

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: P592114

Luminaire Tested: **GRZ-15L-940-10x10FR-X-UNV-STD-2F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592114
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-2F
Description: iO LED GRAZER WITH 10x10FR OPTIC
1500 LUMENS PER FOOT, 2 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

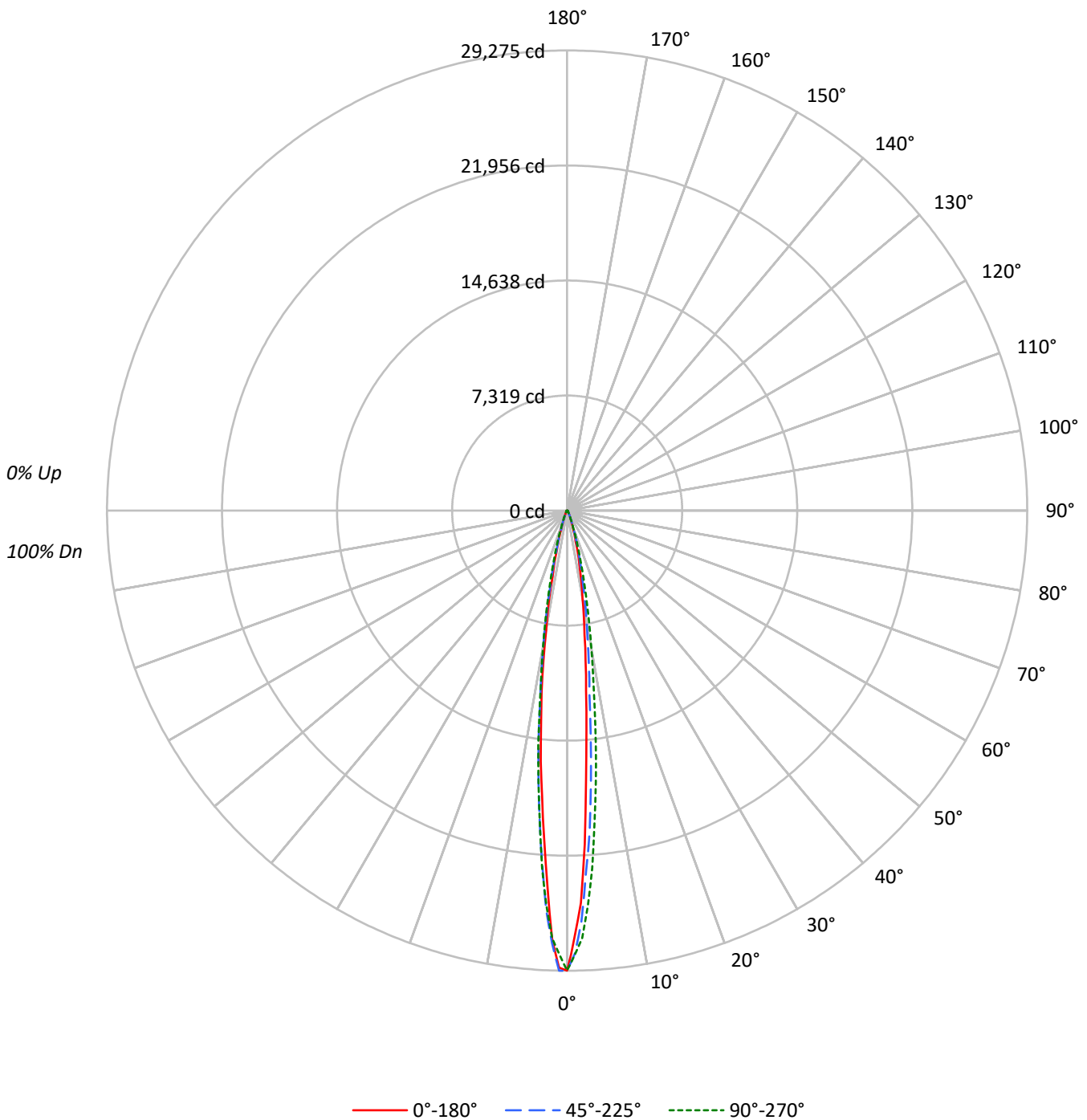
Lumens per Lamp: N/A
Luminaire Lumens: 2702.0 lumens
Efficiency: N/A
Efficacy: 93.2 lumens/watt
Spacing Criteria (0/90/45): 0.19 / 0.25 / 0.25
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 29
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



