

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: P958897

Luminaire Tested: MMG-05W-930-60x60-ID-X-X-1F-1-UNV-STD-X

Issue Date: 1/31/2025

Test Information

Test Method: LM-79-2019
Report Number: P958897
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-1F-1-UNV-STD-X
Description: iO LED MiniO-Graze LINEAR LIGHTING WITH 60x60 DEGREE OPTICS. INPUT WATTAGE IN IES FILE REPRESENTS CONSUMPTION IN A RUN, INDIVIDUAL FIXTURE MAY VARY.
5 WATTS PER FOOT
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 211.6 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: 1' x H: 0.09')
CIE Type: Direct

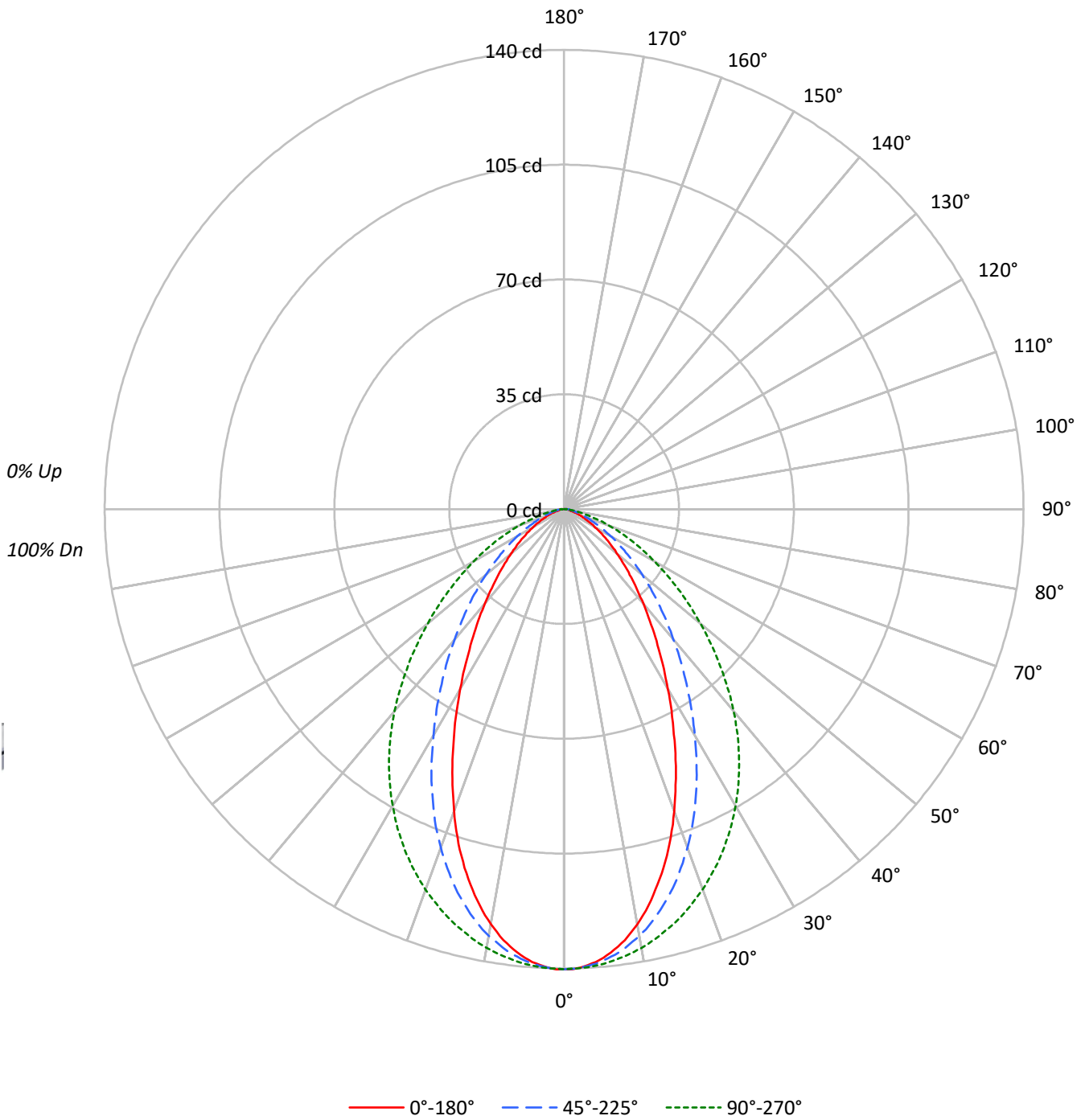
Input Watts (W): 4.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	21918	21918	21918
5°	21372	20018	19682
10°	20083	17988	17683
15°	18184	15828	15849
20°	15818	13617	14143
25°	13246	11425	12535
30°	10883	9323	10993
35°	8836	7501	9501
40°	7137	5929	8032
45°	5761	4645	6624
50°	4633	3574	5321
55°	3739	2681	4172
60°	2913	1943	3160
65°	2219	1340	2266
70°	1628	883	1484
75°	1099	551	870
80°	910	342	415
85°	1089	215	154

