

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: P226127

Luminaire Tested: **MRZ-1-REC-X-1-L30-80-WFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226127
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-1-L30-80-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) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 414.6 lumens
Efficiency: N/A
Efficacy: 76.8 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

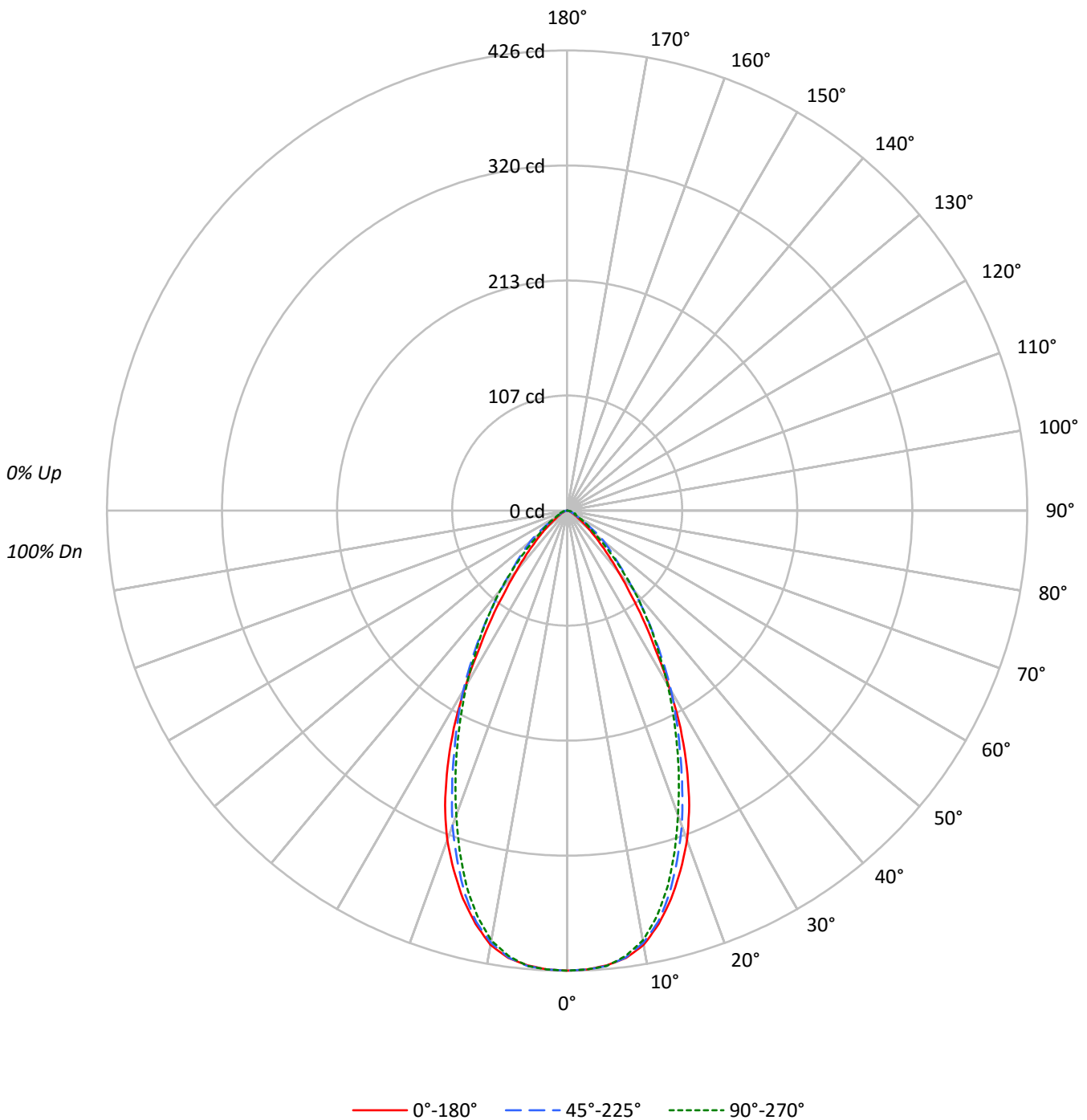
Input Watts (W): 5.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	48	48	48	45	44	42	42		
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°	210130	210130	210130
5°	209249	209546	209546
10°	204504	203502	202450
15°	190114	187305	183831
20°	170377	162869	157513
25°	142574	134790	131088
30°	107788	109725	105851
35°	73361	83600	82757
40°	47339	61315	61830
45°	30422	44586	41306
50°	19343	33926	25560
55°	11698	19268	18752
60°	7401	10756	12038
65°	5487	7939	8756
70°	4905	6780	11685
75°	4003	5147	7816
80°	1989	3694	5967
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.8	9.6
10°-20°	101.5	24.5
20°-30°	114.3	27.6
30°-40°	84.5	20.4
40°-50°	45.1	10.9
50°-60°	18.5	4.5
60°-70°	7.2	1.7
70°-80°	3.2	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°	255.7	61.7
0°-40°	340.2	82.1
0°-60°	403.8	97.4
0°-90°	414.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	414.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	426	426	426	426	426	
5°	422	422	423	423	423	40
15°	372	369	367	362	360	104
25°	262	258	248	243	241	119
35°	122	133	139	137	137	77
45°	44	49	64	63	59	35
55°	14	16	22	21	22	13
65°	5	7	7	8	8	5
75°	2	2	3	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°	425.9	425.9	425.9	425.9	425.9	425.9	425.9	425.9	425.9	425.9	425.9
2.5°	425.2	425.2	425.2	425.2	425.2	425.2	425.2	425.2	425.2	425.2	425.2
5°	422.5	422.5	422.5	422.5	422.5	422.5	422.5	423.1	422.5	423.1	423.1
7.5°	417.7	417.1	417.1	417.1	417.1	417.1	417.1	417.1	417.1	417.1	417.1
