

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: P958838

Luminaire Tested: MMG-03W-935-ASYM-ID-X-X-4F-4-UNV-STD-X

Issue Date: 1/31/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P958838  
SCALED TEST REPORT  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/31/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: iO LED  
Catalog Number: MMG-03W-935-ASYM-ID-X-X-4F-4-UNV-STD-X  
Description: iO LED MiniO-Graze LINEAR LIGHTING WITH ASYMMETRIC LAMBERTIAN OPTICS  
3 WATTS PER FOOT  
Light Source: 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 766.1 lumens  
Efficiency: N/A  
Efficacy: 70.9 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

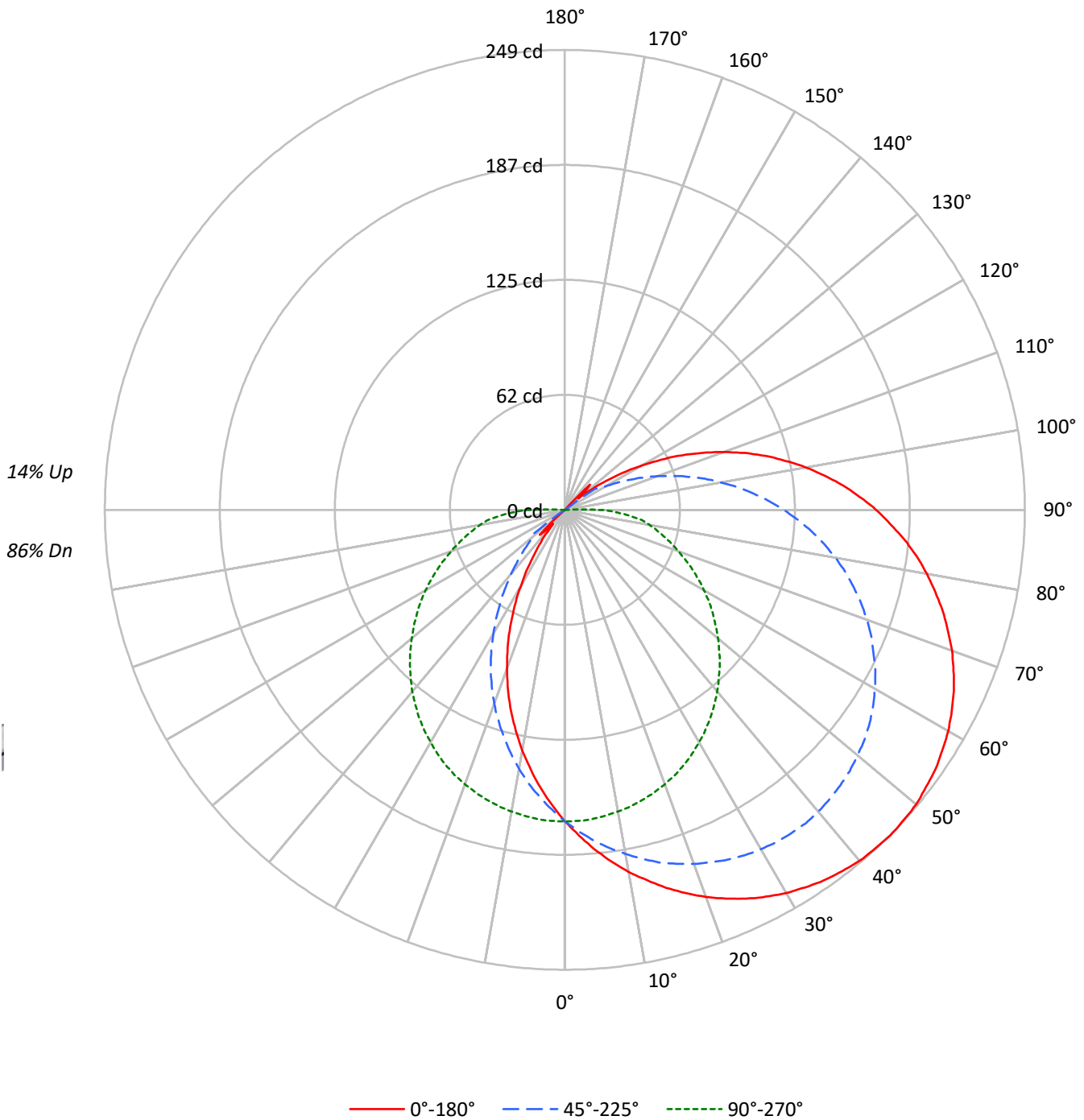
Input Watts (W): 10.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	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																
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°	6585	6585	6585	6585	6585
5°	6527	6536	6578	5674	5349
10°	6478	6485	6555	4881	4310
15°	6431	6451	6537	4159	3422
20°	6389	6403	6520	3506	2622
25°	6347	6364	6503	2890	1910
30°	6301	6317	6473	2302	1257
35°	6255	6276	6455	1780	687
40°	6207	6224	6431	1319	243
45°	6150	6162	6414	938	476
50°	6092	6096	6411	672	0
55°	6024	6037	6456	0	0
60°	5952	5954	6554	0	0
