

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: P591999

Luminaire Tested: **GRZ-05L-940-ASYMx40-X-UNV-STD-4F**

Issue Date: 2/2/2022

**Test Information**

Test Method: LM-79-2019  
Report Number: P591999  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2111-457-24)  
Test Lab: INNOVATION CENTER  
Issue Date: 2/2/2022  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: iO LED  
Catalog Number: GRZ-05L-940-ASYMx40-X-UNV-STD-4F  
Description: iO LED GRAZER WITH ASYMx40 OPTIC  
500 LUMENS PER FOOT, 4 FOOT FIXTURE  
SUMULATED RESULTS  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

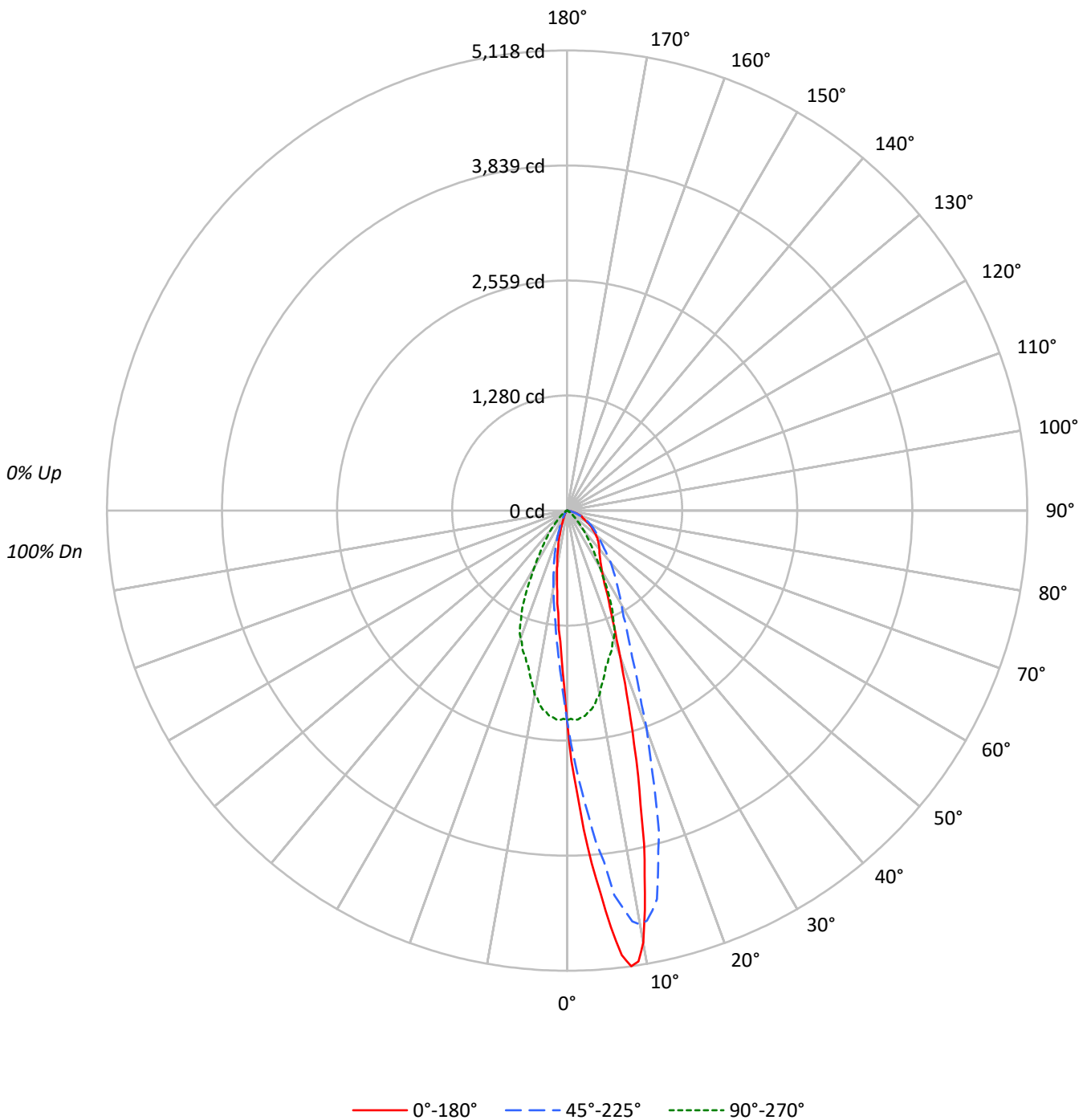
Lumens per Lamp: N/A  
Luminaire Lumens: 1932.0 lumens  
Efficiency: N/A  
Efficacy: 100.1 lumens/watt  
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71  
Luminous Opening: Rectangular (W 4' x L: 0.17' x H: 0')  
CIE Type: Direct

