

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: P709164

Luminaire Tested: **4APN-32-34L835-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709164
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-32-34L835-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

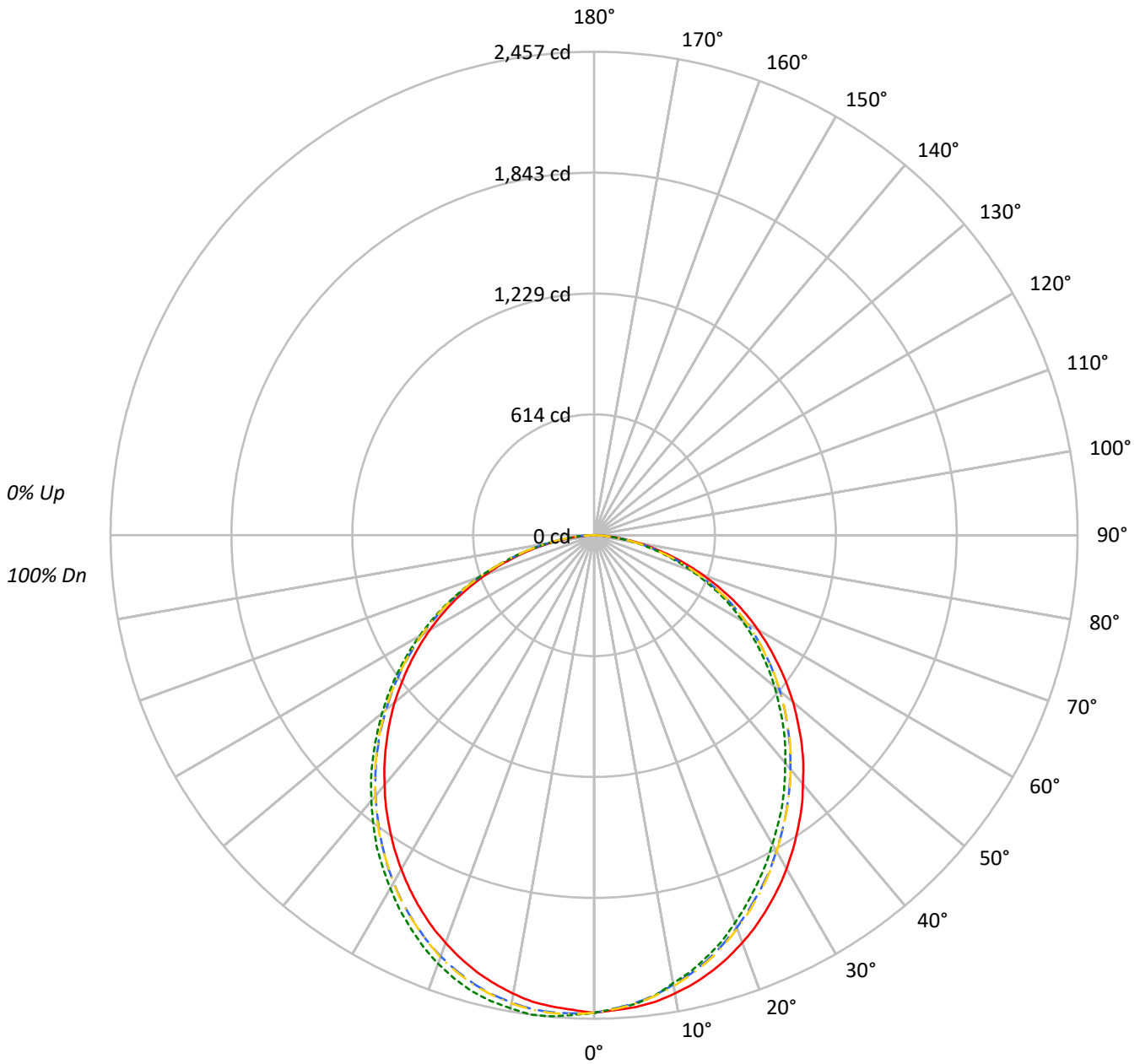
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6416.2 lumens
Efficiency: N/A
Efficacy: 87.9 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				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°	22395	22395	22395	22395
5°	22295	22151	22269	22731
10°	22153	21658	22166	22873
15°	21946	21184	21959	22913
20°	21635	20571	21648	22754
25°	21257	19921	21300	22432
30°	20848	19300	20879	22063
35°	20372	18798	20420	21704
40°	19879	18196	19947	21200
45°	19453	17705	19471	20717
50°	18944	17185	18985	20171
55°	18341	16621	18410	19602
60°	17753	16043	17779	18884
65°	17019	15341	17019	18048
70°	15802	14186	15765	16763
75°	14327	12854	14227	15090
80°	12342	11057	12114	12948
85°	9506	8448	9199	10406



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	229.2	3.6
10°-20°	649.0	10.1
20°-30°	960.9	15.0
30°-40°	1127.4	17.6
40°-50°	1142.5	17.8
50°-60°	1014.0	15.8
60°-70°	761.3	11.9
70°-80°	422.7	6.6
80°-90°	109.2	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°	1839.1	28.7
0°-40°	2966.5	46.2
0°-60°	5123.0	79.8
0°-90°	6416.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6416.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2427	2427	2427	2427	2427	
5°	2407	2392	2404	2454	2407	229
15°	2298	2218	2299	2399	2298	647
25°	2088	1957	2092	2204	2088	962
35°	1809	1669	1813	1927	1809	1132
45°	1491	1357	1492	1588	1491	1149
55°	1140	1033	1144	1219	1140	1021
65°	780	703	780	827	780	769
75°	402	361	399	423	402	427
85°	90	80	87	98	90	108
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°	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3
2.5°	2415.9	2421.6	2428.7	2421.6	2410.2	2404.5	2404.5	2403.1	2407.3	2408.8	2407.3
5°	2407.3	2410.2	2411.6	2403.1	2390.2	2383.1	2380.3	2378.8	2384.5	2391.7	2384.5
7.5°	2391.7	2390.2	2388.8	2377.4	2363.1	2353.2	2348.9	2347.5	2353.2	2360.3	2354.6
10°	2364.6	2363.1	2358.9	2344.6	2326.1	2313.3	2309.0	2304.7	2309.0	2311.8	2309.0
12.5°	2334.6	2328.9	2323.2	2307.6	2287.6	2273.4	2266.2	2260.5	2266.2	2270.5	2267.7
