

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: P592023

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

Issue Date: 2/2/2022

**Test Information**

Test Method: LM-79-2019  
Report Number: P592023  
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-10L-930-10x60-X-UNV-STD-4F  
Description: iO LED GRAZER WITH 10x60 OPTIC  
1000 LUMENS PER FOOT, 4 FOOT FIXTURE  
SUMULATED RESULTS  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

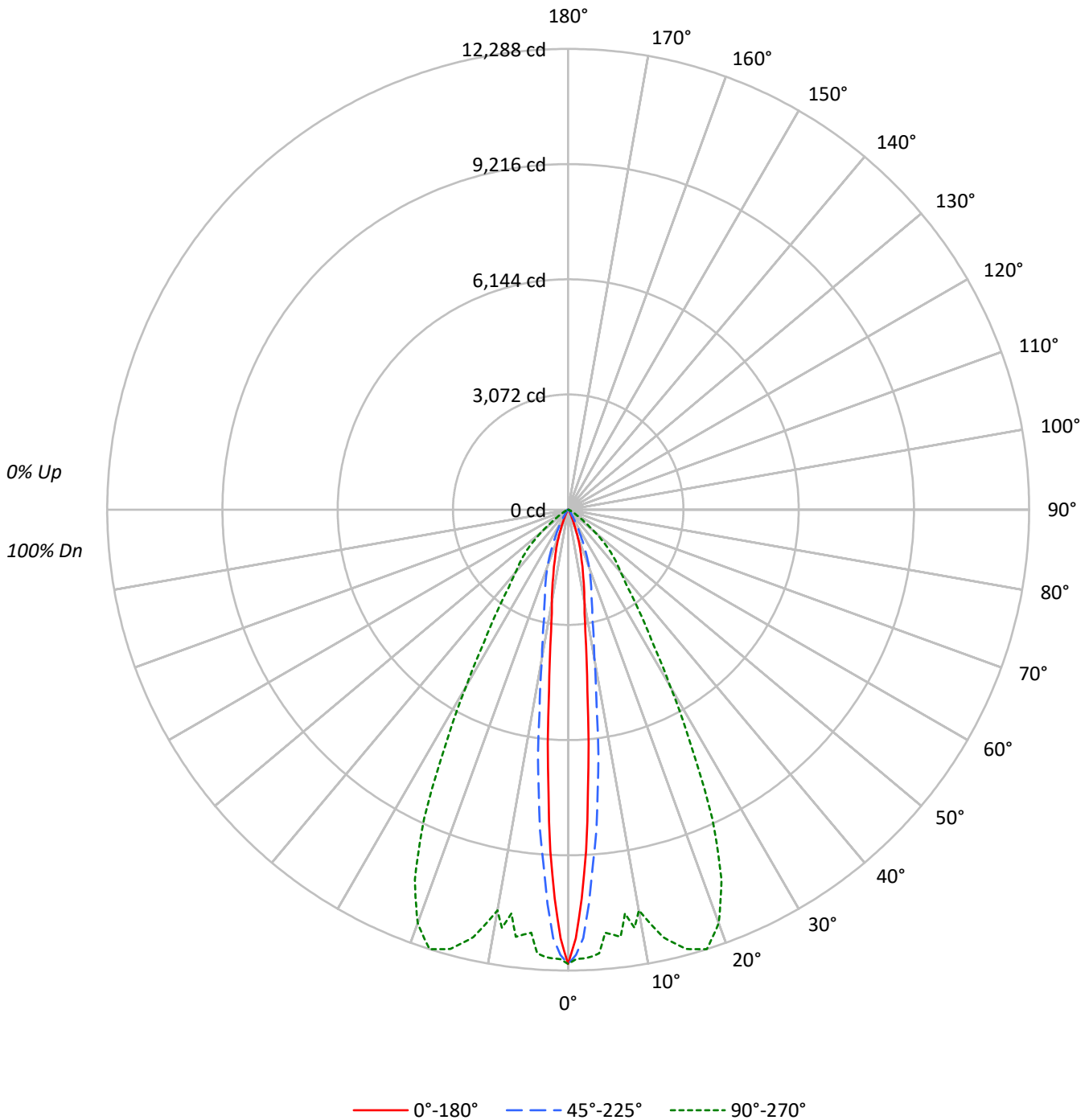
Lumens per Lamp: N/A  
Luminaire Lumens: 3758.0 lumens  
Efficiency: N/A  
Efficacy: 98.9 lumens/watt  
Spacing Criteria (0/90/45): 0.18 / 0.97 / 0.31  
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')  
CIE Type: Direct

