

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: P958857

Luminaire Tested: MMG-05W-940-60x60-ID-X-X-4F-4-UNV-STD-X

Issue Date: 1/31/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P958857  
SCALED TEST REPORT  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/31/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: iO LED  
Catalog Number: MMG-05W-940-60x60-ID-X-X-4F-4-UNV-STD-X  
Description: iO LED MiniO-Graze LINEAR LIGHTING WITH 60x60 DEGREE OPTICS  
5 WATTS PER FOOT  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 915.3 lumens  
Efficiency: N/A  
Efficacy: 50.9 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

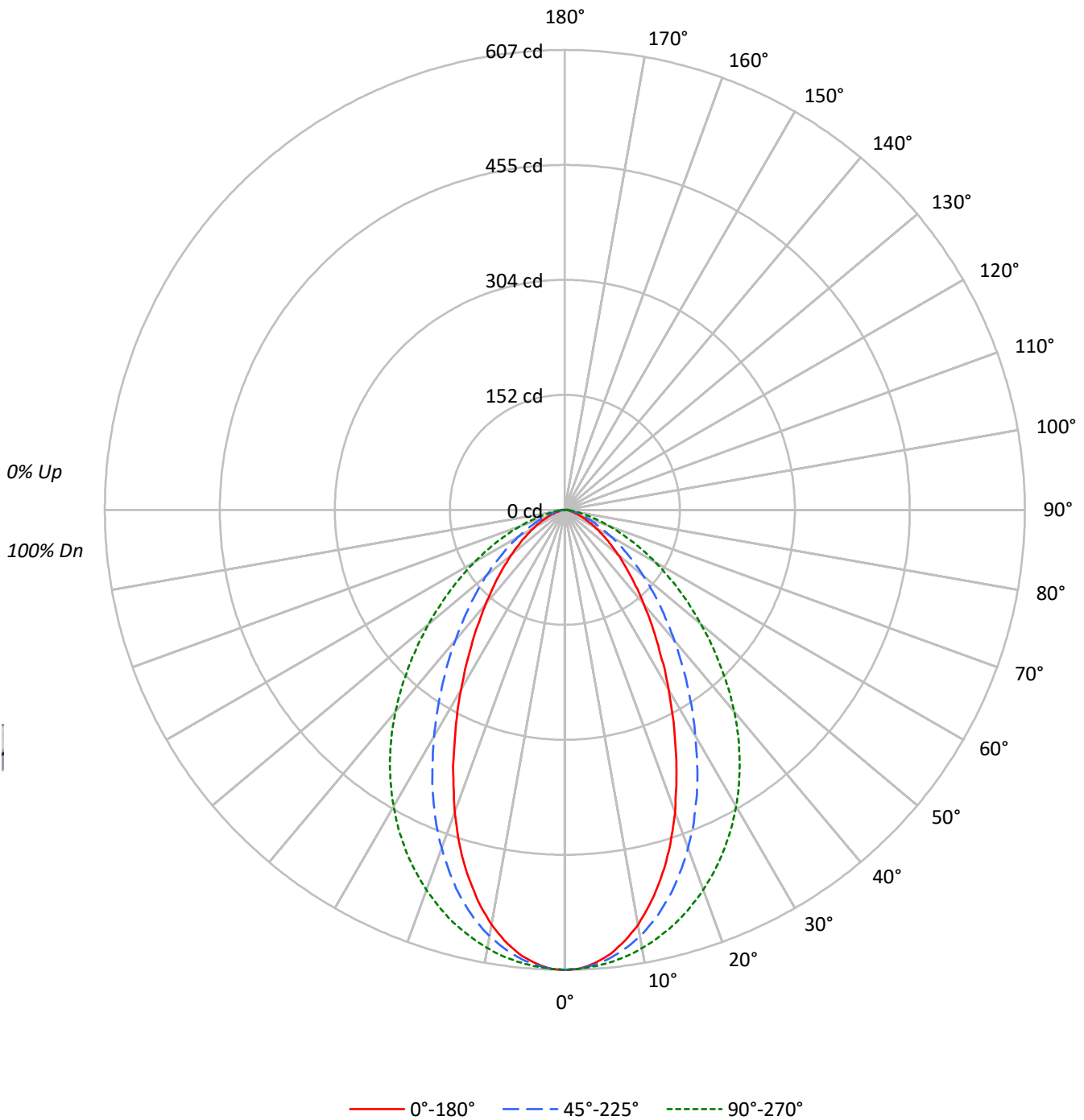
Input Watts (W): 18  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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°	23711	23711	23711
5°	23241	21736	21285
10°	21964	19582	19121
15°	19998	17292	17142
20°	17512	14916	15294
25°	14742	12548	13557
30°	12207	10258	11888
35°	9987	8276	10275
40°	8124	6548	8692
45°	6630	5148	7162
50°	5392	3968	5758
55°	4394	2979	4511
60°	3480	2172	3413
65°	2713	1490	2450
70°	2050	984	1609
75°	1454	625	942
80°	1264	383	449
85°	1801	245	163

