

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: P197254

Luminaire Tested: **NAV-AF-04-D-UNV-T2R-8030-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197254
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24459)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-04-D-UNV-T2R-8030-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 80 CRI, 3000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 22886 lumens
Efficiency: N/A
Efficacy: 88.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G3

Input Watts (W): 258
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

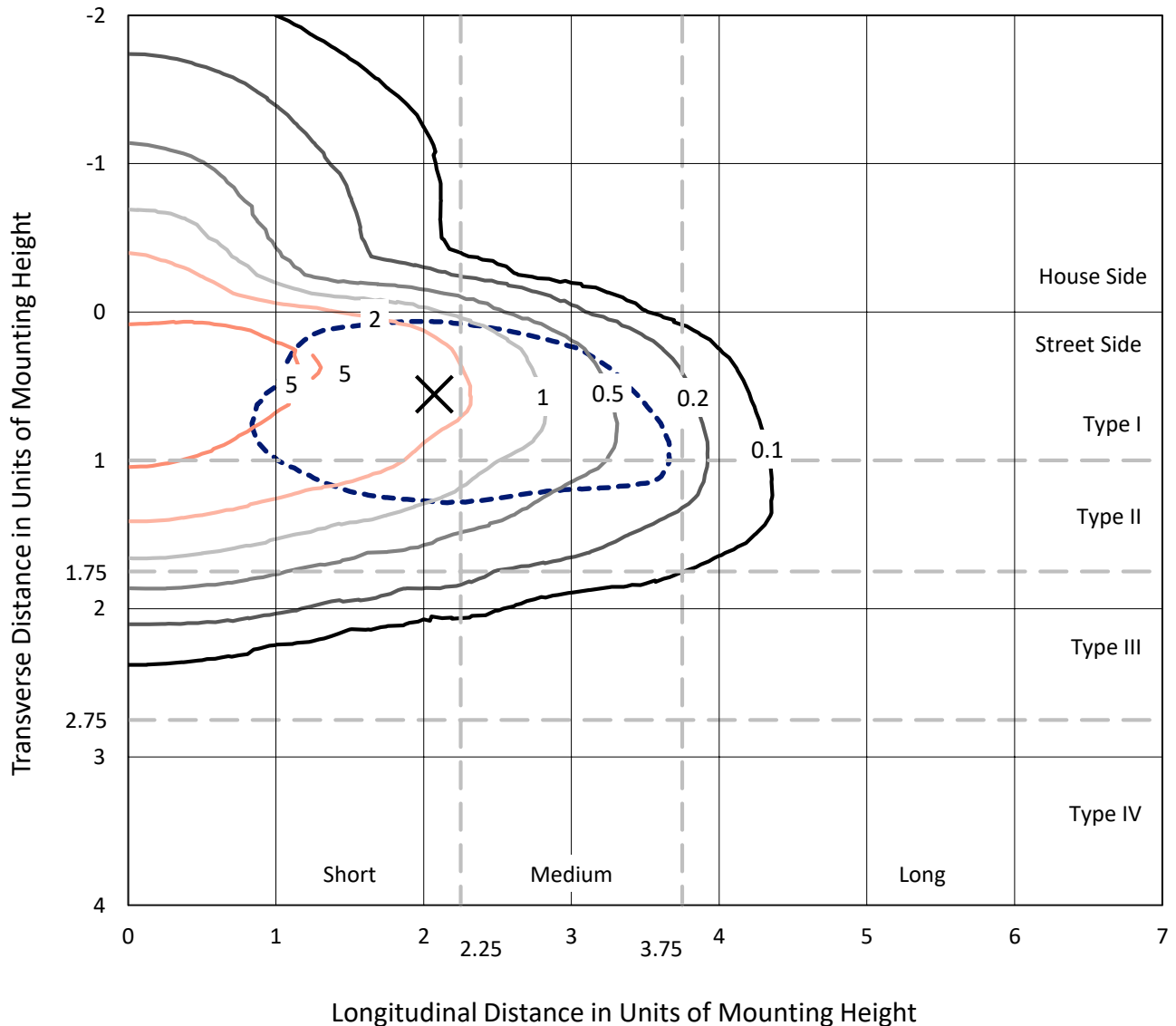


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Iso-Footcandle Lines of Horizontal Illumination

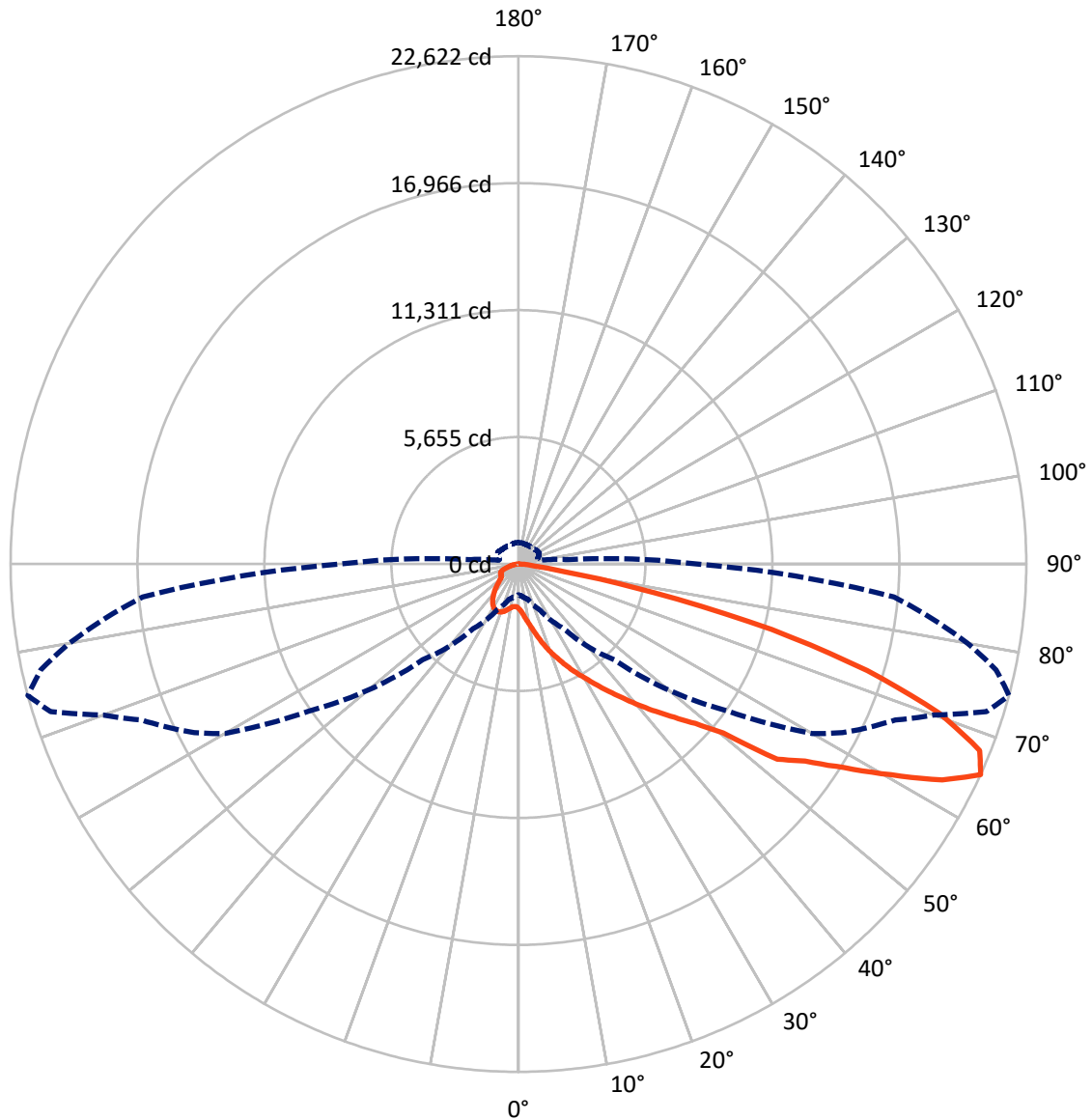
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.1 fc
 Type II - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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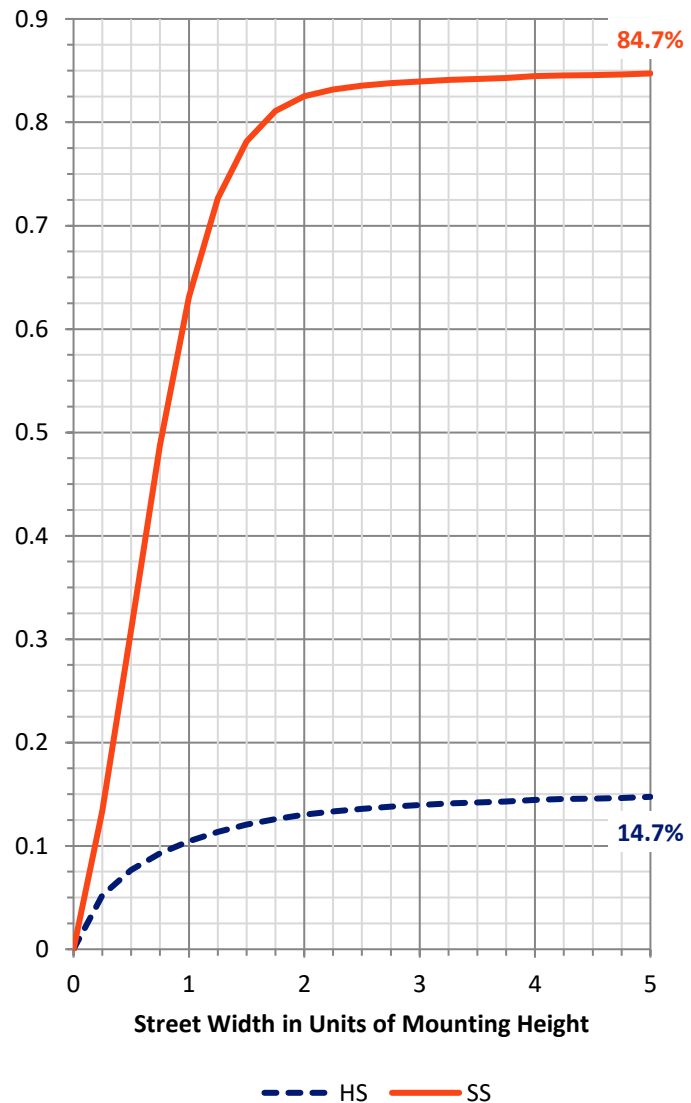
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3439.0	0.0	3439.0
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	19447.0	0.0	19447.0
	% Fixture	85.0	0.0	85.0
Total	Lumens	22886.0	0.0	22886.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.1	1.0
10°-20°	894.1	3.9
20°-30°	1804.5	7.9
30°-40°	3064.5	13.4
40°-50°	4274.2	18.7
50°-60°	5238.6	22.9
60°-70°	4928.8	21.5
70°-80°	2161.2	9.4
80°-90°	286.0	1.2
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°	22886.0	100.0
0°-180°	22886.0	100.0

Coefficient of Utilization



