

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: P145457

Luminaire Tested: **LDRL-SL4-F04-E-7060**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P145457  
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-7060  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL  
Light Source: (28) 5700K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9765.2 lumens  
Efficiency: N/A  
Efficacy: 95.5 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

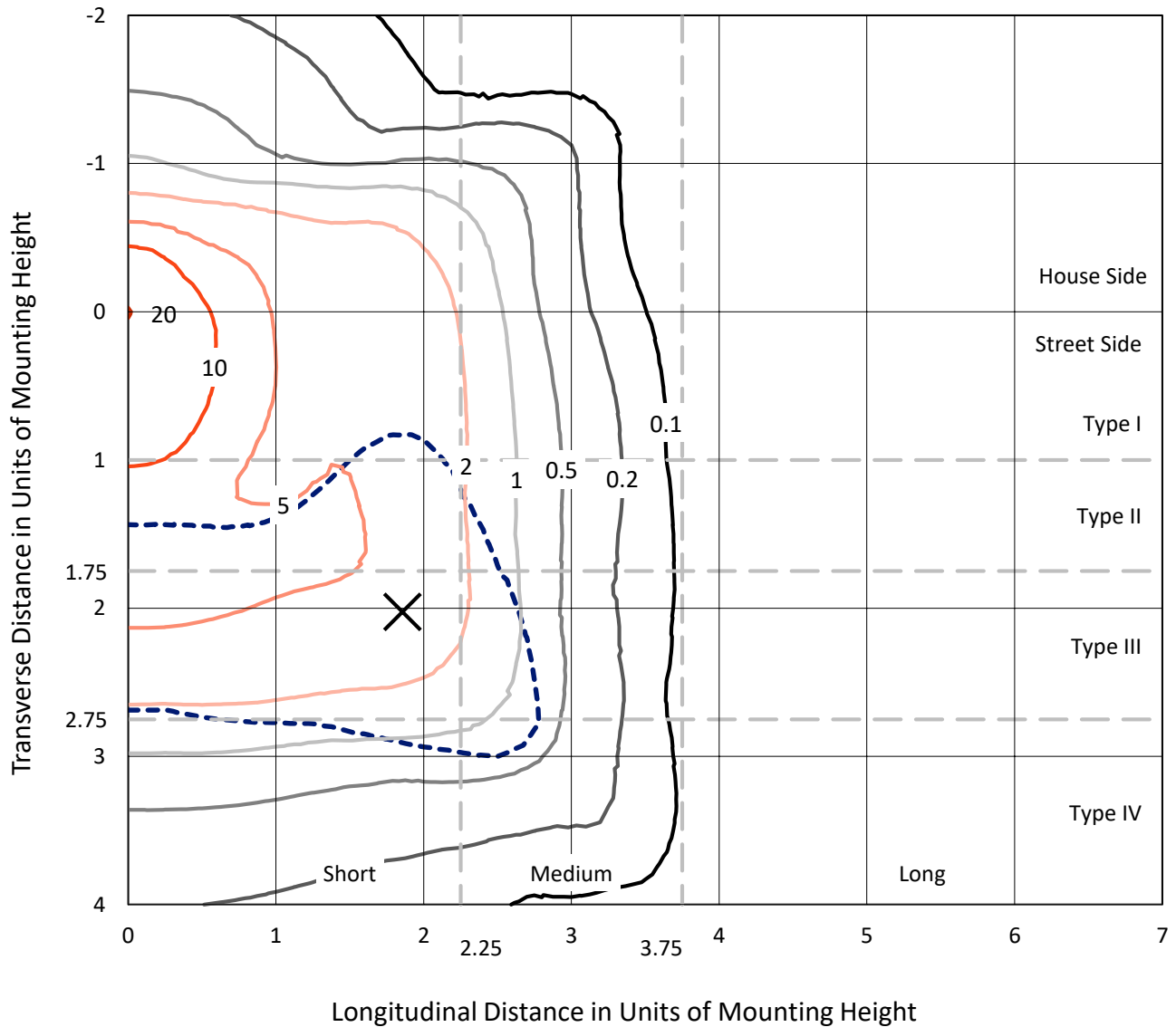
Input Watts (W): 102.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

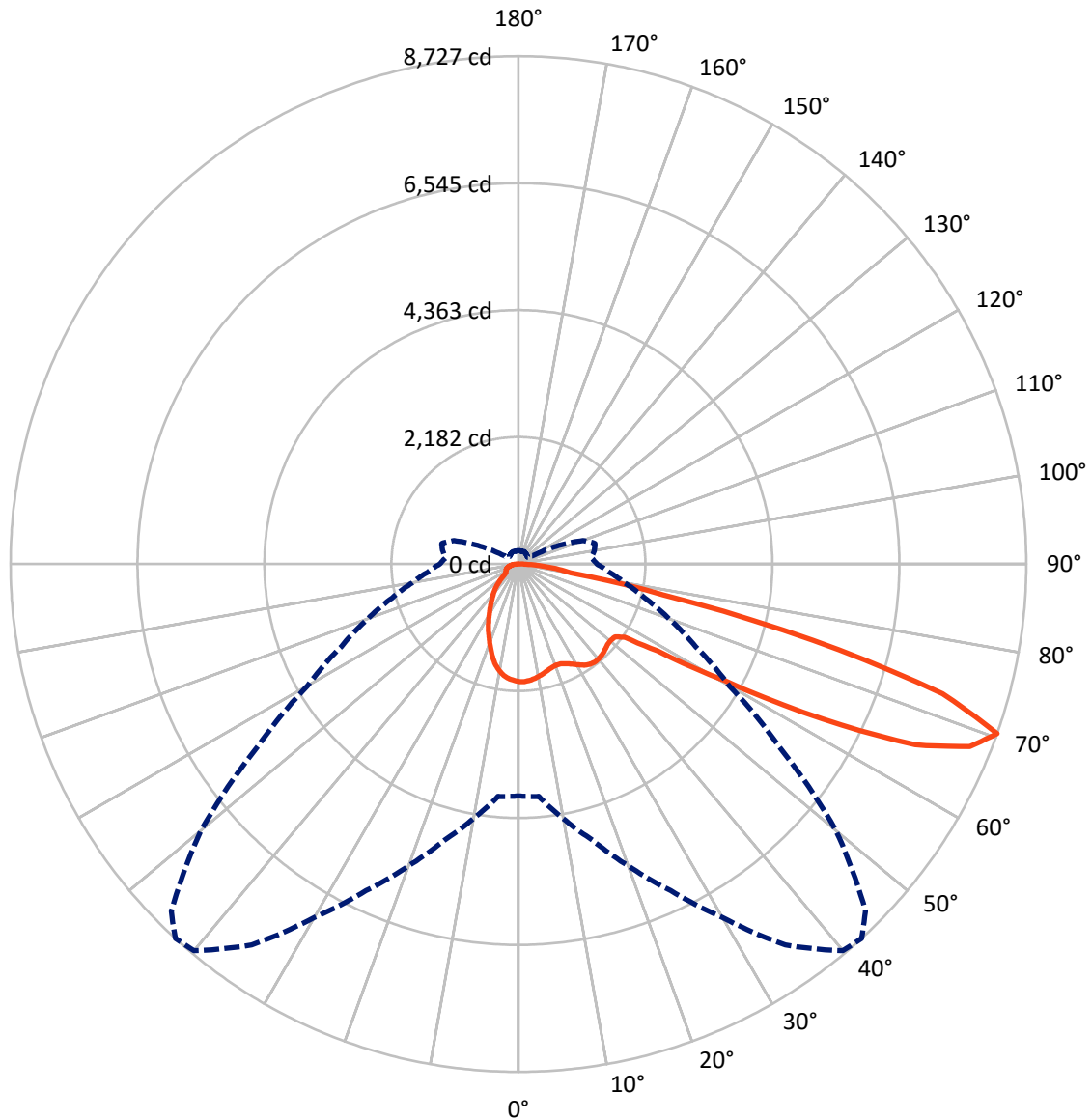
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 20.2 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
<b>House Side</b>	Lumens	2109.5	0.0	2109.5
	% Fixture	21.6	0.0	21.6
<b>Street Side</b>	Lumens	7655.7	0.0	7655.7
	% Fixture	78.4	0.0	78.4
<b>Total</b>	Lumens	9765.2	0.0	9765.2
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	187.9	1.9
10°-20°	506.2	5.2
20°-30°	738.3	7.6
30°-40°	941.7	9.6
40°-50°	1099.1	11.3
50°-60°	1680.8	17.2
60°-70°	3046.9	31.2
70°-80°	1354.7	13.9
80°-90°	209.6	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°	9765.2	100.0
0°-180°	9765.2	100.0



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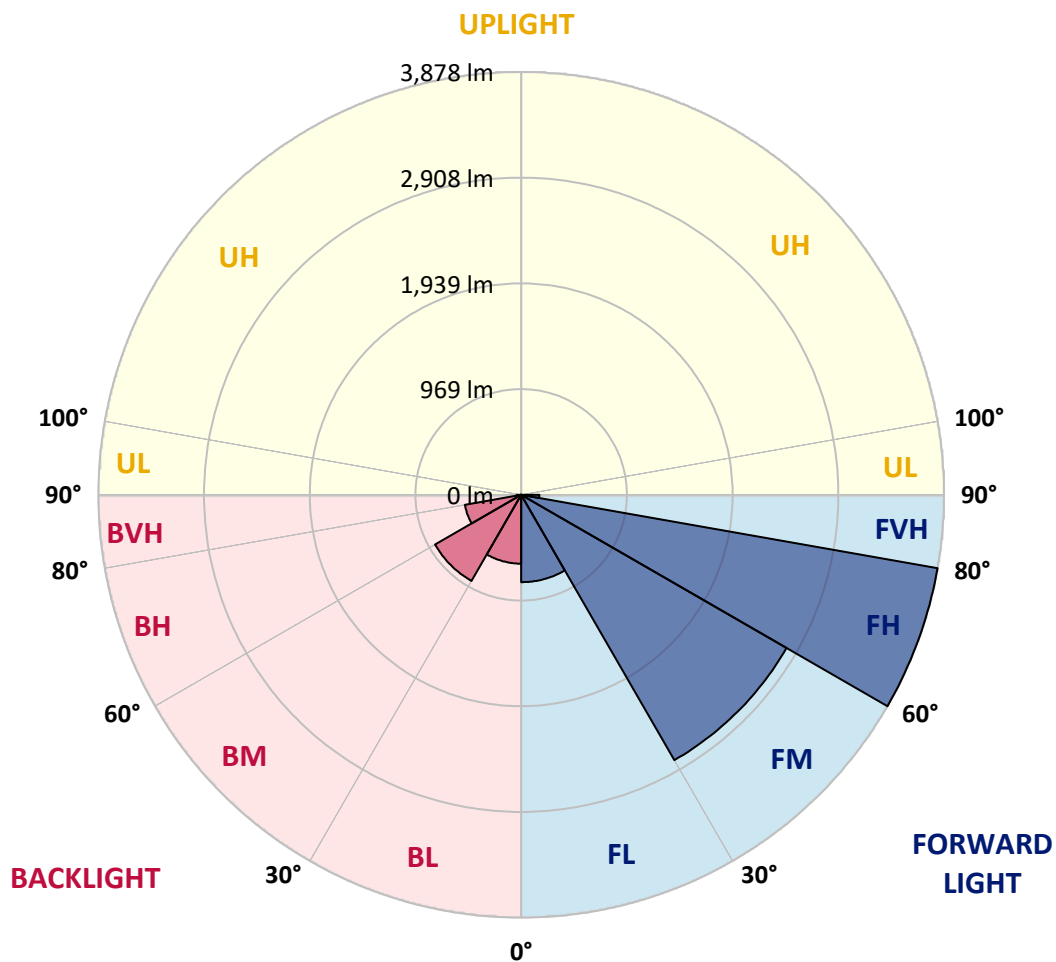
CATALOG NUMBER: LDRL-SL4-F04-E-7060

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	801.0	8.2			
FM (30°-60°)	2809.7	28.8			
FH (60°-80°)	3877.6	39.7			G2/5000
FVH (80°-90°)	167.5	1.7			G2/225
BL (0°-30°)	631.4	6.5	B2/1000		
BM (30°-60°)	911.9	9.3	B1/1000		
BH (60°-80°)	524.1	5.4	B2/1000		G2/1000
