

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: P219904

Luminaire Tested: **MRZ-1-REC-X-3-L35-97-WFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219904
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-3-L35-97-WFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
55 DEGREE WIDE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 3
Light Source: (1) 3500K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 696.4 lumens
Efficiency: N/A
Efficacy: 58.5 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

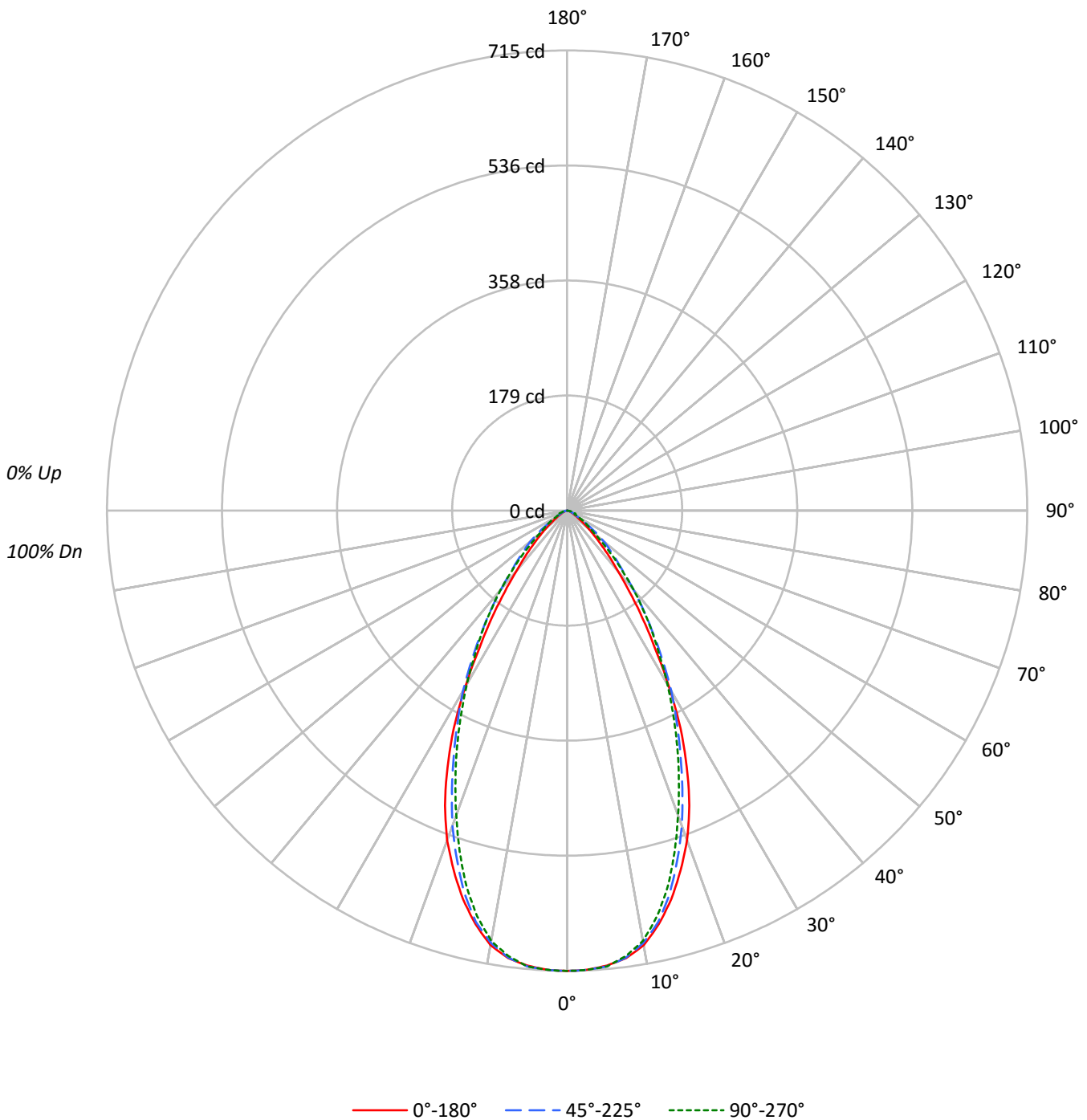
Input Watts (W): 11.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92	92	92	92	
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84	84	84	84	
3	100	93	88	83	98	92	87	83	89	85	81	87	83	80	84	81	79	77	77	77	77	
4	95	86	80	76	93	85	80	75	83	78	74	81	77	73	79	76	73	71	71	71	71	
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65	65	65	65	
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61	61	61	61	
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	66	61	58	56	56	56	56	
8	76	66	59	55	75	65	59	55	64	58	54	63	58	54	62	57	54	52	52	52	52	
9	72	62	55	51	71	61	55	51	60	55	51	59	54	51	58	54	50	49	49	49	49	
10	68	58	52	48	67	58	52	48	57	51	48	56	51	47	55	51	47	46	46	46	46	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	352964	352964	352964
5°	351439	352034	352034
10°	343479	341776	340073
15°	319291	314592	308769
20°	286201	273600	264569
25°	239529	226464	220203
30°	180995	184243	177748
35°	123232	140397	139012
40°	79477	103050	103758
45°	51005	74938	69356
50°	32468	57030	42983
55°	19698	32429	31483
60°	12433	18058	20327
65°	9339	13309	14710
70°	8223	11540	19763
75°	6481	8769	13153
80°	3125	6535	9660
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.9	9.6
10°-20°	170.6	24.5
20°-30°	192.0	27.6
30°-40°	142.0	20.4
40°-50°	75.7	10.9
50°-60°	31.1	4.5
60°-70°	12.1	1.7
70°-80°	5.4	0.8
80°-90°	0.5	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°	429.5	61.7
0°-40°	571.5	82.1
0°-60°	678.3	97.4
0°-90°	696.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	696.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	715	715	715	715	715	
5°	710	710	711	711	711	67
15°	625	619	616	608	604	174
25°	440	434	416	408	404	199
