

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: P592051

Luminaire Tested: **GRZ-10L-940-10x10FR-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592051
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-10L-940-10x10FR-X-UNV-STD-4F
Description: iO LED GRAZER WITH 10x10FR OPTIC
1000 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

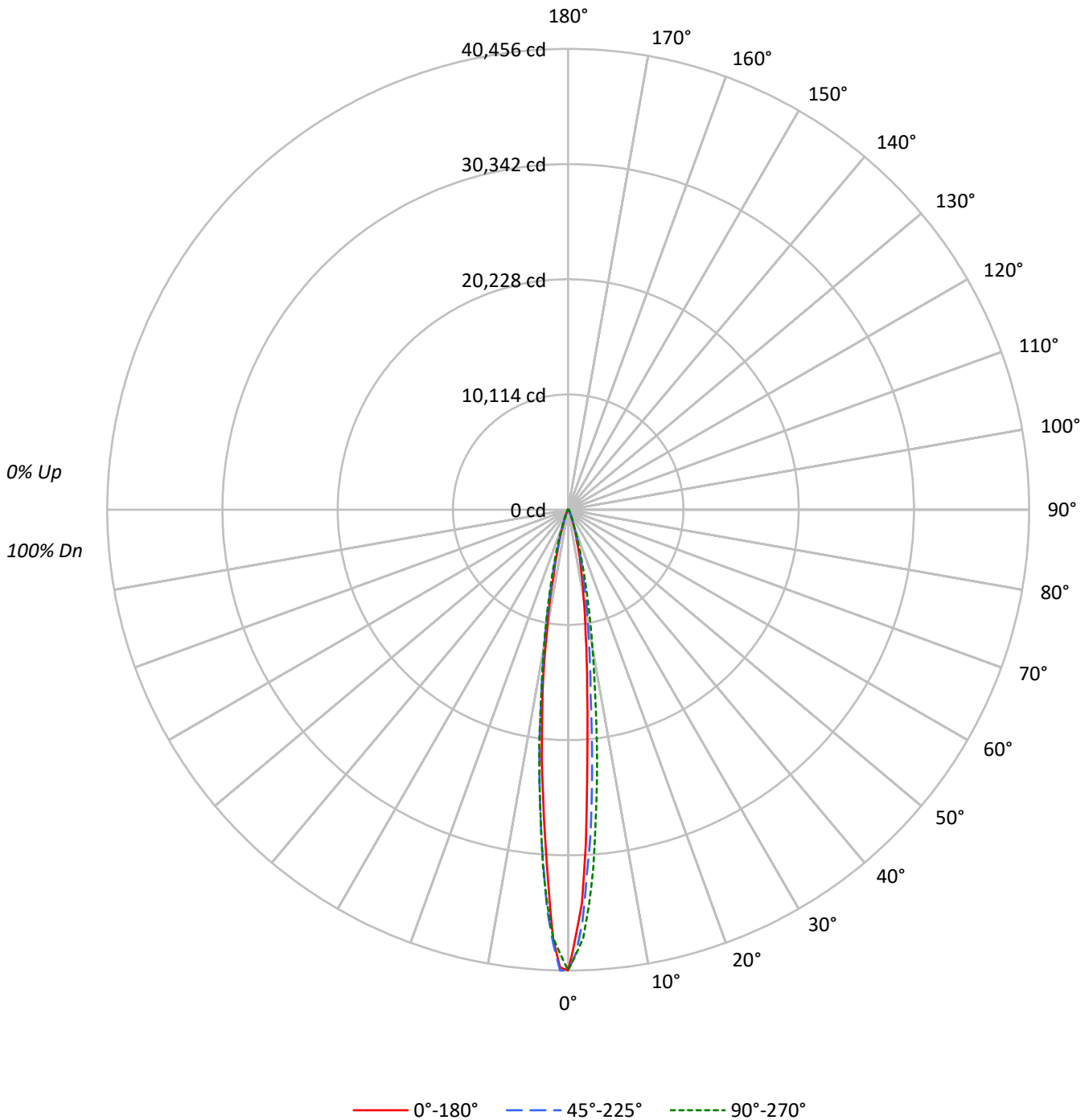
Lumens per Lamp: N/A
Luminaire Lumens: 3734.0 lumens
Efficiency: N/A
Efficacy: 98.3 lumens/watt
Spacing Criteria (0/90/45): 0.19 / 0.25 / 0.25
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 38
Input Voltage (V): 120
Input Current (Ain): 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: P592051
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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°	652944	652944	652944
5°	315218	446206	408577
10°	127344	198439	174721
15°	50484	73000	54076
20°	19715	24134	15892
25°	9093	9572	7315
30°	5366	5222	4294
35°	3631	3631	2874
40°	2751	2913	2266
45°	2366	2541	1927
50°	2025	2313	1638
55°	1835	2162	1512
60°	1611	2105	1489
65°	1467	2052	1467
70°	1270	1992	1270
75°	961	1678	1198
80°	716	1432	1069
85°	704	704	704



