

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: P958906

Luminaire Tested: MMG-05W-940-ASYM-ID-X-X-1F-1-UNV-STD-X

Issue Date: 1/31/2025

Test Information

Test Method: LM-79-2019
Report Number: P958906
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-940-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: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 367.2 lumens
Efficiency: N/A
Efficacy: 81.6 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

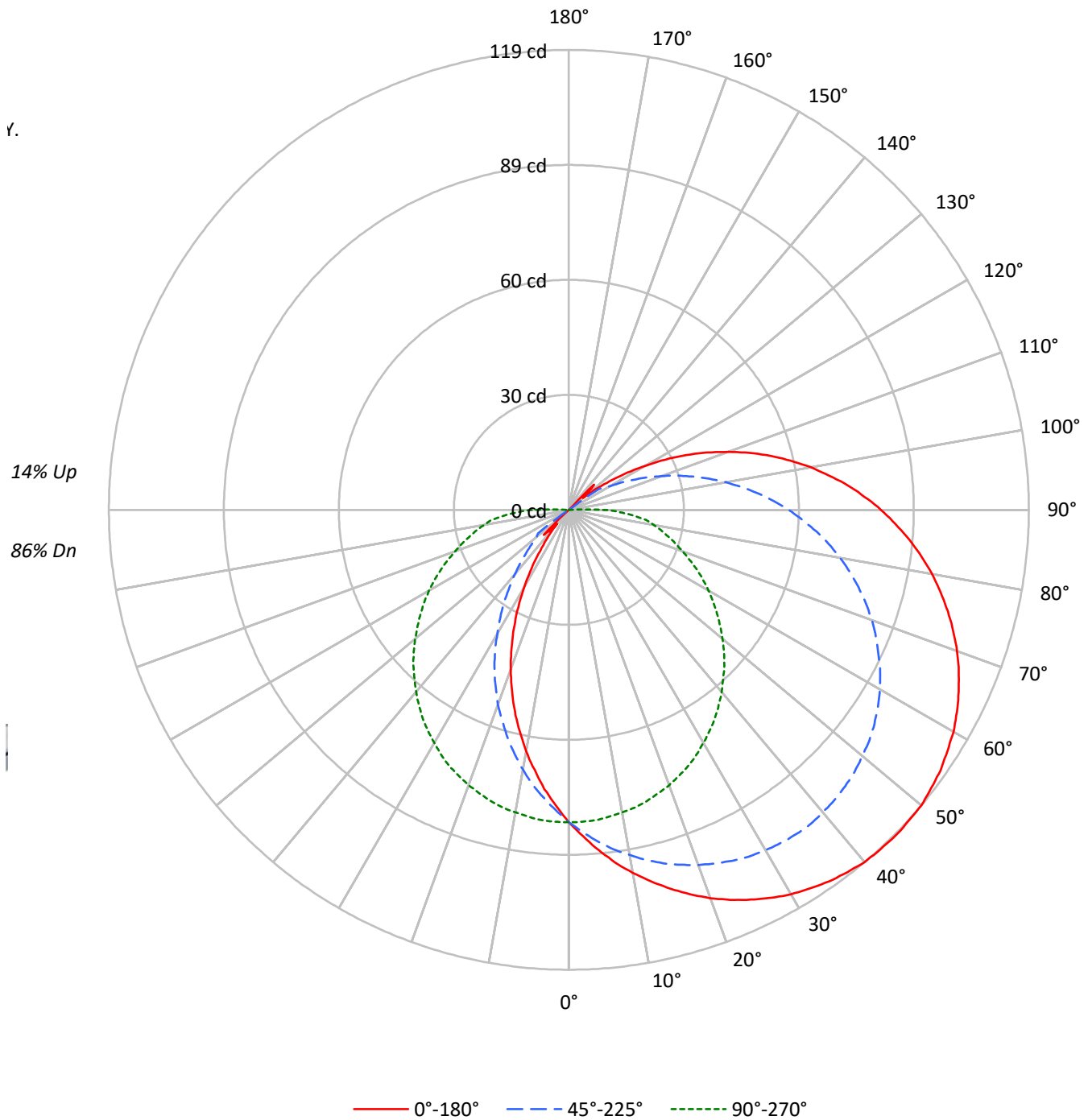
Input Watts (W): 4.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	12623	12623	12623	12623	12623
5°	12508	12495	12546	10843	10258
10°	12422	12350	12425	9300	8268
15°	12327	12246	12334	7901	6558
20°	12252	12129	12222	6647	5031
25°	12163	12025	12119	5460	3661
30°	12087	11911	11966	4333	2409
35°	11993	11810	11860	3353	1318
40°	11903	11675	11704	2479	470
45°	11787	11539	11583	1758	908
50°	11684	11387	11450	1252	0
55°	11552	11250	11363	0	0
60°	11418	11076	11352	0	0
65°	11257	10868	11406	0	0
70°	11094	10668	11582	0	0
75°	10901	10427	12179	0	0
80°	10700	10157	13461	0	0
85°	10459	9855	15248	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 16850 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	7.7	2.1
10°-20°	22.0	6.0
20°-30°	33.6	9.1
30°-40°	41.2	11.2
40°-50°	45.4	12.4
50°-60°	46.3	12.6
60°-70°	44.8	12.2
70°-80°	39.9	10.9
80°-90°	33.6	9.2
90°-100°	24.6	6.7
100°-110°	16.5	4.5
110°-120°	8.1	2.2
120°-130°	2.9	0.8
130°-140°	0.6	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°	63.2	17.2
0°-40°	104.4	28.4
0°-60°	196.0	53.4
0°-90°	314.5	85.6
90°-120°	49.3	13.4
90°-150°	52.8	14.4
90°-180°	53.0	14.4
0°-180°	367.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	81	81	81	81	81	
5°	88	86	81	75	72	9
15°	102	95	78	61	54	29
25°	111	100	73	46	34	52
35°	117	102	66	29	13	74
45°	119	101	57	15	9	92
55°	117	96	47	0	0	105
65°	111	88	36	0	0	110
75°	102	78	27	0	0	107
85°	88	64	17	0	0	74
90°	81	57	9	0	0	44
95°	72	49	0	0	0	57
105°	54	33	0	0	0	57
115°	34	18	0	0	0	33
125°	13	9	0	0	0	12
135°	9	0	0	0	0	4
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°	80.8	80.8	80.8	80.8	80.8	80.8	80.8	80.8	80.8
2.5°	84.6	84.3	83.5	82.3	80.8	79.2	77.8	76.9	76.6
5°	88.4	87.9	86.2	83.5	80.6	77.4	74.8	73.1	72.5
7.5°	92.0	91.1	88.6	84.7	80.1	75.6	71.7	68.9	67.9
10°	95.4	94.2	90.7	85.6	79.5	73.5	68.3	64.7	63.5
12.5°	98.5	97.1	92.8	86.4	78.9	71.2	64.7	60.4	58.7
15°	101.5	99.7	94.7	87.0	78.0	68.8	61.1	56.0	54.0
