

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: P592039

Luminaire Tested: **GRZ-10L-935-10x60-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592039
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2111-457-18)
Test Lab: INNOVATION CENTER
Issue Date: 2/2/2022
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: iO LED
Catalog Number: GRZ-10L-935-10x60-X-UNV-STD-4F
Description: iO LED GRAZER WITH 10x60 OPTIC
1000 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

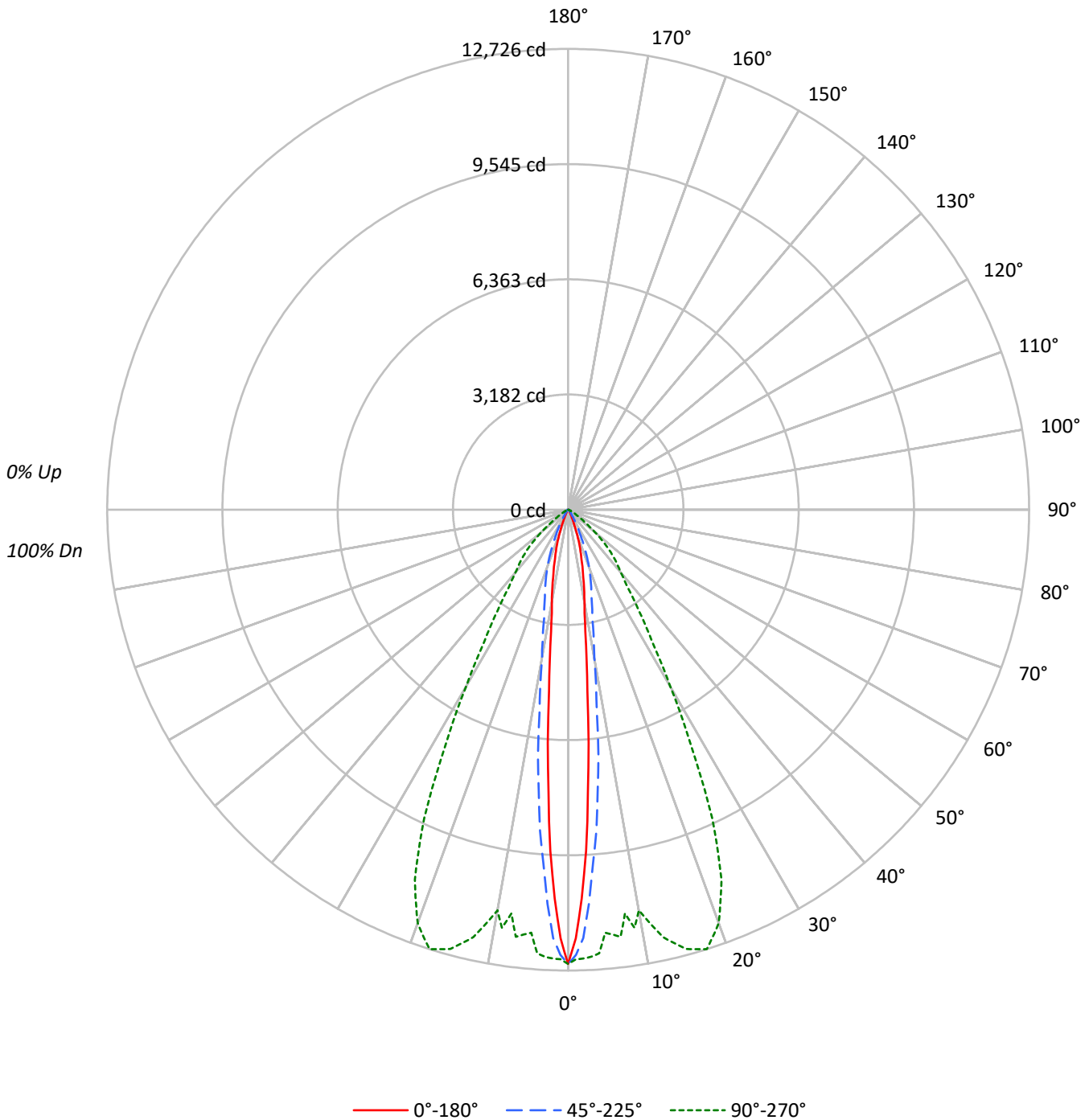
Lumens per Lamp: N/A
Luminaire Lumens: 3892.0 lumens
Efficiency: N/A
Efficacy: 102.4 lumens/watt
Spacing Criteria (0/90/45): 0.18 / 0.97 / 0.31
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 38
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: P592039
CATALOG NUMBER: GRZ-10L-935-10x60-X-UNV-STD-4F

