

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: P145465

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145465
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
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(5) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (35) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11895.9 lumens
Efficiency: N/A
Efficacy: 89.2 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

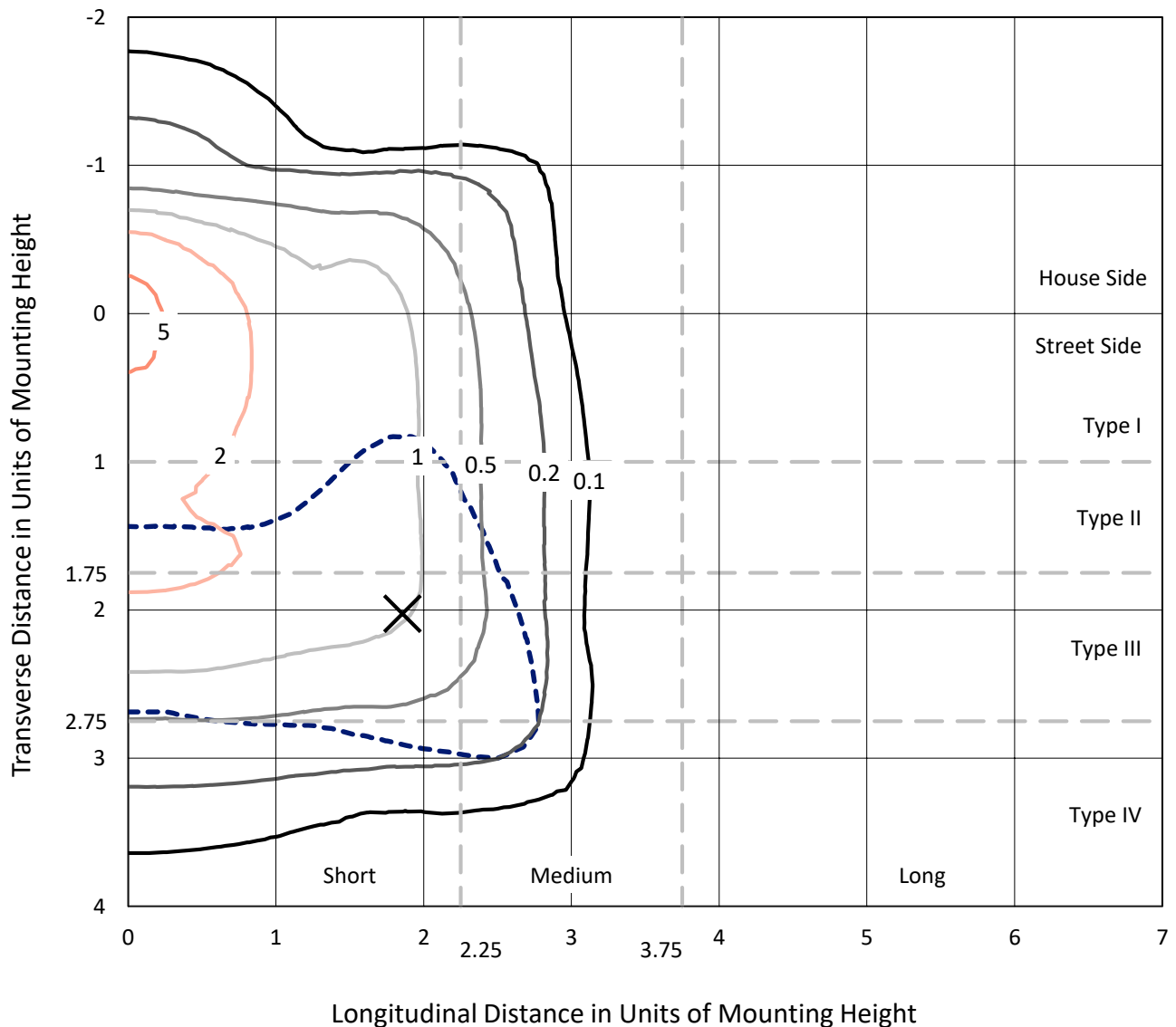
Input Watts (W): 133.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

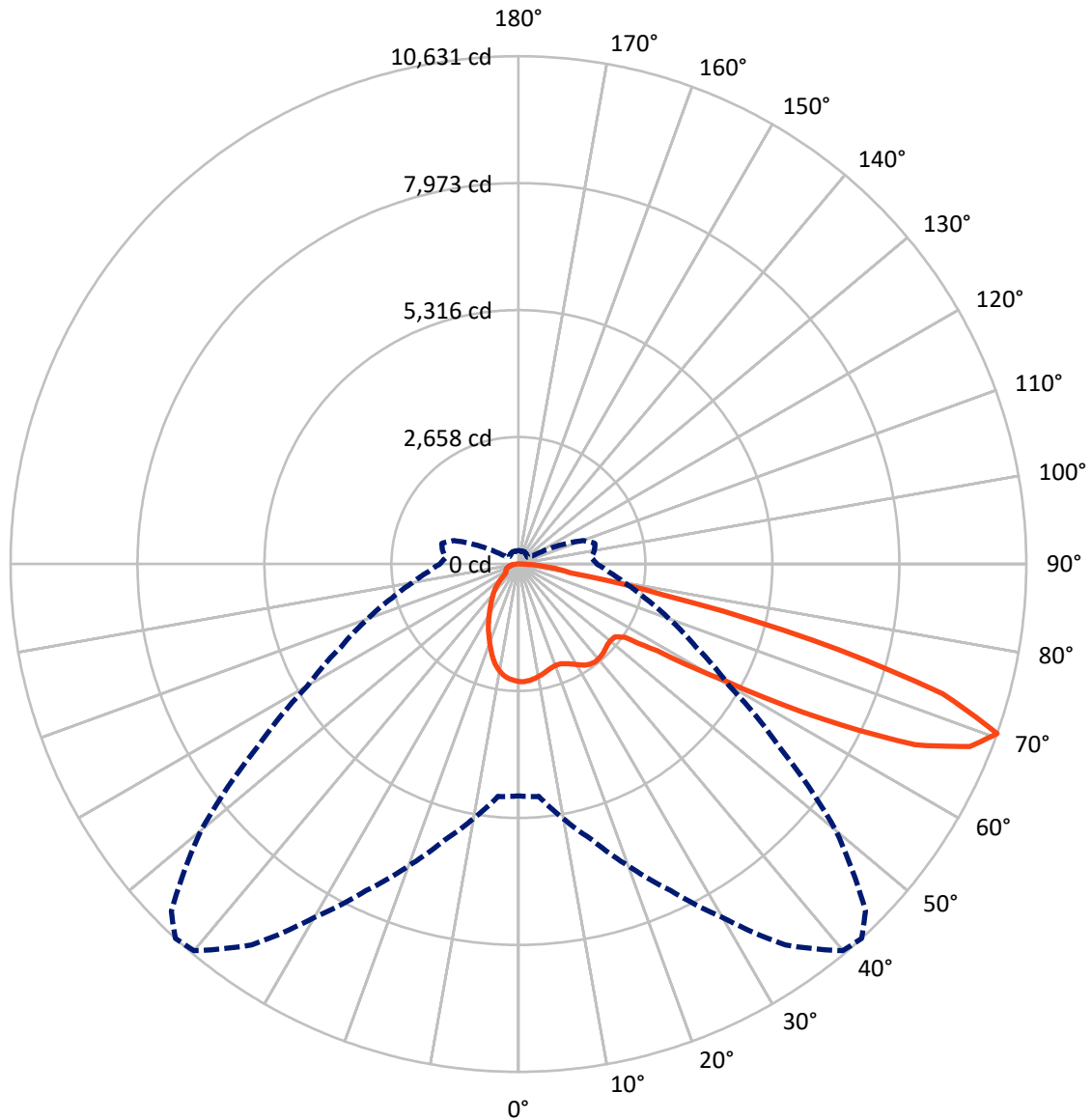
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.2 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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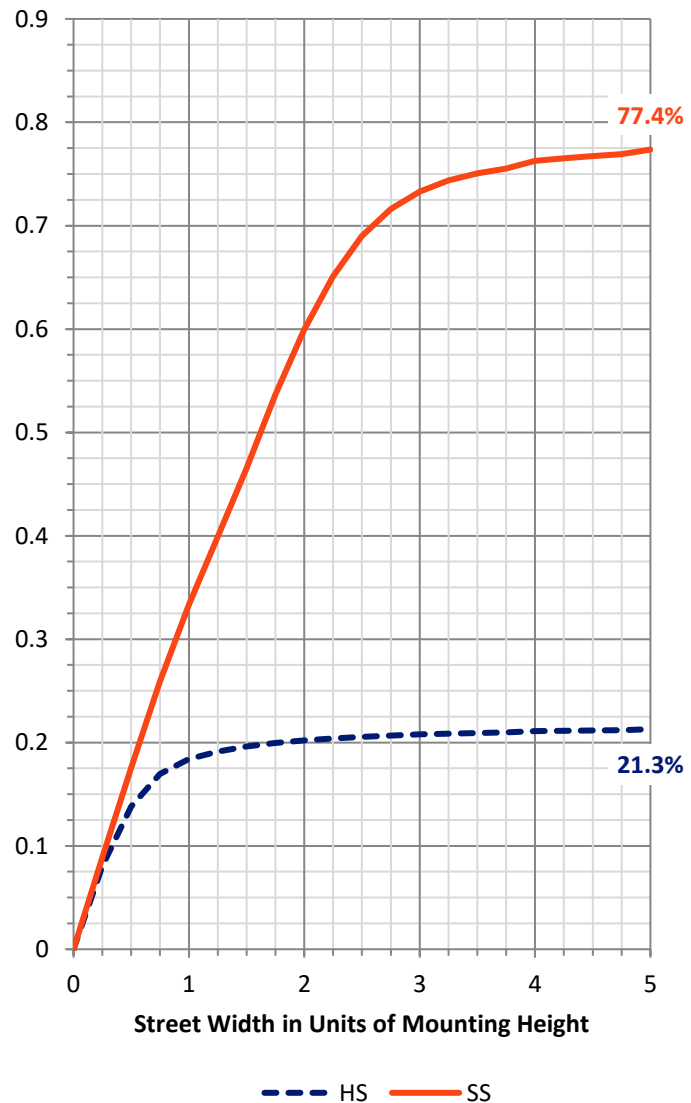
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2569.7	0.0	2569.7
	% Fixture	21.6	0.0	21.6
Street Side	Lumens	9326.2	0.0	9326.2
	% Fixture	78.4	0.0	78.4
Total	Lumens	11895.9	0.0	11895.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	228.9	1.9
10°-20°	616.6	5.2
20°-30°	899.4	7.6
30°-40°	1147.1	9.6
40°-50°	1338.9	11.3
50°-60°	2047.6	17.2
60°-70°	3711.7	31.2
70°-80°	1650.3	13.9
80°-90°	255.4	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°	11895.9	100.0
0°-180°	11895.9	100.0



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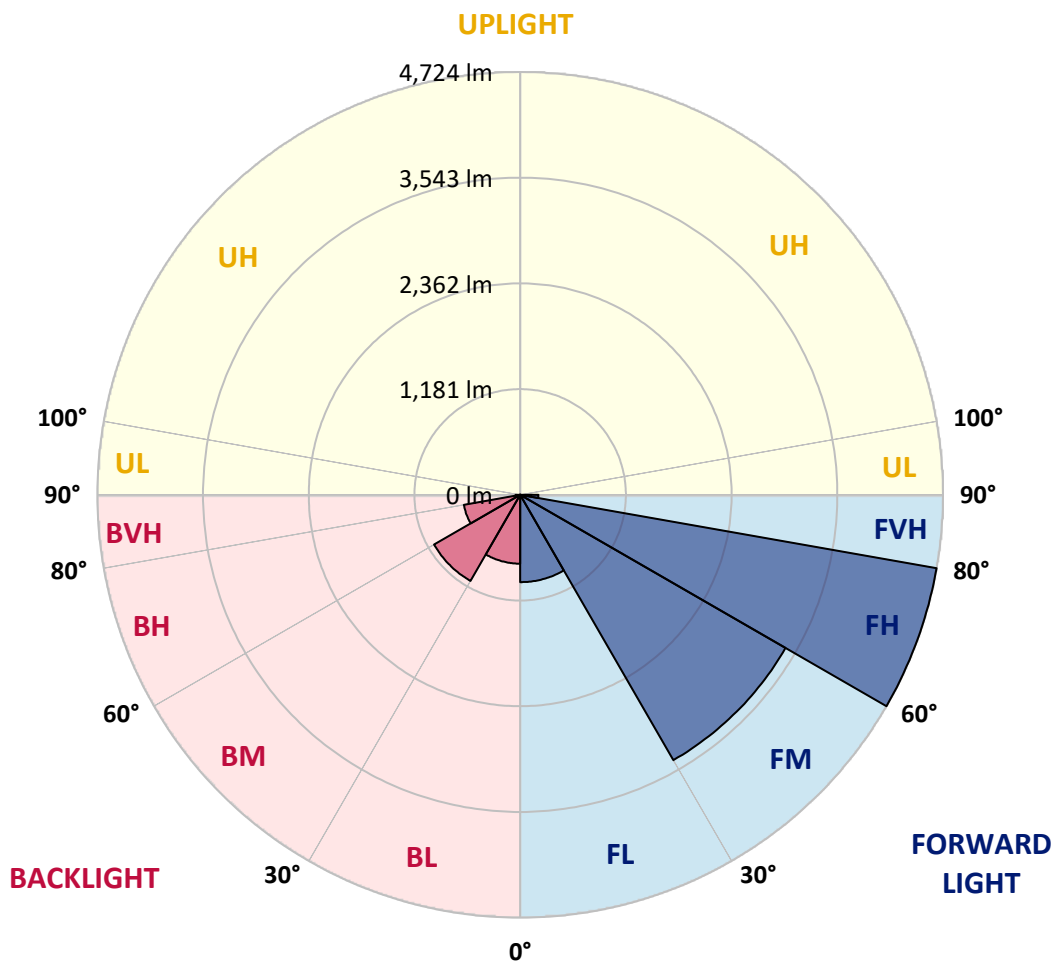
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	975.8	8.2			
