

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: P838093

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-1HI-35-120-EDD**

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: P838093
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-LD4-1HI-35-120-EDD
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

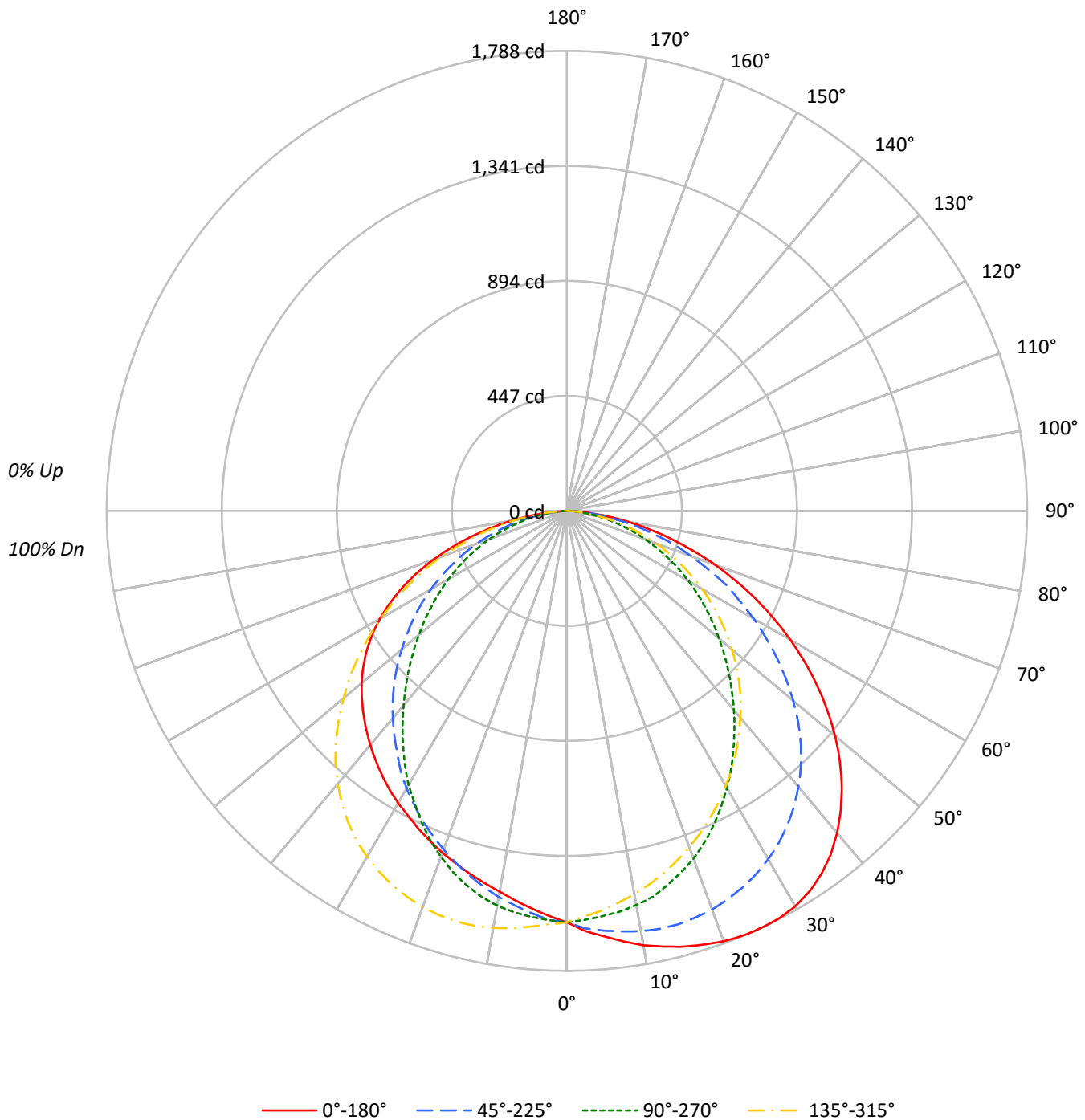
Lumens per Lamp: N/A
Luminaire Lumens: 4691.3 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 44
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°	2151	2151	2151	2151
5°	2242	2136	2096	2140
10°	2342	2125	2053	2128
15°	2443	2098	2033	2098
20°	2549	2060	2024	2048
25°	2655	2002	2024	1982
30°	2757	1933	2038	1911
35°	2830	1853	2058	1824
40°	2868	1773	2087	1733
45°	2874	1693	2127	1650
50°	2847	1615	2179	1572
55°	2788	1544	2228	1501
60°	2700	1468	2257	1430
65°	2579	1382	2245	1350
70°	2410	1281	2166	1258
75°	2168	1142	1987	1136
80°	1838	957	1671	971
85°	1278	633	1059	650

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.8	3.2
10°-20°	439.6	9.4
20°-30°	673.7	14.4
30°-40°	819.2	17.5
40°-50°	851.6	18.2
50°-60°	769.3	16.4
60°-70°	584.9	12.5
70°-80°	326.1	7.0
80°-90°	75.1	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°	1265.2	27.0
0°-40°	2084.4	44.4
0°-60°	3705.4	79.0
0°-90°	4691.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4691.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1599	1599	1599	1599	1599	
5°	1660	1582	1552	1584	1660	160
15°	1754	1506	1460	1506	1754	497
25°	1788	1349	1363	1335	1788	826
35°	1723	1128	1253	1110	1723	1076
45°	1510	890	1118	867	1510	1163
55°	1188	658	950	640	1188	1061
65°	810	434	705	424	810	801
75°	417	220	382	219	417	443
85°	83	41	69	42	83	104
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°	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0
2.5°	1634.5	1610.6	1611.0	1631.9	1615.8	1623.6	1601.3	1609.8	1607.2	1609.1	1590.8
5°	1660.2	1634.5	1634.1	1652.0	1634.1	1637.4	1609.1	1614.7	1606.5	1601.3	1581.5
7.5°	1687.4	1661.7	1659.1	1674.7	1651.2	1648.6	1617.3	1617.3	1602.4	1589.3	1570.7
