

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: LUMARK

Report Number: P145449

Luminaire Tested: **LDRL-SL4-E04-E-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145449
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33703)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-SL4-E04-E-7030
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (84) 3000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10529.2 lumens
Efficiency: N/A
Efficacy: 108.3 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

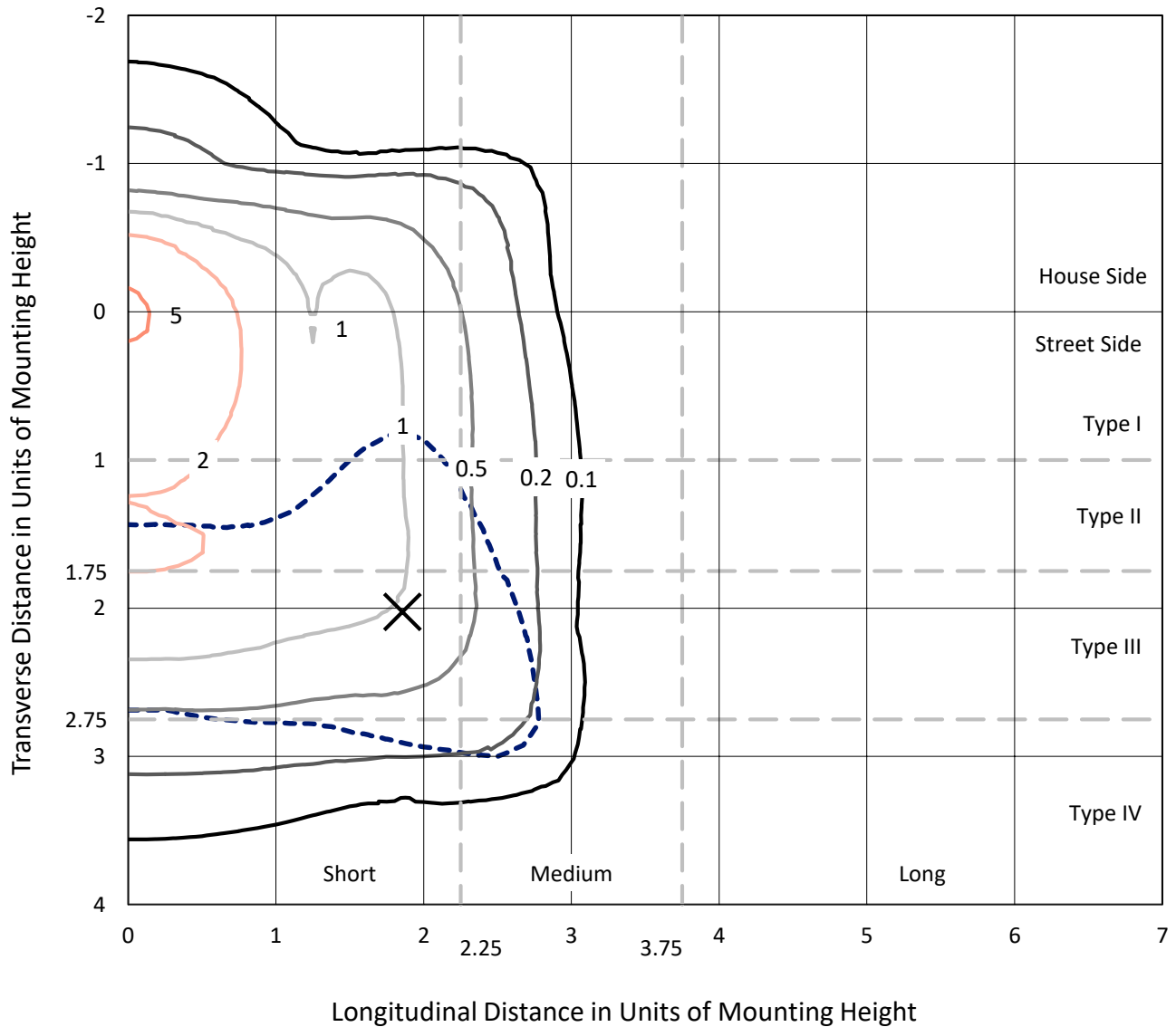
Input Watts (W): 97.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

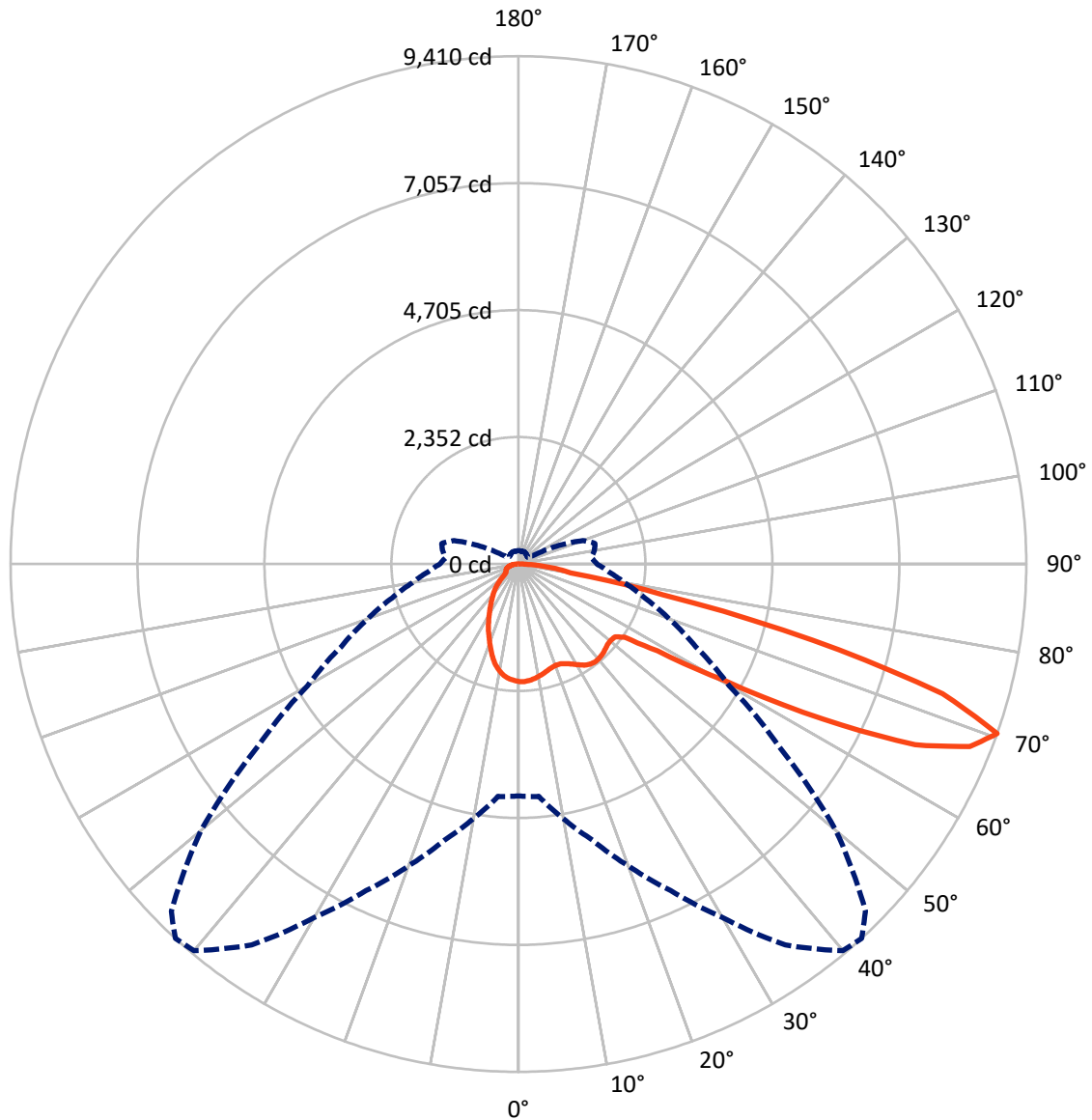
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.4 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 42.5-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2274.5	0.0	2274.5
	% Fixture	21.6	0.0	21.6
Street Side	Lumens	8254.7	0.0	8254.7
	% Fixture	78.4	0.0	78.4
Total	Lumens	10529.2	0.0	10529.2
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	202.6	1.9
10°-20°	545.8	5.2
20°-30°	796.1	7.6
30°-40°	1015.3	9.6
40°-50°	1185.1	11.3
50°-60°	1812.3	17.2
60°-70°	3285.3	31.2
70°-80°	1460.7	13.9
80°-90°	226.0	2.1
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°-90°	10529.2	100.0
0°-180°	10529.2	100.0



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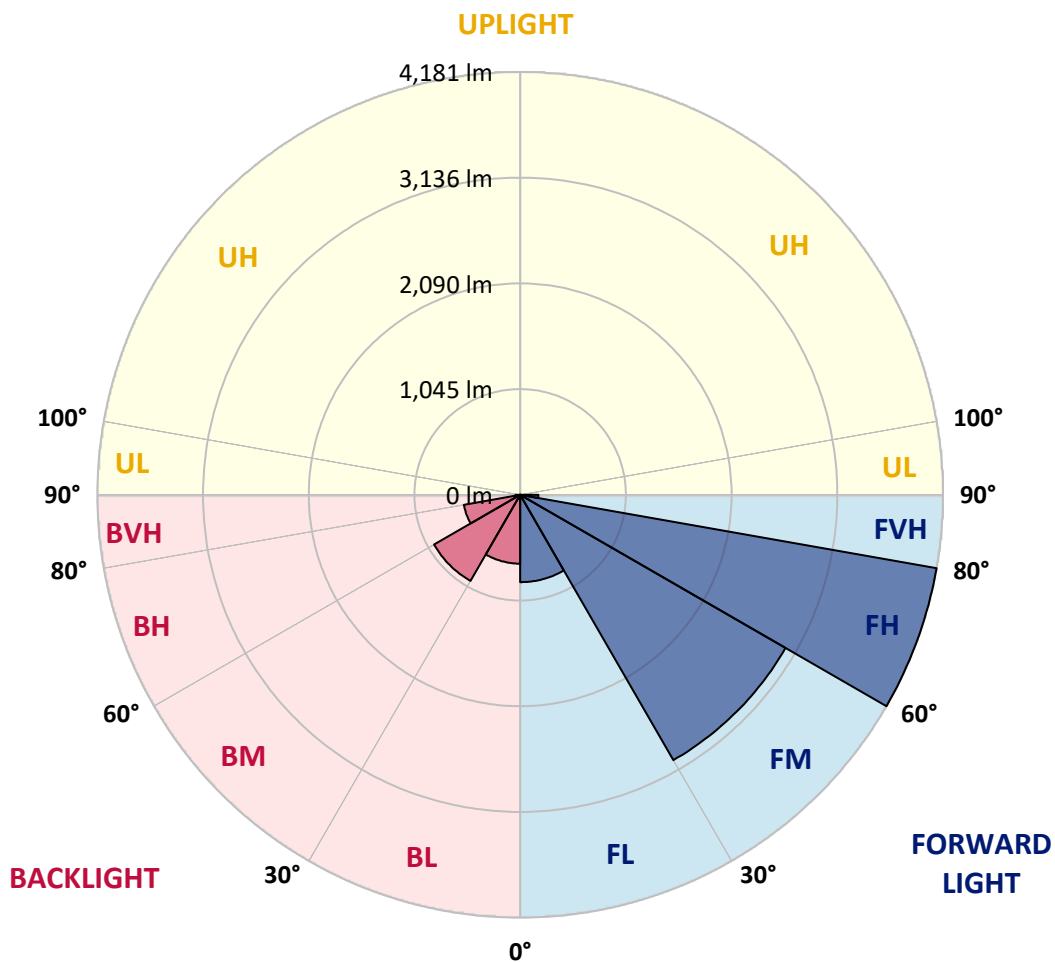
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	863.7	8.2			
FM (30°-60°)	3029.5	28.8			
FH (60°-80°)	4180.9	39.7			G2/5000
FVH (80°-90°)	180.6	1.7			G2/225
BL (0°-30°)	680.8	6.5	B2/1000		
BM (30°-60°)	983.2	9.3	B1/1000		
BH (60°-80°)	565.1	5.4	B2/1000		G2/1000