15°	2297.6	2289.0	2279.1	2262.0	2242.0	2226.3	2217.8	2212.1	2216.3	2217.8	2217.8
17.5°	2253.4	2243.4	2233.4	2212.1	2187.8	2170.7	2160.8	2153.6	2159.3	2162.2	2162.2
20°	2203.5	2192.1	2179.3	2156.5	2130.8	2112.3	2100.9	2092.3	2093.8	2095.2	2095.2
22.5°	2149.4	2135.1	2119.4	2095.2	2068.1	2048.2	2036.8	2026.8	2026.8	2028.2	2028.2
25°	2088.1	2072.4	2056.7	2032.5	2004.0	1982.6	1968.3	1958.4	1958.4	1956.9	1959.8
27.5°	2025.4	2008.2	1992.6	1966.9	1937.0	1915.6	1901.4	1891.4	1889.9	1888.5	1891.4
30°	1956.9	1937.0	1919.9	1892.8	1864.3	1842.9	1828.7	1817.3	1814.4	1811.6	1814.4
32.5°	1884.2	1865.7	1847.2	1818.7	1790.2	1768.8	1754.5	1743.1	1741.7	1740.3	1743.1
35°	1808.7	1788.8	1771.6	1744.6	1716.1	1694.7	1679.0	1669.0	1669.0	1669.0	1669.0
37.5°	1734.6	1714.6	1696.1	1669.0	1640.5	1619.1	1603.5	1593.5	1590.6	1589.2	1590.6
40°	1650.5	1633.4	1616.3	1590.6	1562.1	1540.8	1527.9	1516.5	1513.7	1510.8	1515.1
42.5°	1573.5	1556.4	1537.9	1513.7	1485.2	1463.8	1449.5	1439.6	1438.1	1436.7	1438.1
45°	1490.9	1470.9	1452.4	1429.6	1403.9	1384.0	1369.7	1359.7	1358.3	1356.9	1358.3
47.5°	1403.9	1388.2	1372.6	1349.8	1324.1	1304.2	1291.3	1279.9	1277.1	1274.2	1277.1
50°	1319.8	1302.7	1287.0	1265.7	1241.4	1222.9	1211.5	1201.5	1198.7	1197.3	1198.7
52.5°	1231.5	1215.8	1201.5	1180.1	1160.2	1141.7	1128.8	1120.3	1118.9	1117.4	1118.9
55°	1140.2	1126.0	1113.2	1096.1	1076.1	1059.0	1047.6	1037.6	1036.2	1033.3	1036.2
57.5°	1051.9	1040.5	1027.6	1009.1	990.6	974.9	964.9	956.4	955.0	953.5	955.0
60°	962.1	950.7	939.3	923.6	905.1	889.4	880.8	873.7	870.9	869.4	870.9
62.5°	872.3	860.9	852.3	836.7	819.5	806.7	798.2	791.0	788.2	786.8	788.2
65°	779.6	769.7	759.7	745.4	732.6	722.6	714.1	706.9	704.1	702.7	702.7
67.5°	681.3	672.7	665.6	652.8	638.5	628.6	620.0	614.3	611.5	610.0	611.5
70°	585.8	578.7	571.5	561.6	550.2	541.6	535.9	530.2	527.4	525.9	525.9
72.5°	494.6	488.9	481.8	473.2	464.6	456.1	450.4	446.1	443.3	441.8	441.8
75°	401.9	396.2	393.4	386.3	377.7	372.0	366.3	363.5	360.6	360.6	360.6
77.5°	315.0	312.1	309.3	302.2	296.5	290.8	286.5	285.1	282.2	282.2	282.2
80°	232.3	230.9	229.5	225.2	219.5	213.8	210.9	209.5	208.1	208.1	208.1
82.5°	156.8	156.8	155.4	151.1	146.8	145.4	142.5	141.1	141.1	141.1	141.1
85°	89.8	89.8	89.8	88.4	85.5	85.5	82.7	81.2	79.8	79.8	79.8
87.5°	35.6	37.1	38.5	37.1	34.2	34.2	34.2	34.2	34.2	34.2	34.2
