

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: P591974

Luminaire Tested: **GRZ-05L-935-10x60-X-UNV-STD-2F**

Issue Date: 2/2/2022

**Test Information**

Test Method: LM-79-2019  
Report Number: P591974  
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-935-10x60-X-UNV-STD-2F  
Description: iO LED GRAZER WITH 10x60 OPTIC  
500 LUMENS PER FOOT, 2 FOOT FIXTURE  
SUMULATED RESULTS  
Light Source: 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

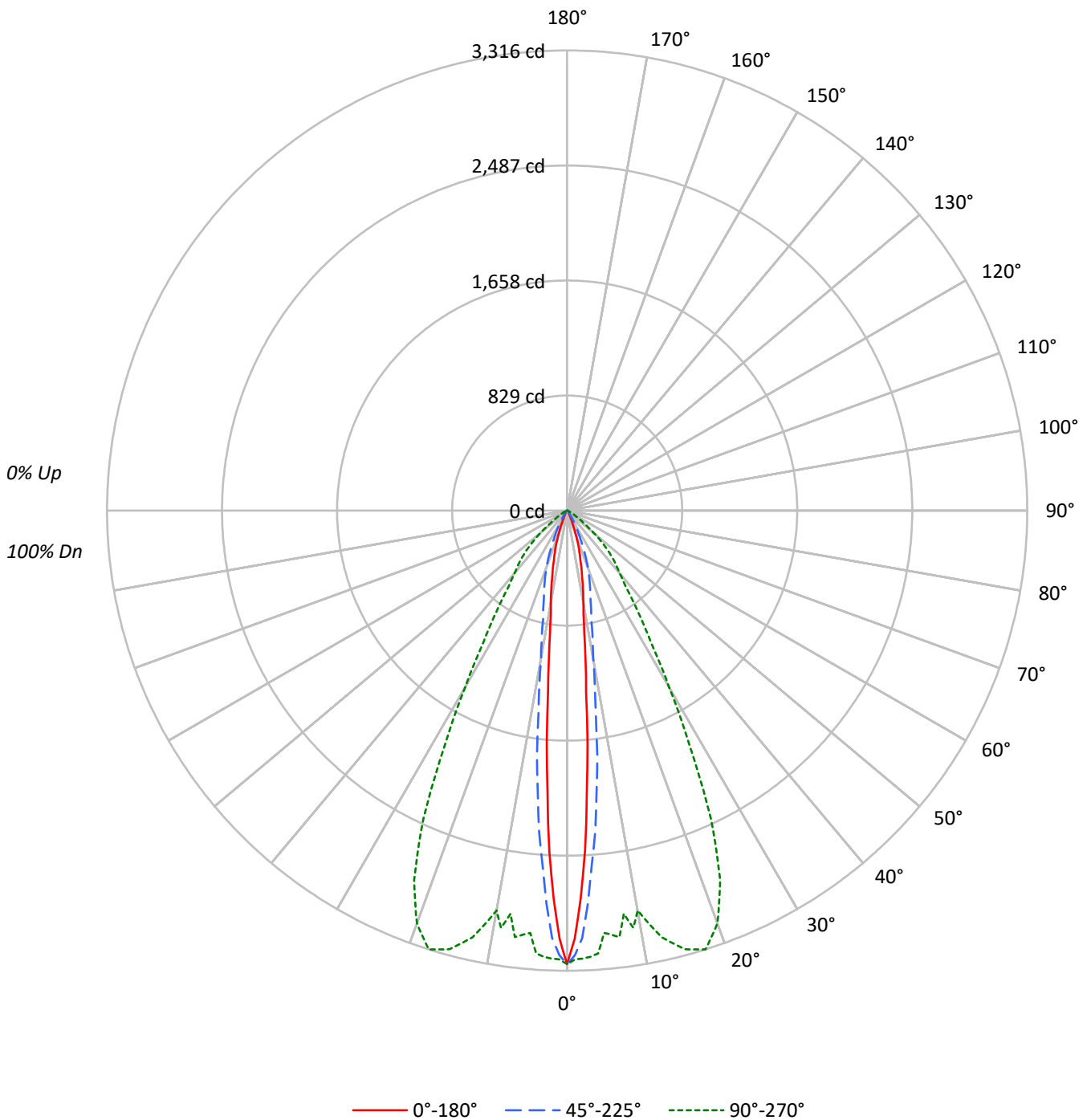
Lumens per Lamp: N/A  
Luminaire Lumens: 1014.0 lumens  
Efficiency: N/A  
Efficacy: 105.6 lumens/watt  
Spacing Criteria (0/90/45): 0.18 / 0.97 / 0.31  
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')  
CIE Type: Direct

