

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: P592115

Luminaire Tested: **GRZ-15L-940-10x10FR-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592115
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-15L-940-10x10FR-X-UNV-STD-4F
Description: iO LED GRAZER WITH 10x10FR OPTIC
1500 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

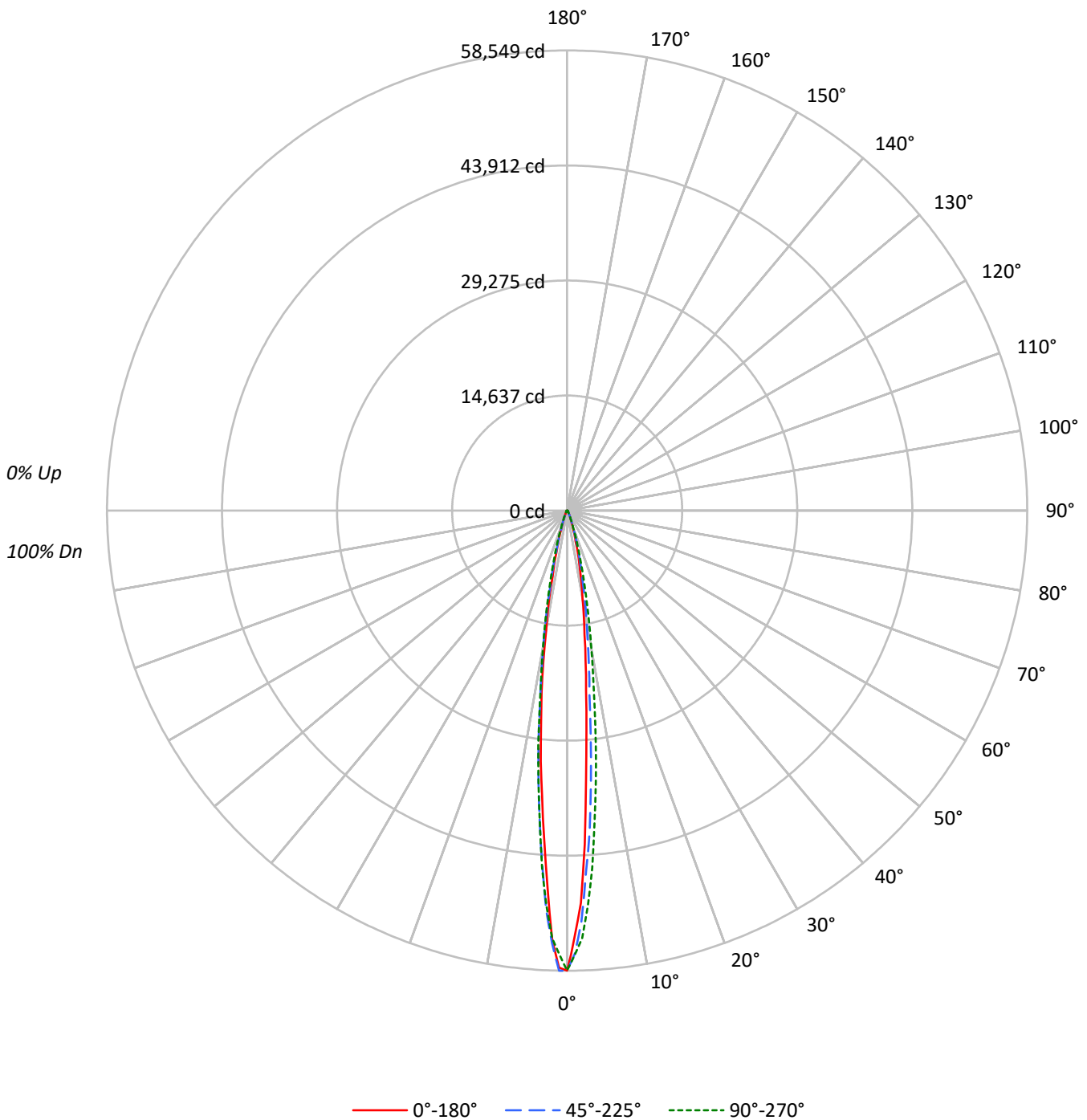
Lumens per Lamp: N/A
Luminaire Lumens: 5404.0 lumens
Efficiency: N/A
Efficacy: 96.5 lumens/watt
Spacing Criteria (0/90/45): 0.19 / 0.25 / 0.25
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 56
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							
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°	944969	944969	944969
5°	456196	645767	591308
10°	184297	287190	252862
15°	73061	105646	78260
20°	28533	34926	22998
25°	13160	13851	10587
30°	7765	7558	6212
35°	5255	5255	4159
40°	3979	4213	3277
45°	3425	3679	2790
50°	2929	3348	2371
55°	2657	3127	2190
60°	2331	3048	2151
65°	2120	2972	2120
70°	1836	2884	1836
75°	1385	2427	1734
80°	1032	2064	1553
85°	1037	1037	1037



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	2820.8	52.2
10°-20°	1704.9	31.5
20°-30°	380.5	7.0
30°-40°	164.5	3.0
40°-50°	118.3	2.2
50°-60°	94.1	1.7
60°-70°	70.0	1.3
70°-80°	40.5	0.7
80°-90°	10.3	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°	4906.3	90.8
0°-40°	5070.8	93.8
0°-60°	5283.2	97.8
0°-90°	5404.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5404.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	58527	58527	58527	58527	58527	
5°	28147	34734	39844	40027	36484	2194
15°	4371	5632	6320	5204	4682	1343
25°	739	839	778	611	594	377
35°	267	267	267	233	211	171
45°	150	161	161	144	122	116
55°	94	117	111	100	78	82
65°	56	83	78	67	56	54
75°	22	44	39	39	28	24
85°	6	11	6	11	6	6
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°	58527.1	58527.1	58527.1	58527.1	58527.1	58527.1	58527.1	58527.1	58527.1	58527.1	58527.1
