

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: P226153

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P226153  
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-L35-80-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) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 436.9 lumens  
Efficiency: N/A  
Efficacy: 80.9 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

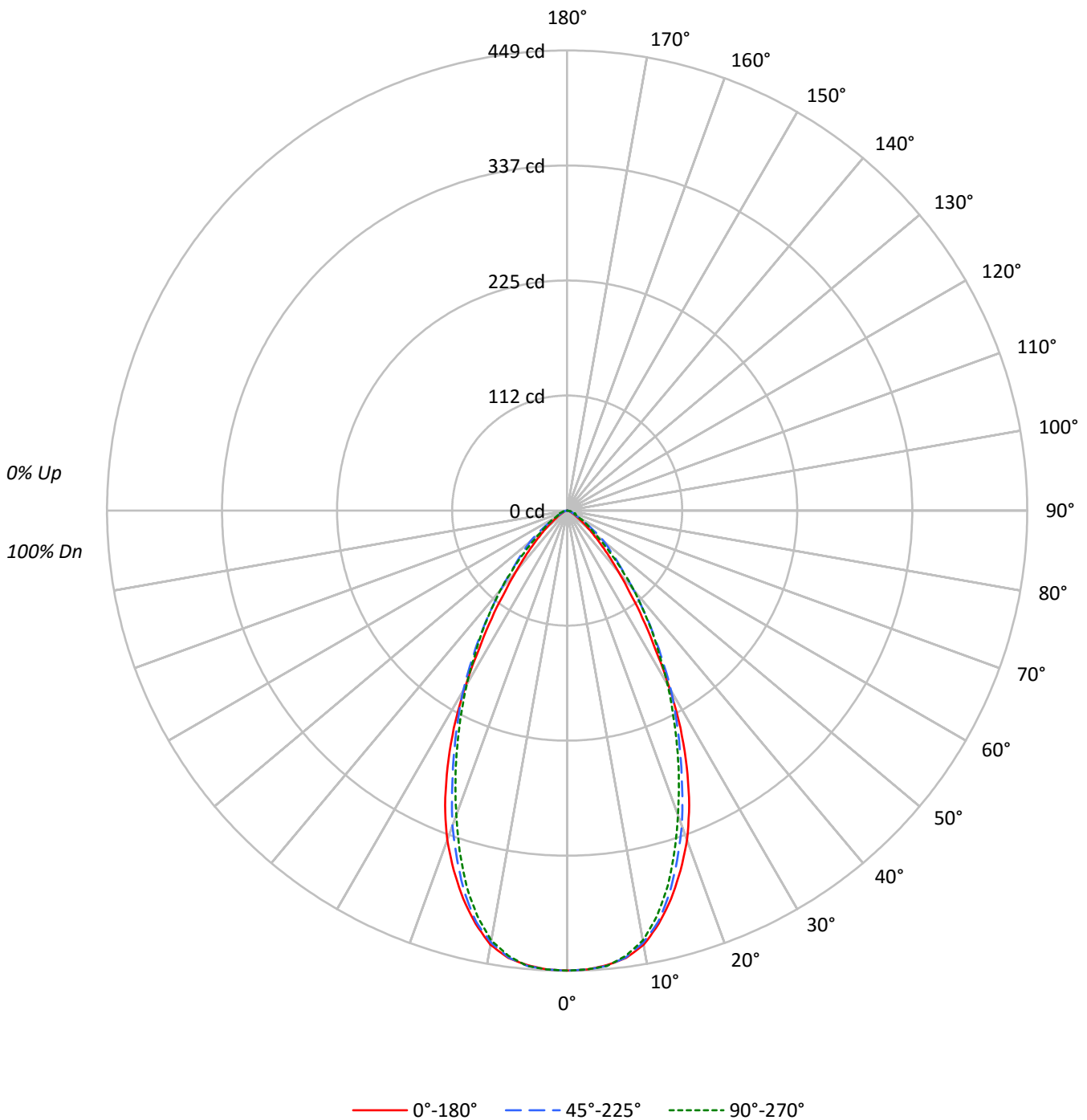
Input Watts (W): 5.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94					92				
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86					84				
3	100	93	88	84	98	92	87	83	89	85	81	87	83	80	84	81	79					77				
4	95	86	80	76	93	85	80	75	83	78	74	81	77	73	79	76	73					71				
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67					65				
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62					61				
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	66	61	58					56				
8	76	66	59	55	75	65	59	55	64	58	54	63	58	54	62	57	54					52				
9	72	62	55	51	71	61	55	51	60	55	51	59	54	51	58	54	50					49				
10	68	58	52	48	67	58	52	48	57	51	48	56	51	47	55	51	47					46				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	221429	221429	221429
5°	220541	220888	220888
10°	215526	214424	213372
15°	200330	197367	193740
20°	179565	171689	166019
25°	150250	142084	138165
30°	113542	115593	111548
35°	77336	88117	87274
40°	49850	64664	65115
45°	32026	47028	43539
50°	20340	35768	27018
55°	12387	20386	19698
60°	7795	11348	12729
65°	5837	8289	9223
70°	5193	7213	12406
75°	4003	5528	8197
80°	1989	3978	5967
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	42.0	9.6
10°-20°	107.0	24.5
20°-30°	120.5	27.6
30°-40°	89.1	20.4
40°-50°	47.5	10.9
50°-60°	19.5	4.5
60°-70°	7.6	1.7
70°-80°	3.4	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°	269.5	61.7
0°-40°	358.6	82.1
0°-60°	425.6	97.4
0°-90°	436.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	436.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	449	449	449	449	449	
5°	445	445	446	446	446	42
15°	392	389	386	381	379	109
25°	276	272	261	256	254	125
35°	128	140	146	145	145	81
