

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: P145454

Luminaire Tested: **LDRL-SL4-F04-E-7030**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P145454  
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-7030  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL  
Light Source: (28) 3000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8692.1 lumens  
Efficiency: N/A  
Efficacy: 85.1 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 (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

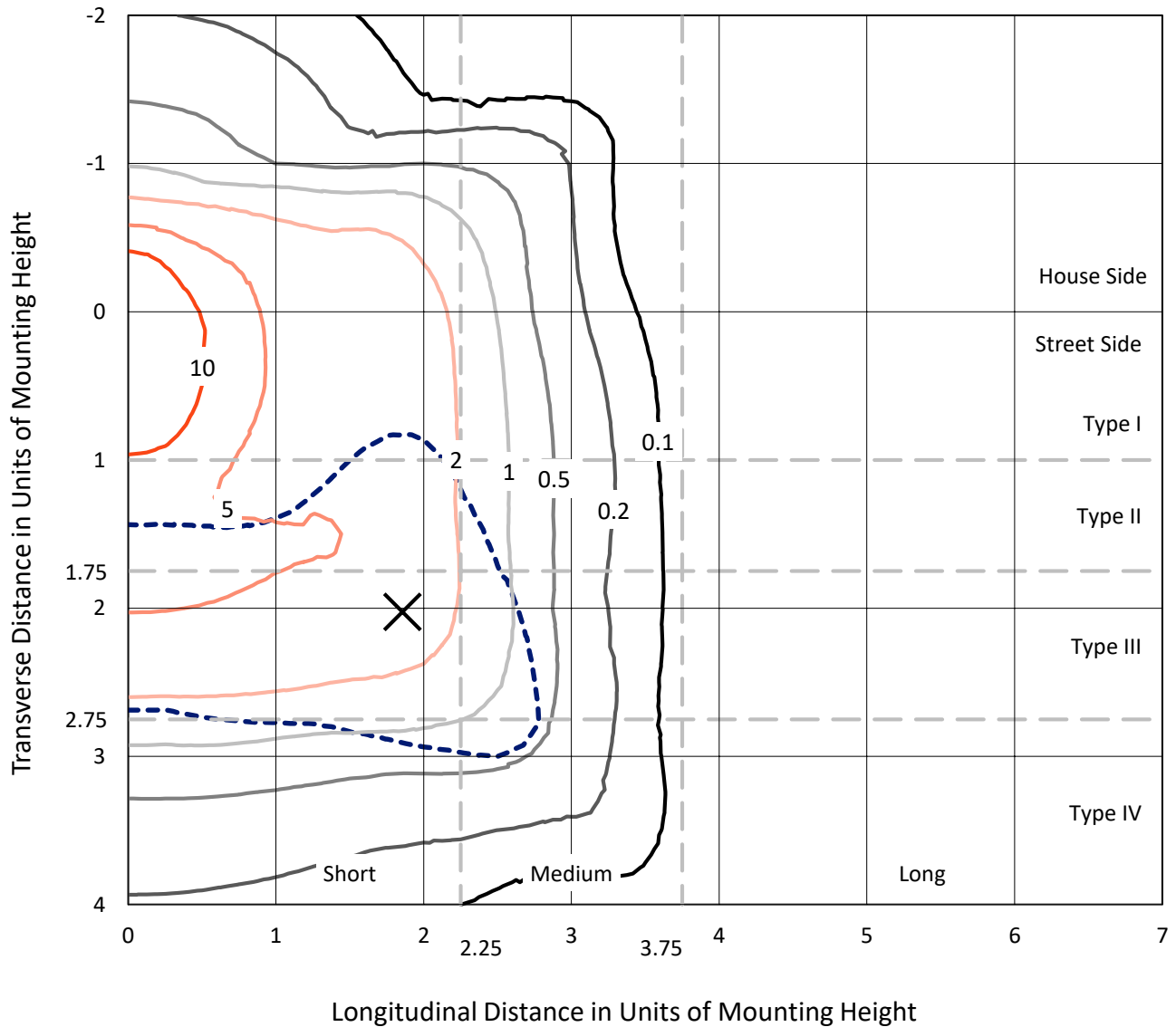


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### Iso-Footcandle Lines of Horizontal Illumination

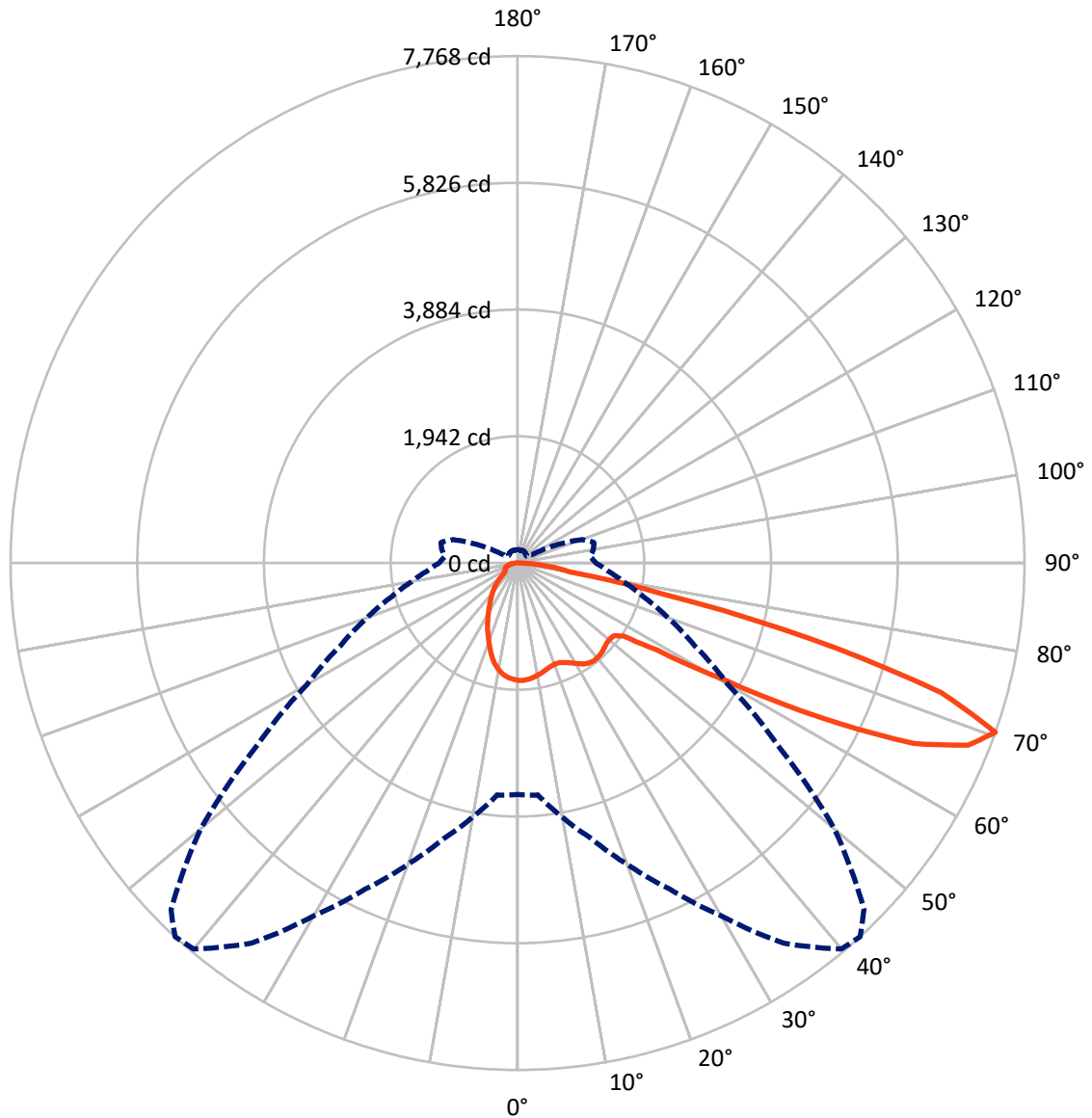
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 18 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	1877.7	0.0	1877.7
	% Fixture	21.6	0.0	21.6
<b>Street Side</b>	Lumens	6814.5	0.0	6814.5
	% Fixture	78.4	0.0	78.4
<b>Total</b>	Lumens	8692.1	0.0	8692.1
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	167.2	1.9
10°-20°	450.5	5.2
20°-30°	657.2	7.6
30°-40°	838.2	9.6
40°-50°	978.3	11.3
50°-60°	1496.1	17.2
60°-70°	2712.1	31.2
70°-80°	1205.9	13.9
80°-90°	186.6	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°	8692.1	100.0
0°-180°	8692.1	100.0



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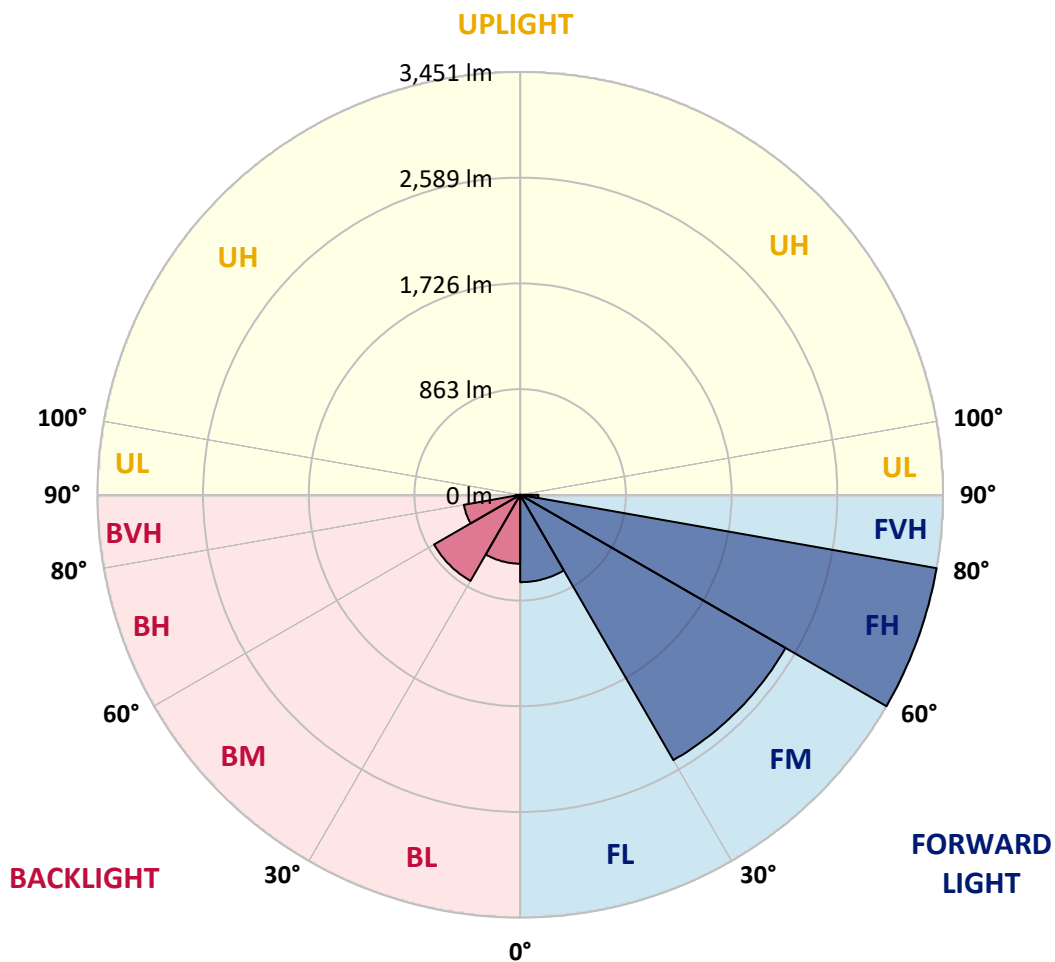
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	713.0	8.2			
FM (30°-60°)	2500.9	28.8			
FH (60°-80°)	3451.5	39.7			G2/5000
FVH (80°-90°)	149.1	1.7			G2/225
BL (0°-30°)	562.0	6.5	B2/1000		
BM (30°-60°)	811.7	9.3	B1/1000		
BH (60°-80°)	466.5	5.4	B1/500		G1/500
