

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: P145464

Luminaire Tested: **LDRL-SL4-F05-E-7030**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P145464  
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-F05-E-7030  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(5) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL  
Light Source: (35) 3000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10865.2 lumens  
Efficiency: N/A  
Efficacy: 81.5 lumens/watt  
Luminous Opening: Rectangular (W 0.83' x L: 1' x H: 0')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B2 - U0 - G2

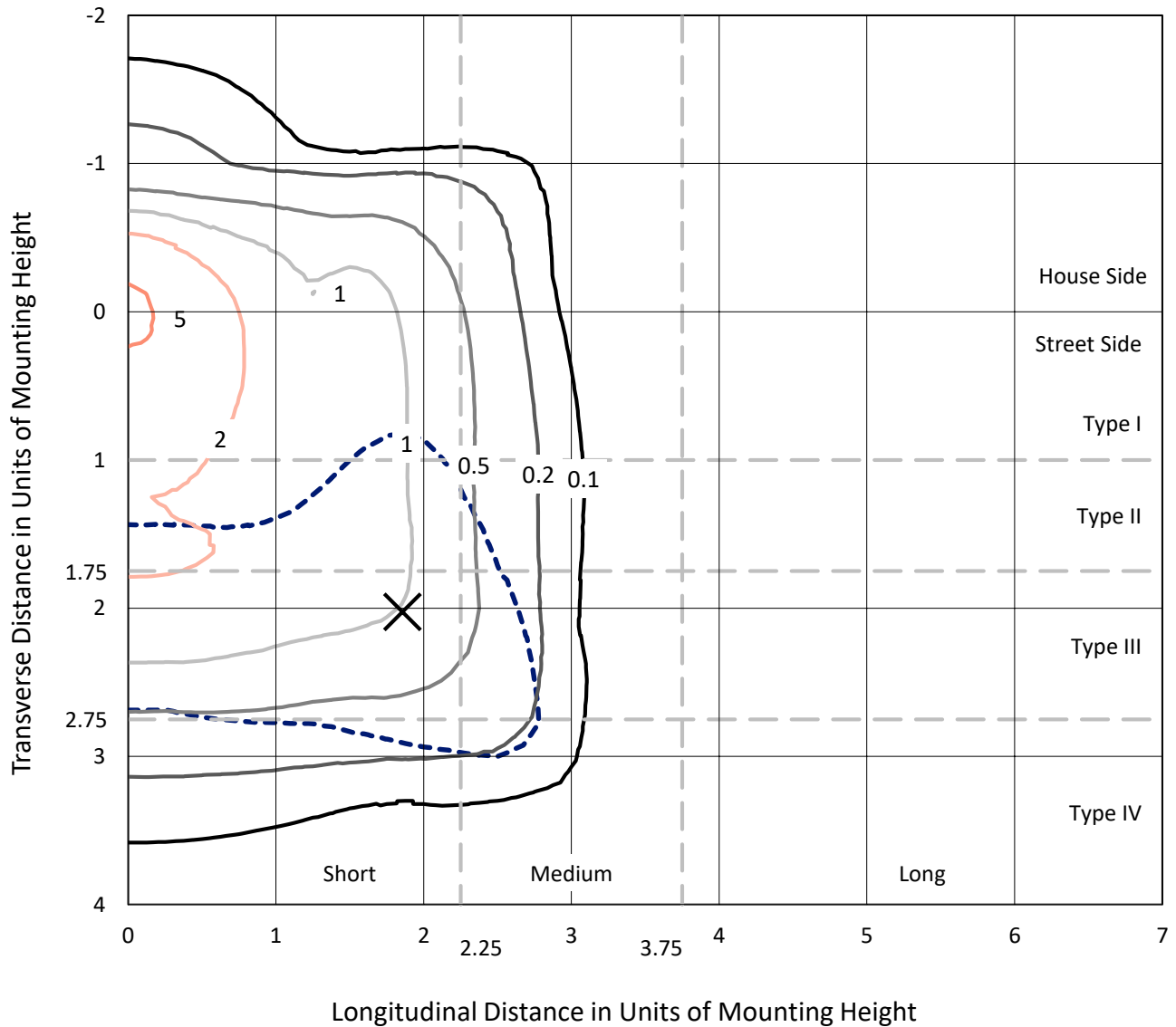
Input Watts (W): 133.3  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

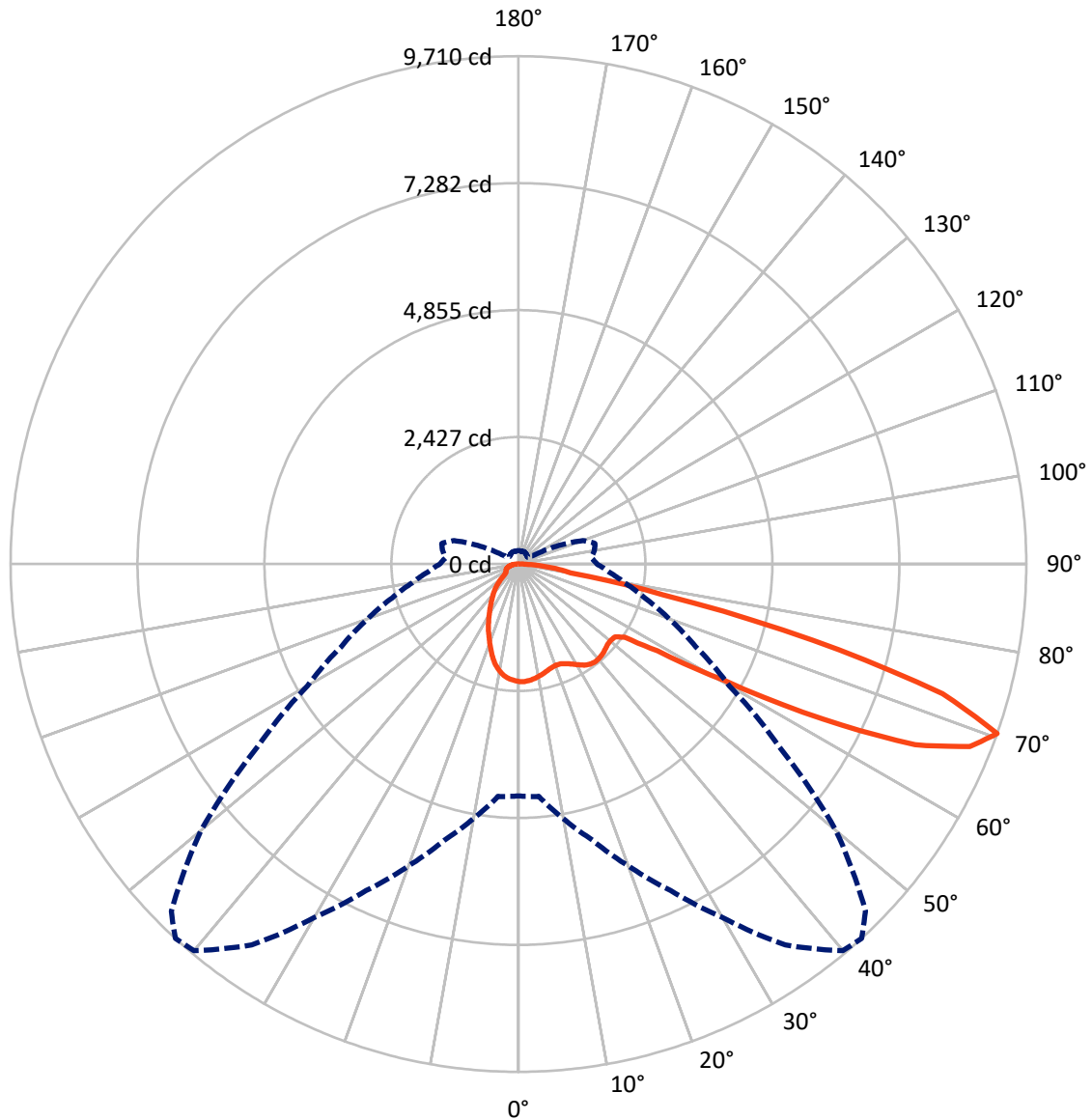
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.6 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	2347.1	0.0	2347.1
	% Fixture	21.6	0.0	21.6
<b>Street Side</b>	Lumens	8518.1	0.0	8518.1
	% Fixture	78.4	0.0	78.4
<b>Total</b>	Lumens	10865.2	0.0	10865.2
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	209.1	1.9
10°-20°	563.2	5.2
20°-30°	821.5	7.6
30°-40°	1047.7	9.6
40°-50°	1222.9	11.3
50°-60°	1870.2	17.2
60°-70°	3390.1	31.2
70°-80°	1507.3	13.9
80°-90°	233.3	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°	10865.2	100.0
0°-180°	10865.2	100.0



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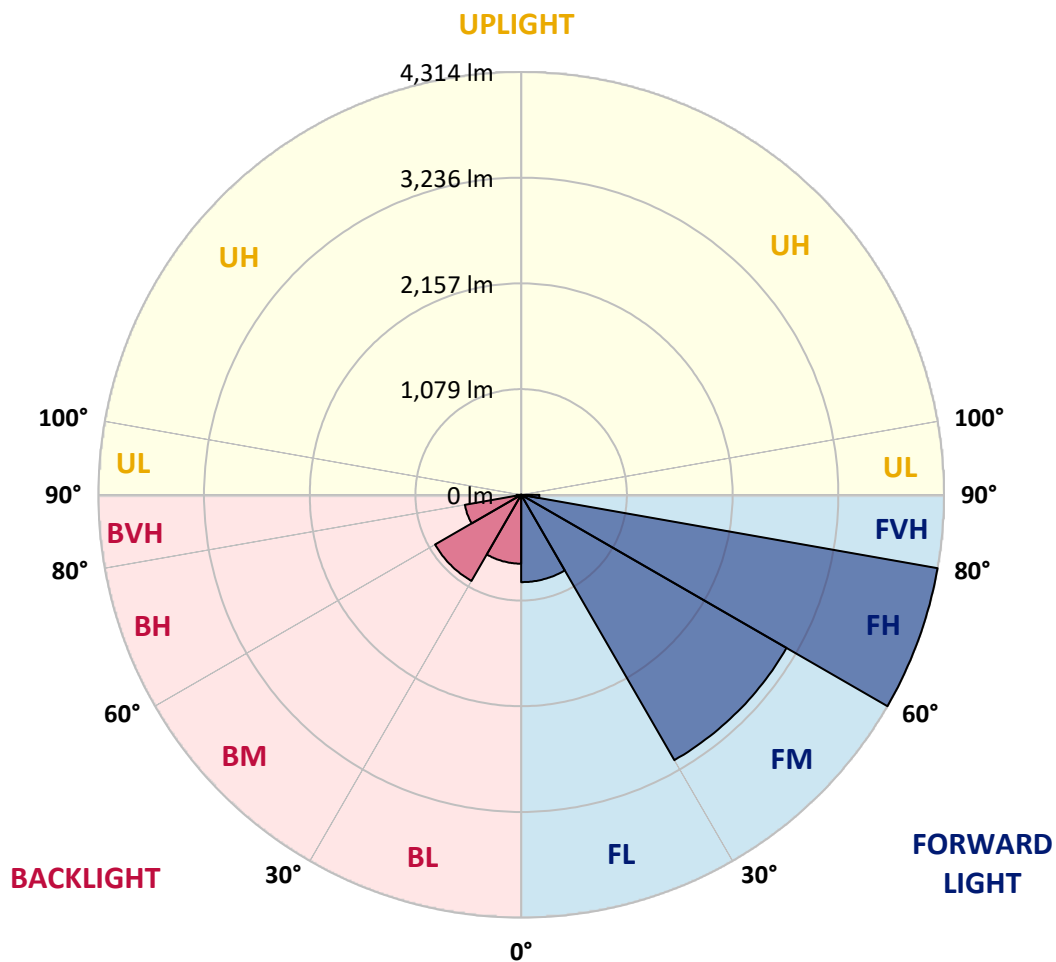
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	891.2	8.2			
FM	(30°-60°)	3126.2	28.8			
FH	(60°-80°)	4314.3	39.7			G2/5000
FVH	(80°-90°)	186.4	1.7			G2/225
BL	(0°-30°)	702.5	6.5	B2/1000		
BM	(30°-60°)	1014.6	9.3	B2/2500		
