

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: P709178

Luminaire Tested: **4APN-24-26L850-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709178
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-24-26L850-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

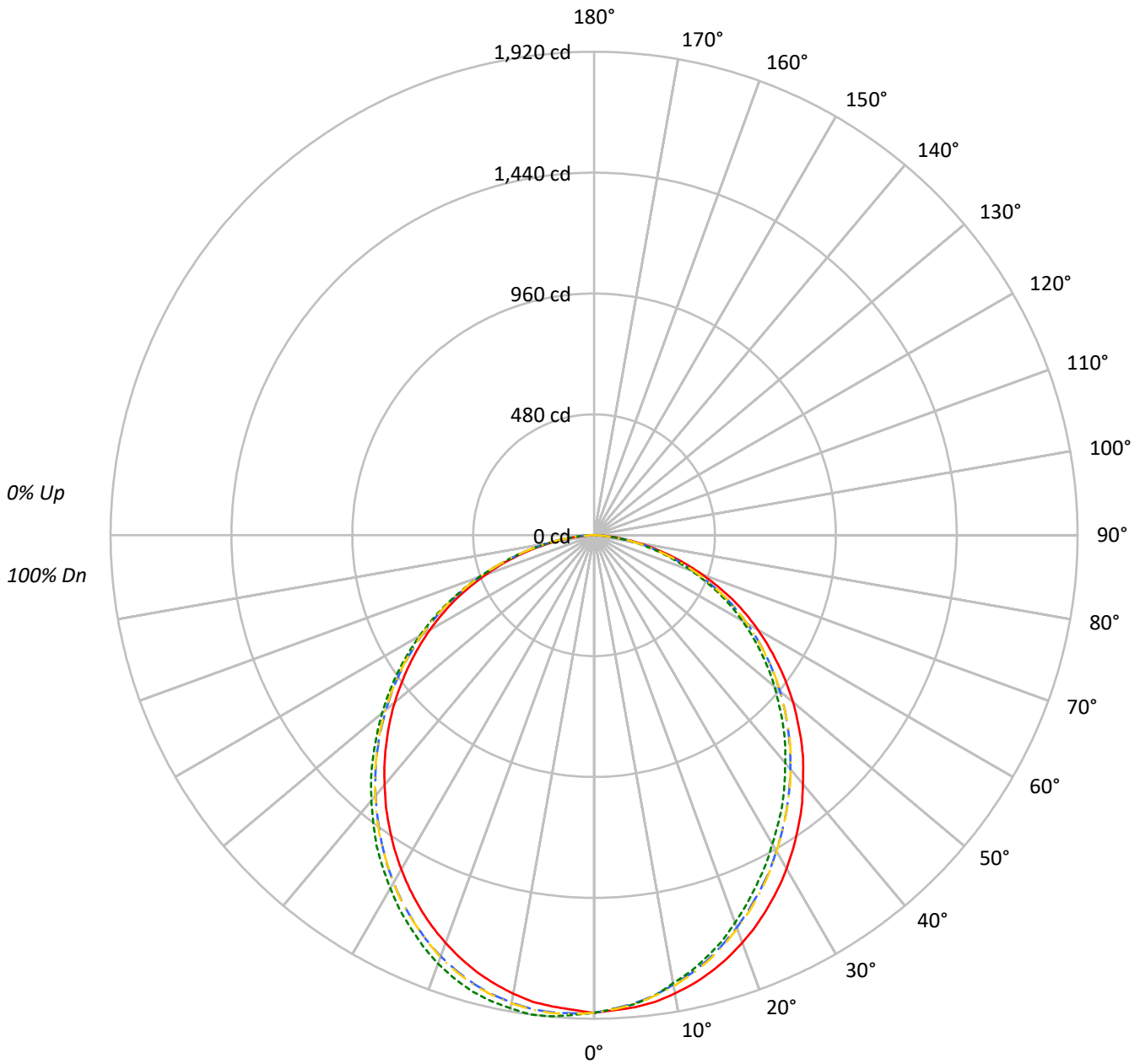
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5013.6 lumens
Efficiency: N/A
Efficacy: 89.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.19 / 1.32
Luminous Opening: Rectangular (W 0.29' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 56
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



— 0°-180° - - 45°-225° - - - 90°-270° - · - 135°-315°



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	86	86	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	72	72	72	70
3	90	80	72	66	88	78	71	65	75	69	64	73	67	63	70	66	62	62	62	62	59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	53	53	53	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	46	46	46	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	41	41	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	36	36	36	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	32	32	32	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	29	29	29	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	27	27	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	17499	17499	17499	17499
5°	17422	17308	17400	17762
10°	17310	16924	17321	17873
15°	17148	16552	17159	17904
20°	16905	16075	16916	17780
25°	16610	15566	16643	17528
30°	16290	15080	16315	17239
35°	15918	14689	15956	16960
40°	15533	14218	15586	16565
45°	15201	13835	15215	16188
50°	14803	13428	14834	15761
55°	14332	12987	14385	15317
60°	13873	12537	13893	14756
65°	13299	11987	13299	14103
70°	12347	11087	12317	13099
75°	11197	10045	11115	11792
80°	9643	8639	9468	10116
85°	7431	6606	7188	8130



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.1	3.6
10°-20°	507.1	10.1
20°-30°	750.8	15.0
30°-40°	880.9	17.6
40°-50°	892.8	17.8
50°-60°	792.4	15.8
60°-70°	594.9	11.9
70°-80°	330.3	6.6
80°-90°	85.3	1.7
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°	1437.1	28.7
0°-40°	2318.0	46.2
0°-60°	4003.1	79.8
0°-90°	5013.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5013.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1897	1897	1897	1897	1897	
5°	1881	1869	1879	1918	1881	179
15°	1795	1733	1796	1874	1795	506
25°	1632	1529	1635	1722	1632	752
