

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: P838221

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-2STD-40-120-EDD-90**

Issue Date: 5/21/2024



Test Information

Test Method: LM-79-08
Report Number: P838221
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-4-INS-ASY2R-LD4-2STD-40-120-EDD-90
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

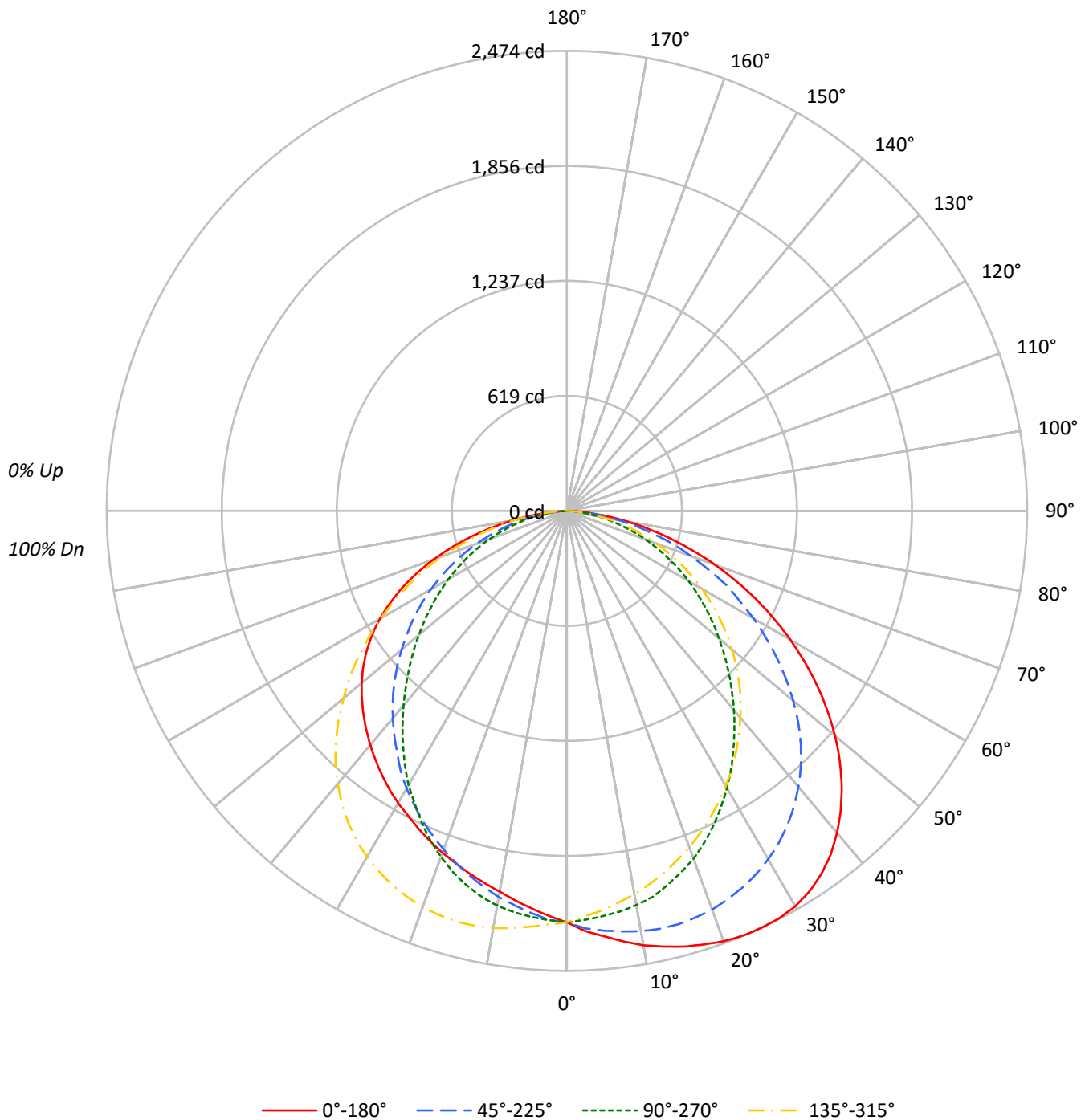
Lumens per Lamp: N/A
Luminaire Lumens: 6491.1 lumens
Efficiency: N/A
Efficacy: 97.5 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 66.6
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: 25 FT

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Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	2977	2977	2977	2977
5°	3103	2955	2900	2960
10°	3241	2940	2841	2945
15°	3379	2903	2813	2904
20°	3527	2850	2801	2834
25°	3673	2771	2800	2742
30°	3815	2674	2819	2644
35°	3916	2564	2847	2524
40°	3968	2454	2887	2399
45°	3976	2342	2943	2283
50°	3939	2235	3015	2176
55°	3857	2136	3082	2076
60°	3736	2032	3123	1979
65°	3569	1912	3107	1868
70°	3334	1772	2996	1740
75°	3000	1580	2750	1572
80°	2543	1323	2311	1344
85°	1769	877	1467	900

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	210.1	3.2
10°-20°	608.3	9.4
20°-30°	932.2	14.4
30°-40°	1133.5	17.5
40°-50°	1178.4	18.2
50°-60°	1064.4	16.4
60°-70°	809.2	12.5
70°-80°	451.1	7.0
80°-90°	103.9	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°	1750.6	27.0
0°-40°	2884.1	44.4
0°-60°	5126.8	79.0
0°-90°	6491.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6491.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2212	2212	2212	2212	2212	
5°	2297	2188	2147	2192	2297	222
15°	2426	2084	2020	2084	2426	688
25°	2474	1866	1886	1847	2474	1143
35°	2384	1561	1734	1536	2384	1489
45°	2090	1231	1547	1200	2090	1609
55°	1644	910	1314	885	1644	1468
65°	1121	601	976	587	1121	1108
75°	577	304	529	302	577	613
85°	115	57	95	58	115	144
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°	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5
2.5°	2261.5	2228.5	2229.0	2257.9	2235.7	2246.5	2215.6	2227.4	2223.8	2226.4	2201.1
