

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  
(formerly Eaton)

Brand: iO LED

Report Number: P591959

Luminaire Tested: **GRZ-05L-930-10x60-X-UNV-STD-4F**

Issue Date: 2/2/2022

**Test Information**

Test Method: LM-79-2019  
Report Number: P591959  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2111-457-18)  
Test Lab: INNOVATION CENTER  
Issue Date: 2/2/2022  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: iO LED  
Catalog Number: GRZ-05L-930-10x60-X-UNV-STD-4F  
Description: iO LED GRAZER WITH 10x60 OPTIC  
500 LUMENS PER FOOT, 4 FOOT FIXTURE  
SUMULATED RESULTS  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

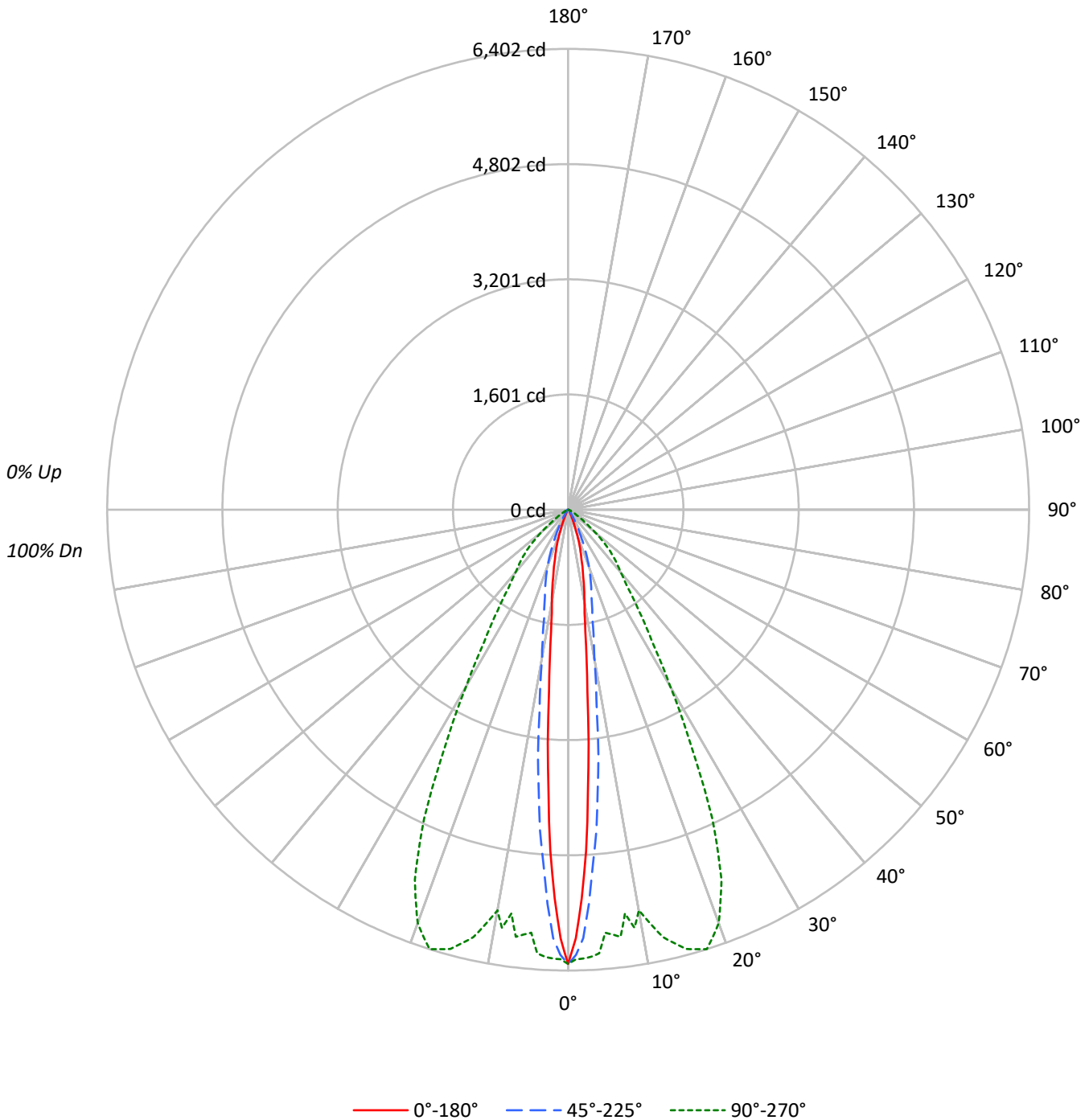
Lumens per Lamp: N/A  
Luminaire Lumens: 1958.0 lumens  
Efficiency: N/A  
Efficacy: 101.5 lumens/watt  
Spacing Criteria (0/90/45): 0.18 / 0.97 / 0.31  
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')  
CIE Type: Direct

