

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: P592066

Luminaire Tested: **GRZ-15L-927-10x10FR-X-UNV-STD-2F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592066
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-2F
Description: iO LED GRAZER WITH 10x10FR OPTIC
1500 LUMENS PER FOOT, 2 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

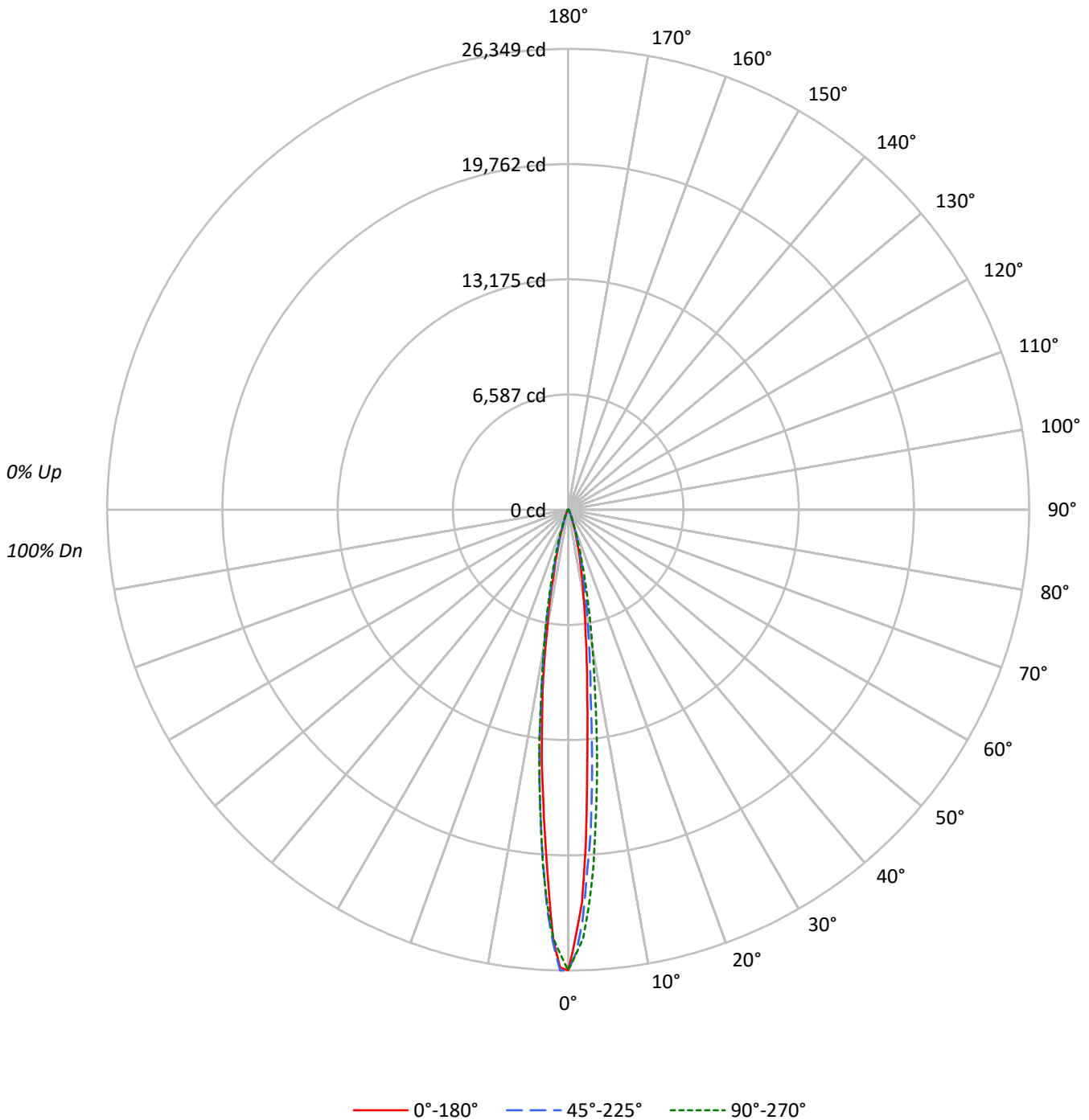
Lumens per Lamp: N/A
Luminaire Lumens: 2432.0 lumens
Efficiency: N/A
Efficacy: 83.9 lumens/watt
Spacing Criteria (0/90/45): 0.19 / 0.25 / 0.25
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')
CIE Type: Direct

