

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: P145455

Luminaire Tested: **LDRL-SL4-F04-E**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145455
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-F04-E
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (28) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9516.7 lumens
Efficiency: N/A
Efficacy: 93.1 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

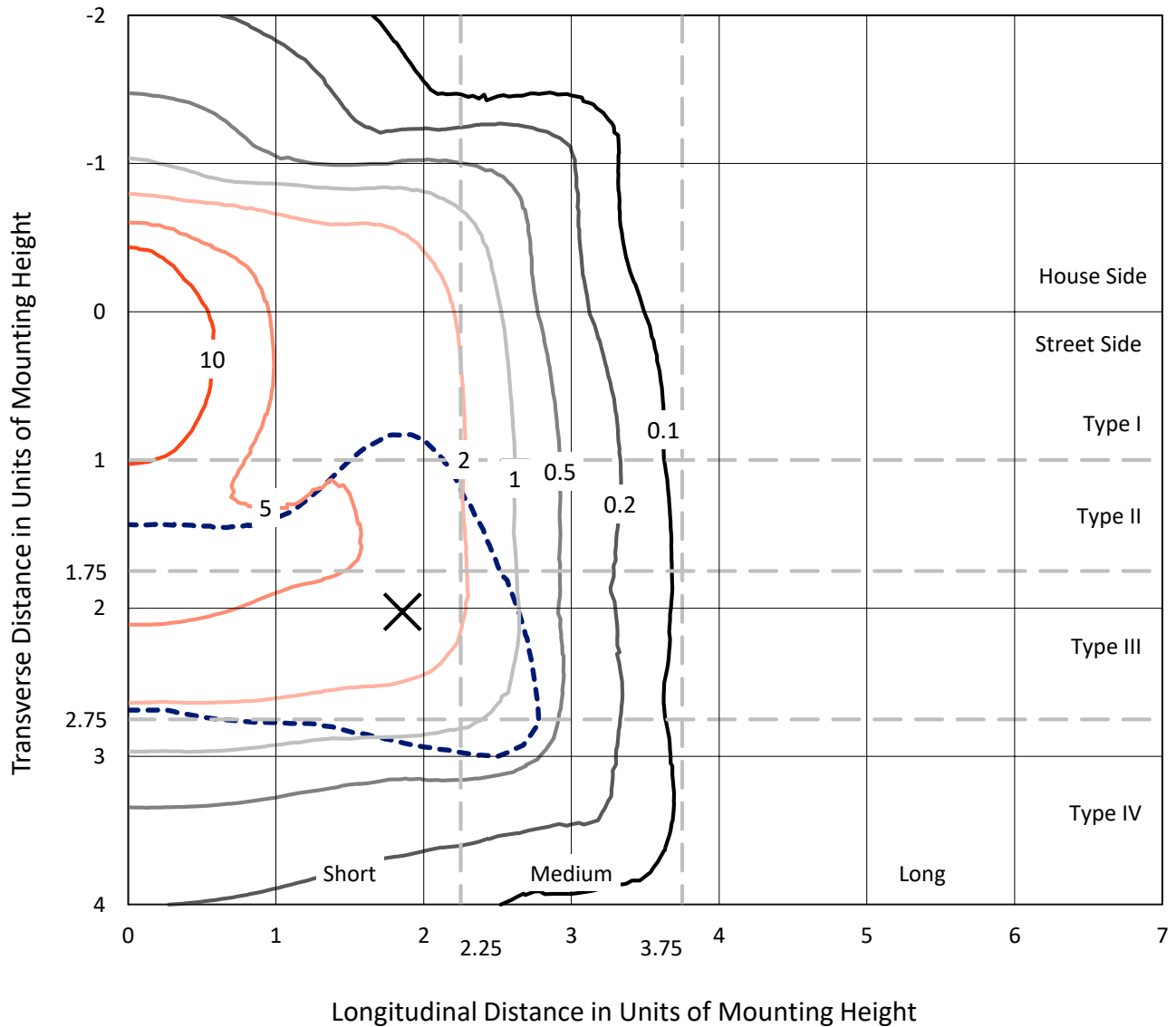
Input Watts (W): 102.2
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

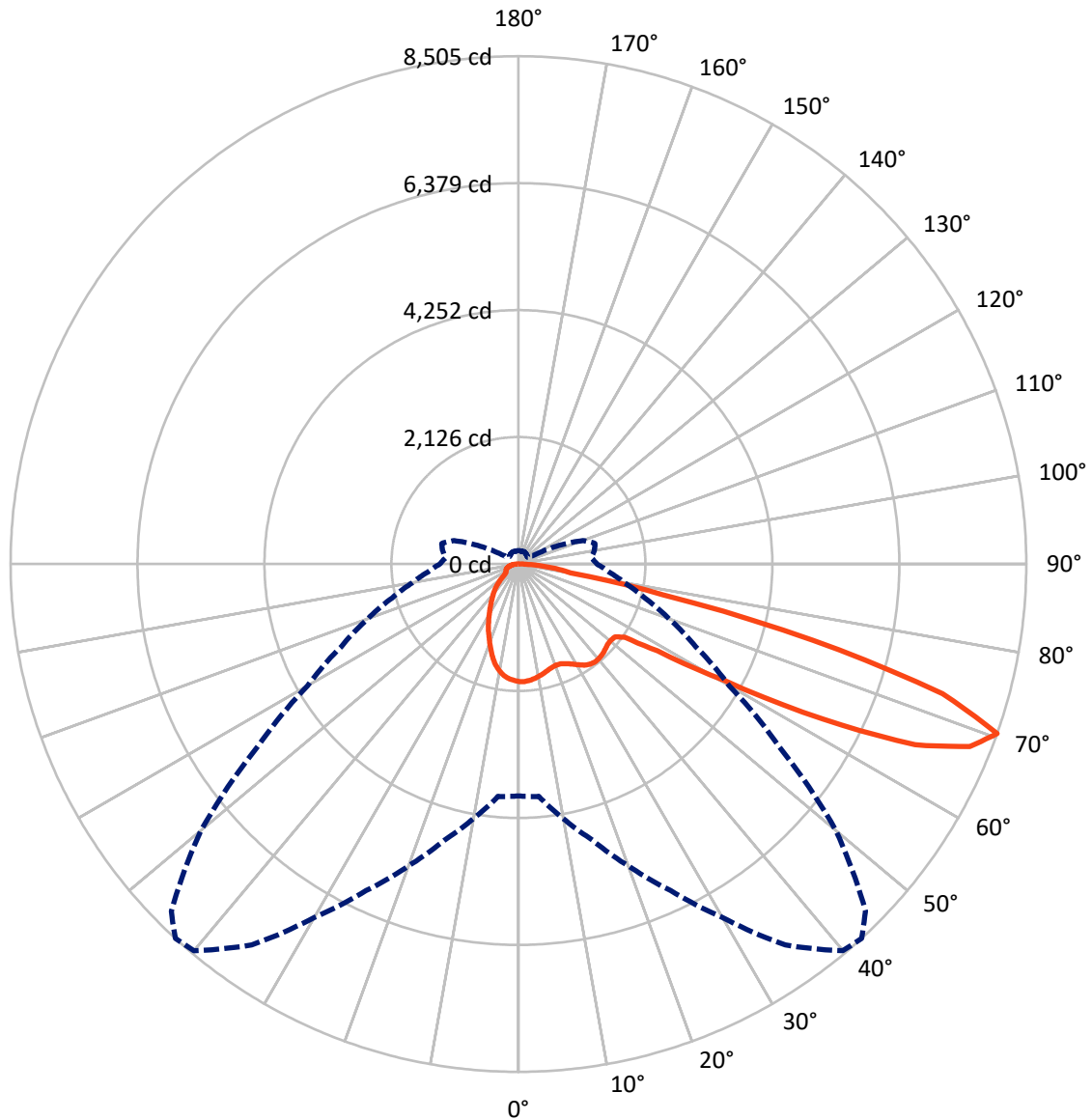
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 19.7 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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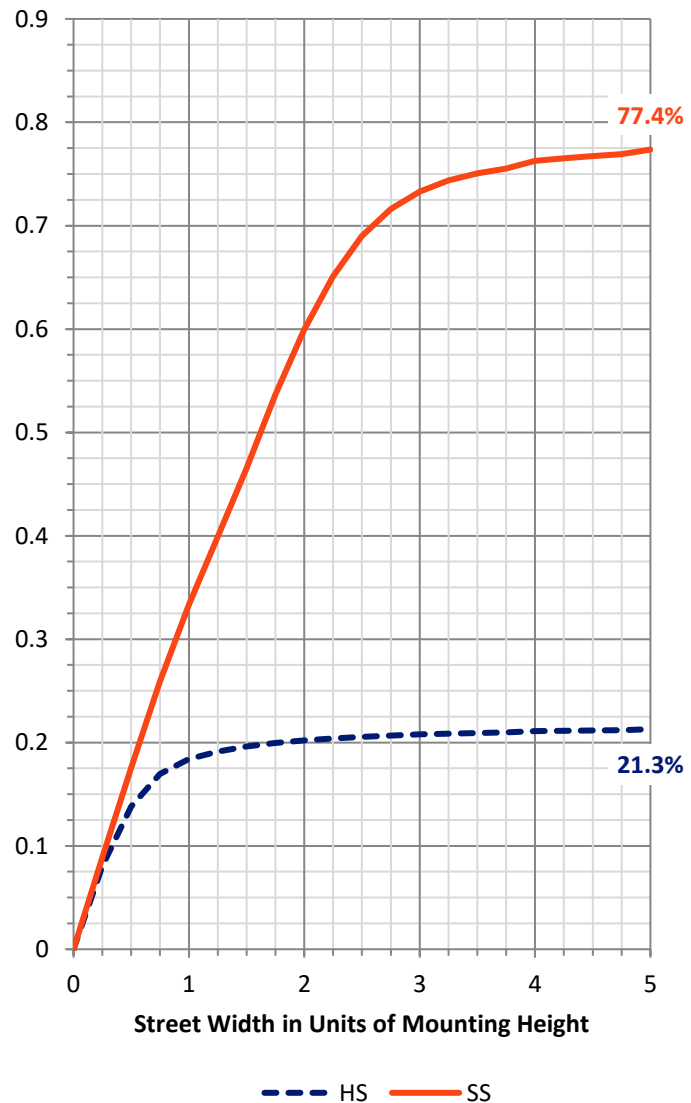
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2055.8	0.0	2055.8
	% Fixture	21.6	0.0	21.6
Street Side	Lumens	7460.9	0.0	7460.9
	% Fixture	78.4	0.0	78.4
Total	Lumens	9516.7	0.0	9516.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.1	1.9
10°-20°	493.3	5.2
20°-30°	719.5	7.6
30°-40°	917.7	9.6
40°-50°	1071.1	11.3
50°-60°	1638.1	17.2
60°-70°	2969.4	31.2
70°-80°	1320.3	13.9
80°-90°	204.3	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°	9516.7	100.0
0°-180°	9516.7	100.0



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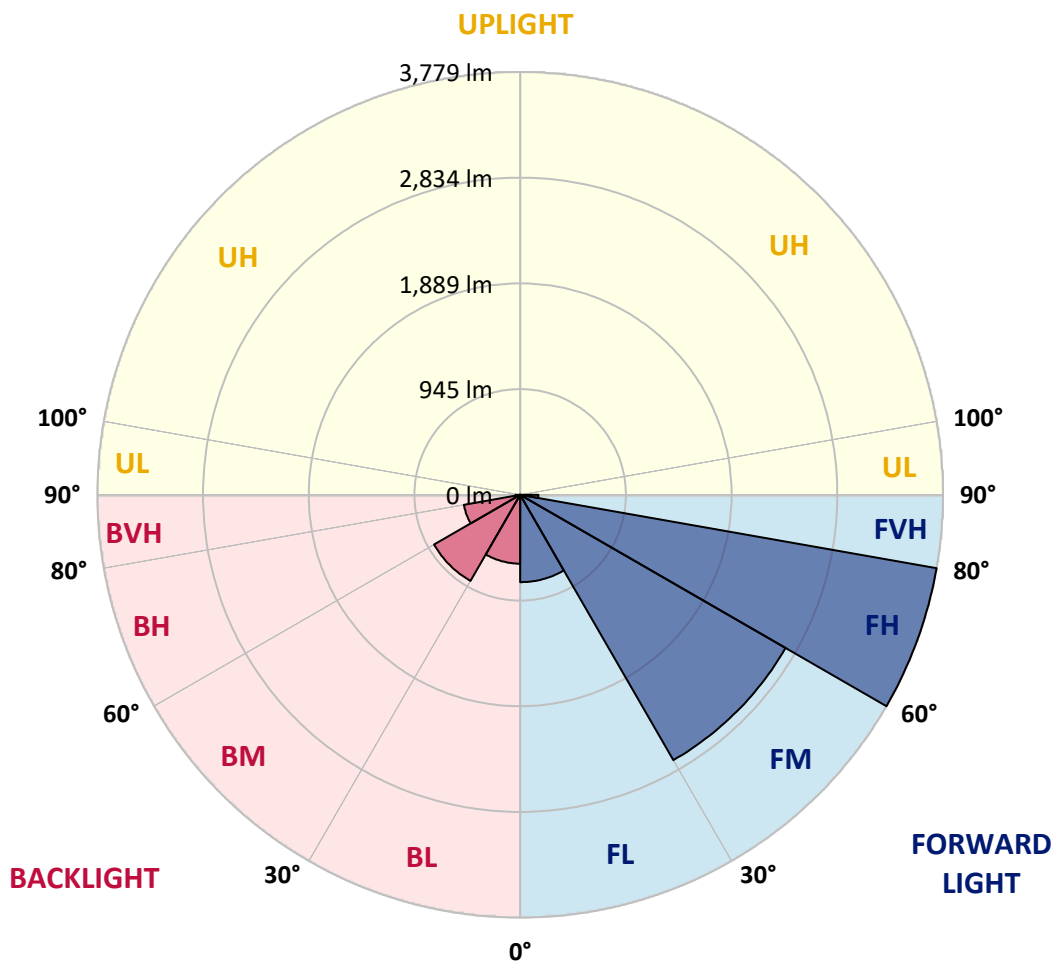
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	780.6	8.2			
FM (30°-60°)	2738.2	28.8			
