

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: P709172

Luminaire Tested: **4APN-24-26L840-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709172
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-24-26L840-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

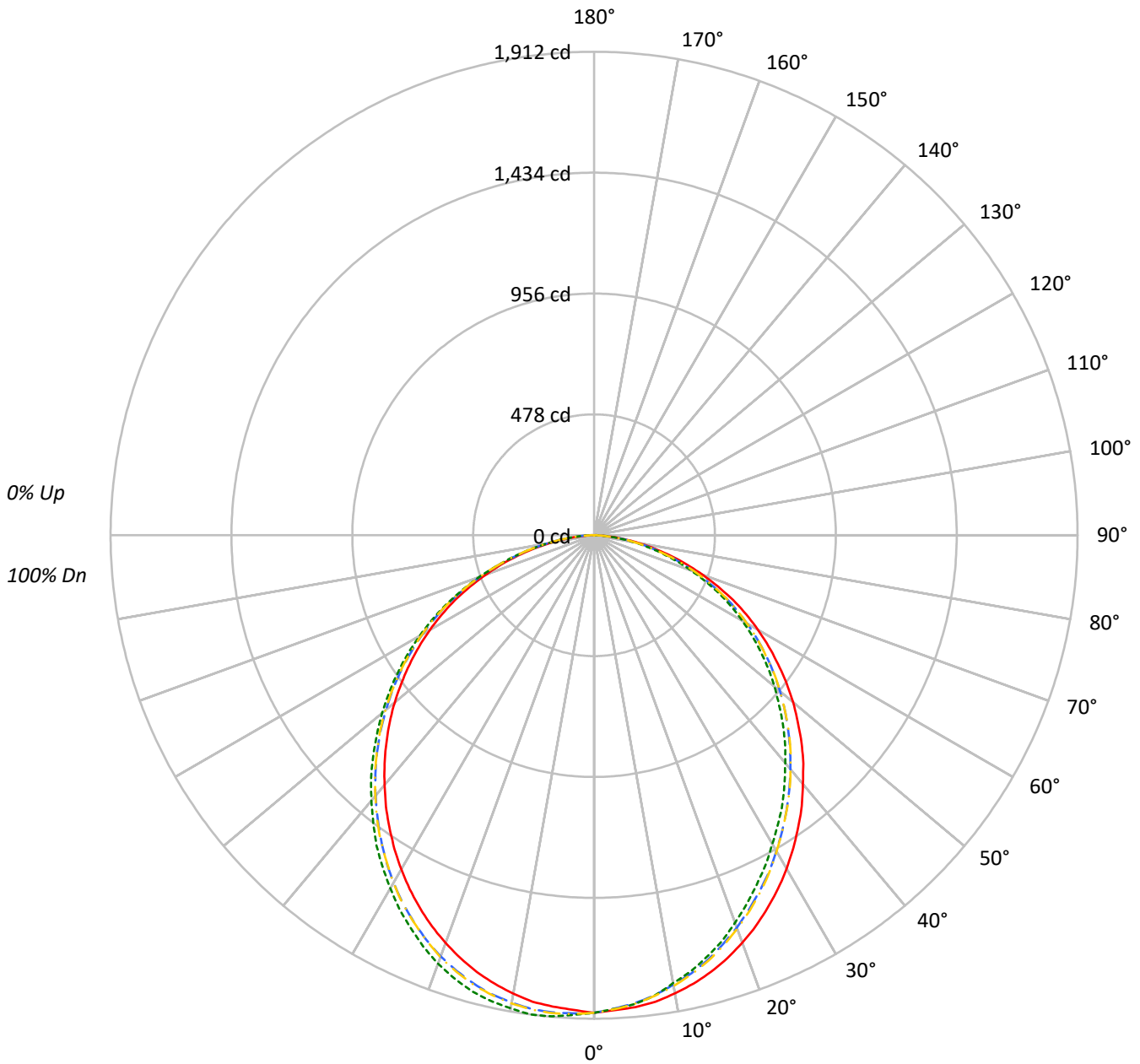
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4992.6 lumens
Efficiency: N/A
Efficacy: 89.2 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	0
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	95	98	95	92	94	91	89	90	88	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70
3	90	80	72	66	88	78	71	65	75	69	64	73	67	63	70	66	62	59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	17426	17426	17426	17426
5°	17349	17236	17328	17688
10°	17237	16853	17247	17798
15°	17076	16483	17087	17829
20°	16834	16007	16845	17705
25°	16540	15501	16574	17455
30°	16222	15017	16247	17168
35°	15852	14627	15889	16889
40°	15468	14159	15521	16497
45°	15137	13776	15151	16121
50°	14741	13372	14773	15695
55°	14273	12934	14326	15252
60°	13813	12483	13834	14694
65°	13245	11937	13245	14044
70°	12295	11038	12266	13045
75°	11150	10003	11068	11742
80°	9606	8602	9431	10074
85°	7400	6574	7167	8098



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	178.4	3.6
10°-20°	505.0	10.1
20°-30°	747.7	15.0
30°-40°	877.2	17.6
40°-50°	889.0	17.8
50°-60°	789.0	15.8
60°-70°	592.4	11.9
70°-80°	328.9	6.6
80°-90°	84.9	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°	1431.1	28.7
0°-40°	2308.3	46.2
0°-60°	3986.3	79.8
0°-90°	4992.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4992.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1889	1889	1889	1889	1889	
5°	1873	1861	1871	1910	1873	178
15°	1788	1726	1789	1867	1788	504
25°	1625	1523	1628	1715	1625	749
35°	1407	1299	1411	1500	1407	881
45°	1160	1056	1161	1236	1160	894
55°	887	804	891	948	887	794
65°	607	547	607	643	607	598
75°	313	281	310	329	313	332
85°	70	62	68	76	70	84
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°	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7
2.5°	1879.9	1884.3	1889.8	1884.3	1875.4	1871.0	1871.0	1869.9	1873.2	1874.3	1873.2
5°	1873.2	1875.4	1876.5	1869.9	1859.9	1854.4	1852.1	1851.0	1855.5	1861.0	1855.5
7.5°	1861.0	1859.9	1858.8	1849.9	1838.8	1831.1	1827.7	1826.6	1831.1	1836.6	1832.2