Luminous Intensity Polar Plot





TEST NUMBER: P592039

CATALOG NUMBER: GRZ-10L-935-10x60-X-UNV-STD-4F

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			
1	114	111	109	106	111	109	107	105	105	103	102	101	100	99	98	97	96	94					94			
2	108	104	100	97	106	102	98	95	99	96	93	96	93	91	93	91	89	88					88			
3	103	97	92	89	101	96	91	88	93	90	86	91	88	85	89	86	84	82					82			
4	98	91	86	82	97	90	85	82	88	84	81	86	83	80	84	81	79	77					77			
5	94	86	81	77	92	85	80	76	83	79	76	82	78	75	80	77	74	73					73			
6	90	82	76	72	88	81	75	72	79	75	71	78	74	71	77	73	70	69					69			
7	86	77	72	68	85	77	71	68	75	71	67	74	70	67	73	69	67	65					65			
8	82	74	68	64	81	73	68	64	72	67	64	71	67	64	70	66	63	62					62			
9	79	70	65	61	78	70	64	61	69	64	61	68	64	60	67	63	60	59					59			
10	76	67	62	58	75	67	61	58	66	61	58	65	61	58	64	60	58	56					56			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	202537	202537	202537
5°	104902	144218	190025
10°	42446	68108	184135
15°	23746	41601	209929
20°	11600	28679	208779
25°	4163	15528	167507
30°	2213	7191	105040
35°	1535	3363	67114
40°	1330	2032	47531
45°	1185	1779	37943
50°	1118	1864	24131
55°	940	1776	11693
60°	959	1318	5990
65°	993	852	2976
70°	1053	699	1751
75°	923	692	1154
80°	688	688	688
85°	685	685	0



TEST NUMBER: P592039

CATALOG NUMBER: GRZ-10L-935-10x60-X-UNV-STD-4F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	750.4	19.3
10°-20°	1195.9	30.7
20°-30°	1006.5	25.9
30°-40°	508.6	13.1
40°-50°	258.0	6.6
50°-60°	116.7	3.0
60°-70°	38.8	1.0
70°-80°	14.7	0.4
80°-90°	2.5	0.1
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°	2952.7	75.9
0°-40°	3461.3	88.9
0°-60°	3835.9	98.6
0°-90°	3892.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3892.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	12544	12544	12544	12544	12544	
5°	6472	7023	8898	10864	11724	484
15°	1421	1679	2489	5954	12559	400
25°	234	319	872	3078	9403	130
35°	78	91	171	1290	3405	52
45°	52	58	78	402	1662	40
55°	33	43	63	153	415	32
65°	26	22	22	45	78	26
75°	15	15	11	15	18	16
85°	4	4	4	0	0	3
90°	0	0	0	0	0	



