

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: P592035

Luminaire Tested: **GRZ-10L-935-10x10FR-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592035
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-935-10x10FR-X-UNV-STD-4F
Description: iO LED GRAZER WITH 10x10FR OPTIC
1000 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

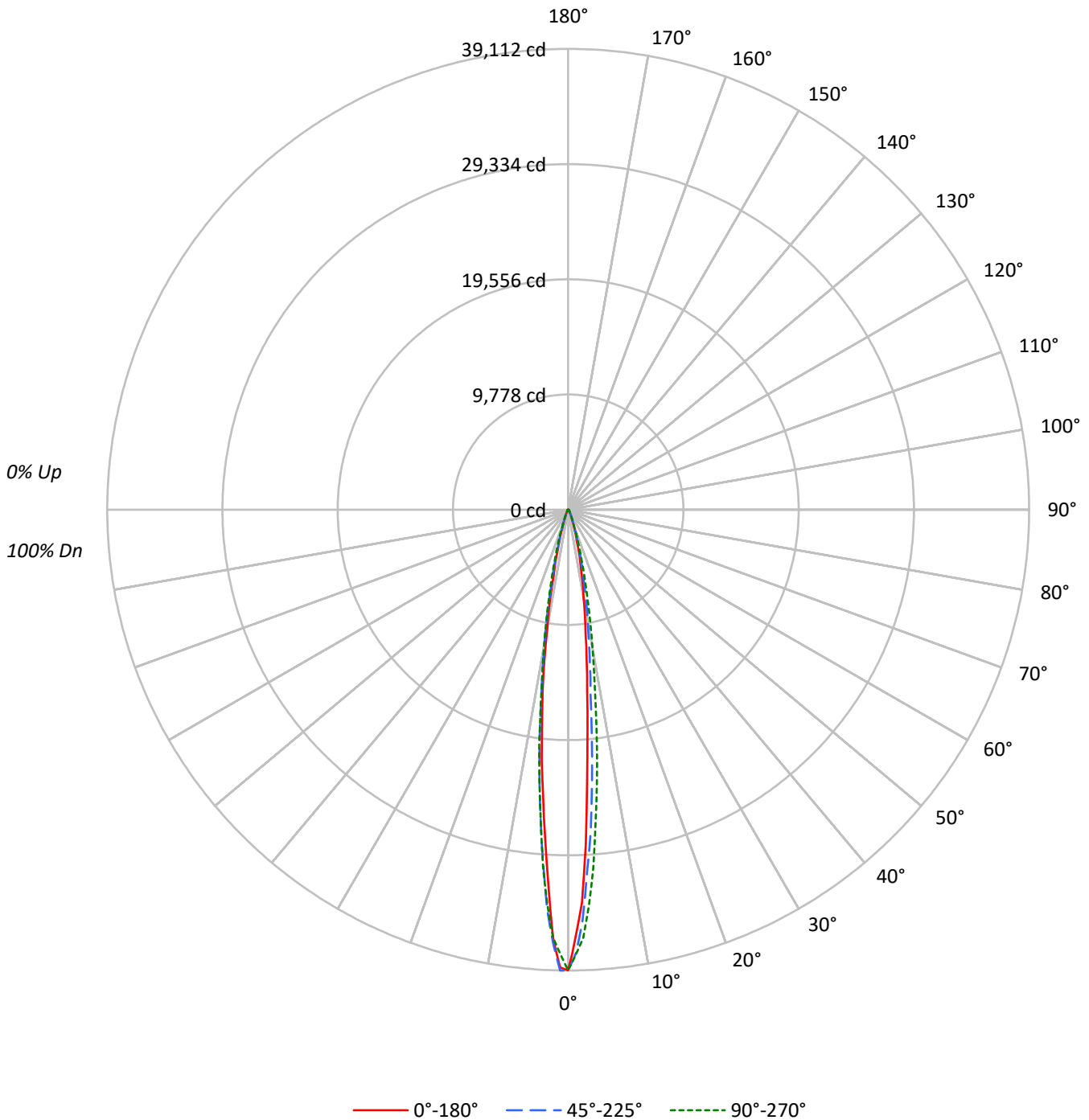
Lumens per Lamp: N/A
Luminaire Lumens: 3610.0 lumens
Efficiency: N/A
Efficacy: 95.0 lumens/watt
Spacing Criteria (0/90/45): 0.19 / 0.25 / 0.25
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 38
Input Voltage (V): 120
Input Current (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	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	100	100	100	100	100		
1	115	113	111	109	113	111	109	107	107	105	104	103	102	101	100	99	98	97	97	96	95	95	95	97		
2	111	108	105	102	109	106	103	101	103	101	99	100	98	97	97	96	95	93	93	92	92	92	92	93		
3	108	103	100	97	106	102	99	96	100	97	95	97	95	93	95	93	92	91	91	90	90	90	90	91		
4	105	100	96	93	103	99	95	92	97	94	91	95	92	90	93	91	89	88	88	87	87	87	87	88		
5	102	96	93	90	101	96	92	89	94	91	89	93	90	88	91	89	87	86	86	85	85	85	85	86		
6	100	94	90	87	98	93	89	87	92	89	86	91	88	86	89	87	85	84	84	83	83	83	83	84		
7	97	91	87	85	96	91	87	84	90	86	84	89	86	84	88	85	83	82	82	81	81	81	81	82		
8	95	89	85	83	94	89	85	83	88	85	82	87	84	82	86	84	82	81	81	80	80	80	80	81		
9	93	87	83	81	92	87	83	81	86	83	81	85	82	80	85	82	80	79	79	79	79	79	79	79		
10	91	85	82	79	91	85	82	79	84	81	79	84	81	79	83	81	79	78	78	78	78	78	78	78		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	631262	631262	631262
5°	304750	431387	395008
10°	123114	191850	168918
15°	48807	70574	52279
20°	19060	23331	15362
25°	8790	9253	7073
30°	5189	5049	4150
35°	3510	3510	2779
40°	2658	2816	2190
45°	2288	2457	1863
50°	1957	2236	1585
55°	1776	2089	1461
60°	1556	2038	1437
65°	1417	1983	1417
70°	1227	1926	1227
75°	923	1622	1160
80°	688	1376	1032
85°	685	685	685



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1884.4	52.2
10°-20°	1138.9	31.5
20°-30°	254.2	7.0
30°-40°	109.9	3.0
40°-50°	79.0	2.2
50°-60°	62.9	1.7
60°-70°	46.8	1.3
70°-80°	27.0	0.7
