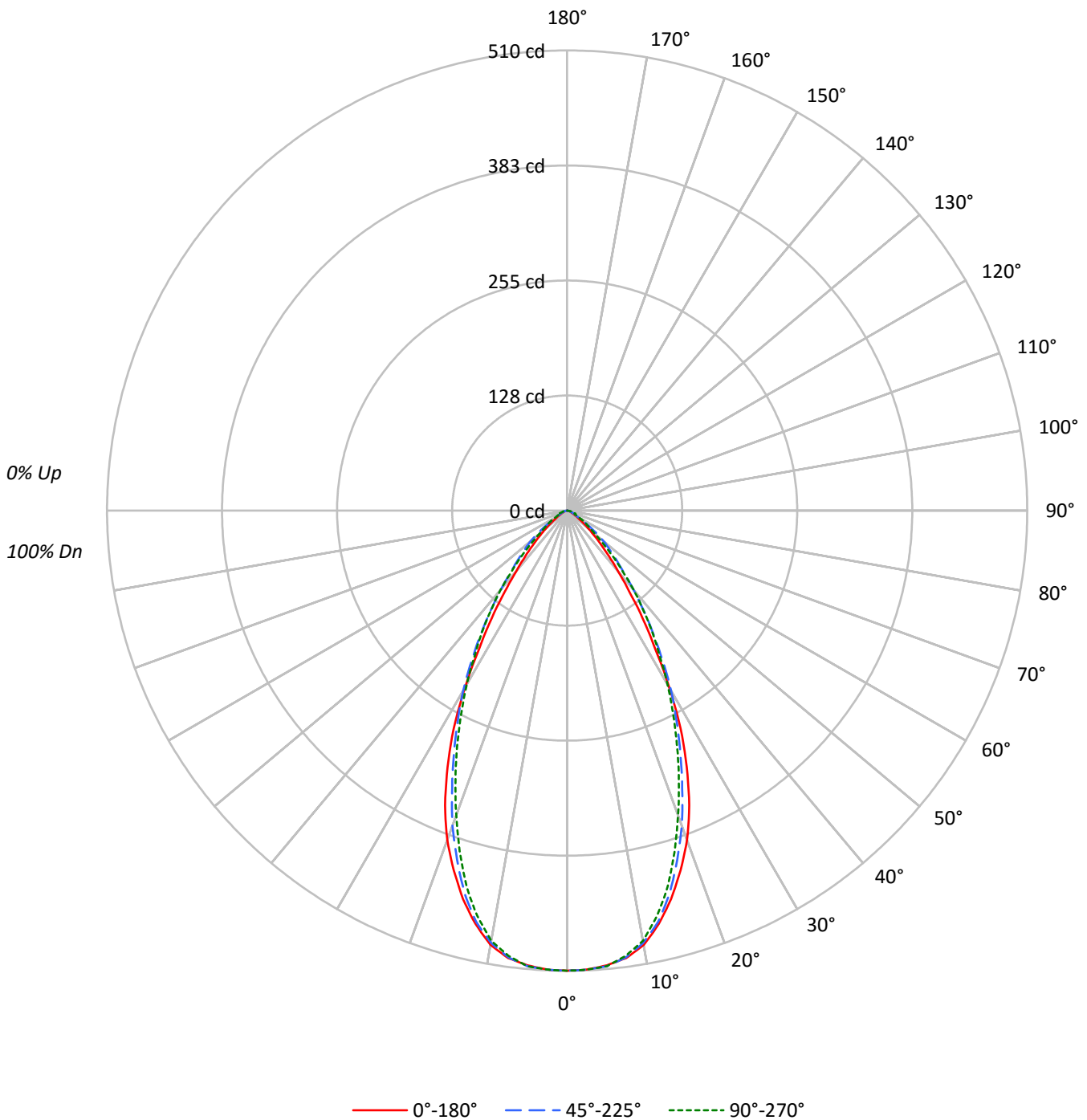
Input Watts (W): 6.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	100	96	95	94	92		
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92	92	92	88	86	84	84		
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84	84	84	81	79	77	77		
3	100	93	88	83	98	92	87	83	89	85	81	87	83	80	84	81	79	77	77	77	74	73	71	71		
4	95	86	80	76	93	85	80	75	83	78	74	81	77	73	79	76	73	71	71	71	68	67	65	65		
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65	65	65	62	61	59	59		
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61	61	61	58	57	55	55		
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	66	61	58	56	56	56	53	52	50	50		
8	76	66	59	55	75	65	59	55	64	58	54	63	58	54	62	57	54	52	52	52	49	48	46	46		
9	72	62	55	51	71	61	55	51	60	55	51	59	54	51	58	54	50	49	49	49	46	45	43	43		
10	68	58	52	48	67	58	52	48	57	51	48	56	51	47	55	51	47	46	46	46	43	42	40	40		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	251624	251624	251624
5°	250554	251000	251000
10°	244884	243682	242429
15°	227605	224285	220148
20°	204032	195054	188648
25°	170773	161464	157000
30°	129038	131374	126703
35°	87816	100103	99139
40°	56677	73487	74003
45°	36352	53447	49470
50°	23104	40681	30626
55°	14021	23139	22451
60°	8881	12828	14505
65°	6654	9456	10507
70°	5914	8223	14137
75°	4575	6291	9341
80°	2273	4546	6819
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	47.7	9.6
10°-20°	121.6	24.5
20°-30°	136.9	27.6
30°-40°	101.3	20.4
40°-50°	54.0	10.9
50°-60°	22.2	4.5
60°-70°	8.7	1.7
70°-80°	3.9	0.8
80°-90°	0.4	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°	306.2	61.7
0°-40°	407.4	82.1
0°-60°	483.6	97.4
0°-90°	496.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	496.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	510	510	510	510	510	
5°	506	506	507	507	507	48
15°	446	442	439	433	431	124
25°	314	310	297	291	288	142
35°	146	160	166	165	165	92
45°	52	59	77	76	71	42
55°	16	20	27	25	26	16
65°	6	8	8	10	9	6
75°	2	2	3	5	5	3
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°	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0