65°	5874	5860	6725	0	0
70°	5786	5765	7055	0	0
75°	5687	5651	7744	0	0
80°	5580	5524	9310	0	0
85°	5457	5376	12574	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 90°  
 Luminance: 35348 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	16.0	2.1
10°-20°	45.9	6.0
20°-30°	70.0	9.1
30°-40°	85.9	11.2
40°-50°	94.7	12.4
50°-60°	96.6	12.6
60°-70°	93.5	12.2
70°-80°	83.3	10.9
80°-90°	70.2	9.2
90°-100°	51.4	6.7
100°-110°	34.5	4.5
110°-120°	17.0	2.2
120°-130°	6.0	0.8
130°-140°	1.2	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°	131.8	17.2
0°-40°	217.7	28.4
0°-60°	409.0	53.4
0°-90°	656.0	85.6
90°-120°	102.9	13.4
90°-150°	110.1	14.4
90°-180°	110.0	14.4
0°-180°	766.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	169	169	169	169	169	
5°	184	180	168	156	151	18
15°	212	198	163	127	113	60
25°	232	209	152	95	70	108
35°	245	214	137	61	27	154
45°	249	211	119	32	19	193
55°	245	201	98	0	0	219
65°	232	184	76	0	0	230
75°	212	162	55	0	0	224
85°	184	134	35	0	0	154
90°	169	119	19	0	0	92
95°	151	102	0	0	0	120
105°	113	69	0	0	0	119
115°	70	38	0	0	0	70
125°	27	20	0	0	0	25
135°	19	0	0	0	0	8
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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CATALOG NUMBER: MMG-03W-935-ASYM-ID-X-X-4F-4-UNV-STD-X