10°	1714.3	1687.8	1684.4	1696.4	1667.3	1658.7	1620.7	1614.7	1594.9	1575.5	1555.4
12.5°	1734.4	1707.6	1705.0	1712.4	1679.6	1663.9	1620.7	1609.1	1580.0	1552.8	1537.1
15°	1753.5	1725.8	1718.8	1722.5	1684.8	1663.9	1615.4	1597.5	1560.2	1524.4	1506.2
17.5°	1766.9	1740.4	1733.3	1732.9	1687.4	1657.6	1604.3	1579.6	1534.9	1491.6	1473.3
20°	1780.3	1753.8	1744.9	1738.2	1686.7	1649.0	1587.8	1554.6	1502.4	1453.9	1438.6
22.5°	1787.0	1759.8	1750.1	1740.0	1681.8	1633.3	1567.7	1525.6	1465.9	1408.1	1395.4
25°	1788.1	1760.2	1749.7	1735.2	1672.1	1614.7	1541.6	1490.5	1423.7	1359.6	1348.8
27.5°	1785.2	1754.6	1744.1	1726.6	1657.6	1591.9	1510.6	1450.6	1379.0	1308.1	1296.5
30°	1774.7	1743.8	1733.7	1710.9	1637.1	1564.0	1476.7	1406.2	1329.4	1254.0	1243.9
32.5°	1753.8	1723.6	1715.4	1692.7	1614.7	1531.5	1437.2	1358.4	1274.5	1202.5	1187.6
35°	1723.2	1693.0	1687.8	1663.9	1583.4	1492.7	1393.9	1306.2	1216.3	1142.9	1128.3
37.5°	1683.3	1658.0	1650.1	1626.6	1546.4	1448.7	1344.3	1249.5	1157.0	1078.0	1069.0
40°	1633.0	1609.1	1603.1	1582.2	1503.5	1399.9	1290.6	1191.0	1095.9	1022.4	1009.7
42.5°	1575.5	1553.2	1549.8	1528.2	1450.6	1345.8	1232.4	1130.2	1032.1	961.2	948.5
45°	1510.3	1488.6	1487.9	1467.4	1392.8	1285.7	1171.2	1068.6	969.8	896.3	889.6
47.5°	1438.3	1418.9	1418.9	1399.9	1328.2	1219.7	1108.2	1004.5	907.1	842.2	830.3
50°	1359.9	1341.7	1336.1	1326.7	1257.0	1147.7	1041.8	941.8	845.2	783.3	771.7
52.5°	1276.4	1260.7	1264.5	1247.3	1179.8	1072.7	974.6	871.3	782.9	726.6	715.0
55°	1188.4	1166.0	1169.3	1163.0	1099.2	995.5	899.3	813.1	721.7	668.8	658.0
57.5°	1097.0	1067.9	1079.8	1076.1	1013.4	916.4	830.3	747.1	660.9	612.1	601.6
60°	1003.4	975.4	987.7	984.3	925.4	837.4	759.0	681.8	600.5	556.1	545.7
62.5°	907.1	881.4	892.6	890.0	835.9	756.4	688.2	617.3	539.7	499.8	490.1
65°	810.1	785.5	795.6	793.7	743.8	683.3	615.4	550.5	478.6	443.9	434.2
67.5°	710.9	688.2	697.5	697.5	651.6	593.8	542.3	483.0	418.5	388.7	379.7
70°	612.5	591.2	599.4	598.7	559.9	512.9	468.5	415.5	357.7	333.1	325.6
72.5°	513.2	494.6	502.1	501.3	468.9	438.6	394.6	348.8	298.4	278.6	271.9
