

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: P592083

Luminaire Tested: **GRZ-15L-930-10x10FR-X-UNV-STD-4F**

Issue Date: 2/2/2022

Test Information

Test Method: LM-79-2019
Report Number: P592083
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-15L-930-10x10FR-X-UNV-STD-4F
Description: iO LED GRAZER WITH 10x10FR OPTIC
1500 LUMENS PER FOOT, 4 FOOT FIXTURE
SUMULATED RESULTS
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

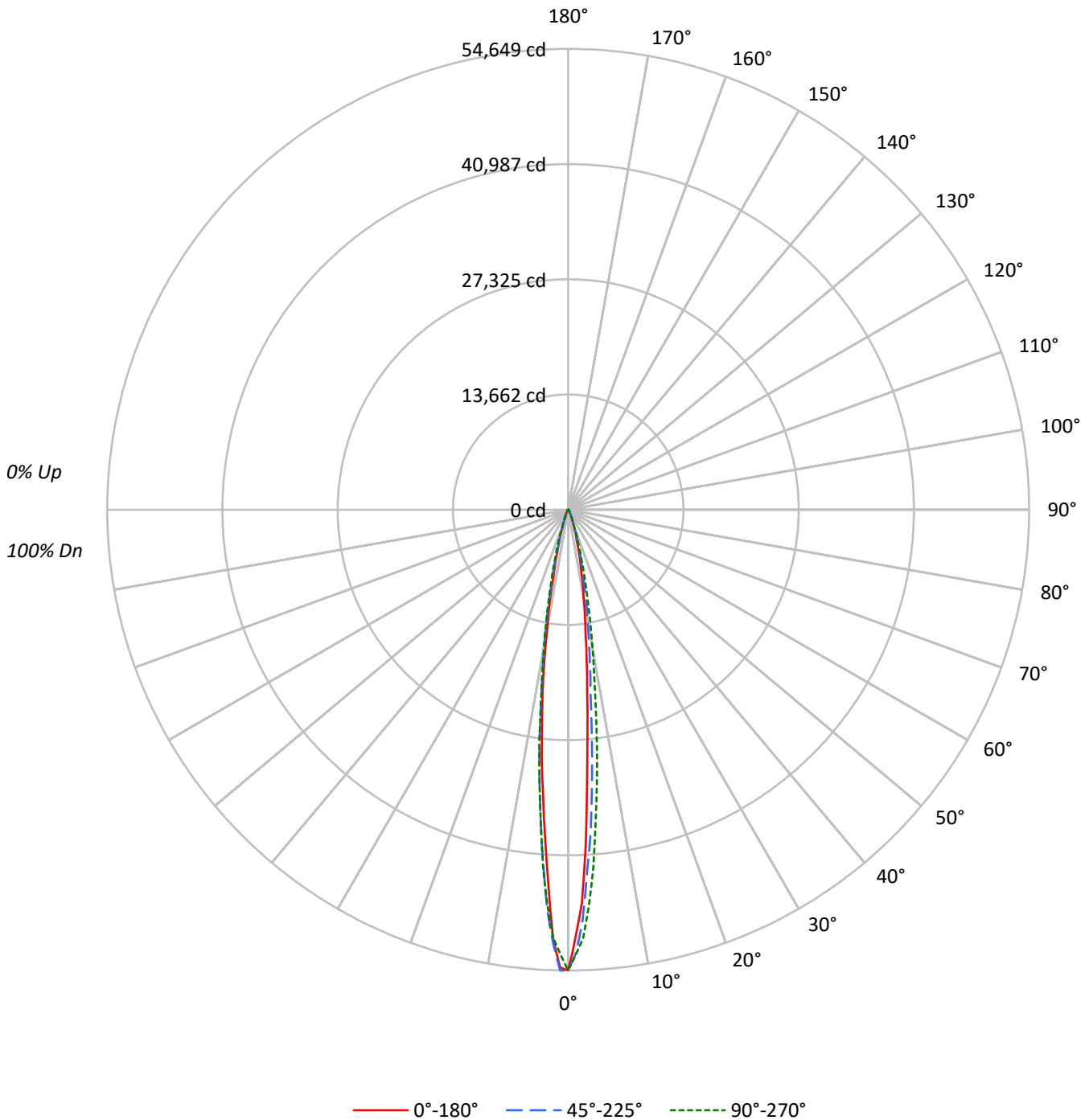
Lumens per Lamp: N/A
Luminaire Lumens: 5044.0 lumens
Efficiency: N/A
Efficacy: 90.1 lumens/watt
Spacing Criteria (0/90/45): 0.19 / 0.25 / 0.25
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 56
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°	882017	882017	882017
5°	425805	602748	551918
10°	172020	268059	236016
15°	68194	98609	73046
20°	26632	32599	21466
25°	12283	12928	9882
30°	7249	7055	5798
35°	4904	4904	3883
40°	3716	3933	3058
45°	3197	3432	2603
50°	2735	3125	2213
55°	2480	2919	2044
60°	2176	2845	2009
65°	1979	2774	1979
70°	1714	2691	1714
75°	1291	2264	1616
80°	967	1925	1450
85°	963	963	963



