

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: P709186

Luminaire Tested: **4APN-39-42L935-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709186
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-39-42L935-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

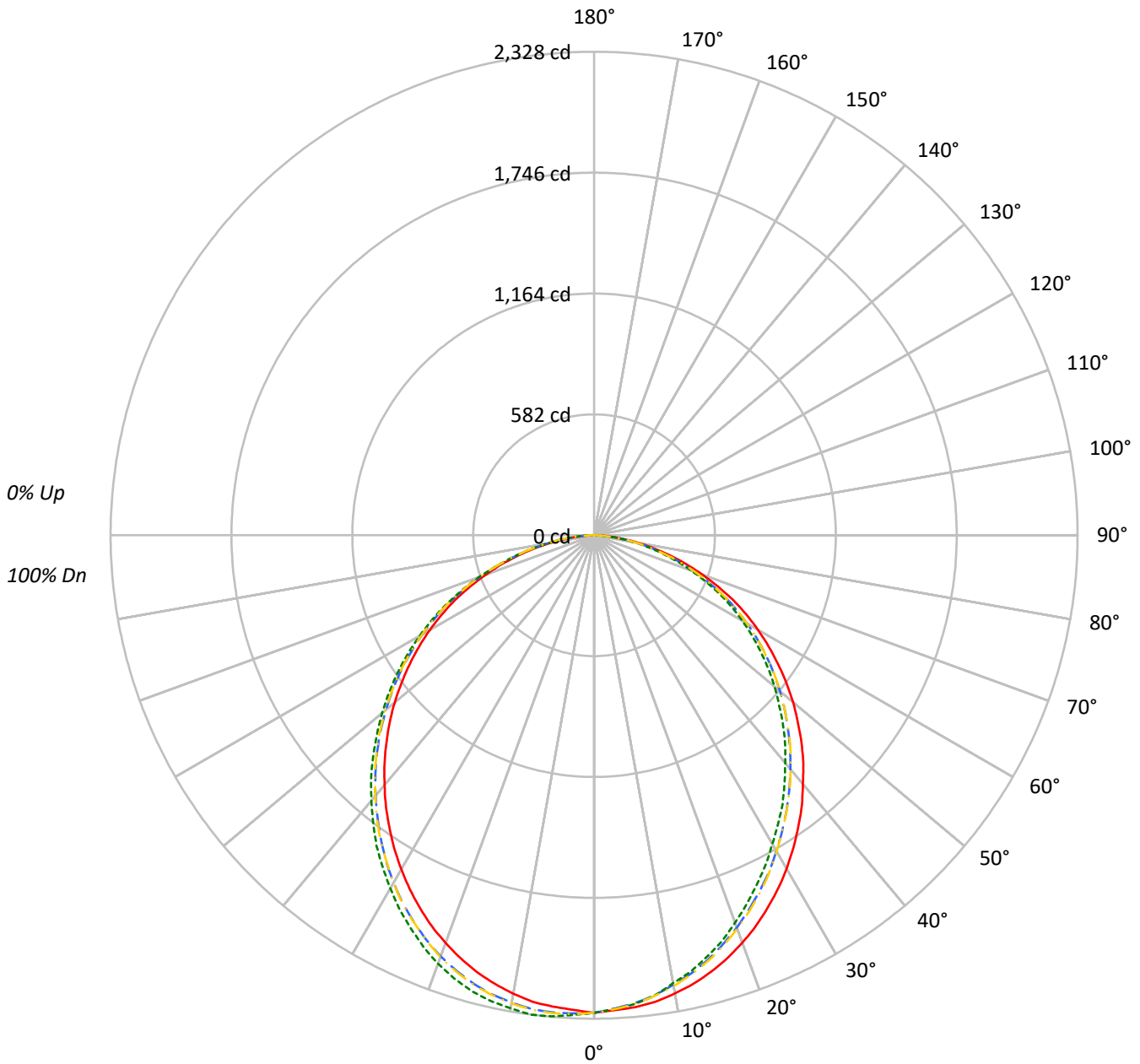
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6079.2 lumens
Efficiency: N/A
Efficacy: 66.1 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): 92
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	100	100	100	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84	84	84	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70	70	70	70
3	90	80	72	66	88	78	71	65	75	69	64	73	67	63	70	66	62	59	59	59	59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	51	51	51	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44	44	44	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	39	39	39	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34	34	34	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	31	31	31	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	28	28	28	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25	25	25	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	21218	21218	21218	21218
5°	21124	20986	21099	21537
10°	20989	20521	21001	21672
15°	20793	20071	20806	21709
20°	20499	19490	20511	21559
25°	20140	18876	20181	21254
30°	19754	18286	19782	20904
35°	19302	17811	19348	20564
40°	18834	17241	18899	20087
45°	18431	16774	18448	19629
50°	17949	16283	17988	19112
55°	17379	15749	17443	18572
60°	16819	15201	16845	17891
65°	16127	14535	16127	17100
70°	14971	13442	14936	15883
75°	13574	12181	13478	14298
80°	11694	10478	11482	12268
85°	9009	8003	8723	9866



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	217.2	3.6
10°-20°	614.9	10.1
20°-30°	910.4	15.0
30°-40°	1068.1	17.6
40°-50°	1082.5	17.8
50°-60°	960.8	15.8
60°-70°	721.3	11.9
70°-80°	400.5	6.6
80°-90°	103.4	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°	1742.5	28.7
0°-40°	2810.7	46.2
0°-60°	4853.9	79.8
0°-90°	6079.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6079.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2300	2300	2300	2300	2300	
5°	2281	2266	2278	2326	2281	217
15°	2177	2101	2178	2273	2177	613
25°	1978	1854	1982	2088	1978	912
35°	1714	1581	1718	1826	1714	1073
45°	1413	1286	1414	1504	1413	1089
55°	1080	979	1084	1155	1080	967
65°	739	666	739	783	739	728
