

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: P219761

Luminaire Tested: **MRZ-1-REC-X-1H-L35-80-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219761
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-L35-80-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 1
Light Source: (1) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 543.0 lumens
Efficiency: N/A
Efficacy: 79.9 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

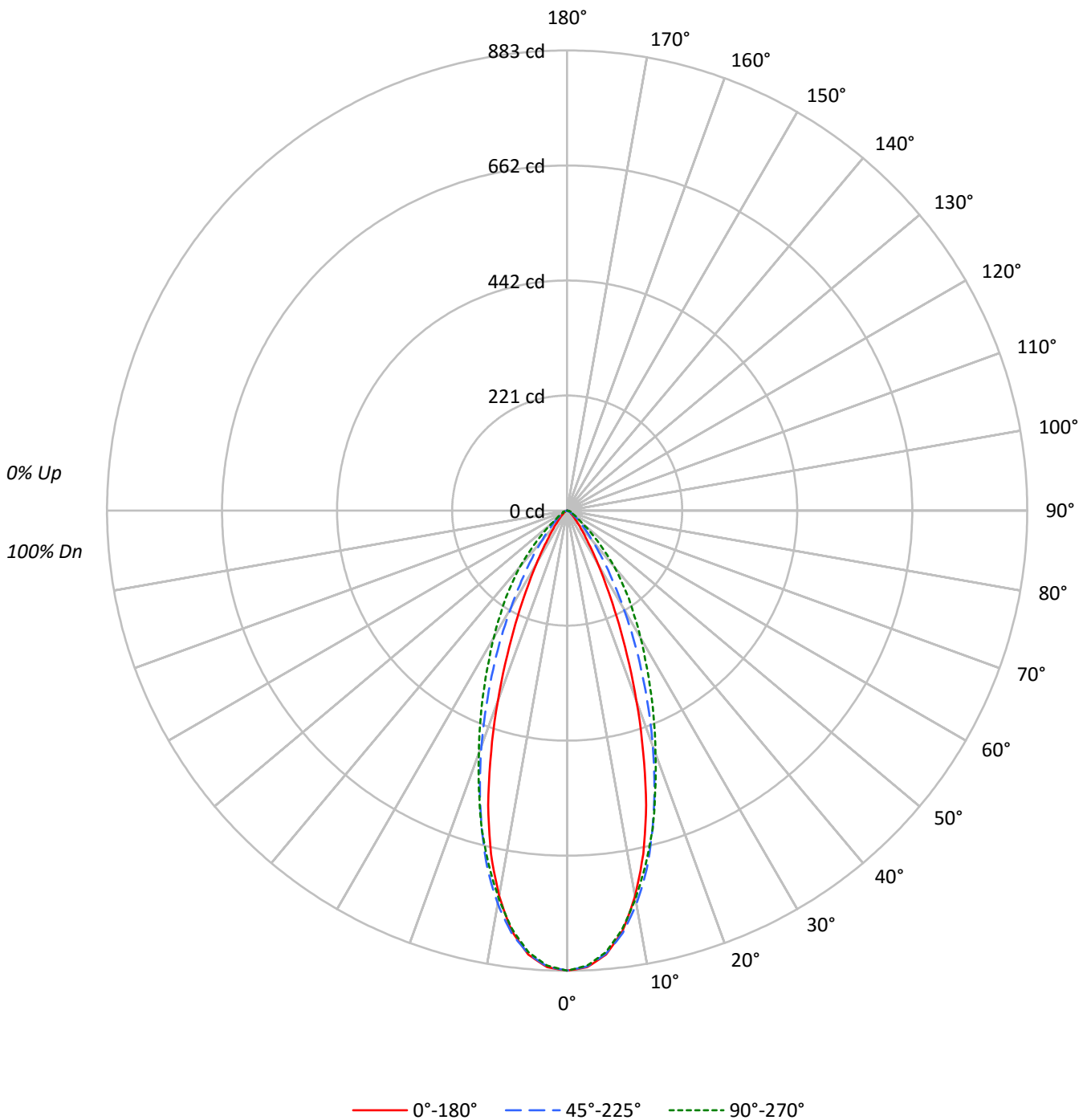
Input Watts (W): 6.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	435506	435506	435506
5°	423649	422857	421272
10°	376244	383909	378649
15°	299115	323275	323275
20°	204137	252598	260212
25°	121996	182750	205505
30°	67282	122658	160600
35°	35295	78842	124316
40°	20159	48111	91070
45°	12908	30840	56587
50°	9211	20340	29628
55°	7570	11784	18666
60°	6315	7105	11841
65°	5604	5604	9339
70°	4616	4616	12694
75°	4575	3050	7625
80°	2273	2273	4546
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.5	14.4
10°-20°	170.5	31.4
20°-30°	147.5	27.2
30°-40°	85.2	15.7
40°-50°	38.6	7.1
50°-60°	13.6	2.5
60°-70°	6.0	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°	396.4	73.0
0°-40°	481.7	88.7
0°-60°	533.9	98.3
0°-90°	543.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	543.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	883	883	883	883	883	
5°	855	855	854	851	851	78
15°	586	603	633	639	633	159
25°	224	258	336	385	378	105
35°	59	76	131	195	206	40
45°	18	22	44	77	81	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°	882.7	882.7	882.7	882.7	882.7	882.7	882.7	882.7	882.7	882.7	882.7
2.5°	877.1	875.5	875.5	875.5	876.3	876.3	875.5	875.5	875.5	875.5	875.5
5°	855.4	853.8	853.8	854.6	853.8	854.6	853.8	855.4	854.6	853.8	853.8
7.5°	813.7	813.7	813.7	814.5	815.3	815.3	815.3	816.9	816.9	818.5	817.7