BH	(60°-80°)	583.1	5.4	B2/1000		G2/1000
BVH	(80°-90°)	46.9	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°	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9
2.5°	2257.5	2255.2	2256.7	2258.2	2258.2	2259.0	2252.2	2252.9	2249.9	2250.7	2251.4
5°	2249.2	2246.9	2248.4	2248.4	2248.4	2247.7	2238.6	2237.9	2234.1	2234.1	2232.6
7.5°	2233.3	2225.0	2229.6	2230.3	2228.8	2225.0	2219.8	2214.5	2212.2	2212.2	2206.9
10°	2209.2	2200.2	2202.4	2203.9	2203.2	2195.6	2193.4	2188.1	2182.1	2179.8	2173.8
12.5°	2178.3	2172.3	2175.3	2174.5	2174.5	2167.7	2164.0	2156.4	2148.9	2145.1	2137.6
15°	2158.7	2151.1	2154.2	2154.2	2151.1	2144.4	2139.1	2125.5	2112.7	2108.2	2098.4
17.5°	2170.7	2163.2	2166.2	2164.0	2158.7	2144.4	2130.8	2108.9	2088.6	2076.5	2063.7
20°	2219.0	2211.5	2213.7	2212.2	2204.7	2181.3	2156.4	2118.7	2081.0	2062.9	2043.3
22.5°	2295.9	2289.9	2293.6	2291.4	2279.3	2249.2	2212.2	2157.9	2101.4	2074.2	2046.3
25°	2409.8	2408.3	2414.3	2407.5	2390.2	2344.9	2291.4	2218.2	2144.4	2110.4	2071.2
27.5°	2547.0	2534.2	2543.2	2537.2	2525.1	2467.8	2395.4	2302.7	2208.4	2164.0	2117.2
30°	2670.6	2659.3	2675.9	2672.9	2654.8	2596.0	2504.8	2396.2	2289.9	2233.3	2179.8
32.5°	2813.9	2799.6	2812.4	2812.4	2785.3	2706.1	2602.0	2477.6	2366.0	2305.7	2241.6
35°	2963.9	2948.9	2960.9	2957.2	2908.9	2804.1	2673.7	2538.7	2415.8	2354.0	2288.4
37.5°	3103.4	3101.2	3104.2	3079.3	3012.2	2878.0	2721.9	2571.1	2440.7	2375.8	2307.2
40°	3242.9	3237.6	3224.8	3181.1	3083.1	2921.7	2746.8	2582.4	2442.2	2374.3	2305.0
42.5°	3330.4	3320.6	3298.7	3239.2	3116.3	2932.3	2739.3	2565.1	2424.1	2354.7	2286.9
45°	3360.5	3350.7	3324.4	3257.3	3117.0	2915.7	2709.9	2530.4	2390.2	2326.8	2258.2
47.5°	3335.7	3329.6	3305.5	3238.4	3092.9	2884.8	2672.9	2495.7	2357.7	2295.9	2231.8
