

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: P837848

Luminaire Tested: **ORLG-24-2-INS-ASY2R-LD4-4LO-27-120-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: P837848
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-LD4-4LO-27-120-EDD
Description: 2FT x 2FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 2700K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

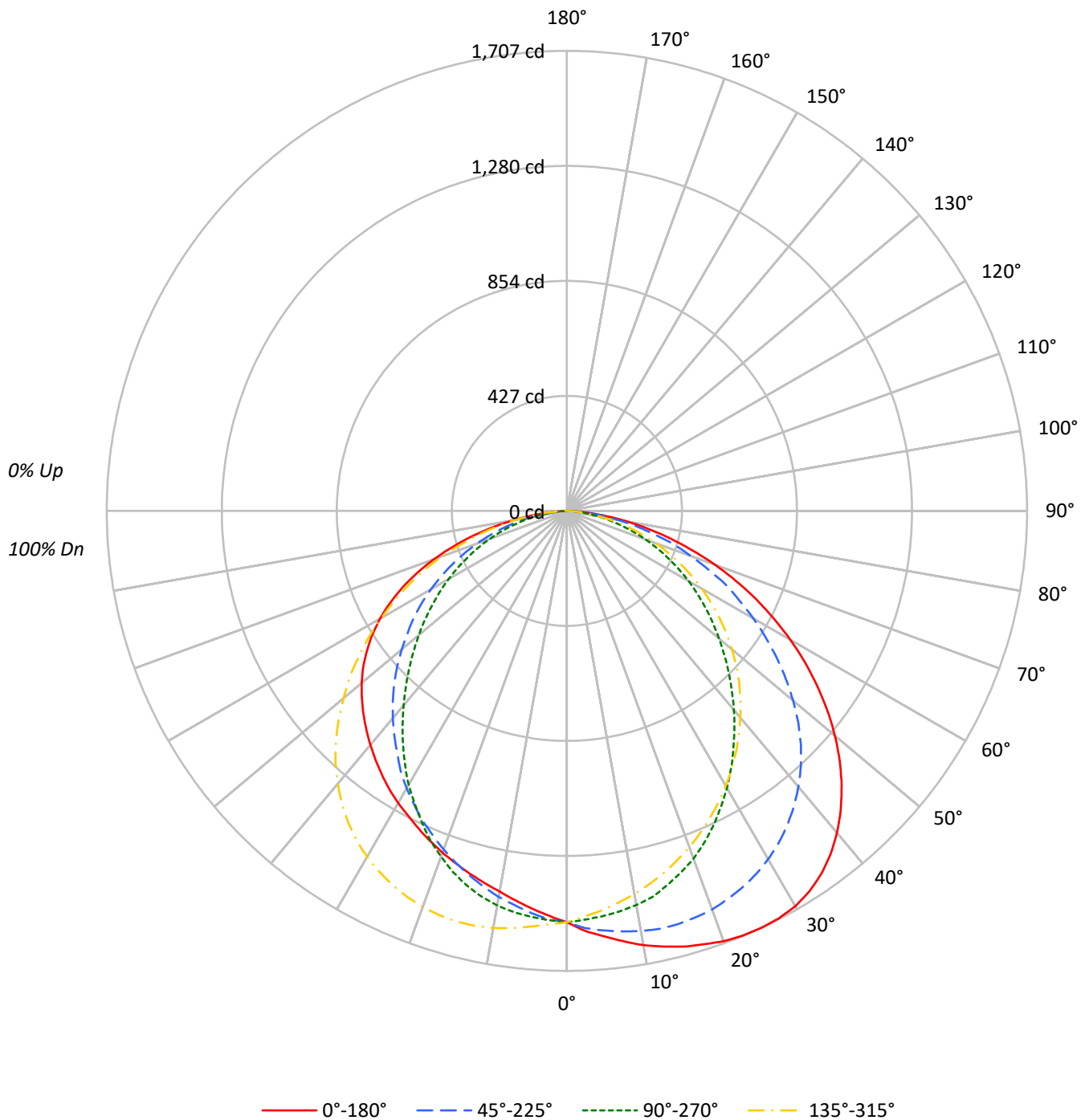
Lumens per Lamp: N/A
Luminaire Lumens: 4477.9 lumens
Efficiency: N/A
Efficacy: 95.7 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 46.8
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°	4107	4107	4107	4107
5°	4281	4078	4001	4084
10°	4471	4057	3919	4063
15°	4663	4005	3881	4006
20°	4866	3932	3864	3910
25°	5068	3823	3864	3783
30°	5264	3689	3890	3649
35°	5403	3538	3929	3482
40°	5475	3386	3983	3309
45°	5486	3231	4061	3150
50°	5434	3084	4160	3002
55°	5322	2946	4252	2865
60°	5154	2803	4309	2730
65°	4924	2639	4287	2578
70°	4600	2445	4135	2400
75°	4138	2180	3794	2169
80°	3508	1826	3189	1853
85°	2439	1210	2022	1241

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	144.9	3.2
10°-20°	419.6	9.4
20°-30°	643.1	14.4
30°-40°	782.0	17.5
40°-50°	812.9	18.2
50°-60°	734.3	16.4
60°-70°	558.3	12.5
70°-80°	311.2	7.0
80°-90°	71.7	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°	1207.6	27.0
0°-40°	1989.6	44.4
0°-60°	3536.8	79.0
0°-90°	4477.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4477.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1526	1526	1526	1526	1526	
5°	1585	1510	1481	1512	1585	153
15°	1674	1438	1393	1438	1674	475
25°	1707	1287	1301	1274	1707	788
35°	1645	1077	1196	1060	1645	1027
45°	1442	849	1067	828	1442	1110
55°	1134	628	906	611	1134	1013
65°	773	414	673	405	773	764
75°	398	210	365	209	398	423
85°	79	39	66	40	79	99
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°	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3
2.5°	1560.1	1537.3	1537.7	1557.6	1542.3	1549.8	1528.4	1536.6	1534.1	1535.9	1518.4
5°	1584.7	1560.1	1559.7	1576.8	1559.7	1562.9	1535.9	1541.2	1533.4	1528.4	1509.5
