

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: P709188

Luminaire Tested: **4APN-32-34L935-UNV**

Issue Date: 09/12/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P709188  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 09/12/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 4APN-32-34L935-UNV  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light  
Light Source: 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

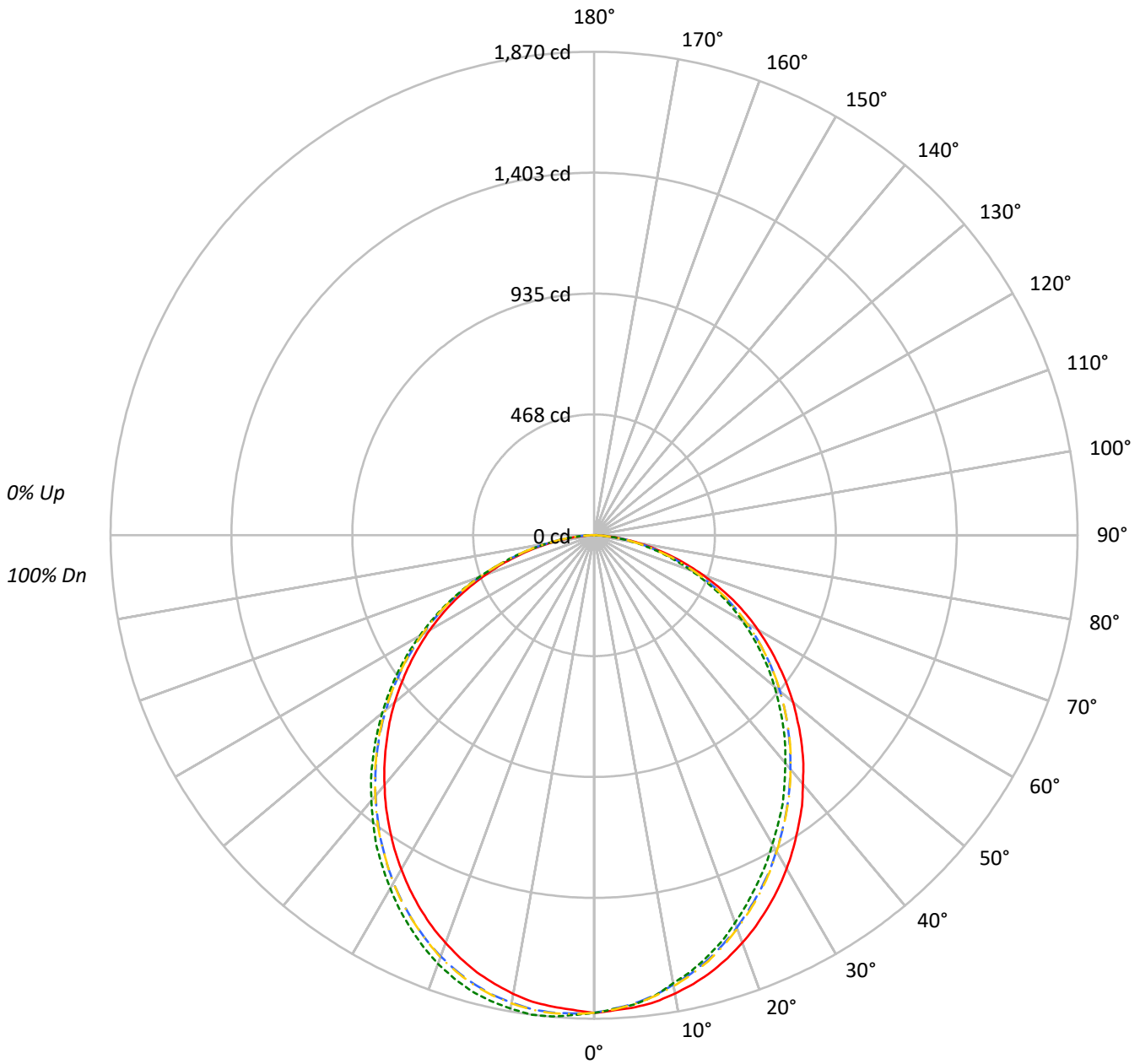
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4884.1 lumens  
Efficiency: N/A  
Efficacy: 66.9 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): 73  
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°	17047	17047	17047	17047
5°	16972	16861	16951	17303
10°	16863	16487	16874	17412
15°	16706	16125	16716	17441
20°	16469	15659	16479	17321
25°	16181	15165	16214	17076
30°	15871	14691	15893	16795
35°	15507	14310	15544	16522
40°	15132	13852	15184	16138
45°	14808	13477	14822	15771
50°	14421	13082	14452	15355
55°	13962	12653	14014	14921
60°	13515	12212	13533	14374
65°	12957	11677	12957	13738
70°	12028	10801	11999	12759
75°	10908	9785	10830	11486
80°	9399	8416	9224	9856
85°	7241	6436	7008	7929



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	174.5	3.6
10°-20°	494.0	10.1
20°-30°	731.4	15.0
30°-40°	858.2	17.6
40°-50°	869.7	17.8
50°-60°	771.9	15.8
60°-70°	579.5	11.9
70°-80°	321.8	6.6
80°-90°	83.1	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°	1400.0	28.7
0°-40°	2258.1	46.2
0°-60°	3899.7	79.8
0°-90°	4884.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4884.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1848	1848	1848	1848	1848	
5°	1832	1821	1830	1868	1832	174
15°	1749	1688	1750	1826	1749	493
25°	1590	1490	1593	1677	1590	732
35°	1377	1270	1380	1467	1377	862
45°	1135	1033	1136	1209	1135	875
55°	868	787	871	928	868	777
65°	594	535	594	629	594	585
75°	306	274	304	322	306	325
85°	68	61	66	75	68	82
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°	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7
2.5°	1839.0	1843.4	1848.8	1843.4	1834.7	1830.3	1830.3	1829.3	1832.5	1833.6	1832.5
5°	1832.5	1834.7	1835.8	1829.3	1819.5	1814.1	1811.9	1810.8	1815.2	1820.6	1815.2
7.5°	1820.6	1819.5	1818.4	1809.7	1798.9	1791.3	1788.0	1786.9	1791.3	1796.7	1792.4
