

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: P958905

Luminaire Tested: MMG-05W-940-60x60-ID-X-X-1F-1-UNV-STD-X

Issue Date: 1/31/2025

Test Information

Test Method: LM-79-2019
Report Number: P958905
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-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: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 228.8 lumens
Efficiency: N/A
Efficacy: 50.8 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

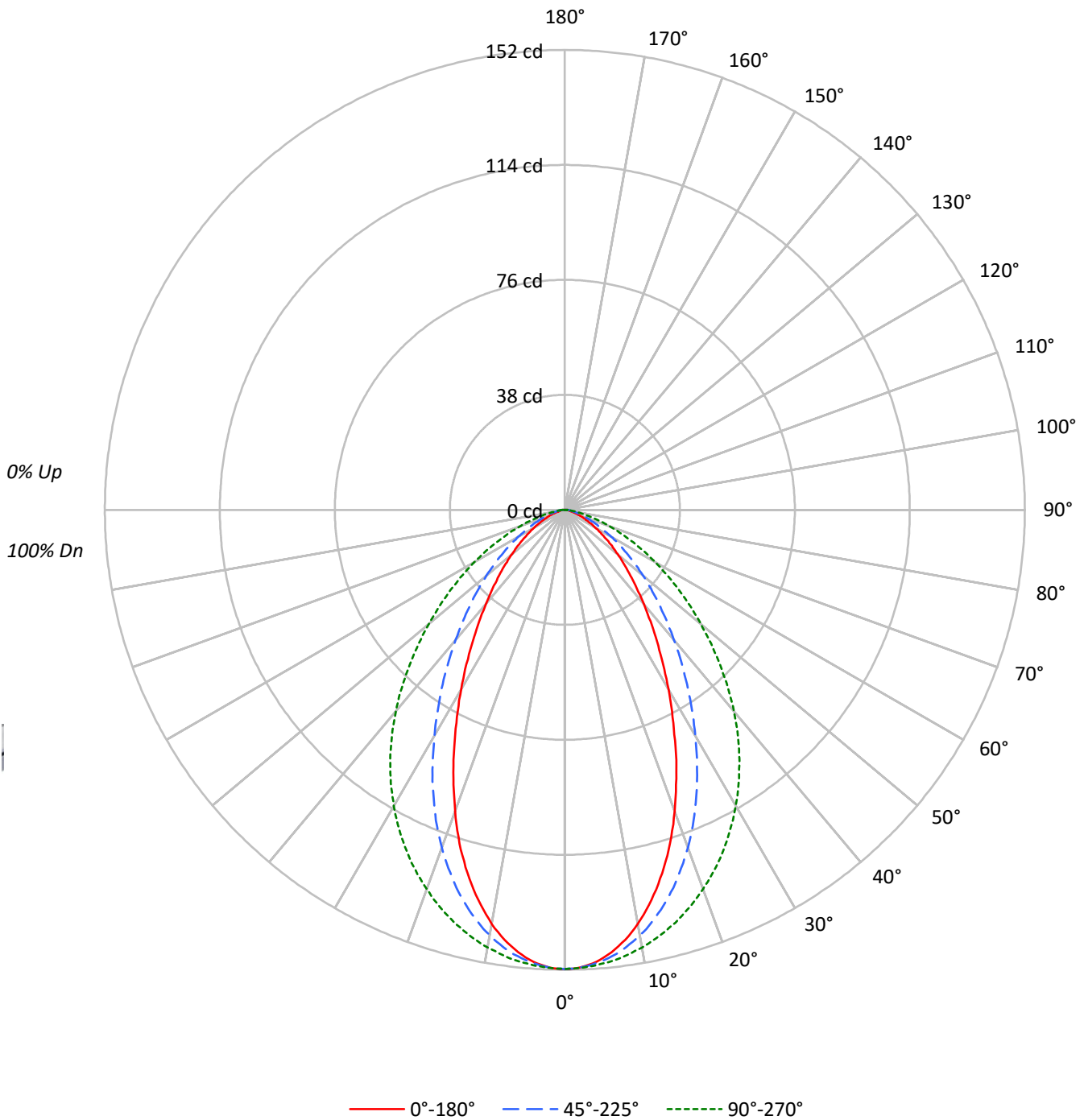
Input Watts (W): 4.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P958905

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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	49	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	40	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°	23715	23715	23715
5°	23116	21656	21281
10°	21724	19445	19128
15°	19655	17121	17149
20°	17108	14733	15289
25°	14324	12361	13551
30°	11777	10084	11888
35°	9556	8112	10277
40°	7708	6409	8692
45°	6250	5022	7167
50°	5008	3872	5753
55°	4030	2903	4516
60°	3131	2110	3408
65°	2406	1438	2448
70°	1739	947	1609
75°	1190	605	945
80°	970	371	449
85°	1180	230	166

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 7167 cd/sqm



TEST NUMBER: P958905

CATALOG NUMBER: MMG-05W-940-60x60-ID-X-X-1F-1-UNV-STD-X

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	14.1	6.1
10°-20°	37.1	16.2
20°-30°	47.7	20.8
30°-40°	45.9	20.1
40°-50°	37.0	16.2
50°-60°	25.4	11.1
60°-70°	14.2	6.2
70°-80°	5.7	2.5
80°-90°	1.8	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°	98.8	43.2
0°-40°	144.8	63.3
0°-60°	207.2	90.5
0°-90°	228.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	228.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	152	152	152	152	152	
5°	148	149	149	150	150	14
15°	124	126	132	138	141	35
25°	86	91	103	117	124	40
35°	53	57	70	90	101	33
45°	31	34	44	62	73	24
55°	17	18	25	39	46	15
65°	8	9	12	20	24	8
75°	3	3	4	7	9	3
85°	1	1	2	2	1	1
90°	1	1	1	1	1	