5°	2297.1	2261.5	2261.0	2285.8	2261.0	2265.6	2226.4	2234.1	2222.8	2215.6	2188.2
7.5°	2334.8	2299.2	2295.6	2317.2	2284.7	2281.1	2237.8	2237.8	2217.1	2199.1	2173.2
10°	2371.9	2335.3	2330.7	2347.2	2306.9	2295.0	2242.4	2234.1	2206.8	2180.0	2152.1
12.5°	2399.8	2362.7	2359.0	2369.4	2323.9	2302.3	2242.4	2226.4	2186.1	2148.5	2126.8
15°	2426.1	2387.9	2378.1	2383.3	2331.2	2302.3	2235.2	2210.4	2158.8	2109.3	2084.0
17.5°	2444.7	2408.1	2398.3	2397.7	2334.8	2293.5	2219.7	2185.6	2123.7	2063.8	2038.5
20°	2463.3	2426.6	2414.3	2405.0	2333.8	2281.6	2197.0	2151.1	2078.8	2011.7	1990.6
22.5°	2472.6	2434.9	2421.5	2407.6	2327.0	2259.9	2169.1	2110.8	2028.2	1948.2	1930.7
25°	2474.1	2435.4	2421.0	2400.8	2313.6	2234.1	2133.0	2062.3	1969.9	1881.1	1866.2
27.5°	2470.0	2427.7	2413.2	2389.0	2293.5	2202.7	2090.2	2007.1	1908.0	1809.9	1793.9
30°	2455.5	2412.7	2398.8	2367.3	2265.1	2164.0	2043.2	1945.7	1839.3	1735.1	1721.2
32.5°	2426.6	2384.8	2373.5	2342.0	2234.1	2119.1	1988.5	1879.6	1763.5	1663.9	1643.2
35°	2384.3	2342.5	2335.3	2302.3	2190.8	2065.4	1928.6	1807.3	1683.0	1581.3	1561.2
37.5°	2329.1	2294.0	2283.2	2250.7	2139.7	2004.5	1860.0	1728.9	1600.9	1491.5	1479.1
40°	2259.4	2226.4	2218.1	2189.2	2080.4	1936.9	1785.7	1647.9	1516.3	1414.6	1397.1
42.5°	2180.0	2149.0	2144.3	2114.4	2007.1	1862.0	1705.2	1563.7	1428.0	1330.0	1312.4
45°	2089.6	2059.7	2058.7	2030.3	1927.1	1779.0	1620.5	1478.6	1341.8	1240.2	1230.9
47.5°	1990.0	1963.2	1963.2	1936.9	1837.8	1687.6	1533.3	1389.8	1255.1	1165.3	1148.8
50°	1881.7	1856.4	1848.6	1835.7	1739.2	1588.0	1441.4	1303.1	1169.5	1083.8	1067.8
52.5°	1766.1	1744.4	1749.5	1725.8	1632.4	1484.3	1348.5	1205.6	1083.3	1005.3	989.3
55°	1644.3	1613.3	1617.9	1609.2	1520.9	1377.4	1244.3	1125.1	998.6	925.3	910.4
57.5°	1517.8	1477.6	1494.1	1488.9	1402.2	1268.0	1148.8	1033.7	914.5	846.9	832.5
60°	1388.3	1349.6	1366.6	1362.0	1280.4	1158.6	1050.2	943.4	830.9	769.5	755.0
62.5°	1255.1	1219.5	1235.0	1231.4	1156.6	1046.6	952.2	854.1	746.8	691.6	678.1
65°	1120.9	1086.9	1100.8	1098.2	1029.1	945.5	851.5	761.7	662.1	614.1	600.7
67.5°	983.7	952.2	965.1	965.1	901.6	821.6	750.4	668.3	579.1	537.8	525.4