17.5°	104.3	102.2	96.3	87.4	76.9	66.3	57.3	51.3	49.0
20°	106.9	104.5	97.8	87.8	75.8	63.7	53.6	46.5	43.9
22.5°	109.2	106.6	99.0	87.9	74.5	61.0	49.5	41.7	38.7
25°	111.3	108.4	100.2	87.8	73.1	58.2	45.5	36.8	33.5
27.5°	113.2	110.0	101.1	87.5	71.5	55.3	41.3	31.9	28.3
30°	114.9	111.5	101.7	87.1	69.6	52.3	37.0	27.1	22.9
32.5°	116.1	112.6	102.2	86.4	67.8	49.2	33.0	22.3	17.9
35°	117.4	113.4	102.5	85.6	65.9	46.0	29.1	17.9	12.9
37.5°	118.2	114.1	102.6	84.7	63.7	43.0	25.2	13.7	8.8
40°	119.0	114.5	102.2	83.5	61.5	39.8	21.7	10.1	4.7
42.5°	119.2	114.8	101.8	82.3	59.1	36.7	18.2	7.5	7.0
45°	119.4	114.8	101.1	80.7	56.9	33.7	15.4	8.4	9.2
47.5°	119.2	114.4	100.3	79.1	54.4	30.9	12.7	0.0	0.0
50°	119.0	113.7	99.1	77.3	51.9	28.0	10.9	0.0	0.0
52.5°	118.2	112.9	98.0	75.3	49.3	25.4	10.1	0.0	0.0
55°	117.4	112.0	96.5	73.2	46.8	22.8	0.0	0.0	0.0
57.5°	116.1	110.7	94.8	70.9	44.3	20.5	0.0	0.0	0.0
60°	114.9	109.2	92.9	68.5	41.7	18.3	0.0	0.0	0.0
62.5°	113.2	107.5	90.8	66.1	39.1	16.3	0.0	0.0	0.0
65°	111.3	105.4	88.4	63.5	36.5	13.8	0.0	0.0	0.0
67.5°	109.2	103.3	86.0	60.9	33.8	11.1	0.0	0.0	0.0
70°	106.9	100.9	83.4	58.1	31.3	0.0	0.0	0.0	0.0
72.5°	104.3	98.1	80.6	55.2	28.9	0.0	0.0	0.0	0.0
75°	101.5	95.4	77.6	52.2	26.6	0.0	0.0	0.0	0.0
77.5°	98.5	92.3	74.5	49.1	24.4	0.0	0.0	0.0	0.0
80°	95.4	89.2	71.2	46.2	22.2	0.0	0.0	0.0	0.0
82.5°	92.0	85.7	67.8	43.1	20.1	0.0	0.0	0.0	0.0
85°	88.4	82.2	64.3	40.0	16.8	0.0	0.0	0.0	0.0
87.5°	84.6	78.4	60.5	36.9	13.0	0.0	0.0	0.0	0.0
90°	80.8	74.5	56.9	33.8	9.2	0.0	0.0	0.0	0.0
92.5°	76.6	70.4	53.0	31.0	0.0	0.0	0.0	0.0	0.0
95°	72.5	66.2	49.0	28.1	0.0	0.0	0.0	0.0	0.0
97.5°	67.9	61.9	45.1	25.2	0.0	0.0	0.0	0.0	0.0
100°	63.5	57.4	41.1	22.6	0.0	0.0	0.0	0.0	0.0
102.5°	58.7	52.8	37.2	19.8	0.0	0.0	0.0	0.0	0.0
105°	54.0	48.1	33.2	17.0	0.0	0.0	0.0	0.0	0.0
107.5°	49.0	43.2	29.3	13.6	0.0	0.0	0.0	0.0	0.0
110°	43.9	38.3	25.5	10.4	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°	38.7	33.5	21.9	0.0	0.0	0.0	0.0	0.0	0.0
115°	33.5	28.6	18.3	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	28.1	23.9	15.2	0.0	0.0	0.0	0.0	0.0	0.0
120°	22.9	19.5	12.2	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	17.9	15.0	10.7	0.0	0.0	0.0	0.0	0.0	0.0
125°	12.9	11.5	9.3	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	8.8	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	4.7	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	7.0	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	9.2	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)