

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: P219773

Luminaire Tested: **MRZ-1-REC-X-2-L35-97-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219773
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14877)
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-2-L35-97-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL2
Light Source: (1) 3500K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 565.2 lumens
Efficiency: N/A
Efficacy: 64.2 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.69 / 0.7
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

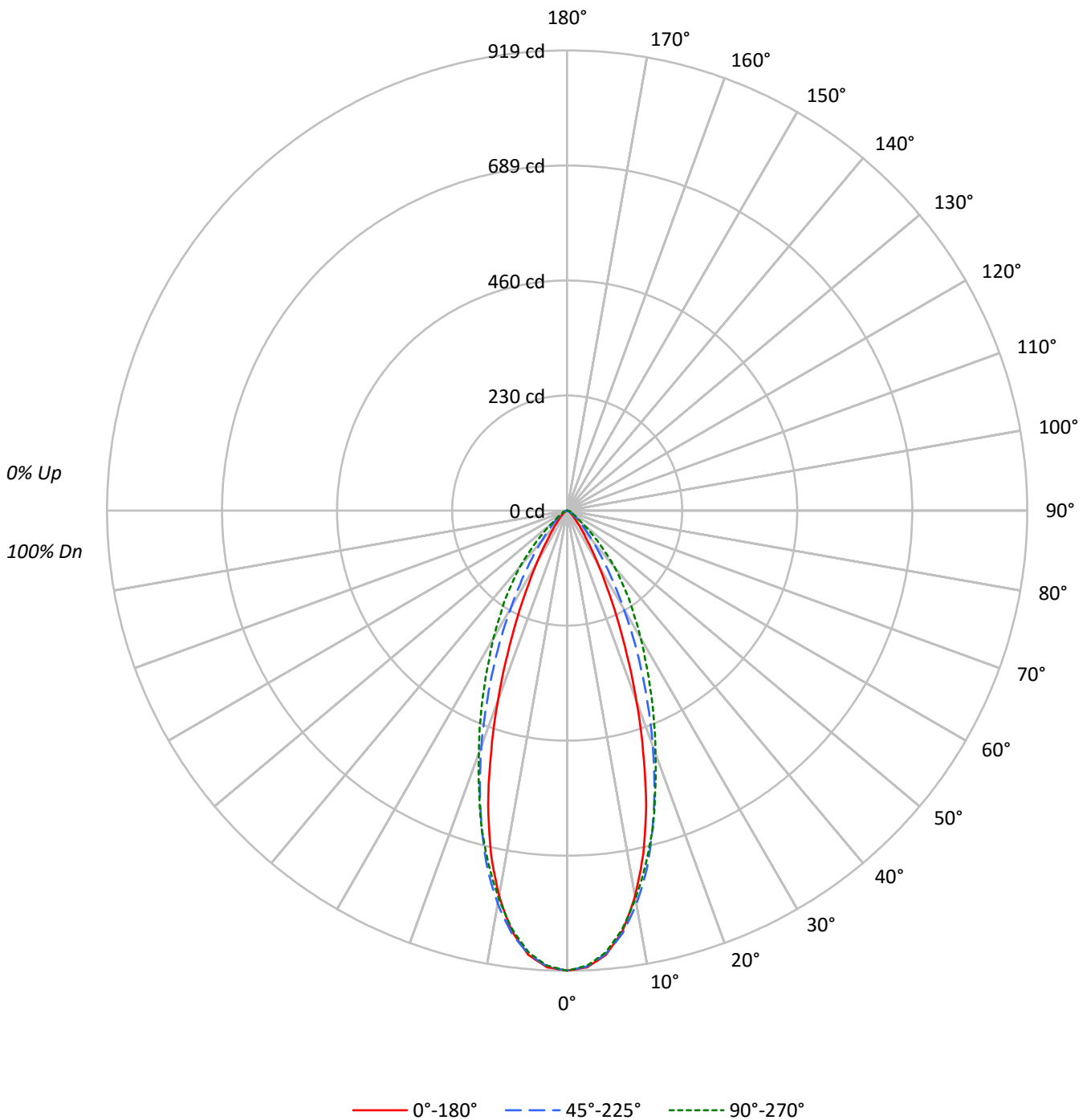
Input Watts (W): 8.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	93				93
2	108	103	99	96	106	101	98	95	98	95	93	95	93	91	92	90	89	87				87
3	103	96	91	87	101	95	90	87	92	88	85	90	87	84	88	85	83	81				81
4	98	90	85	81	96	89	84	80	87	83	79	85	81	78	83	80	77	76				76
5	93	85	79	75	91	84	78	74	82	77	74	80	76	73	79	75	72	71				71
6	88	80	74	70	87	79	74	70	78	73	69	76	72	69	75	71	68	67				67
7	84	75	70	65	83	75	69	65	73	68	65	72	68	65	71	67	64	63				63
8	81	71	66	62	79	71	65	61	70	65	61	69	64	61	68	64	61	59				59
9	77	68	62	58	76	67	62	58	66	61	58	65	61	58	65	61	57	56				56
10	74	64	59	55	73	64	59	55	63	58	55	62	58	55	62	58	55	53				53

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	453317	453317	453317
5°	440983	440141	438507
10°	391624	399590	394129
15°	311323	336505	336505
20°	212485	262942	270870
25°	127005	190262	213943
30°	70017	127671	167209
35°	36741	82094	129435
40°	20996	50108	94741
45°	13397	32096	58890
50°	9595	21185	30779
55°	7914	12215	19440
60°	6611	7401	12334
65°	5837	5837	9806
70°	4760	4760	13271
75°	4766	3241	8006
80°	2273	2273	4830
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.7	14.4
10°-20°	177.5	31.4
20°-30°	153.5	27.2
30°-40°	88.7	15.7
40°-50°	40.2	7.1
50°-60°	14.2	2.5
60°-70°	6.3	1.1
70°-80°	3.0	0.5
80°-90°	0.2	0.0
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°	412.6	73.0
0°-40°	501.4	88.7
0°-60°	555.7	98.3
0°-90°	565.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	565.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	919	919	919	919	919	
