

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: P226101

Luminaire Tested: **MRZ-1-REC-X-1-L27-80-WFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P226101  
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-L27-80-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) 2700K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 407.9 lumens  
Efficiency: N/A  
Efficacy: 75.5 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

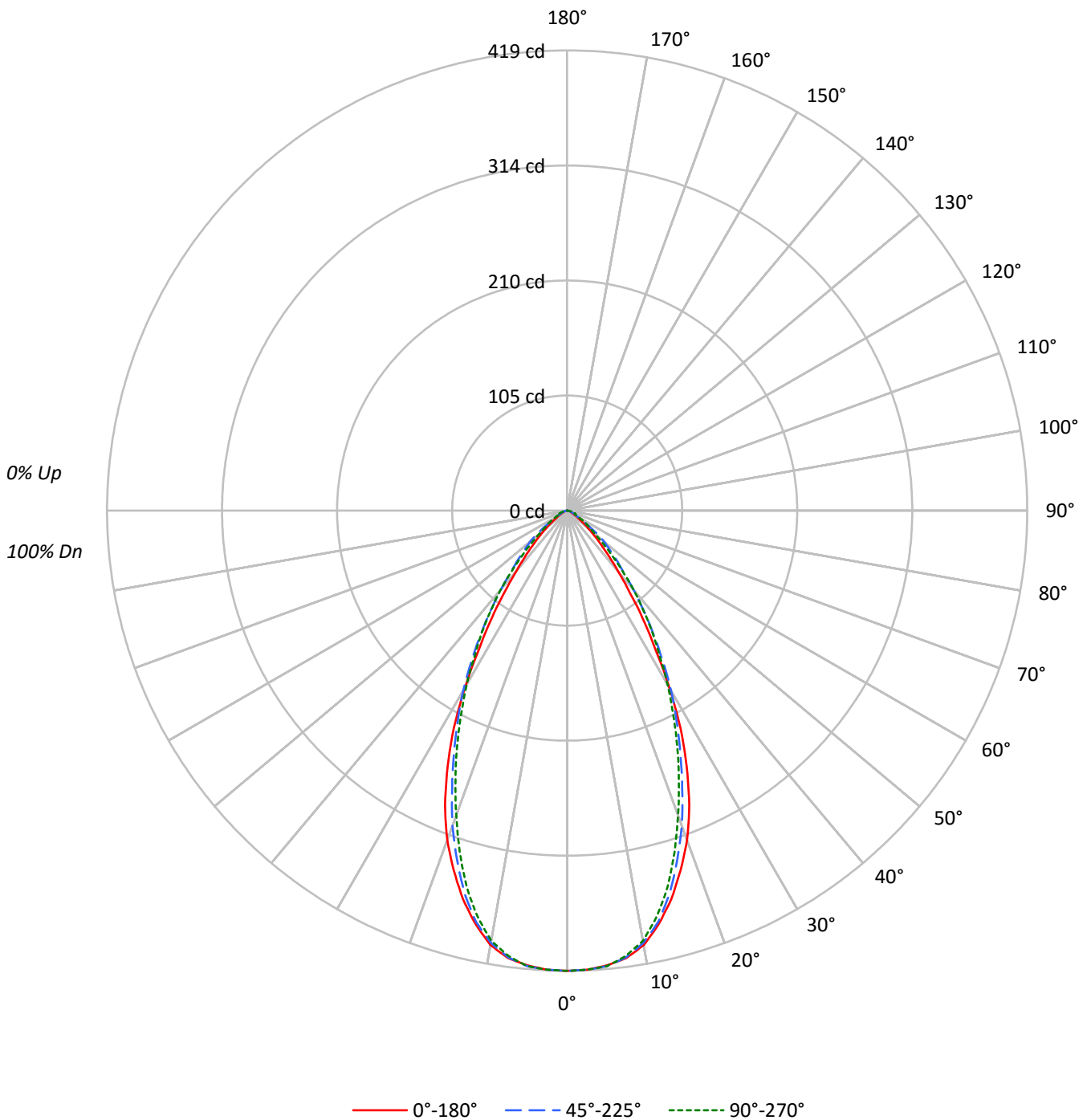
Input Watts (W): 5.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	78	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°	206775	206775	206775
5°	205881	206228	206228
10°	201248	200246	199244
15°	187049	184291	180869
20°	167646	160296	154993
25°	140288	132666	129019
30°	106022	107902	104085
35°	72156	82275	81432
40°	46566	60349	60799
45°	29863	43888	40609
50°	18959	33389	25176
55°	11526	18924	18408
60°	7203	10558	11940
65°	5370	7822	8522
70°	4760	6636	11540
75°	3813	5147	7625
80°	1705	3694	5683
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	39.2	9.6
10°-20°	99.9	24.5
20°-30°	112.5	27.6
30°-40°	83.2	20.4
40°-50°	44.3	10.9
50°-60°	18.2	4.5
60°-70°	7.1	1.7
70°-80°	3.2	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°	251.6	61.7
0°-40°	334.8	82.1
0°-60°	397.3	97.4
0°-90°	407.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	407.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	419	419	419	419	419	
5°	416	416	416	416	416	39
15°	366	363	361	356	354	102
25°	258	254	244	239	237	117
35°	120	131	137	135	135	76
45°	43	48	63	62	58	34
55°	13	16	22	21	21	13
65°	5	7	7	8	7	5
75°	2	2	3	4	4	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



