

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: P958835

Luminaire Tested: MMG-03W-935-10x60-ID-X-X-4F-4-UNV-STD-X

Issue Date: 1/31/2025

Test Information

Test Method: LM-79-2019
Report Number: P958835
SCALED TEST REPORT
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 1/31/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: iO LED
Catalog Number: MMG-03W-935-10x60-ID-X-X-4F-4-UNV-STD-X
Description: iO LED MiniO-Graze LINEAR LIGHTING WITH 10x60 DEGREE OPTICS
3 WATTS PER FOOT
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 315.8 lumens
Efficiency: N/A
Efficacy: 29.2 lumens/watt
Spacing Criteria (0/90/45): 0.18 / 0.91 / 0.25
Luminous Opening: Rectangular w/ Sides (W: 0.07' x L: 4' x H: 0.09')
CIE Type: Direct

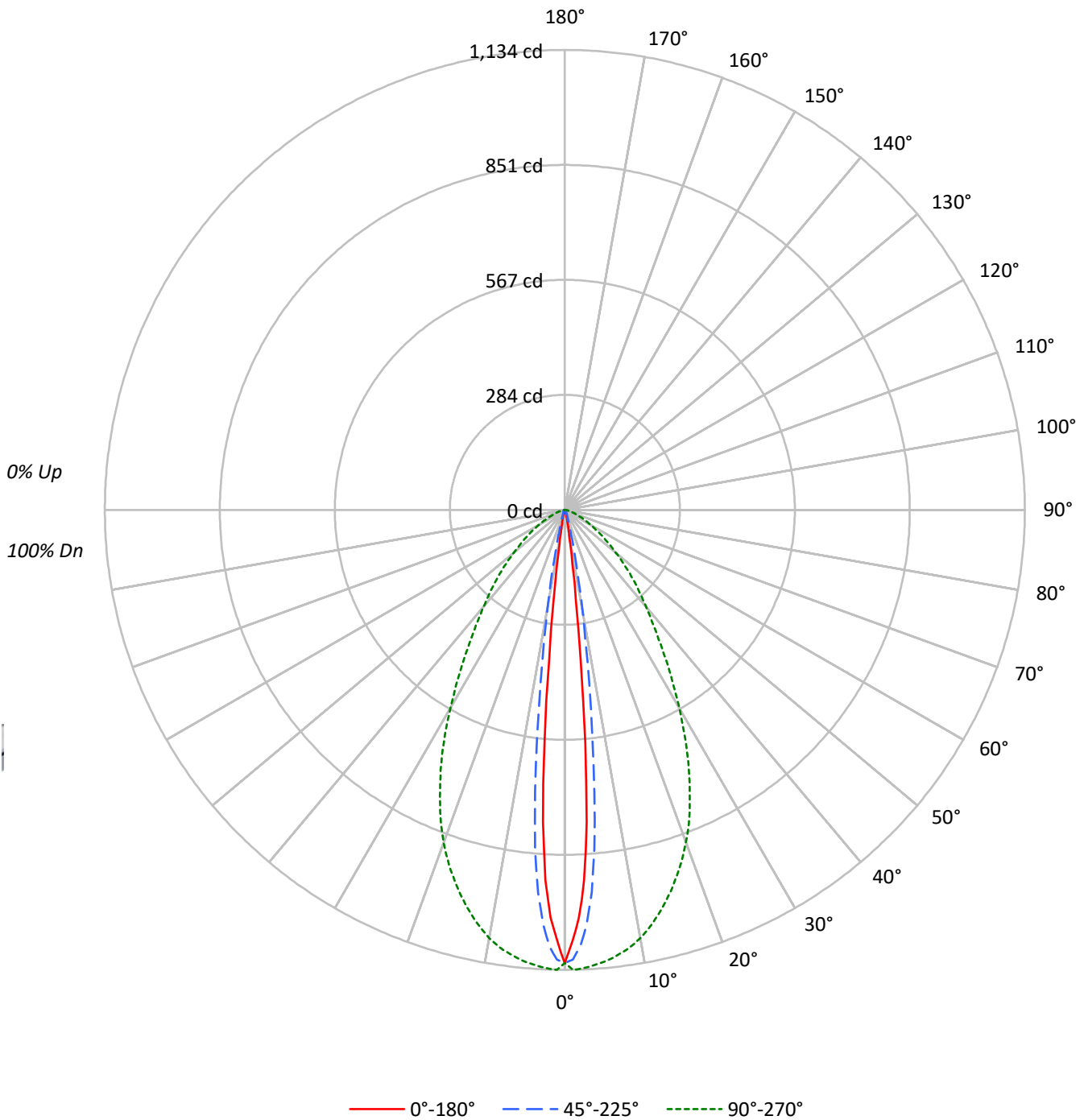
Input Watts (W): 10.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	43653	43653	43653
5°	22615	30552	39555
10°	2248	8439	34900
15°	591	1658	29940
20°	297	574	25010
25°	218	292	19835
30°	218	194	14830
35°	164	159	10681
40°	140	146	7765
45°	135	137	5726
50°	130	127	4040
55°	126	108	2787
60°	121	86	1804
65°	150	70	1110
70°	140	60	638
75°	140	49	330
80°	161	41	157
85°	252	40	56