FM (30°-60°)	3422.8	28.8			
FH (60°-80°)	4723.6	39.7			G2/5000
FVH (80°-90°)	204.0	1.7			G2/225
BL (0°-30°)	769.1	6.5	B2/1000		
BM (30°-60°)	1110.8	9.3	B2/2500		
BH (60°-80°)	638.4	5.4	B2/1000		G2/1000
BVH (80°-90°)	51.3	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°	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1
2.5°	2471.6	2469.1	2470.8	2472.4	2472.4	2473.3	2465.8	2466.7	2463.4	2464.2	2465.0
5°	2462.5	2460.1	2461.7	2461.7	2461.7	2460.9	2451.0	2450.2	2446.0	2446.0	2444.4
7.5°	2445.2	2436.1	2441.1	2441.9	2440.3	2436.1	2430.3	2424.6	2422.1	2422.1	2416.3
10°	2418.8	2408.9	2411.4	2413.0	2412.2	2403.9	2401.5	2395.7	2389.1	2386.6	2380.0
12.5°	2384.9	2378.3	2381.6	2380.8	2380.8	2373.4	2369.3	2361.0	2352.7	2348.6	2340.4
15°	2363.5	2355.2	2358.5	2358.5	2355.2	2347.8	2342.0	2327.2	2313.1	2308.2	2297.4
17.5°	2376.7	2368.4	2371.7	2369.3	2363.5	2347.8	2332.9	2309.0	2286.7	2273.5	2259.5
20°	2429.5	2421.3	2423.7	2422.1	2413.8	2388.2	2361.0	2319.7	2278.4	2258.6	2237.2
22.5°	2513.7	2507.1	2511.2	2508.8	2495.6	2462.5	2422.1	2362.7	2300.7	2271.0	2240.5
25°	2638.4	2636.7	2643.3	2635.9	2616.9	2567.4	2508.8	2428.7	2347.8	2310.6	2267.7
27.5°	2788.6	2774.6	2784.5	2777.9	2764.7	2701.9	2622.7	2521.2	2418.0	2369.3	2318.1
30°	2924.0	2911.6	2929.8	2926.5	2906.7	2842.3	2742.4	2623.5	2507.1	2445.2	2386.6
32.5°	3080.9	3065.2	3079.2	3079.2	3049.5	2962.8	2848.9	2712.7	2590.5	2524.5	2454.3
35°	3245.1	3228.6	3241.8	3237.7	3184.9	3070.1	2927.3	2779.5	2645.0	2577.3	2505.5