FH (60°-80°)	3778.9	39.7			G2/5000
FVH (80°-90°)	163.2	1.7			G2/225
BL (0°-30°)	615.3	6.5	B2/1000		
BM (30°-60°)	888.7	9.3	B1/1000		
BH (60°-80°)	510.7	5.4	B2/1000		G2/1000
BVH (80°-90°)	41.1	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°	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1
2.5°	1977.3	1975.3	1976.6	1978.0	1978.0	1978.6	1972.7	1973.3	1970.7	1971.4	1972.0
5°	1970.0	1968.1	1969.4	1969.4	1969.4	1968.7	1960.8	1960.1	1956.8	1956.8	1955.5
7.5°	1956.2	1948.9	1952.9	1953.5	1952.2	1948.9	1944.3	1939.7	1937.7	1937.7	1933.0
10°	1935.0	1927.1	1929.1	1930.4	1929.7	1923.1	1921.2	1916.5	1911.3	1909.3	1904.0
12.5°	1908.0	1902.7	1905.3	1904.7	1904.7	1898.7	1895.4	1888.8	1882.2	1878.9	1872.3
15°	1890.8	1884.2	1886.8	1886.8	1884.2	1878.2	1873.6	1861.7	1850.5	1846.5	1837.9
17.5°	1901.3	1894.7	1897.4	1895.4	1890.8	1878.2	1866.3	1847.2	1829.4	1818.8	1807.6
20°	1943.6	1937.0	1939.0	1937.7	1931.1	1910.6	1888.8	1855.8	1822.8	1806.9	1789.7
22.5°	2011.0	2005.7	2009.0	2007.0	1996.4	1970.0	1937.7	1890.1	1840.6	1816.8	1792.4
25°	2110.7	2109.4	2114.7	2108.7	2093.5	2053.9	2007.0	1943.0	1878.2	1848.5	1814.2
27.5°	2230.9	2219.7	2227.6	2222.3	2211.7	2161.6	2098.2	2016.9	1934.4	1895.4	1854.5
30°	2339.2	2329.3	2343.8	2341.2	2325.3	2273.8	2193.9	2098.8	2005.7	1956.2	1909.3
32.5°	2464.7	2452.1	2463.4	2463.4	2439.6	2370.2	2279.1	2170.1	2072.4	2019.6	1963.4
35°	2596.1	2582.9	2593.5	2590.2	2547.9	2456.1	2341.8	2223.6	2116.0	2061.8	2004.4
