

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: P837834

Luminaire Tested: **ORLG-24-2-INS-ASY2R-LD4-5STD-20-120-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: P837834
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-20-120-EDD
Description: 2FT x 2FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 2000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

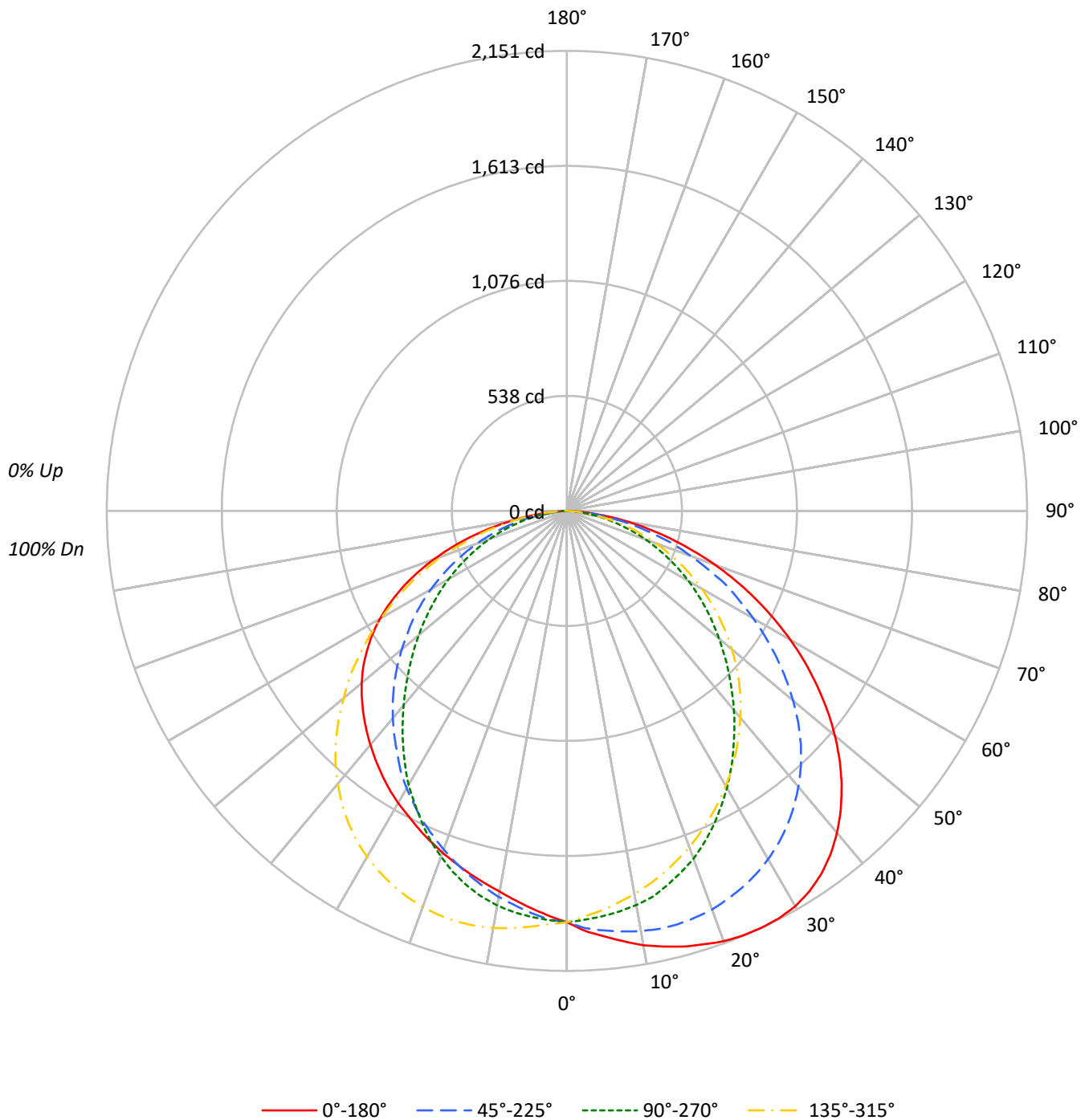
Lumens per Lamp: N/A
Luminaire Lumens: 5642.8 lumens
Efficiency: N/A
Efficacy: 67.8 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

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°	5176	5176	5176	5176
5°	5394	5138	5041	5147
10°	5634	5112	4939	5119
15°	5876	5047	4891	5048
20°	6132	4955	4869	4927
25°	6386	4817	4869	4768
30°	6633	4649	4901	4598
35°	6809	4458	4951	4388
40°	6900	4266	5019	4170
45°	6913	4072	5117	3970
50°	6848	3886	5242	3783
55°	6706	3713	5359	3610
60°	6495	3533	5430	3441
65°	6204	3325	5402	3248
70°	5796	3082	5210	3025
75°	5215	2747	4782	2733
80°	4421	2301	4018	2335
85°	3075	1525	2547	1565

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.6	3.2
10°-20°	528.8	9.4
20°-30°	810.4	14.4
30°-40°	985.4	17.5
40°-50°	1024.4	18.2
50°-60°	925.3	16.4
60°-70°	703.5	12.5
70°-80°	392.2	7.0
80°-90°	90.3	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°	1521.8	27.0
0°-40°	2507.2	44.4
0°-60°	4456.8	79.0
0°-90°	5642.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5642.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1923	1923	1923	1923	1923	
5°	1997	1902	1866	1905	1997	193
15°	2109	1812	1756	1812	2109	598
25°	2151	1622	1640	1606	2151	993
35°	2073	1357	1507	1336	2073	1295
45°	1816	1070	1345	1043	1816	1399
55°	1429	791	1142	769	1429	1276
65°	974	522	848	510	974	963
75°	502	264	460	263	502	533
85°	100	49	82	51	100	125
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°	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3
2.5°	1965.9	1937.2	1937.7	1962.8	1943.5	1952.9	1926.0	1936.3	1933.2	1935.4	1913.5
5°	1996.9	1965.9	1965.5	1987.0	1965.5	1969.5	1935.4	1942.2	1932.3	1926.0	1902.2
