

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: P591954

Luminaire Tested: **GRZ-05L-930-10x10FR-X-UNV-STD-2F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P591954
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-05L-930-10x10FR-X-UNV-STD-2F
Description: iO LED GRAZER WITH 10x10FR OPTIC
500 LUMENS PER FOOT, 2 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

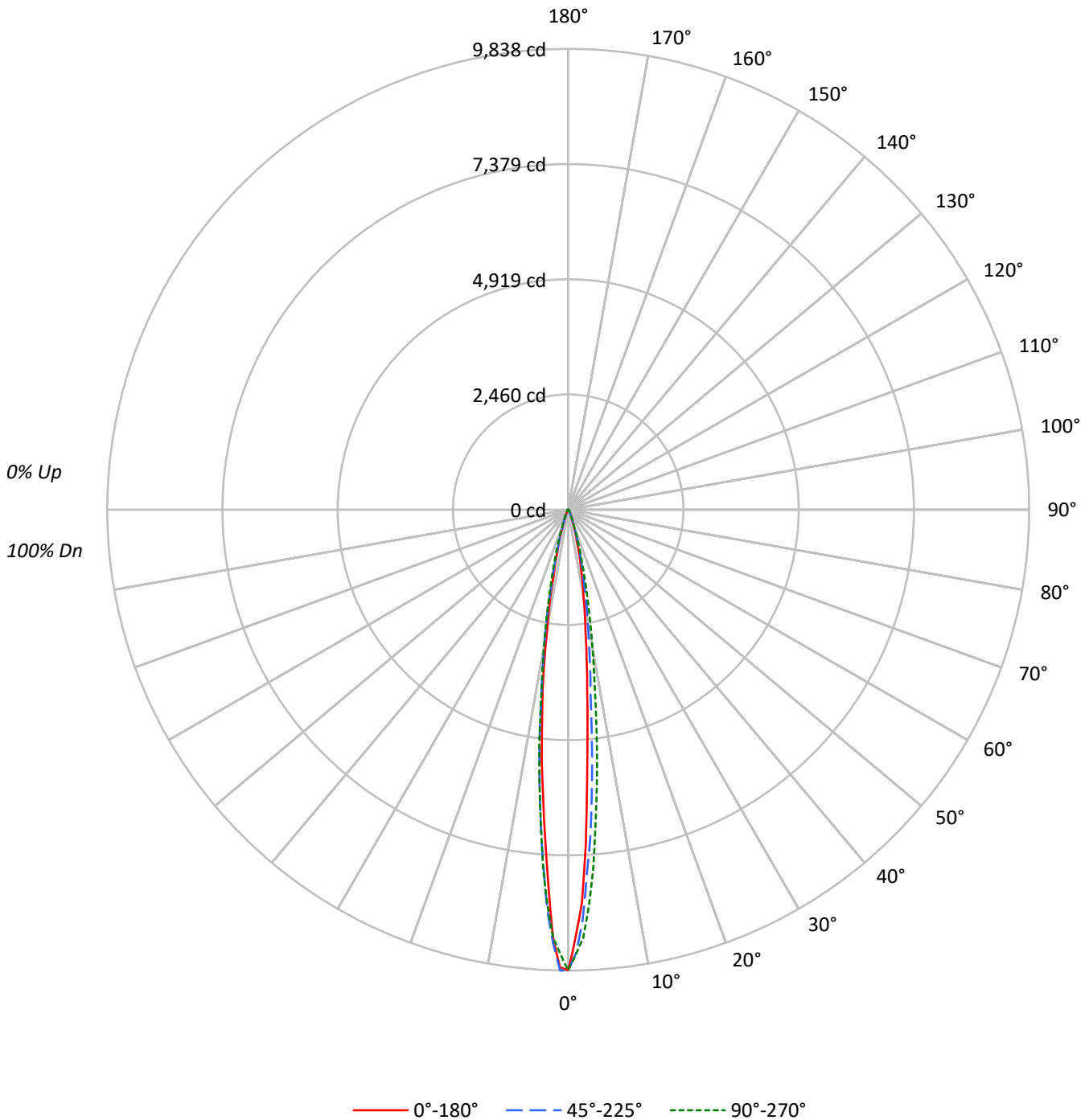
Lumens per Lamp: N/A
Luminaire Lumens: 908.0 lumens
Efficiency: N/A
Efficacy: 94.6 lumens/watt
Spacing Criteria (0/90/45): 0.19 / 0.25 / 0.25
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 9.6
Input Voltage (V): 120
Input Current (A_{in}): 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	115	113	111	109	113	111	109	107	107	105	104	103	102	101	100	99	98	97
2	111	108	105	102	109	106	103	101	103	101	99	100	98	97	97	96	95	93
3	108	103	100	97	106	102	99	96	100	97	95	97	95	93	95	93	92	91
4	105	100	96	93	103	99	95	92	97	94	91	95	92	90	93	91	89	88
5	102	96	93	90	101	96	92	89	94	91	89	93	90	88	91	89	87	86
6	100	94	90	87	98	93	89	87	92	89	86	91	88	86	89	87	85	84
7	97	91	87	85	96	91	87	84	90	86	84	89	86	84	88	85	83	82
8	95	89	85	83	94	89	85	83	88	85	82	87	84	82	86	84	82	81
9	93	87	83	81	92	87	83	81	86	83	81	85	82	80	85	82	80	79
10	91	85	82	79	91	85	82	79	84	81	79	84	81	79	83	81	79	78

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	317553	317553	317553
5°	153304	217009	198707
10°	61933	96510	84975
15°	24552	35504	26300
20°	9588	11735	7728
25°	4422	4653	3559
30°	2610	2539	2088
35°	1766	1766	1399
40°	1336	1416	1100
45°	1151	1238	936
50°	985	1125	799
55°	895	1053	738
60°	781	1027	723
65°	711	1001	711
70°	614	972	614
75°	462	811	586
80°	353	688	521
85°	333	333	333



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	474.0	52.2
10°-20°	286.5	31.5
20°-30°	63.9	7.0
30°-40°	27.7	3.0
40°-50°	19.9	2.2
50°-60°	15.8	1.7
60°-70°	11.8	1.3
70°-80°	6.8	0.7
