

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: P958904

Luminaire Tested: MMG-05W-940-30x60-ID-X-X-1F-1-UNV-STD-X

Issue Date: 1/31/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P958904  
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-940-30x60-ID-X-X-1F-1-UNV-STD-X  
Description: iO LED MiniO-Graze LINEAR LIGHTING WITH 30x60 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: 252.8 lumens  
Efficiency: N/A  
Efficacy: 56.2 lumens/watt  
Spacing Criteria (0/90/45): 0.55 / 1.09 / 0.76  
Luminous Opening: Rectangular w/ Sides (W: 0.07' x L: 1' x H: 0.09')  
CIE Type: Direct

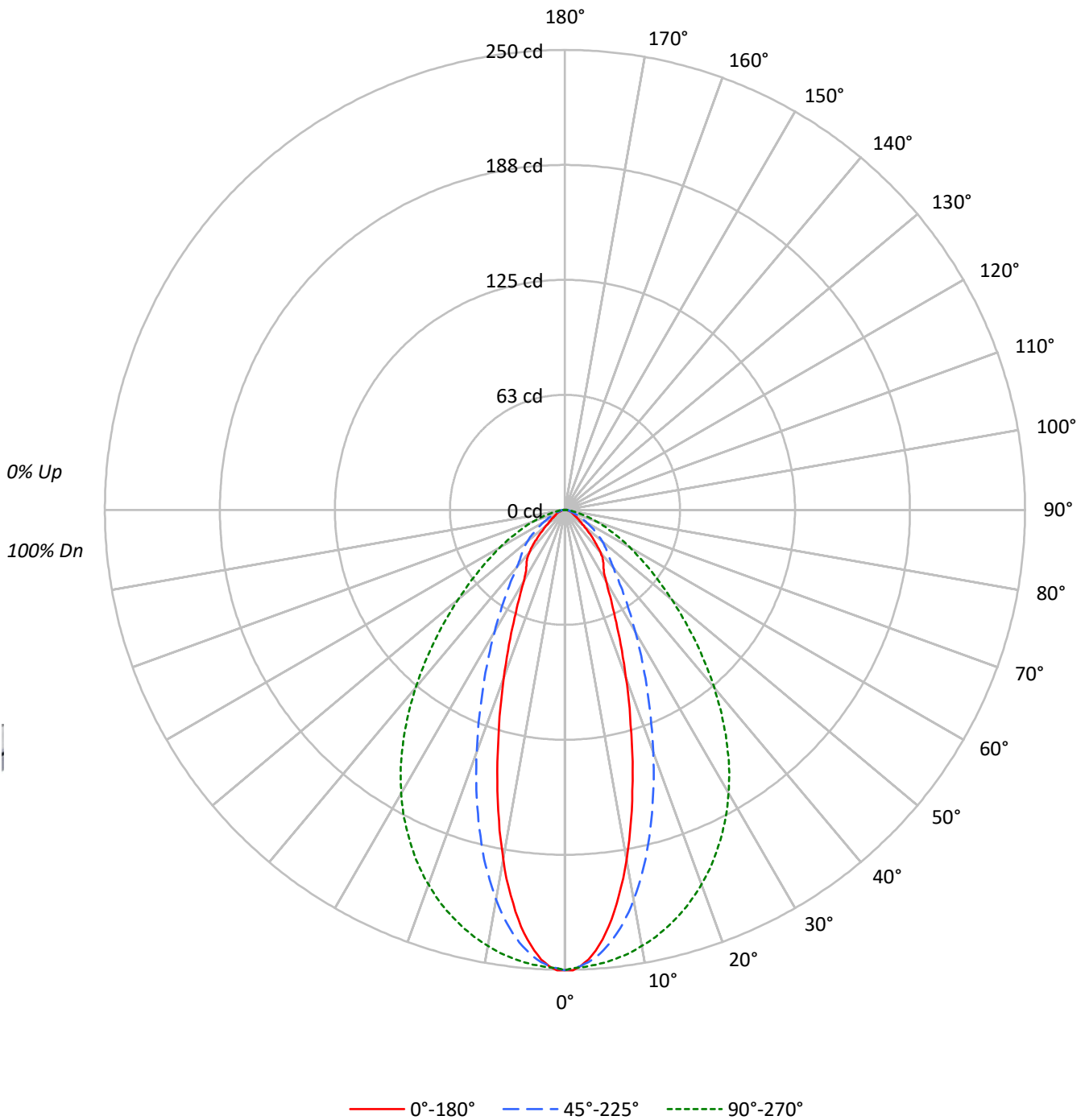
Input Watts (W): 4.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	112	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	92	90			90	
2	104	98	93	88	102	96	91	87	93	89	85	90	86	84	87	84	82	80			80	
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	76	73	72			72	
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64			64	
5	85	75	68	62	83	74	67	62	72	66	61	70	65	61	68	64	60	59			59	
6	80	69	62	57	78	68	61	56	67	61	56	65	60	56	64	59	55	53			53	
7	75	64	57	52	74	63	57	52	62	56	51	61	55	51	60	55	51	49			49	
8	71	60	53	48	70	59	52	48	58	52	47	57	51	47	56	51	47	45			45	
9	67	56	49	44	66	55	49	44	54	48	44	53	48	44	52	47	44	42			42	
10	64	53	46	41	63	52	46	41	51	45	41	50	45	41	50	44	41	39			39	