35°	205	224	233	231	231	129
45°	73	82	107	106	99	59
55°	23	27	38	35	37	22
65°	8	11	11	14	13	8
75°	3	3	5	7	7	4
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°	715.4	715.4	715.4	715.4	715.4	715.4	715.4	715.4	715.4	715.4	715.4
2.5°	714.2	714.2	714.2	714.2	714.2	714.2	714.2	714.2	714.2	714.2	714.2
5°	709.6	709.6	709.6	709.6	709.6	709.6	709.6	710.8	709.6	710.8	710.8
7.5°	701.6	700.5	700.5	700.5	700.5	700.5	700.5	700.5	700.5	700.5	700.5
10°	685.6	684.5	684.5	682.2	683.4	682.2	682.2	682.2	682.2	682.2	682.2
12.5°	658.2	658.2	657.1	655.9	654.8	654.8	654.8	654.8	654.8	654.8	654.8
15°	625.1	625.1	623.9	621.7	620.5	619.4	618.2	618.2	617.1	617.1	615.9
17.5°	586.2	586.2	583.9	581.7	579.4	578.2	575.9	573.7	572.5	571.4	569.1
20°	545.1	545.1	541.7	540.5	535.9	534.8	531.4	527.9	523.4	522.2	521.1
22.5°	496.0	493.7	492.5	492.5	489.1	486.8	484.5	480.0	473.1	470.8	467.4
25°	440.0	438.8	438.8	437.7	436.5	434.2	435.4	432.0	426.2	421.7	416.0
27.5°	381.7	380.5	379.4	380.5	382.8	382.8	381.7	379.4	377.1	371.4	368.0
30°	317.7	317.7	320.0	323.4	326.8	328.0	329.1	328.0	326.8	323.4	323.4
32.5°	254.8	257.1	259.4	267.4	270.8	273.1	274.3	277.7	277.7	277.7	275.4
35°	204.6	204.6	209.1	214.8	219.4	224.0	225.1	229.7	233.1	233.1	233.1
37.5°	158.8	160.0	164.6	169.1	174.8	177.1	179.4	186.3	190.8	193.1	194.3
40°	123.4	125.7	128.0	132.6	138.3	139.4	141.7	147.4	153.1	157.7	160.0
42.5°	96.0	96.0	98.3	101.7	105.1	108.6	110.8	114.3	121.1	124.6	129.1
45°	73.1	74.3	75.4	77.7	81.1	82.3	84.6	89.1	93.7	98.3	107.4
47.5°	56.0	56.0	57.1	58.3	61.7	62.9	64.0	68.6	73.1	82.3	89.1
50°	42.3	42.3	42.3	43.4	45.7	48.0	49.1	52.6	61.7	68.6	74.3
52.5°	30.9	30.9	30.9	33.1	34.3	35.4	36.6	41.1	52.6	53.7	56.0
55°	22.9	22.9	22.9	24.0	26.3	27.4	28.6	36.6	38.9	42.3	37.7
57.5°	17.1	17.1	17.1	18.3	19.4	20.6	22.9	28.6	32.0	27.4	26.3
60°	12.6	12.6	12.6	13.7	16.0	17.1	19.4	21.7	21.7	19.4	18.3
62.5°	10.3	10.3	10.3	10.3	12.6	14.9	14.9	17.1	14.9	13.7	13.7
65°	8.0	8.0	8.0	9.1	10.3	11.4	12.6	11.4	10.3	10.3	11.4
67.5°	6.9	6.9	6.9	6.9	9.1	9.1	9.1	8.0	8.0	8.0	9.1
70°	5.7	5.7	5.7	5.7	6.9	6.9	6.9	5.7	5.7	6.9	8.0
72.5°	4.6	4.6	4.6	5.7	5.7	5.7	4.6	4.6	4.6	5.7	5.7
75°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	4.6	4.6	4.6
