

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: P958854

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

Issue Date: 1/31/2025

Test Information

Test Method: LM-79-2019
Report Number: P958854
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-ASYM-ID-X-X-4F-4-UNV-STD-X
Description: iO LED MiniO-Graze LINEAR LIGHTING WITH ASYMMETRIC LAMBERTIAN OPTICS
5 WATTS PER FOOT
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1372.5 lumens
Efficiency: N/A
Efficacy: 76.2 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.28 / 1.46
Luminous Opening: Rectangular w/ Sides (W: 4' x L: 0.07' x H: 0.09')
CIE Type: Semi-Direct

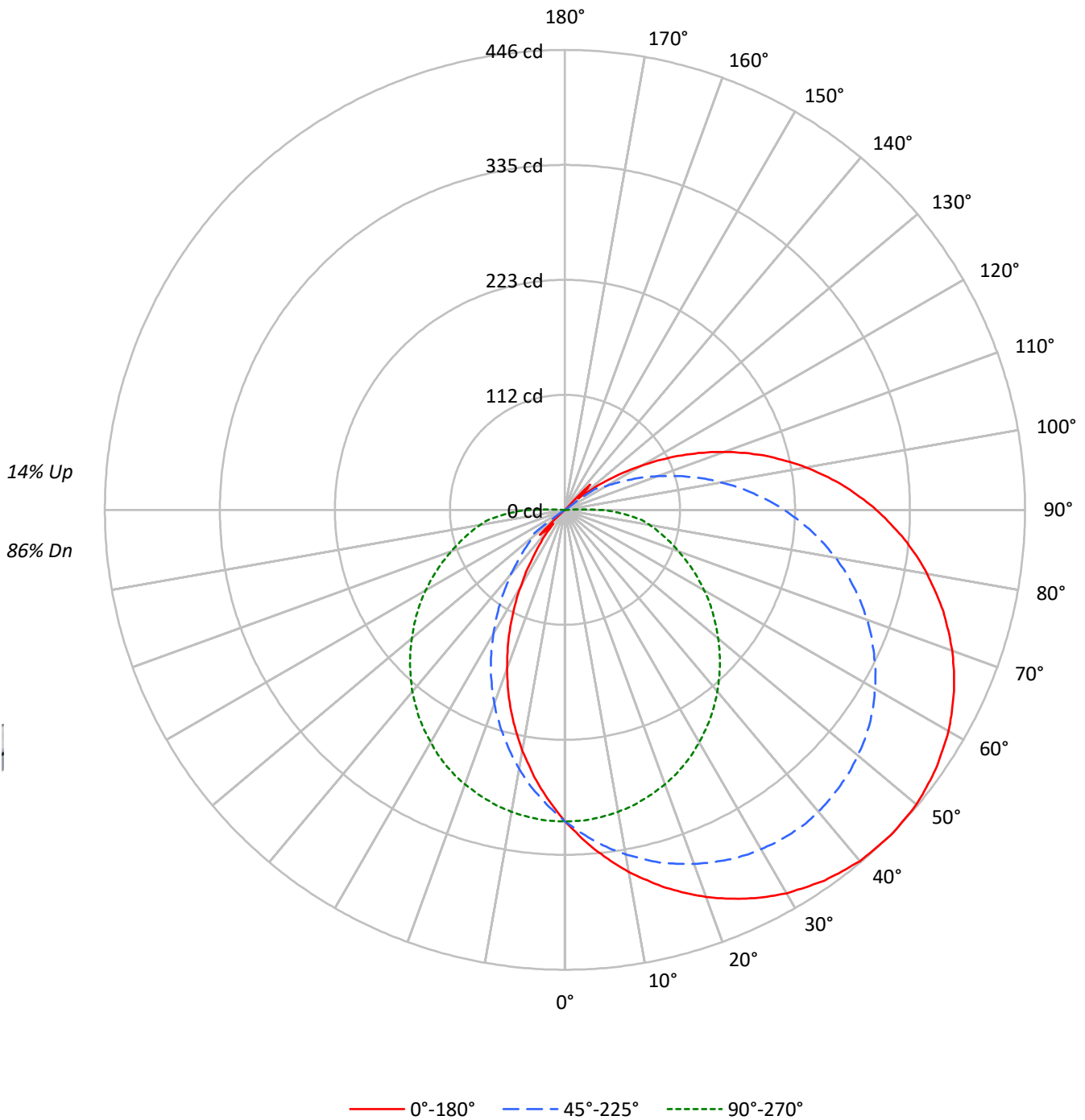
Input Watts (W): 18
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	116	116	116	116	111	111	111	111	103	103	103	96	96	96	89	89	89	86				86
1	102	95	89	84	97	91	86	82	84	80	76	78	75	71	72	69	67				63	
2	91	81	73	66	87	78	70	64	72	66	60	66	61	57	61	57	53				50	
3	82	70	61	53	78	67	59	52	62	55	49	57	51	46	53	48	44				41	
4	75	61	52	44	71	59	50	43	55	47	41	51	44	39	47	41	37				34	
5	68	54	45	37	65	52	43	37	49	41	35	45	38	33	42	36	31				29	
6	63	49	39	32	60	47	38	32	44	36	30	41	34	29	38	32	27				25	
7	58	44	35	28	56	42	34	28	40	32	26	37	30	25	34	29	24				22	
8	54	40	31	25	52	39	30	24	36	29	23	34	27	22	31	26	21				19	
9	50	37	28	22	48	35	27	22	33	26	21	31	25	20	29	23	19				17	
10	47	34	25	20	45	33	25	20	31	24	19	29	23	18	27	21	17				16	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	11795	11795	11795	11795	11795