35°	1413	1304	1417	1506	1413	884
45°	1165	1060	1166	1241	1165	898
55°	891	807	894	952	891	798
65°	609	549	609	646	609	601
75°	314	282	312	331	314	334
85°	70	62	68	77	70	85
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7
2.5°	1887.8	1892.2	1897.8	1892.2	1883.3	1878.8	1878.8	1877.7	1881.1	1882.2	1881.1
5°	1881.1	1883.3	1884.4	1877.7	1867.7	1862.1	1859.9	1858.8	1863.3	1868.8	1863.3
7.5°	1868.8	1867.7	1866.6	1857.7	1846.5	1838.8	1835.4	1834.3	1838.8	1844.3	1839.9
10°	1847.7	1846.5	1843.2	1832.1	1817.6	1807.6	1804.2	1800.9	1804.2	1806.5	1804.2
12.5°	1824.3	1819.8	1815.4	1803.1	1787.5	1776.4	1770.8	1766.4	1770.8	1774.2	1771.9
15°	1795.3	1788.6	1780.8	1767.5	1751.9	1739.6	1732.9	1728.5	1731.8	1732.9	1732.9
17.5°	1760.8	1753.0	1745.2	1728.5	1709.6	1696.2	1688.4	1682.8	1687.3	1689.5	1689.5
20°	1721.8	1712.9	1702.9	1685.1	1665.0	1650.5	1641.6	1634.9	1636.1	1637.2	1637.2
22.5°	1679.5	1668.4	1656.1	1637.2	1616.0	1600.4	1591.5	1583.7	1583.7	1584.8	1584.8
25°	1631.6	1619.3	1607.1	1588.2	1565.9	1549.2	1538.0	1530.3	1530.3	1529.1	1531.4
27.5°	1582.6	1569.2	1557.0	1536.9	1513.5	1496.8	1485.7	1477.9	1476.8	1475.7	1477.9
30°	1529.1	1513.5	1500.2	1479.0	1456.7	1440.0	1428.9	1420.0	1417.8	1415.5	1417.8
32.5°	1472.3	1457.9	1443.4	1421.1	1398.8	1382.1	1371.0	1362.1	1361.0	1359.9	1362.1
35°	1413.3	1397.7	1384.4	1363.2	1340.9	1324.2	1312.0	1304.2	1304.2	1304.2	1304.2
37.5°	1355.4	1339.8	1325.3	1304.2	1281.9	1265.2	1252.9	1245.1	1242.9	1241.8	1242.9
40°	1289.7	1276.3	1263.0	1242.9	1220.6	1203.9	1193.9	1185.0	1182.8	1180.5	1183.9
42.5°	1229.5	1216.2	1201.7	1182.8	1160.5	1143.8	1132.7	1124.9	1123.7	1122.6	1123.7
45°	1165.0	1149.4	1134.9	1117.1	1097.0	1081.4	1070.3	1062.5	1061.4	1060.3	1061.4
47.5°	1097.0	1084.8	1072.5	1054.7	1034.6	1019.1	1009.0	1000.1	997.9	995.7	997.9
50°	1031.3	1017.9	1005.7	989.0	970.1	955.6	946.7	938.9	936.6	935.5	936.6
52.5°	962.3	950.0	938.9	922.2	906.6	892.1	882.1	875.4	874.3	873.2	874.3
55°	891.0	879.8	869.8	856.5	840.9	827.5	818.6	810.8	809.7	807.4	809.7
57.5°	821.9	813.0	803.0	788.5	774.0	761.8	754.0	747.3	746.2	745.1	746.2
60°	751.8	742.9	733.9	721.7	707.2	695.0	688.3	682.7	680.5	679.4	680.5
62.5°	681.6	672.7	666.0	653.8	640.4	630.4	623.7	618.1	615.9	614.8	615.9
65°	609.2	601.4	593.6	582.5	572.5	564.7	558.0	552.4	550.2	549.1	549.1
67.5°	532.4	525.7	520.1	510.1	498.9	491.2	484.5	480.0	477.8	476.7	477.8
70°	457.7	452.2	446.6	438.8	429.9	423.2	418.8	414.3	412.1	411.0	411.0