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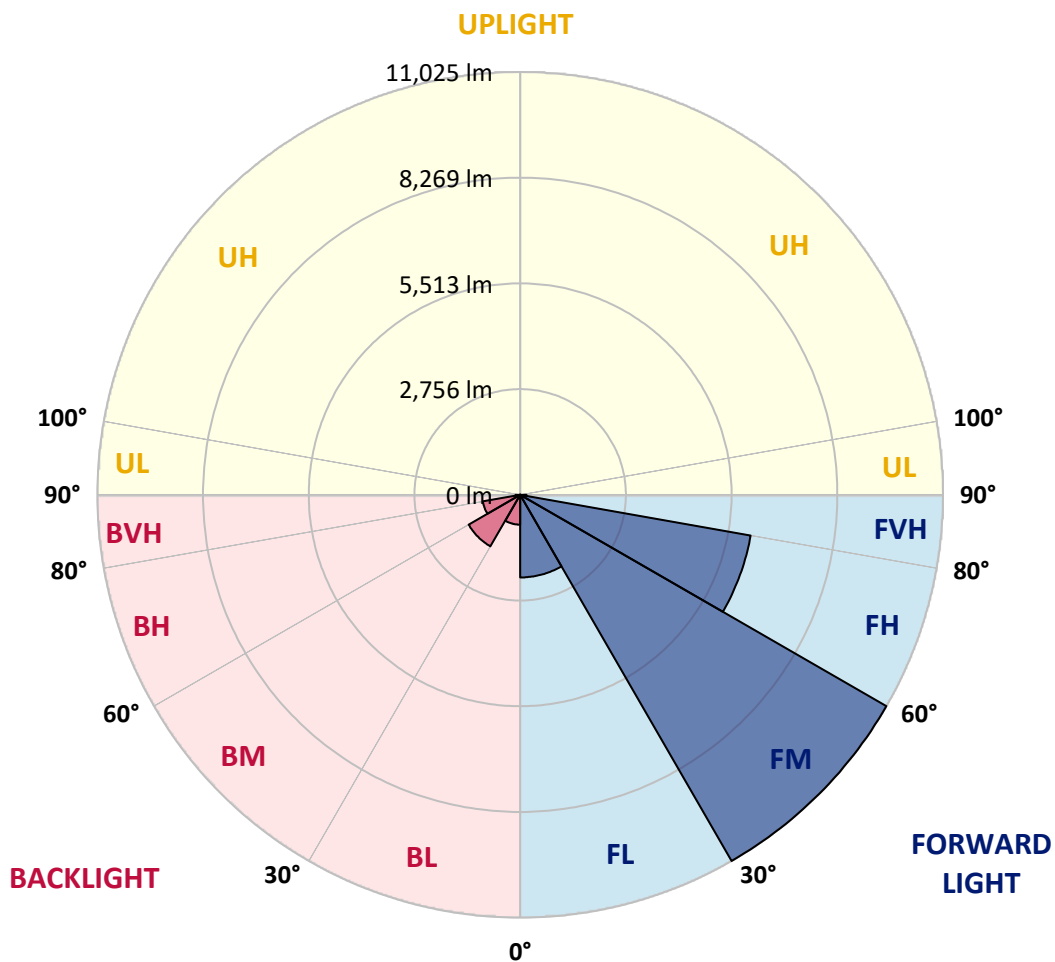
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2154.2	9.4			
FM (30°-60°)	11025.4	48.2			
FH (60°-80°)	6101.6	26.7			G3/7500
FVH (80°-90°)	165.8	0.7			G2/225
BL (0°-30°)	778.5	3.4	B2/1000		
BM (30°-60°)	1551.9	6.8	B2/2500		
BH (60°-80°)	988.4	4.3	B2/1000		G2/1000
BVH (80°-90°)	120.2	0.5			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G3

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9
2.5°	2496.9	2467.7	2470.7	2429.9	2370.2	2304.7	2250.8	2221.7	2196.9	2189.7	2148.9
5°	3265.6	3229.2	3216.1	3122.9	2983.1	2817.2	2652.6	2588.6	2536.2	2504.1	2425.5
7.5°	3894.5	3875.6	3858.1	3772.2	3633.9	3421.4	3156.4	3061.8	2974.4	2878.3	2783.7
10°	4322.6	4315.3	4308.0	4248.3	4133.3	3948.4	3663.0	3559.7	3450.5	3328.2	3204.4
12.5°	4645.8	4645.8	4651.6	4602.1	4532.2	4389.5	4130.4	4034.3	3923.6	3795.5	3654.3
15°	4862.7	4868.5	4899.1	4913.7	4877.3	4785.5	4558.4	4474.0	4369.1	4242.5	4102.7
17.5°	5006.8	5018.5	5063.6	5111.7	5158.2	5126.2	4957.3	4878.7	4784.1	4667.6	4536.6
20°	5341.7	5327.1	5328.6	5314.0	5382.5	5407.2	5314.0	5248.5	5172.8	5066.5	4947.1
22.5°	6044.9	6017.2	5945.9	5763.9	5680.9	5672.2	5616.9	5581.9	5523.7	5456.7	5337.3
25°	6962.1	6930.1	6788.8	6488.9	6241.4	6012.9	5910.9	5889.1	5851.3	5806.1	5720.2
27.5°	7909.9	7874.9	7693.0	7314.4	6991.2	6529.7	6212.3	6183.2	6148.3	6129.3	6088.6
30°	8744.1	8706.3	8527.2	8142.8	7752.7	7202.3	6618.5	6516.6	6456.9	6462.7	6439.4
32.5°	9476.4	9442.9	9242.0	8850.4	8454.4	7920.1	7145.5	6986.9	6852.9	6803.4	6820.9
