

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: P226118

Luminaire Tested: **MRZ-1-REC-X-1-L30-80-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P226118  
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-1-L30-80-FL-UNV-X-STD-LSL  
Description: MRZ INTEGRAL LED DOWNLIGHT  
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 1  
Light Source: (1) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 459.9 lumens  
Efficiency: N/A  
Efficacy: 85.2 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

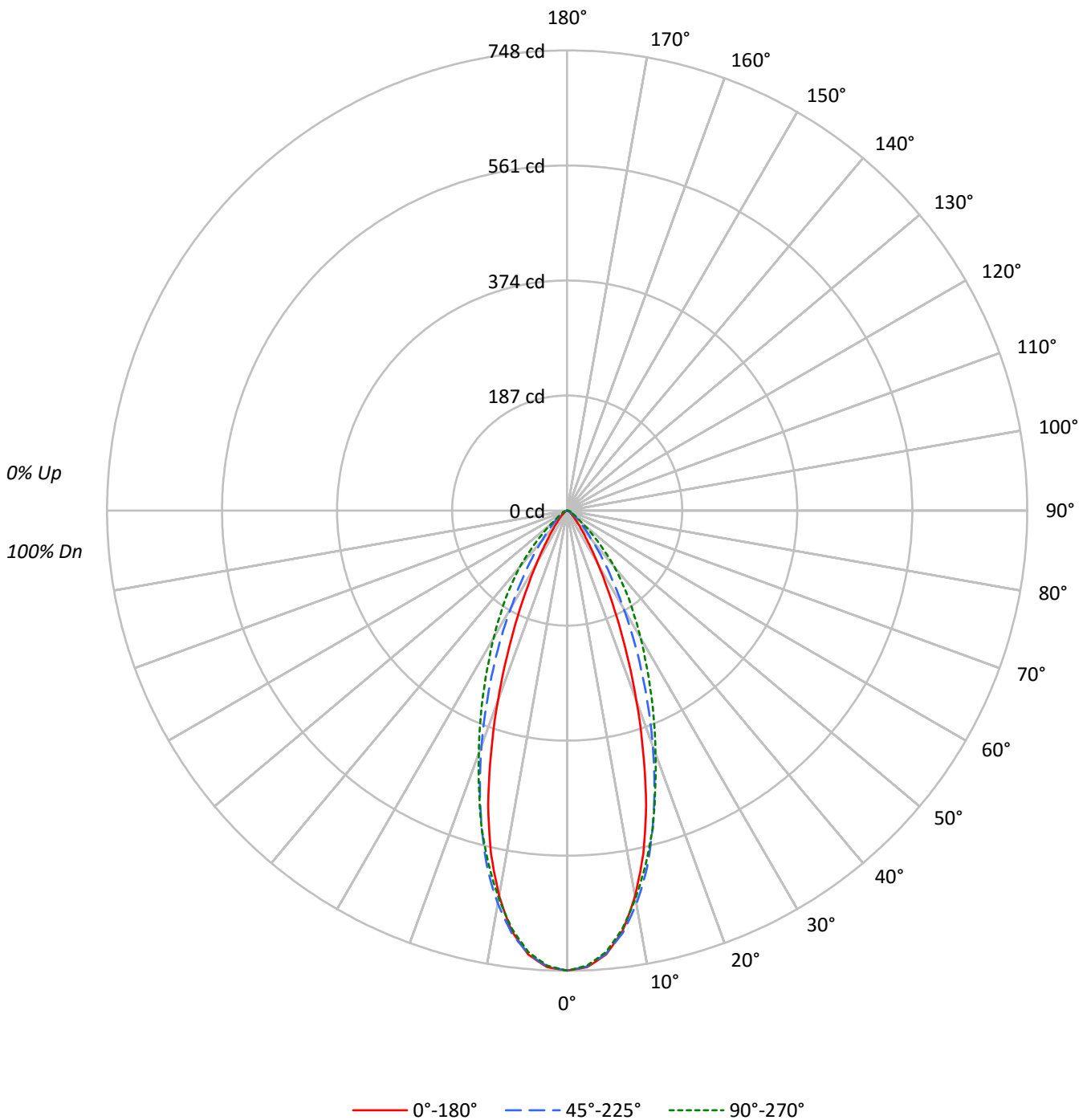
Input Watts (W): 5.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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			
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°	368900	368900	368900
5°	358819	358175	356838
10°	318680	325143	320684
15°	253349	273831	273831
20°	172897	213955	220361
25°	103324	154823	174094
30°	56971	103857	136046
35°	29874	66796	105343
40°	17068	40769	77094
45°	10885	26096	47935
50°	7829	17193	25099
55°	6451	9978	15827
60°	5328	6118	10065
65°	4786	4786	7939
70°	3895	3895	10819
75°	4003	2478	6481
80°	1989	1989	3694
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	66.5	14.4
10°-20°	144.4	31.4
20°-30°	124.9	27.2
30°-40°	72.2	15.7
40°-50°	32.7	7.1
50°-60°	11.6	2.5
60°-70°	5.1	1.1
70°-80°	2.4	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°	335.8	73.0
0°-40°	408.0	88.7
0°-60°	452.2	98.3
0°-90°	459.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	459.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	748	748	748	748	748	
5°	724	724	723	720	720	66
15°	496	511	536	541	536	134
25°	190	218	284	326	320	89
35°	50	65	111	165	175	34
45°	16	19	37	65	69	13
55°	8	8	12	15	18	7
65°	4	5	4	6	7	4
75°	2	2	1	3	3	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°	747.7	747.7	747.7	747.7	747.7	747.7	747.7	747.7	747.7	747.7	747.7
2.5°	742.9	741.6	741.6	741.6	742.3	742.3	741.6	741.6	741.6	741.6	741.6
