

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: P226092

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P226092  
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-L27-80-FL-UNV-X-STD-LSL  
Description: MRZ INTEGRAL LED DOWNLIGHT  
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 1  
Light Source: (1) 2700K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 452.5 lumens  
Efficiency: N/A  
Efficacy: 83.8 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

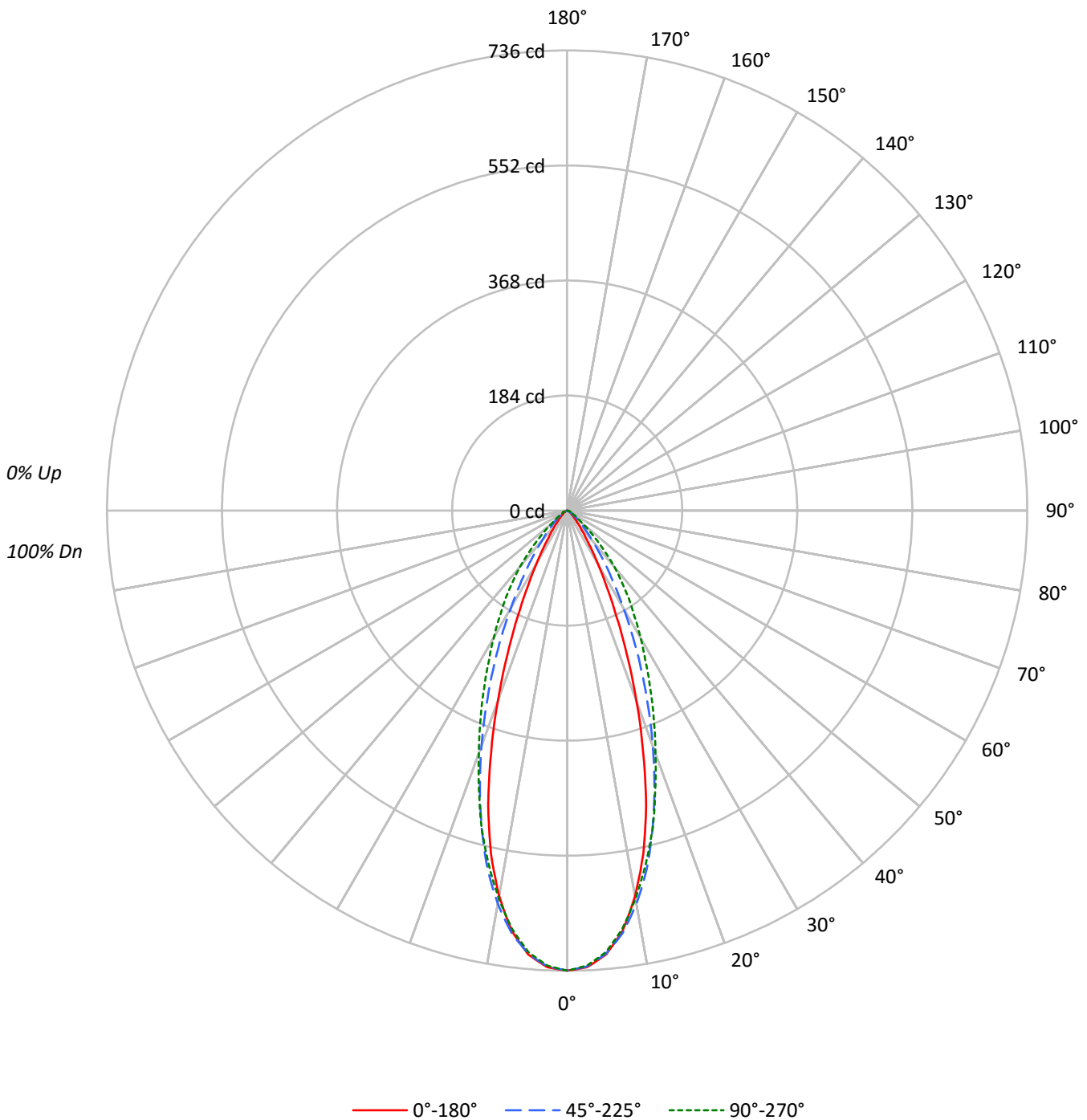
Input Watts (W): 5.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	69	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°	363029	363029	363029
5°	353123	352430	351142
10°	313620	319983	315624
15°	249263	269490	269490
20°	170114	210542	216843
25°	101637	152373	171318
30°	56059	102205	133881
35°	29392	65711	103596
40°	16810	40061	75870
45°	10745	25677	47167
50°	7676	16886	24639
55°	6279	9720	15483
60°	5328	5921	9868
65°	4670	4670	7822
70°	3895	3895	10531
75°	3813	2478	6291
80°	1705	1705	3694
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	65.4	14.5
10°-20°	142.1	31.4
20°-30°	122.9	27.2
30°-40°	71.0	15.7
40°-50°	32.2	7.1
50°-60°	11.4	2.5
60°-70°	5.0	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°	330.4	73.0
0°-40°	401.4	88.7
0°-60°	445.0	98.3
0°-90°	452.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	452.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	736	736	736	736	736	
5°	713	712	712	709	709	65
15°	488	503	528	532	528	132
25°	187	215	280	321	315	88
35°	49	64	109	163	172	33
45°	15	19	37	64	68	13
55°	7	7	11	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°	735.8	735.8	735.8	735.8	735.8	735.8	735.8	735.8	735.8	735.8	735.8
2.5°	731.0	729.7	729.7	729.7	730.4	730.4	729.7	729.7	729.7	729.7	729.7
5°	713.0	711.6	711.6	712.3	711.6	712.3	711.6	713.0	712.3	711.6	711.6
7.5°	678.2	678.2	678.2	678.8	679.5	679.5	679.5	680.9	680.9	682.2	681.5