7.5°	2029.6	1998.7	1995.6	2014.4	1986.1	1983.0	1945.3	1945.3	1927.4	1911.7	1889.2
10°	2062.0	2030.1	2026.1	2040.4	2005.4	1995.1	1949.3	1942.2	1918.4	1895.1	1870.8
12.5°	2086.2	2053.9	2050.7	2059.7	2020.2	2001.4	1949.3	1935.4	1900.4	1867.7	1848.8
15°	2109.1	2075.9	2067.3	2071.8	2026.5	2001.4	1943.1	1921.5	1876.7	1833.6	1811.6
17.5°	2125.2	2093.4	2084.8	2084.4	2029.6	1993.8	1929.6	1900.0	1846.2	1794.1	1772.1
20°	2141.4	2109.5	2098.7	2090.7	2028.8	1983.4	1909.9	1869.9	1807.1	1748.8	1730.4
22.5°	2149.4	2116.7	2105.0	2092.9	2022.9	1964.6	1885.6	1834.9	1763.2	1693.6	1678.4
25°	2150.8	2117.1	2104.6	2087.1	2011.3	1942.2	1854.2	1792.8	1712.5	1635.3	1622.3
27.5°	2147.2	2110.4	2097.8	2076.8	1993.8	1914.8	1817.0	1744.8	1658.6	1573.4	1559.5
30°	2134.6	2097.4	2085.3	2057.9	1969.1	1881.1	1776.2	1691.4	1599.0	1508.3	1496.2
32.5°	2109.5	2073.2	2063.3	2035.9	1942.2	1842.1	1728.6	1633.9	1533.0	1446.4	1428.5
35°	2072.7	2036.4	2030.1	2001.4	1904.5	1795.5	1676.6	1571.1	1463.0	1374.6	1357.1
37.5°	2024.7	1994.2	1984.8	1956.5	1860.1	1742.5	1616.9	1502.9	1391.7	1296.6	1285.8
40°	1964.1	1935.4	1928.3	1903.1	1808.5	1683.7	1552.3	1432.5	1318.1	1229.7	1214.5
42.5°	1895.1	1868.1	1864.1	1838.1	1744.8	1618.7	1482.3	1359.4	1241.4	1156.1	1140.9
45°	1816.5	1790.5	1789.6	1765.0	1675.2	1546.5	1408.7	1285.4	1166.5	1078.1	1070.0
47.5°	1730.0	1706.6	1706.6	1683.7	1597.6	1467.1	1332.9	1208.2	1091.1	1013.0	998.7
50°	1635.7	1613.8	1607.0	1595.8	1511.9	1380.5	1253.1	1132.8	1016.6	942.1	928.2
52.5°	1535.2	1516.4	1520.9	1500.3	1419.0	1290.3	1172.3	1048.0	941.7	874.0	860.0
55°	1429.4	1402.4	1406.5	1398.9	1322.1	1197.4	1081.7	978.0	868.1	804.4	791.4
57.5°	1319.5	1284.5	1298.8	1294.3	1219.0	1102.3	998.7	898.6	795.0	736.2	723.7
60°	1206.8	1173.2	1188.0	1184.0	1113.1	1007.2	913.0	820.1	722.3	668.9	656.4
62.5°	1091.1	1060.1	1073.6	1070.5	1005.4	909.8	827.7	742.5	649.2	601.2	589.5
65°	974.4	944.8	956.9	954.7	894.6	821.9	740.3	662.2	575.6	533.9	522.2
67.5°	855.1	827.7	839.0	839.0	783.8	714.2	652.3	581.0	503.4	467.5	456.7
70°	736.7	711.1	721.0	720.1	673.4	616.9	563.5	499.8	430.2	400.6	391.7