7.5°	1610.7	1586.1	1583.6	1598.6	1576.1	1573.6	1543.7	1543.7	1529.5	1517.0	1499.2
10°	1636.3	1611.0	1607.8	1619.2	1591.4	1583.2	1546.9	1541.2	1522.4	1503.8	1484.6
12.5°	1655.5	1629.9	1627.4	1634.5	1603.2	1588.2	1546.9	1535.9	1508.1	1482.1	1467.2
15°	1673.7	1647.3	1640.6	1644.1	1608.2	1588.2	1541.9	1524.9	1489.3	1455.1	1437.6
17.5°	1686.5	1661.2	1654.4	1654.1	1610.7	1582.2	1531.3	1507.8	1465.0	1423.7	1406.3
20°	1699.3	1674.0	1665.5	1659.1	1609.9	1574.0	1515.6	1483.9	1434.1	1387.8	1373.2
22.5°	1705.7	1679.7	1670.5	1660.9	1605.3	1559.0	1496.4	1456.1	1399.2	1344.0	1331.9
25°	1706.8	1680.1	1670.1	1656.2	1596.1	1541.2	1471.4	1422.7	1358.9	1297.7	1287.4
27.5°	1703.9	1674.7	1664.8	1648.0	1582.2	1519.5	1441.9	1384.6	1316.2	1248.6	1237.5
30°	1694.0	1664.4	1654.8	1633.1	1562.6	1492.8	1409.5	1342.2	1268.9	1197.0	1187.3
32.5°	1674.0	1645.2	1637.4	1615.6	1541.2	1461.8	1371.8	1296.6	1216.5	1147.8	1133.6
35°	1644.8	1616.0	1611.0	1588.2	1511.3	1424.8	1330.5	1246.8	1161.0	1090.9	1077.0
37.5°	1606.7	1582.5	1575.1	1552.6	1476.1	1382.8	1283.1	1192.7	1104.4	1028.9	1020.4
40°	1558.7	1535.9	1530.2	1510.3	1435.1	1336.2	1231.8	1136.8	1046.0	975.9	963.8
42.5°	1503.8	1482.5	1479.3	1458.6	1384.6	1284.5	1176.3	1078.8	985.1	917.5	905.4
45°	1441.5	1420.9	1420.2	1400.6	1329.4	1227.2	1117.9	1020.0	925.7	855.5	849.1
47.5°	1372.8	1354.3	1354.3	1336.2	1267.8	1164.2	1057.7	958.8	865.9	803.9	792.5
50°	1298.1	1280.6	1275.3	1266.4	1199.8	1095.5	994.4	899.0	806.8	747.7	736.6
52.5°	1218.3	1203.4	1206.9	1190.5	1126.1	1023.9	930.3	831.7	747.3	693.5	682.5
55°	1134.3	1112.9	1116.1	1110.1	1049.2	950.2	858.4	776.1	688.9	638.4	628.0
57.5°	1047.1	1019.3	1030.7	1027.1	967.3	874.8	792.5	713.1	630.9	584.2	574.3
60°	957.7	931.0	942.8	939.5	883.3	799.3	724.5	650.8	573.2	530.8	520.9
62.5°	865.9	841.3	852.0	849.5	797.9	722.0	656.9	589.2	515.2	477.1	467.8
65°	773.3	749.8	759.4	757.6	709.9	652.2	587.4	525.5	456.8	423.7	414.4
67.5°	678.6	656.9	665.8	665.8	622.0	566.8	517.7	461.1	399.5	371.0	362.4