10°	1839.9	1838.8	1835.5	1824.4	1810.0	1800.0	1796.7	1793.4	1796.7	1798.9	1796.7
12.5°	1816.6	1812.2	1807.8	1795.6	1780.0	1769.0	1763.4	1759.0	1763.4	1766.7	1764.5
15°	1787.8	1781.2	1773.4	1760.1	1744.6	1732.4	1725.7	1721.3	1724.6	1725.7	1725.7
17.5°	1753.4	1745.7	1737.9	1721.3	1702.4	1689.1	1681.3	1675.8	1680.2	1682.4	1682.4
20°	1714.6	1705.7	1695.8	1678.0	1658.0	1643.6	1634.8	1628.1	1629.2	1630.3	1630.3
22.5°	1672.5	1661.4	1649.2	1630.3	1609.2	1593.7	1584.9	1577.1	1577.1	1578.2	1578.2
25°	1624.8	1612.6	1600.4	1581.5	1559.3	1542.7	1531.6	1523.9	1523.9	1522.7	1525.0
27.5°	1576.0	1562.7	1550.5	1530.5	1507.2	1490.6	1479.5	1471.7	1470.6	1469.5	1471.7
30°	1522.7	1507.2	1493.9	1472.8	1450.7	1434.0	1422.9	1414.1	1411.8	1409.6	1411.8
32.5°	1466.2	1451.8	1437.3	1415.2	1393.0	1376.3	1365.3	1356.4	1355.3	1354.2	1356.4
35°	1407.4	1391.9	1378.6	1357.5	1335.3	1318.7	1306.5	1298.7	1298.7	1298.7	1298.7
37.5°	1349.7	1334.2	1319.8	1298.7	1276.5	1259.9	1247.7	1239.9	1237.7	1236.6	1237.7
40°	1284.3	1271.0	1257.7	1237.7	1215.5	1198.9	1188.9	1180.0	1177.8	1175.6	1178.9
42.5°	1224.4	1211.1	1196.7	1177.8	1155.6	1139.0	1127.9	1120.2	1119.0	1117.9	1119.0
45°	1160.1	1144.6	1130.1	1112.4	1092.4	1076.9	1065.8	1058.0	1056.9	1055.8	1056.9
47.5°	1092.4	1080.2	1068.0	1050.3	1030.3	1014.8	1004.8	995.9	993.7	991.5	993.7
50°	1027.0	1013.7	1001.5	984.8	966.0	951.6	942.7	934.9	932.7	931.6	932.7
52.5°	958.2	946.0	934.9	918.3	902.8	888.4	878.4	871.7	870.6	869.5	870.6
55°	887.3	876.2	866.2	852.9	837.3	824.0	815.2	807.4	806.3	804.1	806.3
57.5°	818.5	809.6	799.6	785.2	770.8	758.6	750.8	744.2	743.1	742.0	743.1
60°	748.6	739.7	730.9	718.7	704.3	692.1	685.4	679.9	677.6	676.5	677.6
62.5°	678.7	669.9	663.2	651.0	637.7	627.7	621.1	615.5	613.3	612.2	613.3
65°	606.7	598.9	591.1	580.0	570.1	562.3	555.6	550.1	547.9	546.8	546.8
67.5°	530.1	523.5	517.9	508.0	496.9	489.1	482.4	478.0	475.8	474.7	475.8
70°	455.8	450.3	444.7	437.0	428.1	421.4	417.0	412.6	410.4	409.2	409.2
72.5°	384.8	380.4	374.9	368.2	361.6	354.9	350.5	347.1	344.9	343.8	343.8
75°	312.8	308.3	306.1	300.6	293.9	289.5	285.0	282.8	280.6	280.6	280.6
77.5°	245.1	242.9	240.7	235.1	230.7	226.2	222.9	221.8	219.6	219.6	219.6
80°	180.8	179.7	178.6	175.2	170.8	166.4	164.1	163.0	161.9	161.9	161.9
82.5°	122.0	122.0	120.9	117.6	114.2	113.1	110.9	109.8	109.8	109.8	109.8
85°	69.9	69.9	69.9	68.8	66.5	66.5	64.3	63.2	62.1	62.1	62.1