BVH (80°-90°)	37.5	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°	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5
2.5°	1806.0	1804.2	1805.4	1806.6	1806.6	1807.2	1801.7	1802.3	1799.9	1800.5	1801.1
5°	1799.3	1797.5	1798.7	1798.7	1798.7	1798.1	1790.9	1790.3	1787.3	1787.3	1786.1
7.5°	1786.7	1780.0	1783.6	1784.3	1783.0	1780.0	1775.8	1771.6	1769.8	1769.8	1765.6
10°	1767.4	1760.1	1761.9	1763.1	1762.5	1756.5	1754.7	1750.5	1745.6	1743.8	1739.0
12.5°	1742.6	1737.8	1740.2	1739.6	1739.6	1734.2	1731.2	1725.1	1719.1	1716.1	1710.1
15°	1726.9	1720.9	1723.3	1723.3	1720.9	1715.5	1711.3	1700.4	1690.2	1686.5	1678.7
17.5°	1736.6	1730.6	1733.0	1731.2	1726.9	1715.5	1704.6	1687.1	1670.8	1661.2	1650.9
20°	1775.2	1769.2	1771.0	1769.8	1763.7	1745.0	1725.1	1695.0	1664.8	1650.3	1634.7
22.5°	1836.7	1831.9	1834.9	1833.1	1823.5	1799.3	1769.8	1726.3	1681.1	1659.4	1637.1
25°	1927.8	1926.6	1931.4	1926.0	1912.1	1875.9	1833.1	1774.6	1715.5	1688.3	1657.0
27.5°	2037.6	2027.3	2034.6	2029.8	2020.1	1974.3	1916.3	1842.2	1766.8	1731.2	1693.8
30°	2136.5	2127.5	2140.7	2138.3	2123.8	2076.8	2003.8	1917.0	1831.9	1786.7	1743.8
32.5°	2251.1	2239.7	2249.9	2249.9	2228.2	2164.9	2081.6	1982.1	1892.8	1844.6	1793.3
35°	2371.2	2359.1	2368.7	2365.7	2327.1	2243.3	2138.9	2031.0	1932.6	1883.2	1830.7
37.5°	2482.7	2480.9	2483.4	2463.4	2409.8	2302.4	2177.5	2056.9	1952.5	1900.7	1845.8
40°	2594.3	2590.1	2579.9	2544.9	2466.5	2337.4	2197.4	2065.9	1953.7	1899.5	1844.0
42.5°	2664.3	2656.5	2639.0	2591.3	2493.0	2345.8	2191.4	2052.1	1939.3	1883.8	1829.5
45°	2688.4	2680.6	2659.5	2605.8	2493.6	2332.6	2167.9	2024.3	1912.1	1861.5	1806.6
47.5°	2668.5	2663.7	2644.4	2590.7	2474.3	2307.8	2138.3	1996.6	1886.2	1836.7	1785.5