TEST NUMBER: P226101

CATALOG NUMBER: MRZ-1-REC-X-1-L27-80-WFL-UNV-X-STD-LSL

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	419.1	419.1	419.1	419.1	419.1	419.1	419.1	419.1	419.1	419.1	419.1
2.5°	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4
5°	415.7	415.7	415.7	415.7	415.7	415.7	415.7	416.4	415.7	416.4	416.4
7.5°	411.1	410.4	410.4	410.4	410.4	410.4	410.4	410.4	410.4	410.4	410.4
10°	401.7	401.0	401.0	399.7	400.4	399.7	399.7	399.7	399.7	399.7	399.7
12.5°	385.6	385.6	384.9	384.3	383.6	383.6	383.6	383.6	383.6	383.6	383.6
15°	366.2	366.2	365.6	364.2	363.5	362.9	362.2	362.2	361.5	361.5	360.8
17.5°	343.4	343.4	342.1	340.7	339.4	338.8	337.4	336.1	335.4	334.8	333.4
20°	319.3	319.3	317.3	316.6	314.0	313.3	311.3	309.3	306.6	305.9	305.3
22.5°	290.6	289.2	288.5	288.5	286.6	285.2	283.9	281.2	277.2	275.8	273.8
25°	257.7	257.1	257.1	256.4	255.8	254.4	255.0	253.1	249.7	247.0	243.7
27.5°	223.6	222.9	222.3	222.9	224.2	224.2	223.6	222.3	220.9	217.5	215.6
30°	186.1	186.1	187.5	189.4	191.5	192.1	192.8	192.1	191.5	189.4	189.4
32.5°	149.3	150.6	151.9	156.7	158.6	160.0	160.7	162.6	162.6	162.6	161.3
35°	119.8	119.8	122.5	125.9	128.5	131.2	131.8	134.5	136.6	136.6	136.6
37.5°	93.0	93.7	96.4	99.1	102.4	103.7	105.1	109.1	111.8	113.1	113.8
40°	72.3	73.6	75.0	77.7	81.0	81.7	83.0	86.3	89.7	92.4	93.7
42.5°	56.2	56.2	57.6	59.5	61.6	63.6	64.9	67.0	71.0	72.9	75.6
45°	42.8	43.5	44.2	45.5	47.5	48.2	49.5	52.2	54.9	57.6	62.9
47.5°	32.8	32.8	33.5	34.1	36.2	36.8	37.5	40.2	42.8	48.2	52.2
50°	24.7	24.7	24.7	25.4	26.8	28.1	28.7	30.8	36.2	40.2	43.5
52.5°	18.0	18.0	18.0	19.4	20.1	20.7	21.4	24.1	30.8	31.4	32.8
55°	13.4	13.4	13.4	14.0	15.4	16.1	16.7	21.4	22.8	24.7	22.0
57.5°	10.0	10.0	10.0	10.7	11.3	12.1	13.4	16.7	18.7	16.1	15.4
60°	7.3	7.3	7.3	8.0	9.4	10.0	11.3	12.7	12.7	11.3	10.7
62.5°	6.0	6.0	6.0	6.0	7.3	8.7	8.7	10.0	8.7	8.0	8.0
65°	4.6	4.6	4.6	5.4	6.0	6.7	7.3	6.7	6.0	6.0	6.7
67.5°	4.0	4.0	4.0	4.0	5.4	5.4	5.4	4.6	4.6	4.6	5.4
70°	3.3	3.3	3.3	3.3	4.0	4.0	4.0	3.3	3.3	4.0	4.6
72.5°	2.7	2.7	2.7	3.3	3.3	3.3	2.7	2.7	2.7	3.3	3.3
75°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.7	2.7	2.7
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.0	2.0	2.0