35°	10090.8	10060.2	9840.4	9445.9	9046.9	8602.9	7824.0	7585.2	7366.8	7230.0	7214.0
37.5°	10451.9	10434.4	10280.1	9945.2	9549.2	9223.1	8584.0	8319.0	7997.2	7797.8	7710.4
40°	10431.5	10450.4	10424.2	10272.8	9965.6	9728.3	9376.0	9113.9	8799.4	8502.4	8324.8
42.5°	10134.5	10160.7	10278.6	10357.3	10274.3	10130.1	10067.5	9872.4	9590.0	9275.5	9029.5
45°	9726.8	9750.1	9903.0	10186.9	10424.2	10465.0	10673.2	10575.6	10336.9	10069.0	9798.2
47.5°	9102.3	9147.4	9325.0	9776.3	10341.2	10734.3	11181.3	11226.4	11088.1	10866.8	10613.5
50°	8198.2	8257.8	8506.8	9148.9	10026.8	11011.0	11936.9	12108.7	12053.4	11829.2	11572.9
52.5°	7272.2	7331.9	7663.8	8346.7	9520.1	11124.5	12680.9	13120.5	13437.9	13669.4	13714.6
55°	6308.4	6375.4	6739.3	7525.5	8844.6	10980.4	13212.3	13711.6	14033.4	14275.1	14372.6
57.5°	5220.8	5296.6	5648.9	6443.8	7889.5	10400.9	13803.4	14510.9	14989.9	15362.6	15572.3
60°	3973.1	4067.8	4433.2	5234.0	6634.5	9291.5	14066.9	15113.7	15875.1	16434.2	16766.1
62.5°	2518.7	2614.8	2994.8	3826.1	5206.3	7775.9	13321.5	14848.7	16147.4	16974.3	17582.9
65°	1374.4	1416.6	1627.7	2253.7	3510.2	6033.2	11431.7	13232.6	15103.5	16275.5	17210.2
67.5°	1030.8	1036.6	1058.4	1211.3	1869.4	4073.6	8937.8	10587.3	12664.8	14173.2	15289.8
70°	902.7	902.7	905.6	907.0	1014.8	2207.1	6055.1	7573.6	9477.9	11003.7	12391.1
72.5°	809.5	800.7	797.8	780.4	794.9	1131.2	3296.2	4660.3	6266.2	7978.3	9272.6
75°	698.8	697.4	697.4	679.9	688.6	796.4	1429.7	2236.3	3481.1	5075.3	6349.2
77.5°	604.2	594.0	595.5	585.3	612.9	610.0	678.4	921.6	1515.6	2665.7	3722.7