BVH (80°-90°)	45.4	0.4			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	42.5°	45°
0°	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4
2.5°	2187.7	2185.5	2186.9	2188.4	2188.4	2189.1	2182.5	2183.3	2180.3	2181.1	2181.8
5°	2179.6	2177.4	2178.9	2178.9	2178.9	2178.2	2169.4	2168.7	2165.0	2165.0	2163.5
7.5°	2164.3	2156.2	2160.6	2161.4	2159.9	2156.2	2151.1	2146.0	2143.8	2143.8	2138.7
10°	2140.9	2132.1	2134.3	2135.8	2135.0	2127.7	2125.5	2120.4	2114.6	2112.4	2106.6
12.5°	2110.9	2105.1	2108.0	2107.3	2107.3	2100.7	2097.1	2089.7	2082.4	2078.8	2071.5
15°	2091.9	2084.6	2087.6	2087.6	2084.6	2078.1	2072.9	2059.8	2047.4	2043.0	2033.5
17.5°	2103.6	2096.3	2099.2	2097.1	2091.9	2078.1	2064.9	2043.7	2024.0	2012.3	1999.9
20°	2150.4	2143.1	2145.3	2143.8	2136.5	2113.9	2089.7	2053.2	2016.7	1999.1	1980.1
22.5°	2224.9	2219.1	2222.7	2220.5	2208.8	2179.6	2143.8	2091.2	2036.4	2010.1	1983.1
25°	2335.3	2333.8	2339.6	2333.1	2316.3	2272.4	2220.5	2149.7	2078.1	2045.2	2007.2
27.5°	2468.2	2455.8	2464.6	2458.7	2447.0	2391.5	2321.4	2231.5	2140.2	2097.1	2051.8
30°	2588.1	2577.1	2593.2	2590.3	2572.7	2515.7	2427.3	2322.1	2219.1	2164.3	2112.4
32.5°	2726.9	2713.0	2725.4	2725.4	2699.1	2622.4	2521.6	2401.0	2292.9	2234.4	2172.3
35°	2872.3	2857.7	2869.4	2865.7	2819.0	2717.4	2591.0	2460.2	2341.1	2281.2	2217.6
37.5°	3007.5	3005.3	3008.2	2984.1	2919.1	2789.0	2637.8	2491.6	2365.2	2302.4	2235.9
40°	3142.7	3137.5	3125.1	3082.7	2987.8	2831.4	2661.9	2502.6	2366.7	2300.9	2233.7
42.5°	3227.4	3217.9	3196.7	3139.0	3019.9	2841.6	2654.6	2485.8	2349.1	2281.9	2216.2
45°	3256.6	3247.1	3221.6	3156.5	3020.6	2825.5	2626.1	2452.2	2316.3	2254.9	2188.4
47.5°	3232.5	3226.7	3203.3	3138.3	2997.3	2795.6	2590.3	2418.6	2284.8	2224.9	2162.8
