

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: P592099

Luminaire Tested: **GRZ-15L-935-10x10FR-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592099
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-935-10x10FR-X-UNV-STD-4F
Description: iO LED GRAZER WITH 10x10FR OPTIC
1500 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

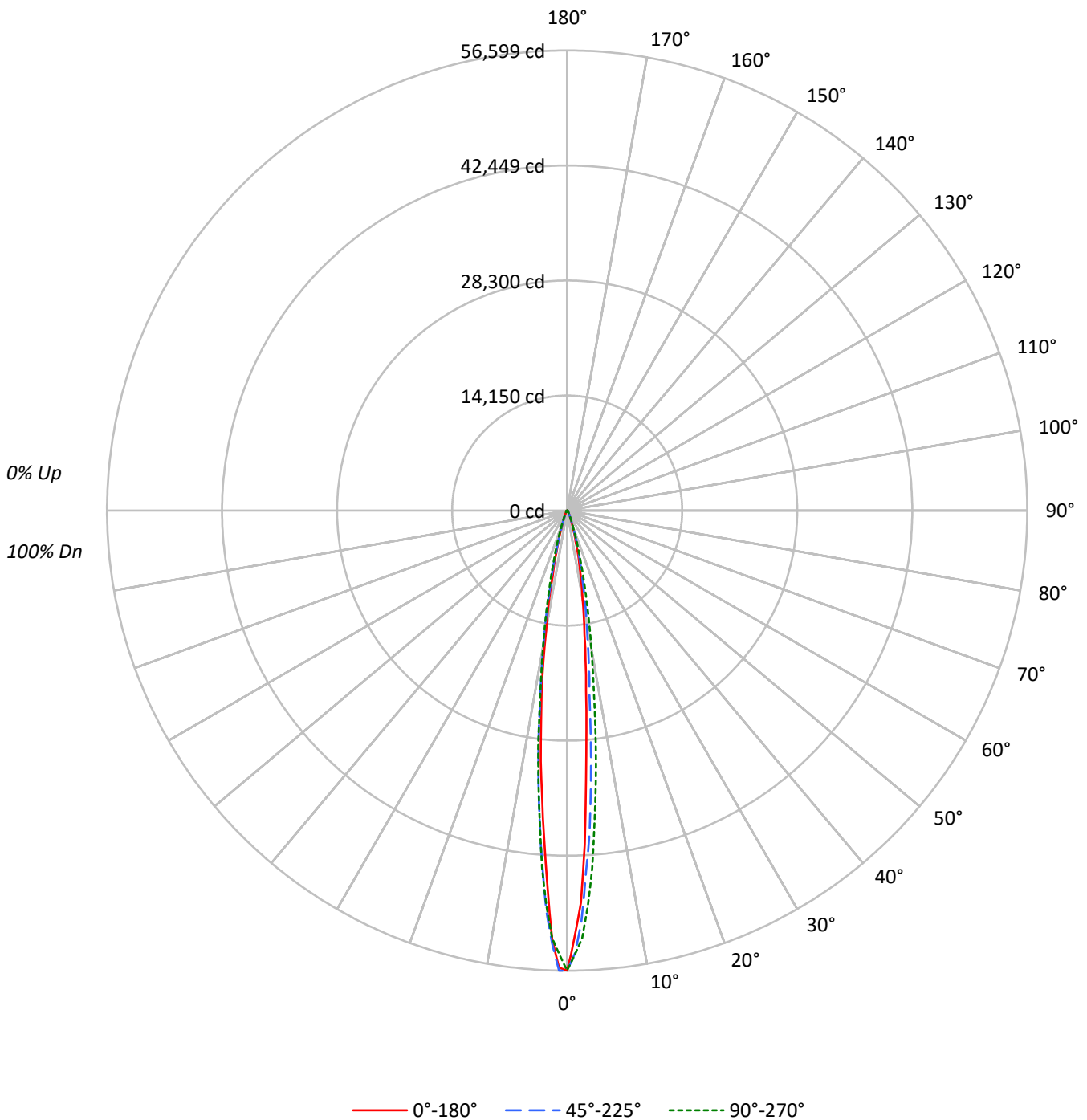
Lumens per Lamp: N/A
Luminaire Lumens: 5224.0 lumens
Efficiency: N/A
Efficacy: 93.3 lumens/watt
Spacing Criteria (0/90/45): 0.19 / 0.25 / 0.25
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 56
Input Voltage (V): 120
Input Current (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°	913493	913493	913493
5°	441000	624258	571613
10°	178159	277623	244440
15°	70628	102128	75654
20°	27582	33763	22232
25°	12722	13390	10235
30°	7508	7306	6005
35°	5079	5079	4021
40°	3847	4074	3168
45°	3311	3555	2697
50°	2831	3238	2293
55°	2570	3023	2117
60°	2254	2948	2080
65°	2052	2873	2052
70°	1775	2790	1775
75°	1341	2346	1672
80°	995	1999	1497
85°	1000	1000	1000



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	2726.9	52.2
10°-20°	1648.1	31.5
20°-30°	367.8	7.0
30°-40°	159.1	3.0
40°-50°	114.4	2.2
50°-60°	91.0	1.7
60°-70°	67.7	1.3
70°-80°	39.1	0.7
80°-90°	10.0	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°	4742.8	90.8
0°-40°	4901.9	93.8
0°-60°	5107.2	97.8
0°-90°	5224.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5224.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	56578	56578	56578	56578	56578	
5°	27210	33577	38517	38694	35268	2121
15°	4225	5444	6110	5031	4526	1298
25°	714	811	752	591	574	365
35°	258	258	258	226	204	166
45°	145	156	156	140	118	112
55°	91	113	107	97	75	79
65°	54	80	75	64	54	52
75°	22	43	38	38	27	23
85°	5	11	5	11	5	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°	56577.6	56577.6	56577.6	56577.6	56577.6	56577.6	56577.6	56577.6	56577.6	56577.6	56577.6
1°	52497.2	54145.5	53737.4	54124.0	54193.8	54456.9	54628.7	54746.8	55031.4	54929.3	54580.4