80°	497.9	490.6	495.0	489.2	532.9	451.3	457.2	563.4	752.7	1169.1	1648.1
82.5°	368.3	371.3	398.9	396.0	448.4	304.3	334.9	420.8	506.7	582.4	633.3
85°	215.5	219.8	286.8	301.4	329.0	160.1	205.3	250.4	282.4	313.0	326.1
87.5°	23.3	30.6	160.1	164.5	147.0	48.0	83.0	104.8	112.1	119.4	104.8
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9
2.5°	2135.8	2116.9	2096.5	2084.8	2064.5	2047.0	2015.0	1988.8	1959.6	1939.3	1930.5
5°	2386.2	2341.1	2293.0	2258.1	2214.4	2176.6	2103.8	2016.4	1988.8	1930.5	1916.0
7.5°	2712.3	2630.8	2549.3	2482.3	2406.6	2344.0	2221.7	2064.5	2044.1	1950.9	1930.5
10°	3095.2	2975.9	2855.0	2751.6	2641.0	2544.9	2364.4	2143.1	2121.2	2001.9	1981.5
12.5°	3523.3	3377.7	3221.9	3067.6	2936.5	2801.1	2555.1	2265.4	2230.4	2089.2	2061.6
15°	3964.4	3807.2	3626.6	3440.3	3278.7	3099.6	2789.5	2425.5	2361.5	2195.5	2157.6
17.5°	4399.7	4229.4	4040.1	3831.9	3642.7	3428.6	3042.8	2604.6	2494.0	2300.3	2252.3
20°	4820.5	4647.2	4447.8	4243.9	4008.1	3763.5	3302.0	2780.8	2611.9	2387.7	2325.1
22.5°	5203.4	5054.9	4855.4	4621.0	4382.3	4107.1	3565.5	2956.9	2715.2	2454.6	2374.6
25°	5606.7	5471.3	5273.3	5047.6	4769.5	4463.8	3837.7	3124.4	2798.2	2491.0	2392.0
27.5°	6014.3	5897.8	5711.5	5474.2	5175.7	4836.5	4114.4	3278.7	2865.2	2502.7	2383.3
30°	6449.6	6359.4	6187.6	5922.6	5621.2	5245.6	4415.7	3430.1	2907.4	2486.7	2344.0
32.5°	6861.6	6858.7	6705.9	6430.7	6106.0	5692.6	4733.1	3583.0	2929.3	2441.5	2275.6
35°	7289.7	7349.4	7234.4	6972.3	6630.2	6171.5	5084.0	3746.0	2930.7	2361.5	2186.8
37.5°	7775.9	7882.2	7831.3	7582.3	7222.7	6717.5	5496.0	3929.5	2922.0	2250.8	2057.2