72.5°	386.5	382.0	376.4	369.8	363.1	356.4	351.9	348.6	346.4	345.3	345.3
75°	314.1	309.6	307.4	301.8	295.1	290.7	286.2	284.0	281.8	281.8	281.8
77.5°	246.1	243.9	241.7	236.1	231.7	227.2	223.9	222.7	220.5	220.5	220.5
80°	181.5	180.4	179.3	176.0	171.5	167.1	164.8	163.7	162.6	162.6	162.6
82.5°	122.5	122.5	121.4	118.1	114.7	113.6	111.4	110.3	110.3	110.3	110.3
85°	70.2	70.2	70.2	69.1	66.8	66.8	64.6	63.5	62.4	62.4	62.4
87.5°	27.8	29.0	30.1	29.0	26.7	26.7	26.7	26.7	26.7	26.7	26.7
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7
2.5°	1877.7	1880.0	1881.1	1886.6	1893.3	1897.8	1892.2	1886.6	1895.6	1905.6	1905.6
5°	1858.8	1861.0	1864.4	1871.1	1880.0	1885.5	1883.3	1878.8	1892.2	1903.3	1904.5
7.5°	1835.4	1837.6	1842.1	1848.8	1859.9	1867.7	1867.7	1868.8	1881.1	1894.4	1897.8
10°	1800.9	1806.5	1813.1	1823.2	1834.3	1844.3	1847.7	1848.8	1864.4	1878.8	1883.3
12.5°	1768.6	1774.2	1780.8	1792.0	1805.3	1816.5	1819.8	1824.3	1841.0	1857.7	1864.4
15°	1731.8	1737.4	1745.2	1756.3	1770.8	1783.1	1789.7	1796.4	1813.1	1831.0	1838.8
17.5°	1688.4	1694.0	1701.8	1715.1	1731.8	1746.3	1754.1	1761.9	1780.8	1799.8	1807.6
20°	1637.2	1645.0	1656.1	1669.5	1688.4	1705.1	1714.0	1722.9	1743.0	1761.9	1770.8
22.5°	1584.8	1593.7	1606.0	1621.6	1641.6	1659.4	1670.6	1681.7	1701.8	1720.7	1730.7
25°	1532.5	1542.5	1554.8	1571.5	1590.4	1608.2	1621.6	1634.9	1655.0	1675.0	1685.1
27.5°	1479.0	1487.9	1500.2	1516.9	1538.0	1557.0	1570.3	1584.8	1604.9	1626.0	1636.1
30°	1420.0	1430.0	1441.2	1457.9	1481.2	1502.4	1515.8	1531.4	1551.4	1572.6	1582.6
32.5°	1363.2	1372.1	1383.2	1399.9	1423.3	1445.6	1460.1	1475.7	1495.7	1516.9	1525.8
35°	1304.2	1313.1	1325.3	1342.0	1365.4	1386.6	1401.1	1416.7	1435.6	1455.6	1465.7
37.5°	1246.3	1255.2	1267.4	1284.1	1306.4	1327.6	1342.0	1357.6	1376.6	1395.5	1404.4
40°	1186.1	1195.0	1205.0	1221.8	1244.0	1265.2	1278.6	1294.1	1313.1	1333.1	1342.0
42.5°	1124.9	1133.8	1146.0	1162.7	1183.9	1202.8	1217.3	1231.8	1249.6	1267.4	1276.3
45°	1063.6	1071.4	1083.7	1099.2	1119.3	1137.1	1151.6	1166.1	1182.8	1199.5	1208.4
47.5°	1000.1	1009.0	1019.1	1034.6	1054.7	1073.6	1088.1	1101.5	1117.1	1133.8	1141.6
50°	938.9	946.7	956.7	971.2	990.1	1007.9	1020.2	1033.5	1048.0	1063.6	1070.3
52.5°	875.4	883.2	893.2	907.7	923.3	940.0	951.1	963.4	977.8	992.3	999.0
55°	810.8	816.4	825.3	838.6	855.3	870.9	882.1	894.3	906.6	918.8	926.6
57.5°	747.3	754.0	762.9	775.1	789.6	804.1	814.1	824.2	836.4	848.7	854.2
60°	682.7	688.3	695.0	706.1	720.6	732.8	742.9	752.9	762.9	774.0	779.6