70°	584.6	564.3	572.1	571.4	534.4	489.5	447.2	396.6	341.4	317.9	310.8
72.5°	489.9	472.1	479.2	478.5	447.5	418.7	376.7	332.9	284.8	266.0	259.5
75°	398.0	381.3	388.1	387.4	362.1	335.0	306.9	270.6	229.3	216.1	209.7
77.5°	310.5	293.4	299.1	299.1	280.5	261.0	238.5	210.4	181.2	167.0	162.3
80°	226.4	218.2	215.4	215.8	203.3	190.5	179.1	152.0	130.7	121.0	117.8
82.5°	148.8	142.1	139.2	139.9	132.8	125.0	117.8	99.0	84.7	79.0	77.3
85°	79.0	74.1	71.6	73.3	71.9	67.6	64.1	51.3	42.4	40.2	39.2
87.5°	24.9	21.7	19.9	26.3	22.4	19.9	19.2	15.3	11.7	11.7	11.4
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3
2.5°	1524.1	1524.1	1510.3	1507.1	1505.6	1507.4	1493.5	1491.0	1511.0	1504.2	1488.9
5°	1512.0	1511.3	1491.7	1488.2	1488.2	1486.0	1470.4	1466.8	1486.8	1481.1	1464.3
7.5°	1497.1	1494.9	1471.8	1469.3	1465.8	1464.3	1446.9	1444.4	1461.5	1457.9	1442.3
10°	1478.9	1476.8	1449.4	1447.6	1443.7	1440.8	1424.5	1422.7	1440.1	1434.4	1422.0
12.5°	1455.1	1451.2	1423.0	1421.2	1418.0	1417.0	1401.0	1400.2	1419.5	1413.8	1400.6
15°	1423.7	1420.5	1389.2	1389.9	1390.3	1390.3	1377.5	1376.7	1395.6	1393.1	1378.9
17.5°	1389.2	1384.9	1355.0	1357.2	1359.7	1362.5	1352.5	1354.3	1374.3	1371.1	1358.2
20°	1350.0	1345.8	1316.6	1322.6	1328.0	1333.7	1327.3	1332.2	1350.8	1349.3	1339.7
22.5°	1306.3	1302.0	1274.9	1284.2	1293.1	1303.8	1300.9	1306.6	1326.2	1325.8	1317.3
25°	1252.9	1253.9	1230.1	1241.5	1256.4	1271.4	1272.4	1281.7	1303.4	1301.3	1293.4
27.5°	1203.0	1204.4	1179.2	1198.4	1218.3	1237.5	1242.2	1255.0	1277.1	1275.3	1268.5
30°	1150.7	1152.5	1127.9	1154.2	1178.4	1201.9	1211.9	1229.4	1251.8	1251.8	1244.7
32.5°	1096.2	1099.4	1073.8	1109.0	1137.1	1164.6	1182.0	1200.2	1225.8	1225.1	1219.0
35°	1040.3	1043.9	1020.4	1065.2	1093.4	1126.8	1148.5	1172.7	1195.5	1195.9	1191.3
37.5°	983.3	987.6	966.3	1015.4	1047.4	1086.9	1114.7	1138.9	1164.2	1165.6	1161.4
40°	926.7	931.4	912.8	960.2	1000.8	1044.9	1077.0	1105.5	1133.2	1133.9	1131.1
42.5°	870.1	875.1	861.2	907.5	953.4	1000.8	1038.5	1070.9	1099.4	1101.2	1098.0
45°	814.9	819.2	809.2	859.8	903.9	955.6	999.0	1035.7	1064.5	1067.0	1065.9