10°	1800.0	1798.9	1795.6	1784.8	1770.7	1760.9	1757.7	1754.4	1757.7	1759.8	1757.7
12.5°	1777.2	1772.8	1768.5	1756.6	1741.4	1730.5	1725.1	1720.8	1725.1	1728.4	1726.2
15°	1749.0	1742.5	1734.9	1721.8	1706.7	1694.7	1688.2	1683.9	1687.1	1688.2	1688.2
17.5°	1715.3	1707.7	1700.1	1683.9	1665.4	1652.4	1644.8	1639.4	1643.7	1645.9	1645.9
20°	1677.4	1668.7	1658.9	1641.6	1622.0	1607.9	1599.2	1592.7	1593.8	1594.9	1594.9
22.5°	1636.1	1625.3	1613.4	1594.9	1574.3	1559.1	1550.4	1542.8	1542.8	1543.9	1543.9
25°	1589.5	1577.5	1565.6	1547.2	1525.5	1509.2	1498.3	1490.7	1490.7	1489.7	1491.8
27.5°	1541.7	1528.7	1516.8	1497.3	1474.5	1458.2	1447.3	1439.8	1438.7	1437.6	1439.8
30°	1489.7	1474.5	1461.5	1440.8	1419.1	1402.9	1392.0	1383.3	1381.2	1379.0	1381.2
32.5°	1434.3	1420.2	1406.1	1384.4	1362.7	1346.4	1335.6	1326.9	1325.8	1324.7	1326.9
35°	1376.8	1361.6	1348.6	1328.0	1306.3	1290.0	1278.1	1270.5	1270.5	1270.5	1270.5
37.5°	1320.4	1305.2	1291.1	1270.5	1248.8	1232.5	1220.6	1213.0	1210.8	1209.7	1210.8
40°	1256.4	1243.4	1230.4	1210.8	1189.1	1172.9	1163.1	1154.4	1152.2	1150.1	1153.3
42.5°	1197.8	1184.8	1170.7	1152.2	1130.5	1114.3	1103.4	1095.8	1094.7	1093.6	1094.7
45°	1134.9	1119.7	1105.6	1088.2	1068.7	1053.5	1042.7	1035.1	1034.0	1032.9	1034.0
47.5°	1068.7	1056.8	1044.8	1027.5	1007.9	992.7	983.0	974.3	972.1	970.0	972.1
50°	1004.7	991.7	979.7	963.5	945.0	930.9	922.2	914.6	912.5	911.4	912.5
52.5°	937.4	925.5	914.6	898.4	883.2	869.1	859.3	852.8	851.7	850.6	851.7
55°	868.0	857.1	847.4	834.3	819.2	806.1	797.5	789.9	788.8	786.6	788.8
57.5°	800.7	792.0	782.3	768.2	754.1	742.1	734.5	728.0	726.9	725.8	726.9
60°	732.4	723.7	715.0	703.1	689.0	677.0	670.5	665.1	662.9	661.8	662.9
62.5°	664.0	655.3	648.8	636.9	623.9	614.1	607.6	602.2	600.0	598.9	600.0
65°	593.5	585.9	578.3	567.4	557.7	550.1	543.6	538.1	536.0	534.9	534.9
67.5°	518.6	512.1	506.7	496.9	486.1	478.5	472.0	467.6	465.5	464.4	465.5
70°	445.9	440.5	435.1	427.5	418.8	412.3	407.9	403.6	401.4	400.4	400.4
72.5°	376.5	372.1	366.7	360.2	353.7	347.2	342.9	339.6	337.4	336.3	336.3
75°	306.0	301.6	299.5	294.0	287.5	283.2	278.8	276.7	274.5	274.5	274.5
77.5°	239.8	237.6	235.4	230.0	225.7	221.3	218.1	217.0	214.8	214.8	214.8
80°	176.9	175.8	174.7	171.4	167.1	162.7	160.6	159.5	158.4	158.4	158.4
82.5°	119.3	119.3	118.3	115.0	111.8	110.7	108.5	107.4	107.4	107.4	107.4