62.5°	617.0	622.6	629.3	640.4	652.6	663.8	672.7	681.6	690.5	700.5	706.1
65°	551.3	556.9	563.5	571.3	581.4	591.4	600.3	609.2	615.9	622.6	628.1
67.5°	480.0	485.6	492.3	498.9	507.9	517.9	524.6	532.4	539.0	546.8	550.2
70°	413.2	417.6	424.3	429.9	437.7	444.4	449.9	456.6	461.1	467.8	473.3
72.5°	347.5	351.9	357.5	363.1	367.5	373.1	379.8	385.3	390.9	397.6	399.8
75°	284.0	286.2	290.7	295.1	299.6	304.0	307.4	311.8	316.3	320.8	324.1
77.5°	221.6	223.9	228.3	231.7	235.0	238.3	240.6	242.8	247.2	250.6	253.9
80°	162.6	164.8	168.2	171.5	174.9	178.2	178.2	178.2	183.8	188.2	189.3
82.5°	110.3	111.4	113.6	115.8	118.1	120.3	120.3	119.2	122.5	125.9	128.1
85°	63.5	64.6	66.8	66.8	67.9	67.9	67.9	67.9	70.2	73.5	75.7
87.5°	25.6	25.6	26.7	26.7	27.8	27.8	26.7	25.6	27.8	31.2	32.3
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):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7	1896.7
2.5°	1901.1	1900.0	1903.3	1904.5	1906.7	1906.7	1907.8	1907.8	1905.6	1902.2	1903.3
5°	1902.2	1902.2	1905.6	1908.9	1913.4	1917.8	1914.5	1911.1	1908.9	1905.6	1904.5
7.5°	1896.7	1898.9	1902.2	1907.8	1913.4	1920.1	1915.6	1911.1	1905.6	1901.1	1898.9
10°	1883.3	1885.5	1891.1	1896.7	1902.2	1907.8	1903.3	1898.9	1894.4	1888.9	1886.6
12.5°	1866.6	1869.9	1876.6	1882.2	1887.8	1894.4	1888.9	1883.3	1877.7	1872.2	1868.8
15°	1842.1	1846.5	1854.3	1861.0	1868.8	1874.4	1869.9	1865.5	1858.8	1851.0	1845.4
17.5°	1810.9	1817.6	1825.4	1833.2	1839.9	1845.4	1842.1	1837.6	1829.8	1820.9	1814.3
20°	1776.4	1783.1	1789.7	1797.5	1805.3	1810.9	1806.5	1800.9	1793.1	1786.4	1779.7
22.5°	1736.3	1743.0	1750.8	1757.5	1764.1	1769.7	1764.1	1757.5	1750.8	1744.1	1737.4
25°	1690.6	1697.3	1706.2	1712.9	1717.4	1721.8	1717.4	1711.8	1705.1	1698.4	1691.7
27.5°	1642.7	1649.4	1658.3	1665.0	1669.5	1673.9	1669.5	1663.9	1657.2	1650.5	1643.9
30°	1589.3	1596.0	1604.9	1611.6	1614.9	1618.2	1613.8	1609.3	1603.8	1597.1	1590.4
32.5°	1532.5	1539.2	1545.8	1552.5	1558.1	1562.6	1558.1	1553.6	1547.0	1538.0	1531.4
35°	1472.3	1479.0	1486.8	1493.5	1500.2	1505.8	1499.1	1491.3	1485.7	1480.1	1474.6
37.5°	1408.9	1416.7	1425.6	1433.4	1435.6	1440.0	1435.6	1431.1	1425.6	1420.0	1413.3
40°	1346.5	1353.2	1361.0	1368.8	1372.1	1375.4	1371.0	1366.5	1359.9	1354.3	1347.6
42.5°	1281.9	1288.6	1295.3	1301.9	1306.4	1310.8	1306.4	1299.7	1295.3	1290.8	1285.2
45°	1215.1	1221.8	1227.3	1234.0	1237.3	1240.7	1236.2	1230.7	1226.2	1222.9	1217.3
47.5°	1147.1	1152.7	1158.3	1163.8	1166.1	1169.4	1165.0	1161.6	1158.3	1154.9	1150.5
