

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: P958849

Luminaire Tested: MMG-05W-930-60x60-ID-X-X-4F-4-UNV-STD-X

Issue Date: 1/31/2025

Test Information

Test Method: LM-79-2019
Report Number: P958849
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-930-60x60-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: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 846.3 lumens
Efficiency: N/A
Efficacy: 47.0 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

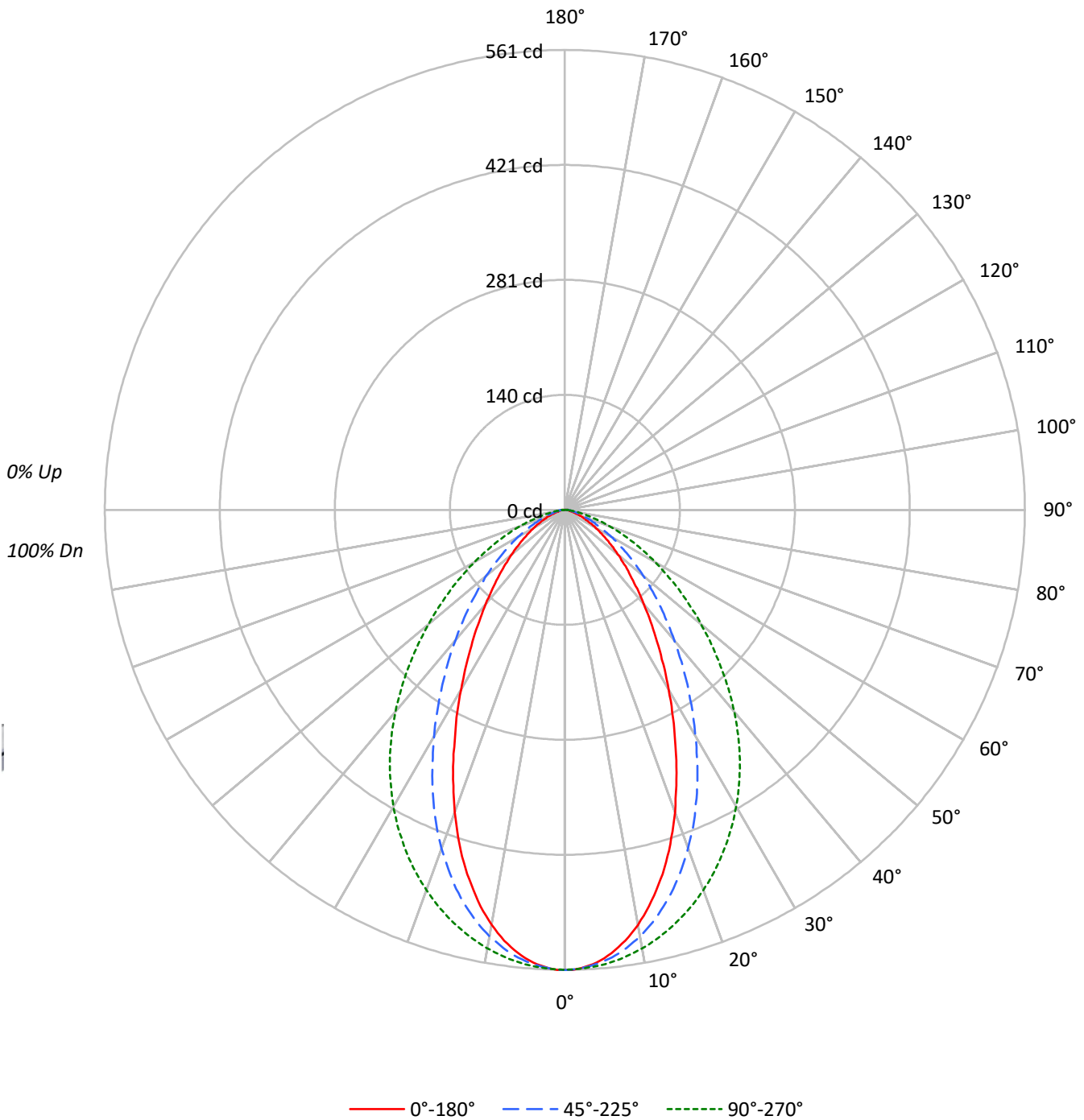
Input Watts (W): 18
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	21922	21922	21922
5°	21488	20095	19679
10°	20308	18108	17679
15°	18490	15986	15852
20°	16192	13792	14140
25°	13629	11601	12535
30°	11284	9487	10991
35°	9231	7650	9501
40°	7513	6055	8037
45°	6133	4759	6622
50°	4983	3670	5324
55°	4057	2755	4172
60°	3217	2006	3155
65°	2510	1378	2266
70°	1899	908	1487
75°	1342	579	870
80°	1184	353	415
85°	1657	224	151

