

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: P958850

Luminaire Tested: MMG-05W-930-ASYM-ID-X-X-4F-4-UNV-STD-X

Issue Date: 1/31/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P958850  
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-930-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: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1358.2 lumens  
Efficiency: N/A  
Efficacy: 75.5 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

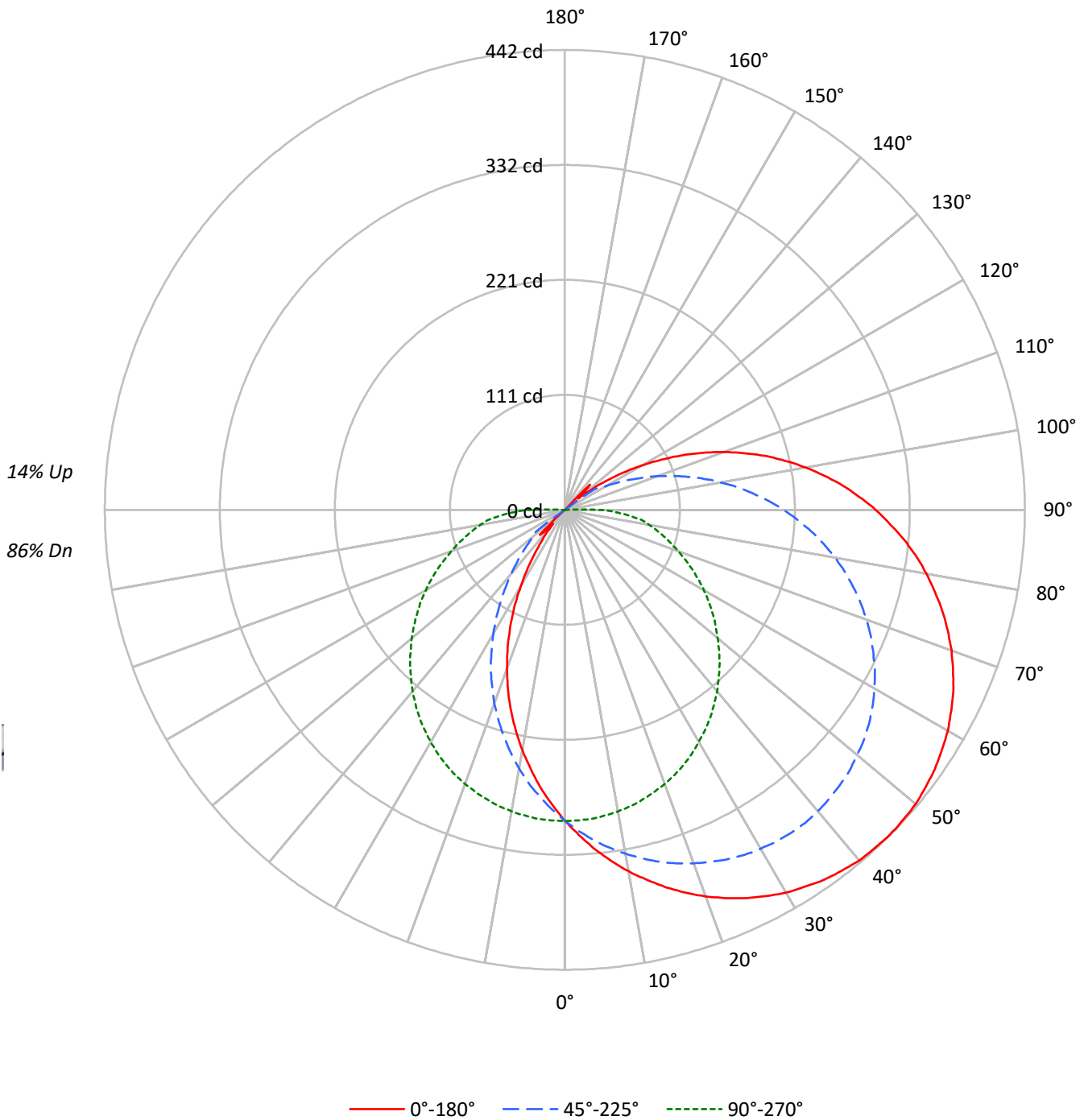
Input Watts (W): 18  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	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°	11670	11670	11670	11670	11670
5°	11571	11592	11661	10057	9484
10°	11485	11500	11624	8655	7643
15°	11404	11435	11591	7374	6066
20°	11329	11350	11560	6218	4650
25°	11251	11282	11529	5122	3385
30°	11175	11199	11472	4081	2228
35°	11087	11127	11444	3157	1216
40°	11003	11033	11400	2337	433
45°	10901	10924	11373	1662	842
50°	10800	10809	11365	1194	0
55°	10678	10701	11445	0	0
60°	10556	10554	11623	0	0
65°	10412	10389	11922	0	0
70°	10258	10221	12502	0	0
75°	10085	10017	13726	0	0
80°	9893	9792	16493	0	0
85°	9675	9529	22339	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 90°  
 Luminance: 62453 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	28.3	2.1
10°-20°	81.3	6.0
20°-30°	124.1	9.1
30°-40°	152.2	11.2
40°-50°	167.8	12.4
50°-60°	171.3	12.6
60°-70°	165.8	12.2
70°-80°	147.7	10.9
80°-90°	124.4	9.2
90°-100°	91.1	6.7
100°-110°	61.2	4.5
110°-120°	30.1	2.2
120°-130°	10.6	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°	233.7	17.2
0°-40°	386.0	28.4
0°-60°	725.0	53.4
0°-90°	1163.0	85.6
90°-120°	182.4	13.4
90°-150°	195.2	14.4
90°-180°	195.0	14.4
0°-180°	1358.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	299	299	299	299	299	
5°	327	319	298	276	268	32
15°	376	350	288	226	200	107
25°	412	370	270	168	124	191
35°	434	379	244	108	48	272
45°	442	374	210	57	34	341
55°	434	357	173	0	0	389
65°	412	327	135	0	0	408
75°	376	287	98	0	0	396
85°	327	238	62	0	0	272
90°	299	210	34	0	0	164
95°	268	181	0	0	0	212
105°	200	123	0	0	0	211
115°	124	68	0	0	0	123
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



