

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: P226192

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226192
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-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: 345.6 lumens
Efficiency: N/A
Efficacy: 64.0 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

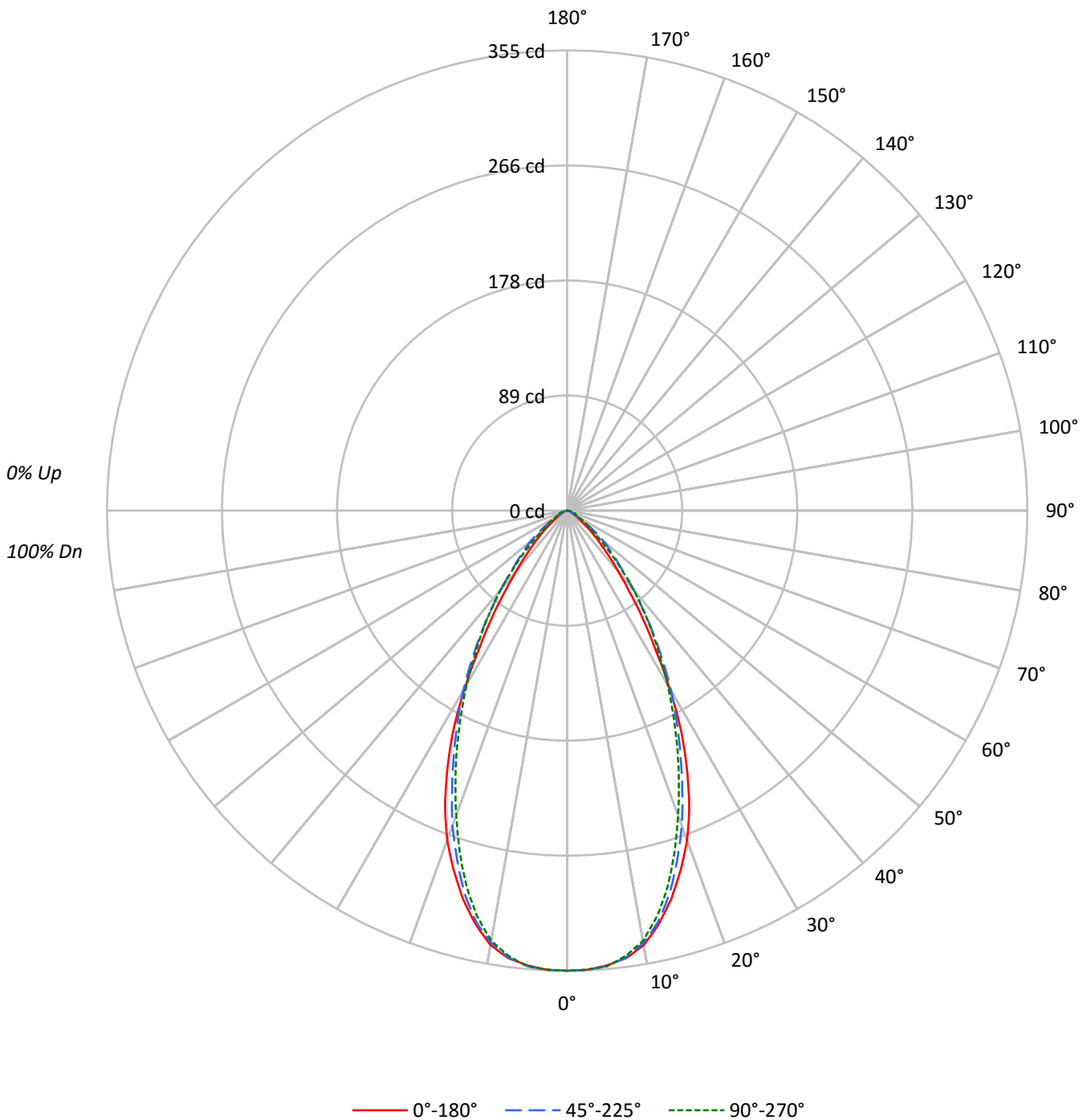
Input Watts (W): 5.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	84	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°	175150	175150	175150
5°	174432	174729	174729
10°	170487	169635	168784
15°	158445	156147	153235
20°	142077	135776	131313
25°	118893	112415	109312
30°	89786	91438	88190
35°	61134	69687	68964
40°	39417	51138	51525
45°	25328	37190	34469
50°	16119	28323	21338
55°	9720	16085	15569
60°	6118	8980	10065
65°	4553	6654	7238
70°	4183	5626	9809
75°	3241	4194	6481
80°	1421	3410	4830
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.2	9.6
10°-20°	84.6	24.5
20°-30°	95.3	27.6
30°-40°	70.5	20.4
40°-50°	37.6	10.9
50°-60°	15.4	4.5
60°-70°	6.0	1.7
70°-80°	2.7	0.8
80°-90°	0.2	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°	213.2	61.7
0°-40°	283.6	82.1
0°-60°	336.7	97.4
0°-90°	345.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	345.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	355	355	355	355	355	
5°	352	352	353	353	353	33
15°	310	307	306	302	300	86
25°	218	216	206	202	201	99
35°	102	111	116	114	114	64
45°	36	41	53	53	49	29
55°	11	14	19	18	18	11
65°	4	6	6	7	6	4
75°	2	2	2	3	3	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°	355.0	355.0	355.0	355.0	355.0	355.0	355.0	355.0	355.0	355.0	355.0
2.5°	354.5	354.5	354.5	354.5	354.5	354.5	354.5	354.5	354.5	354.5	354.5
5°	352.2	352.2	352.2	352.2	352.2	352.2	352.2	352.8	352.2	352.8	352.8
7.5°	348.2	347.7	347.7	347.7	347.7	347.7	347.7	347.7	347.7	347.7	347.7
10°	340.3	339.8	339.8	338.6	339.1	338.6	338.6	338.6	338.6	338.6	338.6