10°	408.2	407.5	407.5	406.2	406.8	406.2	406.2	406.2	406.2	406.2	406.2
12.5°	391.9	391.9	391.2	390.6	389.8	389.8	389.8	389.8	389.8	389.8	389.8
15°	372.2	372.2	371.4	370.1	369.4	368.8	368.1	368.1	367.3	367.3	366.7
17.5°	349.0	349.0	347.6	346.3	344.9	344.2	342.9	341.5	340.8	340.2	338.8
20°	324.5	324.5	322.4	321.8	319.0	318.4	316.4	314.3	311.5	310.9	310.2
22.5°	295.3	293.9	293.2	293.2	291.2	289.9	288.4	285.7	281.6	280.3	278.3
25°	261.9	261.3	261.3	260.6	259.9	258.5	259.2	257.2	253.8	251.0	247.6
27.5°	227.2	226.6	225.8	226.6	227.9	227.9	227.2	225.8	224.5	221.1	219.1
30°	189.2	189.2	190.5	192.6	194.6	195.2	195.9	195.2	194.6	192.6	192.6
32.5°	151.8	153.1	154.4	159.2	161.2	162.6	163.3	165.3	165.3	165.3	164.0
35°	121.8	121.8	124.5	127.9	130.6	133.4	134.0	136.8	138.8	138.8	138.8
37.5°	94.5	95.2	97.9	100.7	104.1	105.4	106.9	110.9	113.6	115.0	115.7
40°	73.5	74.8	76.2	78.9	82.3	83.0	84.4	87.8	91.1	93.9	95.2
42.5°	57.1	57.1	58.5	60.5	62.6	64.6	66.0	68.0	72.1	74.2	76.9
45°	43.6	44.2	44.9	46.2	48.3	49.0	50.3	53.0	55.8	58.5	63.9
47.5°	33.3	33.3	34.0	34.7	36.8	37.4	38.1	40.8	43.6	49.0	53.0
50°	25.2	25.2	25.2	25.9	27.2	28.6	29.3	31.3	36.8	40.8	44.2
52.5°	18.4	18.4	18.4	19.7	20.4	21.1	21.8	24.5	31.3	32.0	33.3
55°	13.6	13.6	13.6	14.3	15.6	16.3	17.1	21.8	23.1	25.2	22.4
57.5°	10.2	10.2	10.2	10.9	11.6	12.2	13.6	17.1	19.0	16.3	15.6
60°	7.5	7.5	7.5	8.1	9.6	10.2	11.6	12.9	12.9	11.6	10.9
62.5°	6.2	6.2	6.2	6.2	7.5	8.8	8.8	10.2	8.8	8.1	8.1
65°	4.7	4.7	4.7	5.4	6.2	6.8	7.5	6.8	6.2	6.2	6.8
67.5°	4.1	4.1	4.1	4.1	5.4	5.4	5.4	4.7	4.7	4.7	5.4
70°	3.4	3.4	3.4	3.4	4.1	4.1	4.1	3.4	3.4	4.1	4.7
72.5°	2.7	2.7	2.7	3.4	3.4	3.4	2.7	2.7	2.7	3.4	3.4
75°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.7	2.7	2.7
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.1	2.1	2.1
80°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.3
82.5°	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7
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°	425.9	425.9	425.9	425.9	425.9	425.9	425.9	425.9	425.9	425.9