37.5°	3397.9	3395.4	3398.7	3371.4	3298.0	3151.0	2980.1	2815.0	2672.2	2601.2	2526.1
40°	3550.6	3544.8	3530.8	3482.9	3375.6	3198.9	3007.4	2827.4	2673.9	2599.6	2523.6
42.5°	3646.3	3635.6	3611.7	3546.5	3411.9	3210.5	2999.1	2808.4	2654.1	2578.1	2503.8
45°	3679.4	3668.6	3639.7	3566.3	3412.7	3192.3	2966.9	2770.5	2616.9	2547.6	2472.4
47.5°	3652.1	3645.5	3619.1	3545.6	3386.3	3158.5	2926.5	2732.5	2581.4	2513.7	2443.6
50°	3605.9	3601.8	3578.7	3511.0	3361.5	3137.8	2907.5	2714.3	2571.5	2508.8	2442.7
52.5°	3721.5	3709.1	3667.8	3587.7	3413.5	3175.0	2937.2	2741.6	2594.6	2531.1	2463.4
55°	5142.2	5050.6	4845.8	4462.0	3924.5	3507.7	3156.8	2920.7	2762.2	2700.3	2635.9
57.5°	6762.7	6666.9	6581.9	6288.8	5650.7	4863.2	4154.9	3740.5	3456.5	3429.2	3403.6
60°	7386.8	7417.3	7409.9	7300.9	6974.0	6600.1	6007.3	5517.8	4975.4	4953.1	4985.3
62.5°	7816.9	7842.5	7845.8	7812.8	7706.3	7581.6	7457.8	7300.9	7197.8	7153.2	6865.1
65°	7994.4	8031.5	8113.3	8174.3	8191.7	8234.6	8346.9	8773.7	9129.5	9127.0	8789.4
67.5°	7316.6	7361.2	7670.8	7974.6	8229.7	8525.2	8980.1	9674.3	10210.1	10193.6	9917.0
70°	4855.7	4883.8	5409.7	5981.8	6723.9	7544.5	8538.4	9735.4	10565.9	10631.1	10274.5
72.5°	2978.5	3042.9	3214.6	3446.6	3842.8	4603.1	6080.8	8126.5	9344.9	9283.9	8999.9
75°	2011.0	2014.3	2009.3	2034.1	2056.4	2209.9	2805.1	4468.6	6330.1	6363.1	6241.0
77.5°	1374.5	1392.7	1402.6	1396.0	1418.3	1411.6	1446.3	1531.3	2426.2	3096.5	2845.6
80°	1201.1	1208.6	1219.3	1203.6	1162.3	1139.2	1171.4	1140.9	1074.8	1110.3	1063.3