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3
2.5°	2403.1	2405.9	2407.3	2414.5	2423.0	2428.7	2421.6	2414.5	2425.9	2438.7	2438.7
5°	2378.8	2381.7	2386.0	2394.5	2405.9	2413.0	2410.2	2404.5	2421.6	2435.8	2437.3
7.5°	2348.9	2351.7	2357.4	2366.0	2380.3	2390.2	2390.2	2391.7	2407.3	2424.4	2428.7
10°	2304.7	2311.8	2320.4	2333.2	2347.5	2360.3	2364.6	2366.0	2386.0	2404.5	2410.2
12.5°	2263.4	2270.5	2279.1	2293.3	2310.4	2324.7	2328.9	2334.6	2356.0	2377.4	2386.0
15°	2216.3	2223.5	2233.4	2247.7	2266.2	2281.9	2290.5	2299.0	2320.4	2343.2	2353.2
17.5°	2160.8	2167.9	2177.9	2195.0	2216.3	2234.9	2244.8	2254.8	2279.1	2303.3	2313.3
20°	2095.2	2105.2	2119.4	2136.5	2160.8	2182.1	2193.5	2204.9	2230.6	2254.8	2266.2
22.5°	2028.2	2039.6	2055.3	2075.2	2100.9	2123.7	2138.0	2152.2	2177.9	2202.1	2214.9
25°	1961.2	1974.0	1989.7	2011.1	2035.3	2058.1	2075.2	2092.3	2118.0	2143.7	2156.5
27.5°	1892.8	1904.2	1919.9	1941.3	1968.3	1992.6	2009.7	2028.2	2053.9	2080.9	2093.8
30°	1817.3	1830.1	1844.3	1865.7	1895.7	1922.7	1939.8	1959.8	1985.4	2012.5	2025.4
32.5°	1744.6	1756.0	1770.2	1791.6	1821.5	1850.0	1868.6	1888.5	1914.2	1941.3	1952.7
35°	1669.0	1680.4	1696.1	1717.5	1747.4	1774.5	1793.0	1813.0	1837.2	1862.9	1875.7
37.5°	1594.9	1606.3	1622.0	1643.4	1671.9	1699.0	1717.5	1737.4	1761.7	1785.9	1797.3
40°	1517.9	1529.3	1542.2	1563.6	1592.1	1619.1	1636.2	1656.2	1680.4	1706.1	1717.5
42.5°	1439.6	1451.0	1466.6	1488.0	1515.1	1539.3	1557.9	1576.4	1599.2	1622.0	1633.4
45°	1361.2	1371.1	1386.8	1406.8	1432.4	1455.2	1473.8	1492.3	1513.7	1535.0	1546.5
47.5°	1279.9	1291.3	1304.2	1324.1	1349.8	1374.0	1392.5	1409.6	1429.6	1451.0	1460.9
50°	1201.5	1211.5	1224.3	1242.9	1267.1	1289.9	1305.6	1322.7	1341.2	1361.2	1369.7
52.5°	1120.3	1130.3	1143.1	1161.6	1181.6	1203.0	1217.2	1232.9	1251.4	1269.9	1278.5
55°	1037.6	1044.7	1056.1	1073.3	1094.6	1114.6	1128.8	1144.5	1160.2	1175.9	1185.9
57.5°	956.4	964.9	976.3	992.0	1010.5	1029.1	1041.9	1054.7	1070.4	1086.1	1093.2
60°	873.7	880.8	889.4	903.6	922.2	937.8	950.7	963.5	976.3	990.6	997.7
62.5°	789.6	796.7	805.3	819.5	835.2	849.5	860.9	872.3	883.7	896.5	903.6
65°	705.5	712.7	721.2	731.2	744.0	756.8	768.2	779.6	788.2	796.7	803.9
67.5°	614.3	621.4	630.0	638.5	649.9	662.8	671.3	681.3	689.8	699.8	704.1
70°	528.8	534.5	543.0	550.2	560.1	568.7	575.8	584.4	590.1	598.6	605.8