2.5°	425.2	425.2	425.9	425.2	425.2	425.2	425.2	425.2	425.2	425.2
5°	423.1	423.1	423.1	423.1	423.1	423.1	423.1	423.1	423.1	423.1
7.5°	417.1	417.1	417.1	416.3	416.3	416.3	416.3	416.3	416.3	415.7
10°	406.2	406.2	405.5	404.8	405.5	404.1	404.1	403.4	403.4	404.1
12.5°	389.1	388.5	387.1	387.1	386.4	385.7	385.1	385.1	384.4	384.4
15°	366.7	365.4	363.9	363.3	361.9	362.6	361.9	360.6	360.6	359.9
17.5°	339.5	338.1	336.1	334.0	334.0	333.3	333.3	332.0	331.3	330.7
20°	308.2	307.5	306.8	304.8	304.1	302.7	301.4	301.4	299.3	300.0
22.5°	276.9	276.2	274.9	274.1	272.8	272.8	271.5	271.5	270.1	270.1
25°	246.9	246.3	245.0	244.2	242.9	242.9	241.5	242.2	240.8	240.8
27.5°	217.0	216.4	215.0	215.7	214.3	213.6	212.9	212.9	212.3	212.3
30°	189.8	187.7	187.7	187.1	186.4	186.4	186.4	185.1	185.1	185.8
32.5°	163.3	161.9	161.2	161.2	161.9	161.2	160.6	160.6	159.9	159.2
35°	138.8	138.1	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4
37.5°	115.7	116.3	115.7	116.3	117.0	116.3	115.7	115.0	115.0	115.0
40°	96.0	97.3	97.9	96.6	96.0	96.0	95.2	96.0	95.2	96.0
42.5°	80.3	81.0	79.6	80.3	81.0	81.0	79.6	77.6	76.2	75.5
45°	65.3	66.7	70.1	65.3	63.3	62.6	60.5	59.9	59.2	59.2
47.5°	55.8	58.5	51.7	49.6	48.3	48.3	47.0	45.6	45.6	44.9
50°	45.6	40.2	38.7	37.4	36.1	35.4	34.7	34.0	34.0	33.3
52.5°	30.6	29.3	27.9	27.2	26.5	26.5	26.5	26.5	26.5	26.5
55°	21.8	21.1	20.4	21.1	21.1	21.8	22.4	22.4	22.4	21.8
57.5°	15.0	15.0	16.3	17.7	17.7	17.7	17.7	17.1	17.1	17.1
60°	11.6	12.2	13.6	13.6	13.6	14.3	13.6	12.9	12.2	12.2
62.5°	8.8	10.2	10.9	10.9	10.2	10.2	9.6	9.6	9.6	9.6
65°	7.5	8.1	8.1	8.1	8.1	7.5	6.8	6.8	7.5	7.5
67.5°	6.2	6.2	6.2	5.4	5.4	6.2	6.8	7.5	7.5	8.1
70°	4.7	4.7	4.7	5.4	6.2	6.2	7.5	7.5	8.1	8.1
72.5°	3.4	3.4	4.7	5.4	6.2	6.2	6.2	5.4	5.4	5.4
75°	2.7	3.4	4.7	4.1	4.1	4.1	4.1	4.1	4.1	4.1
77.5°	2.1	2.7	2.7	2.1	2.7	2.7	2.7	3.4	3.4	4.1
80°	1.3	1.3	1.3	1.3	1.3	1.3	2.1	2.1	2.1	2.1
82.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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)