2.5°	509.2	509.2	509.2	509.2	509.2	509.2	509.2	509.2	509.2	509.2	509.2
5°	505.9	505.9	505.9	505.9	505.9	505.9	505.9	506.8	505.9	506.8	506.8
7.5°	500.2	499.4	499.4	499.4	499.4	499.4	499.4	499.4	499.4	499.4	499.4
10°	488.8	488.0	488.0	486.4	487.2	486.4	486.4	486.4	486.4	486.4	486.4
12.5°	469.3	469.3	468.5	467.6	466.8	466.8	466.8	466.8	466.8	466.8	466.8
15°	445.6	445.6	444.8	443.2	442.4	441.6	440.8	440.8	439.9	439.9	439.1
17.5°	417.9	417.9	416.3	414.7	413.1	412.2	410.6	409.0	408.2	407.4	405.7
20°	388.6	388.6	386.2	385.4	382.1	381.3	378.8	376.4	373.1	372.3	371.5
22.5°	353.6	352.0	351.1	351.1	348.7	347.1	345.4	342.2	337.3	335.7	333.2
25°	313.7	312.9	312.9	312.0	311.2	309.6	310.4	308.0	303.9	300.6	296.6
27.5°	272.1	271.3	270.5	271.3	272.9	272.9	272.1	270.5	268.9	264.8	262.3
30°	226.5	226.5	228.1	230.6	233.0	233.8	234.6	233.8	233.0	230.6	230.6
32.5°	181.7	183.3	184.9	190.6	193.1	194.7	195.5	198.0	198.0	198.0	196.3
35°	145.8	145.8	149.1	153.2	156.4	159.7	160.5	163.8	166.2	166.2	166.2
37.5°	113.2	114.1	117.3	120.6	124.7	126.3	127.9	132.8	136.1	137.7	138.5
40°	88.0	89.6	91.2	94.5	98.6	99.4	101.0	105.1	109.2	112.4	114.1
42.5°	68.4	68.4	70.1	72.5	75.0	77.4	79.0	81.5	86.4	88.8	92.1
45°	52.1	53.0	53.8	55.4	57.8	58.7	60.3	63.5	66.8	70.1	76.6
47.5°	39.9	39.9	40.7	41.6	44.0	44.8	45.6	48.9	52.1	58.7	63.5
50°	30.1	30.1	30.1	31.0	32.6	34.2	35.0	37.5	44.0	48.9	53.0
52.5°	22.0	22.0	22.0	23.6	24.4	25.3	26.1	29.3	37.5	38.3	39.9
55°	16.3	16.3	16.3	17.1	18.7	19.6	20.4	26.1	27.7	30.1	26.9
57.5°	12.2	12.2	12.2	13.0	13.9	14.7	16.3	20.4	22.8	19.6	18.7
60°	9.0	9.0	9.0	9.8	11.4	12.2	13.9	15.5	15.5	13.9	13.0
62.5°	7.3	7.3	7.3	7.3	9.0	10.6	10.6	12.2	10.6	9.8	9.8
65°	5.7	5.7	5.7	6.5	7.3	8.1	9.0	8.1	7.3	7.3	8.1
67.5°	4.9	4.9	4.9	4.9	6.5	6.5	6.5	5.7	5.7	5.7	6.5
70°	4.1	4.1	4.1	4.1	4.9	4.9	4.9	4.1	4.1	4.9	5.7
72.5°	3.3	3.3	3.3	4.1	4.1	4.1	3.3	3.3	3.3	4.1	4.1
75°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.3	3.3	3.3
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.4	2.4	2.4
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.6
82.5°	0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8