72.5°	444.7	450.4	457.5	464.6	470.3	477.5	486.0	493.2	500.3	508.8	511.7
75°	363.5	366.3	372.0	377.7	383.4	389.1	393.4	399.1	404.8	410.5	414.8
77.5°	283.6	286.5	292.2	296.5	300.7	305.0	307.9	310.7	316.4	320.7	325.0
80°	208.1	210.9	215.2	219.5	223.8	228.0	228.0	228.0	235.2	240.9	242.3
82.5°	141.1	142.5	145.4	148.2	151.1	153.9	153.9	152.5	156.8	161.1	163.9
85°	81.2	82.7	85.5	85.5	86.9	86.9	86.9	86.9	89.8	94.1	96.9
87.5°	32.8	32.8	34.2	34.2	35.6	35.6	34.2	32.8	35.6	39.9	41.3
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°	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3	2427.3
2.5°	2433.0	2431.6	2435.8	2437.3	2440.1	2440.1	2441.5	2441.5	2438.7	2434.4	2435.8
5°	2434.4	2434.4	2438.7	2443.0	2448.7	2454.4	2450.1	2445.8	2443.0	2438.7	2437.3
7.5°	2427.3	2430.1	2434.4	2441.5	2448.7	2457.2	2451.5	2445.8	2438.7	2433.0	2430.1
10°	2410.2	2413.0	2420.2	2427.3	2434.4	2441.5	2435.8	2430.1	2424.4	2417.3	2414.5
12.5°	2388.8	2393.1	2401.6	2408.8	2415.9	2424.4	2417.3	2410.2	2403.1	2395.9	2391.7
15°	2357.4	2363.1	2373.1	2381.7	2391.7	2398.8	2393.1	2387.4	2378.8	2368.9	2361.7
17.5°	2317.5	2326.1	2336.1	2346.0	2354.6	2361.7	2357.4	2351.7	2341.8	2330.4	2321.8
20°	2273.4	2281.9	2290.5	2300.4	2310.4	2317.5	2311.8	2304.7	2294.7	2286.2	2277.6
22.5°	2222.0	2230.6	2240.6	2249.1	2257.7	2264.8	2257.7	2249.1	2240.6	2232.0	2223.5
25°	2163.6	2172.2	2183.6	2192.1	2197.8	2203.5	2197.8	2190.7	2182.1	2173.6	2165.0
27.5°	2102.3	2110.9	2122.3	2130.8	2136.5	2142.2	2136.5	2129.4	2120.8	2112.3	2103.7
30°	2033.9	2042.5	2053.9	2062.4	2066.7	2071.0	2065.3	2059.6	2052.4	2043.9	2035.3
32.5°	1961.2	1969.8	1978.3	1986.9	1994.0	1999.7	1994.0	1988.3	1979.7	1968.3	1959.8
35°	1884.2	1892.8	1902.8	1911.3	1919.9	1927.0	1918.5	1908.5	1901.4	1894.2	1887.1
37.5°	1803.0	1813.0	1824.4	1834.4	1837.2	1842.9	1837.2	1831.5	1824.4	1817.3	1808.7
40°	1723.2	1731.7	1741.7	1751.7	1756.0	1760.2	1754.5	1748.8	1740.3	1733.2	1724.6
42.5°	1640.5	1649.1	1657.6	1666.2	1671.9	1677.6	1671.9	1663.3	1657.6	1651.9	1644.8
45°	1555.0	1563.6	1570.7	1579.2	1583.5	1587.8	1582.1	1575.0	1569.3	1565.0	1557.9
47.5°	1468.1	1475.2	1482.3	1489.4	1492.3	1496.6	1490.9	1486.6	1482.3	1478.0	1472.3
50°	1376.8	1384.0	1392.5	1399.6	1401.1	1405.3	1399.6	1395.4	1391.1	1386.8	1382.5
52.5°	1287.0	1292.7	1299.9	1307.0	1309.9	1312.7	1307.0	1301.3	1297.0	1294.2	1289.9
