

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: P958903

Luminaire Tested: MMG-05W-940-10x60-ID-X-X-1F-1-UNV-STD-X

Issue Date: 1/31/2025

Test Information

Test Method: LM-79-2019
Report Number: P958903
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-940-10x60-ID-X-X-1F-1-UNV-STD-X
Description: iO LED MiniO-Graze LINEAR LIGHTING WITH 10x60 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: 151.4 lumens
Efficiency: N/A
Efficacy: 33.6 lumens/watt
Spacing Criteria (0/90/45): 0.18 / 0.91 / 0.25
Luminous Opening: Rectangular w/ Sides (W: 0.07' x L: 1' x H: 0.09')
CIE Type: Direct

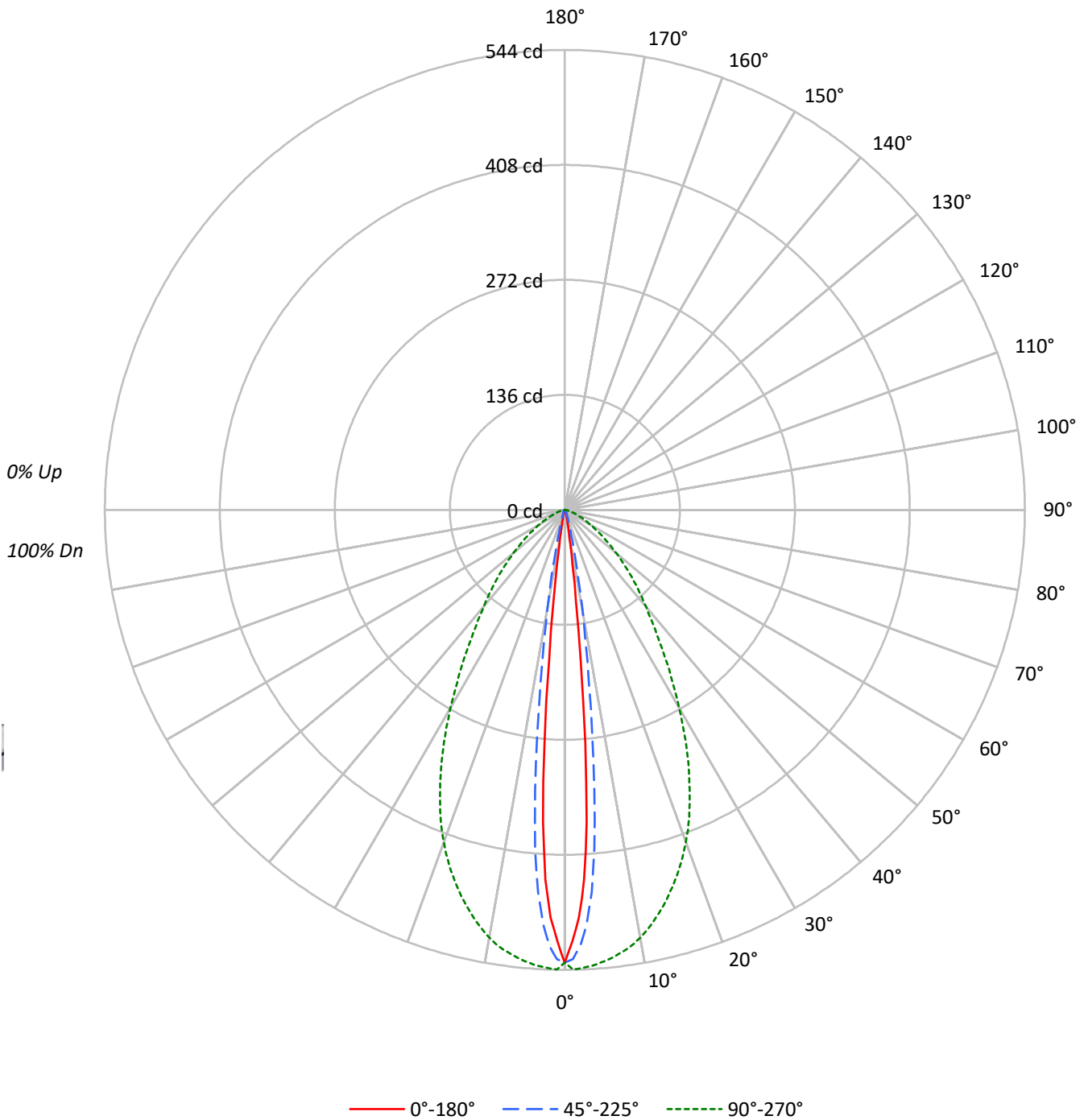
Input Watts (W): 4.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P958903