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 90°  
 Luminance: 7509 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	56.2	6.1
10°-20°	148.3	16.2
20°-30°	190.8	20.8
30°-40°	183.8	20.1
40°-50°	147.9	16.2
50°-60°	101.7	11.1
60°-70°	56.6	6.2
70°-80°	22.9	2.5
80°-90°	7.2	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°	395.4	43.2
0°-40°	579.1	63.3
0°-60°	828.7	90.5
0°-90°	915.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	915.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	607	607	607	607	607	
5°	594	595	598	600	602	55
15°	497	506	530	554	565	138
25°	346	364	412	470	496	158
35°	213	229	282	358	402	133
45°	123	135	176	248	290	95
55°	66	74	99	155	183	60
65°	31	34	47	81	97	31
75°	10	13	18	30	35	12
85°	5	5	6	8	6	6
90°	4	4	4	4	4	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	607.1	607.1	607.1	607.1	607.1
1°	606.9	606.7	606.4	606.3	606.3
2°	605.2	605.2	605.2	605.5	605.8
3°	602.3	602.5	603.4	604.2	604.7
4°	598.6	599.2	600.7	602.6	603.4
5°	593.9	594.8	597.6	600.5	601.7
6°	588.1	589.7	593.6	597.8	599.6
7°	581.2	583.3	589.0	594.7	597.0
8°	574.0	576.7	583.6	591.0	594.3
9°	565.1	568.8	577.5	587.0	591.0
10°	555.9	560.3	571.3	582.5	587.4
11°	545.4	550.9	564.3	577.8	583.5
12°	534.5	540.6	556.4	572.4	579.2
13°	522.4	529.8	548.0	566.7	574.6
14°	509.9	518.1	539.0	560.7	569.8
15°	497.4	505.9	529.7	554.1	564.6
16°	483.7	493.8	519.9	547.1	558.9
17°	469.9	480.9	509.0	540.1	553.1
18°	455.0	467.4	497.9	532.6	546.9
19°	439.9	453.3	486.7	524.5	540.5
20°	424.6	438.8	475.2	516.2	533.8
21°	408.0	424.2	463.3	507.4	526.8
22°	392.4	408.5	451.2	498.2	519.5
23°	377.1	392.9	438.3	488.9	512.0
24°	361.8	378.3	425.0	479.3	504.2
25°	345.5	363.7	412.1	469.5	496.2
26°	330.4	348.6	399.0	459.4	487.7
27°	316.2	333.2	385.0	449.0	479.2
28°	301.7	319.9	371.4	438.0	470.5
29°	287.8	305.2	357.9	427.0	461.2
30°	274.0	292.1	344.4	415.6	452.0
31°	260.3	279.0	332.0	404.0	442.5
32°	248.4	265.8	318.8	392.5	432.6
33°	235.2	252.9	306.2	381.1	422.7
34°	223.1	241.3	293.5	369.5	412.6
35°	212.6	229.0	281.8	358.0	402.3
36°	201.5	217.4	269.5	346.3	391.6
37°	190.7	207.1	258.2	334.9	380.9
38°	180.9	196.7	246.8	323.3	370.0
39°	171.2	186.6	235.4	312.0	358.9
40°	162.2	177.0	224.4	300.9	347.6
41°	153.5	167.6	214.1	289.8	336.2
42°	145.3	159.0	204.2	279.0	324.8
43°	137.1	150.6	194.5	268.5	313.2
44°	129.7	142.5	184.9	258.2	301.7

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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
45°	122.6	134.9	176.2	247.6	290.2
46°	115.9	127.0	167.3	237.3	278.9
47°	109.4	120.3	158.5	227.3	267.7
48°	102.7	113.3	150.6	217.4	256.5
49°	97.2	107.1	142.4	208.1	245.4
50°	91.0	100.7	134.6	198.8	234.6
51°	86.0	94.7	127.4	189.5	224.0
52°	80.7	89.1	120.0	180.6	213.6
53°	75.7	83.3	112.9	171.7	203.3
54°	71.1	78.5	106.0	163.2	193.3
55°	66.5	73.6	99.4	155.1	183.4
56°	62.0	68.8	93.1	146.5	173.8
57°	57.8	64.1	87.3	138.2	164.3
58°	53.8	59.7	81.5	130.4	155.1
59°	49.8	55.4	75.9	122.5	146.1
60°	46.2	51.4	70.7	115.0	137.4
61°	42.7	47.7	65.4	107.7	128.8
62°	39.6	44.0	60.4	100.7	120.5
63°	36.3	40.7	55.6	93.9	112.3
64°	33.4	37.6	51.2	87.2	104.7
65°	30.7	34.5	46.9	80.7	96.9
66°	28.2	31.6	43.0	74.5	89.4
67°	25.7	28.9	39.3	68.4	82.1
68°	23.3	26.4	35.9	62.6	75.2
69°	21.1	24.1	32.7	57.2	68.4
70°	19.0	21.9	29.7	52.0	62.0
71°	16.9	19.8	26.9	46.9	56.0
72°	14.9	17.9	24.4	42.2	50.2
73°	13.2	16.1	22.0	37.7	44.7
74°	11.7	14.2	19.8	33.5	39.6
75°	10.4	12.7	17.9	29.8	35.1
76°	9.2	11.3	16.1	26.1	30.3
77°	8.4	10.2	14.5	23.1	26.4
78°	7.6	9.1	12.9	20.3	22.3
79°	6.9	8.2	11.6	17.7	18.9
80°	6.3	7.4	10.3	15.3	16.0
81°	5.9	6.7	9.4	13.4	13.3
82°	5.7	6.1	8.4	11.6	10.9
83°	5.4	5.7	7.5	10.3	8.8
84°	5.1	5.3	6.9	9.0	7.1
85°	5.0	5.0	6.1	8.0	5.5
86°	4.7	4.7	5.5	7.0	4.2
87°	4.7	4.5	5.0	6.2	3.3
88°	4.7	4.5	4.7	5.5	2.5
89°	4.6	4.2	4.5	5.0	2.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
90°	4.1	4.1	4.1	4.1	4.1

(END OF REPORT)