47.5°	760.1	764.0	755.1	801.4	852.3	907.2	957.3	997.9	1028.6	1031.4	1030.7
50°	706.4	709.6	699.9	748.4	798.9	857.3	909.6	956.6	990.8	993.7	993.3
52.5°	652.9	656.2	648.0	698.9	744.8	806.4	863.4	914.3	948.1	952.4	953.1
55°	601.3	602.7	596.3	645.1	689.6	754.1	819.6	869.1	902.9	906.4	908.6
57.5°	549.7	550.1	544.7	591.4	634.1	699.9	768.7	820.6	852.7	856.2	859.4
60°	498.4	498.1	492.0	537.2	578.2	643.3	714.9	766.5	797.5	800.7	805.0
62.5°	447.5	446.5	441.1	482.8	521.2	585.7	657.6	707.4	737.0	739.1	744.8
65°	397.0	395.9	390.9	429.4	464.3	525.8	596.3	643.7	670.4	673.2	672.2
67.5°	347.1	345.0	341.1	375.6	407.3	464.3	531.9	577.1	599.2	601.7	608.4
70°	297.3	294.8	285.9	322.6	350.3	401.2	464.3	504.5	523.0	525.5	524.4
72.5°	248.1	245.7	236.0	269.9	293.4	337.9	394.1	427.6	443.6	445.7	445.7
75°	200.4	199.0	193.0	218.6	238.2	274.5	322.2	350.0	362.4	364.9	364.2
77.5°	154.5	153.4	147.4	169.5	184.8	211.8	250.3	272.0	281.3	284.1	290.2
80°	110.7	110.4	100.8	122.5	129.2	152.0	180.1	196.9	201.9	205.8	210.1
82.5°	70.8	71.2	61.6	80.1	83.0	97.6	115.0	125.3	128.9	132.1	135.3
85°	34.5	36.0	30.6	42.4	42.7	50.2	57.7	61.6	63.0	65.5	68.4
87.5°	8.9	10.3	5.7	12.1	10.7	13.9	16.0	17.1	16.7	18.5	19.6
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3
2.5°	1493.9	1505.3	1499.6	1518.1	1525.2	1513.8	1533.8	1534.1	1519.9	1536.6	1545.9
5°	1470.7	1482.5	1478.9	1498.2	1507.1	1497.1	1521.3	1525.9	1512.0	1530.9	1545.9
7.5°	1447.2	1461.1	1456.5	1476.1	1486.8	1478.9	1504.9	1512.4	1501.7	1522.4	1542.3
10°	1426.9	1438.7	1433.7	1454.4	1463.6	1457.2	1482.8	1496.7	1486.8	1512.0	1535.9
12.5°	1407.0	1416.6	1410.9	1428.0	1436.9	1428.7	1460.1	1472.9	1465.8	1492.1	1522.7
15°	1381.4	1392.1	1384.2	1399.5	1406.3	1399.2	1424.8	1446.9	1438.0	1466.8	1500.6
17.5°	1361.8	1367.8	1357.2	1369.3	1373.2	1363.6	1389.6	1411.3	1404.9	1436.2	1475.4
20°	1340.1	1345.1	1330.1	1336.9	1336.5	1324.4	1348.3	1369.6	1365.4	1399.9	1444.4
22.5°	1315.9	1318.4	1300.9	1302.3	1301.6	1281.7	1303.0	1324.8	1323.0	1357.9	1407.7
25°	1290.2	1290.6	1268.2	1267.4	1259.6	1236.1	1255.0	1279.6	1274.2	1312.0	1364.3