85°	68.4	68.4	68.4	67.3	65.1	65.1	62.9	61.8	60.8	60.8	60.8
87.5°	27.1	28.2	29.3	28.2	26.0	26.0	26.0	26.0	26.0	26.0	26.0
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°	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7
2.5°	1829.3	1831.4	1832.5	1837.9	1844.4	1848.8	1843.4	1837.9	1846.6	1856.4	1856.4
5°	1810.8	1813.0	1816.2	1822.7	1831.4	1836.9	1834.7	1830.3	1843.4	1854.2	1855.3
7.5°	1788.0	1790.2	1794.5	1801.1	1811.9	1819.5	1819.5	1820.6	1832.5	1845.5	1848.8
10°	1754.4	1759.8	1766.3	1776.1	1786.9	1796.7	1800.0	1801.1	1816.2	1830.3	1834.7
12.5°	1722.9	1728.4	1734.9	1745.7	1758.7	1769.6	1772.8	1777.2	1793.5	1809.7	1816.2
15°	1687.1	1692.6	1700.1	1711.0	1725.1	1737.0	1743.5	1750.1	1766.3	1783.7	1791.3
17.5°	1644.8	1650.2	1657.8	1670.9	1687.1	1701.2	1708.8	1716.4	1734.9	1753.3	1760.9
20°	1594.9	1602.5	1613.4	1626.4	1644.8	1661.1	1669.8	1678.4	1698.0	1716.4	1725.1
22.5°	1543.9	1552.6	1564.5	1579.7	1599.2	1616.6	1627.5	1638.3	1657.8	1676.3	1686.0
25°	1492.9	1502.7	1514.6	1530.9	1549.3	1566.7	1579.7	1592.7	1612.3	1631.8	1641.6
27.5°	1440.8	1449.5	1461.5	1477.7	1498.3	1516.8	1529.8	1543.9	1563.4	1584.1	1593.8
30°	1383.3	1393.1	1404.0	1420.2	1443.0	1463.6	1476.6	1491.8	1511.4	1532.0	1541.7
32.5°	1328.0	1336.7	1347.5	1363.8	1386.6	1408.3	1422.4	1437.6	1457.1	1477.7	1486.4
35°	1270.5	1279.2	1291.1	1307.4	1330.2	1350.8	1364.9	1380.1	1398.5	1418.1	1427.8
37.5°	1214.1	1222.8	1234.7	1251.0	1272.7	1293.3	1307.4	1322.6	1341.0	1359.5	1368.1
40°	1155.5	1164.2	1173.9	1190.2	1211.9	1232.5	1245.5	1260.7	1279.2	1298.7	1307.4
42.5°	1095.8	1104.5	1116.4	1132.7	1153.3	1171.8	1185.9	1200.0	1217.3	1234.7	1243.4
45°	1036.1	1043.7	1055.7	1070.9	1090.4	1107.8	1121.9	1136.0	1152.2	1168.5	1177.2
47.5°	974.3	983.0	992.7	1007.9	1027.5	1045.9	1060.0	1073.0	1088.2	1104.5	1112.1
50°	914.6	922.2	932.0	946.1	964.5	981.9	993.8	1006.9	1021.0	1036.1	1042.7
52.5°	852.8	860.4	870.1	884.3	899.4	915.7	926.6	938.5	952.6	966.7	973.2
55°	789.9	795.3	804.0	817.0	833.3	848.4	859.3	871.2	883.2	895.1	902.7
57.5°	728.0	734.5	743.2	755.1	769.2	783.3	793.1	802.9	814.8	826.7	832.2
60°	665.1	670.5	677.0	687.9	702.0	713.9	723.7	733.4	743.2	754.1	759.5
62.5°	601.1	606.5	613.0	623.9	635.8	646.6	655.3	664.0	672.7	682.4	687.9
65°	537.1	542.5	549.0	556.6	566.4	576.1	584.8	593.5	600.0	606.5	611.9
67.5°	467.6	473.0	479.6	486.1	494.7	504.5	511.0	518.6	525.1	532.7	536.0