70°	847.4	818.0	829.4	828.3	774.6	709.6	648.2	574.9	494.9	460.9	450.5
72.5°	710.1	684.3	694.7	693.6	648.7	606.9	546.0	482.5	412.9	385.5	376.2
75°	577.0	552.7	562.5	561.5	524.9	485.6	444.9	392.2	332.4	313.3	304.0
77.5°	450.0	425.3	433.5	433.5	406.7	378.3	345.8	305.0	262.7	242.0	235.3
80°	328.2	316.4	312.2	312.7	294.7	276.1	259.6	220.4	189.4	175.5	170.8
82.5°	215.7	205.9	201.8	202.8	192.5	181.1	170.8	143.5	122.8	114.6	112.0
85°	114.6	107.3	103.7	106.3	104.2	98.1	92.9	74.3	61.4	58.3	56.8
87.5°	36.1	31.5	28.9	38.2	32.5	28.9	27.9	22.2	17.0	17.0	16.5
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°	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5
2.5°	2209.4	2209.4	2189.2	2184.6	2182.5	2185.1	2165.0	2161.4	2190.3	2180.5	2158.3
5°	2191.8	2190.8	2162.4	2157.2	2157.2	2154.2	2131.4	2126.3	2155.2	2146.9	2122.7
7.5°	2170.2	2167.1	2133.5	2129.9	2124.7	2122.7	2097.4	2093.8	2118.5	2113.4	2090.7
10°	2143.8	2140.7	2101.0	2098.4	2092.7	2088.6	2064.9	2062.3	2087.6	2079.3	2061.3
12.5°	2109.3	2103.6	2062.8	2060.2	2055.6	2054.0	2030.8	2029.8	2057.6	2049.4	2030.3
15°	2063.8	2059.2	2013.8	2014.8	2015.3	2015.3	1996.7	1995.7	2023.1	2019.5	1998.8
17.5°	2013.8	2007.6	1964.2	1967.3	1970.9	1975.1	1960.6	1963.2	1992.1	1987.5	1968.9
20°	1957.0	1950.8	1908.5	1917.3	1925.0	1933.3	1924.0	1931.2	1958.0	1956.0	1942.0
22.5°	1893.5	1887.3	1848.1	1861.5	1874.4	1889.9	1885.8	1894.0	1922.4	1921.9	1909.5
25°	1816.1	1817.7	1783.1	1799.6	1821.3	1843.0	1844.5	1857.9	1889.4	1886.3	1874.9
27.5°	1743.9	1745.9	1709.3	1737.2	1766.1	1793.9	1800.6	1819.2	1851.2	1848.6	1838.8
30°	1668.0	1670.6	1635.0	1673.2	1708.3	1742.3	1756.8	1782.1	1814.6	1814.6	1804.2
32.5°	1589.0	1593.7	1556.5	1607.6	1648.4	1688.1	1713.4	1739.7	1776.9	1775.9	1767.1
35°	1508.0	1513.2	1479.1	1544.1	1584.9	1633.4	1664.9	1700.0	1733.0	1733.5	1726.8
37.5°	1425.4	1431.6	1400.7	1471.9	1518.3	1575.6	1615.9	1651.0	1687.6	1689.7	1683.5
40°	1343.4	1350.1	1323.2	1391.9	1450.7	1514.7	1561.2	1602.5	1642.7	1643.7	1639.6
42.5°	1261.3	1268.5	1248.4	1315.5	1382.1	1450.7	1505.4	1552.4	1593.7	1596.3	1591.6
45°	1181.3	1187.5	1173.1	1246.4	1310.3	1385.2	1448.1	1501.3	1543.1	1546.7	1545.2