45°	46	52	67	67	62	37
55°	14	17	24	22	23	14
65°	5	7	7	9	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°	448.8	448.8	448.8	448.8	448.8	448.8	448.8	448.8	448.8	448.8	448.8
2.5°	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1
5°	445.3	445.3	445.3	445.3	445.3	445.3	445.3	446.0	445.3	446.0	446.0
7.5°	440.3	439.6	439.6	439.6	439.6	439.6	439.6	439.6	439.6	439.6	439.6
10°	430.2	429.5	429.5	428.0	428.8	428.0	428.0	428.0	428.0	428.0	428.0
12.5°	413.0	413.0	412.3	411.6	410.9	410.9	410.9	410.9	410.9	410.9	410.9
15°	392.2	392.2	391.5	390.1	389.4	388.7	388.0	388.0	387.2	387.2	386.4
17.5°	367.9	367.9	366.4	364.9	363.5	362.8	361.4	359.9	359.2	358.5	357.1
20°	342.0	342.0	339.8	339.1	336.3	335.6	333.4	331.3	328.4	327.7	327.0
22.5°	311.2	309.8	309.0	309.0	306.9	305.5	304.0	301.2	296.8	295.4	293.2
25°	276.0	275.3	275.3	274.6	273.9	272.4	273.2	271.0	267.4	264.6	261.0
27.5°	239.5	238.8	238.1	238.8	240.2	240.2	239.5	238.1	236.7	233.1	230.8
30°	199.3	199.3	200.8	202.9	205.0	205.8	206.5	205.8	205.0	202.9	202.9
32.5°	159.9	161.3	162.7	167.8	170.0	171.4	172.1	174.3	174.3	174.3	172.8
35°	128.4	128.4	131.2	134.8	137.7	140.5	141.2	144.2	146.3	146.3	146.3
37.5°	99.6	100.4	103.3	106.1	109.7	111.1	112.6	116.9	119.7	121.1	121.9
40°	77.4	78.9	80.3	83.2	86.8	87.5	88.9	92.5	96.1	98.9	100.4
42.5°	60.3	60.3	61.7	63.8	66.0	68.1	69.5	71.7	76.0	78.2	81.1
45°	45.9	46.6	47.3	48.7	50.9	51.6	53.0	56.0	58.8	61.7	67.4
47.5°	35.2	35.2	35.9	36.6	38.7	39.5	40.2	43.0	45.9	51.6	56.0
50°	26.5	26.5	26.5	27.2	28.7	30.1	30.8	32.9	38.7	43.0	46.6
52.5°	19.4	19.4	19.4	20.8	21.5	22.2	22.9	25.8	32.9	33.7	35.2
55°	14.4	14.4	14.4	15.1	16.5	17.2	17.9	22.9	24.4	26.5	23.7
57.5°	10.7	10.7	10.7	11.5	12.2	12.9	14.4	17.9	20.1	17.2	16.5
60°	7.9	7.9	7.9	8.6	10.0	10.7	12.2	13.7	13.7	12.2	11.5
62.5°	6.4	6.4	6.4	6.4	7.9	9.3	9.3	10.7	9.3	8.6	8.6
65°	5.0	5.0	5.0	5.7	6.4	7.1	7.9	7.1	6.4	6.4	7.1
67.5°	4.3	4.3	4.3	4.3	5.7	5.7	5.7	5.0	5.0	5.0	5.7
70°	3.6	3.6	3.6	3.6	4.3	4.3	4.3	3.6	3.6	4.3	5.0
72.5°	2.9	2.9	2.9	3.6	3.6	3.6	2.9	2.9	2.9	3.6	3.6
75°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.9	2.9	2.9