50°	2634.8	2631.7	2614.8	2565.4	2456.2	2292.7	2124.5	1983.3	1879.0	1833.1	1784.9
52.5°	2719.2	2710.2	2680.0	2621.5	2494.2	2319.9	2146.2	2003.2	1895.8	1849.4	1799.9
55°	3757.3	3690.3	3540.8	3260.3	2867.6	2563.0	2306.6	2134.1	2018.3	1973.1	1926.0
57.5°	4941.4	4871.4	4809.3	4595.1	4128.9	3553.4	3035.9	2733.1	2525.6	2505.7	2487.0
60°	5397.4	5419.7	5414.3	5334.7	5095.8	4822.5	4389.4	4031.8	3635.5	3619.2	3642.7
62.5°	5711.7	5730.4	5732.8	5708.6	5630.8	5539.7	5449.3	5334.7	5259.3	5226.7	5016.2
65°	5841.3	5868.5	5928.2	5972.8	5985.5	6016.9	6098.9	6410.8	6670.7	6668.9	6422.2
67.5°	5346.1	5378.7	5604.9	5826.9	6013.2	6229.2	6561.6	7068.8	7460.3	7448.2	7246.2
70°	3548.0	3568.5	3952.7	4370.7	4913.0	5512.6	6238.8	7113.5	7720.3	7767.9	7507.4
72.5°	2176.3	2223.4	2348.8	2518.3	2807.9	3363.4	4443.1	5937.8	6828.2	6783.5	6576.0
75°	1469.4	1471.8	1468.2	1486.3	1502.6	1614.8	2049.7	3265.1	4625.3	4649.4	4560.2
77.5°	1004.3	1017.6	1024.8	1020.0	1036.3	1031.5	1056.8	1118.9	1772.8	2262.6	2079.2
80°	877.6	883.1	890.9	879.5	849.3	832.4	855.9	833.6	785.4	811.3	776.9
82.5°	555.5	571.8	573.6	613.4	672.6	675.0	705.1	682.8	621.3	580.9	531.4
85°	399.3	405.3	416.2	418.6	398.1	380.6	391.5	372.8	336.0	314.3	278.1
87.5°	232.8	238.9	249.7	243.1	222.6	197.2	177.9	153.2	121.2	113.4	100.1
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°	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5
2.5°	1801.7	1798.7	1796.3	1795.1	1797.5	1795.1	1792.7	1791.5	1789.1	1789.7	1786.7
5°	1784.9	1780.6	1777.0	1774.0	1776.4	1772.2	1768.6	1766.2	1763.1	1762.5	1759.5
7.5°	1761.3	1754.7	1749.9	1744.4	1738.4	1734.8	1730.6	1726.3	1719.7	1719.1	1717.9
