

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: P958899

Luminaire Tested: MMG-05W-935-10x60-ID-X-X-1F-1-UNV-STD-X

Issue Date: 1/31/2025

Test Information

Test Method: LM-79-2019
Report Number: P958899
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-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: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 141.5 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: 1' x H: 0.09')
CIE Type: Direct

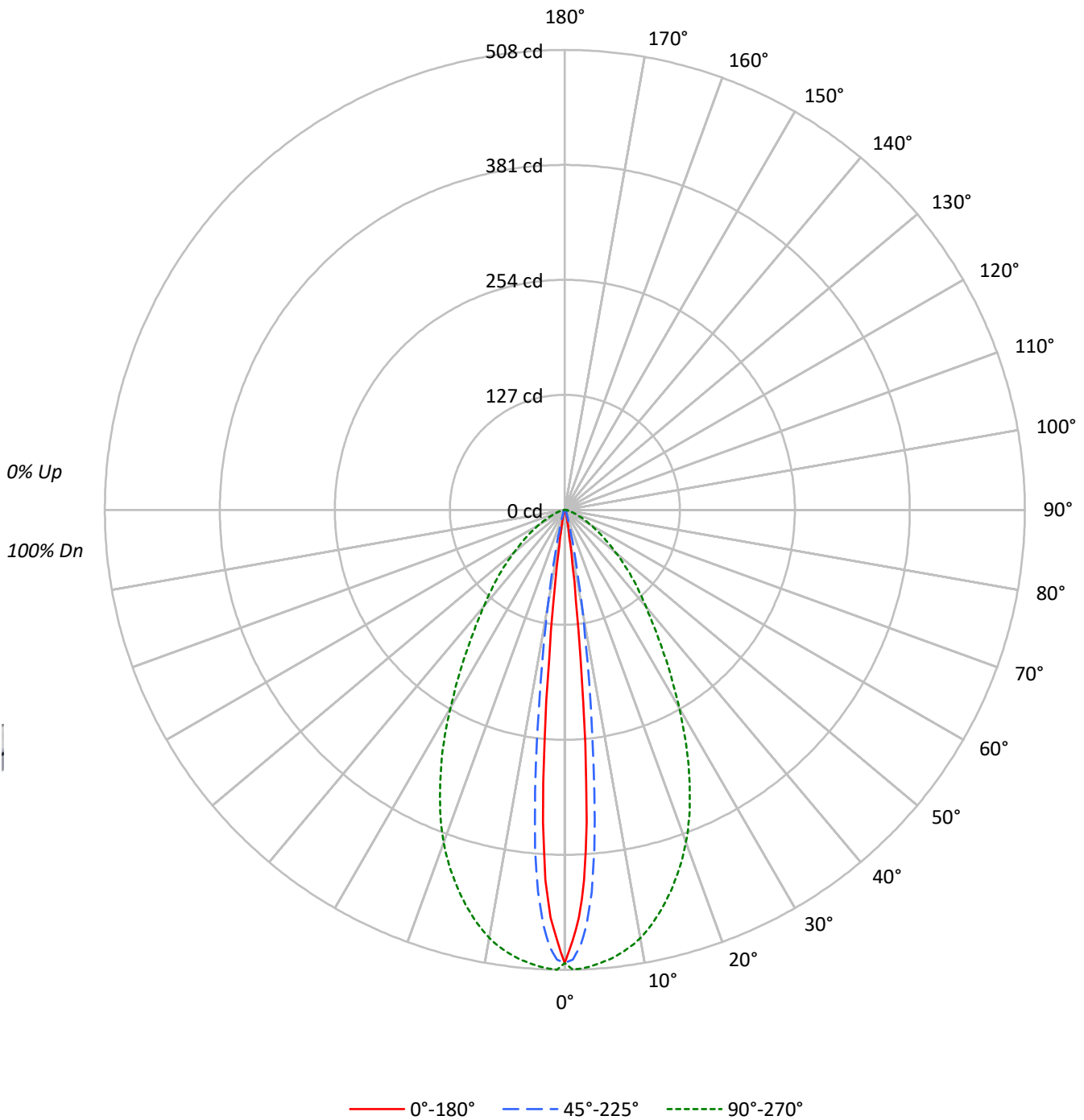
Input Watts (W): 4.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P958899