50°	3293.4	3289.7	3268.6	3206.7	3070.3	2865.9	2655.6	2479.1	2348.7	2291.4	2231.1
52.5°	3399.0	3387.7	3350.0	3276.9	3117.8	2899.9	2682.7	2504.0	2369.8	2311.7	2249.9
55°	4696.6	4612.9	4425.9	4075.3	3584.5	3203.7	2883.3	2667.6	2522.9	2466.3	2407.5
57.5°	6176.7	6089.3	6011.6	5743.9	5161.1	4441.8	3794.8	3416.3	3157.0	3132.1	3108.7
60°	6746.7	6774.6	6767.8	6668.3	6369.7	6028.2	5486.8	5039.7	4544.3	4524.0	4553.4
62.5°	7139.6	7162.9	7166.0	7135.8	7038.5	6924.7	6811.6	6668.3	6574.1	6533.4	6270.2
65°	7301.7	7335.6	7410.2	7466.0	7481.9	7521.1	7623.6	8013.4	8338.4	8336.2	8027.8
67.5°	6682.6	6723.4	7006.1	7283.6	7516.6	7786.5	8201.9	8836.0	9325.4	9310.3	9057.7
70°	4435.0	4460.6	4940.9	5463.4	6141.3	6890.7	7798.6	8891.8	9650.4	9709.9	9384.2
72.5°	2720.4	2779.2	2936.1	3147.9	3509.8	4204.3	5553.9	7422.3	8535.2	8479.4	8220.0
75°	1836.7	1839.7	1835.2	1857.8	1878.2	2018.4	2562.1	4081.4	5781.6	5811.8	5700.2
77.5°	1255.4	1272.0	1281.0	1275.0	1295.4	1289.3	1321.0	1398.7	2216.0	2828.2	2599.0
80°	1097.1	1103.8	1113.6	1099.3	1061.6	1040.5	1069.9	1042.0	981.7	1014.1	971.1
82.5°	694.4	714.8	717.0	766.8	840.7	843.7	881.4	853.5	776.6	726.1	664.3
85°	499.1	506.7	520.3	523.3	497.6	475.8	489.3	466.0	420.0	392.8	347.6
87.5°	291.0	298.6	312.2	303.9	278.2	246.6	222.4	191.5	151.6	141.8	125.2
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):**

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9
2.5°	2252.2	2248.4	2245.4	2243.9	2246.9	2243.9	2240.9	2239.4	2236.3	2237.1	2233.3
5°	2231.1	2225.8	2221.3	2217.5	2220.5	2215.2	2210.7	2207.7	2203.9	2203.2	2199.4
7.5°	2201.7	2193.4	2187.3	2180.5	2173.0	2168.5	2163.2	2157.9	2149.6	2148.9	2147.4