50°	3191.6	3188.0	3167.5	3107.6	2975.3	2777.3	2573.5	2402.5	2276.1	2220.5	2162.1
52.5°	3293.9	3282.9	3246.4	3175.5	3021.4	2810.2	2599.8	2426.6	2296.5	2240.3	2180.3
55°	4551.4	4470.3	4289.1	3949.3	3473.7	3104.7	2794.1	2585.1	2444.9	2390.1	2333.1
57.5°	5985.7	5901.0	5825.7	5566.3	5001.5	4304.4	3677.5	3310.7	3059.4	3035.2	3012.6
60°	6538.1	6565.2	6558.6	6462.1	6172.8	5841.8	5317.2	4883.9	4403.8	4384.1	4412.6
62.5°	6918.8	6941.5	6944.4	6915.2	6820.9	6710.6	6601.0	6462.1	6370.8	6331.3	6076.3
65°	7075.9	7108.8	7181.1	7235.2	7250.5	7288.5	7387.9	7765.7	8080.6	8078.4	7779.6
67.5°	6476.0	6515.5	6789.5	7058.4	7284.2	7545.7	7948.3	8562.8	9037.1	9022.4	8777.7
70°	4297.9	4322.7	4788.1	5294.5	5951.4	6677.7	7557.4	8616.9	9352.0	9409.7	9094.0
72.5°	2636.3	2693.3	2845.3	3050.6	3401.3	4074.3	5382.2	7192.8	8271.3	8217.2	7965.9
75°	1779.9	1782.9	1778.5	1800.4	1820.1	1956.0	2482.9	3955.2	5602.9	5632.1	5523.9
77.5°	1216.6	1232.7	1241.4	1235.6	1255.3	1249.5	1280.2	1355.4	2147.5	2740.8	2518.7
80°	1063.1	1069.7	1079.2	1065.3	1028.8	1008.3	1036.8	1009.8	951.3	982.8	941.1
82.5°	673.0	692.7	694.9	743.1	814.7	817.6	854.2	827.1	752.6	703.6	643.7
85°	483.7	491.0	504.2	507.1	482.2	461.1	474.2	451.6	407.0	380.7	336.8
87.5°	282.0	289.3	302.5	294.5	269.6	238.9	215.6	185.6	146.9	137.4	121.3
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):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4
2.5°	2182.5	2178.9	2176.0	2174.5	2177.4	2174.5	2171.6	2170.1	2167.2	2167.9	2164.3
5°	2162.1	2157.0	2152.6	2148.9	2151.9	2146.7	2142.4	2139.4	2135.8	2135.0	2131.4
7.5°	2133.6	2125.5	2119.7	2113.1	2105.8	2101.4	2096.3	2091.2	2083.2	2082.4	2081.0
