

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: P592082

Luminaire Tested: **GRZ-15L-930-10x10FR-X-UNV-STD-2F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592082
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-930-10x10FR-X-UNV-STD-2F
Description: iO LED GRAZER WITH 10x10FR OPTIC
1500 LUMENS PER FOOT, 2 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

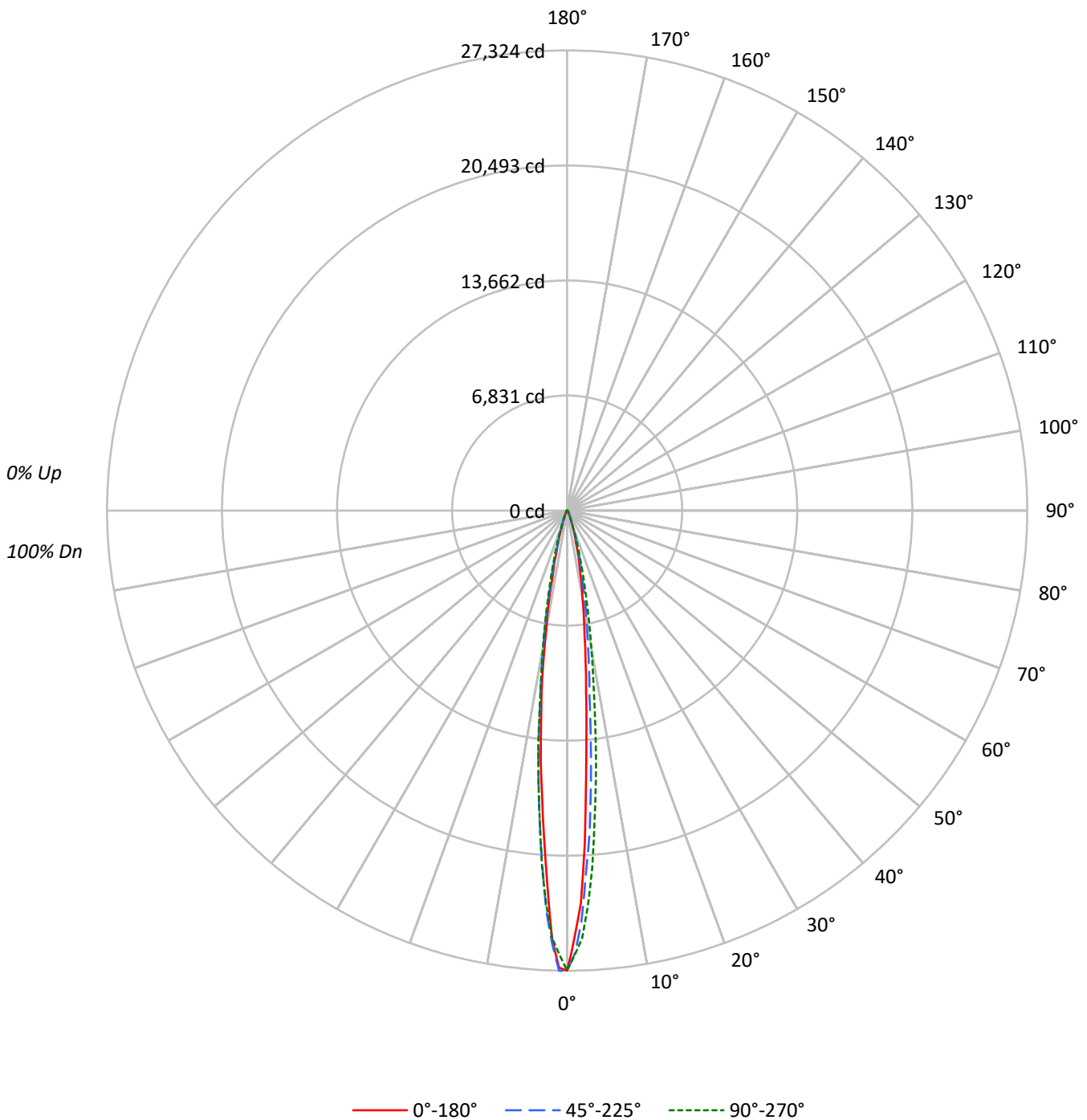
Lumens per Lamp: N/A
Luminaire Lumens: 2522.0 lumens
Efficiency: N/A
Efficacy: 87.0 lumens/watt
Spacing Criteria (0/90/45): 0.19 / 0.25 / 0.25
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')
CIE Type: Direct

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					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°	882018	882018	882018
5°	425807	602748	551918
10°	172019	268057	236018
15°	68196	98611	73046
20°	26632	32601	21467
25°	12282	12930	9880
30°	7249	7055	5798
35°	4904	4904	3883
40°	3714	3933	3060
45°	3197	3434	2603
50°	2733	3125	2215
55°	2483	2916	2044
60°	2176	2848	2009
65°	1979	2774	1979
70°	1709	2691	1709
75°	1298	2258	1622
80°	967	1934	1450
85°	963	963	963



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1316.5	52.2
10°-20°	795.7	31.5
20°-30°	177.6	7.0
30°-40°	76.8	3.0
40°-50°	55.2	2.2
50°-60°	43.9	1.7
60°-70°	32.7	1.3
70°-80°	18.9	0.7
80°-90°	4.8	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°	2289.7	90.8
0°-40°	2366.5	93.8
0°-60°	2465.6	97.8
0°-90°	2522.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2522.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	27314	27314	27314	27314	27314	
5°	13136	16210	18595	18680	17027	1024
15°	2040	2628	2950	2429	2185	627
25°	345	391	363	285	277	176
35°	124	124	124	109	98	80
45°	70	75	75	67	57	54
55°	44	54	52	47	36	38
65°	26	39	36	31	26	25
75°	10	21	18	18	13	11
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°	27314.1	27314.1	27314.1	27314.1	27314.1	27314.1	27314.1	27314.1	27314.1	27314.1	27314.1