40°	8329.2	8474.8	8473.3	8263.7	7879.3	7329.0	5975.0	4134.7	2901.6	2112.5	1904.3
42.5°	8962.5	9135.8	9183.8	8977.1	8588.3	7997.2	6523.9	4360.4	2869.6	1975.7	1742.7
45°	9687.5	9840.4	9930.7	9738.5	9348.3	8725.2	7154.3	4616.6	2830.3	1799.5	1557.8
47.5°	10463.5	10641.2	10776.6	10612.0	10195.6	9555.1	7901.2	4947.1	2815.7	1598.6	1358.4
50°	11425.9	11609.3	11902.0	11827.7	11599.1	11083.7	9480.8	5727.5	2821.5	1407.9	1190.9
52.5°	13813.6	14234.3	14604.1	14439.6	13896.5	13012.8	10764.9	6161.4	2699.2	1252.1	1074.5
55°	14534.2	15011.8	15557.7	15489.3	14968.1	14077.1	11779.7	6523.9	2581.3	1138.5	998.7
57.5°	15795.0	16358.5	17121.4	17106.8	16467.7	15464.5	13085.6	6957.7	2530.3	1073.0	960.9
60°	17130.1	17847.8	18901.9	19066.4	18372.0	17328.1	14628.9	7490.6	2537.6	1036.6	939.1
62.5°	18105.5	19158.2	20691.2	21183.3	20365.1	19214.9	16230.3	8023.4	2494.0	994.4	912.8
65°	18165.2	19680.8	21855.9	22621.7	21793.3	20315.6	16795.2	7918.6	2231.9	937.6	870.6
67.5°	16709.3	18683.5	21326.0	22166.0	21318.7	19637.1	15805.2	6922.8	1814.0	838.6	797.8
70°	13916.9	16208.5	18951.4	19887.6	19187.3	17485.3	13755.3	5529.5	1355.4	707.6	688.6
72.5°	10754.7	12892.0	15383.0	16249.3	15713.5	14216.8	10849.3	4029.9	968.2	573.6	559.1
75°	7688.6	9508.5	11316.7	11647.2	11118.7	9744.3	7039.3	2517.2	678.4	470.3	449.9
77.5°	4760.8	5944.4	6593.8	6168.6	5494.6	4567.1	2865.2	1243.3	451.3	382.9	362.5
80°	2112.5	2479.4	2314.9	2063.0	1629.1	1339.4	875.0	551.8	291.2	295.5	283.9
82.5°	710.5	751.2	730.9	726.5	655.2	573.6	371.3	238.8	163.1	189.3	184.9