10°	1730.6	1725.1	1715.5	1707.0	1698.6	1689.5	1680.5	1673.9	1666.0	1663.0	1658.8
12.5°	1699.8	1688.9	1677.5	1664.2	1654.0	1639.5	1627.4	1614.8	1603.3	1596.1	1588.2
15°	1663.6	1652.2	1635.9	1623.2	1608.7	1592.4	1576.8	1558.1	1539.4	1527.9	1517.0
17.5°	1632.2	1617.8	1604.5	1586.4	1571.9	1553.2	1529.7	1509.8	1487.5	1468.8	1448.9
20°	1608.1	1591.8	1576.1	1559.9	1542.4	1521.3	1495.3	1467.0	1438.6	1412.1	1382.5
22.5°	1598.5	1572.5	1555.0	1540.0	1521.9	1497.7	1468.8	1433.8	1398.8	1365.0	1330.6
25°	1606.9	1568.3	1541.2	1524.3	1508.0	1483.3	1450.7	1410.9	1369.9	1327.0	1286.0
27.5°	1629.8	1581.0	1542.4	1515.8	1497.1	1473.0	1436.8	1395.2	1348.7	1300.5	1256.5
30°	1663.0	1602.1	1553.8	1515.8	1488.1	1460.3	1421.1	1374.1	1325.2	1274.6	1225.1
32.5°	1699.2	1625.6	1567.7	1517.6	1474.8	1439.8	1398.8	1353.0	1301.1	1247.4	1194.3
35°	1726.3	1642.5	1573.7	1511.0	1456.1	1412.1	1368.0	1323.4	1272.7	1218.5	1165.4
37.5°	1737.8	1649.1	1572.5	1497.1	1430.2	1381.9	1336.1	1291.4	1242.6	1191.3	1142.5
40°	1738.4	1649.1	1565.3	1478.4	1403.0	1350.6	1302.3	1260.7	1214.8	1170.8	1127.4
42.5°	1726.9	1640.7	1552.0	1460.9	1383.1	1324.0	1274.6	1231.7	1194.9	1155.7	1118.9
45°	1706.4	1623.8	1540.0	1451.3	1375.9	1317.4	1264.3	1223.9	1190.7	1155.7	1123.8
47.5°	1690.8	1614.1	1540.6	1465.2	1393.4	1333.1	1275.8	1232.9	1204.6	1176.8	1153.9
50°	1693.8	1617.8	1547.8	1476.0	1405.4	1344.5	1289.0	1252.2	1235.3	1226.3	1220.9
52.5°	1709.5	1632.2	1579.2	1531.5	1508.6	1471.2	1440.4	1412.7	1416.9	1395.2	1367.4
55°	1871.1	1845.2	1906.1	1950.1	1971.8	2009.8	2064.7	2012.3	2005.0	1938.1	1739.0
57.5°	2512.3	2573.8	2667.3	2733.7	2740.3	2728.9	2683.6	2640.2	2569.6	2468.9	2190.2
60°	3587.8	3573.3	3486.5	3370.0	3279.6	3160.7	3041.3	2940.6	2827.2	2672.8	2376.0
