

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: P219762

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219762
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-1H-L40-80-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE 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: 550.8 lumens
Efficiency: N/A
Efficacy: 81.0 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

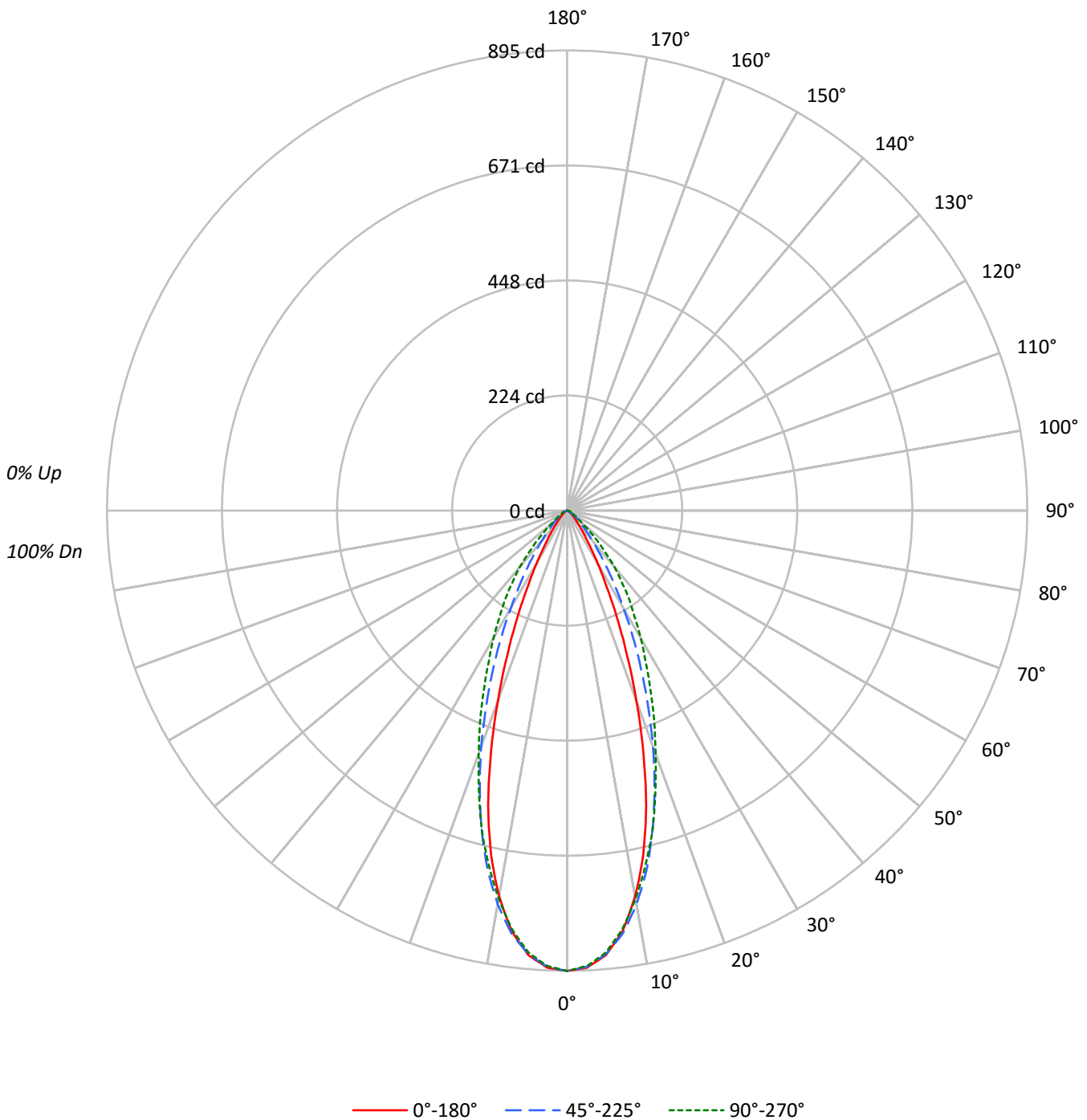
Input Watts (W): 6.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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			
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°	441772	441772	441772
5°	429741	428899	427314
10°	381605	389370	384059
15°	303355	327923	327923
20°	207025	256221	263939
25°	123739	185363	208445
30°	68251	124367	162936
35°	35837	79986	126123
40°	20481	48820	92358
45°	13048	31259	57424
50°	9364	20647	30012
55°	7742	11870	18924
60°	6414	7203	12038
65°	5720	5720	9456
70°	4760	4760	12983
75°	4575	3050	7816
80°	2273	2273	4546
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	79.6	14.4
10°-20°	172.9	31.4
20°-30°	149.6	27.2
30°-40°	86.4	15.7
40°-50°	39.2	7.1
50°-60°	13.8	2.5
60°-70°	6.1	1.1
70°-80°	2.9	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°	402.1	73.0
0°-40°	488.5	88.7
0°-60°	541.5	98.3
0°-90°	550.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	550.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	895	895	895	895	895	
5°	868	867	866	863	863	79
15°	594	612	642	648	642	161
25°	227	262	340	390	383	107
35°	60	77	133	198	209	40
45°	19	23	45	78	82	15
55°	9	9	14	18	22	8
65°	5	6	5	7	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°	895.4	895.4	895.4	895.4	895.4	895.4	895.4	895.4	895.4	895.4	895.4
2.5°	889.7	888.0	888.0	888.0	888.8	888.8	888.0	888.0	888.0	888.0	888.0
5°	867.7	866.0	866.0	866.8	866.0	866.8	866.0	867.7	866.8	866.0	866.0