1°	54306.1	56011.1	55589.0	55988.9	56061.1	56333.3	56511.0	56633.2	56927.5	56822.0	56461.0
2°	49957.4	50901.5	50846.0	51090.4	52484.4	52290.0	52789.9	53845.1	53678.5	53922.9	54433.8
3°	42520.7	44592.3	44114.7	44070.2	45408.7	45986.3	47969.1	48435.6	49596.4	50379.5	50396.1
4°	34350.9	35695.0	36011.5	38571.9	38427.5	40960.1	42143.0	43115.0	44020.3	46852.7	45619.8
5°	28147.2	29141.3	30129.9	31390.7	31701.7	34734.1	35406.1	36805.7	39255.0	40315.8	39843.7
6°	23043.2	24020.6	24015.1	25281.4	26442.1	28608.2	29357.9	31368.5	33362.3	34761.9	34823.0
7°	19166.5	19727.5	20082.9	20899.3	22193.4	23343.1	25098.1	26419.9	27702.9	29163.6	30052.2
8°	15939.7	16478.4	16678.4	17422.6	18189.0	19821.9	21576.9	22604.4	23948.4	25220.3	24964.8
9°	13396.0	14234.7	14118.0	14556.8	15428.7	16534.0	17583.7	19105.4	19971.8	21227.0	20938.2
10°	11241.1	11774.3	12118.6	12668.5	12990.6	14201.3	14840.0	15828.6	16917.2	17089.4	17517.0
12.5°	7375.6	7497.8	7570.0	7842.1	8430.8	9019.5	9658.2	10180.3	10502.4	10569.1	10885.7
15°	4370.9	4582.0	4626.4	4998.5	5320.6	5631.7	6037.1	6114.9	6287.0	6220.4	6320.3
17.5°	2688.1	2710.3	2876.9	2882.5	3232.4	3393.4	3676.7	3743.3	3648.9	3598.9	3598.9
20°	1660.6	1671.7	1716.2	1832.8	1899.4	2077.2	2221.6	2238.2	2188.2	2082.7	2032.7
22.5°	1077.5	1110.8	1077.5	1121.9	1188.5	1288.5	1355.2	1366.3	1299.6	1260.7	1255.2
25°	738.7	744.2	772.0	744.2	777.5	838.6	860.9	877.5	822.0	805.3	777.5
27.5°	544.3	544.3	544.3	544.3	555.4	555.4	566.5	572.1	555.4	544.3	549.8
30°	416.5	411.0	416.5	416.5	405.4	416.5	422.1	422.1	411.0	411.0	405.4
32.5°	322.1	327.7	333.2	327.7	322.1	327.7	333.2	327.7	327.7	333.2	322.1
35°	266.6	266.6	272.1	266.6	266.6	266.6	272.1	272.1	272.1	272.1	266.6
37.5°	216.6	222.2	227.7	227.7	227.7	227.7	233.3	233.3	238.8	227.7	222.2
40°	188.8	188.8	194.4	194.4	199.9	194.4	199.9	205.5	205.5	199.9	199.9
42.5°	166.6	166.6	172.2	172.2	172.2	177.7	183.3	183.3	183.3	183.3	177.7
45°	150.0	144.4	150.0	155.5	161.1	161.1	166.6	172.2	166.6	166.6	161.1
47.5°	133.3	133.3	133.3	138.8	144.4	150.0	150.0	155.5	155.5	150.0	144.4