1°	25344.2	26139.9	25942.9	26129.5	26163.2	26290.2	26373.2	26430.2	26567.6	26518.3	26349.9
2°	23314.7	23755.3	23729.4	23843.4	24494.0	24403.3	24636.6	25129.0	25051.3	25165.3	25403.8
3°	19844.0	20810.8	20587.9	20567.2	21191.9	21461.4	22386.8	22604.5	23146.2	23511.7	23519.4
4°	16031.3	16658.5	16806.3	18001.2	17933.8	19115.7	19667.8	20121.4	20543.9	21865.8	21290.4
5°	13136.1	13600.0	14061.4	14649.8	14794.9	16210.1	16523.7	17176.9	18320.0	18815.0	18594.7
6°	10754.0	11210.2	11207.6	11798.6	12340.3	13351.2	13701.1	14639.4	15569.9	16223.1	16251.6
7°	8944.9	9206.6	9372.5	9753.5	10357.5	10894.0	11713.1	12330.0	12928.7	13610.4	14025.1
8°	7438.9	7690.3	7783.7	8131.0	8488.7	9250.7	10069.8	10549.3	11176.5	11770.1	11650.9
9°	6251.8	6643.2	6588.8	6793.5	7200.5	7716.3	8206.1	8916.3	9320.7	9906.5	9771.7
10°	5246.1	5495.0	5655.7	5912.3	6062.6	6627.6	6925.7	7387.1	7895.1	7975.5	8175.0
12.5°	3442.1	3499.1	3532.8	3659.8	3934.6	4209.3	4507.4	4751.1	4901.4	4932.5	5080.2
15°	2039.9	2138.4	2159.1	2332.8	2483.1	2628.2	2817.5	2853.7	2934.1	2903.0	2949.7
17.5°	1254.5	1264.9	1342.6	1345.2	1508.5	1583.7	1715.9	1747.0	1702.9	1679.6	1679.6
20°	775.0	780.2	800.9	855.3	886.5	969.4	1036.8	1044.6	1021.2	972.0	948.7
22.5°	502.8	518.4	502.8	523.6	554.7	601.3	632.4	637.6	606.5	588.4	585.8
25°	344.7	347.3	360.3	347.3	362.9	391.4	401.8	409.5	383.6	375.8	362.9
27.5°	254.0	254.0	254.0	254.0	259.2	259.2	264.4	267.0	259.2	254.0	256.6
30°	194.4	191.8	194.4	194.4	189.2	194.4	197.0	197.0	191.8	191.8	189.2
32.5°	150.3	152.9	155.5	152.9	150.3	152.9	155.5	152.9	152.9	155.5	150.3
35°	124.4	124.4	127.0	124.4	124.4	124.4	127.0	127.0	127.0	127.0	124.4
37.5°	101.1	103.7	106.3	106.3	106.3	106.3	108.9	108.9	111.5	106.3	103.7
40°	88.1	88.1	90.7	90.7	93.3	90.7	93.3	95.9	95.9	93.3	93.3
42.5°	77.8	77.8	80.4	80.4	80.4	82.9	85.5	85.5	85.5	85.5	82.9
45°	70.0	67.4	70.0	72.6	75.2	75.2	77.8	80.4	77.8	77.8	75.2
