

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: P591998

Luminaire Tested: **GRZ-05L-940-ASYMx40-X-UNV-STD-2F**

Issue Date: 2/2/2022

**Test Information**

Test Method: LM-79-2019  
Report Number: P591998  
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-2F  
Description: iO LED GRAZER WITH ASYMx40 OPTIC  
500 LUMENS PER FOOT, 2 FOOT FIXTURE  
SUMULATED RESULTS  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

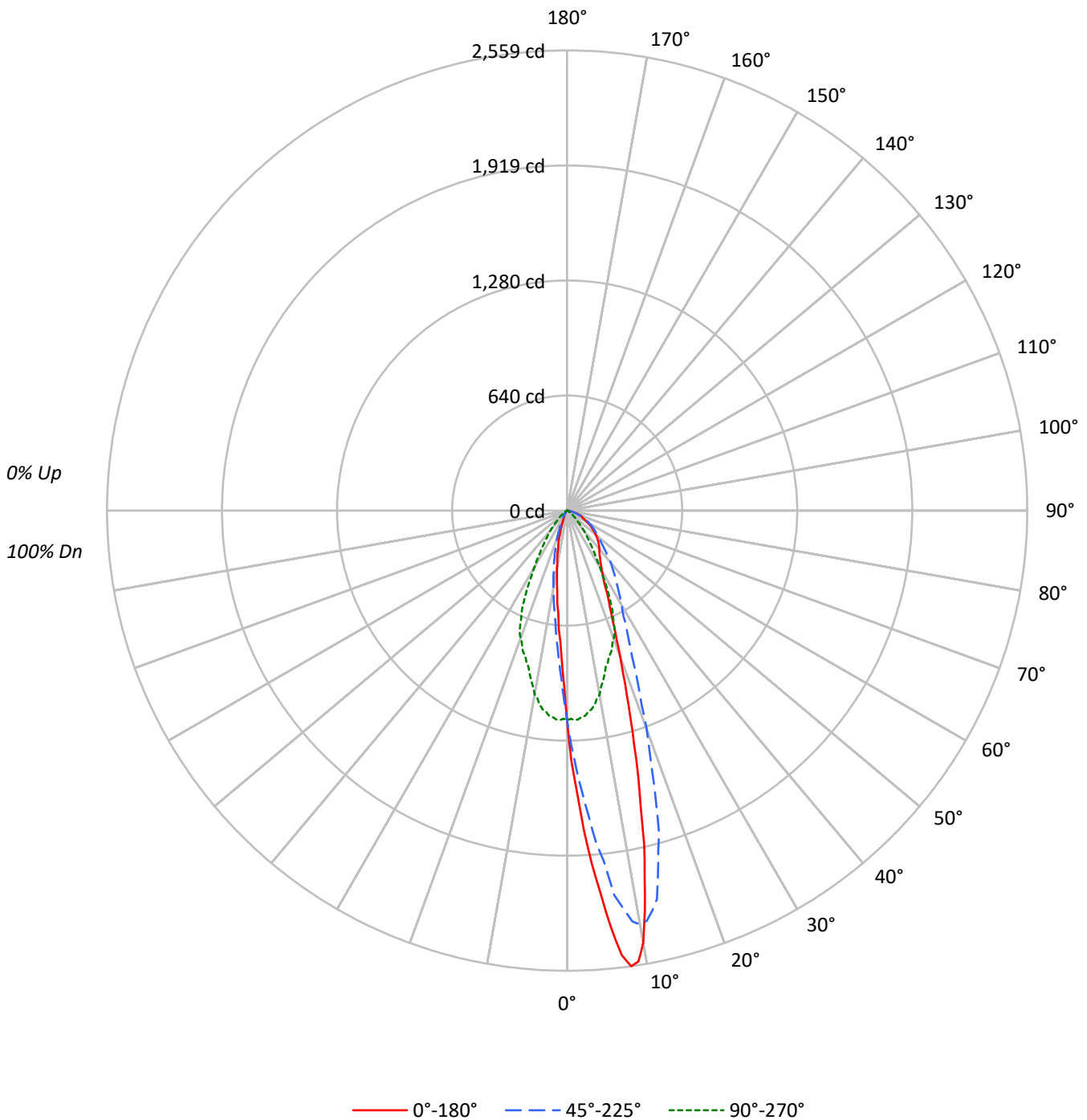
Lumens per Lamp: N/A  
Luminaire Lumens: 966.0 lumens  
Efficiency: N/A  
Efficacy: 100.6 lumens/watt  
Spacing Criteria (0/90/45): 0.61 / 0.78 / 0.71  
Luminous Opening: Rectangular (W 2' x L: 0.17' x H: 0')  
CIE Type: Direct