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



TEST NUMBER: P592066
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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°	850540	850540	850540
5°	410611	581237	532222
10°	165880	258492	227594
15°	65762	95091	70439
20°	25680	31436	20701
25°	11843	12467	9527
30°	6991	6805	5593
35°	4731	4731	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



TEST NUMBER: P592066

CATALOG NUMBER: GRZ-15L-927-10x10FR-X-UNV-STD-2F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1269.5	52.2
10°-20°	767.3	31.5
20°-30°	171.2	7.0
30°-40°	74.1	3.0
40°-50°	53.3	2.2
50°-60°	42.4	1.7
60°-70°	31.5	1.3
70°-80°	18.2	0.7
80°-90°	4.6	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°	2208.0	90.8
0°-40°	2282.1	93.8
0°-60°	2377.7	97.8
0°-90°	2432.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2432.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	26339	26339	26339	26339	26339	
5°	12667	15632	17931	18014	16419	987
15°	1967	2534	2844	2342	2107	604
25°	332	377	350	275	267	170
35°	120	120	120	105	95	77
45°	68	72	72	65	55	52
55°	42	52	50	45	35	37
65°	25	38	35	30	25	24
75°	10	20	18	18	12	11
85°	2	5	2	5	2	3
90°	0	0	0	0	0	



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CATALOG NUMBER: GRZ-15L-927-10x10FR-X-UNV-STD-2F