CATALOG NUMBER: MMG-05W-935-10x60-ID-X-X-1F-1-UNV-STD-X

Luminous Intensity Polar Plot





TEST NUMBER: P958899

CATALOG NUMBER: MMG-05W-935-10x60-ID-X-X-1F-1-UNV-STD-X

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°	78206	78206	78206
5°	40300	54532	70861
10°	3985	15019	62527
15°	1044	2948	53644
20°	516	1017	44812
25°	381	516	35539
30°	378	340	26573
35°	288	277	19134
40°	247	251	13914
45°	224	240	10257
50°	221	218	7236
55°	194	187	4999
60°	191	155	3230
65°	219	123	1992
70°	222	102	1142
75°	229	81	591
80°	243	71	280
85°	272	61	106

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 10257 cd/sqm



TEST NUMBER: P958899

CATALOG NUMBER: MMG-05W-935-10x60-ID-X-X-1F-1-UNV-STD-X

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	28.9	20.4
10°-20°	32.3	22.9
20°-30°	27.0	19.1
30°-40°	20.2	14.3
40°-50°	15.2	10.8
50°-60°	10.1	7.2
60°-70°	5.1	3.6
70°-80°	1.9	1.3
80°-90°	0.6	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°	88.3	62.4
0°-40°	108.5	76.7
0°-60°	133.9	94.6
0°-90°	141.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	141.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	501	501	501	501	501	
5°	259	286	376	468	501	15
15°	7	8	23	194	442	2
25°	2	2	4	64	325	1
35°	2	2	2	29	187	1
45°	1	1	2	23	104	1
55°	1	1	2	17	51	1
65°	1	1	1	8	20	1
75°	0	0	1	3	6	0
85°	0	0	0	1	1	0
90°	0	0	0	0	0	



TEST NUMBER: P958899

CATALOG NUMBER: MMG-05W-935-10x60-ID-X-X-1F-1-UNV-STD-X

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	500.6	500.6	500.6	500.6	500.6
1°	476.6	486.9	496.9	504.4	508.1
2°	450.8	461.5	482.8	501.0	507.1
3°	409.5	423.6	458.7	492.9	505.6
4°	345.7	363.8	423.6	481.5	503.3
5°	258.9	285.8	376.2	468.2	500.8
6°	165.8	198.7	312.8	452.2	498.1
7°	101.2	133.4	249.8	431.7	494.4
8°	61.0	87.7	191.6	409.0	490.4
9°	38.2	54.9	145.9	381.0	485.8
10°	25.5	34.9	110.3	345.5	480.2
11°	18.0	24.5	79.2	316.1	473.7
12°	13.5	17.7	58.2	284.0	466.6
13°	10.1	13.1	41.0	247.4	458.8
14°	8.1	10.2	29.1	221.3	450.6
15°	6.6	8.2	22.8	193.9	441.7
16°	5.4	6.9	17.6	175.3	432.6
17°	4.5	5.7	13.8	154.7	422.9
18°	3.9	4.8	11.3	138.9	413.0
19°	3.5	4.2	9.5	122.6	402.3
20°	3.2	3.7	8.2	110.8	391.0
21°	2.9	3.4	7.0	99.0	379.3
22°	2.7	3.1	6.3	87.0	366.7
23°	2.6	2.8	5.4	79.1	352.9
24°	2.4	2.7	4.7	70.5	338.9
25°	2.3	2.5	4.3	63.6	325.2
26°	2.2	2.4	4.0	57.3	311.2
27°	2.2	2.3	3.6	52.1	296.7
28°	2.2	2.2	3.4	47.4	281.7
29°	2.2	2.1	3.1	43.0	267.1
30°	2.2	2.1	2.9	39.4	252.6
31°	2.1	2.1	2.8	36.8	238.2
32°	2.0	2.1	2.7	34.2	224.5
33°	1.9	2.1	2.6	32.0	212.0
34°	1.7	2.1	2.5	30.3	199.6
35°	1.6	2.0	2.4	28.9	187.3
36°	1.5	1.9	2.3	27.6	175.8
37°	1.4	1.8	2.3	26.9	165.9
38°	1.4	1.7	2.3	26.0	156.5
39°	1.3	1.6	2.2	25.4	147.1
40°	1.3	1.5	2.2	24.9	139.1
41°	1.2	1.4	2.2	24.4	131.6
42°	1.2	1.4	2.2	24.0	124.0
43°	1.2	1.4	2.2	23.7	117.2
44°	1.1	1.3	2.2	23.3	110.8



