

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P837978

Luminaire Tested: **ORLG-24-2-INS-ASY2R-LD4-5STD-30-120-EDD-90**

Issue Date: 5/21/2024

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

**Test Information**

Test Method: LM-79-08
Report Number: P837978
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-2-INS-ASY2R-LD4-5STD-30-120-EDD-90
Description: 2FT x 2FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

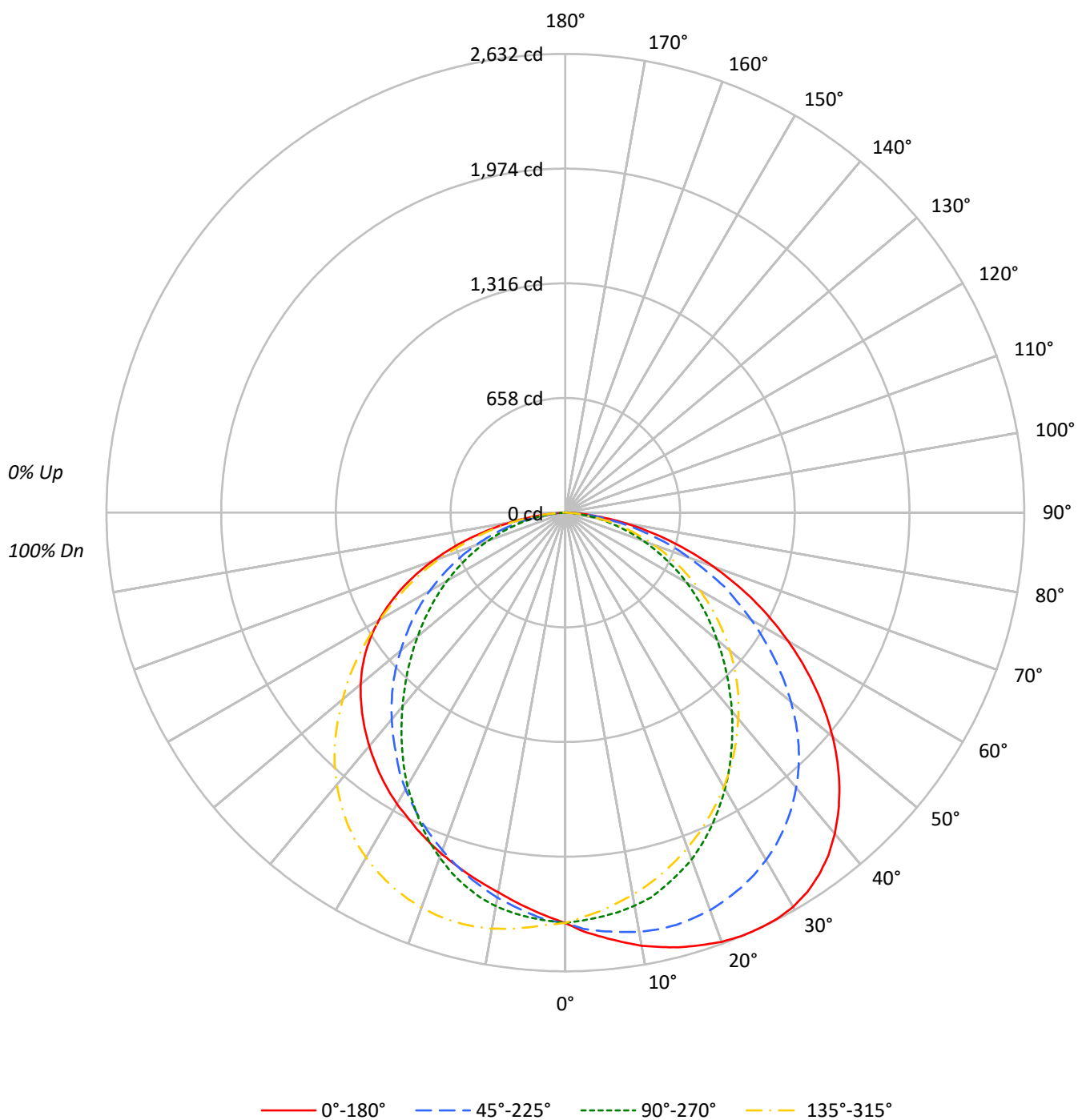
Lumens per Lamp: N/A
Luminaire Lumens: 6906.1 lumens
Efficiency: N/A
Efficacy: 83.0 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 83.2
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: 25 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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	109	104	100	96	106	102	98	94	97	94	91	94	91	89	90	88	86	84		
2	99	91	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	70		
3	90	79	71	65	88	78	70	64	75	68	63	72	66	62	69	65	61	59		
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52	50		
5	76	63	54	47	74	62	53	47	59	52	46	57	51	46	56	50	45	43		
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40	38		
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33		
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32	42	36	31	29		
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26		
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	6334	6334	6334	6334
5°	6602	6289	6170	6299
10°	6896	6257	6045	6266
15°	7191	6177	5986	6178
20°	7505	6065	5959	6030
25°	7816	5895	5959	5835
30°	8118	5690	5999	5627
35°	8334	5457	6059	5370
40°	8444	5221	6143	5104
45°	8461	4984	6263	4858
50°	8381	4756	6416	4630
55°	8207	4544	6559	4418
60°	7949	4323	6646	4211
65°	7594	4069	6611	3975
70°	7094	3771	6376	3703
75°	6383	3362	5852	3346
80°	5411	2816	4919	2859
85°	3764	1865	3118	1914

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	223.5	3.2
10°-20°	647.2	9.4
20°-30°	991.8	14.4
30°-40°	1206.0	17.5
40°-50°	1253.7	18.2
50°-60°	1132.5	16.4
60°-70°	861.0	12.5
70°-80°	480.0	7.0
80°-90°	110.5	1.6
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°	1862.5	27.0
0°-40°	3068.5	44.4
0°-60°	5454.6	79.0
0°-90°	6906.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6906.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2354	2354	2354	2354	2354	