72.5°	617.3	594.9	603.9	603.0	563.9	527.6	474.7	419.5	358.9	335.1	327.1
75°	501.6	480.5	489.0	488.1	456.3	422.2	386.7	341.0	288.9	272.3	264.2
77.5°	391.2	369.7	376.9	376.9	353.5	328.9	300.6	265.1	228.4	210.4	204.6
80°	285.3	275.0	271.4	271.9	256.2	240.0	225.7	191.6	164.7	152.5	148.5
82.5°	187.5	179.0	175.4	176.3	167.3	157.5	148.5	124.7	106.8	99.6	97.4
85°	99.6	93.3	90.2	92.4	90.6	85.2	80.8	64.6	53.4	50.7	49.4
87.5°	31.4	27.4	25.1	33.2	28.3	25.1	24.2	19.3	14.8	14.8	14.4
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°	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3
2.5°	1920.6	1920.6	1903.1	1899.1	1897.3	1899.5	1882.0	1878.9	1904.0	1895.5	1876.2
5°	1905.4	1904.5	1879.8	1875.3	1875.3	1872.6	1852.9	1848.4	1873.5	1866.3	1845.3
7.5°	1886.5	1883.8	1854.7	1851.5	1847.1	1845.3	1823.3	1820.1	1841.7	1837.2	1817.4
10°	1863.7	1861.0	1826.4	1824.2	1819.2	1815.6	1795.0	1792.8	1814.8	1807.6	1791.9
12.5°	1833.6	1828.7	1793.2	1791.0	1786.9	1785.6	1765.4	1764.5	1788.7	1781.6	1765.0
15°	1794.1	1790.1	1750.6	1751.5	1751.9	1751.9	1735.8	1734.9	1758.7	1755.5	1737.6
17.5°	1750.6	1745.2	1707.5	1710.2	1713.4	1716.9	1704.4	1706.6	1731.8	1727.7	1711.6
20°	1701.2	1695.9	1659.1	1666.7	1673.4	1680.6	1672.5	1678.8	1702.1	1700.3	1688.2
22.5°	1646.1	1640.7	1606.6	1618.2	1629.5	1642.9	1639.3	1646.5	1671.2	1670.7	1660.0
25°	1578.8	1580.1	1550.1	1564.4	1583.3	1602.1	1603.4	1615.1	1642.5	1639.8	1629.9
27.5°	1516.0	1517.8	1485.9	1510.1	1535.2	1559.5	1565.3	1581.5	1609.3	1607.0	1598.5
30°	1450.0	1452.2	1421.3	1454.5	1485.0	1514.6	1527.2	1549.2	1577.4	1577.4	1568.4
32.5°	1381.4	1385.4	1353.1	1397.5	1433.0	1467.5	1489.5	1512.4	1544.7	1543.8	1536.1
35°	1310.9	1315.4	1285.8	1342.3	1377.8	1419.9	1447.3	1477.8	1506.5	1507.0	1501.2
37.5°	1239.1	1244.5	1217.6	1279.5	1319.9	1369.7	1404.7	1435.2	1467.1	1468.8	1463.5
40°	1167.8	1173.6	1150.3	1210.0	1261.1	1316.8	1357.1	1393.0	1428.0	1428.9	1425.3
42.5°	1096.5	1102.8	1085.3	1143.6	1201.5	1261.1	1308.7	1349.5	1385.4	1387.6	1383.6
45°	1026.9	1032.3	1019.8	1083.5	1139.1	1204.2	1258.9	1305.1	1341.4	1344.6	1343.2
