

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: P226179

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P226179  
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-L40-80-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) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 443.2 lumens  
Efficiency: N/A  
Efficacy: 82.1 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

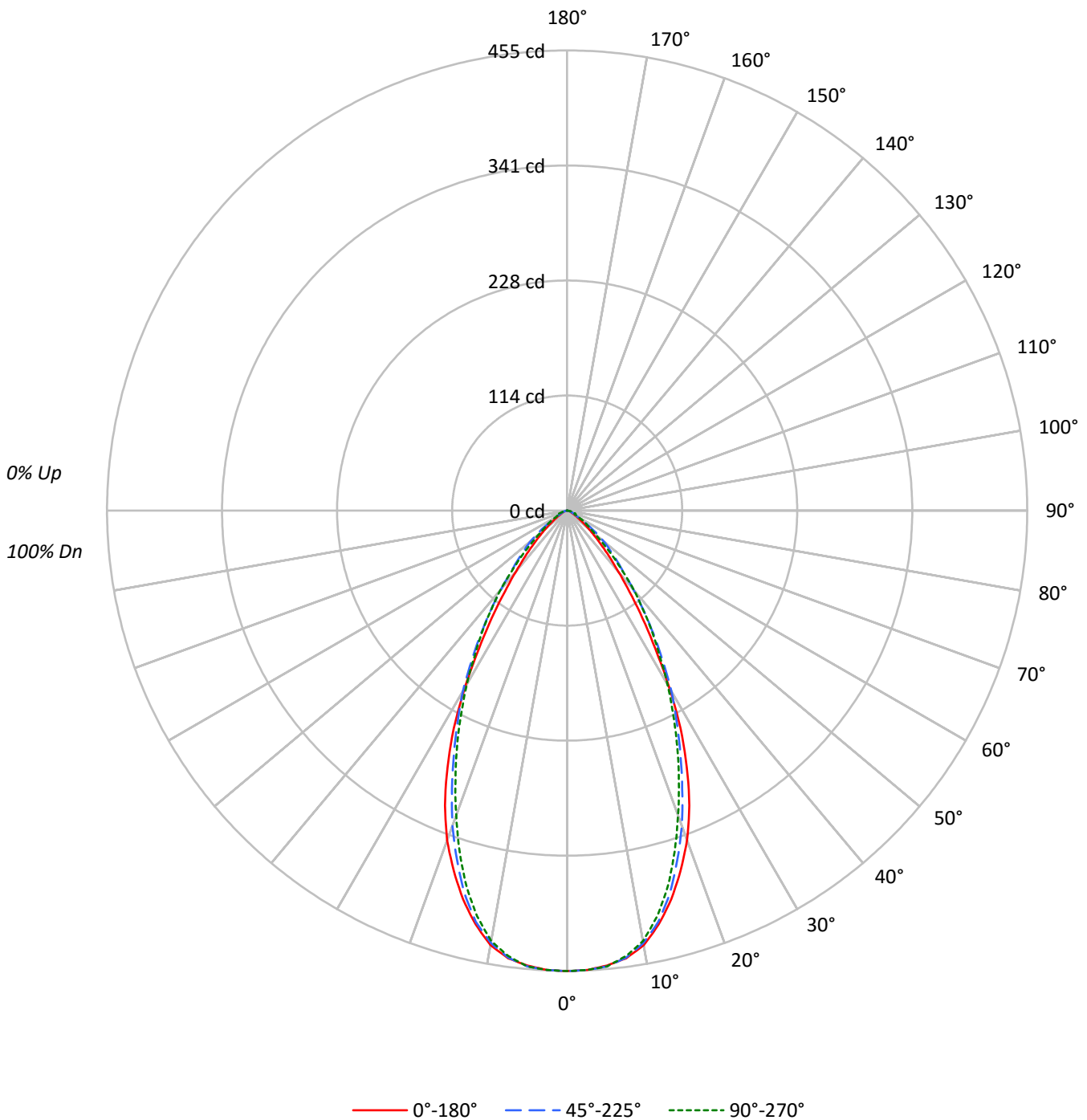
Input Watts (W): 5.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	96	95	94	92		
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92	92	92	90	88	86	84		
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84	84	84	83	81	79	77		
3	100	93	88	84	98	92	87	83	89	85	81	87	83	80	84	81	79	77	77	77	76	73	71	71		
4	95	86	80	76	93	85	80	75	83	78	74	81	77	73	79	76	73	71	71	71	70	67	65	65		
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65	65	65	64	62	61	61		
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61	61	61	60	58	57	57		
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	66	61	58	56	56	56	55	53	52	52		
8	76	66	59	55	75	65	59	55	64	58	54	63	58	54	62	57	54	52	52	52	51	49	48	48		
9	72	62	55	51	71	61	55	51	60	55	51	59	54	51	58	54	50	49	49	49	48	47	46	46		
10	68	58	52	48	67	58	52	48	57	51	48	56	51	47	55	51	47	46	46	46	45	44	43	43		

