

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: P958894

Luminaire Tested: MMG-05W-927-ASYM-ID-X-X-1F-1-UNV-STD-X

Issue Date: 1/31/2025

Test Information

Test Method: LM-79-2019
Report Number: P958894
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-927-ASYM-ID-X-X-1F-1-UNV-STD-X
Description: iO LED MiniO-Graze LINEAR LIGHTING WITH ASYMMETRIC LAMBERTIAN OPTICS. INPUT WATTAGE IN IES FILE REPRESENTS CONSUMPTION IN A RUN, INDIVIDUAL FIXTURE MAY VARY
5 WATTS PER FOOT
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 338.8 lumens
Efficiency: N/A
Efficacy: 75.3 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.28 / 1.46
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 0.07' x H: 0.09')
CIE Type: Semi-Direct

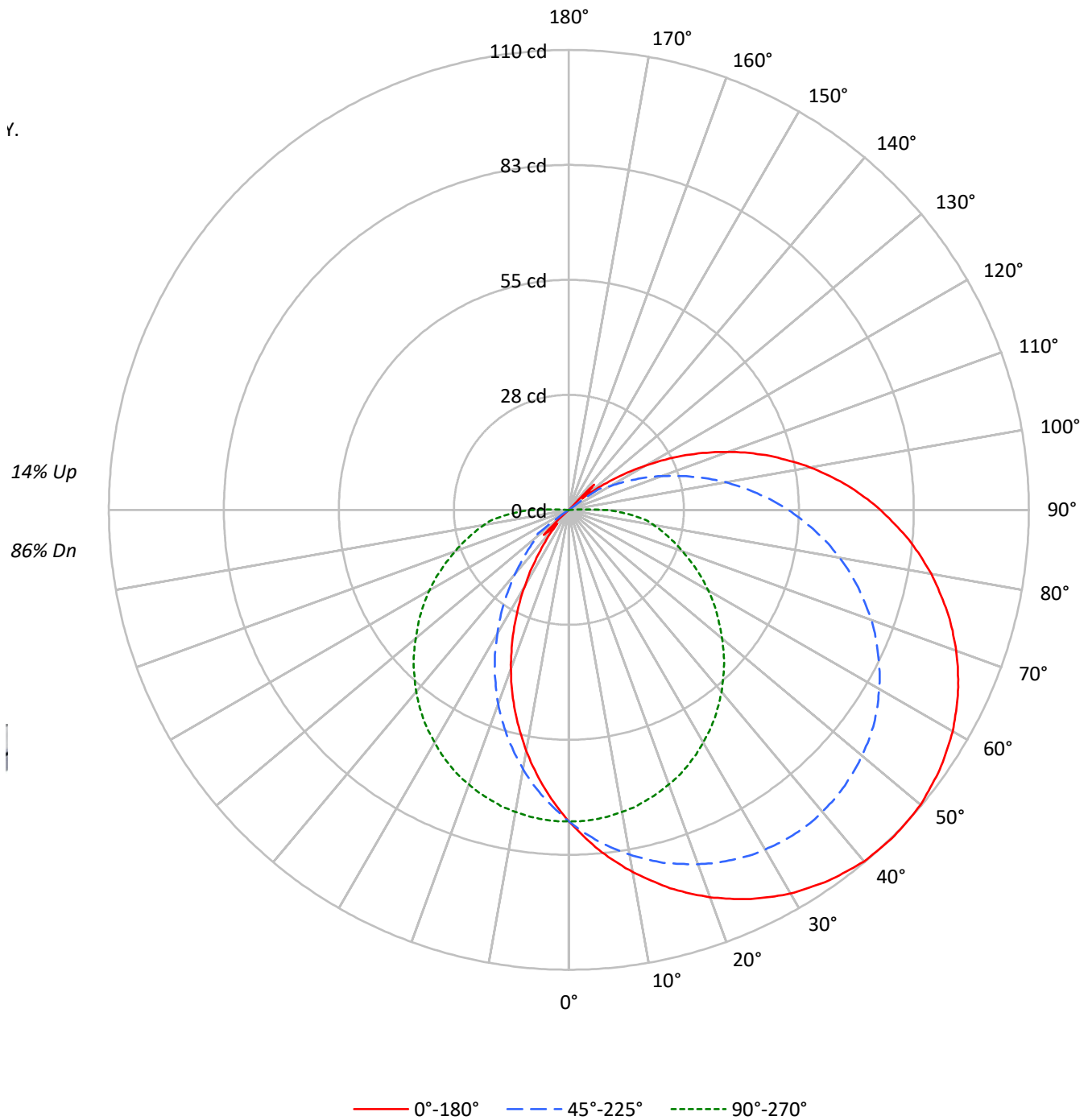
Input Watts (W): 4.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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
RCR																				
0	116	116	116	116	111	111	111	111	103	103	103	96	96	96	89	89	89	86	86	86
1	102	95	89	84	97	91	86	82	84	80	76	78	75	71	72	69	67	63	63	63
2	91	81	73	66	87	78	70	64	72	66	60	66	61	57	61	57	53	50	50	50
3	82	70	61	53	78	67	59	52	62	55	49	57	51	46	53	48	44	41	41	41
4	75	61	52	44	71	59	50	43	55	47	41	51	44	39	47	41	37	34	34	34
5	68	54	45	37	65	52	43	37	49	41	35	45	38	33	42	36	31	29	29	29
6	63	49	39	32	60	47	38	32	44	36	30	41	34	29	38	32	27	25	25	25
7	58	44	35	28	56	42	34	28	40	32	26	37	30	25	34	29	24	22	22	22
8	54	40	31	25	52	39	30	24	36	29	23	34	27	22	31	26	21	19	19	19
9	50	37	28	22	48	35	27	22	33	26	21	31	25	20	29	23	19	17	17	17
