

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: P958834

Luminaire Tested: MMG-03W-930-ASYM-ID-X-X-4F-4-UNV-STD-X

Issue Date: 1/31/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P958834  
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-930-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: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 758.1 lumens  
Efficiency: N/A  
Efficacy: 70.2 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

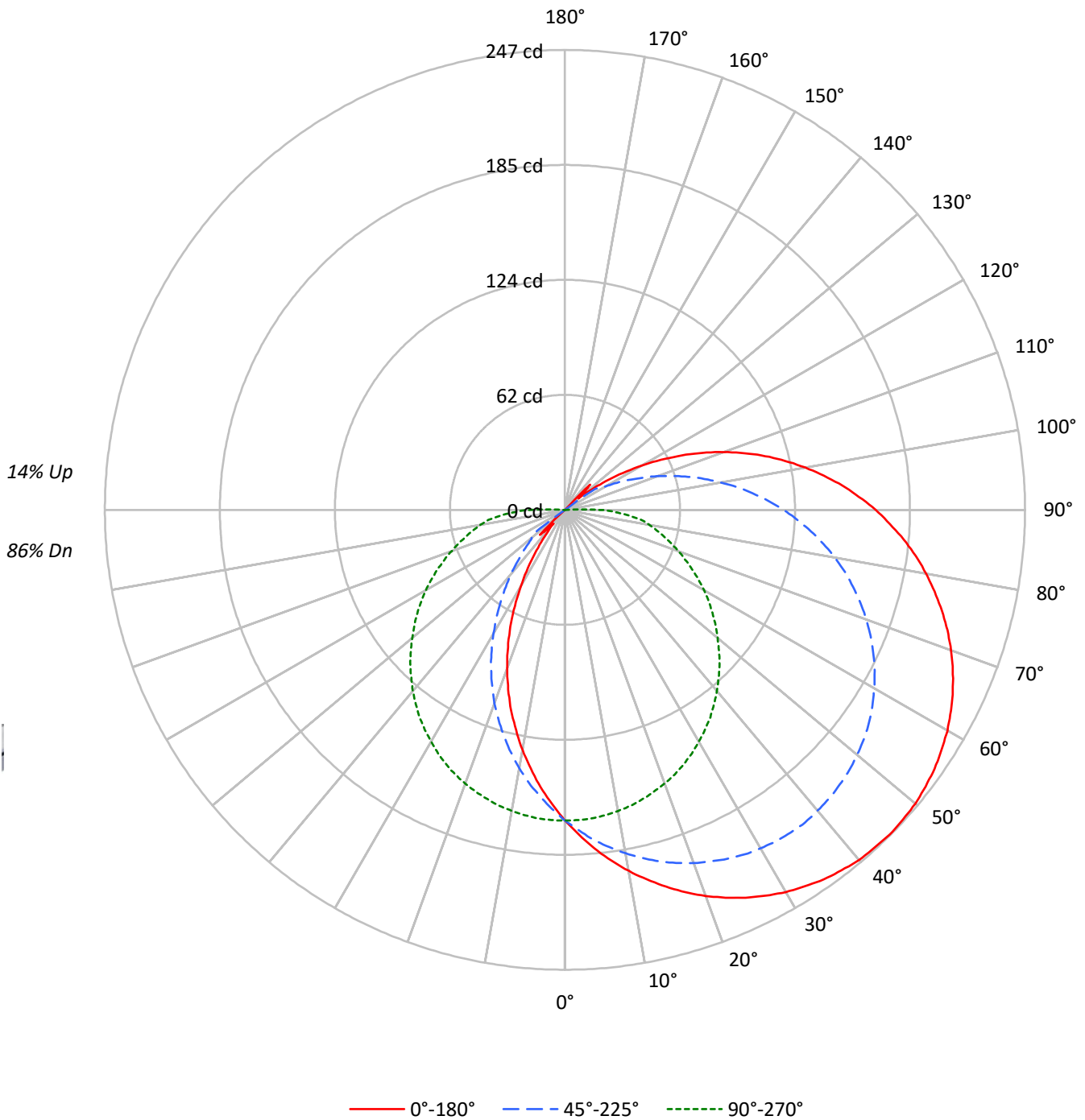
Input Watts (W): 10.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	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°	6515	6515	6515	6515	6515
5°	6459	6471	6508	5612	5292
10°	6410	6420	6488	4830	4264
15°	6364	6382	6469	4117	3385
20°	6324	6337	6450	3472	2596
25°	6278	6297	6435	2859	1891
30°	6236	6252	6402	2279	1244
35°	6188	6211	6389	1762	679
40°	6142	6157	6361	1304	240
45°	6086	6098	6349	929	471
50°	6028	6034	6340	666	0
55°	5960	5974	6390	0	0
60°	5890	5890	6486	0	0
65°	5810	5800	6655	0	0
70°	5726	5705	6979	0	0
75°	5628	5592	7660	0	0
80°	5521	5465	9210	0	0
85°	5401	5320	12466	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 90°  
 Luminance: 34981 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	15.8	2.1
10°-20°	45.4	6.0
20°-30°	69.3	9.1
30°-40°	85.0	11.2
40°-50°	93.7	12.4
50°-60°	95.6	12.6
60°-70°	92.6	12.2
70°-80°	82.5	10.9
80°-90°	69.4	9.2
90°-100°	50.9	6.7
100°-110°	34.1	4.5
110°-120°	16.8	2.2
120°-130°	5.9	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°	130.4	17.2
0°-40°	215.4	28.4
0°-60°	404.7	53.4
0°-90°	649.1	85.6
90°-120°	101.8	13.4
90°-150°	108.9	14.4
90°-180°	109.0	14.4
0°-180°	758.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	167	167	167	167	167	
5°	183	178	166	154	150	18
15°	210	196	161	126	112	60
25°	230	207	151	94	69	106
35°	242	212	136	60	27	152
45°	247	209	117	32	19	191
55°	242	199	97	0	0	217
65°	230	183	75	0	0	228
75°	210	160	55	0	0	221
85°	183	133	35	0	0	152
90°	167	117	19	0	0	91
95°	150	101	0	0	0	118
105°	112	68	0	0	0	118
115°	69	38	0	0	0	69
125°	27	19	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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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8
2.5°	174.6	174.1	172.4	169.9	166.8	163.5	160.7	158.8	158.1
5°	182.6	181.4	177.9	172.4	166.3	159.7	154.3	150.8	149.6
7.5°	189.9	188.0	182.8	174.8	165.4	156.0	148.0	142.3	140.2
10°	196.9	194.6	187.3	176.7	164.2	151.7	140.9	133.6	131.0
12.5°	203.3	200.4	191.5	178.3	162.8	147.0	133.6	124.7	121.2
15°	209.6	205.9	195.5	179.5	160.9	142.1	126.1	115.5	111.5