87.5°	27.7	28.8	29.9	28.8	26.6	26.6	26.6	26.6	26.6	26.6	26.6
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7
2.5°	1869.9	1872.1	1873.2	1878.8	1885.4	1889.8	1884.3	1878.8	1887.6	1897.6	1897.6
5°	1851.0	1853.2	1856.6	1863.2	1872.1	1877.6	1875.4	1871.0	1884.3	1895.4	1896.5
7.5°	1827.7	1830.0	1834.4	1841.0	1852.1	1859.9	1859.9	1861.0	1873.2	1886.5	1889.8
10°	1793.4	1798.9	1805.6	1815.5	1826.6	1836.6	1839.9	1841.0	1856.6	1871.0	1875.4
12.5°	1761.2	1766.7	1773.4	1784.5	1797.8	1808.9	1812.2	1816.6	1833.3	1849.9	1856.6
15°	1724.6	1730.1	1737.9	1749.0	1763.4	1775.6	1782.3	1788.9	1805.6	1823.3	1831.1
17.5°	1681.3	1686.9	1694.6	1708.0	1724.6	1739.0	1746.8	1754.5	1773.4	1792.2	1800.0
20°	1630.3	1638.1	1649.2	1662.5	1681.3	1698.0	1706.8	1715.7	1735.7	1754.5	1763.4
22.5°	1578.2	1587.1	1599.3	1614.8	1634.8	1652.5	1663.6	1674.7	1694.6	1713.5	1723.5
25°	1526.1	1536.1	1548.3	1564.9	1583.7	1601.5	1614.8	1628.1	1648.1	1668.0	1678.0
27.5°	1472.8	1481.7	1493.9	1510.5	1531.6	1550.5	1563.8	1578.2	1598.2	1619.2	1629.2
30°	1414.1	1424.0	1435.1	1451.8	1475.1	1496.1	1509.4	1525.0	1544.9	1566.0	1576.0
32.5°	1357.5	1366.4	1377.5	1394.1	1417.4	1439.6	1454.0	1469.5	1489.5	1510.5	1519.4
35°	1298.7	1307.6	1319.8	1336.4	1359.7	1380.8	1395.2	1410.7	1429.6	1449.5	1459.5
37.5°	1241.0	1249.9	1262.1	1278.7	1300.9	1322.0	1336.4	1351.9	1370.8	1389.7	1398.5
40°	1181.2	1190.0	1200.0	1216.6	1238.8	1259.9	1273.2	1288.7	1307.6	1327.5	1336.4
42.5°	1120.2	1129.0	1141.2	1157.9	1178.9	1197.8	1212.2	1226.6	1244.4	1262.1	1271.0
45°	1059.2	1066.9	1079.1	1094.6	1114.6	1132.4	1146.8	1161.2	1177.8	1194.5	1203.3
47.5°	995.9	1004.8	1014.8	1030.3	1050.3	1069.1	1083.6	1096.9	1112.4	1129.0	1136.8
50°	934.9	942.7	952.7	967.1	986.0	1003.7	1015.9	1029.2	1043.6	1059.2	1065.8
52.5°	871.7	879.5	889.5	903.9	919.4	936.0	947.1	959.3	973.8	988.2	994.8
55°	807.4	812.9	821.8	835.1	851.8	867.3	878.4	890.6	902.8	915.0	922.7
57.5°	744.2	750.8	759.7	771.9	786.3	800.7	810.7	820.7	832.9	845.1	850.7
60°	679.9	685.4	692.1	703.1	717.6	729.8	739.7	749.7	759.7	770.8	776.3
62.5°	614.4	620.0	626.6	637.7	649.9	661.0	669.9	678.7	687.6	697.6	703.1
65°	549.0	554.5	561.2	568.9	578.9	588.9	597.8	606.7	613.3	620.0	625.5
67.5°	478.0	483.6	490.2	496.9	505.7	515.7	522.4	530.1	536.8	544.5	547.9
70°	411.5	415.9	422.6	428.1	435.9	442.5	448.1	454.7	459.2	465.8	471.4