2°	48293.4	49206.1	49152.4	49388.6	50736.2	50548.3	51031.5	52051.6	51890.5	52126.8	52620.7
3°	41104.4	43107.0	42645.3	42602.3	43896.2	44454.6	46371.3	46822.3	47944.4	48701.4	48717.5
4°	33206.7	34506.0	34812.0	37287.1	37147.5	39595.7	40739.3	41678.9	42554.0	45292.1	44100.2
5°	27209.6	28170.7	29126.3	30345.1	30645.8	33577.2	34226.8	35579.8	37947.5	38972.9	38516.6
6°	22275.6	23220.5	23215.2	24439.3	25561.4	27655.3	28380.1	30323.6	32251.1	33604.0	33663.1
7°	18528.1	19070.4	19414.0	20203.2	21454.2	22565.5	24262.1	25539.9	26780.1	28192.2	29051.2
8°	15408.8	15929.6	16122.8	16842.3	17583.2	19161.6	20858.2	21851.5	23150.8	24380.2	24133.3
9°	12949.8	13760.5	13647.8	14071.9	14914.8	15983.3	16998.0	18469.1	19306.6	20520.0	20240.8
10°	10866.7	11382.1	11715.0	12246.5	12557.9	13728.3	14345.7	15301.4	16353.7	16520.1	16933.5
12.5°	7129.9	7248.0	7317.8	7580.9	8150.0	8719.1	9336.5	9841.2	10152.6	10217.0	10523.1
15°	4225.3	4429.4	4472.3	4832.0	5143.4	5444.1	5836.0	5911.2	6077.6	6013.2	6109.8
17.5°	2598.6	2620.0	2781.1	2786.5	3124.7	3280.4	3554.2	3618.6	3527.4	3479.1	3479.1
20°	1605.3	1616.0	1659.0	1771.7	1836.2	2008.0	2147.6	2163.7	2115.4	2013.3	1965.0
22.5°	1041.6	1073.8	1041.6	1084.5	1148.9	1245.6	1310.0	1320.8	1256.3	1218.7	1213.4
25°	714.1	719.4	746.3	719.4	751.6	810.7	832.2	848.3	794.6	778.5	751.6
27.5°	526.2	526.2	526.2	526.2	536.9	536.9	547.6	553.0	536.9	526.2	531.5
30°	402.7	397.3	402.7	402.7	391.9	402.7	408.0	408.0	397.3	397.3	391.9
32.5°	311.4	316.8	322.1	316.8	311.4	316.8	322.1	316.8	316.8	322.1	311.4
35°	257.7	257.7	263.1	257.7	257.7	257.7	263.1	263.1	263.1	263.1	257.7
37.5°	209.4	214.8	220.1	220.1	220.1	220.1	225.5	225.5	230.9	220.1	214.8
40°	182.5	182.5	187.9	187.9	193.3	187.9	193.3	198.6	198.6	193.3	193.3
42.5°	161.1	161.1	166.4	166.4	166.4	171.8	177.2	177.2	177.2	177.2	171.8
45°	145.0	139.6	145.0	150.3	155.7	155.7	161.1	166.4	161.1	161.1	155.7
47.5°	128.9	128.9	128.9	134.2	139.6	145.0	145.0	150.3	150.3	145.0	139.6