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°	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0
2.5°	509.2	509.2	510.0	509.2	509.2	509.2	509.2	509.2	509.2	509.2
5°	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8	506.8
7.5°	499.4	499.4	499.4	498.6	498.6	498.6	498.6	498.6	498.6	497.8
10°	486.4	486.4	485.6	484.8	485.6	483.9	483.9	483.1	483.1	483.9
12.5°	466.0	465.2	463.6	463.6	462.8	461.9	461.1	461.1	460.3	460.3
15°	439.1	437.5	435.9	435.1	433.4	434.2	433.4	431.8	431.8	431.0
17.5°	406.5	404.9	402.5	400.0	400.0	399.2	399.2	397.6	396.8	396.0
20°	369.1	368.3	367.4	365.0	364.2	362.5	360.9	360.9	358.5	359.3
22.5°	331.6	330.8	329.1	328.3	326.7	326.7	325.1	325.1	323.4	323.4
25°	295.7	294.9	293.3	292.5	290.9	290.9	289.2	290.0	288.4	288.4
27.5°	259.9	259.1	257.4	258.3	256.6	255.8	255.0	255.0	254.2	254.2
30°	227.3	224.9	224.9	224.0	223.2	223.2	223.2	221.6	221.6	222.4
32.5°	195.5	193.9	193.1	193.1	193.9	193.1	192.3	192.3	191.5	190.6
35°	166.2	165.4	164.6	164.6	164.6	164.6	164.6	164.6	164.6	164.6
37.5°	138.5	139.3	138.5	139.3	140.1	139.3	138.5	137.7	137.7	137.7
40°	114.9	116.5	117.3	115.7	114.9	114.9	114.1	114.9	114.1	114.9
42.5°	96.1	97.0	95.3	96.1	97.0	97.0	95.3	92.9	91.2	90.4
45°	78.2	79.8	83.9	78.2	75.8	75.0	72.5	71.7	70.9	70.9
47.5°	66.8	70.1	61.9	59.5	57.8	57.8	56.2	54.6	54.6	53.8
50°	54.6	48.1	46.4	44.8	43.2	42.4	41.6	40.7	40.7	39.9
52.5°	36.7	35.0	33.4	32.6	31.8	31.8	31.8	31.8	31.8	31.8
55°	26.1	25.3	24.4	25.3	25.3	26.1	26.9	26.9	26.9	26.1
57.5°	17.9	17.9	19.6	21.2	21.2	21.2	21.2	20.4	20.4	20.4
60°	13.9	14.7	16.3	16.3	16.3	17.1	16.3	15.5	14.7	14.7
62.5°	10.6	12.2	13.0	13.0	12.2	12.2	11.4	11.4	11.4	11.4
65°	9.0	9.8	9.8	9.8	9.8	9.0	8.1	8.1	9.0	9.0
67.5°	7.3	7.3	7.3	6.5	6.5	7.3	8.1	9.0	9.0	9.8
70°	5.7	5.7	5.7	6.5	7.3	7.3	9.0	9.0	9.8	9.8
72.5°	4.1	4.1	5.7	6.5	7.3	7.3	7.3	6.5	6.5	6.5
75°	3.3	4.1	5.7	4.9	4.9	4.9	4.9	4.9	4.9	4.9
77.5°	2.4	3.3	3.3	2.4	3.3	3.3	3.3	4.1	4.1	4.9
80°	1.6	1.6	1.6	1.6	1.6	1.6	2.4	2.4	2.4	2.4
82.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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)