Input Watts (W): 9.6  
Input Voltage (V): 120  
Input Current (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°	123.1	12.7
10°-20°	270.1	28.0
20°-30°	206.4	21.4
30°-40°	138.6	14.3
40°-50°	99.6	10.3
50°-60°	69.3	7.2
60°-70°	39.7	4.1
70°-80°	16.4	1.7
80°-90°	2.7	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°	599.6	62.1
0°-40°	738.2	76.4
0°-60°	907.2	93.9
0°-90°	966.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	966.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1166	1166	1166	1166	1166	
5°	2139	1857	1146	698	571	220
15°	1529	1959	874	274	182	420
25°	544	822	585	84	45	255
35°	318	475	226	27	19	201
45°	245	283	80	13	11	189
55°	169	184	24	7	6	150
65°	95	106	8	5	3	98
75°	45	39	3	2	1	48
85°	4	5	1	0	0	6
90°	0	0	0	0	0	



TEST NUMBER: P591998

CATALOG NUMBER: GRZ-05L-940-ASYMx40-X-UNV-STD-2F

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1166	1166	1166	1166	1166	1166	1166	1166	1166	1166	1166
1°	1394	1343	1359	1343	1319	1302	1274	1246	1207	1168	1158
2°	1569	1547	1511	1489	1446	1435	1378	1324	1268	1182	1165
3°	1775	1723	1706	1660	1610	1564	1484	1401	1294	1196	1163
4°	1967	1927	1921	1861	1771	1701	1605	1472	1342	1208	1151
5°	2139	2137	2081	2058	1952	1857	1720	1556	1382	1225	1146
6°	2331	2316	2306	2242	2117	1964	1840	1630	1447	1231	1124
7°	2490	2483	2464	2403	2285	2155	1947	1675	1448	1210	1114
8°	2559	2540	2562	2506	2418	2232	2010	1753	1475	1213	1092
9°	2539	2516	2575	2549	2478	2313	2063	1766	1478	1191	1058
10°	2438	2462	2507	2546	2490	2338	2081	1785	1460	1169	1039
11°	2263	2280	2365	2465	2442	2323	2111	1776	1435	1138	996
12°	2075	2138	2188	2313	2363	2275	2058	1734	1412	1101	963
13°	1902	1920	2001	2140	2239	2217	2010	1705	1380	1073	929
14°	1684	1704	1829	1966	2065	2087	1924	1661	1350	1041	892
15°	1529	1527	1644	1766	1930	1959	1835	1602	1330	1023	874
16°	1353	1365	1455	1600	1767	1850	1761	1541	1300	1002	843
17°	1207	1227	1313	1444	1603	1691	1608	1477	1259	982	828
18°	1071	1083	1163	1276	1437	1531	1517	1398	1229	963	807
19°	956	963	1018	1148	1308	1401	1393	1317	1203	938	774
20°	857	869	915	1019	1161	1293	1282	1242	1162	920	757
21°	769	771	825	934	1059	1156	1183	1169	1106	895	735
22.5°	664	676	707	792	923	1017	1060	1056	1030	839	683
23°	633	642	679	768	873	974	1011	1011	1002	812	658
24°	582	581	611	693	813	888	952	954	940	774	624
25°	544	536	558	631	741	822	862	884	872	718	585
26°	501	504	518	583	686	767	796	826	809	666	536
27°	458	461	474	542	648	725	752	763	752	602	493
28°	431	433	443	498	609	668	701	713	680	556	445
29°	407	413	419	463	567	633	655	661	627	499	399
30°	387	384	397	436	525	605	618	613	582	450	364
32.5°	346	346	354	383	470	532	544	522	460	356	286
35°	318	318	325	343	405	475	481	442	376	286	226
37.5°	294	297	302	314	362	421	417	375	316	229	180
40°	279	279	280	290	323	376	361	315	266	184	141
42.5°	262	263	265	269	293	325	313	280	229	148	107
45°	245	244	246	249	265	283	277	248	197	115	80
47.5°	227	228	226	230	242	253	247	222	164	88	59
50°	208	209	206	211	222	226	222	197	138	65	44
52.5°	188	187	185	192	199	203	200	172	109	49	32
55°	169	167	166	170	178	184	179	148	84	35	24
57.5°	148	147	146	149	158	164	156	122	64	26	18
60°	128	130	126	128	139	145	136	100	47	19	13
62.5°	111	110	106	109	119	125	114	77	35	14	10
65°	95	94	89	91	99	106	94	61	26	11	8