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	298.8	298.8	298.8	298.8	298.8	298.8	298.8	298.8	298.8
2.5°	312.8	311.9	309.0	304.3	298.8	292.9	287.9	284.5	283.2
5°	327.1	325.0	318.7	309.0	298.0	286.2	276.5	270.2	268.1
7.5°	340.2	336.8	327.5	313.2	296.3	279.5	265.1	255.0	251.2
10°	352.8	348.6	335.5	316.5	294.2	271.9	252.5	239.4	234.8
12.5°	364.2	359.1	343.1	319.5	291.7	263.4	239.4	223.4	217.1
15°	375.6	368.8	350.3	321.6	288.3	254.6	225.9	207.0	199.8
17.5°	385.7	378.1	356.2	323.3	284.5	245.3	212.0	189.7	181.2
20°	395.4	386.5	361.6	324.6	280.3	235.6	198.1	172.0	162.3
22.5°	403.8	394.1	366.3	325.0	275.7	225.5	182.9	154.3	143.3
25°	411.8	400.8	370.5	324.6	270.2	215.4	168.2	136.1	123.9
27.5°	418.5	406.7	373.9	323.7	264.3	204.4	152.6	118.0	104.5
30°	424.9	412.2	376.0	322.0	257.5	193.5	137.0	100.3	84.7
32.5°	429.5	416.4	378.1	319.5	250.8	182.1	122.2	82.6	66.2
35°	434.1	419.4	378.9	316.5	243.6	170.3	107.5	66.2	47.6
37.5°	437.1	421.9	379.3	313.2	235.6	158.9	93.2	50.6	32.5
40°	440.0	423.6	378.1	309.0	227.6	147.1	80.1	37.5	17.3
42.5°	440.9	424.5	376.4	304.3	218.8	135.7	67.4	27.8	25.7
45°	441.7	424.5	373.9	298.4	210.3	124.8	56.9	31.2	34.1
47.5°	440.9	423.2	370.9	292.5	201.1	114.2	46.8	0.0	0.0
50°	440.0	420.7	366.7	285.8	191.8	103.7	40.5	0.0	0.0
52.5°	437.1	417.7	362.5	278.6	182.5	94.0	37.5	0.0	0.0
55°	434.1	414.3	357.0	270.6	173.2	84.3	0.0	0.0	0.0
57.5°	429.5	409.3	350.7	262.2	164.0	75.9	0.0	0.0	0.0
60°	424.9	403.8	343.5	253.3	154.3	67.9	0.0	0.0	0.0
62.5°	418.5	397.5	335.9	244.5	144.6	60.3	0.0	0.0	0.0
65°	411.8	389.9	327.1	234.8	134.9	51.0	0.0	0.0	0.0
67.5°	403.8	381.9	318.2	225.1	125.2	40.9	0.0	0.0	0.0
70°	395.4	373.0	308.5	215.0	115.9	0.0	0.0	0.0	0.0
72.5°	385.7	362.9	298.0	204.0	107.1	0.0	0.0	0.0	0.0
75°	375.6	352.8	287.0	193.0	98.2	0.0	0.0	0.0	0.0
77.5°	364.2	341.4	275.7	181.7	90.2	0.0	0.0	0.0	0.0
80°	352.8	330.0	263.4	170.7	82.2	0.0	0.0	0.0	0.0
82.5°	340.2	317.0	250.8	159.3	74.2	0.0	0.0	0.0	0.0
85°	327.1	303.9	237.7	147.9	62.0	0.0	0.0	0.0	0.0
87.5°	312.8	290.0	223.8	136.6	48.1	0.0	0.0	0.0	0.0
90°	298.8	275.7	210.3	125.2	34.1	0.0	0.0	0.0	0.0
92.5°	283.2	260.5	196.0	114.6	0.0	0.0	0.0	0.0	0.0
95°	268.1	244.9	181.2	104.1	0.0	0.0	0.0	0.0	0.0
97.5°	251.2	228.9	166.9	93.2	0.0	0.0	0.0	0.0	0.0
100°	234.8	212.4	152.2	83.5	0.0	0.0	0.0	0.0	0.0
102.5°	217.1	195.2	137.4	73.3	0.0	0.0	0.0	0.0	0.0
105°	199.8	177.9	122.7	62.8	0.0	0.0	0.0	0.0	0.0
107.5°	181.2	159.7	108.3	50.2	0.0	0.0	0.0	0.0	0.0
110°	162.3	141.6	94.4	38.4	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°	143.3	123.9	80.9	0.0	0.0	0.0	0.0	0.0	0.0
115°	123.9	105.8	67.9	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	104.1	88.5	56.1	0.0	0.0	0.0	0.0	0.0	0.0
120°	84.7	72.1	45.1	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	66.2	55.6	39.6	0.0	0.0	0.0	0.0	0.0	0.0
125°	47.6	42.6	34.6	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	32.5	29.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	17.3	31.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	25.7	34.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	34.1	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)