TEST NUMBER: P958899

CATALOG NUMBER: MMG-05W-935-10x60-ID-X-X-1F-1-UNV-STD-X

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
45°	1.1	1.3	2.1	23.0	103.9
46°	1.1	1.2	2.1	22.6	97.3
47°	1.0	1.2	2.0	22.3	90.9
48°	1.0	1.2	2.0	21.8	84.9
49°	1.0	1.1	1.9	21.4	79.0
50°	1.0	1.1	1.9	20.9	73.7
51°	1.0	1.0	1.8	20.3	68.4
52°	0.9	1.0	1.8	19.5	63.4
53°	0.9	1.0	1.7	18.8	58.7
54°	0.9	1.0	1.7	18.0	54.6
55°	0.8	0.9	1.6	17.1	50.8
56°	0.8	0.9	1.5	16.2	46.4
57°	0.7	0.9	1.5	15.3	42.3
58°	0.7	0.8	1.4	14.4	38.9
59°	0.7	0.8	1.4	13.4	35.7
60°	0.7	0.8	1.3	12.5	32.5
61°	0.7	0.7	1.2	11.6	29.6
62°	0.7	0.7	1.1	10.7	26.8
63°	0.7	0.7	1.1	9.9	24.2
64°	0.7	0.7	1.0	9.1	21.8
65°	0.7	0.7	1.0	8.3	19.7
66°	0.7	0.7	1.0	7.5	17.6
67°	0.7	0.7	0.9	6.8	15.8
68°	0.6	0.6	0.9	6.1	14.0
69°	0.6	0.6	0.8	5.5	12.5
70°	0.6	0.6	0.8	4.9	11.0
71°	0.6	0.6	0.7	4.3	9.8
72°	0.5	0.6	0.7	3.8	8.5
73°	0.5	0.5	0.7	3.4	7.4
74°	0.5	0.5	0.7	3.0	6.4
75°	0.5	0.5	0.6	2.6	5.5
76°	0.4	0.5	0.6	2.3	4.7
77°	0.4	0.4	0.6	2.0	4.1
78°	0.4	0.4	0.6	1.7	3.4
79°	0.4	0.4	0.6	1.5	3.0
80°	0.4	0.4	0.5	1.3	2.5
81°	0.3	0.3	0.5	1.2	2.1
82°	0.3	0.3	0.5	1.0	1.7
83°	0.3	0.3	0.4	1.0	1.4
84°	0.3	0.3	0.4	0.9	1.1
85°	0.3	0.3	0.4	0.8	0.9
86°	0.3	0.3	0.4	0.8	0.7
87°	0.3	0.2	0.4	0.7	0.6
88°	0.2	0.2	0.4	0.7	0.4
89°	0.2	0.2	0.4	0.6	0.4



TEST NUMBER: P958899

CATALOG NUMBER: MMG-05W-935-10x60-ID-X-X-1F-1-UNV-STD-X

CANDELA DISTRIBUTION (continued):

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

(END OF REPORT)