

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: P592098

Luminaire Tested: **GRZ-15L-935-10x10FR-X-UNV-STD-2F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592098
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-2F
Description: iO LED GRAZER WITH 10x10FR OPTIC
1500 LUMENS PER FOOT, 2 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2612.0 lumens
Efficiency: N/A
Efficacy: 90.1 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

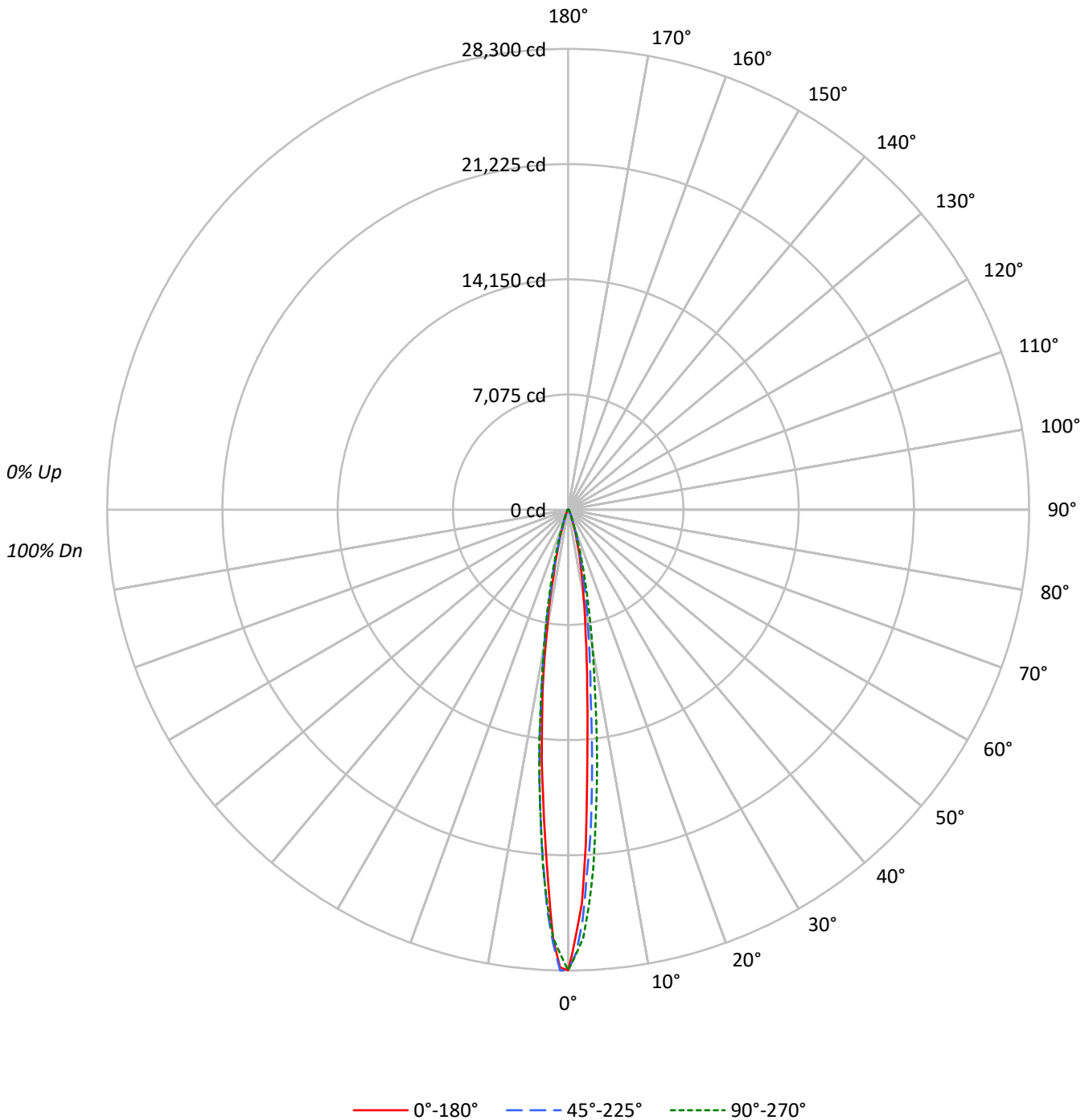
Input Watts (W): 29
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	913493	913493	913493
5°	441000	624258	571613
10°	178157	277625	244438
15°	70629	102128	75654
20°	27584	33763	22234
25°	12720	13390	10233
30°	7506	7308	6007
35°	5081	5081	4021
40°	3849	4072	3170
45°	3311	3553	2699
50°	2833	3235	2291
55°	2567	3023	2117
60°	2254	2945	2080
65°	2048	2873	2048
70°	1775	2785	1775
75°	1335	2346	1672
80°	1004	1990	1506
85°	1000	1000	1000



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1363.4	52.2
10°-20°	824.1	31.5
20°-30°	183.9	7.0
30°-40°	79.5	3.0
40°-50°	57.2	2.2
50°-60°	45.5	1.7
60°-70°	33.9	1.3
70°-80°	19.6	0.7
80°-90°	5.0	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°	2371.4	90.8
0°-40°	2450.9	93.8
0°-60°	2553.6	97.8
0°-90°	2612.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2612.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	28289	28289	28289	28289	28289	
5°	13605	16789	19258	19347	17634	1060
15°	2113	2722	3055	2515	2263	649
25°	357	405	376	295	287	182
35°	129	129	129	113	102	83
45°	72	78	78	70	59	56
55°	46	56	54	48	38	40
65°	27	40	38	32	27	26
75°	11	22	19	19	13	12
85°	3	5	3	5	3	3
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°	28288.8	28288.8	28288.8	28288.8	28288.8	28288.8	28288.8	28288.8	28288.8	28288.8	28288.8
1°	26248.6	27072.7	26868.7	27062.0	27096.9	27228.4	27314.3	27373.4	27515.7	27464.7	27290.2