5°	2444	2328	2284	2332	2444	236
15°	2581	2217	2149	2218	2581	732
25°	2632	1986	2007	1965	2632	1216
35°	2537	1661	1844	1635	2537	1584
45°	2223	1310	1646	1277	2223	1712
55°	1749	969	1398	942	1749	1562
65°	1193	639	1038	624	1193	1179
75°	614	323	563	322	614	652
85°	122	60	101	62	122	153
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°	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9
2.5°	2406.1	2370.9	2371.5	2402.2	2378.6	2390.2	2357.2	2369.8	2366.0	2368.7	2341.8
5°	2444.0	2406.1	2405.5	2431.9	2405.5	2410.5	2368.7	2377.0	2364.9	2357.2	2328.1
7.5°	2484.0	2446.2	2442.3	2465.4	2430.8	2426.9	2380.8	2380.8	2358.9	2339.6	2312.2
10°	2523.6	2484.6	2479.7	2497.2	2454.4	2441.8	2385.8	2377.0	2347.9	2319.3	2289.7
12.5°	2553.2	2513.7	2509.9	2520.8	2472.5	2449.5	2385.8	2368.7	2325.9	2285.8	2262.8
15°	2581.2	2540.6	2530.2	2535.7	2480.2	2449.5	2378.1	2351.7	2296.8	2244.1	2217.2
17.5°	2601.0	2562.0	2551.6	2551.0	2484.0	2440.1	2361.6	2325.4	2259.5	2195.8	2168.9
20°	2620.8	2581.8	2568.6	2558.7	2482.9	2427.5	2337.4	2288.6	2211.7	2140.3	2117.8
22.5°	2630.7	2590.6	2576.3	2561.5	2475.8	2404.4	2307.8	2245.7	2157.9	2072.8	2054.1
25°	2632.3	2591.1	2575.7	2554.3	2461.5	2377.0	2269.4	2194.1	2095.8	2001.4	1985.5
27.5°	2627.9	2582.9	2567.5	2541.7	2440.1	2343.5	2223.8	2135.4	2030.0	1925.6	1908.6
30°	2612.5	2567.0	2552.1	2518.6	2409.9	2302.3	2173.8	2070.0	1956.9	1846.0	1831.2
32.5°	2581.8	2537.3	2525.2	2491.7	2377.0	2254.5	2115.6	1999.8	1876.2	1770.2	1748.3
35°	2536.8	2492.3	2484.6	2449.5	2330.9	2197.4	2051.9	1922.9	1790.6	1682.4	1661.0
37.5°	2478.0	2440.7	2429.1	2394.5	2276.5	2132.6	1978.9	1839.4	1703.3	1586.8	1573.7
40°	2403.9	2368.7	2360.0	2329.2	2213.4	2060.7	1899.8	1753.2	1613.2	1505.0	1486.4
42.5°	2319.3	2286.4	2281.4	2249.6	2135.4	1981.1	1814.2	1663.7	1519.3	1415.0	1396.3
45°	2223.2	2191.4	2190.3	2160.1	2050.3	1892.7	1724.1	1573.1	1427.6	1319.4	1309.6
47.5°	2117.3	2088.7	2088.7	2060.7	1955.3	1795.5	1631.3	1478.7	1335.4	1239.8	1222.3
50°	2002.0	1975.0	1966.8	1953.1	1850.4	1689.5	1533.6	1386.4	1244.2	1153.1	1136.1
52.5°	1879.0	1855.9	1861.4	1836.1	1736.7	1579.2	1434.8	1282.7	1152.5	1069.6	1052.6