72.5°	346.0	350.5	356.0	361.6	366.0	371.5	378.2	383.7	389.3	395.9	398.2
75°	282.8	285.0	289.5	293.9	298.3	302.8	306.1	310.5	315.0	319.4	322.7
77.5°	220.7	222.9	227.4	230.7	234.0	237.3	239.6	241.8	246.2	249.5	252.9
80°	161.9	164.1	167.5	170.8	174.1	177.5	177.5	177.5	183.0	187.4	188.5
82.5°	109.8	110.9	113.1	115.3	117.6	119.8	119.8	118.7	122.0	125.3	127.5
85°	63.2	64.3	66.5	66.5	67.7	67.7	67.7	67.7	69.9	73.2	75.4
87.5°	25.5	25.5	26.6	26.6	27.7	27.7	26.6	25.5	27.7	31.1	32.2
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°	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7	1888.7
2.5°	1893.2	1892.1	1895.4	1896.5	1898.7	1898.7	1899.8	1899.8	1897.6	1894.3	1895.4
5°	1894.3	1894.3	1897.6	1900.9	1905.4	1909.8	1906.5	1903.2	1900.9	1897.6	1896.5
7.5°	1888.7	1891.0	1894.3	1899.8	1905.4	1912.0	1907.6	1903.2	1897.6	1893.2	1891.0
10°	1875.4	1877.6	1883.2	1888.7	1894.3	1899.8	1895.4	1891.0	1886.5	1881.0	1878.8
12.5°	1858.8	1862.1	1868.8	1874.3	1879.9	1886.5	1881.0	1875.4	1869.9	1864.3	1861.0
15°	1834.4	1838.8	1846.6	1853.2	1861.0	1866.6	1862.1	1857.7	1851.0	1843.3	1837.7
17.5°	1803.3	1810.0	1817.8	1825.5	1832.2	1837.7	1834.4	1830.0	1822.2	1813.3	1806.7
20°	1769.0	1775.6	1782.3	1790.0	1797.8	1803.3	1798.9	1793.4	1785.6	1778.9	1772.3
22.5°	1729.0	1735.7	1743.4	1750.1	1756.8	1762.3	1756.8	1750.1	1743.4	1736.8	1730.1
25°	1683.6	1690.2	1699.1	1705.7	1710.2	1714.6	1710.2	1704.6	1698.0	1691.3	1684.7
27.5°	1635.9	1642.5	1651.4	1658.0	1662.5	1666.9	1662.5	1656.9	1650.3	1643.6	1637.0
30°	1582.6	1589.3	1598.2	1604.8	1608.1	1611.5	1607.0	1602.6	1597.1	1590.4	1583.7
32.5°	1526.1	1532.7	1539.4	1546.0	1551.6	1556.0	1551.6	1547.1	1540.5	1531.6	1525.0
35°	1466.2	1472.8	1480.6	1487.3	1493.9	1499.5	1492.8	1485.0	1479.5	1473.9	1468.4
37.5°	1403.0	1410.7	1419.6	1427.4	1429.6	1434.0	1429.6	1425.1	1419.6	1414.1	1407.4
40°	1340.9	1347.5	1355.3	1363.0	1366.4	1369.7	1365.3	1360.8	1354.2	1348.6	1342.0
42.5°	1276.5	1283.2	1289.8	1296.5	1300.9	1305.4	1300.9	1294.3	1289.8	1285.4	1279.9
45°	1210.0	1216.6	1222.2	1228.8	1232.2	1235.5	1231.1	1225.5	1221.1	1217.8	1212.2
47.5°	1142.3	1147.9	1153.4	1159.0	1161.2	1164.5	1160.1	1156.8	1153.4	1150.1	1145.7
50°	1071.4	1076.9	1083.6	1089.1	1090.2	1093.5	1089.1	1085.8	1082.4	1079.1	1075.8
52.5°	1001.5	1005.9	1011.5	1017.0	1019.2	1021.4	1017.0	1012.6	1009.2	1007.0	1003.7