37.5°	2718.3	2716.3	2718.9	2697.2	2638.4	2520.8	2384.1	2252.0	2137.8	2081.0	2020.9
40°	2840.5	2835.8	2824.6	2786.3	2700.5	2559.1	2405.9	2261.9	2139.1	2079.7	2018.9
42.5°	2917.1	2908.5	2889.3	2837.2	2729.5	2568.4	2399.3	2246.7	2123.3	2062.5	2003.1
45°	2943.5	2934.9	2911.8	2853.0	2730.2	2553.8	2373.5	2216.4	2093.5	2038.1	1978.0
47.5°	2921.7	2916.4	2895.3	2836.5	2709.0	2526.8	2341.2	2186.0	2065.1	2011.0	1954.8
50°	2884.7	2881.4	2862.9	2808.8	2689.2	2510.3	2326.0	2171.5	2057.2	2007.0	1954.2
52.5°	2977.2	2967.3	2934.2	2870.2	2730.8	2540.0	2349.8	2193.3	2075.7	2024.8	1970.7
55°	4113.8	4040.4	3876.7	3569.6	3139.6	2806.1	2525.4	2336.6	2209.8	2160.2	2108.7
57.5°	5410.2	5333.6	5265.5	5031.1	4520.6	3890.5	3323.9	2992.4	2765.2	2743.4	2722.9
60°	5909.4	5933.9	5927.9	5840.8	5579.2	5280.1	4805.9	4414.2	3980.4	3962.5	3988.3
62.5°	6253.5	6274.0	6276.6	6250.2	6165.0	6065.3	5966.2	5840.8	5758.2	5722.5	5492.1
65°	6395.5	6425.2	6490.6	6539.5	6553.3	6587.7	6677.5	7018.9	7303.6	7301.6	7031.5
67.5°	5853.3	5889.0	6136.6	6379.7	6583.7	6820.2	7184.0	7739.5	8168.1	8154.9	7933.6
70°	3884.6	3907.0	4327.7	4785.4	5379.1	6035.6	6830.7	7788.3	8452.7	8504.9	8219.6
72.5°	2382.8	2434.3	2571.7	2757.3	3074.3	3682.5	4864.7	6501.2	7476.0	7427.1	7199.9
75°	1608.8	1611.4	1607.5	1627.3	1645.1	1767.9	2244.1	3574.9	5064.1	5090.5	4992.8
77.5°	1099.6	1114.1	1122.1	1116.8	1134.6	1129.3	1157.1	1225.1	1941.0	2477.2	2276.5
80°	960.9	966.9	975.4	962.9	929.9	911.4	937.1	912.7	859.9	888.3	850.6