55°	1749.4	1716.4	1721.4	1712.0	1618.1	1465.5	1323.8	1197.0	1062.5	984.5	968.6
57.5°	1614.9	1572.0	1589.6	1584.1	1491.9	1349.1	1222.3	1099.8	973.0	901.0	885.7
60°	1477.0	1435.9	1454.0	1449.0	1362.3	1232.7	1117.4	1003.7	884.0	818.7	803.3
62.5°	1335.4	1297.5	1314.0	1310.1	1230.5	1113.5	1013.1	908.7	794.5	735.8	721.5
65°	1192.6	1156.4	1171.2	1168.4	1094.9	1005.9	906.0	810.4	704.5	653.4	639.1
67.5°	1046.6	1013.1	1026.8	1026.8	959.2	874.1	798.4	711.1	616.1	572.1	559.0
70°	901.6	870.3	882.4	881.3	824.2	755.0	689.6	611.7	526.6	490.3	479.3
72.5°	755.5	728.1	739.1	738.0	690.2	645.7	580.9	513.4	439.3	410.2	400.3
75°	613.9	588.1	598.5	597.4	558.4	516.7	473.3	417.3	353.6	333.3	323.4
77.5°	478.8	452.4	461.2	461.2	432.7	402.5	367.9	324.5	279.5	257.5	250.4
80°	349.2	336.6	332.2	332.7	313.5	293.8	276.2	234.5	201.5	186.7	181.7
82.5°	229.5	219.1	214.7	215.8	204.8	192.7	181.7	152.6	130.7	121.9	119.2
85°	121.9	114.2	110.4	113.1	110.9	104.3	98.8	79.1	65.3	62.0	60.4
87.5°	38.4	33.5	30.7	40.6	34.6	30.7	29.7	23.6	18.1	18.1	17.6
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°	185°
0°	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9
2.5°	2350.6	2350.6	2329.2	2324.3	2322.1	2324.8	2303.4	2299.6	2330.3	2319.9	2296.3
5°	2332.0	2330.9	2300.7	2295.2	2295.2	2291.9	2267.7	2262.2	2293.0	2284.2	2258.4
7.5°	2308.9	2305.6	2269.9	2266.1	2260.6	2258.4	2231.5	2227.6	2254.0	2248.5	2224.3
10°	2280.9	2277.6	2235.3	2232.6	2226.5	2222.1	2196.9	2194.1	2221.0	2212.3	2193.0
12.5°	2244.1	2238.1	2194.7	2191.9	2187.0	2185.3	2160.6	2159.5	2189.2	2180.4	2160.1
15°	2195.8	2190.8	2142.5	2143.6	2144.2	2144.2	2124.4	2123.3	2152.4	2148.6	2126.6
17.5°	2142.5	2135.9	2089.8	2093.1	2096.9	2101.3	2086.0	2088.7	2119.5	2114.5	2094.7
20°	2082.1	2075.5	2030.5	2039.8	2048.1	2056.9	2047.0	2054.7	2083.2	2081.0	2066.2
22.5°	2014.6	2008.0	1966.3	1980.5	1994.3	2010.7	2006.3	2015.1	2045.3	2044.8	2031.6
25°	1932.2	1933.9	1897.1	1914.6	1937.7	1960.8	1962.4	1976.7	2010.2	2006.9	1994.8
27.5°	1855.3	1857.5	1818.6	1848.2	1879.0	1908.6	1915.7	1935.5	1969.6	1966.8	1956.4
30°	1774.6	1777.4	1739.5	1780.1	1817.5	1853.7	1869.1	1896.0	1930.6	1930.6	1919.6
32.5°	1690.6	1695.6	1656.0	1710.4	1753.8	1796.0	1823.0	1851.0	1890.5	1889.4	1880.1
35°	1604.4	1609.9	1573.7	1642.9	1686.2	1737.8	1771.3	1808.7	1843.8	1844.4	1837.2
