

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: P592050

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

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592050
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-940-10x10FR-X-UNV-STD-2F
Description: iO LED GRAZER WITH 10x10FR OPTIC
1000 LUMENS PER FOOT, 2 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

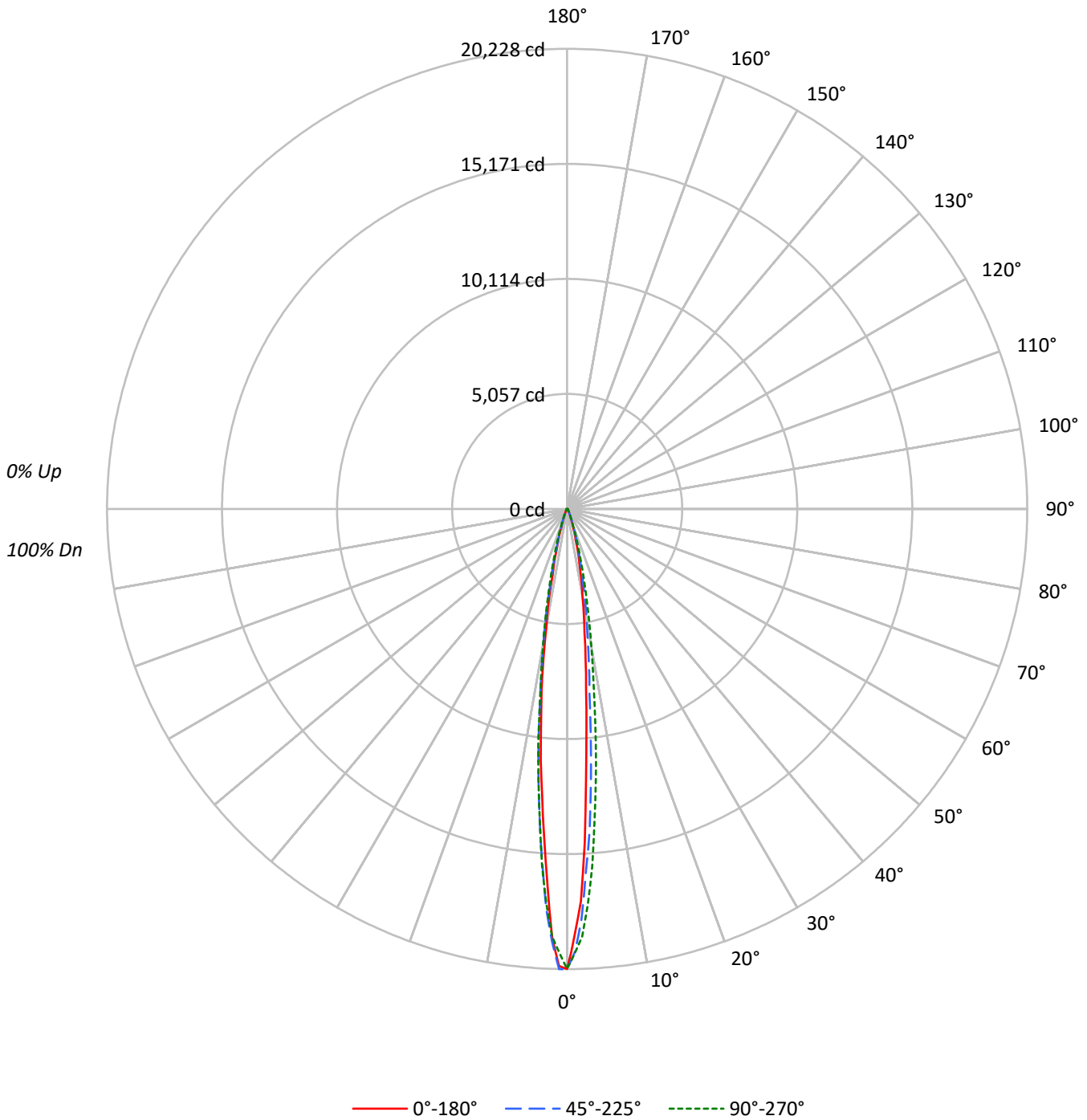
Lumens per Lamp: N/A
Luminaire Lumens: 1867.0 lumens
Efficiency: N/A
Efficacy: 97.7 lumens/watt
Spacing Criteria (0/90/45): 0.19 / 0.25 / 0.25
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 19.1
Input Voltage (V): 120
Input Current (A_{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	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	81	81	81	81	82		
8	95	89	85	83	94	89	85	83	88	85	82	87	84	82	86	84	82	81	81	80	80	80	80	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°	652944	652944	652944
5°	315217	446206	408575
10°	127343	198441	174721
15°	50484	73000	54074
20°	19715	24134	15890
25°	9093	9570	7315
30°	5366	5224	4292
35°	3631	3631	2874
40°	2748	2913	2264
45°	2366	2539	1927
50°	2025	2316	1638
55°	1835	2162	1514
60°	1608	2105	1485
65°	1467	2055	1467
70°	1265	1992	1265
75°	961	1672	1198
80°	707	1432	1079
85°	704	704	704



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	974.6	52.2
10°-20°	589.0	31.5
20°-30°	131.5	7.0
30°-40°	56.8	3.0
40°-50°	40.9	2.2
50°-60°	32.5	1.7
60°-70°	24.2	1.3
70°-80°	14.0	0.7
80°-90°	3.6	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°	1695.0	90.8
0°-40°	1751.9	93.8
0°-60°	1825.3	97.8
0°-90°	1867.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1867.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	20220	20220	20220	20220	20220	
5°	9724	12000	13765	13829	12604	758
15°	1510	1946	2184	1798	1618	464
25°	255	290	269	211	205	130
35°	92	92	92	81	73	59
45°	52	56	56	50	42	40
55°	33	40	38	34	27	28
65°	19	29	27	23	19	19