47.5°	1101.8	1107.5	1094.6	1161.7	1235.5	1315.0	1387.8	1446.6	1491.0	1495.1	1494.1
50°	1023.9	1028.6	1014.6	1084.8	1158.1	1242.7	1318.6	1386.7	1436.3	1440.4	1439.9
52.5°	946.5	951.2	939.3	1013.1	1079.7	1168.9	1251.5	1325.3	1374.3	1380.5	1381.6
55°	871.7	873.7	864.4	935.2	999.7	1093.1	1188.0	1259.8	1308.8	1314.0	1317.1
57.5°	796.8	797.4	789.6	857.2	919.2	1014.6	1114.2	1189.6	1236.0	1241.2	1245.8
60°	722.5	722.0	713.2	778.8	838.1	932.6	1036.3	1111.1	1156.0	1160.7	1166.9
62.5°	648.7	647.2	639.4	699.8	755.6	849.0	953.2	1025.5	1068.3	1071.4	1079.7
65°	575.4	573.9	566.7	622.4	673.0	762.3	864.4	933.1	971.8	975.9	974.4
67.5°	503.2	500.1	494.4	544.5	590.4	673.0	771.0	836.6	868.6	872.2	882.0
70°	430.9	427.3	414.4	467.6	507.8	581.6	673.0	731.3	758.1	761.7	760.2
72.5°	359.7	356.1	342.2	391.2	425.3	489.8	571.3	619.8	643.0	646.1	646.1
75°	290.6	288.5	279.7	316.9	345.3	397.9	467.1	507.3	525.4	529.0	528.0
77.5°	224.0	222.4	213.7	245.7	267.8	307.1	362.8	394.3	407.7	411.8	420.6
80°	160.5	160.0	146.1	177.5	187.3	220.4	261.1	285.4	292.6	298.3	304.5
82.5°	102.7	103.2	89.3	116.1	120.2	141.4	166.7	181.7	186.8	191.5	196.1
85°	50.1	52.1	44.4	61.4	61.9	72.8	83.6	89.3	91.3	95.0	99.1
87.5°	12.9	15.0	8.3	17.5	15.5	20.1	23.2	24.8	24.3	26.8	28.4
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°	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5
2.5°	2165.5	2182.0	2173.8	2200.6	2210.9	2194.4	2223.3	2223.8	2203.2	2227.4	2240.9
5°	2132.0	2149.0	2143.8	2171.7	2184.6	2170.2	2205.2	2212.0	2191.8	2219.2	2240.9
7.5°	2097.9	2118.0	2111.3	2139.7	2155.2	2143.8	2181.5	2192.3	2176.9	2206.8	2235.7
10°	2068.5	2085.5	2078.3	2108.2	2121.6	2112.3	2149.5	2169.6	2155.2	2191.8	2226.4
12.5°	2039.6	2053.5	2045.3	2070.0	2082.9	2071.1	2116.5	2135.1	2124.7	2162.9	2207.3
15°	2002.4	2017.9	2006.6	2028.7	2038.5	2028.2	2065.4	2097.4	2084.5	2126.3	2175.3
17.5°	1974.0	1982.8	1967.3	1984.9	1990.6	1976.6	2014.3	2045.8	2036.5	2081.9	2138.7
20°	1942.6	1949.8	1928.1	1937.9	1937.4	1919.8	1954.4	1985.4	1979.2	2029.3	2093.8
22.5°	1907.5	1911.1	1885.8	1887.9	1886.8	1857.9	1888.9	1920.4	1917.8	1968.4	2040.6