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 6624 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	13.0	6.1
10°-20°	34.3	16.2
20°-30°	44.1	20.8
30°-40°	42.5	20.1
40°-50°	34.2	16.2
50°-60°	23.5	11.1
60°-70°	13.1	6.2
70°-80°	5.3	2.5
80°-90°	1.7	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°	91.4	43.2
0°-40°	133.9	63.3
0°-60°	191.6	90.5
0°-90°	211.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	211.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	140	140	140	140	140	
5°	137	138	138	139	139	13
15°	115	117	122	128	130	32
25°	80	84	95	108	115	37
35°	49	53	65	83	93	31
45°	28	31	41	57	67	22
55°	15	17	23	36	42	14
65°	7	8	11	19	22	7
75°	2	3	4	7	8	3
85°	1	1	1	2	1	1
90°	1	1	1	1	1	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	140.3	140.3	140.3	140.3	140.3
1°	140.3	140.2	140.2	140.1	140.1
2°	139.9	139.9	139.9	140.0	140.0
3°	139.2	139.3	139.5	139.7	139.8
4°	138.4	138.5	138.9	139.3	139.5
5°	137.3	137.5	138.1	138.8	139.1
6°	135.9	136.3	137.2	138.2	138.6
7°	134.4	134.8	136.2	137.5	138.0
8°	132.7	133.3	134.9	136.6	137.4
9°	130.6	131.5	133.5	135.7	136.6
10°	128.5	129.5	132.1	134.7	135.8
11°	126.1	127.3	130.5	133.6	134.9
12°	123.6	125.0	128.6	132.3	133.9
13°	120.8	122.5	126.7	131.0	132.8
14°	117.9	119.8	124.6	129.6	131.7
15°	115.0	117.0	122.4	128.1	130.5
16°	111.8	114.1	120.2	126.5	129.2
17°	108.6	111.2	117.7	124.8	127.9
18°	105.2	108.1	115.1	123.1	126.4
19°	101.7	104.8	112.5	121.2	124.9
20°	98.1	101.4	109.8	119.3	123.4
21°	94.3	98.1	107.1	117.3	121.8
22°	90.7	94.4	104.3	115.2	120.1
23°	87.2	90.8	101.3	113.0	118.4
24°	83.6	87.4	98.2	110.8	116.6
25°	79.9	84.1	95.2	108.5	114.7
26°	76.4	80.6	92.2	106.2	112.7
27°	73.1	77.0	89.0	103.8	110.8
28°	69.7	73.9	85.9	101.3	108.8
29°	66.5	70.6	82.7	98.7	106.6
30°	63.3	67.5	79.6	96.1	104.5
31°	60.2	64.5	76.7	93.4	102.3
32°	57.4	61.4	73.7	90.7	100.0
33°	54.4	58.5	70.8	88.1	97.7
34°	51.6	55.8	67.8	85.4	95.4
35°	49.1	52.9	65.1	82.8	93.0
36°	46.6	50.3	62.3	80.0	90.5
37°	44.1	47.9	59.7	77.4	88.1
38°	41.8	45.5	57.1	74.7	85.5
39°	39.6	43.1	54.4	72.1	83.0
40°	37.5	40.9	51.9	69.6	80.3
41°	35.5	38.7	49.5	67.0	77.7
42°	33.6	36.8	47.2	64.5	75.1
43°	31.7	34.8	45.0	62.1	72.4
44°	30.0	32.9	42.7	59.7	69.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
45°	28.3	31.2	40.7	57.2	67.1
46°	26.8	29.4	38.7	54.9	64.5
47°	25.3	27.8	36.6	52.5	61.9
48°	23.7	26.2	34.8	50.3	59.3
49°	22.5	24.7	32.9	48.1	56.7
50°	21.0	23.3	31.1	46.0	54.2
51°	19.9	21.9	29.4	43.8	51.8
52°	18.7	20.6	27.7	41.8	49.4
53°	17.5	19.3	26.1	39.7	47.0
54°	16.4	18.1	24.5	37.7	44.7
55°	15.4	17.0	23.0	35.8	42.4
56°	14.3	15.9	21.5	33.9	40.2
57°	13.4	14.8	20.2	31.9	38.0
58°	12.4	13.8	18.8	30.1	35.8
59°	11.5	12.8	17.6	28.3	33.8
60°	10.7	11.9	16.3	26.6	31.8
61°	9.9	11.0	15.1	24.9	29.8
62°	9.1	10.2	14.0	23.3	27.9
63°	8.4	9.4	12.9	21.7	26.0
64°	7.7	8.7	11.8	20.1	24.2
65°	7.1	8.0	10.9	18.7	22.4
66°	6.5	7.3	9.9	17.2	20.7
67°	5.9	6.7	9.1	15.8	19.0
68°	5.4	6.1	8.3	14.5	17.4
69°	4.9	5.6	7.6	13.2	15.8
70°	4.4	5.1	6.9	12.0	14.3
71°	3.9	4.6	6.2	10.9	13.0
72°	3.4	4.1	5.6	9.8	11.6
73°	3.0	3.7	5.1	8.7	10.3
74°	2.7	3.3	4.6	7.7	9.1
75°	2.4	2.9	4.1	6.9	8.1
76°	2.1	2.6	3.7	6.0	7.0
77°	2.0	2.3	3.4	5.3	6.1
78°	1.8	2.1	3.0	4.7	5.2
79°	1.6	1.9	2.7	4.1	4.4
80°	1.5	1.7	2.4	3.5	3.7
81°	1.4	1.6	2.2	3.1	3.1
82°	1.3	1.4	2.0	2.7	2.5
83°	1.2	1.3	1.7	2.4	2.0
84°	1.2	1.2	1.6	2.1	1.6
85°	1.2	1.2	1.4	1.9	1.3
86°	1.1	1.1	1.3	1.6	1.0
87°	1.1	1.0	1.2	1.4	0.8
88°	1.1	1.0	1.1	1.3	0.6
89°	1.1	1.0	1.0	1.2	0.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
90°	0.9	0.9	0.9	0.9	0.9

(END OF REPORT)