Input Watts (W): 19.3  
Input Voltage (V): 120  
Input Current (Ain): 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			
1	112	109	106	104	110	107	104	102	103	101	99	99	98	96	96	94	93	91					91			
2	106	100	96	92	104	98	94	91	95	92	89	92	89	87	89	87	85	83					83			
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	78	76					76			
4	94	86	79	75	92	84	79	74	82	77	73	80	76	72	78	74	71	70					70			
5	89	80	73	68	87	79	73	68	77	71	67	75	70	67	73	69	66	65					65			
6	84	74	68	63	83	74	67	63	72	67	62	71	66	62	69	65	62	60					60			
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	65	61	58	56					56			
8	76	66	59	55	75	65	59	55	64	59	55	63	58	54	62	57	54	53					53			
9	72	62	56	52	71	62	56	52	61	55	51	60	55	51	59	54	51	50					50			
10	69	59	53	49	68	59	53	49	58	52	49	57	52	48	56	52	48	47					47			

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

	0°	90°	180°
0°	37652	37652	37652
5°	69336	37148	18509
10°	79942	34069	10591
15°	51116	29219	6084
20°	29450	26014	3058
25°	19383	20844	1603
30°	14430	13573	1044
35°	12536	8909	749
40°	11761	5944	590
45°	11188	3653	502
50°	10449	2210	402
55°	9515	1351	338
60°	8267	840	323
65°	7259	611	229
70°	7270	472	189
75°	5614	374	125
80°	3347	186	186
85°	1482	371	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	246.2	12.7
10°-20°	540.3	28.0
20°-30°	412.7	21.4
30°-40°	277.2	14.3
40°-50°	199.3	10.3
50°-60°	138.6	7.2
60°-70°	79.5	4.1
70°-80°	32.8	1.7
80°-90°	5.4	0.3
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°	1199.2	62.1
0°-40°	1476.4	76.4
0°-60°	1814.3	93.9
0°-90°	1932.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1932.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2332	2332	2332	2332	2332	
5°	4278	3714	2292	1396	1142	439
15°	3058	3918	1748	548	364	839
25°	1088	1644	1170	168	90	510
35°	636	950	452	54	38	403
45°	490	566	160	26	22	377
55°	338	368	48	14	12	301
65°	190	212	16	10	6	196
75°	90	78	6	4	2	96
85°	8	10	2	0	0	12
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°	2332	2332	2332	2332	2332	2332	2332	2332	2332	2332	2332
1°	2788	2686	2718	2686	2638	2604	2548	2492	2414	2336	2316
2°	3138	3094	3022	2978	2892	2870	2756	2648	2536	2364	2330
3°	3550	3446	3412	3320	3220	3128	2968	2802	2588	2392	2326
4°	3934	3854	3842	3722	3542	3402	3210	2944	2684	2416	2302
5°	4278	4274	4162	4116	3904	3714	3440	3112	2764	2450	2292
6°	4662	4632	4612	4484	4234	3928	3680	3260	2894	2462	2248
7°	4980	4966	4928	4806	4570	4310	3894	3350	2896	2420	2228
8°	5118	5080	5124	5012	4836	4464	4020	3506	2950	2426	2184
9°	5078	5032	5150	5098	4956	4626	4126	3532	2956	2382	2116
10°	4876	4924	5014	5092	4980	4676	4162	3570	2920	2338	2078
11°	4526	4560	4730	4930	4884	4646	4222	3552	2870	2276	1992
12°	4150	4276	4376	4626	4726	4550	4116	3468	2824	2202	1926
13°	3804	3840	4002	4280	4478	4434	4020	3410	2760	2146	1858
14°	3368	3408	3658	3932	4130	4174	3848	3322	2700	2082	1784
15°	3058	3054	3288	3532	3860	3918	3670	3204	2660	2046	1748
16°	2706	2730	2910	3200	3534	3700	3522	3082	2600	2004	1686
17°	2414	2454	2626	2888	3206	3382	3216	2954	2518	1964	1656
18°	2142	2166	2326	2552	2874	3062	3034	2796	2458	1926	1614
19°	1912	1926	2036	2296	2616	2802	2786	2634	2406	1876	1548
20°	1714	1738	1830	2038	2322	2586	2564	2484	2324	1840	1514
21°	1538	1542	1650	1868	2118	2312	2366	2338	2212	1790	1470
22.5°	1328	1352	1414	1584	1846	2034	2120	2112	2060	1678	1366
23°	1266	1284	1358	1536	1746	1948	2022	2022	2004	1624	1316
24°	1164	1162	1222	1386	1626	1776	1904	1908	1880	1548	1248
25°	1088	1072	1116	1262	1482	1644	1724	1768	1744	1436	1170
26°	1002	1008	1036	1166	1372	1534	1592	1652	1618	1332	1072
27°	916	922	948	1084	1296	1450	1504	1526	1504	1204	986
28°	862	866	886	996	1218	1336	1402	1426	1360	1112	890
29°	814	826	838	926	1134	1266	1310	1322	1254	998	798
30°	774	768	794	872	1050	1210	1236	1226	1164	900	728
32.5°	692	692	708	766	940	1064	1088	1044	920	712	572
35°	636	636	650	686	810	950	962	884	752	572	452
37.5°	588	594	604	628	724	842	834	750	632	458	360
40°	558	558	560	580	646	752	722	630	532	368	282
42.5°	524	526	530	538	586	650	626	560	458	296	214
45°	490	488	492	498	530	566	554	496	394	230	160
47.5°	454	456	452	460	484	506	494	444	328	176	118
50°	416	418	412	422	444	452	444	394	276	130	88
52.5°	376	374	370	384	398	406	400	344	218	98	64
55°	338	334	332	340	356	368	358	296	168	70	48
57.5°	296	294	292	298	316	328	312	244	128	52	36
60°	256	260	252	256	278	290	272	200	94	38	26
62.5°	222	220	212	218	238	250	228	154	70	28	20
65°	190	188	178	182	198	212	188	122	52	22	16