80°-90°	6.9	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°	3277.5	90.8
0°-40°	3387.4	93.8
0°-60°	3529.3	97.8
0°-90°	3610.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3610.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	39098	39098	39098	39098	39098	
5°	18803	23203	26616	26739	24372	1466
15°	2920	3762	4222	3476	3128	897
25°	493	560	519	408	397	252
35°	178	178	178	156	141	114
45°	100	108	108	96	82	77
55°	63	78	74	67	52	55
65°	37	56	52	44	37	36
75°	15	30	26	26	19	16
85°	4	7	4	7	4	4
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°	39097.5	39097.5	39097.5	39097.5	39097.5	39097.5	39097.5	39097.5	39097.5	39097.5	39097.5
1°	36277.8	37416.8	37134.8	37401.9	37450.2	37632.0	37750.7	37832.3	38028.9	37958.4	37717.3
2°	33372.7	34003.4	33966.3	34129.6	35060.8	34931.0	35264.9	35969.8	35858.5	36021.8	36363.1
3°	28404.8	29788.7	29469.6	29440.0	30334.1	30720.0	32044.5	32356.1	33131.6	33654.7	33665.8
4°	22947.2	23845.1	24056.6	25766.9	25670.5	27362.3	28152.5	28801.8	29406.6	31298.7	30475.1
5°	18803.0	19467.1	20127.5	20969.7	21177.5	23203.2	23652.1	24587.1	26223.3	26931.9	26616.5
6°	15393.4	16046.4	16042.6	16888.6	17664.0	19110.9	19611.8	20954.9	22286.8	23221.8	23262.6
7°	12803.7	13178.4	13415.9	13961.3	14825.7	15593.7	16766.1	17649.1	18506.2	19481.9	20075.6
8°	10648.1	11008.0	11141.6	11638.7	12150.7	13241.5	14413.9	15100.3	15998.1	16847.7	16677.1
9°	8948.9	9509.1	9431.2	9724.3	10306.8	11045.1	11746.3	12762.9	13341.7	14180.2	13987.2
10°	7509.3	7865.5	8095.5	8462.8	8678.0	9486.8	9913.5	10573.9	11301.1	11416.1	11701.8
12.5°	4927.1	5008.7	5056.9	5238.7	5632.0	6025.3	6451.9	6800.7	7015.9	7060.4	7271.9
15°	2919.9	3060.9	3090.5	3339.1	3554.3	3762.1	4032.9	4084.9	4199.9	4155.4	4222.1
17.5°	1795.7	1810.5	1921.9	1925.6	2159.3	2266.9	2456.1	2500.6	2437.6	2404.2	2404.2
20°	1109.3	1116.8	1146.4	1224.3	1268.9	1387.6	1484.1	1495.2	1461.8	1391.3	1357.9
22.5°	719.8	742.0	719.8	749.4	794.0	860.8	905.3	912.7	868.2	842.2	838.5
25°	493.4	497.2	515.7	497.2	519.4	560.2	575.1	586.2	549.1	538.0	519.4
27.5°	363.6	363.6	363.6	363.6	371.0	371.0	378.4	382.1	371.0	363.6	367.3
30°	278.3	274.6	278.3	278.3	270.8	278.3	282.0	282.0	274.6	274.6	270.8
32.5°	215.2	218.9	222.6	218.9	215.2	218.9	222.6	218.9	218.9	222.6	215.2