BVH (80°-90°)	42.1	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°	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4
2.5°	2028.9	2026.9	2028.2	2029.6	2029.6	2030.3	2024.2	2024.8	2022.1	2022.8	2023.5
5°	2021.5	2019.4	2020.8	2020.8	2020.8	2020.1	2012.0	2011.3	2007.9	2007.9	2006.6
7.5°	2007.2	1999.8	2003.8	2004.5	2003.2	1999.8	1995.0	1990.3	1988.3	1988.3	1983.5
10°	1985.5	1977.4	1979.4	1980.8	1980.1	1973.3	1971.3	1966.6	1961.1	1959.1	1953.7
12.5°	1957.8	1952.3	1955.1	1954.4	1954.4	1948.3	1944.9	1938.1	1931.3	1927.9	1921.2
15°	1940.1	1933.4	1936.1	1936.1	1933.4	1927.3	1922.5	1910.3	1898.8	1894.7	1885.9
17.5°	1951.0	1944.2	1946.9	1944.9	1940.1	1927.3	1915.1	1895.4	1877.1	1866.3	1854.8
20°	1994.4	1987.6	1989.6	1988.3	1981.5	1960.5	1938.1	1904.2	1870.3	1854.1	1836.5
22.5°	2063.5	2058.1	2061.4	2059.4	2048.6	2021.5	1988.3	1939.5	1888.6	1864.2	1839.2
25°	2165.8	2164.4	2169.9	2163.8	2148.2	2107.5	2059.4	1993.7	1927.3	1896.8	1861.5
27.5°	2289.1	2277.6	2285.7	2280.3	2269.5	2218.0	2152.9	2069.6	1984.9	1944.9	1902.9
30°	2400.3	2390.1	2405.0	2402.3	2386.0	2333.2	2251.2	2153.6	2058.1	2007.2	1959.1
32.5°	2529.0	2516.2	2527.7	2527.7	2503.3	2432.1	2338.6	2226.8	2126.5	2072.3	2014.7
35°	2663.9	2650.3	2661.2	2657.8	2614.4	2520.2	2403.0	2281.7	2171.2	2115.7	2056.7
37.5°	2789.3	2787.2	2789.9	2767.6	2707.3	2586.6	2446.4	2310.8	2193.6	2135.3	2073.6
40°	2914.6	2909.9	2898.4	2859.0	2771.0	2625.9	2468.7	2321.0	2194.9	2134.0	2071.6
42.5°	2993.2	2984.4	2964.8	2911.2	2800.8	2635.4	2461.9	2305.4	2178.7	2116.3	2055.3
45°	3020.3	3011.5	2987.8	2927.5	2801.4	2620.5	2435.5	2274.2	2148.2	2091.3	2029.6
47.5°	2998.0	2992.5	2970.9	2910.6	2779.8	2592.7	2402.3	2243.1	2119.0	2063.5	2005.9