10°	2096.3	2089.7	2078.1	2067.8	2057.6	2046.6	2035.7	2027.6	2018.1	2014.5	2009.4
12.5°	2059.1	2045.9	2032.0	2015.9	2003.5	1986.0	1971.4	1956.0	1942.1	1933.4	1923.9
15°	2015.2	2001.3	1981.6	1966.3	1948.7	1929.0	1910.0	1887.3	1864.7	1850.8	1837.7
17.5°	1977.2	1959.7	1943.6	1921.7	1904.2	1881.5	1853.0	1828.9	1801.9	1779.2	1755.1
20°	1948.0	1928.3	1909.3	1889.5	1868.3	1842.8	1811.4	1777.0	1742.7	1710.5	1674.7
22.5°	1936.3	1904.9	1883.7	1865.4	1843.5	1814.3	1779.2	1736.8	1694.4	1653.5	1611.9
25°	1946.5	1899.8	1866.9	1846.4	1826.7	1796.7	1757.3	1709.1	1659.4	1607.5	1557.8
27.5°	1974.3	1915.1	1868.3	1836.2	1813.5	1784.3	1740.5	1690.1	1633.8	1575.3	1522.0
30°	2014.5	1940.7	1882.2	1836.2	1802.6	1769.0	1721.5	1664.5	1605.3	1543.9	1484.0
32.5°	2058.3	1969.2	1899.0	1838.4	1786.5	1744.1	1694.4	1638.9	1576.1	1511.0	1446.7
35°	2091.2	1989.6	1906.3	1830.4	1763.9	1710.5	1657.2	1603.1	1541.7	1476.0	1411.7
37.5°	2105.1	1997.7	1904.9	1813.5	1732.4	1674.0	1618.5	1564.4	1505.2	1443.1	1383.9
40°	2105.8	1997.7	1896.1	1790.9	1699.6	1636.0	1577.5	1527.1	1471.6	1418.3	1365.6
42.5°	2091.9	1987.5	1880.0	1769.7	1675.4	1603.8	1543.9	1492.0	1447.5	1400.0	1355.4
45°	2067.1	1967.0	1865.4	1758.0	1666.7	1595.8	1531.5	1482.6	1442.4	1400.0	1361.3
47.5°	2048.1	1955.3	1866.2	1774.8	1687.9	1614.8	1545.4	1493.5	1459.2	1425.6	1397.8
50°	2051.8	1959.7	1874.9	1788.0	1702.5	1628.7	1561.5	1516.9	1496.4	1485.5	1478.9
52.5°	2070.7	1977.2	1912.9	1855.2	1827.4	1782.1	1744.9	1711.3	1716.4	1690.1	1656.5
55°	2266.6	2235.2	2308.9	2362.3	2388.6	2434.6	2501.1	2437.5	2428.8	2347.7	2106.6
57.5°	3043.3	3117.8	3231.1	3311.4	3319.5	3305.6	3250.8	3198.2	3112.7	2990.7	2653.1
60°	4346.1	4328.5	4223.3	4082.3	3972.7	3828.8	3684.1	3562.1	3424.7	3237.6	2878.1