7.5°	825.3	825.3	825.3	826.1	826.9	826.9	826.9	828.6	828.6	830.2	829.4
10°	761.7	763.4	763.4	765.8	768.3	766.6	767.5	772.3	774.0	775.6	777.2
12.5°	684.4	686.8	688.4	690.1	692.5	694.9	695.8	703.9	706.3	709.6	715.3
15°	593.9	593.1	598.0	600.4	607.8	611.8	614.3	622.4	630.6	635.5	642.0
17.5°	492.1	494.5	497.0	503.5	512.4	518.2	521.4	531.2	544.2	554.8	564.6
20°	394.3	399.2	401.6	409.0	417.9	421.2	430.2	443.2	460.3	475.0	488.0
22.5°	303.9	306.3	312.8	321.0	330.8	338.1	347.1	360.1	378.0	392.7	410.6
25°	227.3	228.1	236.3	243.6	254.2	261.5	266.4	283.5	302.3	321.0	340.5
27.5°	165.4	167.0	171.9	179.2	190.6	195.5	203.7	218.3	236.3	256.6	277.0
30°	119.8	119.8	123.0	131.2	139.3	145.8	151.5	165.4	182.5	199.6	218.3
32.5°	83.9	84.7	88.0	93.7	101.8	106.7	110.8	123.8	137.7	154.8	171.1
35°	59.5	60.3	63.5	66.8	73.3	77.4	80.7	90.4	102.7	117.3	132.8
37.5°	43.2	44.0	45.6	48.1	53.0	55.4	58.7	66.8	76.6	88.0	101.8
40°	31.8	32.6	33.4	35.8	39.1	40.7	43.2	48.9	56.2	66.0	75.8
42.5°	24.4	24.4	25.3	26.9	28.5	30.1	31.8	35.8	41.5	48.9	57.8
45°	18.7	18.7	19.6	21.2	22.0	22.8	24.4	26.9	31.0	36.7	44.8
47.5°	15.5	15.5	15.5	16.3	17.1	17.9	18.7	21.2	23.6	29.3	34.2
50°	12.2	12.2	13.0	13.0	13.8	13.8	14.7	16.3	19.6	23.6	26.9
52.5°	10.6	10.6	10.6	10.6	10.6	11.4	11.4	13.0	16.3	17.9	19.6
55°	9.0	9.0	9.0	9.0	9.0	9.0	9.8	11.4	13.0	14.7	13.8
57.5°	7.3	7.3	7.3	7.3	7.3	8.1	8.1	9.8	10.6	9.8	9.8
60°	6.5	6.5	5.7	5.7	6.5	6.5	7.3	8.1	8.1	7.3	7.3
62.5°	5.7	4.9	4.9	4.9	5.7	6.5	6.5	6.5	5.7	5.7	5.7
65°	4.9	4.1	4.1	4.9	4.9	5.7	5.7	4.9	4.9	4.9	4.9
67.5°	4.1	4.1	4.1	4.1	4.9	4.9	4.9	4.1	4.1	4.1	4.1
70°	3.3	3.3	3.3	3.3	4.1	4.1	3.3	3.3	3.3	3.3	3.3
72.5°	2.4	2.4	2.4	3.3	3.3	3.3	2.4	2.4	2.4	3.3	2.4
75°	2.4	2.4	2.4	2.4	2.4	2.4	1.6	1.6	2.4	2.4	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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°	895.4	895.4	895.4	895.4	895.4	895.4	895.4	895.4	895.4	895.4