5°	890	890	889	885	885	82
15°	610	628	659	665	659	165
25°	233	268	350	400	393	109
35°	61	79	136	203	215	41
45°	19	23	46	80	84	16
55°	9	9	14	18	23	8
65°	5	6	5	8	8	5
75°	2	2	2	3	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°	918.8	918.8	918.8	918.8	918.8	918.8	918.8	918.8	918.8	918.8	918.8
2.5°	913.0	911.3	911.3	911.3	912.2	912.2	911.3	911.3	911.3	911.3	911.3
5°	890.4	888.7	888.7	889.6	888.7	889.6	888.7	890.4	889.6	888.7	888.7
7.5°	846.9	846.9	846.9	847.8	848.6	848.6	848.6	850.3	850.3	852.0	851.1
10°	781.7	783.4	783.4	785.9	788.4	786.7	787.6	792.6	794.3	795.9	797.6
12.5°	702.3	704.8	706.5	708.2	710.7	713.2	714.0	722.4	724.9	728.2	734.1
15°	609.5	608.7	613.7	616.2	623.7	627.9	630.4	638.8	647.1	652.1	658.8
17.5°	505.0	507.5	510.0	516.7	525.9	531.7	535.1	545.1	558.5	569.4	579.4
20°	404.7	409.7	412.2	419.7	428.9	432.2	441.4	454.8	472.4	487.4	500.8
22.5°	311.9	314.4	321.1	329.4	339.4	347.0	356.2	369.5	387.9	403.0	421.4
25°	233.3	234.1	242.5	250.0	260.9	268.4	273.4	291.0	310.2	329.4	349.5
27.5°	169.7	171.4	176.4	183.9	195.6	200.7	209.0	224.1	242.5	263.4	284.3
30°	122.9	122.9	126.2	134.6	143.0	149.7	155.5	169.7	187.3	204.8	224.1
32.5°	86.1	87.0	90.3	96.1	104.5	109.5	113.7	127.1	141.3	158.9	175.6
35°	61.0	61.9	65.2	68.6	75.2	79.4	82.8	92.8	105.3	120.4	136.3
37.5°	44.3	45.1	46.8	49.3	54.3	56.9	60.2	68.6	78.6	90.3	104.5
40°	32.6	33.4	34.3	36.8	40.1	41.8	44.3	50.2	57.7	67.7	77.8
42.5°	25.1	25.1	25.9	27.6	29.3	30.9	32.6	36.8	42.6	50.2	59.4
45°	19.2	19.2	20.1	21.7	22.6	23.4	25.1	27.6	31.8	37.6	46.0
47.5°	15.9	15.9	15.9	16.7	17.6	18.4	19.2	21.7	24.2	30.1	35.1
50°	12.5	12.5	13.4	13.4	14.2	14.2	15.0	16.7	20.1	24.2	27.6
52.5°	10.9	10.9	10.9	10.9	10.9	11.7	11.7	13.4	16.7	18.4	20.1
55°	9.2	9.2	9.2	9.2	9.2	9.2	10.0	11.7	13.4	15.0	14.2
57.5°	7.5	7.5	7.5	7.5	7.5	8.4	8.4	10.0	10.9	10.0	10.0
60°	6.7	6.7	5.9	5.9	6.7	6.7	7.5	8.4	8.4	7.5	7.5
62.5°	5.9	5.0	5.0	5.0	5.9	6.7	6.7	6.7	5.9	5.9	5.9
65°	5.0	4.2	4.2	5.0	5.0	5.9	5.9	5.0	5.0	5.0	5.0
67.5°	4.2	4.2	4.2	4.2	5.0	5.0	5.0	4.2	4.2	4.2	4.2
70°	3.3	3.3	3.3	3.3	4.2	4.2	3.3	3.3	3.3	3.3	3.3
72.5°	2.5	2.5	2.5	3.3	3.3	3.3	2.5	2.5	2.5	3.3	2.5