62.5°	5716.1	5293.8	4918.9	4599.6	4328.5	4088.2	3869.7	3686.3	3497.8	3228.9	2846.0
65°	6822.4	6009.8	5349.3	4835.6	4432.3	4092.5	3810.5	3557.7	3305.6	2994.3	2623.1
67.5°	7613.0	6324.0	5327.4	4604.7	4039.2	3571.6	3160.9	2873.0	2614.4	2369.6	2202.3
70°	7675.8	5889.3	4506.8	3622.7	2970.2	2420.7	1994.8	1680.6	1455.5	1354.0	1426.3
72.5°	6559.3	4357.0	2996.5	2217.6	1760.2	1367.8	1099.7	879.0	697.8	608.7	621.1
75°	3863.1	2091.9	1349.6	1005.4	821.3	656.2	567.7	479.3	423.1	339.0	271.1
77.5°	1470.9	909.7	681.0	565.5	403.3	290.1	228.7	197.3	181.2	179.0	169.5
80°	847.6	667.1	466.9	305.4	223.6	189.2	162.2	138.8	129.3	127.1	130.8
82.5°	535.6	415.8	256.5	196.6	162.9	140.3	116.9	101.6	93.5	90.6	95.7
85°	276.9	208.2	156.4	134.4	124.9	114.0	93.5	78.2	77.5	81.1	93.5
87.5°	102.3	89.1	70.1	60.6	65.0	60.6	43.8	38.0	34.3	45.3	65.8
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):

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4	2177.4
2.5°	2164.3	2162.8	2163.5	2162.1	2162.1	2164.3	2161.4	2159.2	2162.8	2162.8	2165.0
5°	2130.7	2132.1	2132.1	2131.4	2132.9	2136.5	2135.8	2135.8	2141.6	2143.8	2146.7
7.5°	2077.3	2079.5	2080.2	2082.4	2083.2	2088.3	2091.9	2096.3	2105.1	2107.3	2113.9
10°	2005.0	2003.5	2008.6	2007.9	2014.5	2018.9	2021.8	2031.3	2044.4	2051.8	2058.3
12.5°	1919.5	1919.5	1922.4	1923.2	1929.0	1934.8	1938.5	1950.2	1961.1	1970.6	1985.3
15°	1828.9	1826.0	1819.4	1818.7	1820.9	1826.7	1834.7	1843.5	1860.3	1874.2	1886.6
17.5°	1733.9	1725.1	1717.1	1706.9	1706.1	1705.4	1709.8	1716.4	1742.7	1756.6	1774.1
20°	1649.9	1630.9	1611.9	1590.7	1578.3	1572.4	1574.6	1583.4	1608.2	1626.5	1644.8
22.5°	1574.6	1546.1	1516.2	1482.6	1462.1	1449.7	1451.1	1454.8	1473.1	1484.0	1493.5
