

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: P592067

Luminaire Tested: **GRZ-15L-927-10x10FR-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592067
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-927-10x10FR-X-UNV-STD-4F
Description: iO LED GRAZER WITH 10x10FR OPTIC
1500 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

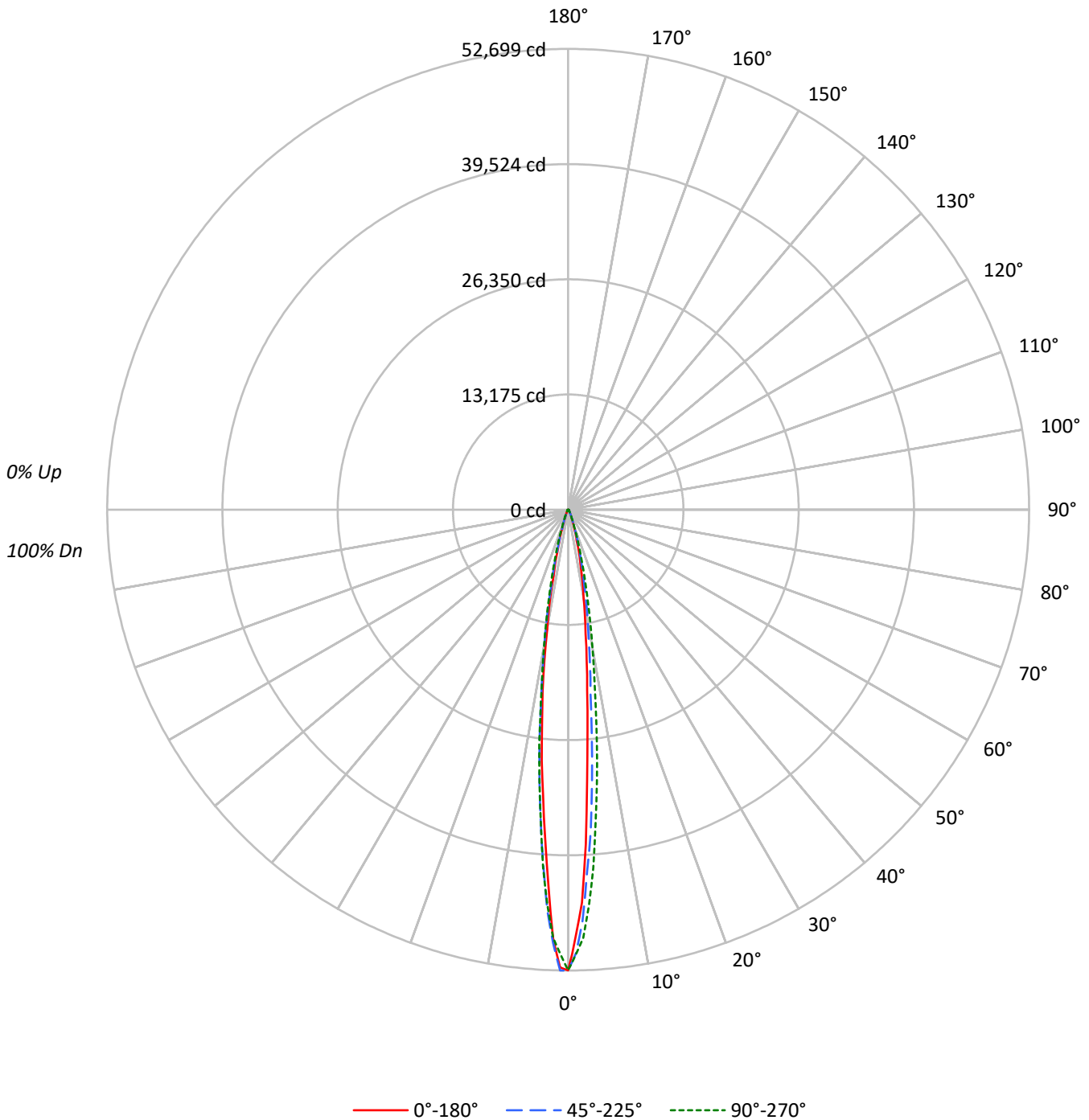
Lumens per Lamp: N/A
Luminaire Lumens: 4864.1 lumens
Efficiency: N/A
Efficacy: 86.9 lumens/watt
Spacing Criteria (0/90/45): 0.19 / 0.25 / 0.25
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

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	93	93	93		
2	111	108	105	102	109	106	103	101	103	101	99	100	98	97	97	96	95	93	93	92	91	89	88	88		
3	108	103	100	97	106	102	99	96	100	97	95	97	95	93	95	93	92	91	89	88	86	84	82	82		
4	105	100	96	93	103	99	95	92	97	94	91	95	92	90	93	91	89	88	86	84	82	80	79	78		
5	102	96	93	90	101	96	92	89	94	91	89	93	90	88	91	89	87	86	84	82	80	79	78	77		
6	100	94	90	87	98	93	89	87	92	89	86	91	88	86	89	87	85	84	82	80	79	78	77	76		
7	97	91	87	85	96	91	87	84	90	86	84	89	86	84	88	85	83	82	80	79	78	77	76	75		
8	95	89	85	83	94	89	85	83	88	85	82	87	84	82	86	84	82	81	80	79	78	77	76	75		
9	93	87	83	81	92	87	83	81	86	83	81	85	82	80	85	82	80	79	78	77	76	75	74	73		
10	91	85	82	79	91	85	82	79	84	81	79	84	81	79	83	81	79	78	77	76	75	74	73	72		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	850542	850542	850542
5°	410611	581239	532221
10°	165880	258492	227594
15°	65762	95091	70440
20°	25682	31436	20699
25°	11845	12467	9529
30°	6989	6803	5591
35°	4729	4729	3745
40°	3583	3794	2951
45°	3083	3311	2512
50°	2637	3014	2135
55°	2393	2815	1970
60°	2099	2745	1938
65°	1910	2674	1910
70°	1652	2596	1652
75°	1248	2183	1560
80°	930	1860	1395
85°	926	926	926



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	2538.9	52.2
10°-20°	1534.5	31.5
20°-30°	342.5	7.0
30°-40°	148.1	3.0
40°-50°	106.5	2.2
50°-60°	84.7	1.7
60°-70°	63.1	1.3
70°-80°	36.4	0.7
80°-90°	9.3	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°	4416.0	90.8
0°-40°	4564.1	93.8
0°-60°	4755.3	97.8