12.5°	326.7	326.7	326.1	325.6	324.9	324.9	324.9	324.9	324.9	324.9	324.9
15°	310.2	310.2	309.7	308.5	308.0	307.4	306.8	306.8	306.3	306.3	305.7
17.5°	290.9	290.9	289.9	288.7	287.5	287.0	285.8	284.7	284.1	283.6	282.4
20°	270.6	270.6	268.8	268.3	266.0	265.4	263.7	262.0	259.8	259.1	258.6
22.5°	246.1	245.0	244.4	244.4	242.7	241.7	240.5	238.2	234.8	233.7	232.0
25°	218.4	217.8	217.8	217.2	216.7	215.5	216.1	214.4	211.6	209.2	206.5
27.5°	189.4	188.9	188.3	188.9	190.0	190.0	189.4	188.3	187.2	184.3	182.6
30°	157.6	157.6	158.8	160.5	162.2	162.7	163.4	162.7	162.2	160.5	160.5
32.5°	126.5	127.6	128.7	132.7	134.4	135.5	136.1	137.8	137.8	137.8	136.7
35°	101.5	101.5	103.8	106.6	108.9	111.1	111.8	114.0	115.7	115.7	115.7
37.5°	78.8	79.4	81.7	83.9	86.8	87.9	89.0	92.5	94.7	95.9	96.4
40°	61.2	62.4	63.6	65.8	68.6	69.2	70.3	73.2	76.0	78.3	79.4
42.5°	47.7	47.7	48.7	50.4	52.2	53.9	55.0	56.7	60.1	61.9	64.1
45°	36.3	36.9	37.4	38.6	40.3	40.8	42.0	44.3	46.5	48.7	53.3
47.5°	27.8	27.8	28.4	28.9	30.6	31.2	31.8	34.0	36.3	40.8	44.3
50°	21.0	21.0	21.0	21.5	22.7	23.8	24.4	26.1	30.6	34.0	36.9
52.5°	15.4	15.4	15.4	16.4	17.1	17.6	18.1	20.4	26.1	26.7	27.8
55°	11.3	11.3	11.3	11.9	13.0	13.6	14.2	18.1	19.3	21.0	18.7
57.5°	8.5	8.5	8.5	9.1	9.6	10.2	11.3	14.2	15.9	13.6	13.0
60°	6.2	6.2	6.2	6.8	7.9	8.5	9.6	10.8	10.8	9.6	9.1
62.5°	5.1	5.1	5.1	5.1	6.2	7.4	7.4	8.5	7.4	6.8	6.8
65°	3.9	3.9	3.9	4.6	5.1	5.7	6.2	5.7	5.1	5.1	5.7
67.5°	3.4	3.4	3.4	3.4	4.6	4.6	4.6	3.9	3.9	3.9	4.6
70°	2.9	2.9	2.9	2.9	3.4	3.4	3.4	2.9	2.9	3.4	3.9
72.5°	2.2	2.2	2.2	2.9	2.9	2.9	2.2	2.2	2.2	2.9	2.9
75°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.2	2.2	2.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.7	1.7	1.7
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.2
82.5°	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5
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°	355.0	355.0	355.0	355.0	355.0	355.0	355.0	355.0	355.0	355.0
2.5°	354.5	354.5	355.0	354.5	354.5	354.5	354.5	354.5	354.5	354.5
