

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: P958851

Luminaire Tested: MMG-05W-935-10x60-ID-X-X-4F-4-UNV-STD-X

Issue Date: 1/31/2025

Test Information

Test Method: LM-79-2019
Report Number: P958851
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-935-10x60-ID-X-X-4F-4-UNV-STD-X
Description: iO LED MiniO-Graze LINEAR LIGHTING WITH 10x60 DEGREE OPTICS
5 WATTS PER FOOT
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 565.8 lumens
Efficiency: N/A
Efficacy: 31.4 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

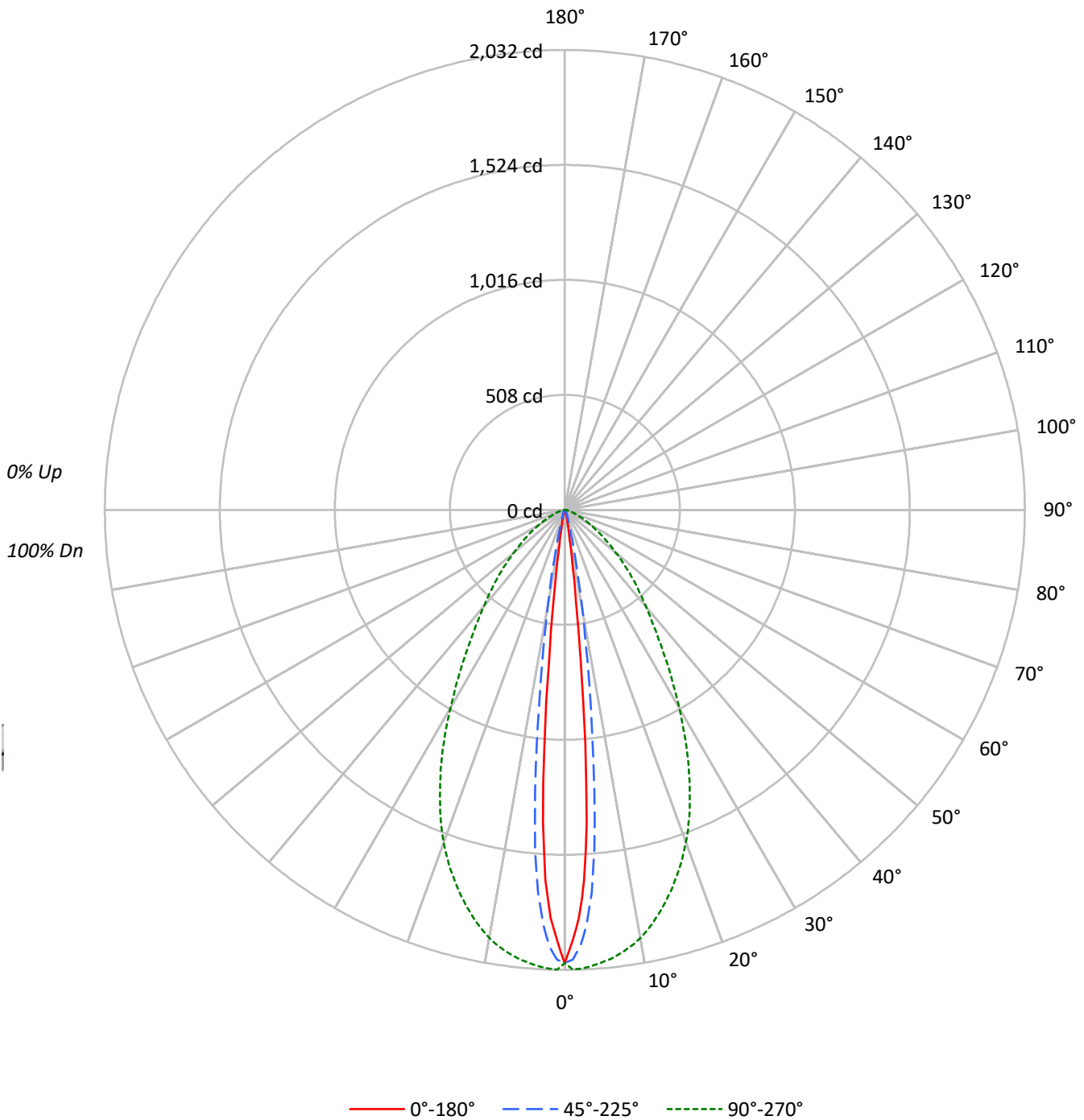
Input Watts (W): 18
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	78214	78214	78214
5°	40518	54740	70865
10°	4030	15119	62527
15°	1061	2971	53644
20°	532	1030	44812
25°	388	524	35537
30°	388	348	26571
35°	296	282	19134
40°	255	260	13911
45°	238	245	10259
50°	231	224	7241
55°	218	192	4994
60°	211	157	3232
65°	265	124	1987
70°	248	106	1144
75°	252	87	593
80°	301	74	280
85°	432	68	101

