

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: iO LED

Report Number: P958837

Luminaire Tested: MMG-03W-935-60x60-ID-X-X-4F-4-UNV-STD-X

Issue Date: 1/31/2025

Test Information

Test Method: LM-79-2019
Report Number: P958837
SCALED TEST REPORT
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/31/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: iO LED
Catalog Number: MMG-03W-935-60x60-ID-X-X-4F-4-UNV-STD-X
Description: iO LED MiniO-Graze LINEAR LIGHTING WITH 60x60 DEGREE OPTICS
3 WATTS PER FOOT
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 477.4 lumens
Efficiency: N/A
Efficacy: 44.2 lumens/watt
Spacing Criteria (0/90/45): 0.83 / 1.12 / 1.01
Luminous Opening: Rectangular w/ Sides (W: 0.07' x L: 4' x H: 0.09')
CIE Type: Direct

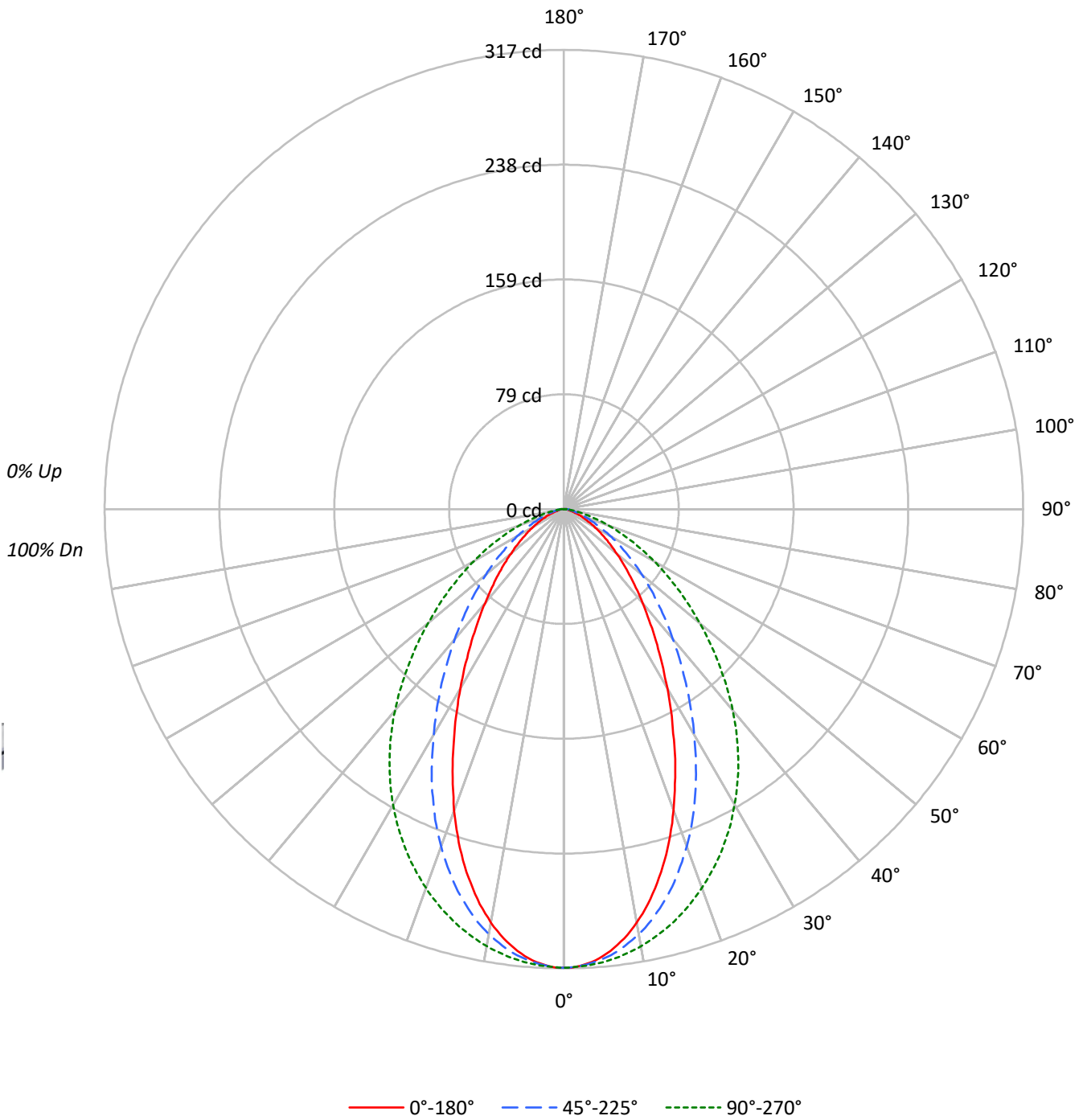
Input Watts (W): 10.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	94	92	90	89				89