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	26339.3	26339.3	26339.3	26339.3	26339.3	26339.3	26339.3	26339.3	26339.3	26339.3	26339.3
1°	24439.7	25207.1	25017.1	25197.1	25229.6	25352.1	25432.0	25487.0	25619.5	25572.0	25409.5
2°	22482.7	22907.6	22882.6	22992.6	23619.9	23532.4	23757.4	24232.3	24157.3	24267.3	24497.2
3°	19135.9	20068.2	19853.2	19833.2	20435.6	20695.6	21587.9	21797.8	22320.2	22672.6	22680.1
4°	15459.2	16064.0	16206.5	17358.8	17293.8	18433.5	18965.9	19403.3	19810.7	21085.5	20530.6
5°	12667.3	13114.7	13559.6	14127.0	14266.9	15631.6	15934.1	16563.9	17666.2	18143.6	17931.1
6°	10370.3	10810.2	10807.7	11377.6	11899.9	12874.7	13212.2	14117.0	15014.3	15644.1	15671.6
7°	8625.6	8878.1	9038.1	9405.5	9987.9	10505.2	11295.1	11889.9	12467.3	13124.7	13524.6
8°	7173.5	7415.9	7505.9	7840.8	8185.7	8920.6	9710.4	10172.8	10777.7	11350.1	11235.1
9°	6028.7	6406.1	6353.6	6551.1	6943.5	7440.9	7913.3	8598.2	8988.1	9552.9	9423.0
10°	5058.9	5298.9	5453.8	5701.3	5846.2	6391.1	6678.6	7123.5	7613.4	7690.8	7883.3
12.5°	3319.3	3374.3	3406.8	3529.2	3794.2	4059.1	4346.6	4581.5	4726.5	4756.5	4898.9
15°	1967.1	2062.1	2082.1	2249.5	2394.5	2534.5	2716.9	2751.9	2829.4	2799.4	2844.4
17.5°	1209.7	1219.7	1294.7	1297.2	1454.7	1527.2	1654.6	1684.6	1642.1	1619.7	1619.7
20°	747.3	752.3	772.3	824.8	854.8	934.8	999.8	1007.3	984.8	937.3	914.8
22.5°	484.9	499.9	484.9	504.9	534.9	579.9	609.9	614.9	584.9	567.4	564.9
25°	332.4	334.9	347.4	334.9	349.9	377.4	387.4	394.9	369.9	362.4	349.9
27.5°	244.9	244.9	244.9	244.9	249.9	249.9	254.9	257.4	249.9	244.9	247.4
30°	187.5	185.0	187.5	187.5	182.5	187.5	190.0	190.0	185.0	185.0	182.5
32.5°	145.0	147.5	150.0	147.5	145.0	147.5	150.0	147.5	147.5	150.0	145.0
35°	120.0	120.0	122.5	120.0	120.0	120.0	122.5	122.5	122.5	122.5	120.0
37.5°	97.5	100.0	102.5	102.5	102.5	102.5	105.0	105.0	107.5	102.5	100.0
40°	85.0	85.0	87.5	87.5	90.0	87.5	90.0	92.5	92.5	90.0	90.0
42.5°	75.0	75.0	77.5	77.5	77.5	80.0	82.5	82.5	82.5	82.5	80.0
45°	67.5	65.0	67.5	70.0	72.5	72.5	75.0	77.5	75.0	75.0	72.5
47.5°	60.0	60.0	60.0	62.5	65.0	67.5	67.5	70.0	70.0	67.5	65.0
50°	52.5	52.5	55.0	57.5	60.0	62.5	62.5	65.0	65.0	62.5	60.0
52.5°	45.0	45.0	47.5	52.5	55.0	57.5	57.5	60.0	60.0	57.5	55.0
55°	42.5	40.0	42.5	45.0	50.0	52.5	55.0	55.0	55.0	52.5	50.0
57.5°	35.0	35.0	37.5	40.0	45.0	50.0	50.0	52.5	50.0	47.5	47.5
60°	32.5	32.5	35.0	37.5	42.5	47.5	47.5	47.5	45.0	42.5	42.5
62.5°	27.5	27.5	30.0	32.5	37.5	42.5	45.0	45.0	42.5	40.0	37.5
65°	25.0	25.0	25.0	30.0	35.0	37.5	40.0	40.0	37.5	35.0	35.0
67.5°	20.0	20.0	22.5	25.0	30.0	32.5	35.0	37.5	35.0	32.5	30.0
70°	17.5	17.5	17.5	22.5	27.5	30.0	32.5	32.5	30.0	27.5	27.5
72.5°	12.5	12.5	15.0	17.5	22.5	25.0	27.5	27.5	25.0	22.5	22.5
75°	10.0	10.0	12.5	15.0	17.5	20.0	22.5	22.5	22.5	20.0	17.5
77.5°	7.5	7.5	10.0	12.5	15.0	17.5	17.5	17.5	17.5	15.0	15.0
80°	5.0	5.0	7.5	7.5	10.0	12.5	12.5	12.5	12.5	10.0	10.0
82.5°	5.0	2.5	5.0	5.0	7.5	7.5	10.0	10.0	7.5	7.5	7.5