37.5°	1516.6	1523.2	1490.2	1566.0	1615.4	1676.3	1719.2	1756.5	1795.5	1797.7	1791.1
40°	1429.3	1436.4	1407.8	1480.9	1543.5	1611.6	1661.0	1704.9	1747.7	1748.8	1744.4
42.5°	1342.0	1349.6	1328.2	1399.6	1470.4	1543.5	1601.7	1651.6	1695.6	1698.3	1693.4
45°	1256.8	1263.4	1248.1	1326.0	1394.1	1473.7	1540.7	1597.3	1641.8	1645.6	1644.0
47.5°	1172.3	1178.3	1164.6	1236.0	1314.5	1399.1	1476.5	1539.1	1586.3	1590.7	1589.6
50°	1089.4	1094.3	1079.5	1154.2	1232.1	1322.2	1402.9	1475.4	1528.1	1532.5	1531.9
52.5°	1007.0	1012.0	999.3	1077.8	1148.7	1243.7	1331.5	1410.0	1462.2	1468.8	1469.9
55°	927.4	929.6	919.7	994.9	1063.6	1163.0	1264.0	1340.3	1392.5	1398.0	1401.3
57.5°	847.8	848.3	840.1	912.0	977.9	1079.5	1185.5	1265.6	1315.1	1320.5	1325.5
60°	768.7	768.2	758.8	828.6	891.7	992.2	1102.6	1182.2	1229.9	1234.9	1241.5
62.5°	690.2	688.5	680.3	744.6	803.9	903.2	1014.2	1091.0	1136.6	1139.9	1148.7
65°	612.2	610.6	602.9	662.2	716.0	811.0	919.7	992.7	1033.9	1038.3	1036.7
67.5°	535.4	532.1	526.0	579.3	628.2	716.0	820.3	890.1	924.1	927.9	938.4
70°	458.5	454.6	440.9	497.5	540.3	618.8	716.0	778.0	806.6	810.4	808.8
72.5°	382.7	378.9	364.0	416.2	452.4	521.1	607.8	659.4	684.2	687.5	687.5
75°	309.1	306.9	297.6	337.1	367.3	423.3	496.9	539.7	559.0	562.8	561.7
77.5°	238.3	236.7	227.3	261.4	285.0	326.7	386.0	419.5	433.8	438.2	447.5
80°	170.8	170.2	155.4	188.9	199.3	234.5	277.8	303.6	311.3	317.4	324.0
82.5°	109.3	109.8	95.0	123.5	127.9	150.4	177.4	193.3	198.8	203.7	208.7
85°	53.3	55.5	47.2	65.3	65.9	77.4	89.0	95.0	97.2	101.0	105.4
87.5°	13.7	15.9	8.8	18.7	16.5	21.4	24.7	26.4	25.8	28.6	30.2
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9
2.5°	2303.9	2321.5	2312.7	2341.3	2352.3	2334.7	2365.4	2366.0	2344.0	2369.8	2384.1
5°	2268.3	2286.4	2280.9	2310.5	2324.3	2308.9	2346.2	2353.4	2332.0	2361.1	2384.1
7.5°	2232.0	2253.4	2246.3	2276.5	2293.0	2280.9	2321.0	2332.5	2316.0	2347.9	2378.6
10°	2200.7	2218.8	2211.2	2243.0	2257.3	2247.4	2286.9	2308.3	2293.0	2332.0	2368.7
12.5°	2170.0	2184.8	2176.0	2202.4	2216.1	2203.5	2251.8	2271.6	2260.6	2301.2	2348.4
15°	2130.4	2146.9	2134.8	2158.4	2168.9	2157.9	2197.4	2231.5	2217.7	2262.2	2314.4
17.5°	2100.2	2109.6	2093.1	2111.8	2117.8	2103.0	2143.1	2176.6	2166.7	2215.0	2275.4