Input Watts (W): 38  
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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	114	111	109	106	111	109	107	105	105	103	102	101	100	99	98	97	96	94				94
2	108	104	100	97	106	102	98	95	99	96	93	96	93	91	93	91	89	88				88
3	103	97	92	89	101	96	91	88	93	90	86	91	88	85	89	86	84	82				82
4	98	91	86	82	97	90	85	82	88	84	81	86	83	80	84	81	79	77				77
5	94	86	81	77	92	85	80	76	83	79	76	82	78	75	80	77	74	73				73
6	90	82	76	72	88	81	75	72	79	75	71	78	74	71	77	73	70	69				69
7	86	77	72	68	85	77	71	68	75	71	67	74	70	67	73	69	67	65				65
8	82	74	68	64	81	73	68	64	72	67	64	71	67	64	70	66	63	62				62
9	79	70	65	61	78	70	64	61	69	64	61	68	64	60	67	63	60	59				59
10	76	67	62	58	75	67	61	58	66	61	58	65	61	58	64	60	58	56				56

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

	0°	45°	90°
0°	195563	195563	195563
5°	101290	139252	183482
10°	40984	65763	177795
15°	22929	40169	202701
20°	11199	27691	201592
25°	4019	14993	161740
30°	2137	6945	101425
35°	1482	3246	64802
40°	1284	1962	45895
45°	1144	1717	36637
50°	1080	1798	23300
55°	906	1714	11291
60°	927	1272	5783
65°	959	821	2873
70°	1015	675	1690
75°	892	667	1117
80°	669	669	669
85°	667	667	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	724.5	19.3
10°-20°	1154.7	30.7
20°-30°	971.8	25.9
30°-40°	491.1	13.1
40°-50°	249.1	6.6
50°-60°	112.6	3.0
60°-70°	37.5	1.0
70°-80°	14.2	0.4
80°-90°	2.4	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°	2851.1	75.9
0°-40°	3342.1	88.9
0°-60°	3703.8	98.6
0°-90°	3758.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3758.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	12112	12112	12112	12112	12112	
5°	6250	6781	8592	10490	11321	467
15°	1372	1622	2403	5749	12127	386
25°	226	308	842	2972	9079	125
35°	75	88	165	1245	3288	50
45°	50	56	75	388	1604	39
55°	32	41	61	148	401	30
65°	25	22	22	43	75	25
75°	14	14	11	14	18	15
85°	4	4	4	0	0	3
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°	12112.3	12112.3	12112.3	12112.3	12112.3	12112.3	12112.3	12112.3	12112.3	12112.3	12112.3
1°	11431.8	11879.5	12194.7	11732.7	12090.8	11872.4	12022.8	11779.2	11947.6	12083.7	11987.0
2°	10375.3	10944.8	10926.9	10873.1	10966.3	11428.3	11847.3	11807.9	11994.1	11915.3	11972.6
3°	9107.5	9411.9	9512.2	9666.2	10067.3	10522.2	11037.9	11492.7	11954.7	12047.8	11933.2
4°	7542.4	7653.5	7993.7	8036.7	8799.5	9447.7	10318.0	10833.8	11747.0	11897.4	11858.0
5°	6249.6	6217.3	6539.6	6862.0	7814.6	8591.8	9659.1	10196.3	11371.0	11779.2	11320.8