82.5°	608.2	626.1	628.1	671.6	736.4	739.0	772.0	747.6	680.2	636.0	581.8
85°	437.2	443.8	455.7	458.3	435.9	416.7	428.6	408.1	367.9	344.1	304.5
87.5°	254.9	261.5	273.4	266.1	243.7	216.0	194.8	167.7	132.7	124.2	109.6
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):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1
2.5°	1972.7	1969.4	1966.7	1965.4	1968.1	1965.4	1962.8	1961.4	1958.8	1959.5	1956.2
5°	1954.2	1949.6	1945.6	1942.3	1944.9	1940.3	1936.4	1933.7	1930.4	1929.7	1926.4
7.5°	1928.4	1921.2	1915.9	1909.9	1903.3	1899.4	1894.7	1890.1	1882.9	1882.2	1880.9
10°	1894.7	1888.8	1878.2	1869.0	1859.7	1849.8	1839.9	1832.7	1824.1	1820.8	1816.2
12.5°	1861.1	1849.2	1836.6	1822.1	1810.9	1795.0	1781.8	1767.9	1755.4	1747.5	1738.9
15°	1821.4	1808.9	1791.1	1777.2	1761.3	1743.5	1726.3	1705.9	1685.4	1672.8	1661.0
17.5°	1787.1	1771.2	1756.7	1736.9	1721.1	1700.6	1674.8	1653.0	1628.6	1608.1	1586.3
20°	1760.7	1742.8	1725.7	1707.8	1688.7	1665.6	1637.2	1606.1	1575.1	1546.0	1513.7
22.5°	1750.1	1721.7	1702.6	1686.1	1666.2	1639.8	1608.1	1569.8	1531.5	1494.5	1456.9
25°	1759.4	1717.1	1687.4	1668.9	1651.0	1624.0	1588.3	1544.7	1499.8	1452.9	1408.0
27.5°	1784.5	1731.0	1688.7	1659.6	1639.2	1612.7	1573.1	1527.6	1476.7	1423.9	1375.7
30°	1820.8	1754.1	1701.2	1659.6	1629.3	1598.9	1555.9	1504.4	1450.9	1395.5	1341.3
32.5°	1860.4	1779.8	1716.4	1661.6	1614.7	1576.4	1531.5	1481.3	1424.5	1365.7	1307.6
35°	1890.1	1798.3	1723.0	1654.4	1594.3	1546.0	1497.8	1449.0	1393.5	1334.0	1275.9