2.5°	887.2	887.2	886.4	887.2	887.2	887.2	887.2	886.4	887.2	886.4
5°	865.2	865.2	865.2	863.6	862.8	863.6	862.8	862.0	862.0	862.8
7.5°	827.7	827.7	826.9	825.3	825.3	824.5	822.9	822.0	821.2	821.2
10°	778.9	778.0	775.6	774.8	774.8	772.3	769.1	769.1	765.8	766.6
12.5°	717.8	716.1	715.3	715.3	712.1	712.1	709.6	708.8	707.2	705.5
15°	644.4	646.9	648.5	647.7	647.7	645.2	644.4	642.8	640.4	642.0
17.5°	571.9	577.6	579.3	581.7	582.5	580.9	578.4	574.4	571.9	570.3
20°	500.2	508.4	514.1	515.7	515.7	514.9	514.1	507.6	506.7	502.7
22.5°	426.1	437.5	447.3	450.5	451.3	452.2	448.9	444.0	442.4	441.6
25°	356.8	372.3	382.1	388.6	390.2	392.7	391.1	388.6	383.7	382.9
27.5°	294.1	310.4	323.4	331.6	335.7	337.3	338.9	334.8	333.2	330.0
30°	237.9	256.6	270.5	281.9	284.3	287.6	288.4	289.2	286.0	286.0
32.5°	189.8	205.3	222.4	233.8	238.7	241.2	245.2	244.4	244.4	243.6
35°	149.1	164.6	180.0	192.3	198.0	201.2	206.1	208.6	209.4	209.4
37.5°	114.9	130.4	144.2	158.9	164.6	168.6	171.9	172.7	173.5	172.7
40°	88.0	102.7	116.5	126.3	130.4	133.6	137.7	140.9	142.6	143.4
42.5°	69.2	79.8	88.8	98.6	105.1	110.0	110.8	110.0	110.0	109.2
45°	52.1	60.3	74.1	76.6	78.2	79.0	81.5	82.3	82.3	82.3
47.5°	41.5	50.5	50.5	53.8	55.4	57.8	58.7	58.7	58.7	58.7
50°	31.0	32.6	35.0	37.5	38.3	38.3	39.1	39.1	39.1	39.1
52.5°	20.4	22.8	23.6	24.4	25.3	26.1	27.7	28.5	27.7	27.7
55°	14.7	15.5	16.3	17.9	17.9	18.7	22.0	22.0	22.0	22.0
57.5°	9.8	10.6	12.2	14.7	14.7	15.5	16.3	16.3	17.1	17.1
60°	8.1	9.0	9.8	10.6	11.4	13.0	14.7	12.2	12.2	12.2
62.5°	6.5	7.3	8.1	9.0	8.1	9.0	9.8	9.8	9.8	9.8
65°	5.7	6.5	5.7	6.5	7.3	7.3	6.5	7.3	7.3	8.1
67.5°	4.9	4.9	4.9	4.9	4.9	5.7	7.3	8.1	9.0	9.0
70°	3.3	3.3	3.3	4.9	4.9	5.7	6.5	8.1	8.1	9.0
72.5°	2.4	2.4	3.3	4.1	4.9	4.9	5.7	5.7	6.5	6.5
75°	2.4	2.4	3.3	3.3	3.3	3.3	4.1	4.1	4.1	4.1
77.5°	1.6	1.6	1.6	1.6	2.4	2.4	2.4	3.3	3.3	3.3
80°	0.8	0.8	0.8	0.8	1.6	1.6	1.6	1.6	1.6	1.6
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)