

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: P591991

Luminaire Tested: **GRZ-05L-940-10x60-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P591991
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-4F
Description: iO LED GRAZER WITH 10x60 OPTIC
500 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

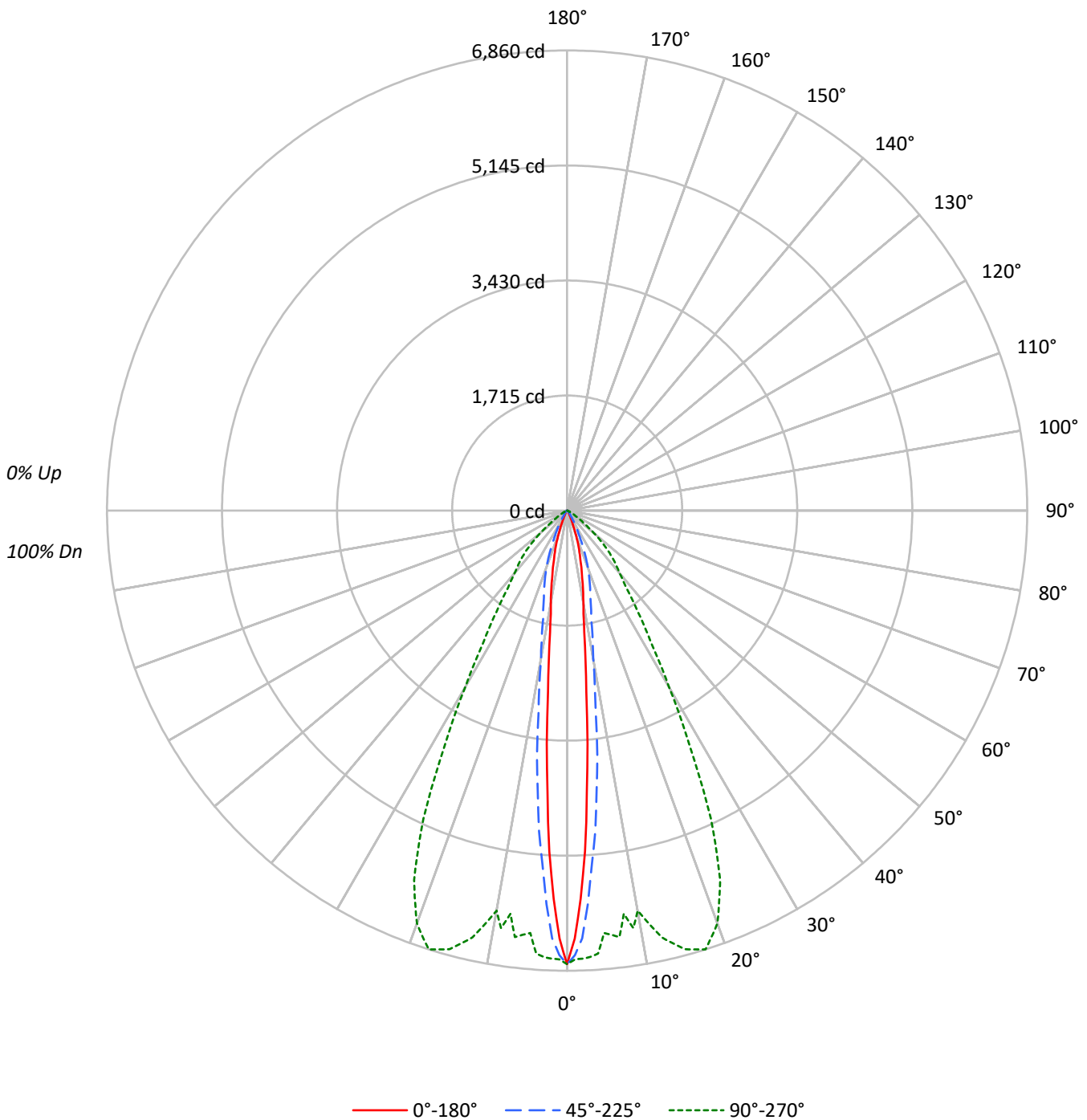
Lumens per Lamp: N/A
Luminaire Lumens: 2098.0 lumens
Efficiency: N/A
Efficacy: 108.7 lumens/watt
Spacing Criteria (0/90/45): 0.18 / 0.97 / 0.31
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 19.3
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