TEST NUMBER: P592039

CATALOG NUMBER: GRZ-10L-935-10x60-X-UNV-STD-4F

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	12544.2	12544.2	12544.2	12544.2	12544.2	12544.2	12544.2	12544.2	12544.2	12544.2	12544.2
1°	11839.5	12303.1	12629.5	12151.0	12522.0	12295.7	12451.5	12199.3	12373.6	12514.5	12414.4
2°	10745.3	11335.0	11316.5	11260.9	11357.3	11835.8	12269.7	12228.9	12421.8	12340.2	12399.5
3°	9432.3	9747.5	9851.4	10010.9	10426.3	10897.4	11431.5	11902.5	12381.0	12477.4	12358.7
4°	7811.4	7926.4	8278.7	8323.2	9113.3	9784.6	10685.9	11220.1	12165.9	12321.7	12280.9
5°	6472.4	6439.0	6772.8	7106.7	8093.3	8898.2	10003.5	10559.8	11776.4	12199.3	11724.5
6°	5033.3	5304.0	5626.7	5938.3	6791.4	7807.7	8994.6	10263.1	11650.3	12028.6	11798.7
7°	4187.6	4243.2	4480.6	4725.4	5649.0	6854.4	7874.4	9480.5	11001.2	11776.4	11884.0
8°	3397.5	3397.5	3705.4	3927.9	4807.0	5671.2	7288.4	8749.8	10637.7	11769.0	11260.9
9°	2893.1	2959.9	3104.5	3456.9	3972.5	4907.2	6298.1	8082.1	10359.5	11553.9	11687.4
10°	2589.0	2678.0	2755.9	2889.4	3442.1	4154.2	5589.6	7433.1	10122.2	11565.0	11231.2
12.5°	1921.3	1969.5	2062.3	2218.0	2637.2	3071.1	4206.1	6153.4	8972.3	11765.3	12088.0
15°	1420.6	1435.4	1565.2	1717.3	2069.7	2488.8	3249.2	5107.4	8493.9	12117.7	12559.0
17.5°	1049.7	1068.2	1153.5	1294.5	1535.6	2066.0	2796.7	4217.3	7937.5	12091.7	12726.0
20°	675.1	697.3	782.6	893.9	1183.2	1669.1	2351.6	3479.1	7121.5	11223.8	12151.0
22.5°	400.6	422.8	452.5	560.1	830.8	1250.0	1936.2	2993.3	5671.2	10066.5	11060.6
25°	233.7	230.0	263.3	337.5	508.1	871.6	1580.1	2559.3	4632.7	8683.0	9402.6
27.5°	152.1	155.8	170.6	207.7	315.3	586.0	1246.3	2199.5	3638.6	6613.3	7344.0
30°	118.7	118.7	126.1	144.7	204.0	385.7	938.4	1832.3	3000.7	5048.1	5634.1
32.5°	92.7	96.4	100.1	111.3	144.7	252.2	675.1	1465.1	2444.3	3809.3	4287.7
35°	77.9	81.6	85.3	92.7	115.0	170.6	459.9	1075.6	1932.4	2889.4	3405.0
37.5°	70.5	70.5	74.2	77.9	96.4	122.4	300.4	734.4	1476.2	2377.5	2681.7
40°	63.1	63.1	66.8	70.5	85.3	96.4	185.5	482.2	1149.8	1962.1	2255.1
42.5°	55.6	59.3	63.1	63.1	74.2	85.3	129.8	359.8	934.7	1754.4	1958.4
45°	51.9	51.9	55.6	59.3	70.5	77.9	100.1	278.2	771.5	1476.2	1661.7
47.5°	48.2	48.2	51.9	55.6	66.8	74.2	81.6	215.1	645.4	1194.3	1324.2
50°	44.5	44.5	48.2	55.6	63.1	74.2	66.8	163.2	515.6	893.9	960.7
52.5°	37.1	40.8	44.5	48.2	55.6	70.5	55.6	126.1	426.5	626.8	630.5
55°	33.4	33.4	37.1	44.5	48.2	63.1	44.5	92.7	333.8	430.3	415.4
57.5°	33.4	29.7	33.4	37.1	40.8	55.6	33.4	70.5	248.5	289.3	267.1
60°	29.7	29.7	29.7	29.7	33.4	40.8	26.0	55.6	181.7	192.9	185.5
62.5°	26.0	26.0	26.0	26.0	26.0	33.4	22.3	40.8	122.4	122.4	115.0
65°	26.0	26.0	22.3	22.3	22.3	22.3	18.5	33.4	77.9	77.9	77.9
67.5°	26.0	22.3	22.3	18.5	18.5	18.5	14.8	26.0	48.2	55.6	51.9
70°	22.3	22.3	18.5	18.5	14.8	14.8	14.8	22.3	33.4	37.1	37.1
72.5°	18.5	18.5	18.5	14.8	14.8	11.1	11.1	18.5	26.0	26.0	26.0
75°	14.8	14.8	14.8	14.8	11.1	11.1	7.4	14.8	14.8	18.5	18.5
77.5°	11.1	11.1	11.1	11.1	11.1	7.4	7.4	11.1	11.1	11.1	11.1
80°	7.4	7.4	7.4	7.4	7.4	7.4	3.7	7.4	7.4	7.4	7.4
82.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
85°	3.7	3.7	3.7	3.7	3.7	3.7	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0

(END OF REPORT)