10°	2163.2	2156.4	2144.4	2133.8	2123.2	2111.9	2100.6	2092.3	2082.5	2078.8	2073.5
12.5°	2124.8	2111.2	2096.9	2080.3	2067.5	2049.4	2034.3	2018.4	2004.1	1995.1	1985.3
15°	2079.5	2065.2	2044.8	2029.0	2010.9	1990.5	1970.9	1947.6	1924.2	1909.9	1896.3
17.5°	2040.3	2022.2	2005.6	1983.0	1964.9	1941.5	1912.1	1887.2	1859.3	1836.0	1811.1
20°	2010.1	1989.8	1970.2	1949.8	1928.0	1901.6	1869.1	1833.7	1798.3	1765.1	1728.2
22.5°	1998.1	1965.7	1943.8	1924.9	1902.3	1872.2	1836.0	1792.2	1748.5	1706.3	1663.3
25°	2008.6	1960.4	1926.5	1905.3	1885.0	1854.1	1813.4	1763.6	1712.3	1658.8	1607.5
27.5°	2037.3	1976.2	1928.0	1894.8	1871.4	1841.3	1796.0	1744.0	1685.9	1625.6	1570.6
30°	2078.8	2002.6	1942.3	1894.8	1860.1	1825.4	1776.4	1717.6	1656.5	1593.2	1531.4
32.5°	2124.0	2032.0	1959.6	1897.0	1843.5	1799.8	1748.5	1691.2	1626.4	1559.3	1492.9
35°	2157.9	2053.1	1967.2	1888.8	1820.1	1765.1	1710.1	1654.3	1590.9	1523.1	1456.7
37.5°	2172.3	2061.4	1965.7	1871.4	1787.7	1727.4	1670.1	1614.3	1553.2	1489.1	1428.1
40°	2173.0	2061.4	1956.6	1848.0	1753.8	1688.2	1627.9	1575.8	1518.5	1463.5	1409.2
42.5°	2158.7	2050.9	1940.0	1826.2	1728.9	1655.0	1593.2	1539.7	1493.7	1444.7	1398.7
45°	2133.0	2029.8	1924.9	1814.1	1719.9	1646.7	1580.4	1529.9	1488.4	1444.7	1404.7
47.5°	2113.4	2017.7	1925.7	1831.5	1741.7	1666.3	1594.7	1541.2	1505.7	1471.0	1442.4
50°	2117.2	2022.2	1934.7	1845.0	1756.8	1680.7	1611.3	1565.3	1544.2	1532.9	1526.1
52.5°	2136.8	2040.3	1974.0	1914.4	1885.7	1839.0	1800.5	1765.9	1771.1	1744.0	1709.3
55°	2338.9	2306.5	2382.6	2437.7	2464.8	2512.3	2580.9	2515.3	2506.3	2422.6	2173.8
57.5°	3140.4	3217.3	3334.2	3417.1	3425.4	3411.1	3354.5	3300.2	3212.0	3086.1	2737.8
60°	4484.8	4466.7	4358.1	4212.6	4099.5	3950.9	3801.6	3675.7	3534.0	3340.9	2970.0