80°-90°	1.7	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°	824.4	90.8
0°-40°	852.0	93.8
0°-60°	887.7	97.8
0°-90°	908.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	908.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	9834	9834	9834	9834	9834	
5°	4729	5836	6695	6726	6130	369
15°	734	946	1062	874	787	226
25°	124	141	131	103	100	63
35°	45	45	45	39	36	29
45°	25	27	27	24	20	19
55°	16	20	19	17	13	14
65°	9	14	13	11	9	9
75°	4	8	6	6	5	4
85°	1	2	1	2	1	1
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°	9833.9	9833.9	9833.9	9833.9	9833.9	9833.9	9833.9	9833.9	9833.9	9833.9	9833.9
1°	9124.7	9411.2	9340.3	9407.5	9419.6	9465.3	9495.2	9515.7	9565.2	9547.4	9486.8
2°	8394.0	8552.7	8543.3	8584.4	8818.6	8786.0	8869.9	9047.3	9019.3	9060.3	9146.2
3°	7144.5	7492.6	7412.3	7404.8	7629.7	7726.8	8059.9	8138.3	8333.4	8464.9	8467.7
4°	5771.8	5997.6	6050.8	6481.0	6456.7	6882.3	7081.0	7244.3	7396.4	7872.4	7665.2
5°	4729.4	4896.4	5062.5	5274.4	5326.6	5836.2	5949.1	6184.2	6595.8	6774.0	6694.7
6°	3871.8	4036.0	4035.1	4247.9	4442.9	4806.8	4932.8	5270.6	5605.7	5840.8	5851.1
7°	3220.4	3314.7	3374.4	3511.6	3729.0	3922.2	4217.1	4439.2	4654.7	4900.2	5049.5
8°	2678.2	2768.8	2802.4	2927.4	3056.2	3330.5	3625.4	3798.1	4023.9	4237.6	4194.7
9°	2250.8	2391.8	2372.2	2445.9	2592.4	2778.1	2954.5	3210.2	3355.7	3566.6	3518.1
10°	1888.8	1978.4	2036.2	2128.6	2182.7	2386.2	2493.5	2659.6	2842.5	2871.4	2943.3
12.5°	1239.3	1259.8	1271.9	1317.7	1416.6	1515.5	1622.8	1710.5	1764.7	1775.9	1829.0
15°	734.4	769.9	777.3	839.9	894.0	946.3	1014.4	1027.4	1056.4	1045.2	1062.0
17.5°	451.7	455.4	483.4	484.3	543.1	570.2	617.8	629.0	613.1	604.7	604.7
20°	279.0	280.9	288.4	308.0	319.2	349.0	373.3	376.1	367.7	349.9	341.5
22.5°	181.0	186.6	181.0	188.5	199.7	216.5	227.7	229.6	218.4	211.8	210.9
25°	124.1	125.0	129.7	125.0	130.6	140.9	144.6	147.4	138.1	135.3	130.6
27.5°	91.5	91.5	91.5	91.5	93.3	93.3	95.2	96.1	93.3	91.5	92.4
30°	70.0	69.1	70.0	70.0	68.1	70.0	70.9	70.9	69.1	69.1	68.1