35°	178.1	178.1	181.8	178.1	178.1	178.1	181.8	181.8	181.8	181.8	178.1
37.5°	144.7	148.4	152.1	152.1	152.1	152.1	155.8	155.8	159.5	152.1	148.4
40°	126.1	126.1	129.9	129.9	133.6	129.9	133.6	137.3	137.3	133.6	133.6
42.5°	111.3	111.3	115.0	115.0	115.0	118.7	122.4	122.4	122.4	122.4	118.7
45°	100.2	96.5	100.2	103.9	107.6	107.6	111.3	115.0	111.3	111.3	107.6
47.5°	89.0	89.0	89.0	92.8	96.5	100.2	100.2	103.9	103.9	100.2	96.5
50°	77.9	77.9	81.6	85.3	89.0	92.8	92.8	96.5	96.5	92.8	89.0
52.5°	66.8	66.8	70.5	77.9	81.6	85.3	85.3	89.0	89.0	85.3	81.6
55°	63.1	59.4	63.1	66.8	74.2	77.9	81.6	81.6	81.6	77.9	74.2
57.5°	51.9	51.9	55.7	59.4	66.8	74.2	74.2	77.9	74.2	70.5	70.5
60°	48.2	48.2	51.9	55.7	63.1	70.5	70.5	70.5	66.8	63.1	63.1
62.5°	40.8	40.8	44.5	48.2	55.7	63.1	66.8	66.8	63.1	59.4	55.7
65°	37.1	37.1	37.1	44.5	51.9	55.7	59.4	59.4	55.7	51.9	51.9
67.5°	29.7	29.7	33.4	37.1	44.5	48.2	51.9	55.7	51.9	48.2	44.5
70°	26.0	26.0	26.0	33.4	40.8	44.5	48.2	48.2	44.5	40.8	40.8
72.5°	18.6	18.6	22.3	26.0	33.4	37.1	40.8	40.8	37.1	33.4	33.4
75°	14.8	14.8	18.6	22.3	26.0	29.7	33.4	33.4	33.4	29.7	26.0
77.5°	11.1	11.1	14.8	18.6	22.3	26.0	26.0	26.0	26.0	22.3	22.3
80°	7.4	7.4	11.1	11.1	14.8	18.6	18.6	18.6	18.6	14.8	14.8
82.5°	7.4	3.7	7.4	7.4	11.1	11.1	14.8	14.8	11.1	11.1	11.1
85°	3.7	3.7	3.7	3.7	7.4	7.4	7.4	7.4	7.4	7.4	3.7
87.5°	0.0	0.0	0.0	0.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7
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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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	39097.5	39097.5	39097.5	39097.5	39097.5	39097.5	39097.5	39097.5	39097.5	39097.5
1°	38310.9	38871.1	38500.1	38915.7	39112.3	39112.3	39179.1	38897.1	38711.6	38848.9
2°	36511.5	37001.2	37145.9	37064.3	36815.7	36852.8	36381.6	36333.4	35713.8	36429.9
3°	33921.8	34463.5	34240.9	33955.2	34003.4	33472.9	32716.0	32359.8	32140.9	32040.8
4°	30812.7	31161.5	31102.1	30901.8	30274.7	29655.2	28968.8	29198.8	27800.1	27985.6
5°	27432.8	27822.3	27622.0	26961.6	26739.0	26071.2	25726.1	25013.8	24260.6	24371.9
6°	23600.2	23470.3	23852.5	23388.7	23281.1	22105.0	21919.5	22038.2	21511.4	21463.2
7°	19700.8	20606.1	20353.8	20023.6	19897.5	19196.3	19085.0	18365.2	18409.7	18135.2