2	103	96	91	86	101	95	90	85	91	87	83	88	85	81	85	82	80	78				78
3	96	87	80	75	93	85	79	74	83	77	73	80	75	72	78	74	71	69				69
4	89	79	71	66	87	78	71	65	75	69	65	73	68	64	71	67	63	61				61
5	83	72	64	58	81	71	64	58	69	62	58	67	61	57	65	60	56	55				55
6	77	66	58	53	76	65	58	52	63	57	52	62	56	51	60	55	51	49				49
7	72	61	53	48	71	60	53	47	58	52	47	57	51	47	56	51	46	45				45
8	68	56	48	43	67	55	48	43	54	48	43	53	47	43	52	47	43	41				41
9	64	52	45	40	63	51	44	40	50	44	39	49	44	39	48	43	39	38				38
10	60	49	41	37	59	48	41	37	47	41	36	46	40	36	45	40	36	35				35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12365	12365	12365
5°	12119	11333	11100
10°	11454	10214	9974
15°	10429	9016	8942
20°	9131	7778	7977
25°	7689	6544	7071
30°	6366	5349	6199
35°	5210	4317	5358
40°	4237	3414	4534
45°	3461	2685	3737
50°	2809	2069	3002
55°	2293	1553	2354
60°	1815	1134	1781
65°	1414	778	1277
70°	1068	514	838
75°	755	328	491
80°	662	201	233
85°	937	128	86