75°	2.5	2.5	2.5	2.5	2.5	2.5	1.7	1.7	2.5	2.5	1.7
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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°	918.8	918.8	918.8	918.8	918.8	918.8	918.8	918.8	918.8	918.8
2.5°	910.5	910.5	909.6	910.5	910.5	910.5	910.5	909.6	910.5	909.6
5°	887.9	887.9	887.9	886.2	885.4	886.2	885.4	884.6	884.6	885.4
7.5°	849.4	849.4	848.6	846.9	846.9	846.1	844.4	843.6	842.8	842.8
10°	799.3	798.4	795.9	795.1	795.1	792.6	789.2	789.2	785.9	786.7
12.5°	736.6	734.9	734.1	734.1	730.7	730.7	728.2	727.4	725.7	724.0
15°	661.3	663.8	665.5	664.7	664.7	662.2	661.3	659.7	657.2	658.8
17.5°	586.9	592.8	594.4	597.0	597.8	596.1	593.6	589.4	586.9	585.2
20°	513.3	521.7	527.6	529.2	529.2	528.4	527.6	520.9	520.0	515.9
22.5°	437.3	449.0	459.0	462.3	463.2	464.0	460.7	455.7	454.0	453.1
25°	366.2	382.1	392.1	398.8	400.5	403.0	401.3	398.8	393.8	393.0
27.5°	301.8	318.5	331.9	340.3	344.5	346.1	347.8	343.6	342.0	338.6
30°	244.1	263.4	277.6	289.3	291.8	295.1	296.0	296.8	293.5	293.5
32.5°	194.8	210.7	228.2	240.0	245.0	247.5	251.7	250.8	250.8	250.0
35°	153.0	168.9	184.8	197.3	203.2	206.5	211.5	214.0	214.9	214.9
37.5°	117.9	133.8	148.0	163.0	168.9	173.1	176.4	177.2	178.1	177.2
40°	90.3	105.3	119.6	129.6	133.8	137.1	141.3	144.6	146.3	147.1
42.5°	71.1	81.9	91.1	101.2	107.9	112.9	113.7	112.9	112.9	112.0
45°	53.5	61.9	76.1	78.6	80.3	81.1	83.6	84.4	84.4	84.4
47.5°	42.6	51.8	51.8	55.2	56.9	59.4	60.2	60.2	60.2	60.2
50°	31.8	33.4	36.0	38.5	39.3	39.3	40.1	40.1	40.1	40.1
52.5°	20.9	23.4	24.2	25.1	25.9	26.8	28.4	29.3	28.4	28.4
55°	15.0	15.9	16.7	18.4	18.4	19.2	22.6	22.6	22.6	22.6
57.5°	10.0	10.9	12.5	15.0	15.0	15.9	16.7	16.7	17.6	17.6
60°	8.4	9.2	10.0	10.9	11.7	13.4	15.0	12.5	12.5	12.5
62.5°	6.7	7.5	8.4	9.2	8.4	9.2	10.0	10.0	10.0	10.0
65°	5.9	6.7	5.9	6.7	7.5	7.5	6.7	7.5	7.5	8.4
67.5°	5.0	5.0	5.0	5.0	5.0	5.9	7.5	8.4	9.2	9.2
70°	3.3	3.3	3.3	5.0	5.0	5.9	6.7	8.4	8.4	9.2
72.5°	2.5	2.5	3.3	4.2	5.0	5.0	5.9	5.9	6.7	6.7
75°	2.5	2.5	3.3	3.3	3.3	3.3	4.2	4.2	4.2	4.2
77.5°	1.7	1.7	1.7	1.7	2.5	2.5	2.5	3.3	3.3	3.3
80°	0.8	0.8	0.8	0.8	1.7	1.7	1.7	1.7	1.7	1.7
82.5°	0.8	0.8	0.8	0.8	0.8	0.0	0.0	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)