62.5°	5898.5	5462.7	5075.9	4746.4	4466.7	4218.6	3993.1	3803.9	3609.4	3331.9	2936.8
65°	7040.0	6201.6	5520.0	4989.9	4573.7	4223.1	3932.1	3671.2	3411.1	3089.9	2706.8
67.5°	7855.9	6525.8	5497.4	4751.7	4168.1	3685.5	3261.8	2964.7	2697.8	2445.2	2272.5
70°	7920.7	6077.2	4650.6	3738.3	3065.0	2498.0	2058.4	1734.2	1502.0	1397.1	1471.8
72.5°	6768.6	4496.1	3092.1	2288.4	1816.4	1411.5	1134.8	907.1	720.1	628.1	640.9
75°	3986.4	2158.7	1392.6	1037.5	847.5	677.1	585.9	494.6	436.6	349.9	279.7
77.5°	1517.8	938.7	702.7	583.6	416.2	299.3	236.0	203.6	187.0	184.7	174.9
80°	874.6	688.4	481.8	315.2	230.7	195.3	167.4	143.3	133.5	131.2	135.0
82.5°	552.7	429.0	264.7	202.8	168.1	144.8	120.6	104.8	96.5	93.5	98.8
85°	285.8	214.9	161.4	138.7	128.9	117.6	96.5	80.7	79.9	83.7	96.5
87.5°	105.6	92.0	72.4	62.6	67.1	62.6	45.2	39.2	35.4	46.7	67.9
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):**

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9	2246.9
2.5°	2233.3	2231.8	2232.6	2231.1	2231.1	2233.3	2230.3	2228.1	2231.8	2231.8	2234.1
5°	2198.6	2200.2	2200.2	2199.4	2200.9	2204.7	2203.9	2203.9	2210.0	2212.2	2215.2
7.5°	2143.6	2145.9	2146.6	2148.9	2149.6	2154.9	2158.7	2163.2	2172.3	2174.5	2181.3
10°	2069.0	2067.5	2072.7	2072.0	2078.8	2083.3	2086.3	2096.1	2109.7	2117.2	2124.0
12.5°	1980.7	1980.7	1983.8	1984.5	1990.5	1996.6	2000.3	2012.4	2023.7	2033.5	2048.6
15°	1887.2	1884.2	1877.4	1876.7	1879.0	1885.0	1893.3	1902.3	1919.7	1934.0	1946.8
17.5°	1789.2	1780.2	1771.9	1761.3	1760.6	1759.8	1764.3	1771.1	1798.3	1812.6	1830.7
20°	1702.5	1682.9	1663.3	1641.4	1628.6	1622.6	1624.9	1633.9	1659.5	1678.4	1697.2
22.5°	1624.9	1595.5	1564.5	1529.9	1508.7	1495.9	1497.4	1501.2	1520.1	1531.4	1541.2