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	2632.9	52.2
10°-20°	1591.3	31.5
20°-30°	355.2	7.0
30°-40°	153.6	3.0
40°-50°	110.4	2.2
50°-60°	87.8	1.7
60°-70°	65.4	1.3
70°-80°	37.8	0.7
80°-90°	9.6	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°	4579.4	90.8
0°-40°	4733.0	93.8
0°-60°	4931.2	97.8
0°-90°	5044.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5044.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	54628	54628	54628	54628	54628	
5°	26272	32420	37189	37360	34053	2048
15°	4080	5256	5899	4857	4370	1253
25°	690	783	726	570	555	352
35°	249	249	249	218	197	160
45°	140	150	150	135	114	108
55°	88	109	104	93	73	76
65°	52	78	73	62	52	50
75°	21	42	36	36	26	23
85°	5	10	5	10	5	6
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°	54628.1	54628.1	54628.1	54628.1	54628.1	54628.1	54628.1	54628.1	54628.1	54628.1	54628.1
1°	50688.4	52279.8	51885.8	52259.1	52326.5	52580.5	52746.4	52860.4	53135.2	53036.7	52699.7
2°	46629.4	47510.6	47458.8	47686.9	48988.0	48806.6	49273.2	50258.1	50102.6	50330.7	50807.6
3°	39688.1	41621.7	41175.9	41134.4	42383.7	42922.9	44773.5	45209.0	46292.4	47023.3	47038.9
4°	32062.5	33317.0	33612.5	36002.3	35867.5	38231.4	39335.6	40242.8	41087.7	43731.5	42580.7
5°	26272.1	27200.0	28122.8	29299.5	29589.8	32420.2	33047.5	34353.8	36639.9	37630.1	37189.4
6°	21508.1	22420.5	22415.3	23597.2	24680.6	26702.4	27402.2	29278.8	31139.8	32446.2	32503.2
7°	17889.7	18413.3	18745.1	19507.1	20714.9	21788.0	23426.1	24659.9	25857.4	27220.8	28050.2
8°	14877.8	15380.7	15567.3	16262.0	16977.3	18501.4	20139.5	21098.6	22353.1	23540.2	23301.7
9°	12503.6	13286.4	13177.5	13587.1	14400.9	15432.5	16412.3	17832.7	18641.4	19812.9	19543.4
10°	10492.3	10989.9	11311.3	11824.5	12125.2	13255.3	13851.4	14774.2	15790.2	15950.9	16350.1
12.5°	6884.2	6998.3	7065.7	7319.7	7869.2	8418.7	9014.8	9502.1	9802.8	9865.0	10160.5
15°	4079.7	4276.7	4318.2	4665.5	4966.2	5256.5	5634.9	5707.5	5868.2	5806.0	5899.3
17.5°	2509.0	2529.8	2685.3	2690.5	3017.0	3167.4	3431.8	3494.0	3405.8	3359.2	3359.2
20°	1550.0	1560.4	1601.8	1710.7	1772.9	1938.8	2073.6	2089.1	2042.5	1944.0	1897.3
22.5°	1005.7	1036.8	1005.7	1047.2	1109.4	1202.7	1264.9	1275.2	1213.0	1176.7	1171.6
25°	689.5	694.6	720.6	694.6	725.7	782.8	803.5	819.1	767.2	751.7	725.7
