

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: P591990

Luminaire Tested: **GRZ-05L-940-10x60-X-UNV-STD-2F**

Issue Date: 2/2/2022

**Test Information**

Test Method: LM-79-2019  
Report Number: P591990  
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-05L-940-10x60-X-UNV-STD-2F  
Description: iO LED GRAZER WITH 10x60 OPTIC  
500 LUMENS PER FOOT, 2 FOOT FIXTURE  
SUMULATED RESULTS  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

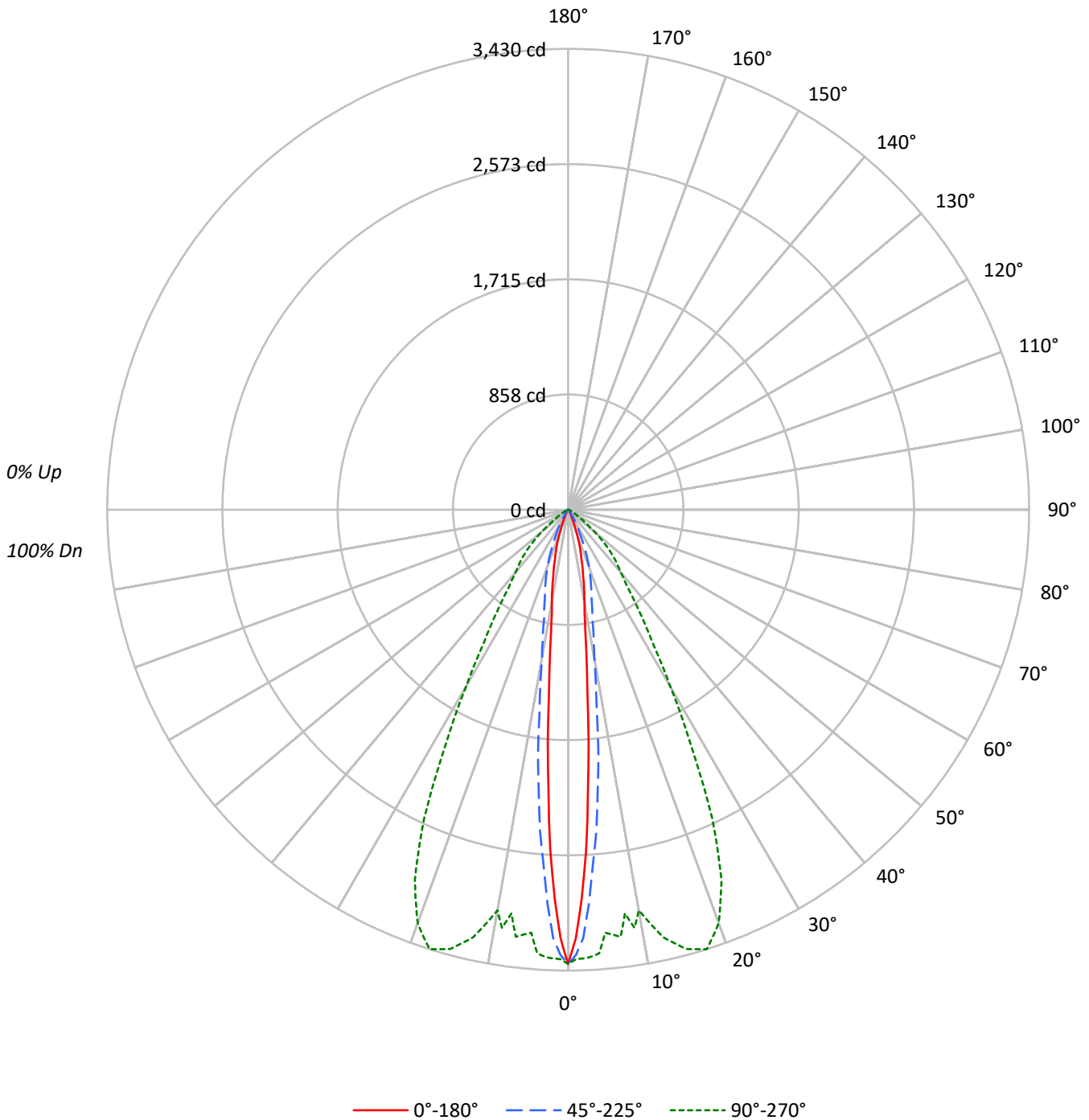
Lumens per Lamp: N/A  
Luminaire Lumens: 1049.0 lumens  
Efficiency: N/A  
Efficacy: 109.3 lumens/watt  
Spacing Criteria (0/90/45): 0.18 / 0.97 / 0.31  
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')  
CIE Type: Direct