TEST NUMBER: P592051

CATALOG NUMBER: GRZ-10L-940-10x10FR-X-UNV-STD-4F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1949.1	52.2
10°-20°	1178.0	31.5
20°-30°	262.9	7.0
30°-40°	113.7	3.0
40°-50°	81.8	2.2
50°-60°	65.0	1.7
60°-70°	48.4	1.3
70°-80°	28.0	0.7
80°-90°	7.1	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°	3390.1	90.8
0°-40°	3503.8	93.8
0°-60°	3650.5	97.8
0°-90°	3734.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3734.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	40440	40440	40440	40440	40440	
5°	19449	24000	27531	27657	25209	1516
15°	3020	3891	4367	3596	3235	928
25°	510	580	537	422	411	261
35°	184	184	184	161	146	118
45°	104	111	111	100	84	80
55°	65	81	77	69	54	57
65°	38	58	54	46	38	37
75°	15	31	27	27	19	17
85°	4	8	4	8	4	4
90°	0	0	0	0	0	



TEST NUMBER: P592051

CATALOG NUMBER: GRZ-10L-940-10x10FR-X-UNV-STD-4F

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	40440.4	40440.4	40440.4	40440.4	40440.4	40440.4	40440.4	40440.4	40440.4	40440.4	40440.4
1°	37523.9	38702.0	38410.3	38686.6	38736.5	38924.6	39047.4	39131.8	39335.2	39262.3	39012.8
2°	34519.0	35171.4	35133.0	35301.9	36265.1	36130.8	36476.2	37205.3	37090.2	37259.1	37612.1
3°	29380.5	30811.9	30481.9	30451.2	31376.1	31775.2	33145.2	33467.5	34269.6	34810.7	34822.2
4°	23735.4	24664.1	24882.9	26652.0	26552.2	28302.2	29119.6	29791.1	30416.7	32373.8	31521.9
5°	19448.9	20135.8	20818.9	21690.0	21904.9	24000.2	24464.6	25431.6	27124.0	27857.0	27530.8
6°	15922.1	16597.5	16593.7	17468.7	18270.7	19767.4	20285.4	21674.7	23052.3	24019.4	24061.6
7°	13243.5	13631.1	13876.7	14440.8	15335.0	16129.3	17342.0	18255.4	19141.8	20151.1	20765.1
8°	11013.9	11386.1	11524.3	12038.5	12568.1	13696.3	14909.0	15619.0	16547.6	17426.5	17249.9
9°	9256.2	9835.7	9755.1	10058.3	10660.8	11424.5	12149.8	13201.3	13799.9	14667.2	14467.7
10°	7767.3	8135.7	8373.6	8753.5	8976.1	9812.7	10254.0	10937.1	11689.3	11808.2	12103.7
12.5°	5096.3	5180.7	5230.6	5418.7	5825.4	6232.2	6673.6	7034.3	7256.9	7302.9	7521.7
15°	3020.2	3166.0	3196.7	3453.8	3676.4	3891.3	4171.4	4225.2	4344.1	4298.1	4367.2