70°	402.5	406.9	413.4	418.8	426.4	432.9	438.3	444.8	449.2	455.7	461.1
72.5°	338.5	342.9	348.3	353.7	358.0	363.5	370.0	375.4	380.8	387.3	389.5
75°	276.7	278.8	283.2	287.5	291.9	296.2	299.5	303.8	308.1	312.5	315.7
77.5°	215.9	218.1	222.4	225.7	228.9	232.2	234.4	236.5	240.9	244.1	247.4
80°	158.4	160.6	163.8	167.1	170.3	173.6	173.6	173.6	179.0	183.4	184.4
82.5°	107.4	108.5	110.7	112.8	115.0	117.2	117.2	116.1	119.3	122.6	124.8
85°	61.8	62.9	65.1	65.1	66.2	66.2	66.2	66.2	68.4	71.6	73.8
87.5°	25.0	25.0	26.0	26.0	27.1	27.1	26.0	25.0	27.1	30.4	31.5
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):**

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7	1847.7
2.5°	1852.0	1851.0	1854.2	1855.3	1857.5	1857.5	1858.6	1858.6	1856.4	1853.1	1854.2
5°	1853.1	1853.1	1856.4	1859.6	1864.0	1868.3	1865.1	1861.8	1859.6	1856.4	1855.3
7.5°	1847.7	1849.9	1853.1	1858.6	1864.0	1870.5	1866.1	1861.8	1856.4	1852.0	1849.9
10°	1834.7	1836.9	1842.3	1847.7	1853.1	1858.6	1854.2	1849.9	1845.5	1840.1	1837.9
12.5°	1818.4	1821.7	1828.2	1833.6	1839.0	1845.5	1840.1	1834.7	1829.3	1823.8	1820.6
15°	1794.5	1798.9	1806.5	1813.0	1820.6	1826.0	1821.7	1817.3	1810.8	1803.2	1797.8
17.5°	1764.2	1770.7	1778.3	1785.9	1792.4	1797.8	1794.5	1790.2	1782.6	1773.9	1767.4
20°	1730.5	1737.0	1743.5	1751.1	1758.7	1764.2	1759.8	1754.4	1746.8	1740.3	1733.8
22.5°	1691.5	1698.0	1705.6	1712.1	1718.6	1724.0	1718.6	1712.1	1705.6	1699.1	1692.6
25°	1647.0	1653.5	1662.2	1668.7	1673.0	1677.4	1673.0	1667.6	1661.1	1654.6	1648.1
27.5°	1600.3	1606.8	1615.5	1622.0	1626.4	1630.7	1626.4	1620.9	1614.4	1607.9	1601.4
30°	1548.3	1554.8	1563.4	1570.0	1573.2	1576.5	1572.1	1567.8	1562.4	1555.8	1549.3
32.5°	1492.9	1499.4	1505.9	1512.4	1517.9	1522.2	1517.9	1513.5	1507.0	1498.3	1491.8
35°	1434.3	1440.8	1448.4	1454.9	1461.5	1466.9	1460.4	1452.8	1447.3	1441.9	1436.5
37.5°	1372.5	1380.1	1388.8	1396.4	1398.5	1402.9	1398.5	1394.2	1388.8	1383.3	1376.8
40°	1311.7	1318.2	1325.8	1333.4	1336.7	1339.9	1335.6	1331.3	1324.7	1319.3	1312.8
42.5°	1248.8	1255.3	1261.8	1268.3	1272.7	1277.0	1272.7	1266.2	1261.8	1257.5	1252.1
45°	1183.7	1190.2	1195.6	1202.1	1205.4	1208.7	1204.3	1198.9	1194.6	1191.3	1185.9
47.5°	1117.5	1122.9	1128.4	1133.8	1136.0	1139.2	1134.9	1131.6	1128.4	1125.1	1120.8
50°	1048.1	1053.5	1060.0	1065.4	1066.5	1069.8	1065.4	1062.2	1058.9	1055.7	1052.4