27.5°	508.0	508.0	508.0	508.0	518.4	518.4	528.8	533.9	518.4	508.0	513.2
30°	388.8	383.6	388.8	388.8	378.4	388.8	394.0	394.0	383.6	383.6	378.4
32.5°	300.7	305.9	311.0	305.9	300.7	305.9	311.0	305.9	305.9	311.0	300.7
35°	248.8	248.8	254.0	248.8	248.8	248.8	254.0	254.0	254.0	254.0	248.8
37.5°	202.2	207.4	212.5	212.5	212.5	212.5	217.7	217.7	222.9	212.5	207.4
40°	176.3	176.3	181.4	181.4	186.6	181.4	186.6	191.8	191.8	186.6	186.6
42.5°	155.5	155.5	160.7	160.7	160.7	165.9	171.1	171.1	171.1	171.1	165.9
45°	140.0	134.8	140.0	145.1	150.3	150.3	155.5	160.7	155.5	155.5	150.3
47.5°	124.4	124.4	124.4	129.6	134.8	140.0	140.0	145.1	145.1	140.0	134.8
50°	108.9	108.9	114.0	119.2	124.4	129.6	129.6	134.8	134.8	129.6	124.4
52.5°	93.3	93.3	98.5	108.9	114.0	119.2	119.2	124.4	124.4	119.2	114.0
55°	88.1	82.9	88.1	93.3	103.7	108.9	114.0	114.0	114.0	108.9	103.7
57.5°	72.6	72.6	77.8	82.9	93.3	103.7	103.7	108.9	103.7	98.5	98.5
60°	67.4	67.4	72.6	77.8	88.1	98.5	98.5	98.5	93.3	88.1	88.1
62.5°	57.0	57.0	62.2	67.4	77.8	88.1	93.3	93.3	88.1	82.9	77.8
65°	51.8	51.8	51.8	62.2	72.6	77.8	82.9	82.9	77.8	72.6	72.6
67.5°	41.5	41.5	46.7	51.8	62.2	67.4	72.6	77.8	72.6	67.4	62.2
70°	36.3	36.3	36.3	46.7	57.0	62.2	67.4	67.4	62.2	57.0	57.0
72.5°	25.9	25.9	31.1	36.3	46.7	51.8	57.0	57.0	51.8	46.7	46.7
75°	20.7	20.7	25.9	31.1	36.3	41.5	46.7	46.7	46.7	41.5	36.3
77.5°	15.6	15.6	20.7	25.9	31.1	36.3	36.3	36.3	36.3	31.1	31.1
80°	10.4	10.4	15.6	15.6	20.7	25.9	25.9	25.9	25.9	20.7	20.7
82.5°	10.4	5.2	10.4	10.4	15.6	15.6	20.7	20.7	15.6	15.6	15.6
85°	5.2	5.2	5.2	5.2	10.4	10.4	10.4	10.4	10.4	10.4	5.2
87.5°	0.0	0.0	0.0	0.0	5.2	5.2	5.2	5.2	5.2	5.2	5.2
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°	54628.1	54628.1	54628.1	54628.1	54628.1	54628.1	54628.1	54628.1	54628.1	54628.1
1°	53529.2	54311.9	53793.5	54374.1	54648.9	54648.9	54742.2	54348.2	54089.0	54280.8
2°	51014.9	51699.2	51901.4	51787.4	51440.0	51491.9	50833.5	50766.1	49900.4	50900.9
3°	47396.6	48153.4	47842.4	47443.2	47510.6	46769.3	45711.8	45214.1	44908.3	44768.3
4°	43052.4	43539.7	43456.8	43176.9	42300.8	41435.1	40476.0	40797.4	38843.1	39102.3
5°	38329.9	38874.2	38594.3	37671.5	37360.5	36427.4	35945.3	34950.0	33897.6	34053.2
6°	32974.9	32793.5	33327.4	32679.4	32529.1	30885.8	30626.6	30792.5	30056.4	29989.0