17.5°	1857.4	1872.7	1987.9	1991.7	2233.5	2344.8	2540.5	2586.5	2521.3	2486.8	2486.8
20°	1147.4	1155.1	1185.8	1266.4	1312.5	1435.3	1535.0	1546.5	1512.0	1439.1	1404.6
22.5°	744.5	767.5	744.5	775.2	821.2	890.3	936.4	944.0	898.0	871.1	867.3
25°	510.4	514.2	533.4	514.2	537.3	579.5	594.8	606.3	568.0	556.4	537.3
27.5°	376.1	376.1	376.1	376.1	383.8	383.8	391.4	395.3	383.8	376.1	379.9
30°	287.8	284.0	287.8	287.8	280.1	287.8	291.7	291.7	284.0	284.0	280.1
32.5°	222.6	226.4	230.3	226.4	222.6	226.4	230.3	226.4	226.4	230.3	222.6
35°	184.2	184.2	188.0	184.2	184.2	184.2	188.0	188.0	188.0	188.0	184.2
37.5°	149.7	153.5	157.3	157.3	157.3	157.3	161.2	161.2	165.0	157.3	153.5
40°	130.5	130.5	134.3	134.3	138.2	134.3	138.2	142.0	142.0	138.2	138.2
42.5°	115.1	115.1	119.0	119.0	119.0	122.8	126.6	126.6	126.6	126.6	122.8
45°	103.6	99.8	103.6	107.5	111.3	111.3	115.1	119.0	115.1	115.1	111.3
47.5°	92.1	92.1	92.1	95.9	99.8	103.6	103.6	107.5	107.5	103.6	99.8
50°	80.6	80.6	84.4	88.3	92.1	95.9	95.9	99.8	99.8	95.9	92.1
52.5°	69.1	69.1	72.9	80.6	84.4	88.3	88.3	92.1	92.1	88.3	84.4
55°	65.2	61.4	65.2	69.1	76.8	80.6	84.4	84.4	84.4	80.6	76.8
57.5°	53.7	53.7	57.6	61.4	69.1	76.8	76.8	80.6	76.8	72.9	72.9
60°	49.9	49.9	53.7	57.6	65.2	72.9	72.9	72.9	69.1	65.2	65.2
62.5°	42.2	42.2	46.1	49.9	57.6	65.2	69.1	69.1	65.2	61.4	57.6
65°	38.4	38.4	38.4	46.1	53.7	57.6	61.4	61.4	57.6	53.7	53.7
67.5°	30.7	30.7	34.5	38.4	46.1	49.9	53.7	57.6	53.7	49.9	46.1
70°	26.9	26.9	26.9	34.5	42.2	46.1	49.9	49.9	46.1	42.2	42.2
72.5°	19.2	19.2	23.0	26.9	34.5	38.4	42.2	42.2	38.4	34.5	34.5
75°	15.4	15.4	19.2	23.0	26.9	30.7	34.5	34.5	34.5	30.7	26.9
77.5°	11.5	11.5	15.4	19.2	23.0	26.9	26.9	26.9	26.9	23.0	23.0
80°	7.7	7.7	11.5	11.5	15.4	19.2	19.2	19.2	19.2	15.4	15.4
82.5°	7.7	3.8	7.7	7.7	11.5	11.5	15.4	15.4	11.5	11.5	11.5
85°	3.8	3.8	3.8	3.8	7.7	7.7	7.7	7.7	7.7	7.7	3.8
87.5°	0.0	0.0	0.0	0.0	3.8	3.8	3.8	3.8	3.8	3.8	3.8
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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CATALOG NUMBER: GRZ-10L-940-10x10FR-X-UNV-STD-4F