32.5°	54.1	55.1	56.0	55.1	54.1	55.1	56.0	55.1	55.1	56.0	54.1
35°	44.8	44.8	45.7	44.8	44.8	44.8	45.7	45.7	45.7	45.7	44.8
37.5°	36.4	37.3	38.3	38.3	38.3	38.3	39.2	39.2	40.1	38.3	37.3
40°	31.7	31.7	32.7	32.7	33.6	32.7	33.6	34.5	34.5	33.6	33.6
42.5°	28.0	28.0	28.9	28.9	28.9	29.9	30.8	30.8	30.8	30.8	29.9
45°	25.2	24.3	25.2	26.1	27.1	27.1	28.0	28.9	28.0	28.0	27.1
47.5°	22.4	22.4	22.4	23.3	24.3	25.2	25.2	26.1	26.1	25.2	24.3
50°	19.6	19.6	20.5	21.5	22.4	23.3	23.3	24.3	24.3	23.3	22.4
52.5°	16.8	16.8	17.7	19.6	20.5	21.5	21.5	22.4	22.4	21.5	20.5
55°	15.9	14.9	15.9	16.8	18.7	19.6	20.5	20.5	20.5	19.6	18.7
57.5°	13.1	13.1	14.0	14.9	16.8	18.7	18.7	19.6	18.7	17.7	17.7
60°	12.1	12.1	13.1	14.0	15.9	17.7	17.7	17.7	16.8	15.9	15.9
62.5°	10.3	10.3	11.2	12.1	14.0	15.9	16.8	16.8	15.9	14.9	14.0
65°	9.3	9.3	9.3	11.2	13.1	14.0	14.9	14.9	14.0	13.1	13.1
67.5°	7.5	7.5	8.4	9.3	11.2	12.1	13.1	14.0	13.1	12.1	11.2
70°	6.5	6.5	6.5	8.4	10.3	11.2	12.1	12.1	11.2	10.3	10.3
72.5°	4.7	4.7	5.6	6.5	8.4	9.3	10.3	10.3	9.3	8.4	8.4
75°	3.7	3.7	4.7	5.6	6.5	7.5	8.4	8.4	8.4	7.5	6.5
77.5°	2.8	2.8	3.7	4.7	5.6	6.5	6.5	6.5	6.5	5.6	5.6
80°	1.9	1.9	2.8	2.8	3.7	4.7	4.7	4.7	4.7	3.7	3.7
82.5°	1.9	0.9	1.9	1.9	2.8	2.8	3.7	3.7	2.8	2.8	2.8
85°	0.9	0.9	0.9	0.9	1.9	1.9	1.9	1.9	1.9	1.9	0.9
87.5°	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	9833.9	9833.9	9833.9	9833.9	9833.9	9833.9	9833.9	9833.9	9833.9	9833.9
1°	9636.1	9777.0	9683.7	9788.2	9837.7	9837.7	9854.5	9783.5	9736.9	9771.4
2°	9183.5	9306.7	9343.1	9322.5	9260.0	9269.4	9150.8	9138.7	8982.9	9163.0
3°	8532.1	8668.4	8612.4	8540.5	8552.7	8419.2	8228.8	8139.3	8084.2	8059.0
4°	7750.1	7837.8	7822.9	7772.5	7614.8	7459.0	7286.3	7344.2	6992.4	7039.0
5°	6900.0	6998.0	6947.6	6781.5	6725.5	6557.5	6470.7	6291.6	6102.1	6130.1
6°	5936.0	5903.3	5999.5	5882.8	5855.8	5559.9	5513.3	5543.1	5410.6	5398.5
7°	4955.2	5182.9	5119.5	5036.4	5004.7	4828.3	4800.3	4619.3	4630.5	4561.4