TEST NUMBER: P591998

CATALOG NUMBER: GRZ-05L-940-ASYMx40-X-UNV-STD-2F

**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
67.5°	88	87	74	73	83	86	75	45	19	8	6
70°	77	76	65	58	65	68	58	33	13	6	5
72.5°	59	60	55	45	50	53	43	23	9	5	4
75°	45	44	42	35	38	39	31	16	7	3	3
77.5°	30	29	30	26	26	27	21	11	5	2	2
80°	18	19	20	19	17	17	13	7	3	2	1
82.5°	9	10	11	11	10	10	8	4	2	1	1
85°	4	4	5	5	4	5	3	2	1	1	1
87.5°	1	1	1	1	1	1	1	1	1	1	1
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°	1166	1166	1166	1166	1166	1166	1166	1166	1166	1166
1°	1139	1113	1113	1076	1048	1031	1001	1002	987	978
2°	1129	1073	1025	978	934	912	888	864	846	841
3°	1115	1040	963	900	845	810	775	753	745	728
4°	1097	995	897	828	761	713	692	661	652	663
5°	1075	952	847	764	698	640	610	594	570	571
6°	1050	898	784	691	624	581	550	528	511	520
7°	1018	850	729	637	573	527	502	471	452	452
8°	991	809	678	589	525	475	441	420	406	403
9°	947	763	637	548	483	431	393	373	361	359
10°	921	722	604	504	437	393	356	335	323	323
11°	879	681	555	468	401	350	320	303	289	286
12°	840	647	523	439	368	317	289	271	261	261
13°	803	618	495	404	331	292	261	241	231	230
14°	773	578	460	373	303	262	231	217	207	206
15°	747	551	439	339	274	232	205	193	183	182
16°	721	524	410	312	249	212	184	167	161	161
17°	700	508	383	290	223	187	161	145	141	135
18°	673	476	359	264	205	165	140	127	119	116
19°	647	448	336	237	182	144	123	108	101	101
20°	617	431	311	217	160	129	104	93	89	89
21°	586	402	283	193	142	110	93	81	76	74
22.5°	542	357	250	165	115	90	75	66	63	62
23°	520	341	232	156	108	83	70	61	58	57
24°	486	316	210	136	93	73	60	54	52	51
25°	450	290	188	121	84	64	54	48	46	45
26°	413	261	165	105	74	56	48	43	42	41
27°	375	236	146	93	65	51	43	39	37	38
28°	339	212	127	82	56	45	39	35	34	33
29°	314	189	114	71	50	40	35	32	31	31
30°	286	170	101	64	45	36	32	29	29	28
32.5°	226	129	74	48	35	28	25	24	23	23
35°	176	96	55	36	27	23	20	20	20	19
37.5°	135	71	42	28	22	19	17	17	16	16
40°	103	53	31	22	18	16	14	14	14	14
42.5°	77	40	25	18	15	13	12	12	12	12
45°	57	30	19	15	13	12	11	10	11	11
47.5°	42	23	15	12	11	10	10	9	9	9
50°	31	18	13	11	10	9	8	8	8	8
52.5°	23	14	11	9	8	8	7	7	7	7
55°	17	11	9	8	7	7	6	6	6	6
57.5°	13	9	8	7	7	6	6	5	5	5
60°	10	8	6	6	6	6	5	5	5	5
62.5°	8	6	5	5	5	5	4	4	4	4
65°	6	5	5	5	5	4	4	3	3	3





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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
67.5°	5	4	4	4	4	4	3	3	3	3
70°	4	3	3	3	3	3	3	2	2	2
72.5°	3	3	3	3	3	2	2	2	2	2
75°	2	2	2	2	2	2	2	1	1	1
77.5°	2	1	1	1	2	1	1	1	1	1
80°	1	1	1	1	1	1	1	1	1	1
82.5°	1	1	1	1	1	1	0	0	0	0
85°	1	1	1	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)