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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	113	110	107	104	110	107	105	103	103	101	99	100	98	96	96	95	94	92
2	106	101	96	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84
3	100	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77
4	95	87	81	76	93	86	80	76	84	79	75	81	77	74	80	76	73	72
5	90	81	75	70	88	80	74	70	78	73	69	77	72	69	75	71	68	67
6	86	76	70	65	84	75	70	65	74	69	65	73	68	64	71	67	64	62
7	82	72	66	61	80	71	65	61	70	65	61	69	64	60	68	63	60	59
8	78	68	62	58	77	68	62	58	66	61	57	65	61	57	64	60	57	55
9	75	65	59	55	73	64	59	55	63	58	54	62	58	54	62	57	54	53
10	72	62	56	52	71	61	56	52	61	55	52	60	55	52	59	55	51	50

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	83705	83705	83705
5°	43118	58373	75842
10°	4267	16068	66915
15°	1123	3155	57409
20°	564	1091	47964
25°	398	552	38031
30°	395	363	28435
35°	306	300	20483
40°	266	274	14884
45°	244	251	10978
50°	243	230	7747
55°	219	198	5343
60°	218	167	3458
65°	250	135	2124
70°	222	115	1225
75°	229	94	634
80°	243	71	303
85°	272	77	106

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 10978 cd/sqm



TEST NUMBER: P958903

CATALOG NUMBER: MMG-05W-940-10x60-ID-X-X-1F-1-UNV-STD-X

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.9	20.4
10°-20°	34.6	22.9
20°-30°	28.9	19.1
30°-40°	21.7	14.3
40°-50°	16.3	10.8
50°-60°	10.9	7.2
60°-70°	5.5	3.6
70°-80°	2.0	1.3
80°-90°	0.7	0.4
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°	94.5	62.4
0°-40°	116.1	76.7
0°-60°	143.3	94.6
0°-90°	151.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	151.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	536	536	536	536	536	
5°	277	306	403	501	536	16
15°	7	9	24	208	473	2
25°	2	3	5	68	348	1
35°	2	2	3	31	200	1
45°	1	1	2	25	111	1
55°	1	1	2	18	54	1
65°	1	1	1	9	21	1
75°	0	0	1	3	6	1
85°	0	0	0	1	1	0
90°	0	0	0	0	0	