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 5726 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	64.6	20.4
10°-20°	72.2	22.9
20°-30°	60.3	19.1
30°-40°	45.2	14.3
40°-50°	34.0	10.8
50°-60°	22.7	7.2
60°-70°	11.4	3.6
70°-80°	4.2	1.3
80°-90°	1.4	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°	197.1	62.4
0°-40°	242.3	76.7
0°-60°	298.9	94.6
0°-90°	315.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	315.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1118	1118	1118	1118	1118	
5°	578	638	840	1045	1118	34
15°	15	18	51	433	986	5
25°	5	6	10	142	726	2
35°	4	4	5	64	418	2
45°	2	3	5	51	232	2
55°	2	2	4	38	113	2
65°	2	2	2	18	44	2
75°	1	1	1	6	12	1
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°	1117.7	1117.7	1117.7	1117.7	1117.7
1°	1064.1	1087.1	1109.4	1126.1	1134.4
2°	1006.4	1030.3	1077.9	1118.6	1132.2
3°	914.2	945.8	1024.1	1100.4	1128.8
4°	771.8	812.1	945.8	1075.0	1123.7
5°	577.9	638.1	840.0	1045.3	1118.2
6°	370.1	443.7	698.4	1009.5	1112.0
7°	225.8	297.9	557.7	963.8	1103.7
8°	136.2	195.8	427.7	913.2	1094.9
9°	85.3	122.5	325.7	850.5	1084.7
10°	56.9	78.0	246.2	771.3	1072.1
11°	40.3	54.7	176.7	705.7	1057.6
12°	30.1	39.6	130.0	634.0	1041.8
13°	22.6	29.2	91.5	552.3	1024.2
14°	18.1	22.7	64.9	494.2	1005.9
15°	14.7	18.3	50.8	432.8	986.1
16°	12.1	15.4	39.3	391.3	965.9
17°	10.0	12.8	30.8	345.4	944.1
18°	8.8	10.7	25.3	310.2	922.2
19°	7.8	9.4	21.2	273.7	898.1
20°	7.2	8.2	18.3	247.4	872.9
21°	6.5	7.5	15.7	221.0	846.7
22°	6.1	6.9	14.0	194.3	818.7
23°	5.7	6.3	12.1	176.5	787.9
24°	5.4	6.1	10.6	157.5	756.7
25°	5.1	5.6	9.6	142.1	726.0
26°	4.9	5.4	8.9	127.9	694.9
27°	4.8	5.1	8.1	116.4	662.4
28°	4.8	5.0	7.5	105.8	628.9
29°	4.8	4.7	7.0	96.0	596.3
30°	4.9	4.7	6.5	88.0	563.9
31°	4.7	4.7	6.3	82.1	531.7
32°	4.5	4.7	6.0	76.4	501.2
33°	4.2	4.7	5.8	71.5	473.3
34°	3.8	4.7	5.6	67.7	445.7
35°	3.5	4.5	5.4	64.4	418.2
36°	3.3	4.3	5.2	61.5	392.5
37°	3.2	4.0	5.2	60.0	370.4
38°	3.0	3.7	5.1	58.0	349.3
39°	2.9	3.5	5.0	56.7	328.5
40°	2.8	3.4	5.0	55.6	310.5
41°	2.8	3.2	5.0	54.4	293.7
42°	2.7	3.1	4.8	53.6	276.9
43°	2.6	3.0	4.8	52.8	261.7
44°	2.5	3.0	4.8	52.1	247.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
45°	2.5	2.9	4.7	51.3	232.0
46°	2.4	2.8	4.7	50.5	217.2
47°	2.3	2.7	4.5	49.8	202.9
48°	2.3	2.6	4.4	48.6	189.5
49°	2.3	2.5	4.3	47.7	176.3
50°	2.2	2.5	4.3	46.6	164.6
51°	2.2	2.3	4.1	45.2	152.7
52°	2.1	2.3	4.0	43.6	141.6
53°	2.0	2.3	3.9	41.9	131.1
54°	1.9	2.2	3.7	40.2	121.9
55°	1.9	2.1	3.6	38.1	113.3
56°	1.8	2.1	3.4	36.2	103.7
57°	1.7	1.9	3.3	34.2	94.5
58°	1.7	1.9	3.1	32.0	86.8
59°	1.6	1.8	3.0	30.0	79.7
60°	1.6	1.7	2.8	27.9	72.6
61°	1.6	1.7	2.7	26.0	66.2
62°	1.5	1.6	2.5	23.9	59.9
63°	1.6	1.6	2.5	22.1	54.1
64°	1.6	1.5	2.3	20.4	48.8
65°	1.7	1.5	2.2	18.5	43.9
66°	1.6	1.5	2.1	16.8	39.4
67°	1.5	1.5	2.0	15.2	35.2
68°	1.4	1.4	1.9	13.6	31.4
69°	1.3	1.4	1.8	12.2	27.9
70°	1.3	1.3	1.8	10.9	24.6
71°	1.2	1.2	1.7	9.6	21.8
72°	1.2	1.2	1.7	8.5	19.0
73°	1.1	1.2	1.5	7.6	16.5
74°	1.1	1.1	1.5	6.6	14.2
75°	1.0	1.1	1.4	5.8	12.3
76°	1.0	1.0	1.4	5.1	10.6
77°	0.9	0.9	1.3	4.4	9.1
78°	0.9	0.9	1.2	3.9	7.7
79°	0.8	0.8	1.2	3.3	6.6
80°	0.8	0.8	1.1	3.0	5.6
81°	0.8	0.8	1.1	2.6	4.6
82°	0.7	0.7	1.1	2.3	3.8
83°	0.7	0.7	1.0	2.1	3.1
84°	0.7	0.7	1.0	2.0	2.5
85°	0.7	0.6	1.0	1.9	1.9
86°	0.6	0.6	1.0	1.8	1.5
87°	0.6	0.6	1.0	1.7	1.2
88°	0.6	0.6	0.9	1.5	1.0
89°	0.6	0.6	0.9	1.4	0.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
90°	0.8	0.8	0.8	0.8	0.8

(END OF REPORT)