10°	751.0	752.6	752.6	755.0	757.4	755.8	756.6	761.5	763.1	764.7	766.3
12.5°	674.7	677.1	678.7	680.3	682.7	685.2	686.0	694.0	696.4	699.6	705.2
15°	585.6	584.7	589.6	592.0	599.2	603.2	605.6	613.7	621.7	626.5	632.9
17.5°	485.1	487.6	490.0	496.4	505.2	510.9	514.1	523.7	536.6	547.0	556.6
20°	388.8	393.6	396.0	403.2	412.1	415.3	424.1	437.0	453.8	468.3	481.1
22.5°	299.6	302.0	308.4	316.5	326.1	333.3	342.2	355.0	372.7	387.2	404.8
25°	224.1	224.9	232.9	240.2	250.6	257.8	262.7	279.5	298.0	316.5	335.7
27.5°	163.1	164.7	169.5	176.7	188.0	192.8	200.8	215.3	232.9	253.0	273.1
30°	118.1	118.1	121.3	129.3	137.4	143.8	149.4	163.1	179.9	196.8	215.3
32.5°	82.7	83.5	86.7	92.4	100.4	105.2	109.2	122.1	135.7	152.6	168.7
35°	58.6	59.4	62.7	65.9	72.3	76.3	79.5	89.2	101.2	115.7	130.9
37.5°	42.6	43.4	45.0	47.4	52.2	54.6	57.8	65.9	75.5	86.7	100.4
40°	31.3	32.1	32.9	35.3	38.6	40.2	42.6	48.2	55.4	65.1	74.7
42.5°	24.1	24.1	24.9	26.5	28.1	29.7	31.3	35.3	41.0	48.2	57.0
45°	18.5	18.5	19.3	20.9	21.7	22.5	24.1	26.5	30.5	36.1	44.2
47.5°	15.3	15.3	15.3	16.1	16.9	17.7	18.5	20.9	23.3	28.9	33.7
50°	12.0	12.0	12.9	12.9	13.7	13.7	14.5	16.1	19.3	23.3	26.5
52.5°	10.4	10.4	10.4	10.4	10.4	11.2	11.2	12.9	16.1	17.7	19.3
55°	8.8	8.8	8.8	8.8	8.8	8.8	9.6	11.2	12.9	14.5	13.7
57.5°	7.2	7.2	7.2	7.2	7.2	8.0	8.0	9.6	10.4	9.6	9.6
60°	6.4	6.4	5.6	5.6	6.4	6.4	7.2	8.0	8.0	7.2	7.2
62.5°	5.6	4.8	4.8	4.8	5.6	6.4	6.4	6.4	5.6	5.6	5.6
65°	4.8	4.0	4.0	4.8	4.8	5.6	5.6	4.8	4.8	4.8	4.8
67.5°	4.0	4.0	4.0	4.0	4.8	4.8	4.8	4.0	4.0	4.0	4.0
70°	3.2	3.2	3.2	3.2	4.0	4.0	3.2	3.2	3.2	3.2	3.2
72.5°	2.4	2.4	2.4	3.2	3.2	3.2	2.4	2.4	2.4	3.2	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°	882.7	882.7	882.7	882.7	882.7	882.7	882.7	882.7	882.7	882.7
2.5°	874.7	874.7	873.9	874.7	874.7	874.7	874.7	873.9	874.7	873.9