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CATALOG NUMBER: MMG-05W-940-60x60-ID-X-X-1F-1-UNV-STD-X

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	151.8	151.8	151.8	151.8	151.8
1°	151.7	151.7	151.6	151.6	151.6
2°	151.3	151.3	151.3	151.4	151.4
3°	150.6	150.6	150.8	151.0	151.2
4°	149.7	149.8	150.2	150.6	150.8
5°	148.5	148.7	149.4	150.1	150.4
6°	147.0	147.4	148.4	149.5	149.9
7°	145.3	145.8	147.3	148.7	149.3
8°	143.5	144.2	145.9	147.7	148.6
9°	141.3	142.2	144.4	146.8	147.7
10°	139.0	140.1	142.8	145.6	146.9
11°	136.3	137.7	141.1	144.4	145.9
12°	133.6	135.2	139.1	143.1	144.8
13°	130.6	132.5	137.0	141.7	143.7
14°	127.5	129.5	134.8	140.2	142.4
15°	124.3	126.5	132.4	138.5	141.2
16°	120.9	123.5	130.0	136.8	139.7
17°	117.5	120.2	127.2	135.0	138.3
18°	113.8	116.9	124.5	133.1	136.7
19°	110.0	113.3	121.7	131.1	135.1
20°	106.1	109.7	118.8	129.1	133.4
21°	102.0	106.0	115.8	126.8	131.7
22°	98.1	102.1	112.8	124.5	129.9
23°	94.3	98.2	109.6	122.2	128.0
24°	90.5	94.6	106.2	119.8	126.1
25°	86.4	90.9	103.0	117.4	124.0
26°	82.6	87.2	99.7	114.8	121.9
27°	79.0	83.3	96.3	112.2	119.8
28°	75.4	80.0	92.9	109.5	117.6
29°	72.0	76.3	89.5	106.7	115.3
30°	68.5	73.0	86.1	103.9	113.0
31°	65.1	69.8	83.0	101.0	110.6
32°	62.1	66.5	79.7	98.1	108.2
33°	58.8	63.2	76.5	95.3	105.7
34°	55.8	60.3	73.4	92.4	103.1
35°	53.1	57.3	70.4	89.5	100.6
36°	50.4	54.4	67.4	86.6	97.9
37°	47.7	51.8	64.5	83.7	95.2
38°	45.2	49.2	61.7	80.8	92.5
39°	42.8	46.6	58.8	78.0	89.7
40°	40.5	44.2	56.1	75.2	86.9
41°	38.4	41.9	53.5	72.5	84.1
42°	36.3	39.8	51.1	69.8	81.2
43°	34.3	37.6	48.6	67.1	78.3
44°	32.4	35.6	46.2	64.5	75.4

TEST NUMBER: P958905

CATALOG NUMBER: MMG-05W-940-60x60-ID-X-X-1F-1-UNV-STD-X

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
45°	30.7	33.7	44.0	61.9	72.6
46°	29.0	31.7	41.8	59.3	69.7
47°	27.4	30.1	39.6	56.8	66.9
48°	25.7	28.3	37.6	54.4	64.1
49°	24.3	26.8	35.6	52.0	61.3
50°	22.7	25.2	33.7	49.7	58.6
51°	21.5	23.7	31.8	47.4	56.0
52°	20.2	22.3	30.0	45.2	53.4
53°	18.9	20.8	28.2	42.9	50.8
54°	17.8	19.6	26.5	40.8	48.3
55°	16.6	18.4	24.9	38.8	45.9
56°	15.5	17.2	23.3	36.6	43.4
57°	14.4	16.0	21.8	34.5	41.1
58°	13.4	14.9	20.4	32.6	38.8
59°	12.5	13.8	19.0	30.6	36.5
60°	11.5	12.9	17.7	28.7	34.3
61°	10.7	11.9	16.4	26.9	32.2
62°	9.9	11.0	15.1	25.2	30.1
63°	9.1	10.2	13.9	23.5	28.1
64°	8.3	9.4	12.8	21.8	26.2
65°	7.7	8.6	11.7	20.2	24.2
66°	7.1	7.9	10.7	18.6	22.3
67°	6.4	7.2	9.8	17.1	20.5
68°	5.8	6.6	9.0	15.7	18.8
69°	5.3	6.0	8.2	14.3	17.1
70°	4.7	5.5	7.4	13.0	15.5
71°	4.2	4.9	6.7	11.7	14.0
72°	3.7	4.5	6.1	10.5	12.6
73°	3.3	4.0	5.5	9.4	11.2
74°	2.9	3.6	4.9	8.4	9.9
75°	2.6	3.2	4.5	7.4	8.8
76°	2.3	2.8	4.0	6.5	7.6
77°	2.1	2.5	3.6	5.8	6.6
78°	1.9	2.3	3.2	5.1	5.6
79°	1.7	2.0	2.9	4.4	4.7
80°	1.6	1.8	2.6	3.8	4.0
81°	1.5	1.7	2.3	3.4	3.3
82°	1.4	1.5	2.1	2.9	2.7
83°	1.4	1.4	1.9	2.6	2.2
84°	1.3	1.3	1.7	2.2	1.8
85°	1.3	1.3	1.5	2.0	1.4
86°	1.2	1.2	1.4	1.7	1.1
87°	1.2	1.1	1.3	1.5	0.8
88°	1.2	1.1	1.2	1.4	0.6
89°	1.2	1.1	1.1	1.3	0.5



TEST NUMBER: P958905

CATALOG NUMBER: MMG-05W-940-60x60-ID-X-X-1F-1-UNV-STD-X

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
90°	1.0	1.0	1.0	1.0	1.0

(END OF REPORT)