52.5°	979.7	984.1	989.5	994.9	997.1	999.3	994.9	990.6	987.3	985.2	981.9
55°	908.1	912.5	917.9	922.2	925.5	927.6	923.3	919.0	915.7	914.6	911.4
57.5°	836.5	840.9	846.3	850.6	852.8	855.0	850.6	846.3	844.1	841.9	839.8
60°	763.8	768.2	772.5	775.8	777.9	779.0	774.7	771.4	770.3	769.2	767.1
62.5°	692.2	694.4	698.7	700.9	703.1	704.1	700.9	698.7	697.6	696.6	695.5
65°	617.3	622.8	626.0	628.2	628.2	629.3	626.0	624.9	623.9	622.8	620.6
67.5°	540.3	544.7	546.8	549.0	549.0	549.0	549.0	549.0	547.9	545.7	543.6
70°	466.5	469.8	472.0	473.0	473.0	473.0	470.9	469.8	470.9	470.9	469.8
72.5°	391.7	393.8	394.9	396.0	394.9	394.9	394.9	397.1	397.1	396.0	393.8
75°	319.0	321.2	322.2	323.3	322.2	322.2	322.2	324.4	323.3	323.3	322.2
77.5°	250.6	251.7	251.7	252.8	251.7	251.7	252.8	255.0	253.9	253.9	253.9
80°	185.5	185.5	185.5	186.6	185.5	185.5	186.6	188.8	187.7	187.7	187.7
82.5°	125.9	126.9	126.9	126.9	128.0	129.1	129.1	129.1	129.1	129.1	128.0
85°	74.9	75.9	74.9	74.9	74.9	74.9	75.9	77.0	77.0	77.0	77.0
87.5°	32.5	33.6	32.5	31.5	30.4	30.4	32.5	34.7	34.7	33.6	33.6
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):**

	330°	340°	350°	360°
0°	1847.7	1847.7	1847.7	1847.7
2.5°	1858.6	1858.6	1848.8	1839.0
5°	1857.5	1855.3	1844.4	1832.5
7.5°	1851.0	1847.7	1833.6	1820.6
10°	1835.8	1831.4	1816.2	1800.0
12.5°	1817.3	1810.8	1793.5	1777.2
15°	1793.5	1785.9	1767.4	1749.0
17.5°	1762.0	1753.3	1734.9	1715.3
20°	1728.4	1718.6	1698.0	1677.4
22.5°	1687.1	1678.4	1656.7	1636.1
25°	1642.6	1632.9	1611.2	1589.5
27.5°	1594.9	1584.1	1562.4	1541.7
30°	1542.8	1532.0	1510.3	1489.7
32.5°	1487.5	1478.8	1457.1	1434.3
35°	1431.1	1420.2	1398.5	1376.8
37.5°	1371.4	1361.6	1341.0	1320.4
40°	1308.5	1298.7	1277.0	1256.4
42.5°	1246.6	1238.0	1217.3	1197.8
45°	1180.4	1171.8	1152.2	1134.9
47.5°	1114.3	1105.6	1087.1	1068.7
50°	1047.0	1038.3	1021.0	1004.7
52.5°	976.5	970.0	953.7	937.4
55°	905.9	898.4	882.1	868.0
57.5°	835.4	830.0	814.8	800.7
60°	762.7	756.2	744.3	732.4
62.5°	692.2	686.8	674.9	664.0
65°	617.3	613.0	603.2	593.5
67.5°	540.3	537.1	527.3	518.6
70°	466.5	461.1	453.5	445.9
72.5°	391.7	389.5	383.0	376.5
75°	320.1	317.9	311.4	306.0
77.5°	252.8	250.6	245.2	239.8
80°	186.6	185.5	181.2	176.9
82.5°	128.0	126.9	123.7	119.3
85°	77.0	74.9	71.6	68.4
87.5°	33.6	32.5	29.3	27.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)