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

	0°	45°	90°
0°	224636	224636	224636
5°	223661	224058	224058
10°	218582	217530	216428
15°	203190	200227	196499
20°	182138	174104	168381
25°	152428	144153	140179
30°	115194	117302	113087
35°	78420	89382	88479
40°	50623	65630	66081
45°	32445	47726	44167
50°	20647	36306	27325
55°	12559	20644	20042
60°	7894	11446	12927
65°	5954	8406	9339
70°	5337	7357	12550
75°	4003	5528	8388
80°	1989	3978	5967
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	42.6	9.6
10°-20°	108.5	24.5
20°-30°	122.2	27.6
30°-40°	90.4	20.4
40°-50°	48.2	10.9
50°-60°	19.8	4.5
60°-70°	7.7	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°	273.3	61.7
0°-40°	363.7	82.1
0°-60°	431.7	97.4
0°-90°	443.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	443.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	455	455	455	455	455	
5°	452	452	452	452	452	43
15°	398	394	392	387	385	111
25°	280	276	265	260	258	127
35°	130	143	148	147	147	82
45°	46	52	68	68	63	37
55°	15	18	24	23	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	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3
2.5°	454.6	454.6	454.6	454.6	454.6	454.6	454.6	454.6	454.6	454.6	454.6
5°	451.6	451.6	451.6	451.6	451.6	451.6	451.6	452.4	451.6	452.4	452.4
7.5°	446.5	445.8	445.8	445.8	445.8	445.8	445.8	445.8	445.8	445.8	445.8
10°	436.3	435.6	435.6	434.2	434.9	434.2	434.2	434.2	434.2	434.2	434.2
12.5°	418.9	418.9	418.2	417.4	416.7	416.7	416.7	416.7	416.7	416.7	416.7
15°	397.8	397.8	397.1	395.6	394.9	394.2	393.5	393.5	392.7	392.7	392.0
17.5°	373.1	373.1	371.6	370.2	368.8	368.0	366.5	365.1	364.4	363.7	362.2
20°	346.9	346.9	344.8	344.0	341.1	340.4	338.1	336.0	333.1	332.3	331.6
22.5°	315.7	314.2	313.4	313.4	311.3	309.9	308.3	305.5	301.1	299.7	297.4
25°	280.0	279.3	279.3	278.5	277.8	276.4	277.1	274.9	271.3	268.3	264.8
27.5°	242.9	242.2	241.5	242.2	243.6	243.6	242.9	241.5	240.0	236.4	234.2
30°	202.2	202.2	203.6	205.9	208.0	208.7	209.4	208.7	208.0	205.9	205.9
32.5°	162.2	163.6	165.1	170.1	172.4	173.8	174.5	176.8	176.8	176.8	175.2
35°	130.2	130.2	133.1	136.8	139.6	142.6	143.3	146.2	148.4	148.4	148.4
37.5°	101.1	101.9	104.7	107.7	111.3	112.7	114.2	118.5	121.5	122.9	123.6
40°	78.6	80.0	81.4	84.4	88.0	88.7	90.2	93.8	97.5	100.3	101.9
42.5°	61.1	61.1	62.6	64.7	67.0	69.1	70.5	72.8	77.1	79.3	82.2
45°	46.5	47.3	48.0	49.5	51.6	52.4	53.8	56.7	59.6	62.6	68.4
47.5°	35.6	35.6	36.3	37.1	39.3	40.0	40.7	43.7	46.5	52.4	56.7
50°	26.9	26.9	26.9	27.7	29.1	30.5	31.2	33.5	39.3	43.7	47.3