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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	102433
10°	22881	36713	99258
15°	12801	22425	113163
20°	6253	15459	112544
25°	2245	8371	90295
30°	1193	3876	56623
35°	828	1813	36178
40°	717	1096	25621
45°	639	959	20452
50°	603	1005	13006
55°	507	957	6303
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°	404.5	19.3
10°-20°	644.6	30.7
20°-30°	542.5	25.9
30°-40°	274.2	13.1
40°-50°	139.1	6.6
50°-60°	62.9	3.0
60°-70°	20.9	1.0
70°-80°	8.0	0.4
80°-90°	1.4	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°	1591.7	75.9
0°-40°	1865.8	88.9
0°-60°	2067.8	98.6
0°-90°	2098.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2098.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6762	6762	6762	6762	6762	
5°	3489	3786	4797	5856	6320	261
15°	766	905	1342	3210	6770	216
25°	126	172	470	1659	5068	70
35°	42	49	92	695	1836	28
45°	28	32	42	216	896	22
55°	18	23	34	82	224	17
65°	14	12	12	24	42	14
75°	8	8	6	8	10	8
85°	2	2	2	0	0	2
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°	6762.0	6762.0	6762.0	6762.0	6762.0	6762.0	6762.0	6762.0	6762.0	6762.0	6762.0
1°	6382.1	6632.0	6808.0	6550.1	6750.0	6628.0	6712.0	6576.1	6670.0	6746.0	6692.0
2°	5792.3	6110.2	6100.2	6070.2	6122.2	6380.1	6614.1	6592.1	6696.0	6652.0	6684.0
3°	5084.5	5254.5	5310.4	5396.4	5620.3	5874.3	6162.2	6416.1	6674.0	6726.0	6662.0
4°	4210.8	4272.7	4462.7	4486.7	4912.6	5274.4	5760.3	6048.2	6558.1	6642.0	6620.1
5°	3489.0	3471.0	3650.9	3830.9	4362.7	4796.6	5392.4	5692.3	6348.1	6576.1	6320.1
6°	2713.2	2859.2	3033.1	3201.1	3660.9	4208.8	4848.6	5532.4	6280.2	6484.1	6360.1
7°	2257.3	2287.3	2415.3	2547.3	3045.1	3694.9	4244.8	5110.5	5930.3	6348.1	6406.1
8°	1831.5	1831.5	1997.4	2117.4	2591.2	3057.1	3928.8	4716.6	5734.3	6344.1	6070.2
9°	1559.5	1595.5	1673.5	1863.5	2141.4	2645.2	3395.0	4356.7	5584.4	6228.2	6300.1
10°	1395.6	1443.6	1485.6	1557.5	1855.5	2239.3	3013.1	4006.8	5456.4	6234.2	6054.2
12.5°	1035.7	1061.7	1111.7	1195.6	1421.6	1655.5	2267.3	3317.0	4836.6	6342.1	6516.1
15°	765.8	773.8	843.8	925.7	1115.7	1341.6	1751.5	2753.2	4578.7	6532.1	6770.0
17.5°	565.8	575.8	621.8	697.8	827.8	1113.7	1507.6	2273.3	4278.7	6518.1	6860.0
20°	363.9	375.9	421.9	481.9	637.8	899.7	1267.6	1875.4	3838.9	6050.2	6550.1
22.5°	215.9	227.9	243.9	301.9	447.9	673.8	1043.7	1613.5	3057.1	5426.4	5962.2
25°	126.0	124.0	142.0	181.9	273.9	469.9	851.7	1379.6	2497.3	4680.6	5068.5
27.5°	82.0	84.0	92.0	112.0	169.9	315.9	671.8	1185.7	1961.4	3565.0	3958.8
30°	64.0	64.0	68.0	78.0	110.0	207.9	505.9	987.7	1617.5	2721.2	3037.1
32.5°	50.0	52.0	54.0	60.0	78.0	136.0	363.9	789.8	1317.6	2053.4	2311.3
35°	42.0	44.0	46.0	50.0	62.0	92.0	247.9	579.8	1041.7	1557.5	1835.5
37.5°	38.0	38.0	40.0	42.0	52.0	66.0	162.0	395.9	795.8	1281.6	1445.6
40°	34.0	34.0	36.0	38.0	46.0	52.0	100.0	259.9	619.8	1057.7	1215.6
42.5°	30.0	32.0	34.0	34.0	40.0	46.0	70.0	193.9	503.9	945.7	1055.7
45°	28.0	28.0	30.0	32.0	38.0	42.0	54.0	150.0	415.9	795.8	895.7
47.5°	26.0	26.0	28.0	30.0	36.0	40.0	44.0	116.0	347.9	643.8	713.8
50°	24.0	24.0	26.0	30.0	34.0	40.0	36.0	88.0	277.9	481.9	517.8
52.5°	20.0	22.0	24.0	26.0	30.0	38.0	30.0	68.0	229.9	337.9	339.9
55°	18.0	18.0	20.0	24.0	26.0	34.0	24.0	50.0	179.9	231.9	223.9
57.5°	18.0	16.0	18.0	20.0	22.0	30.0	18.0	38.0	134.0	156.0	144.0
60°	16.0	16.0	16.0	16.0	18.0	22.0	14.0	30.0	98.0	104.0	100.0
62.5°	14.0	14.0	14.0	14.0	14.0	18.0	12.0	22.0	66.0	66.0	62.0
65°	14.0	14.0	12.0	12.0	12.0	12.0	10.0	18.0	42.0	42.0	42.0
67.5°	14.0	12.0	12.0	10.0	10.0	10.0	8.0	14.0	26.0	30.0	28.0
70°	12.0	12.0	10.0	10.0	8.0	8.0	8.0	12.0	18.0	20.0	20.0
72.5°	10.0	10.0	10.0	8.0	8.0	6.0	6.0	10.0	14.0	14.0	14.0
75°	8.0	8.0	8.0	8.0	6.0	6.0	4.0	8.0	8.0	10.0	10.0
77.5°	6.0	6.0	6.0	6.0	6.0	4.0	4.0	6.0	6.0	6.0	6.0
80°	4.0	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	4.0	4.0
82.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	2.0	2.0	2.0	2.0	2.0	2.0	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)