75°	381	342	378	401	381	405
85°	85	76	82	93	85	103
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°	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8
2.5°	2289.0	2294.4	2301.1	2294.4	2283.6	2278.2	2278.2	2276.8	2280.9	2282.2	2280.9
5°	2280.9	2283.6	2284.9	2276.8	2264.7	2257.9	2255.2	2253.9	2259.3	2266.0	2259.3
7.5°	2266.0	2264.7	2263.3	2252.5	2239.0	2229.6	2225.5	2224.2	2229.6	2236.3	2230.9
10°	2240.4	2239.0	2235.0	2221.5	2203.9	2191.8	2187.7	2183.7	2187.7	2190.4	2187.7
12.5°	2212.0	2206.6	2201.2	2186.4	2167.5	2154.0	2147.2	2141.8	2147.2	2151.3	2148.5
15°	2176.9	2168.8	2159.4	2143.1	2124.2	2109.4	2101.3	2095.9	2099.9	2101.3	2101.3
17.5°	2135.0	2125.6	2116.1	2095.9	2072.9	2056.7	2047.3	2040.5	2045.9	2048.6	2048.6
20°	2087.8	2077.0	2064.8	2043.2	2018.9	2001.4	1990.5	1982.4	1983.8	1985.1	1985.1
22.5°	2036.5	2023.0	2008.1	1985.1	1959.5	1940.6	1929.8	1920.3	1920.3	1921.7	1921.7
25°	1978.4	1963.5	1948.7	1925.7	1898.7	1878.5	1865.0	1855.5	1855.5	1854.2	1856.9
27.5°	1919.0	1902.8	1887.9	1863.6	1835.2	1815.0	1801.5	1792.0	1790.7	1789.3	1792.0
30°	1854.2	1835.2	1819.0	1793.4	1766.4	1746.1	1732.6	1721.8	1719.1	1716.4	1719.1
32.5°	1785.3	1767.7	1750.2	1723.2	1696.2	1675.9	1662.4	1651.6	1650.2	1648.9	1651.6
35°	1713.7	1694.8	1678.6	1652.9	1625.9	1605.7	1590.8	1581.4	1581.4	1581.4	1581.4
37.5°	1643.5	1624.6	1607.0	1581.4	1554.4	1534.1	1519.2	1509.8	1507.1	1505.7	1507.1
40°	1563.8	1547.6	1531.4	1507.1	1480.1	1459.8	1447.7	1436.9	1434.2	1431.5	1435.5
42.5°	1490.9	1474.7	1457.1	1434.2	1407.2	1386.9	1373.4	1363.9	1362.6	1361.2	1362.6
45°	1412.6	1393.7	1376.1	1354.5	1330.2	1311.3	1297.8	1288.3	1287.0	1285.6	1287.0
47.5°	1330.2	1315.3	1300.5	1278.9	1254.6	1235.7	1223.5	1212.7	1210.0	1207.3	1210.0
50°	1250.5	1234.3	1219.4	1199.2	1176.2	1158.7	1147.9	1138.4	1135.7	1134.4	1135.7
52.5°	1166.8	1151.9	1138.4	1118.2	1099.3	1081.7	1069.5	1061.4	1060.1	1058.7	1060.1
55°	1080.4	1066.8	1054.7	1038.5	1019.6	1003.4	992.6	983.1	981.8	979.1	981.8
57.5°	996.6	985.8	973.7	956.1	938.6	923.7	914.2	906.1	904.8	903.4	904.8
60°	911.5	900.7	889.9	875.1	857.5	842.7	834.6	827.8	825.1	823.8	825.1
62.5°	826.5	815.7	807.6	792.7	776.5	764.3	756.2	749.5	746.8	745.4	746.8
65°	738.7	729.2	719.8	706.3	694.1	684.7	676.6	669.8	667.1	665.8	665.8
67.5°	645.5	637.4	630.7	618.5	605.0	595.5	587.4	582.0	579.3	578.0	579.3
70°	555.0	548.3	541.5	532.1	521.3	513.2	507.8	502.4	499.7	498.3	498.3
72.5°	468.6	463.2	456.4	448.3	440.2	432.1	426.7	422.7	420.0	418.6	418.6