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	168.6	168.6	168.6	168.6	168.6	168.6	168.6	168.6	168.6
2.5°	176.4	175.9	174.3	171.6	168.6	165.2	162.4	160.5	159.8
5°	184.5	183.3	179.7	174.3	168.1	161.4	156.0	152.4	151.2
7.5°	191.9	190.0	184.7	176.6	167.1	157.6	149.5	143.8	141.7
10°	199.0	196.6	189.2	178.5	165.9	153.3	142.4	135.0	132.4
12.5°	205.4	202.6	193.5	180.2	164.5	148.6	135.0	126.0	122.4
15°	211.8	208.0	197.6	181.4	162.6	143.6	127.4	116.7	112.7
17.5°	217.5	213.3	200.9	182.3	160.5	138.4	119.6	107.0	102.2
20°	223.0	218.0	204.0	183.1	158.1	132.9	111.7	97.0	91.5
22.5°	227.8	222.3	206.6	183.3	155.5	127.2	103.2	87.0	80.8
25°	232.3	226.1	209.0	183.1	152.4	121.5	94.9	76.8	69.9
27.5°	236.1	229.4	210.9	182.6	149.1	115.3	86.1	66.6	59.0
30°	239.6	232.5	212.1	181.6	145.3	109.1	77.3	56.6	47.8
32.5°	242.3	234.9	213.3	180.2	141.5	102.7	68.9	46.6	37.3
35°	244.9	236.6	213.7	178.5	137.4	96.0	60.6	37.3	26.9
37.5°	246.5	238.0	214.0	176.6	132.9	89.6	52.5	28.5	18.3
40°	248.2	238.9	213.3	174.3	128.4	83.0	45.2	21.2	9.7
42.5°	248.7	239.4	212.3	171.6	123.4	76.6	38.0	15.7	14.5
45°	249.2	239.4	210.9	168.3	118.6	70.4	32.1	17.6	19.3
47.5°	248.7	238.7	209.2	165.0	113.4	64.4	26.4	0.0	0.0
50°	248.2	237.3	206.8	161.2	108.2	58.5	22.8	0.0	0.0
52.5°	246.5	235.6	204.5	157.1	102.9	53.0	21.2	0.0	0.0
55°	244.9	233.7	201.4	152.6	97.7	47.5	0.0	0.0	0.0
57.5°	242.3	230.8	197.8	147.9	92.5	42.8	0.0	0.0	0.0
60°	239.6	227.8	193.8	142.9	87.0	38.3	0.0	0.0	0.0
62.5°	236.1	224.2	189.5	137.9	81.5	34.0	0.0	0.0	0.0
65°	232.3	219.9	184.5	132.4	76.1	28.8	0.0	0.0	0.0
67.5°	227.8	215.4	179.5	127.0	70.6	23.1	0.0	0.0	0.0
70°	223.0	210.4	174.0	121.2	65.4	0.0	0.0	0.0	0.0
72.5°	217.5	204.7	168.1	115.1	60.4	0.0	0.0	0.0	0.0
75°	211.8	199.0	161.9	108.9	55.4	0.0	0.0	0.0	0.0
77.5°	205.4	192.6	155.5	102.5	50.9	0.0	0.0	0.0	0.0
80°	199.0	186.2	148.6	96.3	46.4	0.0	0.0	0.0	0.0
82.5°	191.9	178.8	141.5	89.9	41.8	0.0	0.0	0.0	0.0
85°	184.5	171.4	134.1	83.4	34.9	0.0	0.0	0.0	0.0
87.5°	176.4	163.6	126.2	77.0	27.1	0.0	0.0	0.0	0.0
90°	168.6	155.5	118.6	70.6	19.3	0.0	0.0	0.0	0.0
92.5°	159.8	146.9	110.5	64.7	0.0	0.0	0.0	0.0	0.0
95°	151.2	138.1	102.2	58.7	0.0	0.0	0.0	0.0	0.0
97.5°	141.7	129.1	94.1	52.5	0.0	0.0	0.0	0.0	0.0
100°	132.4	119.8	85.8	47.1	0.0	0.0	0.0	0.0	0.0
102.5°	122.4	110.1	77.5	41.4	0.0	0.0	0.0	0.0	0.0
105°	112.7	100.3	69.2	35.4	0.0	0.0	0.0	0.0	0.0
107.5°	102.2	90.1	61.1	28.3	0.0	0.0	0.0	0.0	0.0
110°	91.5	79.9	53.3	21.6	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°	80.8	69.9	45.6	0.0	0.0	0.0	0.0	0.0	0.0
115°	69.9	59.7	38.3	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	58.7	49.9	31.6	0.0	0.0	0.0	0.0	0.0	0.0
120°	47.8	40.7	25.4	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	37.3	31.4	22.3	0.0	0.0	0.0	0.0	0.0	0.0
125°	26.9	24.0	19.5	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	18.3	16.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	9.7	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	14.5	19.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	19.3	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)