47.5°	957.8	962.8	951.6	1009.9	1074.0	1143.1	1206.4	1257.5	1296.1	1299.7	1298.8
50°	890.1	894.1	882.0	943.0	1006.7	1080.3	1146.3	1205.5	1248.6	1252.2	1251.7
52.5°	822.8	826.8	816.5	880.7	938.6	1016.2	1088.0	1152.1	1194.7	1200.1	1201.0
55°	757.8	759.5	751.5	812.9	869.0	950.2	1032.8	1095.1	1137.8	1142.2	1144.9
57.5°	692.7	693.1	686.4	745.2	799.0	882.0	968.6	1034.1	1074.5	1079.0	1083.0
60°	628.1	627.6	620.0	677.0	728.6	810.7	900.9	965.9	1005.0	1009.0	1014.4
62.5°	563.9	562.6	555.9	608.4	656.8	738.0	828.6	891.4	928.7	931.4	938.6
65°	500.2	498.9	492.6	541.1	585.0	662.6	751.5	811.1	844.8	848.4	847.0
67.5°	437.4	434.7	429.8	473.3	513.2	585.0	670.3	727.2	755.1	758.2	766.7
70°	374.6	371.5	360.3	406.5	441.5	505.6	585.0	635.7	659.1	662.2	660.8
72.5°	312.7	309.6	297.4	340.1	369.7	425.8	496.6	538.8	559.0	561.7	561.7
75°	252.6	250.8	243.2	275.5	300.1	345.9	406.0	441.0	456.7	459.9	459.0
77.5°	194.7	193.4	185.7	213.6	232.8	266.9	315.4	342.8	354.4	358.0	365.6
80°	139.5	139.1	127.0	154.3	162.9	191.6	227.0	248.1	254.4	259.3	264.7
82.5°	89.3	89.7	77.6	100.9	104.5	122.9	144.9	157.9	162.4	166.4	170.5
85°	43.5	45.3	38.6	53.4	53.8	63.3	72.7	77.6	79.4	82.5	86.1
87.5°	11.2	13.0	7.2	15.3	13.5	17.5	20.2	21.5	21.1	23.3	24.7
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°	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3
2.5°	1882.5	1896.9	1889.7	1913.0	1922.0	1907.6	1932.7	1933.2	1915.2	1936.3	1948.0
5°	1853.3	1868.1	1863.7	1887.9	1899.1	1886.5	1917.0	1922.9	1905.4	1929.2	1948.0
7.5°	1823.7	1841.2	1835.4	1860.1	1873.5	1863.7	1896.4	1905.8	1892.4	1918.4	1943.5
10°	1798.2	1813.0	1806.7	1832.7	1844.4	1836.3	1868.6	1886.1	1873.5	1905.4	1935.4
12.5°	1773.0	1785.1	1778.0	1799.5	1810.7	1800.4	1839.9	1856.0	1847.1	1880.3	1918.8
15°	1740.7	1754.2	1744.3	1763.6	1772.1	1763.2	1795.5	1823.3	1812.1	1848.4	1891.0
17.5°	1716.0	1723.7	1710.2	1725.5	1730.4	1718.3	1751.0	1778.4	1770.3	1809.8	1859.2
20°	1688.7	1695.0	1676.1	1684.6	1684.2	1668.9	1699.0	1725.9	1720.5	1764.1	1820.1
22.5°	1658.2	1661.3	1639.3	1641.1	1640.2	1615.1	1642.0	1669.4	1667.1	1711.1	1773.9
25°	1625.9	1626.3	1598.1	1597.2	1587.3	1557.7	1581.5	1612.4	1605.7	1653.2	1719.2