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 10259 cd/sqm



TEST NUMBER: P958851

CATALOG NUMBER: MMG-05W-935-10x60-ID-X-X-4F-4-UNV-STD-X

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	115.7	20.4
10°-20°	129.4	22.9
20°-30°	108.1	19.1
30°-40°	81.0	14.3
40°-50°	60.9	10.8
50°-60°	40.6	7.2
60°-70°	20.4	3.6
70°-80°	7.5	1.3
80°-90°	2.5	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°	353.1	62.4
0°-40°	434.1	76.7
0°-60°	535.5	94.6
0°-90°	565.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	565.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2003	2003	2003	2003	2003	
5°	1035	1143	1505	1873	2003	62
15°	26	33	91	776	1767	9
25°	9	10	17	254	1301	4
35°	6	8	10	115	749	4
45°	4	5	8	92	416	3
55°	3	4	6	68	203	3
65°	3	3	4	33	79	3
75°	2	2	2	10	22	2
85°	1	1	2	3	3	1
90°	2	2	2	2	2	



TEST NUMBER: P958851

CATALOG NUMBER: MMG-05W-935-10x60-ID-X-X-4F-4-UNV-STD-X

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2002.6	2002.6	2002.6	2002.6	2002.6
1°	1906.5	1947.6	1987.6	2017.5	2032.4
2°	1803.1	1846.0	1931.1	2004.1	2028.5
3°	1637.9	1694.6	1834.8	1971.5	2022.4
4°	1382.9	1455.1	1694.6	1926.0	2013.3
5°	1035.4	1143.2	1505.0	1872.7	2003.3
6°	663.1	794.9	1251.3	1808.7	1992.2
7°	404.6	533.7	999.2	1726.9	1977.5
8°	244.1	350.9	766.3	1636.2	1961.7
9°	152.8	219.4	583.5	1523.8	1943.3
10°	102.0	139.7	441.1	1381.9	1920.8
11°	72.2	97.9	316.6	1264.3	1894.8
12°	54.0	71.0	232.9	1135.8	1866.5
13°	40.4	52.2	164.0	989.6	1835.0
14°	32.4	40.7	116.3	885.4	1802.3
15°	26.4	32.8	91.0	775.5	1766.8
16°	21.7	27.6	70.5	701.0	1730.6
17°	18.0	22.9	55.2	618.7	1691.5
18°	15.8	19.1	45.3	555.8	1652.2
19°	13.9	16.9	37.9	490.4	1609.1
20°	12.9	14.7	32.8	443.2	1564.0
21°	11.7	13.4	28.1	395.9	1517.0
22°	10.8	12.3	25.1	348.2	1466.9
23°	10.2	11.3	21.7	316.3	1411.6
24°	9.6	10.8	19.0	282.1	1355.8
25°	9.1	10.1	17.2	254.5	1300.7
26°	8.7	9.6	15.9	229.2	1245.0
27°	8.6	9.1	14.5	208.6	1186.7
28°	8.6	8.9	13.4	189.5	1126.8
29°	8.6	8.4	12.6	172.0	1068.3
30°	8.7	8.4	11.7	157.7	1010.3
31°	8.4	8.4	11.3	147.1	952.6
32°	8.1	8.4	10.7	136.9	898.1
33°	7.5	8.4	10.3	128.1	848.0
34°	6.8	8.4	10.0	121.2	798.5
35°	6.3	8.1	9.6	115.4	749.2
36°	5.9	7.8	9.4	110.3	703.3
37°	5.7	7.1	9.2	107.4	663.6
38°	5.4	6.7	9.1	104.0	625.9
39°	5.2	6.3	9.0	101.6	588.6
40°	5.1	6.0	8.9	99.6	556.3
41°	4.9	5.8	8.9	97.5	526.2
42°	4.8	5.5	8.6	96.1	496.0
43°	4.7	5.4	8.6	94.6	468.9
44°	4.6	5.3	8.6	93.3	443.2