2°	24146.7	24603.0	24576.2	24694.3	25368.1	25274.2	25515.8	26025.8	25945.3	26063.4	26310.4
3°	20552.2	21553.5	21322.6	21301.2	21948.1	22227.3	23185.6	23411.1	23972.2	24350.7	24358.8
4°	16603.4	17253.0	17406.0	18643.5	18573.8	19797.9	20369.7	20839.4	21277.0	22646.1	22050.1
5°	13604.8	14085.3	14563.2	15172.5	15322.9	16788.6	17113.4	17789.9	18973.7	19486.5	19258.3
6°	11137.8	11610.3	11607.6	12219.6	12780.7	13827.6	14190.0	15161.8	16125.5	16802.0	16831.5
7°	9264.1	9535.2	9707.0	10101.6	10727.1	11282.8	12131.1	12770.0	13390.1	14096.1	14525.6
8°	7704.4	7964.8	8061.4	8421.1	8791.6	9580.8	10429.1	10925.7	11575.4	12190.1	12066.6
9°	6474.9	6880.3	6823.9	7036.0	7457.4	7991.6	8499.0	9234.5	9653.3	10260.0	10120.4
10°	5433.3	5691.0	5857.5	6123.2	6278.9	6864.2	7172.9	7650.7	8176.9	8260.1	8466.8
12.5°	3565.0	3624.0	3658.9	3790.5	4075.0	4359.6	4668.3	4920.6	5076.3	5108.5	5261.5
15°	2112.7	2214.7	2236.2	2416.0	2571.7	2722.0	2918.0	2955.6	3038.8	3006.6	3054.9
17.5°	1299.3	1310.0	1390.5	1393.2	1562.4	1640.2	1777.1	1809.3	1763.7	1739.5	1739.5
20°	802.7	808.0	829.5	885.9	918.1	1004.0	1073.8	1081.8	1057.7	1006.7	982.5
22.5°	520.8	536.9	520.8	542.3	574.5	622.8	655.0	660.4	628.2	609.4	606.7
25°	357.0	359.7	373.1	359.7	375.8	405.4	416.1	424.1	397.3	389.2	375.8
27.5°	263.1	263.1	263.1	263.1	268.4	268.4	273.8	276.5	268.4	263.1	265.8
30°	201.3	198.6	201.3	201.3	196.0	201.3	204.0	204.0	198.6	198.6	196.0
32.5°	155.7	158.4	161.1	158.4	155.7	158.4	161.1	158.4	158.4	161.1	155.7
35°	128.9	128.9	131.5	128.9	128.9	128.9	131.5	131.5	131.5	131.5	128.9
37.5°	104.7	107.4	110.1	110.1	110.1	110.1	112.7	112.7	115.4	110.1	107.4
40°	91.3	91.3	94.0	94.0	96.6	94.0	96.6	99.3	99.3	96.6	96.6
42.5°	80.5	80.5	83.2	83.2	83.2	85.9	88.6	88.6	88.6	88.6	85.9
45°	72.5	69.8	72.5	75.2	77.8	77.8	80.5	83.2	80.5	80.5	77.8
47.5°	64.4	64.4	64.4	67.1	69.8	72.5	72.5	75.2	75.2	72.5	69.8