0°-90°	4864.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4864.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	52679	52679	52679	52679	52679	
5°	25335	31263	35862	36027	32838	1975
15°	3934	5069	5689	4684	4214	1209
25°	665	755	700	550	535	340
35°	240	240	240	210	190	154
45°	135	145	145	130	110	104
55°	85	105	100	90	70	74
65°	50	75	70	60	50	48
75°	20	40	35	35	25	22
85°	5	10	5	10	5	5
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°	52678.7	52678.7	52678.7	52678.7	52678.7	52678.7	52678.7	52678.7	52678.7	52678.7	52678.7
1°	48879.5	50414.2	50034.3	50394.2	50459.2	50704.1	50864.1	50974.0	51239.0	51144.0	50819.1
2°	44965.3	45815.2	45765.2	45985.1	47239.9	47064.9	47514.8	48464.6	48314.6	48534.6	48994.5
3°	38271.8	40136.4	39706.5	39666.5	40871.2	41391.1	43175.7	43595.6	44640.4	45345.3	45360.3
4°	30918.4	32128.1	32413.0	34717.5	34587.6	36867.1	37931.9	38806.7	39621.5	42170.9	41061.2
5°	25334.6	26229.4	27119.2	28253.9	28533.9	31263.3	31868.2	33127.9	35332.4	36287.2	35862.3
6°	20740.5	21620.4	21615.4	22755.1	23799.9	25749.5	26424.3	28233.9	30028.5	31288.3	31343.3
7°	17251.3	17756.2	18076.1	18811.0	19975.7	21010.5	22590.1	23779.9	24934.6	26249.4	27049.2
8°	14346.9	14831.8	15011.8	15681.6	16371.5	17841.2	19420.8	20345.6	21555.4	22700.1	22470.2
9°	12057.4	12812.2	12707.3	13102.2	13887.0	14881.8	15826.6	17196.3	17976.1	19105.9	18846.0
10°	10117.8	10597.7	10907.7	11402.6	11692.5	12782.3	13357.1	14246.9	15226.7	15381.7	15766.6
12.5°	6638.6	6748.6	6813.5	7058.5	7588.4	8118.3	8693.1	9163.0	9453.0	9513.0	9797.9
15°	3934.2	4124.1	4164.1	4499.0	4789.0	5068.9	5433.8	5503.8	5658.8	5598.8	5688.8
17.5°	2419.5	2439.5	2589.4	2594.4	2909.4	3054.3	3309.3	3369.3	3284.3	3239.3	3239.3
20°	1494.7	1504.7	1544.7	1649.6	1709.6	1869.6	1999.6	2014.6	1969.6	1874.6	1829.6
22.5°	969.8	999.8	969.8	1009.8	1069.8	1159.8	1219.7	1229.7	1169.7	1134.8	1129.8
25°	664.9	669.9	694.9	669.9	699.8	754.8	774.8	789.8	739.8	724.8	699.8
27.5°	489.9	489.9	489.9	489.9	499.9	499.9	509.9	514.9	499.9	489.9	494.9
30°	374.9	369.9	374.9	374.9	364.9	374.9	379.9	379.9	369.9	369.9	364.9
32.5°	289.9	294.9	299.9	294.9	289.9	294.9	299.9	294.9	294.9	299.9	289.9
35°	239.9	239.9	244.9	239.9	239.9	239.9	244.9	244.9	244.9	244.9	239.9
