

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: P592018

Luminaire Tested: **GRZ-10L-930-10x10FR-X-UNV-STD-2F**

Issue Date: 2/2/2022

**Test Information**

Test Method: LM-79-2019  
Report Number: P592018  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2111-457-16)  
Test Lab: INNOVATION CENTER  
Issue Date: 2/2/2022  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: iO LED  
Catalog Number: GRZ-10L-930-10x10FR-X-UNV-STD-2F  
Description: iO LED GRAZER WITH 10x10FR OPTIC  
1000 LUMENS PER FOOT, 2 FOOT FIXTURE  
SUMULATED RESULTS  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

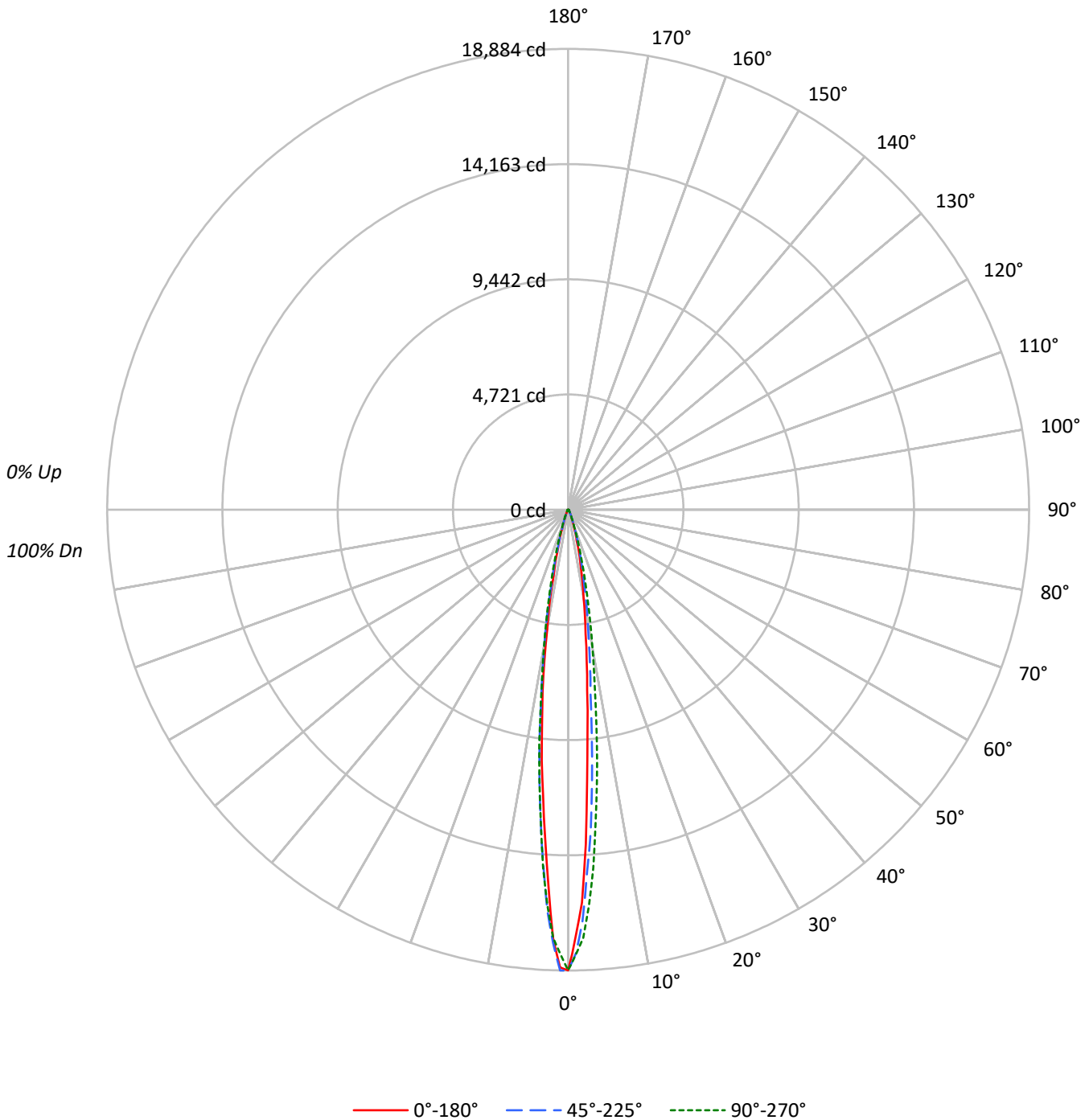
Lumens per Lamp: N/A  
Luminaire Lumens: 1743.0 lumens  
Efficiency: N/A  
Efficacy: 91.3 lumens/watt  
Spacing Criteria (0/90/45): 0.19 / 0.25 / 0.25  
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')  
CIE Type: Direct