85°	346.5	362.5	364.0	377.1	327.6	254.8	100.5	94.6	69.9	101.9	106.3
87.5°	104.8	106.3	96.1	104.8	84.4	58.2	18.9	26.2	13.1	24.8	24.8
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°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9
2.5°	1914.5	1908.7	1898.5	1886.8	1883.9	1869.4	1865.0	1857.7	1853.4	1846.1	1840.3
5°	1897.0	1886.8	1875.2	1862.1	1862.1	1841.7	1833.0	1824.2	1824.2	1811.1	1805.3
7.5°	1914.5	1901.4	1888.3	1876.7	1881.0	1857.7	1849.0	1840.3	1838.8	1825.7	1819.9
10°	1964.0	1950.9	1934.9	1923.2	1918.9	1899.9	1889.8	1876.7	1867.9	1859.2	1850.4
12.5°	2039.7	2022.2	2001.9	1977.1	1966.9	1950.9	1934.9	1917.4	1897.0	1888.3	1875.2
15°	2130.0	2100.9	2073.2	2042.6	2015.0	1998.9	1977.1	1949.4	1921.8	1910.1	1892.7
17.5°	2204.2	2173.7	2134.3	2097.9	2048.4	2035.3	2004.8	1971.3	1926.2	1921.8	1895.6
20°	2266.8	2220.2	2172.2	2128.5	2052.8	2045.5	2007.7	1968.4	1904.3	1904.3	1872.3
22.5°	2301.8	2237.7	2180.9	2122.7	2028.1	2022.2	1978.6	1932.0	1853.4	1856.3	1817.0
25°	2307.6	2230.4	2159.1	2089.2	1980.0	1969.8	1914.5	1863.5	1777.7	1771.8	1731.1
27.5°	2284.3	2194.0	2111.1	2026.6	1908.7	1886.8	1825.7	1764.5	1680.1	1665.5	1621.9
30°	2230.4	2124.2	2031.0	1933.4	1809.7	1774.7	1710.7	1648.1	1562.2	1543.3	1502.5
32.5°	2144.5	2023.7	1920.3	1822.8	1685.9	1642.3	1578.2	1515.6	1432.6	1418.0	1380.2
35°	2031.0	1895.6	1786.4	1683.0	1546.2	1501.0	1439.9	1384.6	1308.9	1303.0	1276.8
37.5°	1888.3	1747.1	1630.6	1531.6	1402.0	1378.7	1316.1	1275.4	1212.8	1218.6	1205.5
40°	1726.7	1582.6	1471.9	1384.6	1272.5	1252.1	1214.2	1183.6	1129.8	1145.8	1147.2