77.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	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	1.4
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°	448.8	448.8	448.8	448.8	448.8	448.8	448.8	448.8	448.8	448.8
2.5°	448.1	448.1	448.8	448.1	448.1	448.1	448.1	448.1	448.1	448.1
5°	446.0	446.0	446.0	446.0	446.0	446.0	446.0	446.0	446.0	446.0
7.5°	439.6	439.6	439.6	438.8	438.8	438.8	438.8	438.8	438.8	438.1
10°	428.0	428.0	427.3	426.6	427.3	425.9	425.9	425.2	425.2	425.9
12.5°	410.2	409.4	408.0	408.0	407.2	406.5	405.8	405.8	405.1	405.1
15°	386.4	385.0	383.6	382.9	381.4	382.2	381.4	380.0	380.0	379.3
17.5°	357.8	356.4	354.2	352.1	352.1	351.4	351.4	349.9	349.2	348.5
20°	324.8	324.1	323.4	321.2	320.5	319.0	317.6	317.6	315.5	316.2
22.5°	291.8	291.1	289.7	289.0	287.5	287.5	286.1	286.1	284.7	284.7
25°	260.3	259.6	258.2	257.5	256.0	256.0	254.5	255.3	253.8	253.8
27.5°	228.7	228.0	226.6	227.3	225.8	225.1	224.4	224.4	223.7	223.7
30°	200.1	197.9	197.9	197.2	196.5	196.5	196.5	195.1	195.1	195.8
32.5°	172.1	170.7	170.0	170.0	170.7	170.0	169.3	169.3	168.5	167.8
35°	146.3	145.6	144.9	144.9	144.9	144.9	144.9	144.9	144.9	144.9
37.5°	121.9	122.7	121.9	122.7	123.4	122.7	121.9	121.1	121.1	121.1
40°	101.1	102.6	103.3	101.9	101.1	101.1	100.4	101.1	100.4	101.1
42.5°	84.6	85.3	83.9	84.6	85.3	85.3	83.9	81.8	80.3	79.6
45°	68.8	70.3	73.8	68.8	66.7	66.0	63.8	63.1	62.4	62.4
47.5°	58.8	61.7	54.5	52.3	50.9	50.9	49.5	48.0	48.0	47.3
50°	48.0	42.3	40.9	39.5	38.0	37.3	36.6	35.9	35.9	35.2
52.5°	32.2	30.8	29.4	28.7	27.9	27.9	27.9	27.9	27.9	27.9
55°	22.9	22.2	21.5	22.2	22.2	22.9	23.7	23.7	23.7	22.9
57.5°	15.8	15.8	17.2	18.7	18.7	18.7	18.7	17.9	17.9	17.9
60°	12.2	12.9	14.4	14.4	14.4	15.1	14.4	13.7	12.9	12.9
62.5°	9.3	10.7	11.5	11.5	10.7	10.7	10.0	10.0	10.0	10.0
65°	7.9	8.6	8.6	8.6	8.6	7.9	7.1	7.1	7.9	7.9
67.5°	6.4	6.4	6.4	5.7	5.7	6.4	7.1	7.9	7.9	8.6
70°	5.0	5.0	5.0	5.7	6.4	6.4	7.9	7.9	8.6	8.6
72.5°	3.6	3.6	5.0	5.7	6.4	6.4	6.4	5.7	5.7	5.7
75°	2.9	3.6	5.0	4.3	4.3	4.3	4.3	4.3	4.3	4.3
77.5°	2.1	2.9	2.9	2.1	2.9	2.9	2.9	3.6	3.6	4.3
80°	1.4	1.4	1.4	1.4	1.4	1.4	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)