50°	116.6	116.6	122.2	127.7	133.3	138.8	138.8	144.4	144.4	138.8	133.3
52.5°	100.0	100.0	105.5	116.6	122.2	127.7	127.7	133.3	133.3	127.7	122.2
55°	94.4	88.9	94.4	100.0	111.1	116.6	122.2	122.2	122.2	116.6	111.1
57.5°	77.8	77.8	83.3	88.9	100.0	111.1	111.1	116.6	111.1	105.5	105.5
60°	72.2	72.2	77.8	83.3	94.4	105.5	105.5	105.5	100.0	94.4	94.4
62.5°	61.1	61.1	66.6	72.2	83.3	94.4	100.0	100.0	94.4	88.9	83.3
65°	55.5	55.5	55.5	66.6	77.8	83.3	88.9	88.9	83.3	77.8	77.8
67.5°	44.4	44.4	50.0	55.5	66.6	72.2	77.8	83.3	77.8	72.2	66.6
70°	38.9	38.9	38.9	50.0	61.1	66.6	72.2	72.2	66.6	61.1	61.1
72.5°	27.8	27.8	33.3	38.9	50.0	55.5	61.1	61.1	55.5	50.0	50.0
75°	22.2	22.2	27.8	33.3	38.9	44.4	50.0	50.0	50.0	44.4	38.9
77.5°	16.7	16.7	22.2	27.8	33.3	38.9	38.9	38.9	38.9	33.3	33.3
80°	11.1	11.1	16.7	16.7	22.2	27.8	27.8	27.8	27.8	22.2	22.2
82.5°	11.1	5.6	11.1	11.1	16.7	16.7	22.2	22.2	16.7	16.7	16.7
85°	5.6	5.6	5.6	5.6	11.1	11.1	11.1	11.1	11.1	11.1	5.6
87.5°	0.0	0.0	0.0	0.0	5.6	5.6	5.6	5.6	5.6	5.6	5.6
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°	58527.1	58527.1	58527.1	58527.1	58527.1	58527.1	58527.1	58527.1	58527.1	58527.1
1°	57349.6	58188.3	57632.9	58254.9	58549.3	58549.3	58649.2	58227.1	57949.5	58154.9
2°	54656.0	55389.1	55605.7	55483.5	55111.4	55166.9	54461.6	54389.4	53461.9	54533.8
3°	50779.4	51590.2	51257.0	50829.3	50901.5	50107.3	48974.3	48441.2	48113.5	47963.5
4°	46125.2	46647.3	46558.4	46258.5	45319.9	44392.4	43364.9	43709.2	41615.4	41893.1
5°	41065.6	41648.7	41348.8	40360.2	40027.0	39027.3	38510.8	37444.4	36317.0	36483.6
6°	35328.4	35134.0	35706.1	35011.8	34850.8	33090.2	32812.5	32990.2	32201.5	32129.3
7°	29491.2	30846.4	30468.7	29974.4	29785.6	28735.9	28569.3	27491.8	27558.5	27147.5
8°	25664.6	25797.9	26147.8	25475.8	24864.8	24737.1	24092.8	23459.7	23598.5	23309.7
9°	21338.1	21754.6	21471.4	21538.0	20743.8	19921.9	19616.4	19783.0	19310.9	19377.6
10°	17289.3	17961.3	17783.6	17633.7	17478.1	16628.4	16484.0	16106.3	15856.4	15423.2