TEST NUMBER: P592114
CATALOG NUMBER: GRZ-15L-940-10x10FR-X-UNV-STD-2F

Luminous Intensity Polar Plot





TEST NUMBER: P592114

CATALOG NUMBER: GRZ-15L-940-10x10FR-X-UNV-STD-2F

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	944968	944968	944968
5°	456196	645769	591308
10°	184299	287190	252862
15°	73063	105648	78262
20°	28533	34928	22996
25°	13158	13853	10586
30°	7767	7558	6212
35°	5255	5255	4159
40°	3979	4215	3280
45°	3425	3676	2790
50°	2929	3346	2371
55°	2657	3125	2190
60°	2331	3048	2151
65°	2124	2972	2124
70°	1832	2880	1832
75°	1385	2420	1734
80°	1041	2064	1543
85°	1037	1037	1037



TEST NUMBER: P592114

CATALOG NUMBER: GRZ-15L-940-10x10FR-X-UNV-STD-2F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1410.4	52.2
10°-20°	852.5	31.5
20°-30°	190.3	7.0
30°-40°	82.3	3.0
40°-50°	59.2	2.2
50°-60°	47.0	1.7
60°-70°	35.0	1.3
70°-80°	20.2	0.7
80°-90°	5.2	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°	2453.1	90.8
0°-40°	2535.4	93.8
0°-60°	2641.6	97.8
0°-90°	2702.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2702.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	29264	29264	29264	29264	29264	
5°	14074	17367	19922	20014	18242	1097
15°	2186	2816	3160	2602	2341	671
25°	369	419	389	306	297	189
35°	133	133	133	117	106	86
45°	75	80	80	72	61	58
55°	47	58	56	50	39	41
65°	28	42	39	33	28	27
75°	11	22	19	19	14	12
85°	3	6	3	6	3	3
90°	0	0	0	0	0	