27.5°	1594.0	1589.5	1555.4	1547.4	1531.7	1496.2	1517.3	1545.1	1541.1	1587.7	1660.9
30°	1559.9	1554.1	1512.4	1497.6	1474.7	1433.9	1451.4	1477.4	1479.6	1520.4	1597.2
32.5°	1527.6	1512.8	1466.6	1445.1	1416.4	1368.8	1378.2	1404.7	1408.3	1449.6	1528.5
35°	1485.9	1476.0	1419.0	1382.3	1354.0	1302.0	1311.8	1330.2	1335.6	1376.0	1456.3
37.5°	1446.4	1430.7	1370.1	1325.3	1288.9	1234.2	1236.9	1255.7	1261.1	1302.0	1381.4
40°	1405.6	1383.2	1318.1	1265.6	1223.9	1166.5	1163.3	1183.1	1187.1	1227.0	1298.8
42.5°	1362.1	1335.2	1262.0	1204.6	1156.6	1098.3	1092.0	1109.0	1113.5	1152.6	1223.0
45°	1318.1	1285.8	1204.6	1141.8	1089.3	1029.6	1023.3	1036.4	1043.1	1079.9	1147.6
47.5°	1271.4	1233.8	1145.4	1075.4	1021.1	961.4	953.8	966.8	972.2	1008.5	1072.7
50°	1222.5	1176.8	1084.4	1007.2	953.4	894.6	883.4	898.6	903.6	937.7	1000.5
52.5°	1168.7	1118.0	1019.3	938.6	884.7	828.6	815.2	830.0	835.8	869.0	926.9
55°	1111.7	1057.0	953.8	875.3	817.0	762.2	751.0	756.9	769.4	800.8	854.7
57.5°	1047.6	993.3	884.7	804.9	748.8	696.3	686.9	692.3	703.9	734.4	782.9
60°	979.4	922.0	814.3	734.4	680.1	630.3	621.8	626.8	639.3	667.1	712.0
62.5°	912.1	847.5	741.6	662.2	612.8	566.6	564.4	562.6	574.3	601.2	640.7
65°	830.4	768.5	665.8	590.4	545.5	503.8	494.9	498.9	510.1	534.8	576.1
67.5°	742.9	686.9	588.2	518.6	478.7	441.5	433.8	435.6	447.3	468.8	504.7
70°	650.1	600.7	508.8	446.4	412.7	377.8	372.8	373.3	384.5	403.3	434.7
72.5°	552.7	508.3	428.5	375.1	347.2	322.1	317.6	312.3	322.6	338.7	365.6
75°	453.6	414.5	348.6	305.1	283.1	262.0	258.0	252.6	262.9	276.8	297.9
77.5°	353.5	322.1	271.0	237.3	220.3	204.6	201.0	195.2	205.5	215.8	232.4
80°	255.7	232.8	202.3	166.9	161.1	150.7	147.2	140.9	150.7	157.5	170.0
82.5°	165.1	149.8	132.3	107.7	106.8	99.1	97.4	90.2	99.1	103.2	112.6
85°	83.4	76.3	71.8	54.7	56.5	51.6	51.1	43.5	50.7	52.5	57.9
87.5°	23.8	25.1	22.4	13.5	17.0	16.2	16.2	11.7	16.2	16.2	18.4
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: P837834

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CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3	1923.3