5°	11691	11712	11783	10162	9583
10°	11605	11623	11746	8744	7725
15°	11522	11556	11712	7453	6130
20°	11447	11473	11684	6284	4699
25°	11368	11400	11649	5176	3421
30°	11293	11315	11596	4122	2251
35°	11204	11245	11566	3189	1228
40°	11120	11150	11520	2361	438
45°	11017	11038	11492	1680	851
50°	10915	10924	11484	1206	0
55°	10792	10814	11571	0	0
60°	10667	10664	11744	0	0
65°	10521	10497	12045	0	0
70°	10365	10331	12632	0	0
75°	10189	10126	13866	0	0
80°	9996	9896	16674	0	0
85°	9775	9629	22555	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 63186 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	28.6	2.1
10°-20°	82.2	6.0
20°-30°	125.4	9.1
30°-40°	153.9	11.2
40°-50°	169.6	12.4
50°-60°	173.1	12.6
60°-70°	167.6	12.2
70°-80°	149.3	10.9
80°-90°	125.7	9.2
90°-100°	92.1	6.7
100°-110°	61.8	4.5
110°-120°	30.4	2.2
120°-130°	10.8	0.8
130°-140°	2.1	0.2
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°	236.2	17.2
0°-40°	390.0	28.4
0°-60°	732.7	53.4
0°-90°	1175.3	85.6
90°-120°	184.3	13.4
90°-150°	197.2	14.4
90°-180°	197.0	14.4
0°-180°	1372.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	302	302	302	302	302	
5°	330	322	301	279	271	32
15°	380	354	291	228	202	108
25°	416	374	273	170	125	193
35°	439	383	246	109	48	275
45°	446	378	212	58	34	345
55°	439	361	175	0	0	393
65°	416	330	136	0	0	412
75°	380	290	99	0	0	401
85°	330	240	63	0	0	275
90°	302	212	34	0	0	165
95°	271	183	0	0	0	214
105°	202	124	0	0	0	213
115°	125	69	0	0	0	125
125°	48	35	0	0	0	45
135°	34	0	0	0	0	14
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P958854