52.5°	19.6	19.6	19.6	21.1	21.8	22.6	23.3	26.2	33.5	34.2	35.6
55°	14.6	14.6	14.6	15.3	16.7	17.5	18.2	23.3	24.7	26.9	24.0
57.5°	10.9	10.9	10.9	11.6	12.4	13.1	14.6	18.2	20.4	17.5	16.7
60°	8.0	8.0	8.0	8.7	10.2	10.9	12.4	13.8	13.8	12.4	11.6
62.5°	6.5	6.5	6.5	6.5	8.0	9.5	9.5	10.9	9.5	8.7	8.7
65°	5.1	5.1	5.1	5.8	6.5	7.2	8.0	7.2	6.5	6.5	7.2
67.5°	4.4	4.4	4.4	4.4	5.8	5.8	5.8	5.1	5.1	5.1	5.8
70°	3.7	3.7	3.7	3.7	4.4	4.4	4.4	3.7	3.7	4.4	5.1
72.5°	2.9	2.9	2.9	3.7	3.7	3.7	2.9	2.9	2.9	3.7	3.7
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°	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3	455.3
2.5°	454.6	454.6	455.3	454.6	454.6	454.6	454.6	454.6	454.6	454.6
5°	452.4	452.4	452.4	452.4	452.4	452.4	452.4	452.4	452.4	452.4
7.5°	445.8	445.8	445.8	445.1	445.1	445.1	445.1	445.1	445.1	444.4
10°	434.2	434.2	433.5	432.8	433.5	432.0	432.0	431.3	431.3	432.0
12.5°	416.0	415.3	413.8	413.8	413.1	412.3	411.6	411.6	410.9	410.9
15°	392.0	390.6	389.1	388.4	386.9	387.6	386.9	385.5	385.5	384.7
17.5°	362.9	361.4	359.3	357.1	357.1	356.4	356.4	354.9	354.2	353.5
20°	329.5	328.8	328.0	325.8	325.1	323.6	322.2	322.2	320.0	320.7
22.5°	296.0	295.3	293.8	293.1	291.6	291.6	290.2	290.2	288.7	288.7
25°	264.0	263.3	261.8	261.1	259.7	259.7	258.2	258.9	257.5	257.5
27.5°	232.0	231.3	229.8	230.6	229.1	228.3	227.6	227.6	226.9	226.9
30°	202.9	200.8	200.8	200.0	199.2	199.2	199.2	197.8	197.8	198.5
32.5°	174.5	173.1	172.4	172.4	173.1	172.4	171.7	171.7	170.9	170.1
35°	148.4	147.7	146.9	146.9	146.9	146.9	146.9	146.9	146.9	146.9
37.5°	123.6	124.4	123.6	124.4	125.1	124.4	123.6	122.9	122.9	122.9
40°	102.6	104.0	104.7	103.3	102.6	102.6	101.9	102.6	101.9	102.6
42.5°	85.8	86.6	85.1	85.8	86.6	86.6	85.1	82.9	81.4	80.7
45°	69.8	71.2	74.9	69.8	67.7	67.0	64.7	64.0	63.3	63.3
47.5°	59.6	62.6	55.3	53.1	51.6	51.6	50.2	48.7	48.7	48.0
50°	48.7	42.9	41.4	40.0	38.6	37.8	37.1	36.3	36.3	35.6
52.5°	32.8	31.2	29.8	29.1	28.4	28.4	28.4	28.4	28.4	28.4
55°	23.3	22.6	21.8	22.6	22.6	23.3	24.0	24.0	24.0	23.3
57.5°	16.0	16.0	17.5	18.9	18.9	18.9	18.9	18.2	18.2	18.2
60°	12.4	13.1	14.6	14.6	14.6	15.3	14.6	13.8	13.1	13.1
62.5°	9.5	10.9	11.6	11.6	10.9	10.9	10.2	10.2	10.2	10.2
65°	8.0	8.7	8.7	8.7	8.7	8.0	7.2	7.2	8.0	8.0
67.5°	6.5	6.5	6.5	5.8	5.8	6.5	7.2	8.0	8.0	8.7
70°	5.1	5.1	5.1	5.8	6.5	6.5	8.0	8.0	8.7	8.7
72.5°	3.7	3.7	5.1	5.8	6.5	6.5	6.5	5.8	5.8	5.8
75°	2.9	3.7	5.1	4.4	4.4	4.4	4.4	4.4	4.4	4.4
77.5°	2.1	2.9	2.9	2.1	2.9	2.9	2.9	3.7	3.7	4.4
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)