20°	2066.7	2074.4	2051.4	2061.8	2061.3	2042.6	2079.4	2112.3	2105.7	2159.0	2227.6
22.5°	2029.4	2033.3	2006.3	2008.5	2007.4	1976.7	2009.6	2043.1	2040.4	2094.2	2171.1
25°	1989.9	1990.4	1955.8	1954.7	1942.7	1906.4	1935.5	1973.4	1965.2	2023.4	2104.1
27.5°	1950.9	1945.4	1903.7	1893.8	1874.6	1831.2	1857.0	1891.0	1886.1	1943.2	2032.7
30°	1909.2	1902.0	1851.0	1832.8	1804.8	1754.9	1776.3	1808.1	1810.9	1860.8	1954.7
32.5°	1869.6	1851.5	1794.9	1768.6	1733.5	1675.2	1686.8	1719.2	1723.6	1774.1	1870.7
35°	1818.6	1806.5	1736.7	1691.7	1657.1	1593.4	1605.5	1628.0	1634.6	1684.0	1782.3
37.5°	1770.2	1751.0	1676.9	1622.0	1577.5	1510.5	1513.8	1536.9	1543.5	1593.4	1690.6
40°	1720.3	1692.8	1613.2	1549.0	1497.9	1427.6	1423.8	1447.9	1452.9	1501.7	1589.6
42.5°	1667.0	1634.1	1544.6	1474.3	1415.5	1344.2	1336.5	1357.3	1362.8	1410.6	1496.8
45°	1613.2	1573.7	1474.3	1397.4	1333.2	1260.1	1252.5	1268.4	1276.6	1321.6	1404.6
47.5°	1556.1	1510.0	1401.8	1316.2	1249.7	1176.7	1167.3	1183.3	1189.9	1234.3	1312.9
50°	1496.2	1440.2	1327.1	1232.7	1166.8	1094.9	1081.1	1099.8	1105.9	1147.6	1224.5
52.5°	1430.4	1368.3	1247.5	1148.7	1082.8	1014.2	997.7	1015.8	1022.9	1063.6	1134.4
55°	1360.6	1293.6	1167.3	1071.3	999.9	932.9	919.2	926.3	941.7	980.1	1046.0
57.5°	1282.1	1215.7	1082.8	985.1	916.4	852.2	840.6	847.2	861.5	898.8	958.1
60°	1198.6	1128.4	996.6	898.8	832.4	771.5	761.0	767.1	782.4	816.5	871.4
62.5°	1116.3	1037.2	907.6	810.4	750.0	693.5	690.7	688.5	702.8	735.8	784.1
65°	1016.4	940.6	814.8	722.6	667.7	616.6	605.6	610.6	624.3	654.5	705.0
67.5°	909.3	840.6	719.8	634.7	585.9	540.3	531.0	533.2	547.4	573.8	617.7
70°	795.6	735.2	622.7	546.3	505.2	462.3	456.3	456.8	470.6	493.6	532.1
72.5°	676.5	622.1	524.4	459.0	425.0	394.2	388.8	382.2	394.8	414.6	447.5
75°	555.1	507.4	426.6	373.4	346.5	320.7	315.7	309.1	321.8	338.8	364.6
77.5°	432.7	394.2	331.6	290.5	269.6	250.4	246.0	238.9	251.5	264.1	284.4
80°	313.0	285.0	247.6	204.3	197.1	184.5	180.1	172.4	184.5	192.7	208.1
82.5°	202.1	183.4	162.0	131.8	130.7	121.3	119.2	110.4	121.3	126.3	137.8
85°	102.1	93.3	87.9	67.0	69.2	63.1	62.6	53.3	62.0	64.2	70.8
87.5°	29.1	30.7	27.5	16.5	20.9	19.8	19.8	14.3	19.8	19.8	22.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P837978