25°	1510.3	1470.9	1429.2	1386.1	1357.6	1338.6	1337.9	1337.9	1329.8	1331.3	1326.2
27.5°	1466.5	1411.7	1358.3	1307.9	1270.7	1251.7	1226.1	1207.8	1191.7	1169.8	1160.3
30°	1424.1	1367.8	1307.2	1251.7	1207.1	1169.8	1122.3	1082.9	1051.4	1021.5	995.9
32.5°	1386.1	1327.6	1269.9	1209.3	1147.9	1083.6	1021.5	976.2	931.6	885.6	854.9
35°	1352.5	1297.7	1240.0	1171.3	1085.1	1001.0	930.9	869.5	816.9	761.4	716.8
37.5°	1333.5	1283.8	1223.9	1130.4	1022.2	926.5	848.3	779.6	709.5	643.0	588.2
40°	1324.0	1280.2	1207.1	1088.7	966.0	863.7	776.7	694.1	611.6	533.4	476.4
42.5°	1322.5	1280.2	1182.2	1046.3	917.7	808.1	711.0	611.6	511.5	435.5	385.1
45°	1335.7	1278.7	1155.9	1008.3	874.6	758.4	641.5	524.6	421.6	355.1	327.3
47.5°	1373.7	1283.8	1135.5	976.2	833.7	703.6	562.6	428.2	340.5	310.5	309.8
50°	1435.1	1307.2	1131.1	952.8	793.5	635.0	469.8	342.7	300.3	298.8	306.9
52.5°	1532.2	1351.0	1142.1	936.7	745.3	545.8	371.9	295.9	287.9	295.9	306.2
55°	1746.3	1429.2	1156.7	908.2	667.1	432.6	306.2	280.6	284.2	293.7	303.2
57.5°	2135.8	1591.4	1172.0	843.9	540.7	332.5	275.5	274.7	281.3	289.3	298.1
60°	2382.7	1791.6	1209.3	748.9	408.5	274.7	263.8	271.1	279.1	285.0	292.3
62.5°	2390.8	1844.2	1229.0	647.4	304.0	251.4	253.5	267.4	276.9	279.1	282.8
65°	2236.6	1744.9	1139.9	526.8	252.1	238.2	246.2	258.7	268.2	269.6	272.5
67.5°	1953.8	1538.8	966.0	397.5	229.4	228.0	236.7	246.2	252.8	258.7	263.0
70°	1471.6	1269.9	776.7	308.3	215.6	214.1	222.9	230.9	236.7	244.0	251.4
72.5°	746.0	879.0	588.9	252.1	196.6	198.0	207.5	214.8	219.2	225.8	233.1
75°	254.3	383.6	372.6	203.9	175.4	181.2	185.6	193.6	200.2	204.6	208.2
77.5°	159.3	166.6	192.2	164.4	154.9	156.4	163.7	171.0	178.3	181.2	182.7