25°	1558.5	1517.8	1474.8	1430.3	1400.9	1381.3	1380.6	1380.6	1372.3	1373.8	1368.5
27.5°	1513.3	1456.7	1401.7	1349.6	1311.2	1291.6	1265.2	1246.4	1229.8	1207.1	1197.3
30°	1469.5	1411.5	1348.9	1291.6	1245.6	1207.1	1158.1	1117.4	1085.0	1054.1	1027.7
32.5°	1430.3	1370.0	1310.4	1247.9	1184.5	1118.2	1054.1	1007.3	961.3	913.8	882.2
35°	1395.6	1339.1	1279.5	1208.7	1119.7	1033.0	960.6	897.3	843.0	785.7	739.7
37.5°	1376.0	1324.8	1262.9	1166.4	1054.8	956.1	875.4	804.5	732.1	663.5	607.0
40°	1366.2	1321.0	1245.6	1123.5	996.8	891.2	801.5	716.3	631.1	550.4	491.6
42.5°	1364.7	1321.0	1220.0	1079.7	947.0	833.9	733.6	631.1	527.8	449.4	397.4
45°	1378.3	1319.5	1192.8	1040.5	902.5	782.6	662.0	541.4	435.1	366.4	337.8
47.5°	1417.5	1324.8	1171.7	1007.3	860.3	726.1	580.6	441.8	351.4	320.4	319.7
50°	1480.8	1348.9	1167.2	983.2	818.8	655.2	484.8	353.6	309.9	308.4	316.7
52.5°	1581.1	1394.1	1178.5	966.6	769.1	563.2	383.8	305.4	297.1	305.4	315.9
55°	1802.0	1474.8	1193.6	937.2	688.4	446.4	315.9	289.5	293.3	303.1	312.9
57.5°	2203.9	1642.2	1209.4	870.9	558.0	343.1	284.3	283.5	290.3	298.6	307.6
60°	2458.8	1848.8	1247.9	772.8	421.5	283.5	272.2	279.7	288.0	294.1	301.6
62.5°	2467.1	1903.1	1268.2	668.0	313.7	259.4	261.6	276.0	285.8	288.0	291.8
65°	2308.0	1800.5	1176.2	543.6	260.1	245.8	254.1	266.9	276.7	278.2	281.2
67.5°	2016.2	1587.9	996.8	410.2	236.8	235.2	244.3	254.1	260.9	266.9	271.4
70°	1518.5	1310.4	801.5	318.2	222.4	220.9	230.0	238.3	244.3	251.8	259.4
72.5°	769.8	907.1	607.7	260.1	202.8	204.3	214.1	221.7	226.2	233.0	240.5
75°	262.4	395.8	384.5	210.4	181.0	187.0	191.5	199.8	206.6	211.1	214.9
77.5°	164.4	171.9	198.3	169.6	159.8	161.4	168.9	176.4	184.0	187.0	188.5