82.5°	760.3	782.6	785.1	839.6	920.5	923.8	965.0	934.5	850.3	795.0	727.3
85°	546.5	554.8	569.6	572.9	544.8	520.9	535.8	510.2	459.8	430.1	380.6
87.5°	318.7	326.9	341.8	332.7	304.6	269.9	243.5	209.7	165.9	155.2	137.0
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):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1
2.5°	2465.8	2461.7	2458.4	2456.8	2460.1	2456.8	2453.5	2451.8	2448.5	2449.3	2445.2
5°	2442.7	2436.9	2432.0	2427.9	2431.2	2425.4	2420.4	2417.1	2413.0	2412.2	2408.1
7.5°	2410.5	2401.5	2394.8	2387.4	2379.2	2374.2	2368.4	2362.7	2353.6	2352.7	2351.1
10°	2368.4	2361.0	2347.8	2336.2	2324.7	2312.3	2299.9	2290.8	2280.1	2276.0	2270.2
12.5°	2326.3	2311.5	2295.8	2277.6	2263.6	2243.8	2227.3	2209.9	2194.2	2184.3	2173.6
15°	2276.8	2261.1	2238.8	2221.5	2201.7	2179.4	2157.9	2132.3	2106.7	2091.1	2076.2
17.5°	2233.9	2214.1	2195.9	2171.1	2151.3	2125.7	2093.5	2066.3	2035.7	2010.2	1982.9
20°	2200.8	2178.6	2157.1	2134.8	2110.9	2082.0	2046.5	2007.7	1968.9	1932.6	1892.1
22.5°	2187.6	2152.1	2128.2	2107.6	2082.8	2049.8	2010.2	1962.3	1914.4	1868.2	1821.1
25°	2199.2	2146.4	2109.2	2086.1	2063.8	2030.0	1985.4	1930.9	1874.8	1816.2	1760.0
27.5°	2230.6	2163.7	2110.9	2074.5	2049.0	2015.9	1966.4	1909.4	1845.9	1779.8	1719.6
30°	2276.0	2192.6	2126.6	2074.5	2036.6	1998.6	1944.9	1880.5	1813.7	1744.3	1676.6
32.5°	2325.5	2224.8	2145.5	2077.0	2018.4	1970.5	1914.4	1851.7	1780.7	1707.2	1634.5
35°	2362.7	2247.9	2153.8	2067.9	1992.8	1932.6	1872.3	1811.2	1741.9	1667.6	1594.9