55°	928.3	932.7	938.3	942.7	946.0	948.2	943.8	939.4	936.0	934.9	931.6
57.5°	855.1	859.5	865.1	869.5	871.7	873.9	869.5	865.1	862.9	860.6	858.4
60°	780.8	785.2	789.7	793.0	795.2	796.3	791.9	788.5	787.4	786.3	784.1
62.5°	707.6	709.8	714.2	716.5	718.7	719.8	716.5	714.2	713.1	712.0	710.9
65°	631.1	636.6	639.9	642.1	642.1	643.3	639.9	638.8	637.7	636.6	634.4
67.5°	552.3	556.7	559.0	561.2	561.2	561.2	561.2	561.2	560.1	557.9	555.6
70°	476.9	480.2	482.4	483.6	483.6	483.6	481.3	480.2	481.3	481.3	480.2
72.5°	400.4	402.6	403.7	404.8	403.7	403.7	403.7	405.9	405.9	404.8	402.6
75°	326.1	328.3	329.4	330.5	329.4	329.4	329.4	331.6	330.5	330.5	329.4
77.5°	256.2	257.3	257.3	258.4	257.3	257.3	258.4	260.6	259.5	259.5	259.5
80°	189.6	189.6	189.6	190.8	189.6	189.6	190.8	193.0	191.9	191.9	191.9
82.5°	128.7	129.8	129.8	129.8	130.9	132.0	132.0	132.0	132.0	132.0	130.9
85°	76.5	77.6	76.5	76.5	76.5	76.5	77.6	78.7	78.7	78.7	78.7
87.5°	33.3	34.4	33.3	32.2	31.1	31.1	33.3	35.5	35.5	34.4	34.4
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: P709172
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CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	1888.7	1888.7	1888.7	1888.7
2.5°	1899.8	1899.8	1889.8	1879.9
5°	1898.7	1896.5	1885.4	1873.2
7.5°	1892.1	1888.7	1874.3	1861.0
10°	1876.5	1872.1	1856.6	1839.9
12.5°	1857.7	1851.0	1833.3	1816.6
15°	1833.3	1825.5	1806.7	1787.8
17.5°	1801.1	1792.2	1773.4	1753.4
20°	1766.7	1756.8	1735.7	1714.6
22.5°	1724.6	1715.7	1693.5	1672.5
25°	1679.1	1669.1	1647.0	1624.8
27.5°	1630.3	1619.2	1597.1	1576.0
30°	1577.1	1566.0	1543.8	1522.7
32.5°	1520.5	1511.7	1489.5	1466.2
35°	1462.9	1451.8	1429.6	1407.4
37.5°	1401.9	1391.9	1370.8	1349.7
40°	1337.5	1327.5	1305.4	1284.3
42.5°	1274.3	1265.4	1244.4	1224.4
45°	1206.7	1197.8	1177.8	1160.1
47.5°	1139.0	1130.1	1111.3	1092.4
50°	1070.2	1061.4	1043.6	1027.0
52.5°	998.2	991.5	974.9	958.2
55°	926.1	918.3	901.7	887.3
57.5°	854.0	848.4	832.9	818.5
60°	779.7	773.0	760.8	748.6
62.5°	707.6	702.0	689.8	678.7
65°	631.1	626.6	616.6	606.7
67.5°	552.3	549.0	539.0	530.1
70°	476.9	471.4	463.6	455.8
72.5°	400.4	398.2	391.5	384.8
75°	327.2	325.0	318.3	312.8
77.5°	258.4	256.2	250.6	245.1
80°	190.8	189.6	185.2	180.8
82.5°	130.9	129.8	126.4	122.0
85°	78.7	76.5	73.2	69.9
87.5°	34.4	33.3	29.9	27.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)