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	40440.4	40440.4	40440.4	40440.4	40440.4	40440.4	40440.4	40440.4	40440.4	40440.4
1°	39626.9	40206.3	39822.6	40252.4	40455.8	40455.8	40524.8	40233.2	40041.3	40183.3
2°	37765.6	38272.2	38421.9	38337.4	38080.3	38118.7	37631.3	37581.4	36940.5	37681.2
3°	35087.0	35647.3	35417.0	35121.5	35171.4	34622.6	33839.8	33471.4	33245.0	33141.3
4°	31871.1	32231.8	32170.4	31963.2	31314.7	30673.8	29963.8	30201.8	28755.0	28946.9
5°	28375.1	28778.0	28570.8	27887.7	27657.4	26966.7	26609.8	25873.0	25093.9	25209.1
6°	24410.8	24276.5	24671.8	24192.1	24080.8	22864.3	22672.4	22795.2	22250.3	22200.4
7°	20377.6	21313.9	21053.0	20711.4	20580.9	19855.6	19740.5	18996.0	19042.1	18758.1
8°	17733.5	17825.6	18067.3	17603.0	17180.8	17092.6	16647.4	16209.9	16305.9	16106.3
9°	14744.0	15031.8	14836.1	14882.1	14333.4	13765.4	13554.3	13669.5	13343.3	13389.3
10°	11946.4	12410.7	12287.9	12184.3	12076.9	11489.7	11389.9	11129.0	10956.3	10657.0
12.5°	7521.7	7349.0	7433.4	7099.5	6969.0	6512.4	6424.1	6312.8	5940.6	5940.6
15°	4578.2	4213.7	4344.1	3922.0	3595.8	3499.9	3258.1	3261.9	3250.4	3235.1
17.5°	2410.0	2410.0	2356.3	2022.4	1922.6	1749.9	1726.9	1749.9	1692.4	1703.9
20°	1416.1	1366.2	1285.6	1128.2	1059.2	986.3	970.9	959.4	959.4	924.9
22.5°	871.1	828.9	782.9	686.9	633.2	610.2	587.1	598.7	598.7	602.5
25°	556.4	521.9	502.7	445.2	422.1	418.3	406.8	391.4	395.3	410.6
27.5°	372.2	356.9	341.5	318.5	303.2	295.5	295.5	299.3	291.7	284.0
30°	280.1	261.0	253.3	245.6	234.1	234.1	234.1	230.3	226.4	230.3
32.5°	222.6	211.1	203.4	195.7	191.9	188.0	191.9	188.0	184.2	180.4
35°	184.2	172.7	168.9	165.0	161.2	157.3	157.3	157.3	149.7	145.8
37.5°	153.5	149.7	149.7	142.0	138.2	134.3	134.3	134.3	126.6	126.6
40°	138.2	134.3	130.5	126.6	122.8	119.0	115.1	115.1	107.5	107.5
42.5°	122.8	119.0	119.0	115.1	111.3	103.6	103.6	99.8	95.9	95.9
45°	111.3	107.5	107.5	103.6	99.8	95.9	92.1	88.3	84.4	84.4
47.5°	103.6	99.8	99.8	95.9	88.3	84.4	80.6	76.8	76.8	76.8
50°	92.1	92.1	92.1	88.3	84.4	80.6	72.9	69.1	65.2	65.2
52.5°	84.4	84.4	80.6	80.6	76.8	72.9	65.2	61.4	61.4	61.4
55°	80.6	76.8	76.8	72.9	69.1	69.1	61.4	57.6	53.7	53.7
57.5°	72.9	69.1	69.1	65.2	65.2	61.4	53.7	53.7	49.9	49.9
60°	65.2	61.4	61.4	57.6	57.6	53.7	49.9	46.1	46.1	46.1
62.5°	57.6	53.7	57.6	53.7	53.7	49.9	46.1	42.2	42.2	42.2
65°	53.7	49.9	49.9	49.9	46.1	46.1	42.2	38.4	38.4	38.4
67.5°	46.1	42.2	46.1	42.2	42.2	38.4	38.4	34.5	34.5	30.7
70°	38.4	38.4	38.4	38.4	38.4	34.5	30.7	30.7	26.9	26.9
72.5°	34.5	34.5	34.5	34.5	30.7	30.7	26.9	26.9	23.0	23.0
75°	26.9	26.9	26.9	26.9	26.9	26.9	23.0	23.0	19.2	19.2
77.5°	23.0	23.0	23.0	23.0	23.0	19.2	19.2	15.4	15.4	15.4
80°	15.4	15.4	15.4	15.4	15.4	15.4	15.4	11.5	11.5	11.5
82.5°	11.5	11.5	11.5	11.5	11.5	7.7	7.7	7.7	7.7	7.7
85°	7.7	7.7	7.7	7.7	7.7	3.8	3.8	3.8	3.8	3.8
87.5°	3.8	3.8	3.8	3.8	3.8	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)