27.5°	1265.0	1261.4	1234.3	1227.9	1215.5	1187.3	1204.1	1226.1	1222.9	1260.0	1318.0
30°	1237.9	1233.3	1200.2	1188.4	1170.3	1137.9	1151.7	1172.4	1174.2	1206.6	1267.4
32.5°	1212.3	1200.5	1163.8	1146.8	1124.0	1086.2	1093.7	1114.7	1117.6	1150.3	1213.0
35°	1179.2	1171.3	1126.1	1096.9	1074.5	1033.2	1041.0	1055.6	1059.9	1091.9	1155.7
37.5°	1147.8	1135.4	1087.3	1051.7	1022.9	979.4	981.6	996.5	1000.8	1033.2	1096.2
40°	1115.4	1097.6	1046.0	1004.3	971.2	925.7	923.2	938.8	942.0	973.7	1030.7
42.5°	1080.9	1059.5	1001.5	955.9	917.8	871.5	866.6	880.1	883.7	914.6	970.5
45°	1046.0	1020.4	955.9	906.1	864.4	817.1	812.1	822.4	827.8	857.0	910.7
47.5°	1009.0	979.1	908.9	853.4	810.3	763.0	756.9	767.2	771.5	800.3	851.3
50°	970.2	933.9	860.5	799.3	756.6	709.9	701.0	713.1	717.0	744.1	793.9
52.5°	927.4	887.2	808.9	744.8	702.1	657.6	646.9	658.6	663.3	689.6	735.5
55°	882.2	838.8	756.9	694.6	648.3	604.9	596.0	600.6	610.6	635.5	678.2
57.5°	831.3	788.2	702.1	638.7	594.2	552.6	545.1	549.3	558.6	582.8	621.3
60°	777.2	731.6	646.2	582.8	539.7	500.2	493.5	497.4	507.3	529.4	565.0
62.5°	723.8	672.5	588.5	525.5	486.3	449.7	447.9	446.5	455.7	477.1	508.4
65°	659.0	609.9	528.3	468.5	432.9	399.8	392.7	395.9	404.8	424.4	457.1
67.5°	589.6	545.1	466.7	411.6	379.9	350.3	344.3	345.7	355.0	372.0	400.5
70°	515.9	476.7	403.7	354.2	327.5	299.8	295.9	296.2	305.1	320.1	345.0
72.5°	438.6	403.4	340.0	297.6	275.6	255.6	252.1	247.8	256.0	268.8	290.2
75°	359.9	329.0	276.6	242.1	224.7	207.9	204.7	200.4	208.6	219.7	236.4
77.5°	280.5	255.6	215.0	188.3	174.8	162.3	159.5	154.9	163.1	171.2	184.4
80°	202.9	184.8	160.6	132.4	127.8	119.6	116.8	111.8	119.6	125.0	134.9
82.5°	131.0	118.9	105.0	85.4	84.7	78.7	77.3	71.6	78.7	81.9	89.4
85°	66.2	60.5	57.0	43.4	44.9	40.9	40.6	34.5	40.2	41.7	45.9
87.5°	18.9	19.9	17.8	10.7	13.5	12.8	12.8	9.3	12.8	12.8	14.6
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: P837848

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-4LO-27-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3	1526.3