37.5°	2378.3	2257.0	2152.1	2049.0	1957.3	1891.3	1828.5	1767.4	1700.6	1630.4	1563.5
40°	2379.2	2257.0	2142.2	2023.4	1920.2	1848.4	1782.3	1725.3	1662.6	1602.3	1542.9
42.5°	2363.5	2245.4	2124.1	1999.4	1892.9	1812.0	1744.3	1685.7	1635.4	1581.7	1531.3
45°	2335.4	2222.3	2107.6	1986.2	1883.0	1802.9	1730.3	1675.0	1629.6	1581.7	1538.0
47.5°	2313.9	2209.1	2108.4	2005.2	1907.0	1824.4	1746.0	1687.4	1648.6	1610.6	1579.2
50°	2318.1	2214.1	2118.3	2020.1	1923.5	1840.1	1764.1	1713.8	1690.7	1678.3	1670.9
52.5°	2339.5	2233.9	2161.2	2096.0	2064.6	2013.5	1971.4	1933.4	1939.2	1909.4	1871.5
55°	2560.8	2525.3	2608.7	2668.9	2698.6	2750.6	2825.8	2754.0	2744.0	2652.4	2380.0
57.5°	3438.3	3522.5	3650.5	3741.3	3750.4	3734.7	3672.8	3613.3	3516.7	3378.9	2997.5
60°	4910.2	4890.4	4771.5	4612.2	4488.4	4325.8	4162.3	4024.4	3869.2	3657.9	3251.7
62.5°	6458.1	5980.9	5557.4	5196.7	4890.4	4618.8	4372.0	4164.8	3951.8	3648.0	3215.4
65°	7707.9	6789.9	6043.7	5463.3	5007.6	4623.8	4305.1	4019.5	3734.7	3383.0	2963.6
67.5°	8601.1	7144.9	6018.9	5202.5	4563.5	4035.2	3571.2	3246.0	2953.7	2677.2	2488.1
70°	8672.1	6653.7	5091.8	4093.0	3355.8	2735.0	2253.7	1898.7	1644.4	1529.7	1611.4
72.5°	7410.7	4922.6	3385.5	2505.5	1988.7	1545.4	1242.4	993.1	788.4	687.7	701.7
75°	4364.6	2363.5	1524.7	1135.9	927.9	741.3	641.4	541.5	478.0	383.0	306.3
77.5°	1661.8	1027.8	769.4	639.0	455.7	327.7	258.4	222.9	204.7	202.3	191.5
80°	957.6	753.7	527.5	345.1	252.6	213.8	183.3	156.8	146.1	143.6	147.8