37.5°	195.0	200.0	205.0	205.0	205.0	205.0	210.0	210.0	215.0	205.0	200.0
40°	170.0	170.0	175.0	175.0	180.0	175.0	180.0	185.0	185.0	180.0	180.0
42.5°	150.0	150.0	155.0	155.0	155.0	160.0	165.0	165.0	165.0	165.0	160.0
45°	135.0	130.0	135.0	140.0	145.0	145.0	150.0	155.0	150.0	150.0	145.0
47.5°	120.0	120.0	120.0	125.0	130.0	135.0	135.0	140.0	140.0	135.0	130.0
50°	105.0	105.0	110.0	115.0	120.0	125.0	125.0	130.0	130.0	125.0	120.0
52.5°	90.0	90.0	95.0	105.0	110.0	115.0	115.0	120.0	120.0	115.0	110.0
55°	85.0	80.0	85.0	90.0	100.0	105.0	110.0	110.0	110.0	105.0	100.0
57.5°	70.0	70.0	75.0	80.0	90.0	100.0	100.0	105.0	100.0	95.0	95.0
60°	65.0	65.0	70.0	75.0	85.0	95.0	95.0	95.0	90.0	85.0	85.0
62.5°	55.0	55.0	60.0	65.0	75.0	85.0	90.0	90.0	85.0	80.0	75.0
65°	50.0	50.0	50.0	60.0	70.0	75.0	80.0	80.0	75.0	70.0	70.0
67.5°	40.0	40.0	45.0	50.0	60.0	65.0	70.0	75.0	70.0	65.0	60.0
70°	35.0	35.0	35.0	45.0	55.0	60.0	65.0	65.0	60.0	55.0	55.0
72.5°	25.0	25.0	30.0	35.0	45.0	50.0	55.0	55.0	50.0	45.0	45.0
75°	20.0	20.0	25.0	30.0	35.0	40.0	45.0	45.0	45.0	40.0	35.0
77.5°	15.0	15.0	20.0	25.0	30.0	35.0	35.0	35.0	35.0	30.0	30.0
80°	10.0	10.0	15.0	15.0	20.0	25.0	25.0	25.0	25.0	20.0	20.0
82.5°	10.0	5.0	10.0	10.0	15.0	15.0	20.0	20.0	15.0	15.0	15.0
85°	5.0	5.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	5.0
87.5°	0.0	0.0	0.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
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°	52678.7	52678.7	52678.7	52678.7	52678.7	52678.7	52678.7	52678.7	52678.7	52678.7
1°	51618.9	52373.7	51873.9	52433.7	52698.7	52698.7	52788.7	52408.7	52158.8	52343.8
2°	49194.4	49854.3	50049.2	49939.3	49604.3	49654.3	49019.5	48954.5	48119.7	49084.5
3°	45705.2	46435.0	46135.1	45750.2	45815.2	45100.3	44080.5	43600.6	43305.7	43170.7
4°	41516.1	41986.0	41906.0	41636.1	40791.2	39956.4	39031.6	39341.5	37457.0	37706.9
5°	36962.1	37486.9	37217.0	36327.2	36027.3	35127.5	34662.6	33702.8	32688.0	32837.9
6°	31798.2	31623.2	32138.1	31513.2	31368.3	29783.6	29533.7	29693.6	28983.8	28918.8
7°	26544.3	27764.0	27424.1	26979.2	26809.2	25864.4	25714.5	24744.7	24804.7	24434.8
8°	23100.0	23220.0	23534.9	22930.1	22380.2	22265.2	21685.3	21115.5	21240.4	20980.5