Input Watts (W): 19.3  
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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	111	109	106	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	108	104	100	97	106	102	98	95	99	96	93	96	93	91	93	91	89	88
3	103	97	92	89	101	96	91	88	93	90	86	91	88	85	89	86	84	82
4	98	91	86	82	97	90	85	82	88	84	81	86	83	80	84	81	79	77
5	94	86	81	77	92	85	80	76	83	79	76	82	78	75	80	77	74	73
6	90	82	76	72	88	81	75	72	79	75	71	78	74	71	77	73	70	69
7	86	77	72	68	85	77	71	68	75	71	67	74	70	67	73	69	67	65
8	82	74	68	64	81	73	68	64	72	67	64	71	67	64	70	66	63	62
9	79	70	65	61	78	70	64	61	69	64	61	68	64	60	67	63	60	59
10	76	67	62	58	75	67	61	58	66	61	58	65	61	58	64	60	58	56

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	101893	101893	101893
5°	52775	72553	95598
10°	21354	34264	92635
15°	11946	20929	105611
20°	5835	14428	105034
25°	2095	7812	84270
30°	1113	3619	52843
35°	773	1691	33764
40°	668	1022	23912
45°	596	895	19089
50°	563	937	12140
55°	473	892	5883
60°	481	662	3013
65°	500	428	1498
70°	529	354	883
75°	468	349	580
80°	344	344	344
85°	352	352	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	377.5	19.3
10°-20°	601.6	30.7
20°-30°	506.3	25.9
30°-40°	255.9	13.1
40°-50°	129.8	6.6
50°-60°	58.7	3.0
60°-70°	19.5	1.0
70°-80°	7.4	0.4
80°-90°	1.3	0.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
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°	1485.5	75.9
0°-40°	1741.3	88.9
0°-60°	1929.8	98.6
0°-90°	1958.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1958.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6311	6311	6311	6311	6311	
5°	3256	3533	4476	5466	5898	244
15°	715	845	1252	2995	6318	201
25°	118	160	438	1548	4730	65
35°	39	46	86	649	1713	26
45°	26	29	39	202	836	20
55°	17	21	32	77	209	16
65°	13	11	11	22	39	13
75°	8	8	6	8	9	8
85°	2	2	2	0	0	2
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	6310.8	6310.8	6310.8	6310.8	6310.8	6310.8	6310.8	6310.8	6310.8	6310.8	6310.8
1°	5956.2	6189.5	6353.7	6113.0	6299.6	6185.8	6264.1	6137.2	6224.9	6295.9	6245.5
2°	5405.8	5702.5	5693.1	5665.1	5713.7	5954.4	6172.7	6152.2	6249.2	6208.1	6238.0
3°	4745.2	4903.8	4956.1	5036.3	5245.3	5482.3	5751.0	5988.0	6228.7	6277.2	6217.5
4°	3929.8	3987.6	4164.9	4187.3	4584.7	4922.5	5375.9	5644.6	6120.4	6198.8	6178.3
5°	3256.2	3239.4	3407.3	3575.2	4071.6	4476.5	5032.6	5312.5	5924.5	6137.2	5898.4