50°	2960.0	2956.6	2937.7	2882.1	2759.4	2575.8	2386.7	2228.1	2110.9	2059.4	2005.2
52.5°	3054.9	3044.7	3010.8	2945.1	2802.1	2606.3	2411.1	2250.5	2129.9	2077.7	2022.1
55°	4221.1	4145.9	3977.9	3662.8	3221.6	2879.4	2591.4	2397.6	2267.5	2216.6	2163.8
57.5°	5551.4	5472.8	5403.0	5162.4	4638.6	3992.1	3410.7	3070.5	2837.4	2815.0	2794.0
60°	6063.7	6088.8	6082.7	5993.2	5724.9	5417.9	4931.3	4529.5	4084.3	4066.0	4092.4
62.5°	6416.8	6437.8	6440.5	6413.4	6326.0	6223.6	6122.0	5993.2	5908.5	5871.9	5635.4
65°	6562.5	6593.0	6660.0	6710.2	6724.4	6759.7	6851.8	7202.2	7494.2	7492.2	7215.1
67.5°	6006.1	6042.7	6296.8	6546.2	6755.6	6998.2	7371.6	7941.5	8381.3	8367.8	8140.7
70°	3986.0	4009.0	4440.7	4910.3	5519.5	6193.1	7009.0	7991.7	8673.4	8726.9	8434.2
72.5°	2445.0	2497.9	2638.8	2829.2	3154.5	3778.6	4991.6	6670.9	7671.1	7621.0	7387.9
75°	1650.8	1653.5	1649.4	1669.8	1688.1	1814.1	2302.7	3668.2	5196.3	5223.4	5123.1
77.5°	1128.3	1143.2	1151.3	1145.9	1164.2	1158.8	1187.3	1257.1	1991.6	2541.9	2335.9
80°	986.0	992.1	1000.9	988.0	954.1	935.2	961.6	936.5	882.3	911.5	872.8
82.5°	624.1	642.4	644.5	689.2	755.6	758.3	792.2	767.1	698.0	652.6	597.0
85°	448.6	455.4	467.6	470.3	447.3	427.6	439.8	418.8	377.5	353.1	312.4
87.5°	261.6	268.4	280.6	273.1	250.1	221.6	199.9	172.1	136.2	127.4	112.5
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):**

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4
2.5°	2024.2	2020.8	2018.1	2016.7	2019.4	2016.7	2014.0	2012.7	2009.9	2010.6	2007.2
5°	2005.2	2000.5	1996.4	1993.0	1995.7	1991.0	1986.9	1984.2	1980.8	1980.1	1976.7
7.5°	1978.8	1971.3	1965.9	1959.8	1953.0	1949.0	1944.2	1939.5	1932.0	1931.3	1930.0
10°	1944.2	1938.1	1927.3	1917.8	1908.3	1898.1	1888.0	1880.5	1871.7	1868.3	1863.6