62.5°	4718.8	4370.1	4060.7	3797.1	3573.3	3374.9	3194.5	3043.1	2887.5	2665.5	2349.4
65°	5632.0	4961.3	4416.0	3991.9	3659.0	3378.5	3145.7	2937.0	2728.9	2471.9	2165.5
67.5°	6284.7	5220.7	4397.9	3801.3	3334.5	2948.4	2609.4	2371.8	2158.2	1956.2	1818.0
70°	6336.6	4861.7	3720.5	2990.6	2452.0	1998.4	1646.7	1387.3	1201.6	1117.7	1177.4
72.5°	5414.9	3596.9	2473.7	1830.7	1453.1	1129.2	907.8	725.6	576.1	502.5	512.7
75°	3189.1	1726.9	1114.1	830.0	678.0	541.7	468.7	395.7	349.2	279.9	223.8
77.5°	1214.2	751.0	562.2	466.9	333.0	239.5	188.8	162.9	149.6	147.8	139.9
80°	699.7	550.7	385.4	252.1	184.6	156.2	133.9	114.6	106.8	105.0	108.0
82.5°	442.1	343.2	211.7	162.3	134.5	115.8	96.5	83.8	77.2	74.8	79.0
85°	228.6	171.9	129.1	111.0	103.1	94.1	77.2	64.5	63.9	67.0	77.2
87.5°	84.4	73.6	57.9	50.1	53.7	50.1	36.2	31.4	28.4	37.4	54.3
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):**

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5	1797.5
2.5°	1786.7	1785.5	1786.1	1784.9	1784.9	1786.7	1784.3	1782.4	1785.5	1785.5	1787.3
5°	1758.9	1760.1	1760.1	1759.5	1760.7	1763.7	1763.1	1763.1	1768.0	1769.8	1772.2
7.5°	1714.9	1716.7	1717.3	1719.1	1719.7	1723.9	1726.9	1730.6	1737.8	1739.6	1745.0
10°	1655.2	1654.0	1658.2	1657.6	1663.0	1666.6	1669.0	1676.9	1687.7	1693.8	1699.2
12.5°	1584.6	1584.6	1587.0	1587.6	1592.4	1597.3	1600.3	1609.9	1619.0	1626.8	1638.9
15°	1509.8	1507.4	1502.0	1501.4	1503.2	1508.0	1514.6	1521.9	1535.7	1547.2	1557.4
17.5°	1431.4	1424.1	1417.5	1409.1	1408.5	1407.9	1411.5	1416.9	1438.6	1450.1	1464.6
20°	1362.0	1346.3	1330.6	1313.2	1302.9	1298.1	1299.9	1307.1	1327.6	1342.7	1357.8
22.5°	1299.9	1276.4	1251.6	1223.9	1207.0	1196.7	1197.9	1201.0	1216.0	1225.1	1232.9