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	302.0	302.0	302.0	302.0	302.0	302.0	302.0	302.0	302.0
2.5°	316.1	315.2	312.2	307.5	302.0	296.0	290.9	287.5	286.2
5°	330.5	328.4	322.0	312.2	301.1	289.2	279.4	273.0	270.9
7.5°	343.7	340.3	331.0	316.5	299.4	282.4	267.9	257.7	253.9
10°	356.5	352.3	339.1	319.9	297.3	274.7	255.1	241.9	237.3
12.5°	368.0	362.9	346.7	322.9	294.8	266.2	241.9	225.8	219.4
15°	379.5	372.7	354.0	325.0	291.3	257.3	228.3	209.1	201.9
17.5°	389.7	382.1	359.9	326.7	287.5	247.9	214.2	191.7	183.2
20°	399.5	390.6	365.5	328.0	283.3	238.1	200.2	173.8	164.0
22.5°	408.1	398.3	370.1	328.4	278.6	227.9	184.9	155.9	144.8
25°	416.1	405.1	374.4	328.0	273.0	217.7	170.0	137.6	125.2
27.5°	423.0	411.0	377.8	327.1	267.1	206.6	154.2	119.3	105.6
30°	429.4	416.6	379.9	325.4	260.3	195.5	138.4	101.4	85.6
32.5°	434.0	420.8	382.1	322.9	253.4	184.0	123.5	83.5	66.9
35°	438.7	423.8	382.9	319.9	246.2	172.1	108.6	66.9	48.1
37.5°	441.7	426.4	383.3	316.5	238.1	160.6	94.1	51.1	32.8
40°	444.7	428.1	382.1	312.2	230.0	148.7	80.9	37.9	17.5
42.5°	445.5	428.9	380.4	307.5	221.1	137.2	68.2	28.1	26.0
45°	446.4	428.9	377.8	301.6	212.5	126.1	57.5	31.5	34.5
47.5°	445.5	427.6	374.8	295.6	203.2	115.4	47.3	0.0	0.0
50°	444.7	425.1	370.6	288.8	193.8	104.8	40.9	0.0	0.0
52.5°	441.7	422.1	366.3	281.5	184.4	95.0	37.9	0.0	0.0
55°	438.7	418.7	360.8	273.5	175.1	85.2	0.0	0.0	0.0
57.5°	434.0	413.6	354.4	264.9	165.7	76.7	0.0	0.0	0.0
60°	429.4	408.1	347.1	256.0	155.9	68.6	0.0	0.0	0.0
62.5°	423.0	401.7	339.5	247.0	146.1	60.9	0.0	0.0	0.0
65°	416.1	394.0	330.5	237.3	136.3	51.5	0.0	0.0	0.0
67.5°	408.1	385.9	321.6	227.5	126.5	41.3	0.0	0.0	0.0
70°	399.5	377.0	311.8	217.2	117.1	0.0	0.0	0.0	0.0
72.5°	389.7	366.7	301.1	206.2	108.2	0.0	0.0	0.0	0.0
75°	379.5	356.5	290.1	195.1	99.2	0.0	0.0	0.0	0.0
77.5°	368.0	345.0	278.6	183.6	91.2	0.0	0.0	0.0	0.0
80°	356.5	333.5	266.2	172.5	83.1	0.0	0.0	0.0	0.0
82.5°	343.7	320.3	253.4	161.0	75.0	0.0	0.0	0.0	0.0
85°	330.5	307.1	240.2	149.5	62.6	0.0	0.0	0.0	0.0
87.5°	316.1	293.0	226.2	138.0	48.6	0.0	0.0	0.0	0.0
90°	302.0	278.6	212.5	126.5	34.5	0.0	0.0	0.0	0.0
92.5°	286.2	263.2	198.1	115.9	0.0	0.0	0.0	0.0	0.0
95°	270.9	247.5	183.2	105.2	0.0	0.0	0.0	0.0	0.0
97.5°	253.9	231.3	168.7	94.1	0.0	0.0	0.0	0.0	0.0
100°	237.3	214.7	153.8	84.3	0.0	0.0	0.0	0.0	0.0
102.5°	219.4	197.2	138.9	74.1	0.0	0.0	0.0	0.0	0.0
105°	201.9	179.7	123.9	63.5	0.0	0.0	0.0	0.0	0.0
107.5°	183.2	161.4	109.5	50.7	0.0	0.0	0.0	0.0	0.0
110°	164.0	143.1	95.4	38.8	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	144.8	125.2	81.8	0.0	0.0	0.0	0.0	0.0	0.0
115°	125.2	106.9	68.6	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	105.2	89.4	56.7	0.0	0.0	0.0	0.0	0.0	0.0
120°	85.6	72.8	45.6	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	66.9	56.2	40.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	48.1	43.0	34.9	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	32.8	29.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	17.5	31.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	26.0	34.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	34.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)