2.5°	1527.7	1533.8	1535.2	1534.8	1538.7	1560.1	1553.0	1560.1
5°	1531.3	1544.8	1548.4	1553.3	1559.7	1584.0	1576.1	1584.7
7.5°	1533.4	1553.7	1561.5	1571.1	1581.5	1608.5	1602.1	1610.7
10°	1533.4	1559.7	1571.1	1587.2	1601.0	1632.4	1626.3	1636.3
12.5°	1527.0	1560.8	1576.8	1599.3	1617.1	1650.9	1648.4	1655.5
15°	1513.8	1555.5	1577.5	1606.4	1628.5	1666.2	1665.1	1673.7
17.5°	1496.0	1546.2	1572.9	1609.2	1637.0	1679.4	1681.9	1686.5
20°	1473.6	1528.8	1563.7	1608.2	1643.1	1689.7	1692.9	1699.3
22.5°	1444.0	1507.8	1549.8	1603.5	1643.8	1694.0	1699.7	1705.7
25°	1409.1	1482.5	1531.6	1594.6	1640.2	1693.6	1701.4	1706.8
27.5°	1369.3	1449.7	1508.5	1580.4	1630.2	1687.9	1697.5	1703.9
30°	1323.0	1414.8	1482.1	1561.9	1616.7	1677.2	1687.6	1694.0
32.5°	1275.3	1376.4	1450.8	1538.0	1597.1	1660.1	1669.0	1674.0
35°	1223.3	1329.8	1413.1	1507.4	1571.8	1632.7	1639.5	1644.8
37.5°	1166.7	1279.2	1370.0	1472.9	1536.2	1594.6	1600.7	1606.7
40°	1108.3	1226.1	1321.6	1430.5	1493.9	1548.0	1554.4	1558.7
42.5°	1049.6	1167.4	1269.9	1380.7	1443.7	1495.7	1499.6	1503.8
45°	990.1	1106.5	1211.9	1325.5	1387.8	1436.6	1438.0	1441.5
47.5°	929.6	1043.5	1148.2	1262.5	1324.1	1368.6	1370.0	1372.8
50°	868.7	980.5	1080.2	1194.5	1254.6	1301.6	1295.2	1298.1
52.5°	808.9	914.3	1016.1	1121.1	1180.6	1222.2	1224.0	1218.3
55°	750.1	849.5	943.1	1044.2	1100.8	1133.2	1132.2	1134.3
57.5°	690.7	784.0	869.8	962.3	1017.5	1048.1	1054.5	1047.1
60°	630.2	717.7	794.6	878.3	931.7	957.3	964.8	957.7
62.5°	570.0	650.5	720.2	793.2	842.7	874.4	873.7	865.9
65°	509.8	582.8	645.1	707.1	750.1	781.8	780.4	773.3
67.5°	454.3	514.5	570.4	620.6	657.9	679.7	687.1	678.6
70°	393.1	445.0	494.2	534.4	565.4	584.9	592.1	584.6
72.5°	331.8	376.0	410.5	449.3	473.2	489.5	497.0	489.9
75°	271.3	307.6	335.7	366.0	382.7	396.6	405.2	398.0
77.5°	212.5	240.7	263.1	285.2	304.4	307.6	315.1	310.5
80°	156.7	176.9	193.3	207.9	221.8	223.2	229.3	226.4
82.5°	104.3	117.8	122.1	137.4	146.3	144.9	151.0	148.8
85°	55.2	63.4	70.8	75.5	80.5	75.8	81.2	79.0
87.5°	18.5	19.6	17.1	24.2	26.7	22.8	26.0	24.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)