50°	56.4	56.4	59.1	61.7	64.4	67.1	67.1	69.8	69.8	67.1	64.4
52.5°	48.3	48.3	51.0	56.4	59.1	61.7	61.7	64.4	64.4	61.7	59.1
55°	45.6	43.0	45.6	48.3	53.7	56.4	59.1	59.1	59.1	56.4	53.7
57.5°	37.6	37.6	40.3	43.0	48.3	53.7	53.7	56.4	53.7	51.0	51.0
60°	34.9	34.9	37.6	40.3	45.6	51.0	51.0	51.0	48.3	45.6	45.6
62.5°	29.5	29.5	32.2	34.9	40.3	45.6	48.3	48.3	45.6	43.0	40.3
65°	26.8	26.8	26.8	32.2	37.6	40.3	43.0	43.0	40.3	37.6	37.6
67.5°	21.5	21.5	24.2	26.8	32.2	34.9	37.6	40.3	37.6	34.9	32.2
70°	18.8	18.8	18.8	24.2	29.5	32.2	34.9	34.9	32.2	29.5	29.5
72.5°	13.4	13.4	16.1	18.8	24.2	26.8	29.5	29.5	26.8	24.2	24.2
75°	10.7	10.7	13.4	16.1	18.8	21.5	24.2	24.2	24.2	21.5	18.8
77.5°	8.1	8.1	10.7	13.4	16.1	18.8	18.8	18.8	18.8	16.1	16.1
80°	5.4	5.4	8.1	8.1	10.7	13.4	13.4	13.4	13.4	10.7	10.7
82.5°	5.4	2.7	5.4	5.4	8.1	8.1	10.7	10.7	8.1	8.1	8.1
85°	2.7	2.7	2.7	2.7	5.4	5.4	5.4	5.4	5.4	5.4	2.7
87.5°	0.0	0.0	0.0	0.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7
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°	28288.8	28288.8	28288.8	28288.8	28288.8	28288.8	28288.8	28288.8	28288.8	28288.8
1°	27719.7	28125.0	27856.6	28157.3	28299.5	28299.5	28347.9	28143.8	28009.6	28108.9
2°	26417.7	26772.1	26876.8	26817.7	26637.9	26664.7	26323.8	26288.9	25840.6	26358.7
3°	24544.0	24935.9	24774.8	24568.1	24603.0	24219.2	23671.5	23413.8	23255.4	23183.0
4°	22294.4	22546.7	22503.8	22358.8	21905.2	21456.9	20960.2	21126.7	20114.6	20248.9
5°	19848.9	20130.7	19985.8	19507.9	19346.9	18863.7	18614.0	18098.6	17553.7	17634.2
6°	17075.8	16981.9	17258.4	16922.8	16845.0	15994.0	15859.8	15945.7	15564.5	15529.6
7°	14254.5	14909.5	14726.9	14488.0	14396.7	13889.4	13808.8	13288.1	13320.3	13121.6
8°	12404.9	12469.3	12638.4	12313.6	12018.3	11956.6	11645.2	11339.1	11406.3	11266.7
9°	10313.7	10515.0	10378.1	10410.3	10026.4	9629.1	9481.5	9562.0	9333.9	9366.1
10°	8356.7	8681.5	8595.6	8523.1	8448.0	8037.3	7967.5	7784.9	7664.1	7454.7