TEST NUMBER: P958903

CATALOG NUMBER: MMG-05W-940-10x60-ID-X-X-1F-1-UNV-STD-X

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	535.8	535.8	535.8	535.8	535.8
1°	510.1	521.1	531.8	539.8	543.8
2°	482.4	493.9	516.7	536.2	542.7
3°	438.2	453.4	490.9	527.5	541.1
4°	370.0	389.3	453.4	515.3	538.7
5°	277.0	305.9	402.7	501.1	536.0
6°	177.4	212.7	334.8	483.9	533.0
7°	108.3	142.8	267.3	462.0	529.1
8°	65.3	93.9	205.0	437.8	524.9
9°	40.9	58.7	156.1	407.7	520.0
10°	27.3	37.4	118.0	369.7	513.9
11°	19.3	26.2	84.7	338.3	507.0
12°	14.4	19.0	62.3	303.9	499.4
13°	10.8	14.0	43.9	264.8	491.0
14°	8.7	10.9	31.1	236.9	482.2
15°	7.1	8.8	24.4	207.5	472.7
16°	5.8	7.4	18.9	187.6	463.0
17°	4.8	6.1	14.8	165.5	452.6
18°	4.2	5.1	12.1	148.7	442.1
19°	3.7	4.5	10.2	131.2	430.5
20°	3.5	3.9	8.8	118.6	418.5
21°	3.1	3.6	7.5	105.9	405.9
22°	2.9	3.3	6.7	93.2	392.5
23°	2.7	3.0	5.8	84.6	377.7
24°	2.6	2.9	5.1	75.5	362.7
25°	2.4	2.7	4.6	68.1	348.0
26°	2.3	2.6	4.3	61.3	333.1
27°	2.3	2.4	3.9	55.8	317.5
28°	2.3	2.4	3.6	50.7	301.5
29°	2.3	2.2	3.4	46.0	285.8
30°	2.3	2.2	3.1	42.2	270.3
31°	2.2	2.2	3.0	39.4	254.9
32°	2.2	2.2	2.9	36.6	240.3
33°	2.0	2.2	2.8	34.3	226.9
34°	1.8	2.2	2.7	32.4	213.6
35°	1.7	2.2	2.6	30.9	200.5
36°	1.6	2.1	2.5	29.5	188.2
37°	1.5	1.9	2.5	28.7	177.5
38°	1.5	1.8	2.4	27.8	167.5
39°	1.4	1.7	2.4	27.2	157.5
40°	1.4	1.6	2.4	26.6	148.8
41°	1.3	1.5	2.4	26.1	140.8
42°	1.3	1.5	2.3	25.7	132.7
43°	1.3	1.5	2.3	25.3	125.5
44°	1.2	1.4	2.3	25.0	118.6

TEST NUMBER: P958903

CATALOG NUMBER: MMG-05W-940-10x60-ID-X-X-1F-1-UNV-STD-X

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
45°	1.2	1.4	2.2	24.6	111.2
46°	1.2	1.3	2.2	24.2	104.1
47°	1.1	1.3	2.2	23.9	97.2
48°	1.1	1.3	2.1	23.3	90.9
49°	1.1	1.2	2.1	22.9	84.5
50°	1.1	1.2	2.0	22.4	78.9
51°	1.1	1.1	2.0	21.7	73.2
52°	1.0	1.1	1.9	20.9	67.9
53°	1.0	1.1	1.8	20.1	62.9
54°	0.9	1.1	1.8	19.3	58.4
55°	0.9	1.0	1.7	18.3	54.3
56°	0.9	1.0	1.6	17.3	49.7
57°	0.8	0.9	1.6	16.4	45.3
58°	0.8	0.9	1.5	15.4	41.6
59°	0.8	0.9	1.5	14.4	38.2
60°	0.8	0.8	1.4	13.4	34.8
61°	0.8	0.8	1.3	12.5	31.7
62°	0.7	0.8	1.2	11.5	28.7
63°	0.8	0.8	1.2	10.6	25.9
64°	0.8	0.7	1.1	9.8	23.4
65°	0.8	0.7	1.1	8.9	21.0
66°	0.8	0.7	1.0	8.0	18.9
67°	0.7	0.7	1.0	7.3	16.9
68°	0.7	0.7	0.9	6.5	15.0
69°	0.6	0.7	0.9	5.9	13.4
70°	0.6	0.6	0.9	5.2	11.8
71°	0.6	0.6	0.8	4.6	10.4
72°	0.6	0.6	0.8	4.1	9.1
73°	0.5	0.6	0.7	3.6	7.9
74°	0.5	0.5	0.7	3.2	6.8
75°	0.5	0.5	0.7	2.8	5.9
76°	0.5	0.5	0.7	2.4	5.1
77°	0.4	0.4	0.6	2.1	4.4
78°	0.4	0.4	0.6	1.8	3.7
79°	0.4	0.4	0.6	1.6	3.2
80°	0.4	0.4	0.5	1.4	2.7
81°	0.4	0.4	0.5	1.3	2.2
82°	0.3	0.3	0.5	1.1	1.8
83°	0.3	0.3	0.5	1.0	1.5
84°	0.3	0.3	0.5	1.0	1.2
85°	0.3	0.3	0.5	0.9	0.9
86°	0.3	0.3	0.5	0.9	0.7
87°	0.3	0.3	0.5	0.8	0.6
88°	0.3	0.3	0.4	0.7	0.5
89°	0.3	0.3	0.4	0.7	0.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
90°	0.4	0.4	0.4	0.4	0.4

(END OF REPORT)