75°	8	15	13	13	10	8
85°	2	4	2	4	2	2
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°	20220.2	20220.2	20220.2	20220.2	20220.2	20220.2	20220.2	20220.2	20220.2	20220.2	20220.2
1°	18761.9	19351.0	19205.2	19343.3	19368.3	19462.3	19523.7	19565.9	19667.6	19631.1	19506.4
2°	17259.5	17585.7	17566.5	17651.0	18132.6	18065.4	18238.1	18602.7	18545.1	18629.5	18806.1
3°	14690.3	15406.0	15240.9	15225.6	15688.0	15887.6	16572.6	16733.8	17134.8	17405.3	17411.1
4°	11867.7	12332.1	12441.4	13326.0	13276.1	14151.1	14559.8	14895.6	15208.3	16186.9	15760.9
5°	9724.4	10067.9	10409.4	10845.0	10952.5	12000.1	12232.3	12715.8	13562.0	13928.5	13765.4
6°	7961.1	8298.8	8296.8	8734.3	9135.4	9883.7	10142.7	10837.3	11526.2	12009.7	12030.8
7°	6621.7	6815.5	6938.3	7220.4	7667.5	8064.7	8671.0	9127.7	9570.9	10075.6	10382.6
8°	5506.9	5693.1	5762.1	6019.2	6284.0	6848.2	7454.5	7809.5	8273.8	8713.2	8625.0
9°	4628.1	4917.9	4877.6	5029.1	5330.4	5712.2	6074.9	6600.6	6900.0	7333.6	7233.8
10°	3883.6	4067.8	4186.8	4376.8	4488.1	4906.3	5127.0	5468.6	5844.6	5904.1	6051.9
12.5°	2548.2	2590.4	2615.3	2709.3	2912.7	3116.1	3336.8	3517.1	3628.4	3651.5	3760.8
15°	1510.1	1583.0	1598.4	1726.9	1838.2	1945.7	2085.7	2112.6	2172.1	2149.0	2183.6
17.5°	928.7	936.4	993.9	995.9	1116.7	1172.4	1270.2	1293.3	1260.6	1243.4	1243.4
20°	573.7	577.6	592.9	633.2	656.2	717.6	767.5	773.3	756.0	719.5	702.3
22.5°	372.2	383.8	372.2	387.6	410.6	445.2	468.2	472.0	449.0	435.6	433.6
25°	255.2	257.1	266.7	257.1	268.6	289.7	297.4	303.2	284.0	278.2	268.6
27.5°	188.0	188.0	188.0	188.0	191.9	191.9	195.7	197.6	191.9	188.0	190.0
30°	143.9	142.0	143.9	143.9	140.1	143.9	145.8	145.8	142.0	142.0	140.1
32.5°	111.3	113.2	115.1	113.2	111.3	113.2	115.1	113.2	113.2	115.1	111.3
35°	92.1	92.1	94.0	92.1	92.1	92.1	94.0	94.0	94.0	94.0	92.1
37.5°	74.8	76.8	78.7	78.7	78.7	78.7	80.6	80.6	82.5	78.7	76.8
40°	65.2	65.2	67.2	67.2	69.1	67.2	69.1	71.0	71.0	69.1	69.1