47.5°	62.2	62.2	62.2	64.8	67.4	70.0	70.0	72.6	72.6	70.0	67.4
50°	54.4	54.4	57.0	59.6	62.2	64.8	64.8	67.4	67.4	64.8	62.2
52.5°	46.7	46.7	49.2	54.4	57.0	59.6	59.6	62.2	62.2	59.6	57.0
55°	44.1	41.5	44.1	46.7	51.8	54.4	57.0	57.0	57.0	54.4	51.8
57.5°	36.3	36.3	38.9	41.5	46.7	51.8	51.8	54.4	51.8	49.2	49.2
60°	33.7	33.7	36.3	38.9	44.1	49.2	49.2	49.2	46.7	44.1	44.1
62.5°	28.5	28.5	31.1	33.7	38.9	44.1	46.7	46.7	44.1	41.5	38.9
65°	25.9	25.9	25.9	31.1	36.3	38.9	41.5	41.5	38.9	36.3	36.3
67.5°	20.7	20.7	23.3	25.9	31.1	33.7	36.3	38.9	36.3	33.7	31.1
70°	18.1	18.1	18.1	23.3	28.5	31.1	33.7	33.7	31.1	28.5	28.5
72.5°	13.0	13.0	15.6	18.1	23.3	25.9	28.5	28.5	25.9	23.3	23.3
75°	10.4	10.4	13.0	15.6	18.1	20.7	23.3	23.3	23.3	20.7	18.1
77.5°	7.8	7.8	10.4	13.0	15.6	18.1	18.1	18.1	18.1	15.6	15.6
80°	5.2	5.2	7.8	7.8	10.4	13.0	13.0	13.0	13.0	10.4	10.4
82.5°	5.2	2.6	5.2	5.2	7.8	7.8	10.4	10.4	7.8	7.8	7.8
85°	2.6	2.6	2.6	2.6	5.2	5.2	5.2	5.2	5.2	5.2	2.6
87.5°	0.0	0.0	0.0	0.0	2.6	2.6	2.6	2.6	2.6	2.6	2.6
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°	27314.1	27314.1	27314.1	27314.1	27314.1	27314.1	27314.1	27314.1	27314.1	27314.1
1°	26764.6	27156.0	26896.8	27187.1	27324.4	27324.4	27371.1	27174.1	27044.5	27140.4
2°	25507.5	25849.6	25950.7	25893.7	25720.0	25745.9	25416.8	25383.1	24950.2	25450.5
3°	23698.3	24076.7	23921.2	23721.6	23755.3	23384.7	22855.9	22607.1	22454.1	22384.2
4°	21526.2	21769.9	21728.4	21588.4	21150.4	20717.5	20238.0	20398.7	19421.6	19551.2
5°	19164.9	19437.1	19297.1	18835.8	18680.3	18213.7	17972.6	17475.0	16948.8	17026.6
6°	16487.5	16396.7	16663.7	16339.7	16264.5	15442.9	15313.3	15396.2	15028.2	14994.5
7°	13763.3	14395.7	14219.5	13988.8	13900.7	13410.8	13333.0	12830.2	12861.3	12669.5
8°	11977.4	12039.7	12202.9	11889.3	11604.2	11544.6	11243.9	10948.4	11013.2	10878.5
9°	9958.3	10152.7	10020.5	10051.6	9681.0	9297.4	9154.8	9232.6	9012.2	9043.3