12.5°	1909.6	1897.4	1884.6	1869.7	1858.1	1841.9	1828.3	1814.1	1801.2	1793.1	1784.3
15°	1869.0	1856.1	1837.8	1823.6	1807.3	1789.0	1771.4	1750.4	1729.4	1716.5	1704.3
17.5°	1833.7	1817.5	1802.6	1782.2	1766.0	1745.0	1718.5	1696.2	1671.1	1650.1	1627.7
20°	1806.6	1788.3	1770.7	1752.4	1732.8	1709.1	1679.9	1648.1	1616.2	1586.4	1553.2
22.5°	1795.8	1766.7	1747.0	1730.1	1709.7	1682.6	1650.1	1610.8	1571.5	1533.5	1494.9
25°	1805.3	1761.9	1731.4	1712.4	1694.2	1666.4	1629.8	1585.0	1539.0	1490.9	1444.8
27.5°	1831.0	1776.1	1732.8	1703.0	1682.0	1654.8	1614.2	1567.4	1515.2	1461.0	1411.6
30°	1868.3	1799.9	1745.7	1703.0	1671.8	1640.6	1596.6	1543.7	1488.8	1431.9	1376.3
32.5°	1909.0	1826.3	1761.2	1705.0	1656.9	1617.6	1571.5	1520.0	1461.7	1401.4	1341.8
35°	1939.5	1845.3	1768.0	1697.5	1635.9	1586.4	1536.9	1486.8	1429.9	1368.9	1309.2
37.5°	1952.3	1852.7	1766.7	1682.0	1606.7	1552.5	1501.0	1450.9	1396.0	1338.4	1283.5
40°	1953.0	1852.7	1758.5	1660.9	1576.2	1517.3	1463.1	1416.3	1364.8	1315.3	1266.5
42.5°	1940.1	1843.2	1743.6	1641.3	1553.9	1487.5	1431.9	1383.8	1342.4	1298.4	1257.1
45°	1917.1	1824.3	1730.1	1630.5	1545.7	1480.0	1420.4	1375.0	1337.7	1298.4	1262.5
47.5°	1899.5	1813.4	1730.7	1646.0	1565.4	1497.6	1433.3	1385.1	1353.3	1322.1	1296.4
50°	1902.9	1817.5	1738.9	1658.2	1578.9	1510.5	1448.2	1406.8	1387.8	1377.7	1371.6
52.5°	1920.5	1833.7	1774.1	1720.6	1694.8	1652.8	1618.3	1587.1	1591.8	1567.4	1536.3
55°	2102.1	2073.0	2141.4	2190.9	2215.3	2258.0	2319.6	2260.7	2252.5	2177.3	1953.7
57.5°	2822.5	2891.6	2996.6	3071.2	3078.6	3065.7	3014.9	2966.1	2886.8	2773.7	2460.6
60°	4030.7	4014.5	3916.9	3786.1	3684.4	3550.9	3416.8	3303.6	3176.2	3002.7	2669.3