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.3
82.5°	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6
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°	419.1	419.1	419.1	419.1	419.1	419.1	419.1	419.1	419.1	419.1
2.5°	418.4	418.4	419.1	418.4	418.4	418.4	418.4	418.4	418.4	418.4
5°	416.4	416.4	416.4	416.4	416.4	416.4	416.4	416.4	416.4	416.4
7.5°	410.4	410.4	410.4	409.7	409.7	409.7	409.7	409.7	409.7	409.0
10°	399.7	399.7	399.0	398.3	399.0	397.7	397.7	397.0	397.0	397.7
12.5°	383.0	382.2	380.9	380.9	380.3	379.6	378.9	378.9	378.2	378.2
15°	360.8	359.5	358.1	357.5	356.2	356.8	356.2	354.8	354.8	354.1
17.5°	334.0	332.7	330.7	328.7	328.7	328.1	328.1	326.7	326.0	325.4
20°	303.2	302.6	301.9	299.9	299.2	297.9	296.6	296.6	294.6	295.2
22.5°	272.4	271.8	270.5	269.8	268.4	268.4	267.1	267.1	265.8	265.8
25°	243.0	242.4	241.0	240.3	239.0	239.0	237.6	238.3	237.0	237.0
27.5°	213.5	212.9	211.6	212.2	210.9	210.2	209.5	209.5	208.9	208.9
30°	186.7	184.8	184.8	184.1	183.4	183.4	183.4	182.1	182.1	182.7
32.5°	160.7	159.3	158.6	158.6	159.3	158.6	158.0	158.0	157.3	156.7
35°	136.6	135.9	135.2	135.2	135.2	135.2	135.2	135.2	135.2	135.2
37.5°	113.8	114.4	113.8	114.4	115.2	114.4	113.8	113.1	113.1	113.1
40°	94.4	95.7	96.4	95.1	94.4	94.4	93.7	94.4	93.7	94.4
42.5°	79.0	79.6	78.3	79.0	79.6	79.6	78.3	76.3	75.0	74.3
45°	64.3	65.6	68.9	64.3	62.2	61.6	59.5	58.9	58.2	58.2
47.5°	54.9	57.6	50.9	48.8	47.5	47.5	46.2	44.8	44.8	44.2
50°	44.8	39.5	38.1	36.8	35.4	34.8	34.1	33.5	33.5	32.8
52.5°	30.1	28.7	27.4	26.8	26.1	26.1	26.1	26.1	26.1	26.1
55°	21.4	20.7	20.1	20.7	20.7	21.4	22.0	22.0	22.0	21.4
57.5°	14.7	14.7	16.1	17.4	17.4	17.4	17.4	16.7	16.7	16.7
60°	11.3	12.1	13.4	13.4	13.4	14.0	13.4	12.7	12.1	12.1
62.5°	8.7	10.0	10.7	10.7	10.0	10.0	9.4	9.4	9.4	9.4
65°	7.3	8.0	8.0	8.0	8.0	7.3	6.7	6.7	7.3	7.3
67.5°	6.0	6.0	6.0	5.4	5.4	6.0	6.7	7.3	7.3	8.0
70°	4.6	4.6	4.6	5.4	6.0	6.0	7.3	7.3	8.0	8.0
72.5°	3.3	3.3	4.6	5.4	6.0	6.0	6.0	5.4	5.4	5.4
75°	2.7	3.3	4.6	4.0	4.0	4.0	4.0	4.0	4.0	4.0
77.5°	2.0	2.7	2.7	2.0	2.7	2.7	2.7	3.3	3.3	4.0
80°	1.3	1.3	1.3	1.3	1.3	1.3	2.0	2.0	2.0	2.0
82.5°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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)