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-5STD-30-120-EDD-90

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9	2353.9
2.5°	2356.1	2365.4	2367.6	2367.1	2373.1	2406.1	2395.1	2406.1
5°	2361.6	2382.5	2388.0	2395.6	2405.5	2442.9	2430.8	2444.0
7.5°	2364.9	2396.2	2408.3	2423.1	2439.0	2480.8	2470.9	2484.0
10°	2364.9	2405.5	2423.1	2447.8	2469.2	2517.5	2508.2	2523.6
12.5°	2355.0	2407.2	2431.9	2466.5	2493.9	2546.1	2542.3	2553.2
15°	2334.7	2398.9	2433.0	2477.5	2511.5	2569.7	2568.1	2581.2
17.5°	2307.2	2384.7	2425.8	2481.9	2524.7	2590.0	2593.9	2601.0
20°	2272.7	2357.8	2411.6	2480.2	2534.0	2605.9	2610.9	2620.8
22.5°	2227.1	2325.4	2390.2	2473.1	2535.1	2612.5	2621.3	2630.7
25°	2173.3	2286.4	2362.2	2459.3	2529.6	2612.0	2624.1	2632.3
27.5°	2111.8	2235.9	2326.5	2437.4	2514.2	2603.2	2618.0	2627.9
30°	2040.4	2182.1	2285.8	2408.8	2493.4	2586.7	2602.6	2612.5
32.5°	1966.8	2122.8	2237.5	2372.0	2463.2	2560.4	2574.1	2581.8
35°	1886.6	2050.8	2179.3	2324.8	2424.2	2518.1	2528.5	2536.8
37.5°	1799.3	1972.9	2112.9	2271.6	2369.3	2459.3	2468.7	2478.0
40°	1709.3	1891.0	2038.2	2206.2	2303.9	2387.4	2397.3	2403.9
42.5°	1618.7	1800.4	1958.6	2129.3	2226.5	2306.7	2312.7	2319.3
45°	1527.0	1706.5	1869.1	2044.2	2140.3	2215.5	2217.7	2223.2
47.5°	1433.7	1609.4	1770.8	1947.0	2042.0	2110.7	2112.9	2117.3
50°	1339.8	1512.2	1665.9	1842.2	1935.0	2007.4	1997.6	2002.0
52.5°	1247.5	1410.0	1567.1	1729.1	1820.8	1885.0	1887.7	1879.0
55°	1156.9	1310.1	1454.5	1610.5	1697.8	1747.7	1746.1	1749.4
57.5°	1065.2	1209.1	1341.4	1484.2	1569.3	1616.5	1626.4	1614.9
60°	971.9	1106.9	1225.6	1354.6	1436.9	1476.5	1488.0	1477.0
62.5°	879.1	1003.2	1110.8	1223.4	1299.7	1348.5	1347.4	1335.4
65°	786.3	898.8	994.9	1090.5	1156.9	1205.8	1203.6	1192.6
67.5°	700.6	793.4	879.6	957.1	1014.7	1048.2	1059.7	1046.6
70°	606.2	686.4	762.1	824.2	871.9	902.1	913.1	901.6
72.5°	511.7	579.8	633.1	692.9	729.7	755.0	766.5	755.5
75°	418.4	474.4	517.8	564.5	590.3	611.7	624.9	613.9
77.5°	327.8	371.2	405.8	439.8	469.5	474.4	485.9	478.8
80°	241.6	272.9	298.2	320.7	342.1	344.3	353.6	349.2
82.5°	160.9	181.7	188.3	211.9	225.7	223.5	232.8	229.5
85°	85.1	97.7	109.3	116.4	124.1	117.0	125.2	121.9
87.5°	28.6	30.2	26.4	37.3	41.2	35.1	40.1	38.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)