75°	380.8	375.4	372.7	366.0	357.9	352.5	347.1	344.4	341.7	341.7	341.7
77.5°	298.4	295.7	293.0	286.3	280.9	275.5	271.4	270.1	267.4	267.4	267.4
80°	220.1	218.8	217.4	213.4	208.0	202.6	199.9	198.5	197.2	197.2	197.2
82.5°	148.5	148.5	147.2	143.1	139.1	137.7	135.0	133.7	133.7	133.7	133.7
85°	85.1	85.1	85.1	83.7	81.0	81.0	78.3	77.0	75.6	75.6	75.6
87.5°	33.8	35.1	36.5	35.1	32.4	32.4	32.4	32.4	32.4	32.4	32.4
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8
2.5°	2276.8	2279.5	2280.9	2287.6	2295.7	2301.1	2294.4	2287.6	2298.4	2310.6	2310.6
5°	2253.9	2256.6	2260.6	2268.7	2279.5	2286.3	2283.6	2278.2	2294.4	2307.9	2309.3
7.5°	2225.5	2228.2	2233.6	2241.7	2255.2	2264.7	2264.7	2266.0	2280.9	2297.1	2301.1
10°	2183.7	2190.4	2198.5	2210.7	2224.2	2236.3	2240.4	2241.7	2260.6	2278.2	2283.6
12.5°	2144.5	2151.3	2159.4	2172.9	2189.1	2202.6	2206.6	2212.0	2232.3	2252.5	2260.6
15°	2099.9	2106.7	2116.1	2129.6	2147.2	2162.1	2170.2	2178.3	2198.5	2220.1	2229.6
17.5°	2047.3	2054.0	2063.5	2079.7	2099.9	2117.5	2126.9	2136.4	2159.4	2182.3	2191.8
20°	1985.1	1994.6	2008.1	2024.3	2047.3	2067.5	2078.3	2089.1	2113.4	2136.4	2147.2
22.5°	1921.7	1932.5	1947.3	1966.2	1990.5	2012.2	2025.7	2039.2	2063.5	2086.4	2098.6
25°	1858.2	1870.4	1885.2	1905.5	1928.4	1950.0	1966.2	1982.4	2006.8	2031.1	2043.2
27.5°	1793.4	1804.2	1819.0	1839.3	1865.0	1887.9	1904.1	1921.7	1946.0	1971.6	1983.8
30°	1721.8	1734.0	1747.5	1767.7	1796.1	1821.7	1837.9	1856.9	1881.2	1906.8	1919.0
32.5°	1652.9	1663.7	1677.2	1697.5	1725.9	1752.9	1770.4	1789.3	1813.6	1839.3	1850.1
35°	1581.4	1592.2	1607.0	1627.3	1655.6	1681.3	1698.9	1717.8	1740.7	1765.0	1777.2
37.5°	1511.1	1521.9	1536.8	1557.1	1584.1	1609.7	1627.3	1646.2	1669.1	1692.1	1702.9
40°	1438.2	1449.0	1461.2	1481.4	1508.4	1534.1	1550.3	1569.2	1592.2	1616.5	1627.3
42.5°	1363.9	1374.7	1389.6	1409.9	1435.5	1458.5	1476.0	1493.6	1515.2	1536.8	1547.6
45°	1289.7	1299.1	1314.0	1332.9	1357.2	1378.8	1396.4	1413.9	1434.2	1454.4	1465.2
47.5°	1212.7	1223.5	1235.7	1254.6	1278.9	1301.8	1319.4	1335.6	1354.5	1374.7	1384.2
50°	1138.4	1147.9	1160.0	1177.6	1200.5	1222.1	1237.0	1253.2	1270.8	1289.7	1297.8
52.5°	1061.4	1070.9	1083.1	1100.6	1119.5	1139.8	1153.3	1168.1	1185.7	1203.2	1211.3
55°	983.1	989.9	1000.7	1016.9	1037.1	1056.0	1069.5	1084.4	1099.3	1114.1	1123.6
57.5°	906.1	914.2	925.1	939.9	957.5	975.0	987.2	999.3	1014.2	1029.0	1035.8
60°	827.8	834.6	842.7	856.2	873.7	888.6	900.7	912.9	925.1	938.6	945.3