5°	853.0	853.0	853.0	851.4	850.6	851.4	850.6	849.8	849.8	850.6
7.5°	816.1	816.1	815.3	813.7	813.7	812.9	811.3	810.5	809.7	809.7
10°	767.9	767.1	764.7	763.9	763.9	761.5	758.2	758.2	755.0	755.8
12.5°	707.6	706.0	705.2	705.2	702.0	702.0	699.6	698.8	697.2	695.6
15°	635.4	637.8	639.4	638.6	638.6	636.2	635.4	633.7	631.3	632.9
17.5°	563.9	569.5	571.1	573.5	574.3	572.7	570.3	566.3	563.9	562.3
20°	493.2	501.2	506.8	508.4	508.4	507.6	506.8	500.4	499.6	495.6
22.5°	420.1	431.3	441.0	444.2	445.0	445.8	442.6	437.8	436.2	435.3
25°	351.8	367.1	376.7	383.1	384.7	387.2	385.5	383.1	378.3	377.5
27.5°	290.0	306.0	318.9	326.9	330.9	332.5	334.1	330.1	328.5	325.3
30°	234.5	253.0	266.7	277.9	280.3	283.5	284.3	285.1	281.9	281.9
32.5°	187.2	202.4	219.3	230.5	235.3	237.8	241.8	241.0	241.0	240.2
35°	147.0	162.3	177.5	189.6	195.2	198.4	203.2	205.6	206.4	206.4
37.5°	113.3	128.5	142.2	156.6	162.3	166.3	169.5	170.3	171.1	170.3
40°	86.7	101.2	114.9	124.5	128.5	131.7	135.7	139.0	140.6	141.4
42.5°	68.3	78.7	87.6	97.2	103.6	108.4	109.2	108.4	108.4	107.6
45°	51.4	59.4	73.1	75.5	77.1	77.9	80.3	81.1	81.1	81.1
47.5°	41.0	49.8	49.8	53.0	54.6	57.0	57.8	57.8	57.8	57.8
50°	30.5	32.1	34.5	36.9	37.8	37.8	38.6	38.6	38.6	38.6
52.5°	20.1	22.5	23.3	24.1	24.9	25.7	27.3	28.1	27.3	27.3
55°	14.5	15.3	16.1	17.7	17.7	18.5	21.7	21.7	21.7	21.7
57.5°	9.6	10.4	12.0	14.5	14.5	15.3	16.1	16.1	16.9	16.9
60°	8.0	8.8	9.6	10.4	11.2	12.9	14.5	12.0	12.0	12.0
62.5°	6.4	7.2	8.0	8.8	8.0	8.8	9.6	9.6	9.6	9.6
65°	5.6	6.4	5.6	6.4	7.2	7.2	6.4	7.2	7.2	8.0
67.5°	4.8	4.8	4.8	4.8	4.8	5.6	7.2	8.0	8.8	8.8
70°	3.2	3.2	3.2	4.8	4.8	5.6	6.4	8.0	8.0	8.8
72.5°	2.4	2.4	3.2	4.0	4.8	4.8	5.6	5.6	6.4	6.4
75°	2.4	2.4	3.2	3.2	3.2	3.2	4.0	4.0	4.0	4.0
77.5°	1.6	1.6	1.6	1.6	2.4	2.4	2.4	3.2	3.2	3.2
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)