50°	1075.9	1081.4	1088.1	1093.7	1094.8	1098.1	1093.7	1090.3	1087.0	1083.7	1080.3
52.5°	1005.7	1010.1	1015.7	1021.3	1023.5	1025.7	1021.3	1016.8	1013.5	1011.3	1007.9
55°	932.2	936.6	942.2	946.7	950.0	952.2	947.8	943.3	940.0	938.9	935.5
57.5°	858.7	863.1	868.7	873.2	875.4	877.6	873.2	868.7	866.5	864.2	862.0
60°	784.1	788.5	793.0	796.3	798.5	799.7	795.2	791.9	790.7	789.6	787.4
62.5°	710.6	712.8	717.2	719.5	721.7	722.8	719.5	717.2	716.1	715.0	713.9
65°	633.7	639.3	642.6	644.8	644.8	646.0	642.6	641.5	640.4	639.3	637.0
67.5°	554.6	559.1	561.3	563.5	563.5	563.5	563.5	563.5	562.4	560.2	558.0
70°	478.9	482.2	484.5	485.6	485.6	485.6	483.4	482.2	483.4	483.4	482.2
72.5°	402.1	404.3	405.4	406.5	405.4	405.4	405.4	407.6	407.6	406.5	404.3
75°	327.4	329.7	330.8	331.9	330.8	330.8	330.8	333.0	331.9	331.9	330.8
77.5°	257.3	258.4	258.4	259.5	258.4	258.4	259.5	261.7	260.6	260.6	260.6
80°	190.4	190.4	190.4	191.6	190.4	190.4	191.6	193.8	192.7	192.7	192.7
82.5°	129.2	130.3	130.3	130.3	131.4	132.5	132.5	132.5	132.5	132.5	131.4
85°	76.8	78.0	76.8	76.8	76.8	76.8	78.0	79.1	79.1	79.1	79.1
87.5°	33.4	34.5	33.4	32.3	31.2	31.2	33.4	35.6	35.6	34.5	34.5
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: P709178
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CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	1896.7	1896.7	1896.7	1896.7
2.5°	1907.8	1907.8	1897.8	1887.8
5°	1906.7	1904.5	1893.3	1881.1
7.5°	1900.0	1896.7	1882.2	1868.8
10°	1884.4	1880.0	1864.4	1847.7
12.5°	1865.5	1858.8	1841.0	1824.3
15°	1841.0	1833.2	1814.3	1795.3
17.5°	1808.7	1799.8	1780.8	1760.8
20°	1774.2	1764.1	1743.0	1721.8
22.5°	1731.8	1722.9	1700.7	1679.5
25°	1686.2	1676.1	1653.9	1631.6
27.5°	1637.2	1626.0	1603.8	1582.6
30°	1583.7	1572.6	1550.3	1529.1
32.5°	1526.9	1518.0	1495.7	1472.3
35°	1469.0	1457.9	1435.6	1413.3
37.5°	1407.7	1397.7	1376.6	1355.4
40°	1343.1	1333.1	1310.8	1289.7
42.5°	1279.7	1270.8	1249.6	1229.5
45°	1211.7	1202.8	1182.8	1165.0
47.5°	1143.8	1134.9	1115.9	1097.0
50°	1074.7	1065.8	1048.0	1031.3
52.5°	1002.3	995.7	979.0	962.3
55°	930.0	922.2	905.5	891.0
57.5°	857.6	852.0	836.4	821.9
60°	782.9	776.3	764.0	751.8
62.5°	710.6	705.0	692.7	681.6
65°	633.7	629.3	619.2	609.2
67.5°	554.6	551.3	541.3	532.4
70°	478.9	473.3	465.5	457.7
72.5°	402.1	399.8	393.1	386.5
75°	328.5	326.3	319.6	314.1
77.5°	259.5	257.3	251.7	246.1
80°	191.6	190.4	186.0	181.5
82.5°	131.4	130.3	127.0	122.5
85°	79.1	76.8	73.5	70.2
87.5°	34.5	33.4	30.1	27.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)