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°	105536	105536	105536
5°	54661	75148	99015
10°	22117	35488	95946
15°	12373	21677	109389
20°	6045	14945	108790
25°	2170	8092	87283
30°	1152	3747	54734
35°	800	1754	34970
40°	691	1058	24765
45°	617	927	19769
50°	583	970	12574
55°	490	923	6092
60°	497	685	3119
65°	520	443	1551
70°	548	368	916
75°	487	362	599
80°	353	353	353
85°	371	371	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	195.5	19.3
10°-20°	311.6	30.7
20°-30°	262.2	25.9
30°-40°	132.5	13.1
40°-50°	67.2	6.6
50°-60°	30.4	3.0
60°-70°	10.1	1.0
70°-80°	3.8	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°	769.3	75.9
0°-40°	901.8	88.9
0°-60°	999.4	98.6
0°-90°	1014.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1014.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3268	3268	3268	3268	3268	
5°	1686	1830	2318	2830	3055	126
15°	370	438	648	1551	3272	104
25°	61	83	227	802	2450	34
35°	20	24	44	336	887	13
45°	14	15	20	105	433	11
55°	9	11	16	40	108	8
65°	7	6	6	12	20	7
75°	4	4	3	4	5	4
85°	1	1	1	0	0	1
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°	3268.2	3268.2	3268.2	3268.2	3268.2	3268.2	3268.2	3268.2	3268.2	3268.2	3268.2
1°	3084.6	3205.4	3290.4	3165.8	3262.4	3203.5	3244.0	3178.3	3223.7	3260.5	3234.4
2°	2799.5	2953.2	2948.3	2933.8	2959.0	3083.6	3196.7	3186.1	3236.3	3215.0	3230.5
3°	2457.4	2539.6	2566.6	2608.2	2716.4	2839.1	2978.3	3101.0	3225.7	3250.8	3219.9
4°	2035.1	2065.1	2156.9	2168.5	2374.3	2549.2	2784.1	2923.2	3169.6	3210.2	3199.6
5°	1686.3	1677.6	1764.6	1851.5	2108.6	2318.3	2606.2	2751.2	3068.2	3178.3	3054.6
6°	1311.3	1381.9	1466.0	1547.1	1769.4	2034.2	2343.4	2673.9	3035.3	3133.9	3074.0
7°	1091.0	1105.5	1167.4	1231.1	1471.8	1785.8	2051.6	2470.0	2866.2	3068.2	3096.2
8°	885.2	885.2	965.4	1023.4	1252.4	1477.5	1898.9	2279.6	2771.5	3066.2	2933.8
9°	753.8	771.1	808.8	900.6	1035.0	1278.5	1640.9	2105.7	2699.0	3010.2	3045.0
10°	674.5	697.7	718.0	752.8	896.8	1082.3	1456.3	1936.6	2637.2	3013.1	2926.1
12.5°	500.6	513.1	537.3	577.9	687.1	800.1	1095.8	1603.2	2337.6	3065.3	3149.3
15°	370.1	374.0	407.8	447.4	539.2	648.4	846.5	1330.7	2212.9	3157.1	3272.1
17.5°	273.5	278.3	300.5	337.3	400.1	538.3	728.6	1098.7	2068.0	3150.3	3315.5
20°	175.9	181.7	203.9	232.9	308.3	434.9	612.7	906.4	1855.4	2924.2	3165.8
22.5°	104.4	110.2	117.9	145.9	216.5	325.7	504.4	779.8	1477.5	2622.7	2881.7
25°	60.9	59.9	68.6	87.9	132.4	227.1	411.7	666.8	1207.0	2262.2	2449.7
27.5°	39.6	40.6	44.5	54.1	82.1	152.7	324.7	573.0	948.0	1723.0	1913.4
30°	30.9	30.9	32.9	37.7	53.1	100.5	244.5	477.4	781.8	1315.2	1467.9
32.5°	24.2	25.1	26.1	29.0	37.7	65.7	175.9	381.7	636.8	992.4	1117.1
35°	20.3	21.3	22.2	24.2	30.0	44.5	119.8	280.2	503.5	752.8	887.1
37.5°	18.4	18.4	19.3	20.3	25.1	31.9	78.3	191.3	384.6	619.4	698.7
40°	16.4	16.4	17.4	18.4	22.2	25.1	48.3	125.6	299.6	511.2	587.5
42.5°	14.5	15.5	16.4	16.4	19.3	22.2	33.8	93.7	243.5	457.1	510.2
45°	13.5	13.5	14.5	15.5	18.4	20.3	26.1	72.5	201.0	384.6	432.9
47.5°	12.6	12.6	13.5	14.5	17.4	19.3	21.3	56.0	168.1	311.2	345.0
50°	11.6	11.6	12.6	14.5	16.4	19.3	17.4	42.5	134.3	232.9	250.3
52.5°	9.7	10.6	11.6	12.6	14.5	18.4	14.5	32.9	111.1	163.3	164.3
55°	8.7	8.7	9.7	11.6	12.6	16.4	11.6	24.2	87.0	112.1	108.2
57.5°	8.7	7.7	8.7	9.7	10.6	14.5	8.7	18.4	64.7	75.4	69.6
60°	7.7	7.7	7.7	7.7	8.7	10.6	6.8	14.5	47.4	50.3	48.3
62.5°	6.8	6.8	6.8	6.8	6.8	8.7	5.8	10.6	31.9	31.9	30.0
65°	6.8	6.8	5.8	5.8	5.8	5.8	4.8	8.7	20.3	20.3	20.3
67.5°	6.8	5.8	5.8	4.8	4.8	4.8	3.9	6.8	12.6	14.5	13.5
70°	5.8	5.8	4.8	4.8	3.9	3.9	3.9	5.8	8.7	9.7	9.7
72.5°	4.8	4.8	4.8	3.9	3.9	2.9	2.9	4.8	6.8	6.8	6.8
75°	3.9	3.9	3.9	3.9	2.9	2.9	1.9	3.9	3.9	4.8	4.8
77.5°	2.9	2.9	2.9	2.9	2.9	1.9	1.9	2.9	2.9	2.9	2.9
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.0	1.9	1.9	1.9	1.9
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)