Input Watts (W): 19.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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



TEST NUMBER: P592018  
CATALOG NUMBER: GRZ-10L-930-10x10FR-X-UNV-STD-2F

### Luminous Intensity Polar Plot





TEST NUMBER: P592018

CATALOG NUMBER: GRZ-10L-930-10x10FR-X-UNV-STD-2F

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20							
RC	80				70				50				30				10							
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10				
RCR																								
0	119	119	119	119	116	116	116	116	111	111	111	111	106	106	106	106	102	102	102	102	100	100	100	100
1	115	113	111	109	113	111	109	107	107	105	104	104	103	102	101	101	100	99	98	98	97	97	97	97
2	111	108	105	102	109	106	103	101	103	101	99	99	100	98	97	97	97	96	95	95	93	93	93	93
3	108	103	100	97	106	102	99	96	100	97	95	95	97	95	93	93	95	93	92	92	91	91	91	91
4	105	100	96	93	103	99	95	92	97	94	91	91	95	92	90	90	93	91	89	89	88	88	88	88
5	102	96	93	90	101	96	92	89	94	91	89	89	93	90	88	88	91	89	87	87	86	86	86	86
6	100	94	90	87	98	93	89	87	92	89	86	86	91	88	86	86	89	87	85	85	84	84	84	84
7	97	91	87	85	96	91	87	84	90	86	84	84	89	86	84	84	88	85	83	83	82	82	82	82
8	95	89	85	83	94	89	85	83	88	85	82	82	87	84	82	82	86	84	82	82	81	81	81	81
9	93	87	83	81	92	87	83	81	86	83	81	81	85	82	80	80	85	82	80	80	79	79	79	79
10	91	85	82	79	91	85	82	79	84	81	79	79	84	81	79	79	83	81	79	79	78	78	78	78

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

	0°	90°	180°
0°	609580	609580	609580
5°	294283	416569	381441
10°	118886	185259	163116
15°	47131	68152	50484
20°	18405	22529	14835
25°	8487	8936	6830
30°	5011	4877	4008
35°	3390	3390	2685
40°	2567	2719	2116
45°	2210	2370	1799
50°	1889	2160	1532
55°	1717	2015	1413
60°	1505	1970	1389
65°	1368	1918	1368
70°	1180	1860	1180
75°	898	1560	1123
80°	669	1339	1004
85°	667	667	667



TEST NUMBER: P592018

CATALOG NUMBER: GRZ-10L-930-10x10FR-X-UNV-STD-2F

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	909.8	52.2
10°-20°	549.9	31.5
20°-30°	122.7	7.0
30°-40°	53.1	3.0
40°-50°	38.2	2.2
50°-60°	30.3	1.7
60°-70°	22.6	1.3
70°-80°	13.0	0.7
80°-90°	3.3	0.2
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°	1582.5	90.8
0°-40°	1635.5	93.8
0°-60°	1704.0	97.8
0°-90°	1743.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1743.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	18877	18877	18877	18877	18877	
5°	9079	11203	12851	12910	11767	708
15°	1410	1816	2039	1678	1510	433
25°	238	270	251	197	192	122
35°	86	86	86	75	68	55
45°	48	52	52	47	39	37
55°	30	38	36	32	25	26
65°	18	27	25	22	18	17
75°	7	14	12	12	9	8
85°	2	4	2	4	2	2
90°	0	0	0	0	0	