82.5°	605.1	469.7	289.8	222.1	184.1	158.5	132.1	114.7	105.7	102.4	108.1
85°	312.9	235.3	176.7	151.9	141.2	128.8	105.7	88.3	87.5	91.6	105.7
87.5°	115.6	100.7	79.3	68.5	73.5	68.5	49.5	42.9	38.8	51.2	74.3
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°	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1	2460.1
2.5°	2445.2	2443.6	2444.4	2442.7	2442.7	2445.2	2441.9	2439.4	2443.6	2443.6	2446.0
5°	2407.2	2408.9	2408.9	2408.1	2409.7	2413.8	2413.0	2413.0	2419.6	2422.1	2425.4
7.5°	2347.0	2349.4	2350.3	2352.7	2353.6	2359.4	2363.5	2368.4	2378.3	2380.8	2388.2
10°	2265.2	2263.6	2269.4	2268.5	2276.0	2280.9	2284.2	2295.0	2309.8	2318.1	2325.5
12.5°	2168.7	2168.7	2172.0	2172.8	2179.4	2186.0	2190.1	2203.3	2215.7	2226.4	2243.0
15°	2066.3	2063.0	2055.6	2054.7	2057.2	2063.8	2072.9	2082.8	2101.8	2117.5	2131.5
17.5°	1959.0	1949.1	1940.0	1928.4	1927.6	1926.8	1931.7	1939.2	1968.9	1984.6	2004.4
20°	1864.0	1842.6	1821.1	1797.2	1783.1	1776.5	1779.0	1788.9	1817.0	1837.6	1858.3
22.5°	1779.0	1746.8	1713.0	1675.0	1651.9	1637.8	1639.5	1643.6	1664.3	1676.6	1687.4
25°	1706.4	1661.8	1614.7	1566.0	1533.8	1512.4	1511.5	1511.5	1502.5	1504.1	1498.3
27.5°	1656.8	1594.9	1534.7	1477.7	1435.6	1414.1	1385.2	1364.6	1346.4	1321.7	1310.9
30°	1608.9	1545.4	1476.9	1414.1	1363.8	1321.7	1268.0	1223.4	1187.9	1154.1	1125.2
32.5°	1566.0	1500.0	1434.8	1366.2	1296.9	1224.3	1154.1	1102.9	1052.5	1000.5	965.9
35°	1528.0	1466.1	1400.9	1323.3	1225.9	1131.0	1051.7	982.4	922.9	860.2	809.8