55°	1193.0	1198.7	1205.8	1211.5	1215.8	1218.6	1212.9	1207.2	1203.0	1201.5	1197.3
57.5°	1098.9	1104.6	1111.7	1117.4	1120.3	1123.1	1117.4	1111.7	1108.9	1106.0	1103.2
60°	1003.4	1009.1	1014.8	1019.1	1021.9	1023.4	1017.7	1013.4	1012.0	1010.5	1007.7
62.5°	909.3	912.2	917.9	920.7	923.6	925.0	920.7	917.9	916.5	915.0	913.6
65°	811.0	818.1	822.4	825.2	825.2	826.7	822.4	821.0	819.5	818.1	815.3
67.5°	709.8	715.5	718.4	721.2	721.2	721.2	721.2	721.2	719.8	716.9	714.1
70°	612.9	617.2	620.0	621.4	621.4	621.4	618.6	617.2	618.6	618.6	617.2
72.5°	514.5	517.4	518.8	520.2	518.8	518.8	518.8	521.7	521.7	520.2	517.4
75°	419.0	421.9	423.3	424.7	423.3	423.3	423.3	426.2	424.7	424.7	423.3
77.5°	329.2	330.7	330.7	332.1	330.7	330.7	332.1	334.9	333.5	333.5	333.5
80°	243.7	243.7	243.7	245.2	243.7	243.7	245.2	248.0	246.6	246.6	246.6
82.5°	165.3	166.8	166.8	166.8	168.2	169.6	169.6	169.6	169.6	169.6	168.2
85°	98.3	99.8	98.3	98.3	98.3	98.3	99.8	101.2	101.2	101.2	101.2
87.5°	42.8	44.2	42.8	41.3	39.9	39.9	42.8	45.6	45.6	44.2	44.2
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):

	330°	340°	350°	360°
0°	2427.3	2427.3	2427.3	2427.3
2.5°	2441.5	2441.5	2428.7	2415.9
5°	2440.1	2437.3	2423.0	2407.3
7.5°	2431.6	2427.3	2408.8	2391.7
10°	2411.6	2405.9	2386.0	2364.6
12.5°	2387.4	2378.8	2356.0	2334.6
15°	2356.0	2346.0	2321.8	2297.6
17.5°	2314.7	2303.3	2279.1	2253.4
20°	2270.5	2257.7	2230.6	2203.5
22.5°	2216.3	2204.9	2176.4	2149.4
25°	2157.9	2145.1	2116.6	2088.1
27.5°	2095.2	2080.9	2052.4	2025.4
30°	2026.8	2012.5	1984.0	1956.9
32.5°	1954.1	1942.7	1914.2	1884.2
35°	1880.0	1865.7	1837.2	1808.7
37.5°	1801.6	1788.8	1761.7	1734.6
40°	1718.9	1706.1	1677.6	1650.5
42.5°	1637.7	1626.3	1599.2	1573.5
45°	1550.7	1539.3	1513.7	1490.9
47.5°	1463.8	1452.4	1428.2	1403.9
50°	1375.4	1364.0	1341.2	1319.8
52.5°	1282.8	1274.2	1252.8	1231.5
55°	1190.1	1180.1	1158.8	1140.2
57.5°	1097.5	1090.4	1070.4	1051.9
60°	1002.0	993.4	977.8	962.1
62.5°	909.3	902.2	886.5	872.3
65°	811.0	805.3	792.5	779.6
67.5°	709.8	705.5	692.7	681.3
70°	612.9	605.8	595.8	585.8
72.5°	514.5	511.7	503.1	494.6
75°	420.5	417.6	409.1	401.9
77.5°	332.1	329.2	322.1	315.0
80°	245.2	243.7	238.0	232.3
82.5°	168.2	166.8	162.5	156.8
85°	101.2	98.3	94.1	89.8
87.5°	44.2	42.8	38.5	35.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)