25°	1246.8	1214.2	1179.8	1144.3	1120.7	1105.1	1104.4	1104.4	1097.8	1099.0	1094.8
27.5°	1210.6	1165.4	1121.3	1079.7	1049.0	1033.3	1012.2	997.1	983.8	965.7	957.9
30°	1175.6	1129.2	1079.1	1033.3	996.5	965.7	926.5	893.9	868.0	843.3	822.2
32.5°	1144.3	1096.0	1048.4	998.3	947.6	894.5	843.3	805.9	769.1	731.1	705.7
35°	1116.5	1071.3	1023.6	966.9	895.7	826.4	768.5	717.8	674.4	628.5	591.7
37.5°	1100.8	1059.8	1010.4	933.1	843.9	764.9	700.3	643.6	585.7	530.8	485.6
40°	1093.0	1056.8	996.5	898.8	797.4	713.0	641.2	573.0	504.9	440.3	393.3
42.5°	1091.8	1056.8	976.0	863.8	757.6	667.1	586.9	504.9	422.2	359.5	317.9
45°	1102.6	1055.6	954.3	832.4	722.0	626.1	529.6	433.1	348.0	293.2	270.2
47.5°	1134.0	1059.8	937.4	805.9	688.2	580.9	464.5	353.5	281.1	256.4	255.8
50°	1184.7	1079.1	933.7	786.6	655.1	524.2	387.9	282.9	247.9	246.7	253.3
52.5°	1264.9	1115.3	942.8	773.3	615.3	450.6	307.0	244.3	237.7	244.3	252.7
55°	1441.6	1179.8	954.9	749.8	550.7	357.1	252.7	231.6	234.6	242.5	250.3
57.5°	1763.1	1313.8	967.5	696.7	446.4	274.5	227.4	226.8	232.2	238.9	246.1
60°	1967.0	1479.0	998.3	618.3	337.2	226.8	217.8	223.8	230.4	235.2	241.3
62.5°	1973.7	1522.5	1014.6	534.4	250.9	207.5	209.3	220.8	228.6	230.4	233.4
65°	1846.4	1440.4	941.0	434.9	208.1	196.6	203.3	213.5	221.4	222.6	225.0
67.5°	1612.9	1270.3	797.4	328.1	189.4	188.2	195.4	203.3	208.7	213.5	217.2
70°	1214.8	1048.4	641.2	254.5	177.9	176.7	184.0	190.6	195.4	201.5	207.5
72.5°	615.9	725.6	486.2	208.1	162.3	163.5	171.3	177.3	181.0	186.4	192.4
75°	209.9	316.7	307.6	168.3	144.8	149.6	153.2	159.8	165.3	168.9	171.9
77.5°	131.5	137.5	158.6	135.7	127.9	129.1	135.1	141.1	147.2	149.6	150.8