5°	724.5	723.2	723.2	723.9	723.2	723.9	723.2	724.5	723.9	723.2	723.2
7.5°	689.2	689.2	689.2	689.9	690.5	690.5	690.5	691.9	691.9	693.3	692.5
10°	636.1	637.5	637.5	639.5	641.6	640.1	640.9	645.0	646.3	647.6	649.0
12.5°	571.5	573.6	574.9	576.2	578.3	580.3	581.0	587.8	589.8	592.6	597.3
15°	496.0	495.3	499.4	501.4	507.5	510.9	512.9	519.7	526.6	530.6	536.1
17.5°	410.9	413.0	415.0	420.5	428.0	432.7	435.4	443.6	454.5	463.3	471.4
20°	329.3	333.3	335.4	341.5	349.0	351.7	359.2	370.1	384.4	396.6	407.5
22.5°	253.8	255.8	261.2	268.1	276.2	282.4	289.9	300.7	315.7	327.9	342.9
25°	189.8	190.5	197.3	203.4	212.3	218.4	222.5	236.7	252.4	268.1	284.4
27.5°	138.1	139.4	143.5	149.7	159.2	163.3	170.1	182.3	197.3	214.3	231.3
30°	100.0	100.0	102.7	109.5	116.3	121.8	126.6	138.1	152.4	166.7	182.3
32.5°	70.1	70.8	73.5	78.2	85.1	89.1	92.5	103.4	115.0	129.3	142.8
35°	49.6	50.3	53.0	55.8	61.2	64.6	67.3	75.5	85.7	97.9	110.9
37.5°	36.1	36.8	38.1	40.2	44.2	46.2	49.0	55.8	63.9	73.5	85.1
40°	26.5	27.2	27.9	29.9	32.7	34.0	36.1	40.8	47.0	55.1	63.3
42.5°	20.4	20.4	21.1	22.4	23.8	25.2	26.5	29.9	34.7	40.8	48.3
45°	15.6	15.6	16.3	17.7	18.4	19.0	20.4	22.4	25.9	30.6	37.4
47.5°	12.9	12.9	12.9	13.6	14.3	15.0	15.6	17.7	19.7	24.5	28.6
50°	10.2	10.2	10.9	10.9	11.6	11.6	12.2	13.6	16.3	19.7	22.4
52.5°	8.8	8.8	8.8	8.8	8.8	9.6	9.6	10.9	13.6	15.0	16.3
55°	7.5	7.5	7.5	7.5	7.5	7.5	8.1	9.6	10.9	12.2	11.6
57.5°	6.2	6.2	6.2	6.2	6.2	6.8	6.8	8.1	8.8	8.1	8.1
60°	5.4	5.4	4.7	4.7	5.4	5.4	6.2	6.8	6.8	6.2	6.2
62.5°	4.7	4.1	4.1	4.1	4.7	5.4	5.4	5.4	4.7	4.7	4.7
65°	4.1	3.4	3.4	4.1	4.1	4.7	4.7	4.1	4.1	4.1	4.1
67.5°	3.4	3.4	3.4	3.4	4.1	4.1	4.1	3.4	3.4	3.4	3.4
70°	2.7	2.7	2.7	2.7	3.4	3.4	2.7	2.7	2.7	2.7	2.7
72.5°	2.1	2.1	2.1	2.7	2.7	2.7	2.1	2.1	2.1	2.7	2.1
75°	2.1	2.1	2.1	2.1	2.1	2.1	1.3	1.3	2.1	2.1	1.3
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
80°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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°	747.7	747.7	747.7	747.7	747.7	747.7	747.7	747.7	747.7	747.7