85°	2.5	2.5	2.5	2.5	5.0	5.0	5.0	5.0	5.0	5.0	2.5
87.5°	0.0	0.0	0.0	0.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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°	26339.3	26339.3	26339.3	26339.3	26339.3	26339.3	26339.3	26339.3	26339.3	26339.3
1°	25809.5	26186.9	25936.9	26216.9	26349.3	26349.3	26394.3	26204.4	26079.4	26171.9
2°	24597.2	24927.1	25024.6	24969.6	24802.2	24827.2	24509.7	24477.2	24059.8	24542.2
3°	22852.6	23217.5	23067.5	22875.1	22907.6	22550.2	22040.3	21800.3	21652.8	21585.4
4°	20758.0	20993.0	20953.0	20818.0	20395.6	19978.2	19515.8	19670.8	18728.5	18853.4
5°	18481.0	18743.5	18608.5	18163.6	18013.6	17563.7	17331.3	16851.4	16344.0	16419.0
6°	15899.1	15811.6	16069.0	15756.6	15684.1	14891.8	14766.8	14846.8	14491.9	14459.4
7°	13272.1	13882.0	13712.1	13489.6	13404.6	12932.2	12857.2	12372.3	12402.3	12217.4
8°	11550.0	11610.0	11767.5	11465.0	11190.1	11132.6	10842.7	10557.7	10620.2	10490.2
9°	9602.9	9790.4	9662.9	9692.9	9335.5	8965.6	8828.1	8903.1	8690.6	8720.6
10°	7780.8	8083.3	8003.3	7935.8	7865.8	7483.4	7418.4	7248.4	7136.0	6941.0
12.5°	4898.9	4786.5	4841.5	4624.0	4539.0	4241.6	4184.1	4111.6	3869.2	3869.2
15°	2981.9	2744.4	2829.4	2554.5	2342.0	2279.5	2122.0	2124.5	2117.0	2107.0
17.5°	1569.7	1569.7	1534.7	1317.2	1252.2	1139.8	1124.8	1139.8	1102.3	1109.8
20°	922.3	889.8	837.3	734.8	689.9	642.4	632.4	624.9	624.9	602.4
22.5°	567.4	539.9	509.9	447.4	412.4	397.4	382.4	389.9	389.9	392.4
25°	362.4	339.9	327.4	289.9	274.9	272.4	264.9	254.9	257.4	267.4
27.5°	242.4	232.5	222.5	207.5	197.5	192.5	192.5	195.0	190.0	185.0
30°	182.5	170.0	165.0	160.0	152.5	152.5	152.5	150.0	147.5	150.0
32.5°	145.0	137.5	132.5	127.5	125.0	122.5	125.0	122.5	120.0	117.5
35°	120.0	112.5	110.0	107.5	105.0	102.5	102.5	102.5	97.5	95.0
37.5°	100.0	97.5	97.5	92.5	90.0	87.5	87.5	87.5	82.5	82.5
40°	90.0	87.5	85.0	82.5	80.0	77.5	75.0	75.0	70.0	70.0
42.5°	80.0	77.5	77.5	75.0	72.5	67.5	67.5	65.0	62.5	62.5
45°	72.5	70.0	70.0	67.5	65.0	62.5	60.0	57.5	55.0	55.0
47.5°	67.5	65.0	65.0	62.5	57.5	55.0	52.5	50.0	50.0	50.0
50°	60.0	60.0	60.0	57.5	55.0	52.5	47.5	45.0	42.5	42.5
52.5°	55.0	55.0	52.5	52.5	50.0	47.5	42.5	40.0	40.0	40.0
55°	52.5	50.0	50.0	47.5	45.0	45.0	40.0	37.5	35.0	35.0
57.5°	47.5	45.0	45.0	42.5	42.5	40.0	35.0	35.0	32.5	32.5
60°	42.5	40.0	40.0	37.5	37.5	35.0	32.5	30.0	30.0	30.0
62.5°	37.5	35.0	37.5	35.0	35.0	32.5	30.0	27.5	27.5	27.5
65°	35.0	32.5	32.5	32.5	30.0	30.0	27.5	25.0	25.0	25.0
67.5°	30.0	27.5	30.0	27.5	27.5	25.0	25.0	22.5	22.5	20.0
70°	25.0	25.0	25.0	25.0	25.0	22.5	20.0	20.0	17.5	17.5
72.5°	22.5	22.5	22.5	22.5	20.0	20.0	17.5	17.5	15.0	15.0
75°	17.5	17.5	17.5	17.5	17.5	17.5	15.0	15.0	12.5	12.5
77.5°	15.0	15.0	15.0	15.0	15.0	12.5	12.5	10.0	10.0	10.0
80°	10.0	10.0	10.0	10.0	10.0	10.0	10.0	7.5	7.5	7.5
82.5°	7.5	7.5	7.5	7.5	7.5	5.0	5.0	5.0	5.0	5.0
85°	5.0	5.0	5.0	5.0	5.0	2.5	2.5	2.5	2.5	2.5
87.5°	2.5	2.5	2.5	2.5	2.5	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)