50°	112.7	112.7	118.1	123.5	128.9	134.2	134.2	139.6	139.6	134.2	128.9
52.5°	96.6	96.6	102.0	112.7	118.1	123.5	123.5	128.9	128.9	123.5	118.1
55°	91.3	85.9	91.3	96.6	107.4	112.7	118.1	118.1	118.1	112.7	107.4
57.5°	75.2	75.2	80.5	85.9	96.6	107.4	107.4	112.7	107.4	102.0	102.0
60°	69.8	69.8	75.2	80.5	91.3	102.0	102.0	102.0	96.6	91.3	91.3
62.5°	59.1	59.1	64.4	69.8	80.5	91.3	96.6	96.6	91.3	85.9	80.5
65°	53.7	53.7	53.7	64.4	75.2	80.5	85.9	85.9	80.5	75.2	75.2
67.5°	43.0	43.0	48.3	53.7	64.4	69.8	75.2	80.5	75.2	69.8	64.4
70°	37.6	37.6	37.6	48.3	59.1	64.4	69.8	69.8	64.4	59.1	59.1
72.5°	26.8	26.8	32.2	37.6	48.3	53.7	59.1	59.1	53.7	48.3	48.3
75°	21.5	21.5	26.8	32.2	37.6	43.0	48.3	48.3	48.3	43.0	37.6
77.5°	16.1	16.1	21.5	26.8	32.2	37.6	37.6	37.6	37.6	32.2	32.2
80°	10.7	10.7	16.1	16.1	21.5	26.8	26.8	26.8	26.8	21.5	21.5
82.5°	10.7	5.4	10.7	10.7	16.1	16.1	21.5	21.5	16.1	16.1	16.1
85°	5.4	5.4	5.4	5.4	10.7	10.7	10.7	10.7	10.7	10.7	5.4
87.5°	0.0	0.0	0.0	0.0	5.4	5.4	5.4	5.4	5.4	5.4	5.4
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°	56577.6	56577.6	56577.6	56577.6	56577.6	56577.6	56577.6	56577.6	56577.6	56577.6
1°	55439.4	56250.1	55713.2	56314.5	56599.1	56599.1	56695.7	56287.7	56019.2	56217.9
2°	52835.5	53544.2	53753.6	53635.4	53275.7	53329.4	52647.6	52577.8	51681.2	52717.4
3°	49088.0	49871.8	49549.7	49136.3	49206.1	48438.3	47343.1	46827.7	46510.9	46365.9
4°	44588.8	45093.5	45007.6	44717.7	43810.3	42913.7	41920.5	42253.3	40229.3	40497.7
5°	39697.7	40261.5	39971.6	39015.9	38693.8	37727.3	37228.0	36197.2	35107.3	35268.4
6°	34151.7	33963.7	34516.7	33845.6	33689.9	31988.0	31719.5	31891.3	31129.0	31059.2
7°	28508.9	29818.9	29453.9	28976.0	28793.5	27778.8	27617.7	26576.1	26640.5	26243.2
8°	24809.7	24938.6	25276.8	24627.2	24036.6	23913.1	23290.3	22678.3	22812.5	22533.3
9°	20627.4	21030.0	20756.2	20820.6	20052.9	19258.3	18963.0	19124.1	18667.7	18732.1
10°	16713.4	17363.1	17191.3	17046.3	16896.0	16074.5	15934.9	15569.8	15328.2	14909.5