8°	17144.6	17233.6	17467.3	17018.4	16610.3	16525.0	16094.6	15671.6	15764.4	15571.5
9°	14254.4	14532.6	14343.4	14387.9	13857.4	13308.3	13104.2	13215.5	12900.2	12944.7
10°	11549.7	11998.6	11879.9	11779.7	11675.8	11108.2	11011.7	10759.4	10592.5	10303.1
12.5°	7271.9	7104.9	7186.5	6863.8	6737.6	6296.1	6210.8	6103.2	5743.3	5743.3
15°	4426.2	4073.7	4199.9	3791.8	3476.4	3383.6	3149.9	3153.6	3142.5	3127.6
17.5°	2330.0	2330.0	2278.0	1955.2	1858.8	1691.8	1669.6	1691.8	1636.2	1647.3
20°	1369.0	1320.8	1242.9	1090.8	1024.0	953.5	938.7	927.5	927.5	894.1
22.5°	842.2	801.4	756.9	664.1	612.2	589.9	567.7	578.8	578.8	582.5
25°	538.0	504.6	486.0	430.4	408.1	404.4	393.3	378.4	382.1	397.0
27.5°	359.9	345.0	330.2	307.9	293.1	285.7	285.7	289.4	282.0	274.6
30°	270.8	252.3	244.9	237.4	226.3	226.3	226.3	222.6	218.9	222.6
32.5°	215.2	204.1	196.6	189.2	185.5	181.8	185.5	181.8	178.1	174.4
35°	178.1	167.0	163.2	159.5	155.8	152.1	152.1	152.1	144.7	141.0
37.5°	148.4	144.7	144.7	137.3	133.6	129.9	129.9	129.9	122.4	122.4
40°	133.6	129.9	126.1	122.4	118.7	115.0	111.3	111.3	103.9	103.9
42.5°	118.7	115.0	115.0	111.3	107.6	100.2	100.2	96.5	92.8	92.8
45°	107.6	103.9	103.9	100.2	96.5	92.8	89.0	85.3	81.6	81.6
47.5°	100.2	96.5	96.5	92.8	85.3	81.6	77.9	74.2	74.2	74.2
50°	89.0	89.0	89.0	85.3	81.6	77.9	70.5	66.8	63.1	63.1
52.5°	81.6	81.6	77.9	77.9	74.2	70.5	63.1	59.4	59.4	59.4
55°	77.9	74.2	74.2	70.5	66.8	66.8	59.4	55.7	51.9	51.9
57.5°	70.5	66.8	66.8	63.1	63.1	59.4	51.9	51.9	48.2	48.2
60°	63.1	59.4	59.4	55.7	55.7	51.9	48.2	44.5	44.5	44.5
62.5°	55.7	51.9	55.7	51.9	51.9	48.2	44.5	40.8	40.8	40.8
65°	51.9	48.2	48.2	48.2	44.5	44.5	40.8	37.1	37.1	37.1
67.5°	44.5	40.8	44.5	40.8	40.8	37.1	37.1	33.4	33.4	29.7
70°	37.1	37.1	37.1	37.1	37.1	33.4	29.7	29.7	26.0	26.0
72.5°	33.4	33.4	33.4	33.4	29.7	29.7	26.0	26.0	22.3	22.3
75°	26.0	26.0	26.0	26.0	26.0	26.0	22.3	22.3	18.6	18.6
77.5°	22.3	22.3	22.3	22.3	22.3	18.6	18.6	14.8	14.8	14.8
80°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	11.1	11.1	11.1
82.5°	11.1	11.1	11.1	11.1	11.1	7.4	7.4	7.4	7.4	7.4
85°	7.4	7.4	7.4	7.4	7.4	3.7	3.7	3.7	3.7	3.7
87.5°	3.7	3.7	3.7	3.7	3.7	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)