Input Watts (W): 9.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	111	109	106	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	108	104	100	97	106	102	98	95	99	96	93	96	93	91	93	91	89	88
3	103	97	92	89	101	96	91	88	93	90	86	91	88	85	89	86	84	82
4	98	91	86	82	97	90	85	82	88	84	81	86	83	80	84	81	79	77
5	94	86	81	77	92	85	80	76	83	79	76	82	78	75	80	77	74	73
6	90	82	76	72	88	81	75	72	79	75	71	78	74	71	77	73	70	69
7	86	77	72	68	85	77	71	68	75	71	67	74	70	67	73	69	67	65
8	82	74	68	64	81	73	68	64	72	67	64	71	67	64	70	66	63	62
9	79	70	65	61	78	70	64	61	69	64	61	68	64	60	67	63	60	59
10	76	67	62	58	75	67	61	58	66	61	58	65	61	58	64	60	58	56

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	109178	109178	109178
5°	56548	77741	102435
10°	22881	36715	99258
15°	12801	22425	113163
20°	6251	15460	112542
25°	2245	8369	90297
30°	1193	3878	56624
35°	828	1813	36177
40°	717	1096	25621
45°	639	959	20454
50°	603	1005	13006
55°	507	957	6305
60°	517	710	3229
65°	535	458	1605
70°	566	378	944
75°	499	374	624
80°	372	372	372
85°	371	371	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	202.2	19.3
10°-20°	322.3	30.7
20°-30°	271.3	25.9
30°-40°	137.1	13.1
40°-50°	69.5	6.6
50°-60°	31.5	3.0
60°-70°	10.5	1.0
70°-80°	4.0	0.4
80°-90°	0.7	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°	795.8	75.9
0°-40°	932.9	88.9
0°-60°	1033.9	98.6
0°-90°	1049.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1049.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3381	3381	3381	3381	3381	
5°	1744	1893	2398	2928	3160	130
15°	383	453	671	1605	3385	108
25°	63	86	235	830	2534	35
35°	21	24	46	348	918	14
45°	14	16	21	108	448	11
55°	9	12	17	41	112	8
65°	7	6	6	12	21	7
75°	4	4	3	4	5	4
85°	1	1	1	0	0	1
90°	0	0	0	0	0	