7°	27526.6	28791.5	28439.0	27977.6	27801.4	26821.6	26666.1	25660.4	25722.6	25339.0
8°	23954.9	24079.3	24405.9	23778.6	23208.4	23089.2	22487.8	21896.9	22026.5	21756.9
9°	19916.6	20305.4	20041.0	20103.2	19361.9	18594.7	18309.6	18465.1	18024.5	18086.7
10°	16137.5	16764.8	16598.9	16458.9	16313.8	15520.7	15385.9	15033.4	14800.1	14395.7
12.5°	10160.5	9927.2	10041.3	9590.3	9414.0	8797.1	8677.9	8527.5	8024.7	8024.7
15°	6184.4	5691.9	5868.2	5298.0	4857.3	4727.7	4401.1	4406.3	4390.8	4370.0
17.5°	3255.5	3255.5	3182.9	2731.9	2597.1	2363.9	2332.8	2363.9	2286.1	2301.7
20°	1912.9	1845.5	1736.6	1524.1	1430.8	1332.3	1311.5	1296.0	1296.0	1249.3
22.5°	1176.7	1119.7	1057.5	927.9	855.3	824.2	793.1	808.7	808.7	813.9
25°	751.7	705.0	679.1	601.3	570.2	565.0	549.5	528.8	533.9	554.7
27.5°	502.8	482.1	461.4	430.3	409.5	399.2	399.2	404.3	394.0	383.6
30°	378.4	352.5	342.1	331.8	316.2	316.2	316.2	311.0	305.9	311.0
32.5°	300.7	285.1	274.7	264.4	259.2	254.0	259.2	254.0	248.8	243.6
35°	248.8	233.3	228.1	222.9	217.7	212.5	212.5	212.5	202.2	197.0
37.5°	207.4	202.2	202.2	191.8	186.6	181.4	181.4	181.4	171.1	171.1
40°	186.6	181.4	176.3	171.1	165.9	160.7	155.5	155.5	145.1	145.1
42.5°	165.9	160.7	160.7	155.5	150.3	140.0	140.0	134.8	129.6	129.6
45°	150.3	145.1	145.1	140.0	134.8	129.6	124.4	119.2	114.0	114.0
47.5°	140.0	134.8	134.8	129.6	119.2	114.0	108.9	103.7	103.7	103.7
50°	124.4	124.4	124.4	119.2	114.0	108.9	98.5	93.3	88.1	88.1
52.5°	114.0	114.0	108.9	108.9	103.7	98.5	88.1	82.9	82.9	82.9
55°	108.9	103.7	103.7	98.5	93.3	93.3	82.9	77.8	72.6	72.6
57.5°	98.5	93.3	93.3	88.1	88.1	82.9	72.6	72.6	67.4	67.4
60°	88.1	82.9	82.9	77.8	77.8	72.6	67.4	62.2	62.2	62.2
62.5°	77.8	72.6	77.8	72.6	72.6	67.4	62.2	57.0	57.0	57.0
65°	72.6	67.4	67.4	67.4	62.2	62.2	57.0	51.8	51.8	51.8
67.5°	62.2	57.0	62.2	57.0	57.0	51.8	51.8	46.7	46.7	41.5
70°	51.8	51.8	51.8	51.8	51.8	46.7	41.5	41.5	36.3	36.3
72.5°	46.7	46.7	46.7	46.7	41.5	41.5	36.3	36.3	31.1	31.1
75°	36.3	36.3	36.3	36.3	36.3	36.3	31.1	31.1	25.9	25.9
77.5°	31.1	31.1	31.1	31.1	31.1	25.9	25.9	20.7	20.7	20.7
80°	20.7	20.7	20.7	20.7	20.7	20.7	20.7	15.6	15.6	15.6
82.5°	15.6	15.6	15.6	15.6	15.6	10.4	10.4	10.4	10.4	10.4
85°	10.4	10.4	10.4	10.4	10.4	5.2	5.2	5.2	5.2	5.2
87.5°	5.2	5.2	5.2	5.2	5.2	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)