75°	417.0	399.5	406.6	405.8	379.3	351.0	321.5	283.5	240.2	226.4	219.7
77.5°	325.3	307.3	313.3	313.3	293.9	273.4	249.9	220.4	189.9	174.9	170.1
80°	237.2	228.6	225.7	226.0	213.0	199.6	187.6	159.3	136.9	126.8	123.5
82.5°	155.9	148.8	145.8	146.6	139.1	130.9	123.5	103.7	88.8	82.8	80.9
85°	82.8	77.6	75.0	76.8	75.3	70.9	67.1	53.7	44.4	42.1	41.0
87.5°	26.1	22.8	20.9	27.6	23.5	20.9	20.1	16.0	12.3	12.3	11.9
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°	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0
2.5°	1596.8	1596.8	1582.2	1578.9	1577.4	1579.3	1564.7	1562.1	1583.0	1575.9	1559.9
5°	1584.1	1583.4	1562.8	1559.1	1559.1	1556.9	1540.5	1536.7	1557.6	1551.7	1534.1
7.5°	1568.4	1566.2	1542.0	1539.4	1535.6	1534.1	1515.9	1513.2	1531.1	1527.4	1511.0
10°	1549.4	1547.2	1518.5	1516.6	1512.5	1509.5	1492.4	1490.5	1508.8	1502.8	1489.7
12.5°	1524.4	1520.3	1490.9	1489.0	1485.6	1484.5	1467.7	1467.0	1487.1	1481.2	1467.4
15°	1491.6	1488.3	1455.4	1456.2	1456.5	1456.5	1443.1	1442.4	1462.1	1459.5	1444.6
17.5°	1455.4	1451.0	1419.6	1421.9	1424.5	1427.5	1417.0	1418.9	1439.8	1436.4	1423.0
20°	1414.4	1409.9	1379.3	1385.7	1391.3	1397.2	1390.5	1395.7	1415.1	1413.7	1403.6
22.5°	1368.5	1364.0	1335.7	1345.4	1354.7	1365.9	1362.9	1368.9	1389.4	1389.0	1380.1
25°	1312.6	1313.7	1288.7	1300.6	1316.3	1332.0	1333.1	1342.8	1365.5	1363.3	1355.1
27.5°	1260.4	1261.8	1235.4	1255.5	1276.4	1296.5	1301.4	1314.8	1337.9	1336.1	1329.0
30°	1205.5	1207.4	1181.6	1209.3	1234.6	1259.2	1269.7	1288.0	1311.5	1311.5	1304.0
32.5°	1148.5	1151.8	1125.0	1161.9	1191.3	1220.1	1238.3	1257.4	1284.2	1283.5	1277.1
35°	1089.9	1093.6	1069.0	1116.0	1145.5	1180.5	1203.3	1228.6	1252.5	1252.9	1248.0
37.5°	1030.2	1034.7	1012.3	1063.8	1097.4	1138.8	1167.8	1193.2	1219.7	1221.2	1216.7
40°	970.9	975.8	956.4	1006.0	1048.5	1094.7	1128.3	1158.1	1187.2	1188.0	1185.0
42.5°	911.6	916.8	902.3	950.8	998.9	1048.5	1088.0	1122.0	1151.8	1153.7	1150.3
45°	853.8	858.3	847.8	900.8	947.0	1001.1	1046.6	1085.0	1115.3	1117.9	1116.7
47.5°	796.3	800.4	791.1	839.6	893.0	950.4	1003.0	1045.5	1077.6	1080.6	1079.8