TEST NUMBER: P591990

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3381.0	3381.0	3381.0	3381.0	3381.0	3381.0	3381.0	3381.0	3381.0	3381.0	3381.0
1°	3191.1	3316.0	3404.0	3275.0	3375.0	3314.0	3356.0	3288.0	3335.0	3373.0	3346.0
2°	2896.1	3055.1	3050.1	3035.1	3061.1	3190.1	3307.0	3296.0	3348.0	3326.0	3342.0
3°	2542.3	2627.2	2655.2	2698.2	2810.2	2937.1	3081.1	3208.1	3337.0	3363.0	3331.0
4°	2105.4	2136.4	2231.3	2243.3	2456.3	2637.2	2880.2	3024.1	3279.0	3321.0	3310.0
5°	1744.5	1735.5	1825.5	1915.4	2181.4	2398.3	2696.2	2846.2	3174.1	3288.0	3160.1
6°	1356.6	1429.6	1516.6	1600.5	1830.5	2104.4	2424.3	2766.2	3140.1	3242.0	3180.1
7°	1128.7	1143.7	1207.6	1273.6	1522.6	1847.5	2122.4	2555.2	2965.1	3174.1	3203.1
8°	915.7	915.7	998.7	1058.7	1295.6	1528.6	1964.4	2358.3	2867.2	3172.1	3035.1
9°	779.8	797.8	836.8	931.7	1070.7	1322.6	1697.5	2178.4	2792.2	3114.1	3150.1
10°	697.8	721.8	742.8	778.8	927.7	1119.7	1506.6	2003.4	2728.2	3117.1	3027.1
12.5°	517.8	530.8	555.8	597.8	710.8	827.8	1133.7	1658.5	2418.3	3171.1	3258.0
15°	382.9	386.9	421.9	462.9	557.8	670.8	875.7	1376.6	2289.3	3266.0	3385.0
17.5°	282.9	287.9	310.9	348.9	413.9	556.8	753.8	1136.7	2139.4	3259.0	3430.0
20°	181.9	187.9	210.9	240.9	318.9	449.9	633.8	937.7	1919.4	3025.1	3275.0
22.5°	108.0	114.0	122.0	151.0	223.9	336.9	521.8	806.8	1528.6	2713.2	2981.1
25°	63.0	62.0	71.0	91.0	137.0	234.9	425.9	689.8	1248.6	2340.3	2534.3
27.5°	41.0	42.0	46.0	56.0	85.0	158.0	335.9	592.8	980.7	1782.5	1979.4
30°	32.0	32.0	34.0	39.0	55.0	104.0	252.9	493.9	808.8	1360.6	1518.6
32.5°	25.0	26.0	27.0	30.0	39.0	68.0	181.9	394.9	658.8	1026.7	1155.7
35°	21.0	22.0	23.0	25.0	31.0	46.0	124.0	289.9	520.8	778.8	917.7
37.5°	19.0	19.0	20.0	21.0	26.0	33.0	81.0	197.9	397.9	640.8	722.8
40°	17.0	17.0	18.0	19.0	23.0	26.0	50.0	130.0	309.9	528.8	607.8
42.5°	15.0	16.0	17.0	17.0	20.0	23.0	35.0	97.0	251.9	472.9	527.8
45°	14.0	14.0	15.0	16.0	19.0	21.0	27.0	75.0	207.9	397.9	447.9
47.5°	13.0	13.0	14.0	15.0	18.0	20.0	22.0	58.0	173.9	321.9	356.9
50°	12.0	12.0	13.0	15.0	17.0	20.0	18.0	44.0	139.0	240.9	258.9
52.5°	10.0	11.0	12.0	13.0	15.0	19.0	15.0	34.0	115.0	169.0	169.9
55°	9.0	9.0	10.0	12.0	13.0	17.0	12.0	25.0	90.0	116.0	112.0
57.5°	9.0	8.0	9.0	10.0	11.0	15.0	9.0	19.0	67.0	78.0	72.0
60°	8.0	8.0	8.0	8.0	9.0	11.0	7.0	15.0	49.0	52.0	50.0
62.5°	7.0	7.0	7.0	7.0	7.0	9.0	6.0	11.0	33.0	33.0	31.0
65°	7.0	7.0	6.0	6.0	6.0	6.0	5.0	9.0	21.0	21.0	21.0
67.5°	7.0	6.0	6.0	5.0	5.0	5.0	4.0	7.0	13.0	15.0	14.0
70°	6.0	6.0	5.0	5.0	4.0	4.0	4.0	6.0	9.0	10.0	10.0
72.5°	5.0	5.0	5.0	4.0	4.0	3.0	3.0	5.0	7.0	7.0	7.0
75°	4.0	4.0	4.0	4.0	3.0	3.0	2.0	4.0	4.0	5.0	5.0
77.5°	3.0	3.0	3.0	3.0	3.0	2.0	2.0	3.0	3.0	3.0	3.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	1.0	1.0	1.0	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)