80°	109.8	110.4	111.0	108.6	109.2	112.8	116.4	123.1	129.1	130.3	130.9
82.5°	86.9	92.9	92.3	91.7	94.7	98.3	100.7	103.1	105.6	106.8	108.6
85°	76.6	75.4	76.0	77.8	75.4	73.0	72.4	72.4	76.0	80.2	82.0
87.5°	70.0	59.7	44.6	42.2	42.2	41.0	38.6	38.6	42.2	45.8	47.7
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°	1797.5	1797.5	1797.5	1797.5	1797.5
2.5°	1786.7	1787.3	1786.7	1786.7	1789.7
5°	1773.4	1775.8	1774.6	1776.4	1778.2
7.5°	1746.2	1752.3	1753.5	1758.3	1756.5
10°	1707.0	1711.3	1717.3	1722.1	1720.3
12.5°	1644.9	1655.2	1664.2	1669.6	1668.4
15°	1565.9	1580.4	1592.4	1596.7	1591.8
17.5°	1481.4	1490.5	1505.0	1508.0	1512.8
20°	1374.7	1374.1	1386.7	1386.7	1384.3
22.5°	1235.3	1244.4	1244.4	1235.9	1231.7
25°	1093.0	1096.0	1087.0	1088.8	1077.3
27.5°	950.0	942.2	935.0	938.0	929.5
30°	813.7	796.8	789.6	790.8	781.7
32.5°	682.8	662.9	655.7	646.0	638.2
35°	564.0	532.6	513.9	509.1	514.5
37.5°	447.6	425.3	402.9	386.6	388.5
40°	354.1	331.2	316.7	310.0	308.8
42.5°	292.5	279.3	276.3	276.9	276.9
45°	265.4	266.0	268.4	270.8	271.4
47.5°	260.0	263.6	267.8	270.8	271.4
50°	259.4	263.0	266.0	269.6	270.8
52.5°	258.8	261.2	263.0	264.8	266.6
55°	256.4	257.6	257.0	258.2	260.0
57.5°	250.3	250.9	249.7	250.3	253.9
60°	244.9	245.5	243.1	246.1	246.7
62.5°	238.3	237.7	236.5	238.3	238.3
65°	228.6	225.0	226.2	228.0	228.6
67.5°	217.2	213.5	213.5	214.7	216.5
70°	202.7	200.9	200.9	203.3	205.7
72.5°	186.4	187.6	191.2	194.8	198.5
75°	173.1	176.1	179.8	188.8	194.2
77.5°	156.2	156.8	159.8	168.9	178.5
80°	132.7	132.1	132.7	133.9	135.7
82.5°	105.0	103.7	100.1	101.3	98.9
85°	77.2	75.4	71.2	68.2	67.6
87.5°	44.6	44.6	42.8	40.4	38.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)