6°	2532.1	2668.4	2830.7	2987.5	3416.6	3927.9	4525.0	5163.2	5861.1	6051.4	5935.7
7°	2106.7	2134.7	2254.1	2377.3	2841.9	3448.4	3961.5	4769.5	5534.5	5924.5	5978.6
8°	1709.2	1709.2	1864.1	1976.1	2418.3	2853.1	3666.7	4401.9	5351.7	5920.8	5665.1
9°	1455.5	1489.1	1561.8	1739.1	1998.5	2468.7	3168.5	4066.0	5211.7	5812.6	5879.7
10°	1302.5	1347.2	1386.4	1453.6	1731.6	2089.9	2812.0	3739.4	5092.3	5818.2	5650.2
12.5°	966.6	990.8	1037.5	1115.9	1326.7	1545.0	2116.0	3095.7	4513.8	5918.9	6081.3
15°	714.7	722.1	787.4	864.0	1041.2	1252.1	1634.6	2569.5	4273.1	6096.2	6318.2
17.5°	528.1	537.4	580.3	651.2	772.5	1039.4	1407.0	2121.6	3993.2	6083.1	6402.2
20°	339.6	350.8	393.7	449.7	595.3	839.7	1183.0	1750.3	3582.7	5646.5	6113.0
22.5°	201.5	212.7	227.7	281.8	418.0	628.8	974.0	1505.9	2853.1	5064.3	5564.4
25°	117.6	115.7	132.5	169.8	255.6	438.5	794.9	1287.5	2330.6	4368.3	4730.3
27.5°	76.5	78.4	85.8	104.5	158.6	294.8	627.0	1106.5	1830.5	3327.1	3694.7
30°	59.7	59.7	63.4	72.8	102.6	194.1	472.1	921.8	1509.6	2539.6	2834.4
32.5°	46.6	48.5	50.4	56.0	72.8	126.9	339.6	737.1	1229.7	1916.4	2157.1
35°	39.2	41.1	42.9	46.6	57.8	85.8	231.4	541.1	972.2	1453.6	1713.0
37.5°	35.5	35.5	37.3	39.2	48.5	61.6	151.1	369.5	742.7	1196.1	1349.1
40°	31.7	31.7	33.6	35.5	42.9	48.5	93.3	242.6	578.5	987.1	1134.5
42.5°	28.0	29.9	31.7	31.7	37.3	42.9	65.3	181.0	470.2	882.6	985.2
45°	26.1	26.1	28.0	29.9	35.5	39.2	50.4	139.9	388.1	742.7	836.0
47.5°	24.3	24.3	26.1	28.0	33.6	37.3	41.1	108.2	324.7	600.8	666.2
50°	22.4	22.4	24.3	28.0	31.7	37.3	33.6	82.1	259.4	449.7	483.3
52.5°	18.7	20.5	22.4	24.3	28.0	35.5	28.0	63.4	214.6	315.4	317.2
55°	16.8	16.8	18.7	22.4	24.3	31.7	22.4	46.6	167.9	216.5	209.0
57.5°	16.8	14.9	16.8	18.7	20.5	28.0	16.8	35.5	125.0	145.5	134.4
60°	14.9	14.9	14.9	14.9	16.8	20.5	13.1	28.0	91.4	97.0	93.3
62.5°	13.1	13.1	13.1	13.1	13.1	16.8	11.2	20.5	61.6	61.6	57.8
65°	13.1	13.1	11.2	11.2	11.2	11.2	9.3	16.8	39.2	39.2	39.2
67.5°	13.1	11.2	11.2	9.3	9.3	9.3	7.5	13.1	24.3	28.0	26.1
70°	11.2	11.2	9.3	9.3	7.5	7.5	7.5	11.2	16.8	18.7	18.7
72.5°	9.3	9.3	9.3	7.5	7.5	5.6	5.6	9.3	13.1	13.1	13.1
75°	7.5	7.5	7.5	7.5	5.6	5.6	3.7	7.5	7.5	9.3	9.3
77.5°	5.6	5.6	5.6	5.6	5.6	3.7	3.7	5.6	5.6	5.6	5.6
80°	3.7	3.7	3.7	3.7	3.7	3.7	1.9	3.7	3.7	3.7	3.7
82.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
85°	1.9	1.9	1.9	1.9	1.9	1.9	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)