TEST NUMBER: P592018

CATALOG NUMBER: GRZ-10L-930-10x10FR-X-UNV-STD-2F

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	18877.3	18877.3	18877.3	18877.3	18877.3	18877.3	18877.3	18877.3	18877.3	18877.3	18877.3
1°	17515.8	18065.8	17929.6	18058.6	18081.9	18169.7	18227.0	18266.4	18361.3	18327.3	18210.9
2°	16113.2	16417.7	16399.8	16478.6	16928.3	16865.6	17026.8	17367.1	17313.4	17392.2	17557.0
3°	13714.6	14382.8	14228.7	14214.4	14646.1	14832.4	15471.9	15622.4	15996.8	16249.3	16254.7
4°	11079.5	11513.0	11615.1	12440.9	12394.4	13211.2	13592.8	13906.3	14198.2	15111.8	14714.2
5°	9078.6	9399.2	9718.1	10124.7	10225.0	11203.1	11419.9	11871.3	12661.3	13003.4	12851.1
6°	7432.3	7747.6	7745.8	8154.2	8528.6	9227.2	9469.1	10117.5	10760.6	11212.1	11231.8
7°	6182.0	6362.9	6477.5	6740.9	7158.2	7529.0	8095.1	8521.5	8935.3	9406.4	9693.0
8°	5141.2	5314.9	5379.4	5619.5	5866.7	6393.3	6959.4	7290.8	7724.3	8134.5	8052.1
9°	4320.7	4591.2	4553.6	4695.1	4976.4	5332.9	5671.4	6162.2	6441.7	6846.5	6753.4
10°	3625.7	3797.7	3908.7	4086.1	4190.0	4580.5	4786.5	5105.3	5456.5	5512.0	5649.9
12.5°	2378.9	2418.3	2441.6	2529.4	2719.3	2909.2	3115.2	3283.5	3387.4	3408.9	3511.0
15°	1409.8	1477.9	1492.2	1612.2	1716.1	1816.4	1947.2	1972.3	2027.8	2006.3	2038.6
17.5°	867.0	874.2	927.9	929.7	1042.6	1094.5	1185.9	1207.4	1176.9	1160.8	1160.8
20°	535.6	539.2	553.5	591.1	612.6	670.0	716.5	721.9	705.8	671.8	655.6
22.5°	347.5	358.3	347.5	361.9	383.3	415.6	437.1	440.7	419.2	406.6	404.8
25°	238.2	240.0	249.0	240.0	250.8	270.5	277.7	283.0	265.1	259.7	250.8
27.5°	175.6	175.6	175.6	175.6	179.1	179.1	182.7	184.5	179.1	175.6	177.3
30°	134.4	132.6	134.4	134.4	130.8	134.4	136.1	136.1	132.6	132.6	130.8
32.5°	103.9	105.7	107.5	105.7	103.9	105.7	107.5	105.7	105.7	107.5	103.9
35°	86.0	86.0	87.8	86.0	86.0	86.0	87.8	87.8	87.8	87.8	86.0
37.5°	69.9	71.7	73.4	73.4	73.4	73.4	75.2	75.2	77.0	73.4	71.7
40°	60.9	60.9	62.7	62.7	64.5	62.7	64.5	66.3	66.3	64.5	64.5
42.5°	53.7	53.7	55.5	55.5	55.5	57.3	59.1	59.1	59.1	59.1	57.3
45°	48.4	46.6	48.4	50.2	51.9	51.9	53.7	55.5	53.7	53.7	51.9
47.5°	43.0	43.0	43.0	44.8	46.6	48.4	48.4	50.2	50.2	48.4	46.6
50°	37.6	37.6	39.4	41.2	43.0	44.8	44.8	46.6	46.6	44.8	43.0
52.5°	32.2	32.2	34.0	37.6	39.4	41.2	41.2	43.0	43.0	41.2	39.4
55°	30.5	28.7	30.5	32.2	35.8	37.6	39.4	39.4	39.4	37.6	35.8
57.5°	25.1	25.1	26.9	28.7	32.2	35.8	35.8	37.6	35.8	34.0	34.0
60°	23.3	23.3	25.1	26.9	30.5	34.0	34.0	34.0	32.2	30.5	30.5
62.5°	19.7	19.7	21.5	23.3	26.9	30.5	32.2	32.2	30.5	28.7	26.9
65°	17.9	17.9	17.9	21.5	25.1	26.9	28.7	28.7	26.9	25.1	25.1
67.5°	14.3	14.3	16.1	17.9	21.5	23.3	25.1	26.9	25.1	23.3	21.5
70°	12.5	12.5	12.5	16.1	19.7	21.5	23.3	23.3	21.5	19.7	19.7
72.5°	9.0	9.0	10.7	12.5	16.1	17.9	19.7	19.7	17.9	16.1	16.1
75°	7.2	7.2	9.0	10.7	12.5	14.3	16.1	16.1	16.1	14.3	12.5
77.5°	5.4	5.4	7.2	9.0	10.7	12.5	12.5	12.5	12.5	10.7	10.7
80°	3.6	3.6	5.4	5.4	7.2	9.0	9.0	9.0	9.0	7.2	7.2
82.5°	3.6	1.8	3.6	3.6	5.4	5.4	7.2	7.2	5.4	5.4	5.4
85°	1.8	1.8	1.8	1.8	3.6	3.6	3.6	3.6	3.6	3.6	1.8
87.5°	0.0	0.0	0.0	0.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P592018