TEST NUMBER: P592114

CATALOG NUMBER: GRZ-15L-940-10x10FR-X-UNV-STD-2F

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	29263.5	29263.5	29263.5	29263.5	29263.5	29263.5	29263.5	29263.5	29263.5	29263.5	29263.5
1°	27153.0	28005.6	27794.5	27994.5	28030.6	28166.6	28255.5	28316.6	28463.8	28411.0	28230.5
2°	24978.7	25450.8	25423.0	25545.2	26242.2	26145.0	26394.9	26922.6	26839.2	26961.4	27216.9
3°	21260.4	22296.2	22057.3	22035.1	22704.4	22993.2	23984.5	24217.8	24798.2	25189.7	25198.1
4°	17175.5	17847.5	18005.8	19285.9	19213.7	20480.0	21071.5	21557.5	22010.1	23426.4	22809.9
5°	14073.6	14570.7	15065.0	15695.3	15850.8	17367.1	17703.1	18402.9	19627.5	20157.9	19921.9
6°	11521.6	12010.3	12007.5	12640.7	13221.1	14304.1	14679.0	15684.2	16681.2	17380.9	17411.5
7°	9583.3	9863.7	10041.5	10449.7	11096.7	11671.5	12549.0	13210.0	13851.4	14581.8	15026.1
8°	7969.9	8239.2	8339.2	8711.3	9094.5	9910.9	10788.5	11302.2	11974.2	12610.1	12482.4
9°	6698.0	7117.3	7059.0	7278.4	7714.4	8267.0	8791.8	9552.7	9985.9	10613.5	10469.1
10°	5620.6	5887.1	6059.3	6334.2	6495.3	7100.7	7420.0	7914.3	8458.6	8544.7	8758.5
12.5°	3687.8	3748.9	3785.0	3921.1	4215.4	4509.8	4829.1	5090.2	5251.2	5284.5	5442.8
15°	2185.5	2291.0	2313.2	2499.3	2660.3	2815.8	3018.5	3057.4	3143.5	3110.2	3160.2
17.5°	1344.0	1355.2	1438.5	1441.2	1616.2	1696.7	1838.3	1871.7	1824.5	1799.5	1799.5
20°	830.3	835.9	858.1	916.4	949.7	1038.6	1110.8	1119.1	1094.1	1041.4	1016.4
22.5°	538.7	555.4	538.7	560.9	594.3	644.3	677.6	683.1	649.8	630.4	627.6
25°	369.3	372.1	386.0	372.1	388.8	419.3	430.4	438.8	411.0	402.7	388.8
27.5°	272.1	272.1	272.1	272.1	277.7	277.7	283.2	286.0	277.7	272.1	274.9
30°	208.3	205.5	208.3	208.3	202.7	208.3	211.0	211.0	205.5	205.5	202.7
32.5°	161.1	163.8	166.6	163.8	161.1	163.8	166.6	163.8	163.8	166.6	161.1
35°	133.3	133.3	136.1	133.3	133.3	133.3	136.1	136.1	136.1	136.1	133.3
37.5°	108.3	111.1	113.9	113.9	113.9	113.9	116.6	116.6	119.4	113.9	111.1
40°	94.4	94.4	97.2	97.2	100.0	97.2	100.0	102.7	102.7	100.0	100.0
42.5°	83.3	83.3	86.1	86.1	86.1	88.9	91.6	91.6	91.6	91.6	88.9
45°	75.0	72.2	75.0	77.8	80.5	80.5	83.3	86.1	83.3	83.3	80.5
47.5°	66.6	66.6	66.6	69.4	72.2	75.0	75.0	77.8	77.8	75.0	72.2
50°	58.3	58.3	61.1	63.9	66.6	69.4	69.4	72.2	72.2	69.4	66.6
52.5°	50.0	50.0	52.8	58.3	61.1	63.9	63.9	66.6	66.6	63.9	61.1
55°	47.2	44.4	47.2	50.0	55.5	58.3	61.1	61.1	61.1	58.3	55.5
57.5°	38.9	38.9	41.7	44.4	50.0	55.5	55.5	58.3	55.5	52.8	52.8
60°	36.1	36.1	38.9	41.7	47.2	52.8	52.8	52.8	50.0	47.2	47.2
62.5°	30.5	30.5	33.3	36.1	41.7	47.2	50.0	50.0	47.2	44.4	41.7
65°	27.8	27.8	27.8	33.3	38.9	41.7	44.4	44.4	41.7	38.9	38.9
67.5°	22.2	22.2	25.0	27.8	33.3	36.1	38.9	41.7	38.9	36.1	33.3
70°	19.4	19.4	19.4	25.0	30.5	33.3	36.1	36.1	33.3	30.5	30.5
72.5°	13.9	13.9	16.7	19.4	25.0	27.8	30.5	30.5	27.8	25.0	25.0
75°	11.1	11.1	13.9	16.7	19.4	22.2	25.0	25.0	25.0	22.2	19.4
77.5°	8.3	8.3	11.1	13.9	16.7	19.4	19.4	19.4	19.4	16.7	16.7
80°	5.6	5.6	8.3	8.3	11.1	13.9	13.9	13.9	13.9	11.1	11.1
82.5°	5.6	2.8	5.6	5.6	8.3	8.3	11.1	11.1	8.3	8.3	8.3
85°	2.8	2.8	2.8	2.8	5.6	5.6	5.6	5.6	5.6	5.6	2.8
87.5°	0.0	0.0	0.0	0.0	2.8	2.8	2.8	2.8	2.8	2.8	2.8
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: P592114