37.5°	1902.7	1805.6	1721.7	1639.2	1565.9	1513.0	1462.8	1414.0	1360.5	1304.3	1250.8
40°	1903.3	1805.6	1713.8	1618.7	1536.1	1478.7	1425.8	1380.3	1330.1	1281.9	1234.3
42.5°	1890.8	1796.3	1699.3	1599.5	1514.3	1449.6	1395.5	1348.6	1308.3	1265.4	1225.1
45°	1868.3	1777.9	1686.1	1589.0	1506.4	1442.4	1384.2	1340.0	1303.7	1265.4	1230.4
47.5°	1851.2	1767.3	1686.7	1604.2	1525.6	1459.5	1396.8	1349.9	1318.9	1288.5	1263.4
50°	1854.5	1771.2	1694.6	1616.0	1538.8	1472.1	1411.3	1371.0	1352.5	1342.6	1336.7
52.5°	1871.6	1787.1	1729.0	1676.8	1651.7	1610.8	1577.1	1546.7	1551.3	1527.6	1497.2
55°	2048.6	2020.2	2086.9	2135.1	2158.9	2200.5	2260.6	2203.2	2195.2	2121.9	1904.0
57.5°	2750.6	2818.0	2920.4	2993.0	3000.3	2987.7	2938.2	2890.7	2813.4	2703.1	2398.0
60°	3928.2	3912.3	3817.2	3689.8	3590.7	3460.6	3329.8	3219.5	3095.4	2926.3	2601.4
62.5°	5166.5	4784.7	4445.9	4157.3	3912.3	3695.0	3497.6	3331.8	3161.4	2918.4	2572.3
65°	6166.3	5432.0	4834.9	4370.7	4006.1	3699.0	3444.1	3215.6	2987.7	2706.4	2370.9
67.5°	6880.9	5715.9	4815.1	4162.0	3650.8	3228.1	2857.0	2596.8	2363.0	2141.7	1990.5
70°	6937.7	5323.0	4073.5	3274.4	2684.6	2188.0	1802.9	1519.0	1315.6	1223.8	1289.1
72.5°	5928.6	3938.1	2708.4	2004.4	1591.0	1236.3	993.9	794.5	630.7	550.1	561.4
75°	3491.6	1890.8	1219.8	908.7	742.3	593.1	513.1	433.2	382.4	306.4	245.0
77.5°	1329.4	822.2	615.5	511.2	364.6	262.2	206.7	178.3	163.8	161.8	153.2
80°	766.1	603.0	422.0	276.1	202.1	171.0	146.6	125.5	116.9	114.9	118.2