37.5°	1506.6	1450.4	1382.8	1277.1	1154.9	1046.8	958.4	880.8	801.6	726.5	664.5
40°	1495.9	1446.3	1363.8	1230.0	1091.3	975.8	877.5	784.2	691.0	602.6	538.2
42.5°	1494.2	1446.3	1335.7	1182.2	1036.9	913.0	803.2	691.0	577.9	492.0	435.1
45°	1509.1	1444.7	1306.0	1139.2	988.2	856.9	724.8	592.7	476.3	401.2	369.8
47.5°	1552.0	1450.4	1282.9	1102.9	941.9	795.0	635.7	483.8	384.7	350.8	350.0
50°	1621.3	1476.9	1277.9	1076.5	896.5	717.4	530.8	387.2	339.3	337.6	346.7
52.5°	1731.1	1526.4	1290.3	1058.3	842.0	616.7	420.2	334.3	325.3	334.3	345.9
55°	1973.0	1614.7	1306.8	1026.1	753.7	488.7	345.9	317.0	321.1	331.9	342.6
57.5°	2413.0	1798.0	1324.1	953.5	610.9	375.6	311.2	310.4	317.8	326.9	336.8
60°	2692.0	2024.2	1366.2	846.2	461.5	310.4	298.0	306.3	315.4	322.0	330.2
62.5°	2701.1	2083.6	1388.5	731.4	343.4	284.0	286.5	302.1	312.9	315.4	319.5
65°	2526.9	1971.4	1287.8	595.2	284.8	269.1	278.2	292.2	303.0	304.6	307.9
67.5°	2207.5	1738.6	1091.3	449.1	259.2	257.6	267.5	278.2	285.6	292.2	297.2
70°	1662.6	1434.8	877.5	348.4	243.5	241.9	251.8	260.9	267.5	275.7	284.0
72.5°	842.9	993.1	665.4	284.8	222.1	223.7	234.4	242.7	247.7	255.1	263.3
75°	287.3	433.4	421.0	230.3	198.1	204.7	209.7	218.8	226.2	231.1	235.3
77.5°	180.0	188.2	217.1	185.7	175.0	176.7	184.9	193.2	201.4	204.7	206.4
80°	150.2	151.1	151.9	148.6	149.4	154.4	159.3	168.4	176.7	178.3	179.1
82.5°	118.9	127.1	126.3	125.5	129.6	134.6	137.9	141.2	144.5	146.1	148.6
85°	104.8	103.2	104.0	106.5	103.2	99.9	99.1	99.1	104.0	109.8	112.3