CATALOG NUMBER: GRZ-15L-940-10x10FR-X-UNV-STD-2F

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	29263.5	29263.5	29263.5	29263.5	29263.5	29263.5	29263.5	29263.5	29263.5	29263.5
1°	28674.8	29094.1	28816.4	29127.5	29274.6	29274.6	29324.6	29113.6	28974.7	29077.5
2°	27328.0	27694.6	27802.9	27741.8	27555.7	27583.5	27230.8	27194.7	26730.9	27266.9
3°	25389.7	25795.1	25628.5	25414.7	25450.8	25053.7	24487.2	24220.6	24056.7	23981.8
4°	23062.6	23323.6	23279.2	23129.2	22659.9	22196.2	21682.4	21854.6	20807.7	20946.6
5°	20532.8	20824.4	20674.4	20180.1	20013.5	19513.6	19255.4	18722.2	18158.5	18241.8
6°	17664.2	17567.0	17853.0	17505.9	17425.4	16545.1	16406.2	16495.1	16100.8	16064.7
7°	14745.6	15423.2	15234.4	14987.2	14892.8	14368.0	14284.6	13745.9	13779.2	13573.7
8°	12832.3	12898.9	13073.9	12737.9	12432.4	12368.5	12046.4	11729.8	11799.3	11654.9
9°	10669.1	10877.3	10735.7	10769.0	10371.9	9960.9	9808.2	9891.5	9655.5	9688.8
10°	8644.7	8980.7	8891.8	8816.8	8739.1	8314.2	8242.0	8053.2	7928.2	7711.6
12.5°	5442.8	5317.9	5379.0	5137.4	5042.9	4712.5	4648.6	4568.1	4298.7	4298.7
15°	3312.9	3049.1	3143.5	2838.0	2602.0	2532.6	2357.6	2360.4	2352.1	2341.0
17.5°	1743.9	1743.9	1705.0	1463.5	1391.3	1266.3	1249.6	1266.3	1224.6	1233.0
20°	1024.7	988.6	930.3	816.4	766.4	713.7	702.6	694.2	694.2	669.2
22.5°	630.4	599.8	566.5	497.1	458.2	441.5	424.9	433.2	433.2	436.0
25°	402.7	377.7	363.8	322.1	305.5	302.7	294.4	283.2	286.0	297.1
27.5°	269.4	258.3	247.1	230.5	219.4	213.8	213.8	216.6	211.0	205.5
30°	202.7	188.8	183.3	177.7	169.4	169.4	169.4	166.6	163.8	166.6
32.5°	161.1	152.7	147.2	141.6	138.8	136.1	138.8	136.1	133.3	130.5
35°	133.3	125.0	122.2	119.4	116.6	113.9	113.9	113.9	108.3	105.5
37.5°	111.1	108.3	108.3	102.7	100.0	97.2	97.2	97.2	91.6	91.6
40°	100.0	97.2	94.4	91.6	88.9	86.1	83.3	83.3	77.8	77.8
42.5°	88.9	86.1	86.1	83.3	80.5	75.0	75.0	72.2	69.4	69.4
45°	80.5	77.8	77.8	75.0	72.2	69.4	66.6	63.9	61.1	61.1
47.5°	75.0	72.2	72.2	69.4	63.9	61.1	58.3	55.5	55.5	55.5
50°	66.6	66.6	66.6	63.9	61.1	58.3	52.8	50.0	47.2	47.2
52.5°	61.1	61.1	58.3	58.3	55.5	52.8	47.2	44.4	44.4	44.4
55°	58.3	55.5	55.5	52.8	50.0	50.0	44.4	41.7	38.9	38.9
57.5°	52.8	50.0	50.0	47.2	47.2	44.4	38.9	38.9	36.1	36.1
60°	47.2	44.4	44.4	41.7	41.7	38.9	36.1	33.3	33.3	33.3
62.5°	41.7	38.9	41.7	38.9	38.9	36.1	33.3	30.5	30.5	30.5
65°	38.9	36.1	36.1	36.1	33.3	33.3	30.5	27.8	27.8	27.8
67.5°	33.3	30.5	33.3	30.5	30.5	27.8	27.8	25.0	25.0	22.2
70°	27.8	27.8	27.8	27.8	27.8	25.0	22.2	22.2	19.4	19.4
72.5°	25.0	25.0	25.0	25.0	22.2	22.2	19.4	19.4	16.7	16.7
75°	19.4	19.4	19.4	19.4	19.4	19.4	16.7	16.7	13.9	13.9
77.5°	16.7	16.7	16.7	16.7	16.7	13.9	13.9	11.1	11.1	11.1
80°	11.1	11.1	11.1	11.1	11.1	11.1	11.1	8.3	8.3	8.3
82.5°	8.3	8.3	8.3	8.3	8.3	5.6	5.6	5.6	5.6	5.6
85°	5.6	5.6	5.6	5.6	5.6	2.8	2.8	2.8	2.8	2.8
87.5°	2.8	2.8	2.8	2.8	2.8	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)