82.5°	484.1	375.8	231.8	177.7	147.3	126.8	105.7	91.8	84.5	81.9	86.5
85°	250.3	188.2	141.3	121.5	112.9	103.0	84.5	70.7	70.0	73.3	84.5
87.5°	92.5	80.6	63.4	54.8	58.8	54.8	39.6	34.3	31.0	40.9	59.4
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):

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1	1968.1
2.5°	1956.2	1954.8	1955.5	1954.2	1954.2	1956.2	1953.5	1951.5	1954.8	1954.8	1956.8
5°	1925.8	1927.1	1927.1	1926.4	1927.8	1931.1	1930.4	1930.4	1935.7	1937.7	1940.3
7.5°	1877.6	1879.6	1880.2	1882.2	1882.9	1887.5	1890.8	1894.7	1902.7	1904.7	1910.6
10°	1812.2	1810.9	1815.5	1814.8	1820.8	1824.7	1827.4	1836.0	1847.9	1854.5	1860.4
12.5°	1734.9	1734.9	1737.6	1738.2	1743.5	1748.8	1752.1	1762.7	1772.6	1781.2	1794.4
15°	1653.0	1650.4	1644.4	1643.8	1645.8	1651.0	1658.3	1666.2	1681.4	1694.0	1705.2
17.5°	1567.2	1559.3	1552.0	1542.7	1542.1	1541.4	1545.4	1551.3	1575.1	1587.6	1603.5
20°	1491.2	1474.1	1456.9	1437.7	1426.5	1421.2	1423.2	1431.1	1453.6	1470.1	1486.6
22.5°	1423.2	1397.4	1370.4	1340.0	1321.5	1310.3	1311.6	1314.9	1331.4	1341.3	1349.9
25°	1365.1	1329.4	1291.8	1252.8	1227.1	1209.9	1209.2	1209.2	1202.0	1203.3	1198.7
27.5°	1325.5	1275.9	1227.7	1182.2	1148.5	1131.3	1108.2	1091.7	1077.1	1057.3	1048.7
30°	1287.2	1236.3	1181.5	1131.3	1091.0	1057.3	1014.4	978.7	950.3	923.3	900.2
32.5°	1252.8	1200.0	1147.8	1093.0	1037.5	979.4	923.3	882.3	842.0	800.4	772.7
35°	1222.4	1172.9	1120.7	1058.7	980.7	904.8	841.4	785.9	738.3	688.2	647.9