62.5°	5301.3	4909.7	4562.0	4265.9	4014.5	3791.5	3588.9	3418.8	3244.0	2994.6	2639.5
65°	6327.3	5573.8	4961.2	4484.8	4110.7	3795.6	3534.0	3299.5	3065.7	2777.1	2432.8
67.5°	7060.5	5865.2	4940.8	4270.6	3746.1	3312.4	2931.6	2664.6	2424.7	2197.7	2042.5
70°	7118.8	5461.9	4179.8	3359.8	2754.7	2245.1	1850.0	1558.6	1349.9	1255.7	1322.8
72.5°	6083.4	4040.9	2779.1	2056.7	1632.5	1268.6	1019.9	815.2	647.2	564.5	576.0
75°	3582.8	1940.1	1251.6	932.5	761.7	608.5	526.5	444.5	392.4	314.4	251.4
77.5°	1364.1	843.7	631.6	524.5	374.1	269.0	212.1	183.0	168.1	166.0	157.2
80°	786.1	618.7	433.0	283.3	207.4	175.5	150.4	128.8	119.9	117.9	121.3
82.5°	496.7	385.6	237.9	182.3	151.1	130.1	108.4	94.2	86.7	84.0	88.8
85°	256.8	193.1	145.0	124.7	115.9	105.7	86.7	72.5	71.8	75.2	86.7
87.5°	94.9	82.7	65.1	56.2	60.3	56.2	40.7	35.2	31.9	42.0	61.0
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):**

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4	2019.4
2.5°	2007.2	2005.9	2006.6	2005.2	2005.2	2007.2	2004.5	2002.5	2005.9	2005.9	2007.9
5°	1976.1	1977.4	1977.4	1976.7	1978.1	1981.5	1980.8	1980.8	1986.2	1988.3	1991.0
7.5°	1926.6	1928.6	1929.3	1931.3	1932.0	1936.8	1940.1	1944.2	1952.3	1954.4	1960.5
10°	1859.5	1858.1	1862.9	1862.2	1868.3	1872.4	1875.1	1883.9	1896.1	1902.9	1909.0
12.5°	1780.2	1780.2	1782.9	1783.6	1789.0	1794.4	1797.8	1808.7	1818.8	1827.7	1841.2
15°	1696.2	1693.5	1687.4	1686.7	1688.7	1694.2	1701.6	1709.7	1725.3	1738.2	1749.7
17.5°	1608.1	1600.0	1592.5	1583.0	1582.3	1581.7	1585.7	1591.8	1616.2	1629.1	1645.4
20°	1530.2	1512.5	1494.9	1475.3	1463.7	1458.3	1460.4	1468.5	1491.5	1508.5	1525.4
22.5°	1460.4	1433.9	1406.1	1375.0	1356.0	1344.5	1345.8	1349.2	1366.2	1376.3	1385.1