17.5°	215.3	211.0	198.8	180.4	158.8	136.9	118.3	105.9	101.2
20°	220.7	215.7	201.9	181.2	156.4	131.5	110.6	96.0	90.6
22.5°	225.4	220.0	204.4	181.4	153.9	125.9	102.1	86.1	80.0
25°	229.8	223.7	206.8	181.2	150.8	120.2	93.9	76.0	69.2
27.5°	233.6	227.0	208.7	180.7	147.5	114.1	85.2	65.9	58.3
30°	237.1	230.1	209.9	179.7	143.7	108.0	76.5	56.0	47.3
32.5°	239.7	232.4	211.0	178.3	140.0	101.6	68.2	46.1	36.9
35°	242.3	234.1	211.5	176.7	136.0	95.0	60.0	36.9	26.6
37.5°	244.0	235.5	211.7	174.8	131.5	88.7	52.0	28.2	18.1
40°	245.6	236.4	211.0	172.4	127.0	82.1	44.7	20.9	9.6
42.5°	246.1	236.9	210.1	169.9	122.1	75.8	37.6	15.5	14.4
45°	246.6	236.9	208.7	166.6	117.4	69.6	31.8	17.4	19.1
47.5°	246.1	236.2	207.0	163.3	112.2	63.8	26.1	0.0	0.0
50°	245.6	234.8	204.7	159.5	107.0	57.9	22.6	0.0	0.0
52.5°	244.0	233.1	202.3	155.5	101.9	52.5	20.9	0.0	0.0
55°	242.3	231.3	199.3	151.0	96.7	47.1	0.0	0.0	0.0
57.5°	239.7	228.4	195.7	146.3	91.5	42.3	0.0	0.0	0.0
60°	237.1	225.4	191.7	141.4	86.1	37.9	0.0	0.0	0.0
62.5°	233.6	221.9	187.5	136.5	80.7	33.6	0.0	0.0	0.0
65°	229.8	217.6	182.6	131.0	75.3	28.5	0.0	0.0	0.0
67.5°	225.4	213.1	177.6	125.6	69.9	22.8	0.0	0.0	0.0
70°	220.7	208.2	172.2	120.0	64.7	0.0	0.0	0.0	0.0
72.5°	215.3	202.6	166.3	113.9	59.8	0.0	0.0	0.0	0.0
75°	209.6	196.9	160.2	107.7	54.8	0.0	0.0	0.0	0.0
77.5°	203.3	190.6	153.9	101.4	50.3	0.0	0.0	0.0	0.0
80°	196.9	184.2	147.0	95.3	45.9	0.0	0.0	0.0	0.0
82.5°	189.9	176.9	140.0	88.9	41.4	0.0	0.0	0.0	0.0
85°	182.6	169.6	132.7	82.6	34.6	0.0	0.0	0.0	0.0
87.5°	174.6	161.9	124.9	76.2	26.8	0.0	0.0	0.0	0.0
90°	166.8	153.9	117.4	69.9	19.1	0.0	0.0	0.0	0.0
92.5°	158.1	145.4	109.4	64.0	0.0	0.0	0.0	0.0	0.0
95°	149.6	136.7	101.2	58.1	0.0	0.0	0.0	0.0	0.0
97.5°	140.2	127.7	93.2	52.0	0.0	0.0	0.0	0.0	0.0
100°	131.0	118.6	84.9	46.6	0.0	0.0	0.0	0.0	0.0
102.5°	121.2	108.9	76.7	40.9	0.0	0.0	0.0	0.0	0.0
105°	111.5	99.3	68.5	35.1	0.0	0.0	0.0	0.0	0.0
107.5°	101.2	89.2	60.5	28.0	0.0	0.0	0.0	0.0	0.0
110°	90.6	79.0	52.7	21.4	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°	80.0	69.2	45.2	0.0	0.0	0.0	0.0	0.0	0.0
115°	69.2	59.1	37.9	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	58.1	49.4	31.3	0.0	0.0	0.0	0.0	0.0	0.0
120°	47.3	40.2	25.2	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	36.9	31.1	22.1	0.0	0.0	0.0	0.0	0.0	0.0
125°	26.6	23.8	19.3	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	18.1	16.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	9.6	17.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	14.4	19.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	19.1	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)