80°	133.0	133.7	134.4	131.5	132.3	136.6	141.0	149.1	156.4	157.8	158.6
82.5°	105.2	112.5	111.8	111.1	114.7	119.1	122.0	124.9	127.9	129.3	131.5
85°	92.8	91.3	92.1	94.3	91.3	88.4	87.7	87.7	92.1	97.2	99.4
87.5°	84.8	72.3	54.1	51.1	51.1	49.7	46.8	46.8	51.1	55.5	57.7
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):

	160°	165°	170°	175°	180°
0°	2177.4	2177.4	2177.4	2177.4	2177.4
2.5°	2164.3	2165.0	2164.3	2164.3	2167.9
5°	2148.2	2151.1	2149.7	2151.9	2154.0
7.5°	2115.3	2122.6	2124.1	2129.9	2127.7
10°	2067.8	2072.9	2080.2	2086.1	2083.9
12.5°	1992.6	2005.0	2015.9	2022.5	2021.1
15°	1896.8	1914.4	1929.0	1934.1	1928.3
17.5°	1794.6	1805.5	1823.0	1826.7	1832.5
20°	1665.2	1664.5	1679.8	1679.8	1676.9
22.5°	1496.4	1507.4	1507.4	1497.2	1492.0
25°	1324.0	1327.6	1316.7	1318.9	1305.0
27.5°	1150.8	1141.3	1132.6	1136.2	1126.0
30°	985.7	965.2	956.5	957.9	947.0
32.5°	827.1	803.0	794.2	782.6	773.1
35°	683.2	645.2	622.5	616.7	623.3
37.5°	542.2	515.1	488.1	468.4	470.6
40°	428.9	401.1	383.6	375.6	374.1
42.5°	354.4	338.3	334.7	335.4	335.4
45°	321.5	322.2	325.2	328.1	328.8
47.5°	314.9	319.3	324.4	328.1	328.8
50°	314.2	318.6	322.2	326.6	328.1
52.5°	313.5	316.4	318.6	320.8	323.0
55°	310.5	312.0	311.3	312.7	314.9
57.5°	303.2	304.0	302.5	303.2	307.6
60°	296.7	297.4	294.5	298.1	298.8
62.5°	288.6	287.9	286.4	288.6	288.6
65°	276.9	272.5	274.0	276.2	276.9
67.5°	263.0	258.7	258.7	260.1	262.3
70°	245.5	243.3	243.3	246.2	249.2
72.5°	225.8	227.2	231.6	236.0	240.4
75°	209.7	213.4	217.7	228.7	235.3
77.5°	189.2	190.0	193.6	204.6	216.3
80°	160.7	160.0	160.7	162.2	164.4
82.5°	127.1	125.7	121.3	122.8	119.8
85°	93.5	91.3	86.2	82.6	81.8
87.5°	54.1	54.1	51.9	49.0	46.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)