25°	1400.7	1364.1	1325.5	1285.5	1259.1	1241.5	1240.8	1240.8	1233.3	1234.7	1230.0
27.5°	1360.1	1309.2	1259.8	1213.0	1178.5	1160.8	1137.1	1120.2	1105.3	1084.9	1076.1
30°	1320.8	1268.6	1212.3	1160.8	1119.5	1084.9	1040.9	1004.3	975.2	947.4	923.7
32.5°	1285.5	1231.3	1177.8	1121.5	1064.6	1005.0	947.4	905.4	864.0	821.3	792.9
35°	1254.3	1203.5	1150.0	1086.3	1006.3	928.4	863.3	806.4	757.6	706.1	664.8
37.5°	1236.7	1190.6	1135.1	1048.3	948.0	859.3	786.8	723.1	658.0	596.3	545.5
40°	1227.9	1187.3	1119.5	1009.7	895.9	801.0	720.4	643.8	567.2	494.7	441.8
42.5°	1226.6	1187.3	1096.5	970.4	851.1	749.5	659.4	567.2	474.4	403.9	357.1
45°	1238.8	1185.9	1072.1	935.2	811.2	703.4	595.0	486.6	391.0	329.3	303.6
47.5°	1274.0	1190.6	1053.1	905.4	773.2	652.6	521.8	397.1	315.8	288.0	287.3
50°	1330.9	1212.3	1049.0	883.7	735.9	588.9	435.7	317.8	278.5	277.2	284.6
52.5°	1421.1	1253.0	1059.2	868.8	691.2	506.2	344.9	274.5	267.0	274.5	283.9
55°	1619.6	1325.5	1072.7	842.3	618.7	401.2	283.9	260.2	263.6	272.4	281.2
57.5°	1980.8	1475.9	1087.0	782.7	501.5	308.3	255.5	254.8	260.9	268.4	276.5
60°	2209.9	1661.6	1121.5	694.6	378.8	254.8	244.6	251.4	258.9	264.3	271.1
62.5°	2217.3	1710.4	1139.8	600.4	281.9	233.1	235.1	248.0	256.8	258.9	262.3
65°	2074.3	1618.3	1057.2	488.6	233.8	220.9	228.4	239.9	248.7	250.1	252.8
67.5°	1812.1	1427.2	895.9	368.6	212.8	211.4	219.6	228.4	234.5	239.9	244.0
70°	1364.8	1177.8	720.4	286.0	199.9	198.6	206.7	214.1	219.6	226.3	233.1
72.5°	691.9	815.2	546.2	233.8	182.3	183.6	192.5	199.2	203.3	209.4	216.2
75°	235.8	355.8	345.6	189.1	162.6	168.1	172.1	179.6	185.7	189.7	193.1
77.5°	147.7	154.5	178.2	152.5	143.7	145.0	151.8	158.6	165.3	168.1	169.4
80°	123.3	124.0	124.7	122.0	122.7	126.7	130.8	138.2	145.0	146.4	147.1