42.5°	1563.6	1419.5	1319.0	1240.4	1144.3	1131.2	1105.0	1087.6	1046.8	1078.8	1091.9
45°	1378.7	1244.8	1158.9	1099.2	1027.9	1027.9	1014.8	1013.3	985.6	1030.8	1043.9
47.5°	1199.7	1094.8	1035.1	998.7	949.2	972.5	968.2	979.8	959.4	1006.0	1017.7
50°	1064.3	991.5	955.1	937.6	902.7	939.1	947.8	963.8	946.3	987.1	995.8
52.5°	978.4	930.3	909.9	905.6	880.8	926.0	940.5	955.1	934.7	972.5	971.1
55°	930.3	898.3	891.0	899.7	880.8	924.5	939.1	949.2	931.8	958.0	956.5
57.5°	912.8	895.4	899.7	912.8	899.7	936.1	943.4	955.1	937.6	949.2	955.1
60°	911.4	911.4	928.9	946.3	937.6	963.8	968.2	966.7	950.7	952.2	955.1
62.5°	902.7	924.5	953.6	981.3	978.4	1010.4	1013.3	994.4	981.3	966.7	962.3
65°	875.0	911.4	953.6	991.5	997.3	1046.8	1052.6	1033.7	1025.0	1000.2	981.3
67.5°	813.8	860.4	909.9	956.5	966.7	1033.7	1046.8	1054.1	1058.4	1042.4	1017.7
70°	710.5	758.5	809.5	863.3	877.9	952.2	979.8	1013.3	1039.5	1062.8	1054.1
72.5°	578.0	621.7	665.3	714.8	736.7	813.8	850.2	908.5	949.2	1008.9	1033.7
75°	458.6	484.8	511.0	541.6	559.1	634.8	679.9	749.8	805.1	888.1	943.4
77.5°	361.1	374.2	387.3	400.4	407.7	449.9	486.3	556.2	620.2	725.0	806.6
80°	278.1	285.4	286.8	291.2	288.3	308.7	321.8	364.0	419.3	522.7	618.8
82.5°	179.1	184.9	187.8	195.1	180.5	206.7	215.5	219.8	249.0	324.7	393.1
85°	100.5	101.9	103.4	106.3	85.9	112.1	113.6	106.3	103.4	133.9	151.4
87.5°	24.8	23.3	24.8	24.8	10.2	23.3	23.3	16.0	11.6	21.8	17.5
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):

	135°	145°	155°	165°	175°	180°
0°	1982.9	1982.9	1982.9	1982.9	1982.9	1982.9