TEST NUMBER: P958851

CATALOG NUMBER: MMG-05W-935-10x60-ID-X-X-4F-4-UNV-STD-X

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
45°	4.4	5.2	8.4	91.9	415.7
46°	4.3	4.9	8.4	90.4	389.1
47°	4.2	4.8	8.1	89.2	363.5
48°	4.2	4.7	7.9	87.1	339.6
49°	4.1	4.4	7.8	85.5	315.9
50°	3.9	4.4	7.6	83.5	295.0
51°	3.9	4.2	7.4	81.1	273.6
52°	3.7	4.2	7.1	78.1	253.7
53°	3.6	4.1	6.9	75.0	235.0
54°	3.4	3.9	6.7	72.0	218.3
55°	3.3	3.7	6.4	68.3	203.0
56°	3.2	3.7	6.2	64.8	185.8
57°	3.0	3.4	5.9	61.2	169.3
58°	3.0	3.3	5.5	57.4	155.5
59°	2.8	3.2	5.4	53.7	142.8
60°	2.8	3.1	5.1	50.0	130.1
61°	2.8	3.0	4.8	46.6	118.5
62°	2.7	2.8	4.6	42.9	107.3
63°	2.8	2.8	4.4	39.7	97.0
64°	2.8	2.7	4.2	36.5	87.4
65°	3.0	2.7	3.9	33.1	78.6
66°	2.8	2.7	3.8	30.1	70.6
67°	2.7	2.7	3.6	27.2	63.1
68°	2.6	2.6	3.4	24.4	56.2
69°	2.3	2.5	3.2	21.9	49.9
70°	2.3	2.3	3.2	19.5	44.1
71°	2.2	2.2	3.0	17.2	39.1
72°	2.1	2.2	3.0	15.3	34.1
73°	2.0	2.1	2.7	13.6	29.6
74°	2.0	2.0	2.7	11.8	25.5
75°	1.8	2.0	2.5	10.3	22.1
76°	1.7	1.8	2.5	9.1	19.0
77°	1.6	1.6	2.3	7.9	16.3
78°	1.6	1.6	2.2	6.9	13.8
79°	1.5	1.5	2.2	5.9	11.8
80°	1.5	1.5	2.0	5.3	10.0
81°	1.4	1.4	2.0	4.7	8.3
82°	1.2	1.2	2.0	4.2	6.8
83°	1.2	1.2	1.7	3.8	5.5
84°	1.2	1.2	1.7	3.6	4.4
85°	1.2	1.1	1.7	3.3	3.4
86°	1.1	1.1	1.7	3.2	2.7
87°	1.1	1.0	1.7	3.0	2.2
88°	1.0	1.0	1.6	2.7	1.7
89°	1.0	1.0	1.6	2.6	1.6



TEST NUMBER: P958851

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
90°	1.5	1.5	1.5	1.5	1.5

(END OF REPORT)