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 90°
 Luminance: 6960 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.0	6.1
10°-20°	137.1	16.2
20°-30°	176.5	20.8
30°-40°	169.9	20.1
40°-50°	136.7	16.2
50°-60°	94.0	11.1
60°-70°	52.4	6.2
70°-80°	21.1	2.5
80°-90°	6.6	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°	365.6	43.2
0°-40°	535.5	63.3
0°-60°	766.2	90.5
0°-90°	846.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	846.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	561	561	561	561	561	
5°	549	550	552	555	556	51
15°	460	468	490	512	522	128
25°	319	336	381	434	459	147
35°	196	212	260	331	372	123
45°	113	125	163	229	268	88
55°	61	68	92	143	170	55
65°	28	32	43	75	90	29
75°	10	12	17	28	32	11
85°	5	5	6	7	5	5
90°	4	4	4	4	4	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	561.3	561.3	561.3	561.3	561.3
1°	561.2	560.9	560.7	560.6	560.6
2°	559.6	559.6	559.6	559.9	560.1
3°	556.9	557.0	557.9	558.6	559.1
4°	553.5	554.0	555.5	557.2	557.9
5°	549.1	550.0	552.5	555.2	556.3
6°	543.8	545.2	548.9	552.8	554.4
7°	537.4	539.4	544.6	549.9	552.0
8°	530.7	533.3	539.6	546.4	549.5
9°	522.5	526.0	534.0	542.8	546.4
10°	514.0	518.0	528.3	538.6	543.1
11°	504.3	509.4	521.8	534.2	539.5
12°	494.3	499.9	514.5	529.3	535.6
13°	483.0	489.9	506.7	524.0	531.3
14°	471.5	479.0	498.4	518.4	526.8
15°	459.9	467.8	489.7	512.3	522.1
16°	447.2	456.6	480.7	505.8	516.8
17°	434.5	444.6	470.6	499.4	511.5
18°	420.7	432.2	460.4	492.4	505.7
19°	406.7	419.2	450.0	485.0	499.7
20°	392.6	405.7	439.4	477.3	493.5
21°	377.2	392.2	428.4	469.1	487.1
22°	362.8	377.7	417.2	460.6	480.4
23°	348.7	363.3	405.3	452.1	473.4
24°	334.5	349.8	392.9	443.2	466.2
25°	319.4	336.3	381.0	434.2	458.8
26°	305.5	322.4	368.9	424.8	451.0
27°	292.4	308.1	356.0	415.1	443.1
28°	279.0	295.8	343.4	405.0	435.0
29°	266.1	282.2	330.9	394.8	426.5
30°	253.3	270.1	318.5	384.3	417.9
31°	240.7	258.0	307.0	373.6	409.2
32°	229.7	245.8	294.8	363.0	400.0
33°	217.5	233.8	283.1	352.3	390.9
34°	206.3	223.1	271.4	341.6	381.5
35°	196.5	211.8	260.5	331.0	372.0
36°	186.3	201.0	249.2	320.2	362.1
37°	176.3	191.5	238.7	309.7	352.2
38°	167.3	181.9	228.2	298.9	342.1
39°	158.3	172.5	217.6	288.5	331.9
40°	150.0	163.6	207.5	278.2	321.4
41°	141.9	155.0	198.0	268.0	310.9
42°	134.4	147.0	188.9	258.0	300.3
43°	126.8	139.2	179.8	248.2	289.6
44°	120.0	131.8	170.9	238.7	279.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
45°	113.4	124.7	162.9	229.0	268.3
46°	107.2	117.4	154.7	219.5	257.9
47°	101.2	111.2	146.5	210.2	247.5
48°	95.0	104.7	139.2	201.0	237.1
49°	89.9	99.0	131.7	192.4	226.9
50°	84.1	93.1	124.5	183.9	216.9
51°	79.5	87.5	117.8	175.2	207.1
52°	74.6	82.4	110.9	167.0	197.5
53°	70.0	77.1	104.4	158.7	188.0
54°	65.7	72.5	98.0	150.9	178.7
55°	61.4	68.0	91.9	143.4	169.6
56°	57.3	63.6	86.1	135.5	160.7
57°	53.4	59.3	80.7	127.8	151.9
58°	49.7	55.2	75.3	120.6	143.4
59°	46.1	51.2	70.2	113.3	135.1
60°	42.7	47.5	65.3	106.3	127.0
61°	39.5	44.1	60.5	99.6	119.1
62°	36.6	40.7	55.8	93.1	111.4
63°	33.5	37.7	51.4	86.8	103.9
64°	30.8	34.7	47.3	80.6	96.8
65°	28.4	31.9	43.4	74.6	89.6
66°	26.1	29.3	39.7	68.9	82.7
67°	23.8	26.7	36.3	63.3	76.0
68°	21.6	24.4	33.2	57.9	69.5
69°	19.5	22.3	30.2	52.9	63.3
70°	17.6	20.2	27.4	48.0	57.3
71°	15.6	18.3	24.9	43.4	51.8
72°	13.8	16.6	22.6	39.0	46.5
73°	12.2	14.9	20.4	34.9	41.3
74°	10.9	13.2	18.3	31.0	36.6
75°	9.6	11.7	16.6	27.6	32.4
76°	8.5	10.5	14.9	24.1	28.0
77°	7.8	9.4	13.4	21.3	24.4
78°	7.1	8.4	11.9	18.8	20.6
79°	6.3	7.6	10.7	16.3	17.4
80°	5.9	6.8	9.5	14.1	14.8
81°	5.5	6.2	8.7	12.4	12.3
82°	5.2	5.6	7.8	10.7	10.1
83°	5.0	5.2	6.9	9.5	8.2
84°	4.8	4.9	6.3	8.3	6.6
85°	4.6	4.6	5.6	7.4	5.1
86°	4.4	4.4	5.1	6.5	3.9
87°	4.4	4.1	4.6	5.7	3.0
88°	4.4	4.1	4.4	5.1	2.3
89°	4.3	3.9	4.1	4.6	2.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
90°	3.8	3.8	3.8	3.8	3.8

(END OF REPORT)