10	47	34	25	20	45	33	25	20	31	24	19	29	23	18	27	21	17	16	16	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	11639	11639	11639	11639	11639
5°	11546	11524	11566	10002	9466
10°	11459	11397	11471	8579	7630
15°	11380	11302	11369	7293	6048
20°	11300	11186	11271	6126	4642
25°	11224	11089	11174	5040	3377
30°	11151	10986	11038	4005	2220
35°	11064	10888	10942	3088	1216
40°	10983	10773	10810	2285	430
45°	10879	10649	10687	1621	839
50°	10780	10514	10545	1161	0
55°	10656	10387	10489	0	0
60°	10533	10217	10481	0	0
65°	10387	10032	10500	0	0
70°	10232	9849	10694	0	0
75°	10063	9621	11217	0	0
80°	9870	9372	12430	0	0
85°	9654	9088	14068	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 15568 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	7.1	2.1
10°-20°	20.3	6.0
20°-30°	31.0	9.1
30°-40°	38.0	11.2
40°-50°	41.9	12.4
50°-60°	42.7	12.6
60°-70°	41.4	12.2
70°-80°	36.8	10.9
80°-90°	31.0	9.2
90°-100°	22.7	6.7
100°-110°	15.3	4.5
110°-120°	7.5	2.2
120°-130°	2.7	0.8
130°-140°	0.5	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°	58.3	17.2
0°-40°	96.3	28.4
0°-60°	180.9	53.4
0°-90°	290.1	85.6
90°-120°	45.5	13.4
90°-150°	48.7	14.4
90°-180°	49.0	14.5
0°-180°	338.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	74	74	74	74	74	
5°	82	80	74	69	67	8
15°	94	87	72	56	50	27
25°	103	92	67	42	31	48
35°	108	94	61	27	12	68
45°	110	93	52	14	8	85
55°	108	89	43	0	0	97
65°	103	82	34	0	0	102
75°	94	72	24	0	0	99
85°	82	59	16	0	0	68
90°	74	52	8	0	0	41
95°	67	45	0	0	0	53
105°	50	31	0	0	0	53
115°	31	17	0	0	0	31
125°	12	9	0	0	0	11
135°	8	0	0	0	0	3
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