10°	626.0	627.3	627.3	629.3	631.3	630.0	630.7	634.7	636.0	637.4	638.7
12.5°	562.4	564.4	565.7	567.0	569.1	571.1	571.8	578.5	580.4	583.1	587.8
15°	488.0	487.4	491.4	493.4	499.5	502.8	504.8	511.5	518.2	522.2	527.6
17.5°	404.4	406.4	408.4	413.8	421.1	425.8	428.5	436.5	447.2	455.9	463.9
20°	324.0	328.1	330.0	336.1	343.4	346.1	353.5	364.2	378.2	390.3	401.0
22.5°	249.7	251.7	257.1	263.8	271.8	277.8	285.2	295.9	310.7	322.7	337.4
25°	186.7	187.5	194.2	200.1	208.9	214.9	218.9	233.0	248.3	263.8	279.9
27.5°	135.9	137.2	141.2	147.3	156.7	160.7	167.4	179.4	194.2	210.9	227.6
30°	98.4	98.4	101.1	107.7	114.4	119.8	124.5	135.9	150.0	164.0	179.4
32.5°	68.9	69.6	72.3	76.9	83.6	87.7	91.1	101.8	113.1	127.2	140.6
35°	48.8	49.5	52.2	54.9	60.3	63.6	66.2	74.3	84.4	96.4	109.1
37.5°	35.4	36.2	37.5	39.5	43.5	45.5	48.2	54.9	62.9	72.3	83.6
40°	26.1	26.8	27.4	29.5	32.1	33.5	35.4	40.2	46.2	54.2	62.2
42.5°	20.1	20.1	20.7	22.0	23.4	24.7	26.1	29.5	34.1	40.2	47.5
45°	15.4	15.4	16.1	17.4	18.0	18.7	20.1	22.0	25.4	30.1	36.8
47.5°	12.7	12.7	12.7	13.4	14.0	14.7	15.4	17.4	19.4	24.1	28.1
50°	10.0	10.0	10.7	10.7	11.3	11.3	12.1	13.4	16.1	19.4	22.0
52.5°	8.7	8.7	8.7	8.7	8.7	9.4	9.4	10.7	13.4	14.7	16.1
55°	7.3	7.3	7.3	7.3	7.3	7.3	8.0	9.4	10.7	12.1	11.3
57.5°	6.0	6.0	6.0	6.0	6.0	6.7	6.7	8.0	8.7	8.0	8.0
60°	5.4	5.4	4.6	4.6	5.4	5.4	6.0	6.7	6.7	6.0	6.0
62.5°	4.6	4.0	4.0	4.0	4.6	5.4	5.4	5.4	4.6	4.6	4.6
65°	4.0	3.3	3.3	4.0	4.0	4.6	4.6	4.0	4.0	4.0	4.0
67.5°	3.3	3.3	3.3	3.3	4.0	4.0	4.0	3.3	3.3	3.3	3.3
70°	2.7	2.7	2.7	2.7	3.3	3.3	2.7	2.7	2.7	2.7	2.7
72.5°	2.0	2.0	2.0	2.7	2.7	2.7	2.0	2.0	2.0	2.7	2.0
75°	2.0	2.0	2.0	2.0	2.0	2.0	1.3	1.3	2.0	2.0	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°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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°	735.8	735.8	735.8	735.8	735.8	735.8	735.8	735.8	735.8	735.8