62.5°	748.1	754.9	763.0	776.5	791.4	804.9	815.7	826.5	837.3	849.4	856.2
65°	668.5	675.2	683.3	692.8	704.9	717.1	727.9	738.7	746.8	754.9	761.6
67.5°	582.0	588.8	596.9	605.0	615.8	628.0	636.1	645.5	653.6	663.1	667.1
70°	501.0	506.4	514.5	521.3	530.7	538.8	545.6	553.7	559.1	567.2	573.9
72.5°	421.3	426.7	433.5	440.2	445.6	452.4	460.5	467.3	474.0	482.1	484.8
75°	344.4	347.1	352.5	357.9	363.3	368.7	372.7	378.1	383.5	388.9	393.0
77.5°	268.7	271.4	276.8	280.9	284.9	289.0	291.7	294.4	299.8	303.8	307.9
80°	197.2	199.9	203.9	208.0	212.0	216.1	216.1	216.1	222.8	228.2	229.6
82.5°	133.7	135.0	137.7	140.4	143.1	145.8	145.8	144.5	148.5	152.6	155.3
85°	77.0	78.3	81.0	81.0	82.4	82.4	82.4	82.4	85.1	89.1	91.8
87.5°	31.1	31.1	32.4	32.4	33.8	33.8	32.4	31.1	33.8	37.8	39.2
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°	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8	2299.8
2.5°	2305.2	2303.8	2307.9	2309.3	2312.0	2312.0	2313.3	2313.3	2310.6	2306.6	2307.9
5°	2306.6	2306.6	2310.6	2314.7	2320.1	2325.5	2321.4	2317.4	2314.7	2310.6	2309.3
7.5°	2299.8	2302.5	2306.6	2313.3	2320.1	2328.2	2322.8	2317.4	2310.6	2305.2	2302.5
10°	2283.6	2286.3	2293.0	2299.8	2306.6	2313.3	2307.9	2302.5	2297.1	2290.3	2287.6
12.5°	2263.3	2267.4	2275.5	2282.2	2289.0	2297.1	2290.3	2283.6	2276.8	2270.1	2266.0
15°	2233.6	2239.0	2248.5	2256.6	2266.0	2272.8	2267.4	2262.0	2253.9	2244.4	2237.7
17.5°	2195.8	2203.9	2213.4	2222.8	2230.9	2237.7	2233.6	2228.2	2218.8	2208.0	2199.9
20°	2154.0	2162.1	2170.2	2179.6	2189.1	2195.8	2190.4	2183.7	2174.2	2166.1	2158.0
22.5°	2105.3	2113.4	2122.9	2131.0	2139.1	2145.8	2139.1	2131.0	2122.9	2114.8	2106.7
25°	2050.0	2058.1	2068.9	2077.0	2082.4	2087.8	2082.4	2075.6	2067.5	2059.4	2051.3
27.5°	1991.9	2000.0	2010.8	2018.9	2024.3	2029.7	2024.3	2017.6	2009.5	2001.4	1993.2
30°	1927.1	1935.2	1946.0	1954.1	1958.1	1962.2	1956.8	1951.4	1944.6	1936.5	1928.4
32.5°	1858.2	1866.3	1874.4	1882.5	1889.3	1894.7	1889.3	1883.9	1875.8	1865.0	1856.9
35°	1785.3	1793.4	1802.8	1810.9	1819.0	1825.8	1817.7	1808.2	1801.5	1794.7	1788.0
37.5°	1708.3	1717.8	1728.6	1738.0	1740.7	1746.1	1740.7	1735.3	1728.6	1721.8	1713.7
40°	1632.7	1640.8	1650.2	1659.7	1663.7	1667.8	1662.4	1657.0	1648.9	1642.1	1634.0
42.5°	1554.4	1562.5	1570.6	1578.7	1584.1	1589.5	1584.1	1576.0	1570.6	1565.2	1558.4
45°	1473.3	1481.4	1488.2	1496.3	1500.3	1504.4	1499.0	1492.2	1486.8	1482.8	1476.0
47.5°	1391.0	1397.7	1404.5	1411.2	1413.9	1418.0	1412.6	1408.5	1404.5	1400.4	1395.0