8°	4312.3	4334.7	4393.4	4280.5	4177.9	4156.4	4048.2	3941.8	3965.1	3916.6
9°	3585.3	3655.3	3607.7	3618.9	3485.5	3347.3	3296.0	3324.0	3244.7	3255.9
10°	2905.0	3017.9	2988.1	2962.9	2936.7	2794.0	2769.7	2706.2	2664.3	2591.5
12.5°	1829.0	1787.1	1807.6	1726.4	1694.7	1583.6	1562.2	1535.1	1444.6	1444.6
15°	1113.3	1024.6	1056.4	953.7	874.4	851.1	792.3	793.2	790.4	786.7
17.5°	586.0	586.0	573.0	491.8	467.5	425.5	419.9	425.5	411.5	414.3
20°	344.3	332.2	312.6	274.4	257.6	239.8	236.1	233.3	233.3	224.9
22.5°	211.8	201.6	190.4	167.0	154.0	148.4	142.8	145.6	145.6	146.5
25°	135.3	126.9	122.2	108.2	102.7	101.7	98.9	95.2	96.1	99.9
27.5°	90.5	86.8	83.1	77.5	73.7	71.9	71.9	72.8	70.9	69.1
30°	68.1	63.5	61.6	59.7	56.9	56.9	56.9	56.0	55.1	56.0
32.5°	54.1	51.3	49.5	47.6	46.7	45.7	46.7	45.7	44.8	43.9
35°	44.8	42.0	41.1	40.1	39.2	38.3	38.3	38.3	36.4	35.5
37.5°	37.3	36.4	36.4	34.5	33.6	32.7	32.7	32.7	30.8	30.8
40°	33.6	32.7	31.7	30.8	29.9	28.9	28.0	28.0	26.1	26.1
42.5°	29.9	28.9	28.9	28.0	27.1	25.2	25.2	24.3	23.3	23.3
45°	27.1	26.1	26.1	25.2	24.3	23.3	22.4	21.5	20.5	20.5
47.5°	25.2	24.3	24.3	23.3	21.5	20.5	19.6	18.7	18.7	18.7
50°	22.4	22.4	22.4	21.5	20.5	19.6	17.7	16.8	15.9	15.9
52.5°	20.5	20.5	19.6	19.6	18.7	17.7	15.9	14.9	14.9	14.9
55°	19.6	18.7	18.7	17.7	16.8	16.8	14.9	14.0	13.1	13.1
57.5°	17.7	16.8	16.8	15.9	15.9	14.9	13.1	13.1	12.1	12.1
60°	15.9	14.9	14.9	14.0	14.0	13.1	12.1	11.2	11.2	11.2
62.5°	14.0	13.1	14.0	13.1	13.1	12.1	11.2	10.3	10.3	10.3
65°	13.1	12.1	12.1	12.1	11.2	11.2	10.3	9.3	9.3	9.3
67.5°	11.2	10.3	11.2	10.3	10.3	9.3	9.3	8.4	8.4	7.5
70°	9.3	9.3	9.3	9.3	9.3	8.4	7.5	7.5	6.5	6.5
72.5°	8.4	8.4	8.4	8.4	7.5	7.5	6.5	6.5	5.6	5.6
75°	6.5	6.5	6.5	6.5	6.5	6.5	5.6	5.6	4.7	4.7
77.5°	5.6	5.6	5.6	5.6	5.6	4.7	4.7	3.7	3.7	3.7
80°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	2.8	2.8	2.8
82.5°	2.8	2.8	2.8	2.8	2.8	1.9	1.9	1.9	1.9	1.9
85°	1.9	1.9	1.9	1.9	1.9	0.9	0.9	0.9	0.9	0.9
87.5°	0.9	0.9	0.9	0.9	0.9	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)