82.5°	97.6	104.4	103.7	103.0	106.4	110.5	113.2	115.9	118.6	119.9	122.0
85°	86.1	84.7	85.4	87.4	84.7	82.0	81.3	81.3	85.4	90.1	92.2
87.5°	78.6	67.1	50.1	47.4	47.4	46.1	43.4	43.4	47.4	51.5	53.5
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):**

	160°	165°	170°	175°	180°
0°	2019.4	2019.4	2019.4	2019.4	2019.4
2.5°	2007.2	2007.9	2007.2	2007.2	2010.6
5°	1992.3	1995.0	1993.7	1995.7	1997.7
7.5°	1961.8	1968.6	1970.0	1975.4	1973.3
10°	1917.8	1922.5	1929.3	1934.7	1932.7
12.5°	1848.0	1859.5	1869.7	1875.8	1874.4
15°	1759.2	1775.5	1789.0	1793.8	1788.3
17.5°	1664.3	1674.5	1690.8	1694.2	1699.6
20°	1544.4	1543.7	1557.9	1557.9	1555.2
22.5°	1387.8	1398.0	1398.0	1388.5	1383.8
25°	1227.9	1231.3	1221.1	1223.2	1210.3
27.5°	1067.3	1058.5	1050.4	1053.8	1044.3
30°	914.2	895.2	887.1	888.4	878.2
32.5°	767.1	744.7	736.6	725.8	717.0
35°	633.6	598.4	577.4	571.9	578.0
37.5°	502.8	477.8	452.7	434.4	436.4
40°	397.8	372.0	355.8	348.3	347.0
42.5°	328.7	313.8	310.4	311.0	311.0
45°	298.2	298.8	301.6	304.3	304.9
47.5°	292.1	296.1	300.9	304.3	304.9
50°	291.4	295.5	298.8	302.9	304.3
52.5°	290.7	293.4	295.5	297.5	299.5
55°	288.0	289.4	288.7	290.0	292.1
57.5°	281.2	281.9	280.6	281.2	285.3
60°	275.1	275.8	273.1	276.5	277.2
62.5°	267.7	267.0	265.6	267.7	267.7
65°	256.8	252.8	254.1	256.2	256.8
67.5°	244.0	239.9	239.9	241.2	243.3
70°	227.7	225.7	225.7	228.4	231.1
72.5°	209.4	210.8	214.8	218.9	223.0
75°	194.5	197.9	201.9	212.1	218.2
77.5°	175.5	176.2	179.6	189.7	200.6
80°	149.1	148.4	149.1	150.4	152.5
82.5°	117.9	116.6	112.5	113.8	111.1
85°	86.7	84.7	80.0	76.6	75.9
87.5°	50.1	50.1	48.1	45.4	42.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)