12.5°	10885.7	10635.7	10757.9	10274.7	10085.9	9425.0	9297.2	9136.2	8597.4	8597.4
15°	6625.8	6098.2	6287.0	5676.1	5204.0	5065.2	4715.3	4720.8	4704.2	4681.9
17.5°	3487.9	3487.9	3410.1	2926.9	2782.5	2532.6	2499.3	2532.6	2449.3	2465.9
20°	2049.4	1977.2	1860.6	1632.8	1532.9	1427.4	1405.1	1388.5	1388.5	1338.5
22.5°	1260.7	1199.6	1133.0	994.1	916.4	883.1	849.7	866.4	866.4	872.0
25°	805.3	755.3	727.6	644.3	610.9	605.4	588.7	566.5	572.1	594.3
27.5°	538.7	516.5	494.3	461.0	438.8	427.7	427.7	433.2	422.1	411.0
30°	405.4	377.7	366.6	355.4	338.8	338.8	338.8	333.2	327.7	333.2
32.5°	322.1	305.5	294.4	283.2	277.7	272.1	277.7	272.1	266.6	261.0
35°	266.6	249.9	244.4	238.8	233.3	227.7	227.7	227.7	216.6	211.0
37.5°	222.2	216.6	216.6	205.5	199.9	194.4	194.4	194.4	183.3	183.3
40°	199.9	194.4	188.8	183.3	177.7	172.2	166.6	166.6	155.5	155.5
42.5°	177.7	172.2	172.2	166.6	161.1	150.0	150.0	144.4	138.8	138.8
45°	161.1	155.5	155.5	150.0	144.4	138.8	133.3	127.7	122.2	122.2
47.5°	150.0	144.4	144.4	138.8	127.7	122.2	116.6	111.1	111.1	111.1
50°	133.3	133.3	133.3	127.7	122.2	116.6	105.5	100.0	94.4	94.4
52.5°	122.2	122.2	116.6	116.6	111.1	105.5	94.4	88.9	88.9	88.9
55°	116.6	111.1	111.1	105.5	100.0	100.0	88.9	83.3	77.8	77.8
57.5°	105.5	100.0	100.0	94.4	94.4	88.9	77.8	77.8	72.2	72.2
60°	94.4	88.9	88.9	83.3	83.3	77.8	72.2	66.6	66.6	66.6
62.5°	83.3	77.8	83.3	77.8	77.8	72.2	66.6	61.1	61.1	61.1
65°	77.8	72.2	72.2	72.2	66.6	66.6	61.1	55.5	55.5	55.5
67.5°	66.6	61.1	66.6	61.1	61.1	55.5	55.5	50.0	50.0	44.4
70°	55.5	55.5	55.5	55.5	55.5	50.0	44.4	44.4	38.9	38.9
72.5°	50.0	50.0	50.0	50.0	44.4	44.4	38.9	38.9	33.3	33.3
75°	38.9	38.9	38.9	38.9	38.9	38.9	33.3	33.3	27.8	27.8
77.5°	33.3	33.3	33.3	33.3	33.3	27.8	27.8	22.2	22.2	22.2
80°	22.2	22.2	22.2	22.2	22.2	22.2	22.2	16.7	16.7	16.7
82.5°	16.7	16.7	16.7	16.7	16.7	11.1	11.1	11.1	11.1	11.1
85°	11.1	11.1	11.1	11.1	11.1	5.6	5.6	5.6	5.6	5.6
87.5°	5.6	5.6	5.6	5.6	5.6	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)