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	39103	39103	39103
5°	36487	34833	34950
10°	30163	29303	31355
15°	22422	23212	28018
20°	15625	17387	24847
25°	10726	12565	21759
30°	7668	8936	18715
35°	6569	6372	15640
40°	5690	4661	12613
45°	4194	3721	9823
50°	2868	3033	7432
55°	2137	2285	5510
60°	1661	1586	4024
65°	1469	1033	2842
70°	1369	665	1858
75°	1053	443	1063
80°	910	285	505
85°	998	215	189

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 45°  
 Luminance: 9823 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	22.2	8.8
10°-20°	50.7	20.1
20°-30°	54.2	21.4
30°-40°	46.5	18.4
40°-50°	35.8	14.2
50°-60°	23.4	9.2
60°-70°	12.8	5.1
70°-80°	5.4	2.1
80°-90°	1.7	0.7
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°	127.1	50.3
0°-40°	173.6	68.7
0°-60°	232.8	92.1
0°-90°	252.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	252.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	250	250	250	250	250	
5°	234	236	240	245	247	21
15°	142	152	180	214	231	39
25°	65	74	105	162	199	30
35°	36	38	55	107	153	23
45°	21	25	33	68	100	16
55°	9	11	20	41	56	8
65°	5	5	8	21	28	5
75°	2	3	3	8	10	3
85°	1	1	1	2	2	1
90°	1	1	1	1	1	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	250.3	250.3	250.3	250.3	250.3
1°	250.3	249.8	249.3	249.2	249.2
2°	248.1	247.9	248.1	248.5	248.9
3°	244.8	245.0	246.2	247.6	248.4
4°	240.1	241.0	243.6	246.4	247.8
5°	234.4	235.9	240.3	244.9	247.0
6°	227.7	230.0	236.4	243.1	246.1
7°	220.1	223.4	231.9	241.0	245.0
8°	211.5	215.9	226.9	238.6	243.8
9°	202.8	207.7	221.3	235.8	242.4
10°	193.0	199.3	215.2	232.8	240.8
11°	183.0	190.0	208.6	229.5	239.1
12°	172.6	180.7	201.7	225.9	237.2
13°	162.3	170.9	194.9	222.1	235.2
14°	152.0	161.5	187.2	218.2	233.0
15°	141.8	151.8	179.5	213.9	230.7
16°	131.9	142.1	171.7	209.3	228.2
17°	122.2	132.8	163.6	204.5	225.6
18°	113.6	123.8	156.0	199.5	222.8
19°	105.1	115.4	148.2	194.4	219.9
20°	96.9	107.2	140.2	189.3	216.8
21°	89.6	99.6	132.6	183.9	213.6
22°	82.5	92.3	125.2	178.5	210.2
23°	76.1	85.8	118.0	173.0	206.7
24°	70.1	79.3	111.2	167.3	202.9