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	176	174	148	146	166	172	150	90	38	16	12
70°	154	152	130	116	130	136	116	66	26	12	10
72.5°	118	120	110	90	100	106	86	46	18	10	8
75°	90	88	84	70	76	78	62	32	14	6	6
77.5°	60	58	60	52	52	54	42	22	10	4	4
80°	36	38	40	38	34	34	26	14	6	4	2
82.5°	18	20	22	22	20	20	16	8	4	2	2
85°	8	8	10	10	8	10	6	4	2	2	2
87.5°	2	2	2	2	2	2	2	2	2	2	2
90°	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°	2332	2332	2332	2332	2332	2332	2332	2332	2332	2332
1°	2278	2226	2226	2152	2096	2062	2002	2004	1974	1956
2°	2258	2146	2050	1956	1868	1824	1776	1728	1692	1682
3°	2230	2080	1926	1800	1690	1620	1550	1506	1490	1456
4°	2194	1990	1794	1656	1522	1426	1384	1322	1304	1326
5°	2150	1904	1694	1528	1396	1280	1220	1188	1140	1142
6°	2100	1796	1568	1382	1248	1162	1100	1056	1022	1040
7°	2036	1700	1458	1274	1146	1054	1004	942	904	904
8°	1982	1618	1356	1178	1050	950	882	840	812	806
9°	1894	1526	1274	1096	966	862	786	746	722	718
10°	1842	1444	1208	1008	874	786	712	670	646	646
11°	1758	1362	1110	936	802	700	640	606	578	572
12°	1680	1294	1046	878	736	634	578	542	522	522
13°	1606	1236	990	808	662	584	522	482	462	460
14°	1546	1156	920	746	606	524	462	434	414	412
15°	1494	1102	878	678	548	464	410	386	366	364
16°	1442	1048	820	624	498	424	368	334	322	322
17°	1400	1016	766	580	446	374	322	290	282	270
18°	1346	952	718	528	410	330	280	254	238	232
19°	1294	896	672	474	364	288	246	216	202	202
20°	1234	862	622	434	320	258	208	186	178	178
21°	1172	804	566	386	284	220	186	162	152	148
22.5°	1084	714	500	330	230	180	150	132	126	124
23°	1040	682	464	312	216	166	140	122	116	114
24°	972	632	420	272	186	146	120	108	104	102
25°	900	580	376	242	168	128	108	96	92	90
26°	826	522	330	210	148	112	96	86	84	82
27°	750	472	292	186	130	102	86	78	74	76
28°	678	424	254	164	112	90	78	70	68	66
29°	628	378	228	142	100	80	70	64	62	62
30°	572	340	202	128	90	72	64	58	58	56
32.5°	452	258	148	96	70	56	50	48	46	46
35°	352	192	110	72	54	46	40	40	40	38
37.5°	270	142	84	56	44	38	34	34	32	32
40°	206	106	62	44	36	32	28	28	28	28
42.5°	154	80	50	36	30	26	24	24	24	24
45°	114	60	38	30	26	24	22	20	22	22
47.5°	84	46	30	24	22	20	20	18	18	18
50°	62	36	26	22	20	18	16	16	16	16
52.5°	46	28	22	18	16	16	14	14	14	14
55°	34	22	18	16	14	14	12	12	12	12
57.5°	26	18	16	14	14	12	12	10	10	10
60°	20	16	12	12	12	12	10	10	10	10
62.5°	16	12	10	10	10	10	8	8	8	8
65°	12	10	10	10	10	8	8	6	6	6





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	10	8	8	8	8	8	6	6	6	6
70°	8	6	6	6	6	6	6	4	4	4
72.5°	6	6	6	6	6	4	4	4	4	4
75°	4	4	4	4	4	4	4	2	2	2
77.5°	4	2	2	2	4	2	2	2	2	2
80°	2	2	2	2	2	2	2	2	2	2
82.5°	2	2	2	2	2	2	0	0	0	0
85°	2	2	2	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0

(END OF REPORT)