25°	1870.3	1870.8	1838.3	1837.3	1825.9	1791.9	1819.2	1854.8	1847.1	1901.8	1977.6
27.5°	1833.7	1828.5	1789.3	1780.0	1761.9	1721.2	1745.4	1777.4	1772.8	1826.4	1910.6
30°	1794.4	1787.7	1739.7	1722.7	1696.4	1649.4	1669.5	1699.5	1702.1	1749.0	1837.3
32.5°	1757.3	1740.2	1687.1	1662.3	1629.3	1574.6	1585.4	1615.9	1620.0	1667.5	1758.3
35°	1709.3	1697.9	1632.4	1590.1	1557.6	1497.7	1509.0	1530.2	1536.4	1582.8	1675.2
37.5°	1663.9	1645.8	1576.1	1524.5	1482.7	1419.8	1422.9	1444.5	1450.7	1497.7	1589.0
40°	1616.9	1591.1	1516.3	1455.9	1407.9	1341.8	1338.2	1360.9	1365.6	1411.5	1494.1
42.5°	1566.8	1535.9	1451.8	1385.7	1330.5	1263.4	1256.2	1275.8	1280.9	1325.8	1406.9
45°	1516.3	1479.1	1385.7	1313.4	1253.1	1184.4	1177.2	1192.2	1199.9	1242.2	1320.2
47.5°	1462.6	1419.2	1317.6	1237.1	1174.6	1106.0	1097.2	1112.2	1118.4	1160.2	1234.0
50°	1406.3	1353.7	1247.4	1158.6	1096.7	1029.1	1016.2	1033.7	1039.4	1078.6	1150.9
52.5°	1344.4	1286.1	1172.6	1079.7	1017.7	953.2	937.7	954.8	961.5	999.7	1066.2
55°	1278.9	1215.9	1097.2	1006.9	939.8	876.8	863.9	870.6	885.1	921.2	983.1
57.5°	1205.1	1142.6	1017.7	925.9	861.4	801.0	790.1	796.3	809.7	844.8	900.6
60°	1126.6	1060.6	936.7	844.8	782.4	725.1	715.3	721.0	735.4	767.4	819.0
62.5°	1049.2	974.9	853.1	761.7	705.0	651.8	649.2	647.2	660.6	691.6	737.0
65°	955.3	884.1	765.9	679.2	627.6	579.6	569.2	573.9	586.8	615.2	662.7
67.5°	854.6	790.1	676.6	596.6	550.7	507.8	499.1	501.1	514.5	539.3	580.6
70°	747.8	691.0	585.2	513.5	474.8	434.5	428.9	429.4	442.3	464.0	500.1
72.5°	635.8	584.7	492.9	431.4	399.5	370.6	365.4	359.2	371.1	389.6	420.6
75°	521.8	476.9	401.0	350.9	325.7	301.4	296.8	290.6	302.4	318.4	342.7
77.5°	406.7	370.6	311.7	273.0	253.4	235.3	231.2	224.5	236.4	248.2	267.3
80°	294.2	267.8	232.8	192.0	185.3	173.4	169.3	162.1	173.4	181.1	195.6
82.5°	189.9	172.4	152.2	123.9	122.8	114.1	112.0	103.7	114.1	118.7	129.5
85°	96.0	87.7	82.6	63.0	65.0	59.4	58.8	50.1	58.3	60.4	66.6
87.5°	27.4	28.9	25.8	15.5	19.6	18.6	18.6	13.4	18.6	18.6	21.2
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: P838221

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-2STD-40-120-EDD-90

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5	2212.5