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5
2.5°	78.0	77.8	77.1	75.9	74.5	73.1	71.8	71.0	70.7
5°	81.6	81.1	79.5	77.1	74.3	71.4	69.0	67.4	66.9
7.5°	84.8	84.0	81.7	78.1	73.9	69.7	66.1	63.6	62.7
10°	88.0	87.0	83.7	79.0	73.4	67.8	63.0	59.7	58.6
12.5°	90.8	89.6	85.6	79.7	72.8	65.7	59.7	55.7	54.1
15°	93.7	92.0	87.4	80.2	71.9	63.5	56.4	51.6	49.8
17.5°	96.2	94.3	88.8	80.6	71.0	61.2	52.9	47.3	45.2
20°	98.6	96.4	90.2	81.0	69.9	58.8	49.4	42.9	40.5
22.5°	100.7	98.3	91.4	81.1	68.8	56.3	45.6	38.5	35.7
25°	102.7	100.0	92.4	81.0	67.4	53.7	42.0	34.0	30.9
27.5°	104.4	101.5	93.3	80.7	65.9	51.0	38.1	29.4	26.1
30°	106.0	102.8	93.8	80.3	64.2	48.3	34.2	25.0	21.1
32.5°	107.1	103.9	94.3	79.7	62.6	45.4	30.5	20.6	16.5
35°	108.3	104.6	94.5	79.0	60.8	42.5	26.8	16.5	11.9
37.5°	109.0	105.2	94.6	78.1	58.8	39.6	23.2	12.6	8.1
40°	109.8	105.7	94.3	77.1	56.8	36.7	20.0	9.4	4.3
42.5°	110.0	105.9	93.9	75.9	54.6	33.9	16.8	6.9	6.4
45°	110.2	105.9	93.3	74.4	52.5	31.1	14.2	7.8	8.5
47.5°	110.0	105.6	92.5	73.0	50.2	28.5	11.7	0.0	0.0
50°	109.8	104.9	91.5	71.3	47.8	25.9	10.1	0.0	0.0
52.5°	109.0	104.2	90.4	69.5	45.5	23.4	9.4	0.0	0.0
55°	108.3	103.4	89.1	67.5	43.2	21.0	0.0	0.0	0.0
57.5°	107.1	102.1	87.5	65.4	40.9	18.9	0.0	0.0	0.0
60°	106.0	100.7	85.7	63.2	38.5	16.9	0.0	0.0	0.0
62.5°	104.4	99.1	83.8	61.0	36.1	15.0	0.0	0.0	0.0
65°	102.7	97.3	81.6	58.6	33.6	12.7	0.0	0.0	0.0
67.5°	100.7	95.3	79.4	56.1	31.2	10.2	0.0	0.0	0.0
70°	98.6	93.0	77.0	53.6	28.9	0.0	0.0	0.0	0.0
72.5°	96.2	90.5	74.3	50.9	26.7	0.0	0.0	0.0	0.0
75°	93.7	88.0	71.6	48.2	24.5	0.0	0.0	0.0	0.0
77.5°	90.8	85.2	68.8	45.3	22.5	0.0	0.0	0.0	0.0
80°	88.0	82.3	65.7	42.6	20.5	0.0	0.0	0.0	0.0
82.5°	84.8	79.1	62.6	39.7	18.5	0.0	0.0	0.0	0.0
85°	81.6	75.8	59.3	36.9	15.5	0.0	0.0	0.0	0.0
87.5°	78.0	72.3	55.8	34.1	12.0	0.0	0.0	0.0	0.0
90°	74.5	68.8	52.5	31.2	8.5	0.0	0.0	0.0	0.0
92.5°	70.7	65.0	48.9	28.6	0.0	0.0	0.0	0.0	0.0
95°	66.9	61.1	45.2	26.0	0.0	0.0	0.0	0.0	0.0
97.5°	62.7	57.1	41.6	23.2	0.0	0.0	0.0	0.0	0.0
100°	58.6	53.0	38.0	20.8	0.0	0.0	0.0	0.0	0.0
102.5°	54.1	48.7	34.3	18.3	0.0	0.0	0.0	0.0	0.0
105°	49.8	44.4	30.6	15.7	0.0	0.0	0.0	0.0	0.0
107.5°	45.2	39.8	27.0	12.5	0.0	0.0	0.0	0.0	0.0
110°	40.5	35.3	23.6	9.6	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°	35.7	30.9	20.2	0.0	0.0	0.0	0.0	0.0	0.0
115°	30.9	26.4	16.9	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	26.0	22.1	14.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	21.1	18.0	11.3	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	16.5	13.9	9.9	0.0	0.0	0.0	0.0	0.0	0.0
125°	11.9	10.6	8.6	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	8.1	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	4.3	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	6.4	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	8.5	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)