5°	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8	352.8
7.5°	347.7	347.7	347.7	347.1	347.1	347.1	347.1	347.1	347.1	346.5
10°	338.6	338.6	338.1	337.4	338.1	336.9	336.9	336.4	336.4	336.9
12.5°	324.4	323.9	322.7	322.7	322.2	321.5	321.0	321.0	320.5	320.5
15°	305.7	304.6	303.4	302.9	301.7	302.3	301.7	300.6	300.6	300.0
17.5°	283.0	281.9	280.2	278.4	278.4	277.9	277.9	276.7	276.2	275.7
20°	256.9	256.4	255.8	254.1	253.5	252.4	251.3	251.3	249.5	250.1
22.5°	230.8	230.2	229.2	228.5	227.5	227.5	226.3	226.3	225.1	225.1
25°	205.9	205.3	204.2	203.6	202.5	202.5	201.3	201.9	200.8	200.8
27.5°	180.9	180.3	179.3	179.8	178.6	178.1	177.6	177.6	176.9	176.9
30°	158.3	156.6	156.6	156.0	155.4	155.4	155.4	154.3	154.3	154.8
32.5°	136.1	135.0	134.4	134.4	135.0	134.4	133.8	133.8	133.3	132.7
35°	115.7	115.2	114.5	114.5	114.5	114.5	114.5	114.5	114.5	114.5
37.5°	96.4	96.9	96.4	96.9	97.6	96.9	96.4	95.9	95.9	95.9
40°	80.0	81.1	81.7	80.5	80.0	80.0	79.4	80.0	79.4	80.0
42.5°	67.0	67.5	66.3	67.0	67.5	67.5	66.3	64.6	63.6	62.9
45°	54.5	55.6	58.4	54.5	52.8	52.2	50.4	49.9	49.4	49.4
47.5°	46.5	48.7	43.1	41.4	40.3	40.3	39.1	38.0	38.0	37.4
50°	38.0	33.5	32.3	31.2	30.1	29.5	28.9	28.4	28.4	27.8
52.5°	25.5	24.4	23.2	22.7	22.1	22.1	22.1	22.1	22.1	22.1
55°	18.1	17.6	17.1	17.6	17.6	18.1	18.7	18.7	18.7	18.1
57.5°	12.5	12.5	13.6	14.7	14.7	14.7	14.7	14.2	14.2	14.2
60°	9.6	10.2	11.3	11.3	11.3	11.9	11.3	10.8	10.2	10.2
62.5°	7.4	8.5	9.1	9.1	8.5	8.5	7.9	7.9	7.9	7.9
65°	6.2	6.8	6.8	6.8	6.8	6.2	5.7	5.7	6.2	6.2
67.5°	5.1	5.1	5.1	4.6	4.6	5.1	5.7	6.2	6.2	6.8
70°	3.9	3.9	3.9	4.6	5.1	5.1	6.2	6.2	6.8	6.8
72.5°	2.9	2.9	3.9	4.6	5.1	5.1	5.1	4.6	4.6	4.6
75°	2.2	2.9	3.9	3.4	3.4	3.4	3.4	3.4	3.4	3.4
77.5°	1.7	2.2	2.2	1.7	2.2	2.2	2.2	2.9	2.9	3.4
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.7	1.7	1.7	1.7
82.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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)