42.5°	57.6	57.6	59.5	59.5	59.5	61.4	63.3	63.3	63.3	63.3	61.4
45°	51.8	49.9	51.8	53.7	55.6	55.6	57.6	59.5	57.6	57.6	55.6
47.5°	46.1	46.1	46.1	48.0	49.9	51.8	51.8	53.7	53.7	51.8	49.9
50°	40.3	40.3	42.2	44.1	46.1	48.0	48.0	49.9	49.9	48.0	46.1
52.5°	34.5	34.5	36.5	40.3	42.2	44.1	44.1	46.1	46.1	44.1	42.2
55°	32.6	30.7	32.6	34.5	38.4	40.3	42.2	42.2	42.2	40.3	38.4
57.5°	26.9	26.9	28.8	30.7	34.5	38.4	38.4	40.3	38.4	36.5	36.5
60°	24.9	24.9	26.9	28.8	32.6	36.5	36.5	36.5	34.5	32.6	32.6
62.5°	21.1	21.1	23.0	24.9	28.8	32.6	34.5	34.5	32.6	30.7	28.8
65°	19.2	19.2	19.2	23.0	26.9	28.8	30.7	30.7	28.8	26.9	26.9
67.5°	15.4	15.4	17.3	19.2	23.0	24.9	26.9	28.8	26.9	24.9	23.0
70°	13.4	13.4	13.4	17.3	21.1	23.0	24.9	24.9	23.0	21.1	21.1
72.5°	9.6	9.6	11.5	13.4	17.3	19.2	21.1	21.1	19.2	17.3	17.3
75°	7.7	7.7	9.6	11.5	13.4	15.4	17.3	17.3	17.3	15.4	13.4
77.5°	5.8	5.8	7.7	9.6	11.5	13.4	13.4	13.4	13.4	11.5	11.5
80°	3.8	3.8	5.8	5.8	7.7	9.6	9.6	9.6	9.6	7.7	7.7
82.5°	3.8	1.9	3.8	3.8	5.8	5.8	7.7	7.7	5.8	5.8	5.8
85°	1.9	1.9	1.9	1.9	3.8	3.8	3.8	3.8	3.8	3.8	1.9
87.5°	0.0	0.0	0.0	0.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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°	20220.2	20220.2	20220.2	20220.2	20220.2	20220.2	20220.2	20220.2	20220.2	20220.2
1°	19813.4	20103.2	19911.3	20126.2	20227.9	20227.9	20262.4	20116.6	20020.7	20091.7
2°	18882.8	19136.1	19210.9	19168.7	19040.2	19059.3	18815.7	18790.7	18470.3	18840.6
3°	17543.5	17823.6	17708.5	17560.8	17585.7	17311.3	16919.9	16735.7	16622.5	16570.7
4°	15935.6	16115.9	16085.2	15981.6	15657.3	15336.9	14981.9	15100.9	14377.5	14473.4
5°	14187.5	14389.0	14285.4	13943.8	13828.7	13483.3	13304.9	12936.5	12547.0	12604.5
6°	12205.4	12138.3	12335.9	12096.1	12040.4	11432.2	11336.2	11397.6	11125.1	11100.2
7°	10188.8	10657.0	10526.5	10355.7	10290.5	9927.8	9870.3	9498.0	9521.0	9379.0
8°	8866.7	8912.8	9033.7	8801.5	8590.4	8546.3	8323.7	8105.0	8152.9	8053.2
9°	7372.0	7515.9	7418.0	7441.1	7166.7	6882.7	6777.2	6834.7	6671.6	6694.7