80°	137.2	138.0	138.7	135.7	136.5	141.0	145.5	153.8	161.4	162.9	163.6
82.5°	108.6	116.1	115.4	114.6	118.4	122.9	125.9	128.9	131.9	133.5	135.7
85°	95.8	94.2	95.0	97.3	94.2	91.2	90.5	90.5	95.0	100.3	102.5
87.5°	87.5	74.6	55.8	52.8	52.8	51.3	48.3	48.3	52.8	57.3	59.6
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):**

	160°	165°	170°	175°	180°
0°	2246.9	2246.9	2246.9	2246.9	2246.9
2.5°	2233.3	2234.1	2233.3	2233.3	2237.1
5°	2216.7	2219.8	2218.2	2220.5	2222.8
7.5°	2182.8	2190.4	2191.9	2197.9	2195.6
10°	2133.8	2139.1	2146.6	2152.7	2150.4
12.5°	2056.1	2069.0	2080.3	2087.1	2085.5
15°	1957.4	1975.5	1990.5	1995.8	1989.8
17.5°	1851.8	1863.1	1881.2	1885.0	1891.0
20°	1718.4	1717.6	1733.4	1733.4	1730.4
22.5°	1544.2	1555.5	1555.5	1544.9	1539.7
25°	1366.2	1370.0	1358.7	1361.0	1346.6
27.5°	1187.5	1177.7	1168.7	1172.5	1161.9
30°	1017.1	996.0	987.0	988.5	977.2
32.5°	853.5	828.6	819.6	807.5	797.7
35°	705.0	665.8	642.4	636.4	643.2
37.5°	559.5	531.6	503.7	483.3	485.6
40°	442.6	413.9	395.8	387.6	386.0
42.5°	365.7	349.1	345.3	346.1	346.1
45°	331.8	332.5	335.5	338.5	339.3
47.5°	325.0	329.5	334.8	338.5	339.3
50°	324.2	328.7	332.5	337.0	338.5
52.5°	323.5	326.5	328.7	331.0	333.3
55°	320.4	322.0	321.2	322.7	325.0
57.5°	312.9	313.7	312.2	312.9	317.4
60°	306.1	306.9	303.9	307.6	308.4
62.5°	297.8	297.1	295.6	297.8	297.8
65°	285.8	281.2	282.7	285.0	285.8
67.5°	271.4	266.9	266.9	268.4	270.7
70°	253.3	251.1	251.1	254.1	257.1
72.5°	233.0	234.5	239.0	243.5	248.1
75°	216.4	220.2	224.7	236.0	242.8
77.5°	195.3	196.0	199.8	211.1	223.2
80°	165.9	165.1	165.9	167.4	169.6
82.5°	131.2	129.7	125.2	126.7	123.7
85°	96.5	94.2	89.0	85.2	84.4
87.5°	55.8	55.8	53.5	50.5	47.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)