2.5°	2214.5	2223.3	2225.4	2224.9	2230.5	2261.5	2251.2	2261.5
5°	2219.7	2239.3	2244.5	2251.7	2261.0	2296.1	2284.7	2297.1
7.5°	2222.8	2252.2	2263.6	2277.5	2292.5	2331.7	2322.4	2334.8
10°	2222.8	2261.0	2277.5	2300.7	2320.8	2366.3	2357.5	2371.9
12.5°	2213.5	2262.5	2285.8	2318.3	2344.1	2393.1	2389.5	2399.8
15°	2194.4	2254.8	2286.8	2328.6	2360.6	2415.3	2413.7	2426.1
17.5°	2168.6	2241.4	2280.1	2332.7	2373.0	2434.4	2438.0	2444.7
20°	2136.1	2216.1	2266.7	2331.2	2381.7	2449.4	2454.0	2463.3
22.5°	2093.3	2185.6	2246.5	2324.5	2382.8	2455.5	2463.8	2472.6
25°	2042.7	2149.0	2220.2	2311.6	2377.6	2455.0	2466.4	2474.1
27.5°	1984.9	2101.5	2186.7	2290.9	2363.2	2446.8	2460.7	2470.0
30°	1917.8	2050.9	2148.5	2264.1	2343.6	2431.3	2446.3	2455.5
32.5°	1848.6	1995.2	2103.1	2229.5	2315.2	2406.5	2419.4	2426.6
35°	1773.3	1927.6	2048.4	2185.1	2278.5	2366.8	2376.6	2384.3
37.5°	1691.2	1854.3	1985.9	2135.1	2226.9	2311.6	2320.3	2329.1
40°	1606.6	1777.4	1915.7	2073.6	2165.5	2244.0	2253.2	2259.4
42.5°	1521.4	1692.3	1840.9	2001.4	2092.7	2168.1	2173.8	2180.0
45°	1435.2	1604.0	1756.8	1921.4	2011.7	2082.4	2084.5	2089.6
47.5°	1347.5	1512.7	1664.4	1830.0	1919.3	1983.8	1985.9	1990.0
50°	1259.3	1421.3	1565.8	1731.5	1818.7	1886.8	1877.5	1881.7
52.5°	1172.6	1325.3	1472.9	1625.2	1711.3	1771.7	1774.3	1766.1
55°	1087.4	1231.4	1367.1	1513.7	1595.7	1642.7	1641.2	1644.3
57.5°	1001.2	1136.4	1260.8	1395.0	1475.0	1519.4	1528.7	1517.8
60°	913.5	1040.4	1151.9	1273.2	1350.6	1387.8	1398.6	1388.3
62.5°	826.3	942.9	1044.0	1149.8	1221.6	1267.5	1266.5	1255.1
65°	739.0	844.8	935.2	1025.0	1087.4	1133.3	1131.3	1120.9
67.5°	658.5	745.7	826.8	899.5	953.7	985.2	996.0	983.7
70°	569.8	645.1	716.3	774.6	819.5	847.9	858.3	847.4
72.5°	481.0	545.0	595.0	651.3	685.9	709.6	720.5	710.1
75°	393.3	445.9	486.7	530.5	554.8	574.9	587.3	577.0
77.5°	308.1	348.9	381.4	413.4	441.3	445.9	456.7	450.0
80°	227.1	256.5	280.2	301.4	321.5	323.6	332.4	328.2
82.5°	151.2	170.8	177.0	199.2	212.1	210.0	218.8	215.7
85°	80.0	91.9	102.7	109.4	116.6	109.9	117.7	114.6
87.5°	26.8	28.4	24.8	35.1	38.7	33.0	37.7	36.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)