50°	740.0	743.4	733.3	784.0	837.0	898.2	953.0	1002.2	1038.0	1041.0	1040.7
52.5°	684.1	687.4	678.9	732.2	780.3	844.8	904.5	957.9	993.3	997.8	998.5
55°	630.0	631.5	624.8	675.9	722.5	790.0	858.6	910.5	945.9	949.6	951.9
57.5°	575.9	576.3	570.7	619.5	664.3	733.3	805.3	859.8	893.3	897.1	900.4
60°	522.2	521.8	515.5	562.8	605.7	674.0	749.0	803.1	835.5	838.9	843.3
62.5°	468.9	467.7	462.1	505.8	546.1	613.6	688.9	741.1	772.1	774.3	780.3
65°	415.9	414.8	409.5	449.8	486.4	550.9	624.8	674.4	702.3	705.3	704.2
67.5°	363.7	361.4	357.3	393.5	426.7	486.4	557.3	604.6	627.8	630.4	637.4
70°	311.5	308.8	299.5	337.9	367.0	420.4	486.4	528.5	547.9	550.5	549.4
72.5°	260.0	257.4	247.3	282.7	307.3	354.0	412.9	448.0	464.8	467.0	467.0
75°	210.0	208.5	202.2	229.0	249.5	287.6	337.6	366.7	379.7	382.3	381.6
77.5°	161.9	160.8	154.4	177.5	193.6	221.9	262.2	285.0	294.7	297.7	304.0
80°	116.0	115.6	105.6	128.3	135.4	159.3	188.7	206.3	211.5	215.6	220.1
82.5°	74.2	74.6	64.5	83.9	86.9	102.2	120.5	131.3	135.0	138.4	141.7
85°	36.2	37.7	32.1	44.4	44.8	52.6	60.4	64.5	66.0	68.6	71.6
87.5°	9.3	10.8	6.0	12.7	11.2	14.5	16.8	17.9	17.5	19.4	20.5
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0
2.5°	1565.1	1577.0	1571.1	1590.5	1597.9	1586.0	1606.9	1607.2	1592.3	1609.8	1619.5
5°	1540.8	1553.2	1549.4	1569.6	1578.9	1568.4	1593.8	1598.7	1584.1	1603.9	1619.5
7.5°	1516.2	1530.8	1525.9	1546.4	1557.6	1549.4	1576.7	1584.5	1573.3	1594.9	1615.8
10°	1495.0	1507.3	1502.1	1523.7	1533.4	1526.7	1553.5	1568.1	1557.6	1584.1	1609.1
12.5°	1474.1	1484.1	1478.2	1496.1	1505.4	1496.8	1529.7	1543.1	1535.6	1563.2	1595.3
15°	1447.2	1458.4	1450.2	1466.2	1473.3	1465.9	1492.7	1515.9	1506.5	1536.7	1572.2
17.5°	1426.7	1433.0	1421.9	1434.5	1438.6	1428.6	1455.8	1478.6	1471.8	1504.7	1545.7
20°	1404.0	1409.2	1393.5	1400.6	1400.2	1387.5	1412.5	1434.9	1430.4	1466.6	1513.2
22.5°	1378.6	1381.2	1362.9	1364.4	1363.7	1342.8	1365.2	1387.9	1386.0	1422.6	1474.8
25°	1351.7	1352.1	1328.6	1327.9	1319.7	1295.0	1314.8	1340.5	1334.9	1374.5	1429.3