10°	5973.2	6205.4	6144.0	6092.2	6038.4	5744.9	5695.0	5564.5	5478.1	5328.5
12.5°	3760.8	3674.5	3716.7	3549.8	3484.5	3256.2	3212.1	3156.4	2970.3	2970.3
15°	2289.1	2106.8	2172.1	1961.0	1797.9	1749.9	1629.1	1631.0	1625.2	1617.5
17.5°	1205.0	1205.0	1178.1	1011.2	961.3	875.0	863.5	875.0	846.2	851.9
20°	708.0	683.1	642.8	564.1	529.6	493.1	485.5	479.7	479.7	462.4
22.5°	435.6	414.5	391.4	343.5	316.6	305.1	293.6	299.3	299.3	301.3
25°	278.2	261.0	251.4	222.6	211.1	209.1	203.4	195.7	197.6	205.3
27.5°	186.1	178.4	170.8	159.3	151.6	147.7	147.7	149.7	145.8	142.0
30°	140.1	130.5	126.6	122.8	117.0	117.0	117.0	115.1	113.2	115.1
32.5°	111.3	105.5	101.7	97.9	95.9	94.0	95.9	94.0	92.1	90.2
35°	92.1	86.3	84.4	82.5	80.6	78.7	78.7	78.7	74.8	72.9
37.5°	76.8	74.8	74.8	71.0	69.1	67.2	67.2	67.2	63.3	63.3
40°	69.1	67.2	65.2	63.3	61.4	59.5	57.6	57.6	53.7	53.7
42.5°	61.4	59.5	59.5	57.6	55.6	51.8	51.8	49.9	48.0	48.0
45°	55.6	53.7	53.7	51.8	49.9	48.0	46.1	44.1	42.2	42.2
47.5°	51.8	49.9	49.9	48.0	44.1	42.2	40.3	38.4	38.4	38.4
50°	46.1	46.1	46.1	44.1	42.2	40.3	36.5	34.5	32.6	32.6
52.5°	42.2	42.2	40.3	40.3	38.4	36.5	32.6	30.7	30.7	30.7
55°	40.3	38.4	38.4	36.5	34.5	34.5	30.7	28.8	26.9	26.9
57.5°	36.5	34.5	34.5	32.6	32.6	30.7	26.9	26.9	24.9	24.9
60°	32.6	30.7	30.7	28.8	28.8	26.9	24.9	23.0	23.0	23.0
62.5°	28.8	26.9	28.8	26.9	26.9	24.9	23.0	21.1	21.1	21.1
65°	26.9	24.9	24.9	24.9	23.0	23.0	21.1	19.2	19.2	19.2
67.5°	23.0	21.1	23.0	21.1	21.1	19.2	19.2	17.3	17.3	15.4
70°	19.2	19.2	19.2	19.2	19.2	17.3	15.4	15.4	13.4	13.4
72.5°	17.3	17.3	17.3	17.3	15.4	15.4	13.4	13.4	11.5	11.5
75°	13.4	13.4	13.4	13.4	13.4	13.4	11.5	11.5	9.6	9.6
77.5°	11.5	11.5	11.5	11.5	11.5	9.6	9.6	7.7	7.7	7.7
80°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	5.8	5.8	5.8
82.5°	5.8	5.8	5.8	5.8	5.8	3.8	3.8	3.8	3.8	3.8
85°	3.8	3.8	3.8	3.8	3.8	1.9	1.9	1.9	1.9	1.9
87.5°	1.9	1.9	1.9	1.9	1.9	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)