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.4	3.4	3.4
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.3
82.5°	0.0	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1
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°	715.4	715.4	715.4	715.4	715.4	715.4	715.4	715.4	715.4	715.4
2.5°	714.2	714.2	715.4	714.2	714.2	714.2	714.2	714.2	714.2	714.2
5°	710.8	710.8	710.8	710.8	710.8	710.8	710.8	710.8	710.8	710.8
7.5°	700.5	700.5	700.5	699.4	699.4	699.4	699.4	699.4	699.4	698.2
10°	682.2	682.2	681.1	679.9	681.1	678.8	678.8	677.6	677.6	678.8
12.5°	653.6	652.5	650.2	650.2	649.1	647.9	646.8	646.8	645.6	645.6
15°	615.9	613.7	611.4	610.2	607.9	609.1	607.9	605.7	605.7	604.5
17.5°	570.2	567.9	564.5	561.1	561.1	559.9	559.9	557.7	556.5	555.4
20°	517.7	516.5	515.4	511.9	510.8	508.5	506.2	506.2	502.8	503.9
22.5°	465.1	464.0	461.7	460.5	458.2	458.2	456.0	456.0	453.7	453.7
25°	414.8	413.7	411.4	410.2	408.0	408.0	405.7	406.8	404.5	404.5
27.5°	364.5	363.4	361.1	362.2	360.0	358.8	357.7	357.7	356.5	356.5
30°	318.8	315.4	315.4	314.3	313.1	313.1	313.1	310.8	310.8	312.0
32.5°	274.3	272.0	270.8	270.8	272.0	270.8	269.7	269.7	268.5	267.4
35°	233.1	232.0	230.8	230.8	230.8	230.8	230.8	230.8	230.8	230.8
37.5°	194.3	195.4	194.3	195.4	196.6	195.4	194.3	193.1	193.1	193.1
40°	161.1	163.4	164.6	162.3	161.1	161.1	160.0	161.1	160.0	161.1
42.5°	134.8	136.0	133.7	134.8	136.0	136.0	133.7	130.3	128.0	126.8
45°	109.7	112.0	117.7	109.7	106.3	105.1	101.7	100.6	99.4	99.4
47.5°	93.7	98.3	86.8	83.4	81.1	81.1	78.8	76.6	76.6	75.4
50°	76.6	67.4	65.1	62.9	60.6	59.4	58.3	57.1	57.1	56.0
52.5°	51.4	49.1	46.9	45.7	44.6	44.6	44.6	44.6	44.6	44.6
55°	36.6	35.4	34.3	35.4	35.4	36.6	37.7	37.7	37.7	36.6
57.5°	25.1	25.1	27.4	29.7	29.7	29.7	29.7	28.6	28.6	28.6
60°	19.4	20.6	22.9	22.9	22.9	24.0	22.9	21.7	20.6	20.6
62.5°	14.9	17.1	18.3	18.3	17.1	17.1	16.0	16.0	16.0	16.0
65°	12.6	13.7	13.7	13.7	13.7	12.6	11.4	11.4	12.6	12.6
67.5°	10.3	10.3	10.3	9.1	9.1	10.3	11.4	12.6	12.6	13.7
70°	8.0	8.0	8.0	9.1	10.3	10.3	12.6	12.6	13.7	13.7
72.5°	5.7	5.7	8.0	9.1	10.3	10.3	10.3	9.1	9.1	9.1
75°	4.6	5.7	8.0	6.9	6.9	6.9	6.9	6.9	6.9	6.9
77.5°	3.4	4.6	4.6	3.4	4.6	4.6	4.6	5.7	5.7	6.9
80°	2.3	2.3	2.3	2.3	2.3	2.3	3.4	3.4	3.4	3.4
82.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)