27.5°	1325.3	1321.5	1293.2	1286.5	1273.4	1243.9	1261.5	1284.6	1281.2	1320.0	1380.8
30°	1296.9	1292.1	1257.4	1245.1	1226.0	1192.1	1206.6	1228.3	1230.1	1264.1	1327.9
32.5°	1270.0	1257.7	1219.3	1201.4	1177.5	1138.0	1145.8	1167.8	1170.8	1205.1	1270.8
35°	1235.4	1227.2	1179.8	1149.2	1125.7	1082.4	1090.6	1105.9	1110.4	1144.0	1210.7
37.5°	1202.5	1189.5	1139.1	1101.8	1071.6	1026.1	1028.3	1044.0	1048.5	1082.4	1148.5
40°	1168.6	1149.9	1095.9	1052.2	1017.5	969.8	967.2	983.6	986.9	1020.1	1079.8
42.5°	1132.4	1110.0	1049.2	1001.5	961.6	913.1	907.9	922.0	925.8	958.2	1016.8
45°	1095.9	1069.0	1001.5	949.3	905.6	856.0	850.8	861.6	867.2	897.8	954.1
47.5°	1057.1	1025.7	952.3	894.1	848.9	799.3	793.0	803.8	808.3	838.5	891.8
50°	1016.4	978.4	901.5	837.4	792.6	743.8	734.4	747.1	751.2	779.6	831.8
52.5°	971.7	929.5	847.4	780.3	735.5	688.9	677.7	690.0	694.9	722.5	770.6
55°	924.3	878.8	793.0	727.7	679.2	633.7	624.4	629.2	639.7	665.8	710.6
57.5°	870.9	825.8	735.5	669.2	622.5	578.9	571.1	575.5	585.2	610.6	650.9
60°	814.2	766.5	677.0	610.6	565.5	524.1	517.0	521.1	531.5	554.6	591.9
62.5°	758.3	704.6	616.6	550.5	509.5	471.1	469.2	467.7	477.4	499.8	532.6
65°	690.4	638.9	553.5	490.9	453.6	418.9	411.4	414.8	424.1	444.6	478.9
67.5°	617.7	571.1	489.0	431.2	398.0	367.0	360.7	362.2	371.9	389.8	419.6
70°	540.5	499.4	423.0	371.1	343.2	314.1	310.0	310.3	319.7	335.3	361.4
72.5°	459.5	422.6	356.2	311.8	288.7	267.8	264.1	259.6	268.2	281.6	304.0
75°	377.1	344.6	289.8	253.6	235.4	217.8	214.5	210.0	218.6	230.1	247.7
77.5°	293.9	267.8	225.3	197.3	183.1	170.1	167.1	162.3	170.8	179.4	193.2
80°	212.6	193.6	168.2	138.8	133.9	125.3	122.3	117.1	125.3	130.9	141.4
82.5°	137.3	124.6	110.0	89.5	88.8	82.4	80.9	75.0	82.4	85.8	93.6
85°	69.4	63.4	59.7	45.5	47.0	42.9	42.5	36.2	42.1	43.6	48.1
87.5°	19.8	20.9	18.6	11.2	14.2	13.4	13.4	9.7	13.4	13.4	15.3
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: P838093

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1HI-35-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0	1599.0
2.5°	1600.5	1606.9	1608.4	1608.0	1612.1	1634.5	1627.0	1634.5