37.5°	1205.3	1160.4	1106.2	1021.7	923.9	837.4	766.7	704.7	641.3	581.2	531.6
40°	1196.7	1157.1	1091.0	984.0	873.1	780.6	702.0	627.4	552.8	482.1	430.6
42.5°	1195.4	1157.1	1068.6	945.7	829.5	730.4	642.6	552.8	462.3	393.6	348.0
45°	1207.2	1155.7	1044.8	911.4	790.5	685.5	579.8	474.2	381.1	321.0	295.9
47.5°	1241.6	1160.4	1026.3	882.3	753.5	636.0	508.5	387.0	307.8	280.7	280.0
50°	1297.1	1181.5	1022.3	861.2	717.2	573.9	424.7	309.7	271.4	270.1	277.4
52.5°	1384.9	1221.1	1032.2	846.7	673.6	493.3	336.2	267.5	260.2	267.5	276.7
55°	1578.4	1291.8	1045.4	820.9	603.0	391.0	276.7	253.6	256.9	265.5	274.1
57.5°	1930.4	1438.4	1059.3	762.8	488.7	300.5	249.0	248.3	254.3	261.5	269.5
60°	2153.6	1619.3	1093.0	676.9	369.2	248.3	238.4	245.0	252.3	257.6	264.2
62.5°	2160.9	1666.9	1110.8	585.1	274.7	227.2	229.2	241.7	250.3	252.3	255.6
65°	2021.5	1577.1	1030.3	476.2	227.8	215.3	222.6	233.8	242.4	243.7	246.3
67.5°	1766.0	1390.8	873.1	359.3	207.4	206.1	214.0	222.6	228.5	233.8	237.8
70°	1330.1	1147.8	702.0	278.7	194.8	193.5	201.4	208.7	214.0	220.6	227.2
72.5°	674.3	794.5	532.3	227.8	177.7	179.0	187.6	194.2	198.1	204.1	210.7
75°	229.8	346.7	336.8	184.3	158.5	163.8	167.7	175.0	181.0	184.9	188.2
77.5°	144.0	150.6	173.7	148.6	140.0	141.3	147.9	154.5	161.1	163.8	165.1
80°	120.2	120.9	121.5	118.9	119.5	123.5	127.5	134.7	141.3	142.7	143.3
82.5°	95.1	101.7	101.0	100.4	103.7	107.6	110.3	112.9	115.6	116.9	118.9
85°	83.9	82.6	83.2	85.2	82.6	79.9	79.3	79.3	83.2	87.8	89.8
87.5°	76.6	65.4	48.9	46.2	46.2	44.9	42.3	42.3	46.2	50.2	52.2