2.5°	740.8	740.8	740.2	740.8	740.8	740.8	740.8	740.2	740.8	740.2
5°	722.5	722.5	722.5	721.1	720.5	721.1	720.5	719.8	719.8	720.5
7.5°	691.2	691.2	690.5	689.2	689.2	688.4	687.1	686.5	685.8	685.8
10°	650.4	649.7	647.6	647.0	647.0	645.0	642.2	642.2	639.5	640.1
12.5°	599.3	598.0	597.3	597.3	594.6	594.6	592.6	591.9	590.5	589.2
15°	538.1	540.2	541.5	540.9	540.9	538.8	538.1	536.8	534.7	536.1
17.5°	477.6	482.3	483.7	485.7	486.4	485.1	483.0	479.6	477.6	476.2
20°	417.7	424.6	429.3	430.6	430.6	429.9	429.3	423.8	423.1	419.7
22.5°	355.8	365.3	373.5	376.2	376.9	377.6	374.8	370.7	369.4	368.8
25°	298.0	310.9	319.0	324.5	325.8	327.9	326.5	324.5	320.5	319.8
27.5°	245.6	259.2	270.1	276.9	280.3	281.6	283.0	279.6	278.3	275.6
30°	198.6	214.3	225.8	235.4	237.5	240.1	240.8	241.5	238.8	238.8
32.5°	158.5	171.4	185.8	195.2	199.3	201.4	204.8	204.1	204.1	203.4
35°	124.5	137.4	150.3	160.6	165.3	168.0	172.1	174.2	174.9	174.9
37.5°	96.0	108.8	120.4	132.7	137.4	140.9	143.5	144.3	144.9	144.3
40°	73.5	85.7	97.3	105.4	108.8	111.6	115.0	117.7	119.1	119.7
42.5°	57.8	66.7	74.2	82.3	87.8	91.9	92.5	91.9	91.9	91.1
45°	43.6	50.3	62.0	63.9	65.3	66.0	68.0	68.7	68.7	68.7
47.5°	34.7	42.2	42.2	44.9	46.2	48.3	49.0	49.0	49.0	49.0
50°	25.9	27.2	29.3	31.3	32.0	32.0	32.7	32.7	32.7	32.7
52.5°	17.1	19.0	19.7	20.4	21.1	21.8	23.1	23.8	23.1	23.1
55°	12.2	12.9	13.6	15.0	15.0	15.6	18.4	18.4	18.4	18.4
57.5°	8.1	8.8	10.2	12.2	12.2	12.9	13.6	13.6	14.3	14.3
60°	6.8	7.5	8.1	8.8	9.6	10.9	12.2	10.2	10.2	10.2
62.5°	5.4	6.2	6.8	7.5	6.8	7.5	8.1	8.1	8.1	8.1
65°	4.7	5.4	4.7	5.4	6.2	6.2	5.4	6.2	6.2	6.8
67.5°	4.1	4.1	4.1	4.1	4.1	4.7	6.2	6.8	7.5	7.5
70°	2.7	2.7	2.7	4.1	4.1	4.7	5.4	6.8	6.8	7.5
72.5°	2.1	2.1	2.7	3.4	4.1	4.1	4.7	4.7	5.4	5.4
75°	2.1	2.1	2.7	2.7	2.7	2.7	3.4	3.4	3.4	3.4
77.5°	1.3	1.3	1.3	1.3	2.1	2.1	2.1	2.7	2.7	2.7
80°	0.7	0.7	0.7	0.7	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	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)