87.5°	95.8	81.7	61.1	57.8	57.8	56.1	52.8	52.8	57.8	62.7	65.2
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°	2460.1	2460.1	2460.1	2460.1	2460.1
2.5°	2445.2	2446.0	2445.2	2445.2	2449.3
5°	2427.0	2430.3	2428.7	2431.2	2433.6
7.5°	2389.9	2398.1	2399.8	2406.4	2403.9
10°	2336.2	2342.0	2350.3	2356.9	2354.4
12.5°	2251.2	2265.2	2277.6	2285.1	2283.4
15°	2143.1	2162.9	2179.4	2185.2	2178.6
17.5°	2027.5	2039.9	2059.7	2063.8	2070.4
20°	1881.4	1880.5	1897.9	1897.9	1894.6
22.5°	1690.7	1703.1	1703.1	1691.5	1685.7
25°	1495.9	1500.0	1487.6	1490.1	1474.4
27.5°	1300.2	1289.5	1279.6	1283.7	1272.1
30°	1113.6	1090.5	1080.6	1082.3	1069.9
32.5°	934.5	907.3	897.3	884.1	873.4
35°	771.9	728.9	703.3	696.7	704.2
37.5°	612.5	582.0	551.5	529.2	531.6
40°	484.6	453.2	433.4	424.3	422.7
42.5°	400.4	382.2	378.1	378.9	378.9
45°	363.2	364.1	367.4	370.7	371.5
47.5°	355.8	360.8	366.5	370.7	371.5
50°	355.0	359.9	364.1	369.0	370.7
52.5°	354.2	357.5	359.9	362.4	364.9
55°	350.8	352.5	351.7	353.3	355.8
57.5°	342.6	343.4	341.8	342.6	347.5
60°	335.2	336.0	332.7	336.8	337.6
62.5°	326.1	325.3	323.6	326.1	326.1
65°	312.9	307.9	309.6	312.0	312.9
67.5°	297.2	292.2	292.2	293.9	296.4
70°	277.4	274.9	274.9	278.2	281.5
72.5°	255.1	256.7	261.7	266.6	271.6
75°	236.9	241.1	246.0	258.4	265.8
77.5°	213.8	214.6	218.8	231.1	244.4
80°	181.6	180.8	181.6	183.3	185.7
82.5°	143.6	142.0	137.0	138.7	135.4
85°	105.7	103.2	97.4	93.3	92.5
87.5°	61.1	61.1	58.6	55.3	52.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)