CATALOG NUMBER: GRZ-10L-930-10x10FR-X-UNV-STD-2F

**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	18877.3	18877.3	18877.3	18877.3	18877.3	18877.3	18877.3	18877.3	18877.3	18877.3
1°	18497.5	18768.0	18588.8	18789.5	18884.4	18884.4	18916.7	18780.5	18690.9	18757.2
2°	17628.7	17865.1	17935.0	17895.6	17775.6	17793.5	17566.0	17542.7	17243.5	17589.3
3°	16378.3	16639.9	16532.4	16394.4	16417.7	16161.6	15796.1	15624.2	15518.5	15470.1
4°	14877.2	15045.6	15016.9	14920.2	14617.4	14318.3	13986.9	14097.9	13422.6	13512.2
5°	13245.2	13433.3	13336.6	13017.7	12910.3	12587.8	12421.2	12077.3	11713.6	11767.4
6°	11394.8	11332.1	11516.6	11292.7	11240.7	10672.9	10583.3	10640.6	10386.2	10363.0
7°	9512.1	9949.2	9827.3	9667.9	9607.0	9268.4	9214.7	8867.2	8888.7	8756.1
8°	8277.8	8320.8	8433.7	8216.9	8019.9	7978.7	7770.9	7566.7	7611.4	7518.3
9°	6882.4	7016.7	6925.4	6946.9	6690.7	6425.6	6327.0	6380.8	6228.5	6250.0
10°	5576.5	5793.2	5735.9	5687.5	5637.4	5363.3	5316.7	5194.9	5114.3	4974.6
12.5°	3511.0	3430.4	3469.8	3314.0	3253.1	3039.9	2998.7	2946.8	2773.0	2773.0
15°	2137.1	1966.9	2027.8	1830.8	1678.5	1633.7	1520.9	1522.6	1517.3	1510.1
17.5°	1125.0	1125.0	1099.9	944.0	897.5	816.9	806.1	816.9	790.0	795.4
20°	661.0	637.7	600.1	526.7	494.4	460.4	453.2	447.8	447.8	431.7
22.5°	406.6	386.9	365.4	320.7	295.6	284.8	274.1	279.5	279.5	281.2
25°	259.7	243.6	234.7	207.8	197.0	195.3	189.9	182.7	184.5	191.7
27.5°	173.8	166.6	159.4	148.7	141.5	137.9	137.9	139.7	136.1	132.6
30°	130.8	121.8	118.2	114.6	109.3	109.3	109.3	107.5	105.7	107.5
32.5°	103.9	98.5	94.9	91.4	89.6	87.8	89.6	87.8	86.0	84.2
35°	86.0	80.6	78.8	77.0	75.2	73.4	73.4	73.4	69.9	68.1
37.5°	71.7	69.9	69.9	66.3	64.5	62.7	62.7	62.7	59.1	59.1
40°	64.5	62.7	60.9	59.1	57.3	55.5	53.7	53.7	50.2	50.2
42.5°	57.3	55.5	55.5	53.7	51.9	48.4	48.4	46.6	44.8	44.8
45°	51.9	50.2	50.2	48.4	46.6	44.8	43.0	41.2	39.4	39.4
47.5°	48.4	46.6	46.6	44.8	41.2	39.4	37.6	35.8	35.8	35.8
50°	43.0	43.0	43.0	41.2	39.4	37.6	34.0	32.2	30.5	30.5
52.5°	39.4	39.4	37.6	37.6	35.8	34.0	30.5	28.7	28.7	28.7
55°	37.6	35.8	35.8	34.0	32.2	32.2	28.7	26.9	25.1	25.1
57.5°	34.0	32.2	32.2	30.5	30.5	28.7	25.1	25.1	23.3	23.3
60°	30.5	28.7	28.7	26.9	26.9	25.1	23.3	21.5	21.5	21.5
62.5°	26.9	25.1	26.9	25.1	25.1	23.3	21.5	19.7	19.7	19.7
65°	25.1	23.3	23.3	23.3	21.5	21.5	19.7	17.9	17.9	17.9
67.5°	21.5	19.7	21.5	19.7	19.7	17.9	17.9	16.1	16.1	14.3
70°	17.9	17.9	17.9	17.9	17.9	16.1	14.3	14.3	12.5	12.5
72.5°	16.1	16.1	16.1	16.1	14.3	14.3	12.5	12.5	10.7	10.7
75°	12.5	12.5	12.5	12.5	12.5	12.5	10.7	10.7	9.0	9.0
77.5°	10.7	10.7	10.7	10.7	10.7	9.0	9.0	7.2	7.2	7.2
80°	7.2	7.2	7.2	7.2	7.2	7.2	7.2	5.4	5.4	5.4
82.5°	5.4	5.4	5.4	5.4	5.4	3.6	3.6	3.6	3.6	3.6
85°	3.6	3.6	3.6	3.6	3.6	1.8	1.8	1.8	1.8	1.8
87.5°	1.8	1.8	1.8	1.8	1.8	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

(END OF REPORT)