2.5°	729.1	729.1	728.3	729.1	729.1	729.1	729.1	728.3	729.1	728.3
5°	710.9	710.9	710.9	709.6	709.0	709.6	709.0	708.3	708.3	709.0
7.5°	680.1	680.1	679.5	678.2	678.2	677.5	676.1	675.5	674.8	674.8
10°	640.1	639.3	637.4	636.7	636.7	634.7	632.0	632.0	629.3	630.0
12.5°	589.8	588.5	587.8	587.8	585.2	585.2	583.1	582.5	581.1	579.8
15°	529.5	531.6	532.9	532.2	532.2	530.3	529.5	528.2	526.2	527.6
17.5°	470.0	474.6	476.0	478.0	478.7	477.3	475.4	472.0	470.0	468.7
20°	411.1	417.8	422.4	423.8	423.8	423.1	422.4	417.1	416.4	413.0
22.5°	350.1	359.5	367.5	370.2	370.9	371.5	368.9	364.8	363.5	362.9
25°	293.2	305.9	314.0	319.3	320.7	322.7	321.4	319.3	315.3	314.7
27.5°	241.7	255.0	265.8	272.4	275.8	277.2	278.5	275.1	273.8	271.1
30°	195.5	210.9	222.3	231.7	233.6	236.3	237.0	237.6	235.0	235.0
32.5°	156.0	168.7	182.7	192.1	196.1	198.2	201.5	200.9	200.9	200.1
35°	122.5	135.2	147.9	158.0	162.6	165.3	169.3	171.4	172.0	172.0
37.5°	94.4	107.1	118.5	130.5	135.2	138.5	141.2	141.9	142.6	141.9
40°	72.3	84.4	95.7	103.7	107.1	109.8	113.1	115.8	117.1	117.8
42.5°	56.9	65.6	72.9	81.0	86.3	90.3	91.1	90.3	90.3	89.7
45°	42.8	49.5	60.9	62.9	64.3	64.9	67.0	67.6	67.6	67.6
47.5°	34.1	41.5	41.5	44.2	45.5	47.5	48.2	48.2	48.2	48.2
50°	25.4	26.8	28.7	30.8	31.4	31.4	32.1	32.1	32.1	32.1
52.5°	16.7	18.7	19.4	20.1	20.7	21.4	22.8	23.4	22.8	22.8
55°	12.1	12.7	13.4	14.7	14.7	15.4	18.0	18.0	18.0	18.0
57.5°	8.0	8.7	10.0	12.1	12.1	12.7	13.4	13.4	14.0	14.0
60°	6.7	7.3	8.0	8.7	9.4	10.7	12.1	10.0	10.0	10.0
62.5°	5.4	6.0	6.7	7.3	6.7	7.3	8.0	8.0	8.0	8.0
65°	4.6	5.4	4.6	5.4	6.0	6.0	5.4	6.0	6.0	6.7
67.5°	4.0	4.0	4.0	4.0	4.0	4.6	6.0	6.7	7.3	7.3
70°	2.7	2.7	2.7	4.0	4.0	4.6	5.4	6.7	6.7	7.3
72.5°	2.0	2.0	2.7	3.3	4.0	4.0	4.6	4.6	5.4	5.4
75°	2.0	2.0	2.7	2.7	2.7	2.7	3.3	3.3	3.3	3.3
77.5°	1.3	1.3	1.3	1.3	2.0	2.0	2.0	2.7	2.7	2.7
80°	0.6	0.6	0.6	0.6	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	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)