50°	1304.5	1311.3	1319.4	1326.1	1327.5	1331.5	1326.1	1322.1	1318.0	1314.0	1309.9
52.5°	1219.4	1224.8	1231.6	1238.4	1241.1	1243.8	1238.4	1233.0	1228.9	1226.2	1222.1
55°	1130.3	1135.7	1142.5	1147.9	1151.9	1154.6	1149.2	1143.8	1139.8	1138.4	1134.4
57.5°	1041.2	1046.6	1053.3	1058.7	1061.4	1064.1	1058.7	1053.3	1050.6	1047.9	1045.2
60°	950.7	956.1	961.5	965.6	968.3	969.6	964.2	960.2	958.8	957.5	954.8
62.5°	861.6	864.3	869.7	872.4	875.1	876.4	872.4	869.7	868.3	867.0	865.6
65°	768.4	775.2	779.2	781.9	781.9	783.3	779.2	777.9	776.5	775.2	772.5
67.5°	672.5	677.9	680.6	683.3	683.3	683.3	683.3	683.3	682.0	679.3	676.6
70°	580.7	584.7	587.4	588.8	588.8	588.8	586.1	584.7	586.1	586.1	584.7
72.5°	487.5	490.2	491.6	492.9	491.6	491.6	491.6	494.3	494.3	492.9	490.2
75°	397.0	399.7	401.1	402.4	401.1	401.1	401.1	403.8	402.4	402.4	401.1
77.5°	312.0	313.3	313.3	314.7	313.3	313.3	314.7	317.4	316.0	316.0	316.0
80°	230.9	230.9	230.9	232.3	230.9	230.9	232.3	235.0	233.6	233.6	233.6
82.5°	156.7	158.0	158.0	158.0	159.4	160.7	160.7	160.7	160.7	160.7	159.4
85°	93.2	94.5	93.2	93.2	93.2	93.2	94.5	95.9	95.9	95.9	95.9
87.5°	40.5	41.9	40.5	39.2	37.8	37.8	40.5	43.2	43.2	41.9	41.9
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°	2299.8	2299.8	2299.8	2299.8
2.5°	2313.3	2313.3	2301.1	2289.0
5°	2312.0	2309.3	2295.7	2280.9
7.5°	2303.8	2299.8	2282.2	2266.0
10°	2284.9	2279.5	2260.6	2240.4
12.5°	2262.0	2253.9	2232.3	2212.0
15°	2232.3	2222.8	2199.9	2176.9
17.5°	2193.1	2182.3	2159.4	2135.0
20°	2151.3	2139.1	2113.4	2087.8
22.5°	2099.9	2089.1	2062.1	2036.5
25°	2044.6	2032.4	2005.4	1978.4
27.5°	1985.1	1971.6	1944.6	1919.0
30°	1920.3	1906.8	1879.8	1854.2
32.5°	1851.5	1840.6	1813.6	1785.3
35°	1781.2	1767.7	1740.7	1713.7
37.5°	1707.0	1694.8	1669.1	1643.5
40°	1628.6	1616.5	1589.5	1563.8
42.5°	1551.7	1540.9	1515.2	1490.9
45°	1469.3	1458.5	1434.2	1412.6
47.5°	1386.9	1376.1	1353.1	1330.2
50°	1303.2	1292.4	1270.8	1250.5
52.5°	1215.4	1207.3	1187.0	1166.8
55°	1127.6	1118.2	1097.9	1080.4
57.5°	1039.8	1033.1	1014.2	996.6
60°	949.4	941.3	926.4	911.5
62.5°	861.6	854.8	840.0	826.5
65°	768.4	763.0	750.8	738.7
67.5°	672.5	668.5	656.3	645.5
70°	580.7	573.9	564.5	555.0
72.5°	487.5	484.8	476.7	468.6
75°	398.4	395.7	387.6	380.8
77.5°	314.7	312.0	305.2	298.4
80°	232.3	230.9	225.5	220.1
82.5°	159.4	158.0	154.0	148.5
85°	95.9	93.2	89.1	85.1
87.5°	41.9	40.5	36.5	33.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)