2.5°	1925.1	1932.7	1934.5	1934.1	1939.0	1965.9	1957.0	1965.9
5°	1929.6	1946.7	1951.1	1957.4	1965.5	1996.0	1986.1	1996.9
7.5°	1932.3	1957.9	1967.7	1979.8	1992.9	2027.0	2018.9	2029.6
10°	1932.3	1965.5	1979.8	2000.0	2017.5	2057.0	2049.4	2062.0
12.5°	1924.2	1966.8	1987.0	2015.3	2037.7	2080.3	2077.2	2086.2
15°	1907.6	1960.1	1987.9	2024.3	2052.1	2099.6	2098.3	2109.1
17.5°	1885.2	1948.4	1982.1	2027.9	2062.8	2116.2	2119.4	2125.2
20°	1856.9	1926.5	1970.4	2026.5	2070.5	2129.2	2133.3	2141.4
22.5°	1819.7	1900.0	1952.9	2020.7	2071.4	2134.6	2141.8	2149.4
25°	1775.7	1868.1	1930.1	2009.5	2066.9	2134.2	2144.1	2150.8
27.5°	1725.5	1826.9	1900.9	1991.5	2054.3	2127.0	2139.1	2147.2
30°	1667.1	1782.9	1867.7	1968.2	2037.3	2113.5	2126.6	2134.6
32.5°	1607.0	1734.4	1828.2	1938.1	2012.6	2092.0	2103.2	2109.5
35°	1541.5	1675.7	1780.7	1899.5	1980.7	2057.5	2066.0	2072.7
37.5°	1470.2	1612.0	1726.4	1856.0	1935.9	2009.5	2017.1	2024.7
40°	1396.6	1545.1	1665.4	1802.6	1882.5	1950.7	1958.8	1964.1
42.5°	1322.6	1471.1	1600.3	1739.8	1819.2	1884.7	1889.7	1895.1
45°	1247.7	1394.4	1527.2	1670.3	1748.8	1810.3	1812.1	1816.5
47.5°	1171.4	1315.0	1446.9	1590.9	1668.5	1724.6	1726.4	1730.0
50°	1094.7	1235.6	1361.2	1505.2	1581.0	1640.2	1632.2	1635.7
52.5°	1019.3	1152.1	1280.4	1412.8	1487.7	1540.2	1542.4	1535.2
55°	945.3	1070.5	1188.4	1315.9	1387.2	1428.0	1426.7	1429.4
57.5°	870.4	987.9	1096.0	1212.7	1282.2	1320.8	1328.9	1319.5
60°	794.1	904.5	1001.4	1106.8	1174.1	1206.4	1215.8	1206.8
62.5°	718.3	819.7	907.6	999.6	1061.9	1101.9	1101.0	1091.1
65°	642.5	734.4	812.9	891.0	945.3	985.2	983.4	974.4
67.5°	572.5	648.3	718.7	782.0	829.1	856.5	865.9	855.1
70°	495.3	560.8	622.7	673.4	712.4	737.1	746.1	736.7
72.5°	418.1	473.8	517.3	566.2	596.2	616.9	626.3	617.3
75°	341.9	387.6	423.1	461.2	482.3	499.8	510.6	501.6
77.5°	267.8	303.3	331.5	359.4	383.6	387.6	397.0	391.2
80°	197.4	223.0	243.6	262.0	279.5	281.3	288.9	285.3
82.5°	131.5	148.5	153.9	173.2	184.4	182.6	190.2	187.5
85°	69.5	79.9	89.3	95.1	101.4	95.6	102.3	99.6
87.5°	23.3	24.7	21.5	30.5	33.6	28.7	32.8	31.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)