5°	1604.3	1618.4	1622.2	1627.4	1634.1	1659.5	1651.2	1660.2
7.5°	1606.5	1627.8	1636.0	1646.0	1656.8	1685.2	1678.5	1687.4
10°	1606.5	1634.1	1646.0	1662.8	1677.4	1710.2	1703.8	1714.3
12.5°	1599.8	1635.2	1652.0	1675.5	1694.1	1729.6	1727.0	1734.4
15°	1586.0	1629.6	1652.7	1683.0	1706.1	1745.6	1744.5	1753.5
17.5°	1567.3	1619.9	1647.9	1685.9	1715.0	1759.4	1762.0	1766.9
20°	1543.8	1601.6	1638.2	1684.8	1721.4	1770.2	1773.6	1780.3
22.5°	1512.9	1579.6	1623.6	1680.0	1722.1	1774.7	1780.7	1787.0
25°	1476.3	1553.2	1604.6	1670.6	1718.4	1774.3	1782.5	1788.1
27.5°	1434.5	1518.8	1580.4	1655.7	1707.9	1768.4	1778.4	1785.2
30°	1386.0	1482.3	1552.8	1636.3	1693.8	1757.2	1768.0	1774.7
32.5°	1336.1	1442.0	1520.0	1611.3	1673.3	1739.3	1748.6	1753.8
35°	1281.6	1393.1	1480.4	1579.3	1646.8	1710.6	1717.6	1723.2
37.5°	1222.3	1340.2	1435.3	1543.1	1609.5	1670.6	1677.0	1683.3
40°	1161.1	1284.6	1384.6	1498.7	1565.1	1621.8	1628.5	1633.0
42.5°	1099.6	1223.1	1330.5	1446.5	1512.5	1567.0	1571.1	1575.5
45°	1037.3	1159.3	1269.7	1388.7	1453.9	1505.0	1506.5	1510.3
47.5°	973.9	1093.2	1202.9	1322.6	1387.2	1433.8	1435.3	1438.3
50°	910.1	1027.2	1131.7	1251.4	1314.4	1363.7	1357.0	1359.9
52.5°	847.4	957.9	1064.5	1174.6	1236.9	1280.5	1282.4	1276.4
55°	785.9	890.0	988.1	1094.0	1153.3	1187.2	1186.1	1188.4
57.5°	723.6	821.3	911.2	1008.2	1066.0	1098.1	1104.8	1097.0
60°	660.2	752.0	832.5	920.2	976.1	1003.0	1010.8	1003.4
62.5°	597.2	681.5	754.6	831.0	882.9	916.1	915.3	907.1
65°	534.1	610.6	675.9	740.8	785.9	819.1	817.6	810.1
67.5°	475.9	539.0	597.5	650.1	689.3	712.0	719.9	710.9
70°	411.8	466.2	517.7	559.9	592.3	612.8	620.3	612.5
72.5°	347.6	393.9	430.1	470.7	495.7	512.9	520.7	513.2
75°	284.2	322.3	351.7	383.4	401.0	415.5	424.5	417.0
77.5°	222.7	252.1	275.6	298.8	318.9	322.3	330.1	325.3
80°	164.1	185.4	202.5	217.8	232.4	233.9	240.2	237.2
82.5°	109.3	123.5	127.9	144.0	153.3	151.8	158.1	155.9
85°	57.8	66.4	74.2	79.1	84.3	79.4	85.0	82.8
87.5°	19.4	20.5	17.9	25.4	28.0	23.9	27.2	26.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)