12.5°	10523.1	10281.5	10399.6	9932.5	9749.9	9111.0	8987.6	8831.9	8311.1	8311.1
15°	6405.1	5895.1	6077.6	5487.0	5030.7	4896.4	4558.2	4563.6	4547.5	4526.0
17.5°	3371.7	3371.7	3296.5	2829.4	2689.8	2448.2	2416.0	2448.2	2367.7	2383.8
20°	1981.1	1911.3	1798.6	1578.5	1481.8	1379.8	1358.3	1342.2	1342.2	1293.9
22.5°	1218.7	1159.7	1095.3	961.0	885.9	853.7	821.4	837.6	837.6	842.9
25°	778.5	730.2	703.3	622.8	590.6	585.2	569.1	547.6	553.0	574.5
27.5°	520.8	499.3	477.8	445.6	424.1	413.4	413.4	418.8	408.0	397.3
30°	391.9	365.1	354.3	343.6	327.5	327.5	327.5	322.1	316.8	322.1
32.5°	311.4	295.3	284.6	273.8	268.4	263.1	268.4	263.1	257.7	252.3
35°	257.7	241.6	236.2	230.9	225.5	220.1	220.1	220.1	209.4	204.0
37.5°	214.8	209.4	209.4	198.6	193.3	187.9	187.9	187.9	177.2	177.2
40°	193.3	187.9	182.5	177.2	171.8	166.4	161.1	161.1	150.3	150.3
42.5°	171.8	166.4	166.4	161.1	155.7	145.0	145.0	139.6	134.2	134.2
45°	155.7	150.3	150.3	145.0	139.6	134.2	128.9	123.5	118.1	118.1
47.5°	145.0	139.6	139.6	134.2	123.5	118.1	112.7	107.4	107.4	107.4
50°	128.9	128.9	128.9	123.5	118.1	112.7	102.0	96.6	91.3	91.3
52.5°	118.1	118.1	112.7	112.7	107.4	102.0	91.3	85.9	85.9	85.9
55°	112.7	107.4	107.4	102.0	96.6	96.6	85.9	80.5	75.2	75.2
57.5°	102.0	96.6	96.6	91.3	91.3	85.9	75.2	75.2	69.8	69.8
60°	91.3	85.9	85.9	80.5	80.5	75.2	69.8	64.4	64.4	64.4
62.5°	80.5	75.2	80.5	75.2	75.2	69.8	64.4	59.1	59.1	59.1
65°	75.2	69.8	69.8	69.8	64.4	64.4	59.1	53.7	53.7	53.7
67.5°	64.4	59.1	64.4	59.1	59.1	53.7	53.7	48.3	48.3	43.0
70°	53.7	53.7	53.7	53.7	53.7	48.3	43.0	43.0	37.6	37.6
72.5°	48.3	48.3	48.3	48.3	43.0	43.0	37.6	37.6	32.2	32.2
75°	37.6	37.6	37.6	37.6	37.6	37.6	32.2	32.2	26.8	26.8
77.5°	32.2	32.2	32.2	32.2	32.2	26.8	26.8	21.5	21.5	21.5
80°	21.5	21.5	21.5	21.5	21.5	21.5	21.5	16.1	16.1	16.1
82.5°	16.1	16.1	16.1	16.1	16.1	10.7	10.7	10.7	10.7	10.7
85°	10.7	10.7	10.7	10.7	10.7	5.4	5.4	5.4	5.4	5.4
87.5°	5.4	5.4	5.4	5.4	5.4	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)