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 3846 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	29.3	6.1
10°-20°	77.3	16.2
20°-30°	99.5	20.8
30°-40°	95.8	20.1
40°-50°	77.1	16.2
50°-60°	53.0	11.1
60°-70°	29.5	6.2
70°-80°	11.9	2.5
80°-90°	3.7	0.8
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°	206.2	43.2
0°-40°	302.0	63.3
0°-60°	432.2	90.5
0°-90°	477.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	477.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	317	317	317	317	317	
5°	310	310	312	313	314	29
15°	259	264	276	289	294	72
25°	180	190	215	245	259	83
35°	111	119	147	187	210	69
45°	64	70	92	129	151	50
55°	35	38	52	81	96	31
65°	16	18	24	42	50	16
75°	5	7	9	16	18	6
85°	3	3	3	4	3	3
90°	2	2	2	2	2	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	316.6	316.6	316.6	316.6	316.6
1°	316.5	316.4	316.3	316.2	316.2
2°	315.6	315.6	315.6	315.8	315.9
3°	314.1	314.2	314.7	315.1	315.4
4°	312.2	312.5	313.3	314.3	314.7
5°	309.7	310.2	311.6	313.2	313.8
6°	306.7	307.5	309.6	311.8	312.7
7°	303.1	304.2	307.2	310.1	311.4
8°	299.3	300.8	304.4	308.2	309.9
9°	294.7	296.7	301.2	306.1	308.2
10°	289.9	292.2	298.0	303.8	306.4
11°	284.4	287.3	294.3	301.3	304.3
12°	278.8	281.9	290.2	298.5	302.1
13°	272.5	276.3	285.8	295.6	299.7
14°	265.9	270.2	281.1	292.4	297.1
15°	259.4	263.9	276.2	289.0	294.5
16°	252.2	257.5	271.1	285.3	291.5
17°	245.1	250.8	265.4	281.7	288.5
18°	237.3	243.8	259.7	277.7	285.2
19°	229.4	236.4	253.8	273.6	281.9
20°	221.4	228.9	247.8	269.2	278.4
21°	212.8	221.2	241.6	264.6	274.7
22°	204.6	213.0	235.3	259.8	270.9
23°	196.7	204.9	228.6	255.0	267.0
24°	188.7	197.3	221.6	250.0	263.0
25°	180.2	189.7	214.9	244.9	258.8
26°	172.3	181.8	208.1	239.6	254.4
27°	164.9	173.8	200.8	234.1	249.9
28°	157.3	166.8	193.7	228.4	245.4
29°	150.1	159.2	186.6	222.7	240.5
30°	142.9	152.3	179.6	216.8	235.7
31°	135.7	145.5	173.2	210.7	230.8
32°	129.6	138.6	166.3	204.7	225.6
33°	122.7	131.9	159.7	198.7	220.5
34°	116.4	125.8	153.1	192.7	215.2
35°	110.9	119.4	147.0	186.7	209.8
36°	105.1	113.4	140.6	180.6	204.2
37°	99.4	108.0	134.6	174.7	198.7
38°	94.3	102.6	128.7	168.6	193.0
39°	89.3	97.3	122.7	162.7	187.2
40°	84.6	92.3	117.0	156.9	181.3
41°	80.0	87.4	111.7	151.1	175.4
42°	75.8	82.9	106.5	145.5	169.4
43°	71.5	78.5	101.4	140.0	163.3
44°	67.7	74.3	96.4	134.6	157.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
45°	64.0	70.3	91.9	129.1	151.4
46°	60.4	66.2	87.3	123.8	145.4
47°	57.1	62.7	82.7	118.6	139.6
48°	53.6	59.1	78.5	113.4	133.8
49°	50.7	55.8	74.3	108.5	128.0
50°	47.4	52.5	70.2	103.7	122.3
51°	44.8	49.4	66.4	98.8	116.8
52°	42.1	46.5	62.6	94.2	111.4
53°	39.5	43.5	58.9	89.5	106.0
54°	37.1	40.9	55.3	85.1	100.8
55°	34.7	38.4	51.8	80.9	95.7
56°	32.3	35.9	48.5	76.4	90.6
57°	30.1	33.4	45.5	72.1	85.7
58°	28.1	31.2	42.5	68.0	80.9
59°	26.0	28.9	39.6	63.9	76.2
60°	24.1	26.8	36.9	60.0	71.7
61°	22.3	24.9	34.1	56.2	67.2
62°	20.6	23.0	31.5	52.5	62.9
63°	18.9	21.2	29.0	49.0	58.6
64°	17.4	19.6	26.7	45.5	54.6
65°	16.0	18.0	24.5	42.1	50.5
66°	14.7	16.5	22.4	38.9	46.6
67°	13.4	15.1	20.5	35.7	42.8
68°	12.2	13.8	18.7	32.7	39.2
69°	11.0	12.6	17.1	29.8	35.7
70°	9.9	11.4	15.5	27.1	32.3
71°	8.8	10.3	14.0	24.5	29.2
72°	7.8	9.4	12.7	22.0	26.2
73°	6.9	8.4	11.5	19.7	23.3
74°	6.1	7.4	10.3	17.5	20.6
75°	5.4	6.6	9.4	15.5	18.3
76°	4.8	5.9	8.4	13.6	15.8
77°	4.4	5.3	7.6	12.0	13.8
78°	4.0	4.7	6.7	10.6	11.6
79°	3.6	4.3	6.1	9.2	9.8
80°	3.3	3.9	5.4	8.0	8.3
81°	3.1	3.5	4.9	7.0	6.9
82°	3.0	3.2	4.4	6.1	5.7
83°	2.8	3.0	3.9	5.4	4.6
84°	2.7	2.8	3.6	4.7	3.7
85°	2.6	2.6	3.2	4.2	2.9
86°	2.5	2.5	2.9	3.6	2.2
87°	2.5	2.3	2.6	3.2	1.7
88°	2.5	2.3	2.5	2.9	1.3
89°	2.4	2.2	2.3	2.6	1.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
90°	2.1	2.1	2.1	2.1	2.1

(END OF REPORT)