9°	19205.9	19580.8	19325.8	19385.8	18671.0	17931.1	17656.2	17806.2	17381.3	17441.3
10°	15561.7	16166.5	16006.6	15871.6	15731.6	14966.8	14836.8	14496.9	14271.9	13882.0
12.5°	9797.9	9572.9	9682.9	9248.0	9078.0	8483.2	8368.2	8223.2	7738.3	7738.3
15°	5963.7	5488.8	5658.8	5108.9	4684.0	4559.0	4244.1	4249.1	4234.1	4214.1
17.5°	3139.3	3139.3	3069.3	2634.4	2504.5	2279.5	2249.5	2279.5	2204.5	2219.5
20°	1844.6	1779.6	1674.6	1469.7	1379.7	1284.7	1264.7	1249.7	1249.7	1204.7
22.5°	1134.8	1079.8	1019.8	894.8	824.8	794.8	764.8	779.8	779.8	784.8
25°	724.8	679.9	654.9	579.9	549.9	544.9	529.9	509.9	514.9	534.9
27.5°	484.9	464.9	444.9	414.9	394.9	384.9	384.9	389.9	379.9	369.9
30°	364.9	339.9	329.9	319.9	304.9	304.9	304.9	299.9	294.9	299.9
32.5°	289.9	274.9	264.9	254.9	249.9	244.9	249.9	244.9	239.9	234.9
35°	239.9	225.0	220.0	215.0	210.0	205.0	205.0	205.0	195.0	190.0
37.5°	200.0	195.0	195.0	185.0	180.0	175.0	175.0	175.0	165.0	165.0
40°	180.0	175.0	170.0	165.0	160.0	155.0	150.0	150.0	140.0	140.0
42.5°	160.0	155.0	155.0	150.0	145.0	135.0	135.0	130.0	125.0	125.0
45°	145.0	140.0	140.0	135.0	130.0	125.0	120.0	115.0	110.0	110.0
47.5°	135.0	130.0	130.0	125.0	115.0	110.0	105.0	100.0	100.0	100.0
50°	120.0	120.0	120.0	115.0	110.0	105.0	95.0	90.0	85.0	85.0
52.5°	110.0	110.0	105.0	105.0	100.0	95.0	85.0	80.0	80.0	80.0
55°	105.0	100.0	100.0	95.0	90.0	90.0	80.0	75.0	70.0	70.0
57.5°	95.0	90.0	90.0	85.0	85.0	80.0	70.0	70.0	65.0	65.0
60°	85.0	80.0	80.0	75.0	75.0	70.0	65.0	60.0	60.0	60.0
62.5°	75.0	70.0	75.0	70.0	70.0	65.0	60.0	55.0	55.0	55.0
65°	70.0	65.0	65.0	65.0	60.0	60.0	55.0	50.0	50.0	50.0
67.5°	60.0	55.0	60.0	55.0	55.0	50.0	50.0	45.0	45.0	40.0
70°	50.0	50.0	50.0	50.0	50.0	45.0	40.0	40.0	35.0	35.0
72.5°	45.0	45.0	45.0	45.0	40.0	40.0	35.0	35.0	30.0	30.0
75°	35.0	35.0	35.0	35.0	35.0	35.0	30.0	30.0	25.0	25.0
77.5°	30.0	30.0	30.0	30.0	30.0	25.0	25.0	20.0	20.0	20.0
80°	20.0	20.0	20.0	20.0	20.0	20.0	20.0	15.0	15.0	15.0
82.5°	15.0	15.0	15.0	15.0	15.0	10.0	10.0	10.0	10.0	10.0
85°	10.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0
87.5°	5.0	5.0	5.0	5.0	5.0	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)