12.5°	5261.5	5140.7	5199.8	4966.2	4875.0	4555.5	4493.8	4415.9	4155.5	4155.5
15°	3202.6	2947.5	3038.8	2743.5	2515.3	2448.2	2279.1	2281.8	2273.7	2263.0
17.5°	1685.8	1685.8	1648.3	1414.7	1344.9	1224.1	1208.0	1224.1	1183.8	1191.9
20°	990.6	955.7	899.3	789.2	740.9	689.9	679.2	671.1	671.1	647.0
22.5°	609.4	579.8	547.6	480.5	442.9	426.8	410.7	418.8	418.8	421.5
25°	389.2	365.1	351.7	311.4	295.3	292.6	284.6	273.8	276.5	287.2
27.5°	260.4	249.7	238.9	222.8	212.1	206.7	206.7	209.4	204.0	198.6
30°	196.0	182.5	177.2	171.8	163.8	163.8	163.8	161.1	158.4	161.1
32.5°	155.7	147.6	142.3	136.9	134.2	131.5	134.2	131.5	128.9	126.2
35°	128.9	120.8	118.1	115.4	112.7	110.1	110.1	110.1	104.7	102.0
37.5°	107.4	104.7	104.7	99.3	96.6	94.0	94.0	94.0	88.6	88.6
40°	96.6	94.0	91.3	88.6	85.9	83.2	80.5	80.5	75.2	75.2
42.5°	85.9	83.2	83.2	80.5	77.8	72.5	72.5	69.8	67.1	67.1
45°	77.8	75.2	75.2	72.5	69.8	67.1	64.4	61.7	59.1	59.1
47.5°	72.5	69.8	69.8	67.1	61.7	59.1	56.4	53.7	53.7	53.7
50°	64.4	64.4	64.4	61.7	59.1	56.4	51.0	48.3	45.6	45.6
52.5°	59.1	59.1	56.4	56.4	53.7	51.0	45.6	43.0	43.0	43.0
55°	56.4	53.7	53.7	51.0	48.3	48.3	43.0	40.3	37.6	37.6
57.5°	51.0	48.3	48.3	45.6	45.6	43.0	37.6	37.6	34.9	34.9
60°	45.6	43.0	43.0	40.3	40.3	37.6	34.9	32.2	32.2	32.2
62.5°	40.3	37.6	40.3	37.6	37.6	34.9	32.2	29.5	29.5	29.5
65°	37.6	34.9	34.9	34.9	32.2	32.2	29.5	26.8	26.8	26.8
67.5°	32.2	29.5	32.2	29.5	29.5	26.8	26.8	24.2	24.2	21.5
70°	26.8	26.8	26.8	26.8	26.8	24.2	21.5	21.5	18.8	18.8
72.5°	24.2	24.2	24.2	24.2	21.5	21.5	18.8	18.8	16.1	16.1
75°	18.8	18.8	18.8	18.8	18.8	18.8	16.1	16.1	13.4	13.4
77.5°	16.1	16.1	16.1	16.1	16.1	13.4	13.4	10.7	10.7	10.7
80°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	8.1	8.1	8.1
82.5°	8.1	8.1	8.1	8.1	8.1	5.4	5.4	5.4	5.4	5.4
85°	5.4	5.4	5.4	5.4	5.4	2.7	2.7	2.7	2.7	2.7
87.5°	2.7	2.7	2.7	2.7	2.7	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)