10°	8068.8	8382.4	8299.5	8229.5	8156.9	7760.3	7692.9	7516.7	7400.0	7197.9
12.5°	5080.2	4963.6	5020.6	4795.1	4707.0	4398.6	4338.9	4263.8	4012.4	4012.4
15°	3092.2	2846.0	2934.1	2649.0	2428.7	2363.9	2200.6	2203.2	2195.4	2185.0
17.5°	1627.8	1627.8	1591.5	1366.0	1298.6	1181.9	1166.4	1181.9	1143.1	1150.8
20°	956.4	922.7	868.3	762.0	715.4	666.1	655.8	648.0	648.0	624.7
22.5°	588.4	559.9	528.8	464.0	427.7	412.1	396.6	404.3	404.3	406.9
25°	375.8	352.5	339.5	300.7	285.1	282.5	274.7	264.4	267.0	277.3
27.5°	251.4	241.1	230.7	215.1	204.8	199.6	199.6	202.2	197.0	191.8
30°	189.2	176.3	171.1	165.9	158.1	158.1	158.1	155.5	152.9	155.5
32.5°	150.3	142.6	137.4	132.2	129.6	127.0	129.6	127.0	124.4	121.8
35°	124.4	116.6	114.0	111.5	108.9	106.3	106.3	106.3	101.1	98.5
37.5°	103.7	101.1	101.1	95.9	93.3	90.7	90.7	90.7	85.5	85.5
40°	93.3	90.7	88.1	85.5	82.9	80.4	77.8	77.8	72.6	72.6
42.5°	82.9	80.4	80.4	77.8	75.2	70.0	70.0	67.4	64.8	64.8
45°	75.2	72.6	72.6	70.0	67.4	64.8	62.2	59.6	57.0	57.0
47.5°	70.0	67.4	67.4	64.8	59.6	57.0	54.4	51.8	51.8	51.8
50°	62.2	62.2	62.2	59.6	57.0	54.4	49.2	46.7	44.1	44.1
52.5°	57.0	57.0	54.4	54.4	51.8	49.2	44.1	41.5	41.5	41.5
55°	54.4	51.8	51.8	49.2	46.7	46.7	41.5	38.9	36.3	36.3
57.5°	49.2	46.7	46.7	44.1	44.1	41.5	36.3	36.3	33.7	33.7
60°	44.1	41.5	41.5	38.9	38.9	36.3	33.7	31.1	31.1	31.1
62.5°	38.9	36.3	38.9	36.3	36.3	33.7	31.1	28.5	28.5	28.5
65°	36.3	33.7	33.7	33.7	31.1	31.1	28.5	25.9	25.9	25.9
67.5°	31.1	28.5	31.1	28.5	28.5	25.9	25.9	23.3	23.3	20.7
70°	25.9	25.9	25.9	25.9	25.9	23.3	20.7	20.7	18.1	18.1
72.5°	23.3	23.3	23.3	23.3	20.7	20.7	18.1	18.1	15.6	15.6
75°	18.1	18.1	18.1	18.1	18.1	18.1	15.6	15.6	13.0	13.0
77.5°	15.6	15.6	15.6	15.6	15.6	13.0	13.0	10.4	10.4	10.4
80°	10.4	10.4	10.4	10.4	10.4	10.4	10.4	7.8	7.8	7.8
82.5°	7.8	7.8	7.8	7.8	7.8	5.2	5.2	5.2	5.2	5.2
85°	5.2	5.2	5.2	5.2	5.2	2.6	2.6	2.6	2.6	2.6
87.5°	2.6	2.6	2.6	2.6	2.6	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)