6°	4860.0	5121.4	5433.0	5733.8	6557.6	7538.9	8684.9	9909.7	11249.2	11614.5	11392.5
7°	4043.4	4097.1	4326.3	4562.7	5454.5	6618.4	7603.3	9154.1	10622.4	11371.0	11474.8
8°	3280.6	3280.6	3577.8	3792.7	4641.5	5476.0	7037.5	8448.5	10271.5	11363.8	10873.1
9°	2793.5	2858.0	2997.6	3337.9	3835.7	4738.2	6081.2	7803.9	10002.9	11156.1	11285.0
10°	2499.8	2585.8	2661.0	2789.9	3323.5	4011.2	5397.2	7177.1	9773.7	11166.8	10844.5
12.5°	1855.2	1901.7	1991.3	2141.7	2546.4	2965.4	4061.3	5941.6	8663.4	11360.2	11671.8
15°	1371.7	1386.0	1511.4	1658.2	1998.4	2403.1	3137.3	4931.6	8201.4	11700.5	12126.6
17.5°	1013.5	1031.4	1113.8	1249.9	1482.7	1994.8	2700.4	4072.1	7664.2	11675.4	12287.8
20°	651.8	673.3	755.7	863.1	1142.5	1611.6	2270.6	3359.4	6876.3	10837.3	11732.7
22.5°	386.8	408.3	436.9	540.8	802.2	1206.9	1869.5	2890.2	5476.0	9719.9	10679.8
25°	225.6	222.0	254.3	325.9	490.7	841.6	1525.7	2471.2	4473.2	8384.1	9078.9
27.5°	146.8	150.4	164.7	200.6	304.4	565.9	1203.4	2123.8	3513.4	6385.6	7091.2
30°	114.6	114.6	121.8	139.7	197.0	372.5	906.1	1769.2	2897.4	4874.3	5440.2
32.5°	89.5	93.1	96.7	107.4	139.7	243.5	651.8	1414.7	2360.1	3678.1	4140.1
35°	75.2	78.8	82.4	89.5	111.0	164.7	444.1	1038.6	1865.9	2789.9	3287.7
37.5°	68.0	68.0	71.6	75.2	93.1	118.2	290.1	709.1	1425.4	2295.7	2589.4
40°	60.9	60.9	64.5	68.0	82.4	93.1	179.1	465.6	1110.2	1894.6	2177.5
42.5°	53.7	57.3	60.9	60.9	71.6	82.4	125.3	347.4	902.5	1694.0	1891.0
45°	50.1	50.1	53.7	57.3	68.0	75.2	96.7	268.6	744.9	1425.4	1604.5
47.5°	46.6	46.6	50.1	53.7	64.5	71.6	78.8	207.7	623.2	1153.2	1278.6
50°	43.0	43.0	46.6	53.7	60.9	71.6	64.5	157.6	497.8	863.1	927.6
52.5°	35.8	39.4	43.0	46.6	53.7	68.0	53.7	121.8	411.9	605.3	608.8
55°	32.2	32.2	35.8	43.0	46.6	60.9	43.0	89.5	322.3	415.4	401.1
57.5°	32.2	28.7	32.2	35.8	39.4	53.7	32.2	68.0	240.0	279.3	257.9
60°	28.7	28.7	28.7	28.7	32.2	39.4	25.1	53.7	175.5	186.2	179.1
62.5°	25.1	25.1	25.1	25.1	25.1	32.2	21.5	39.4	118.2	118.2	111.0
65°	25.1	25.1	21.5	21.5	21.5	21.5	17.9	32.2	75.2	75.2	75.2
67.5°	25.1	21.5	21.5	17.9	17.9	17.9	14.3	25.1	46.6	53.7	50.1
70°	21.5	21.5	17.9	17.9	14.3	14.3	14.3	21.5	32.2	35.8	35.8
72.5°	17.9	17.9	17.9	14.3	14.3	10.7	10.7	17.9	25.1	25.1	25.1
75°	14.3	14.3	14.3	14.3	10.7	10.7	7.2	14.3	14.3	17.9	17.9
77.5°	10.7	10.7	10.7	10.7	10.7	7.2	7.2	10.7	10.7	10.7	10.7
80°	7.2	7.2	7.2	7.2	7.2	7.2	3.6	7.2	7.2	7.2	7.2
82.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
85°	3.6	3.6	3.6	3.6	3.6	3.6	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)