25°	64.7	73.5	104.7	161.5	199.1
26°	59.7	67.9	98.5	155.7	195.2
27°	55.2	63.0	92.4	149.9	191.1
28°	51.2	58.4	86.8	144.2	186.9
29°	47.6	54.3	81.5	138.7	182.5
30°	44.6	50.4	76.3	133.3	177.9
31°	42.1	47.0	71.7	127.9	173.2
32°	40.1	44.1	67.1	122.6	168.4
33°	38.7	41.7	63.0	117.4	163.4
34°	37.5	39.8	59.0	112.3	158.3
35°	36.5	38.2	55.3	107.3	153.1
36°	35.5	37.0	51.8	102.7	147.8
37°	34.4	36.0	48.8	98.1	142.4
38°	33.1	34.9	45.8	93.8	137.0
39°	31.6	33.9	43.1	89.7	131.6
40°	29.9	32.7	40.8	85.8	126.1
41°	28.1	31.4	38.7	81.9	120.7
42°	26.2	29.9	36.9	78.2	115.3
43°	24.3	28.2	35.3	74.6	109.9
44°	22.4	26.4	33.9	71.2	104.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
45°	20.6	24.7	32.6	67.9	99.5
46°	18.9	22.9	31.3	64.8	94.5
47°	17.1	21.2	30.1	61.8	89.5
48°	15.6	19.6	28.9	58.8	84.7
49°	14.2	17.9	27.7	56.1	80.1
50°	13.0	16.4	26.4	53.4	75.7
51°	11.9	14.9	25.1	50.7	71.4
52°	10.9	13.6	23.7	48.2	67.3
53°	10.2	12.5	22.4	45.7	63.4
54°	9.4	11.5	21.0	43.3	59.6
55°	8.8	10.6	19.6	41.1	56.0
56°	8.1	9.8	18.2	38.8	52.6
57°	7.6	9.1	16.9	36.6	49.4
58°	7.1	8.4	15.6	34.5	46.2
59°	6.5	7.8	14.4	32.5	43.3
60°	6.1	7.2	13.3	30.5	40.5
61°	5.7	6.7	12.1	28.5	37.8
62°	5.4	6.2	11.1	26.6	35.2
63°	5.2	5.7	10.2	24.8	32.7
64°	4.9	5.3	9.3	23.0	30.3
65°	4.7	5.0	8.4	21.4	28.1
66°	4.5	4.7	7.6	19.7	25.8
67°	4.4	4.5	7.0	18.1	23.7
68°	4.2	4.2	6.3	16.5	21.7
69°	4.0	4.0	5.7	15.0	19.7
70°	3.7	3.8	5.2	13.6	17.9
71°	3.4	3.5	4.7	12.3	16.1
72°	3.1	3.3	4.3	11.0	14.4
73°	2.8	3.1	3.9	9.8	12.8
74°	2.6	2.8	3.6	8.7	11.3
75°	2.3	2.6	3.3	7.7	9.9
76°	2.1	2.4	3.0	6.8	8.6
77°	1.9	2.2	2.7	5.9	7.5
78°	1.7	2.0	2.5	5.1	6.4
79°	1.6	1.8	2.2	4.5	5.4
80°	1.5	1.6	2.0	3.9	4.5
81°	1.4	1.5	1.9	3.4	3.8
82°	1.3	1.4	1.7	3.0	3.1
83°	1.3	1.3	1.6	2.6	2.5
84°	1.2	1.3	1.5	2.3	2.0
85°	1.1	1.2	1.4	2.1	1.6
86°	1.1	1.1	1.3	1.8	1.2
87°	1.1	1.1	1.2	1.6	0.9
88°	1.1	1.0	1.1	1.5	0.7
89°	1.1	1.0	1.1	1.4	0.6



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**CANDELA DISTRIBUTION (continued):**

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

(END OF REPORT)