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):

	160°	165°	170°	175°	180°
0°	1968.1	1968.1	1968.1	1968.1	1968.1
2.5°	1956.2	1956.8	1956.2	1956.2	1959.5
5°	1941.6	1944.3	1943.0	1944.9	1946.9
7.5°	1911.9	1918.5	1919.8	1925.1	1923.1
10°	1869.0	1873.6	1880.2	1885.5	1883.5
12.5°	1801.0	1812.2	1822.1	1828.0	1826.7
15°	1714.5	1730.3	1743.5	1748.1	1742.8
17.5°	1622.0	1631.9	1647.7	1651.0	1656.3
20°	1505.1	1504.4	1518.3	1518.3	1515.7
22.5°	1352.5	1362.4	1362.4	1353.2	1348.6
25°	1196.7	1200.0	1190.1	1192.1	1179.5
27.5°	1040.2	1031.6	1023.7	1027.0	1017.7
30°	890.9	872.4	864.5	865.8	855.9
32.5°	747.6	725.8	717.9	707.3	698.7
35°	617.5	583.2	562.7	557.4	563.3
37.5°	490.0	465.6	441.2	423.3	425.3
40°	387.7	362.6	346.7	339.5	338.1
42.5°	320.3	305.8	302.5	303.1	303.1
45°	290.6	291.2	293.9	296.5	297.2
47.5°	284.6	288.6	293.2	296.5	297.2
50°	284.0	287.9	291.2	295.2	296.5
52.5°	283.3	286.0	287.9	289.9	291.9
55°	280.7	282.0	281.3	282.7	284.6
57.5°	274.1	274.7	273.4	274.1	278.0
60°	268.1	268.8	266.1	269.5	270.1
62.5°	260.9	260.2	258.9	260.9	260.9
65°	250.3	246.3	247.7	249.6	250.3
67.5°	237.8	233.8	233.8	235.1	237.1
70°	221.9	219.9	219.9	222.6	225.2
72.5°	204.1	205.4	209.4	213.3	217.3
75°	189.5	192.8	196.8	206.7	212.7
77.5°	171.0	171.7	175.0	184.9	195.5
80°	145.3	144.6	145.3	146.6	148.6
82.5°	114.9	113.6	109.6	111.0	108.3
85°	84.5	82.6	77.9	74.6	74.0
87.5°	48.9	48.9	46.9	44.2	41.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)