2.5°	1827.2	1824.2	1825.7	1818.4	1815.5	1817.0
5°	1798.0	1792.2	1792.2	1787.8	1782.0	1782.0
7.5°	1811.1	1799.5	1795.1	1786.4	1777.7	1779.1
10°	1831.5	1811.1	1796.6	1783.5	1773.3	1773.3
12.5°	1844.6	1808.2	1786.4	1768.9	1757.3	1757.3
15°	1847.5	1792.2	1760.2	1741.3	1729.6	1729.6
17.5°	1830.1	1760.2	1719.4	1694.7	1681.6	1684.5
20°	1786.4	1700.5	1652.4	1626.2	1613.1	1614.6
22.5°	1718.0	1619.0	1563.6	1533.1	1520.0	1520.0
25°	1624.8	1517.0	1457.4	1432.6	1421.0	1421.0
27.5°	1518.5	1407.9	1355.4	1336.5	1329.2	1329.2
30°	1399.1	1307.4	1269.5	1256.4	1244.8	1244.8
32.5°	1298.7	1233.1	1220.0	1202.6	1172.0	1170.5
35°	1218.6	1211.3	1201.1	1148.7	1105.0	1099.2
37.5°	1174.9	1218.6	1154.5	1064.3	1029.3	1027.9
40°	1151.6	1192.4	1081.7	1038.1	1033.7	1033.7
42.5°	1096.3	1125.4	1077.4	1052.6	1052.6	1054.1
45°	1038.1	1062.8	1087.6	1065.7	1073.0	1074.5
47.5°	997.3	1046.8	1087.6	1068.6	1083.2	1091.9
50°	959.4	1032.2	1065.7	1065.7	1081.7	1083.2
52.5°	950.7	1011.8	1045.3	1061.3	1062.8	1055.5
55°	952.2	995.8	1029.3	1049.7	1041.0	1041.0
57.5°	950.7	987.1	1016.2	1023.5	1027.9	1027.9
60°	952.2	975.5	998.7	995.8	1010.4	1010.4
62.5°	956.5	959.4	971.1	968.2	990.0	990.0
65°	966.7	939.1	931.8	934.7	960.9	959.4
67.5°	985.6	911.4	888.1	889.6	927.4	921.6
70°	1013.3	873.5	838.6	829.9	893.9	883.7
72.5°	1022.0	829.9	774.5	765.8	803.7	774.5
75°	981.3	794.9	706.1	677.0	661.0	652.2
77.5°	875.0	773.1	634.8	573.6	548.9	543.0
80°	725.0	727.9	541.6	468.8	544.5	543.0
82.5°	547.4	628.9	433.9	406.2	394.5	329.0
85°	265.0	473.2	333.4	279.5	167.4	158.7
87.5°	23.3	198.0	192.2	125.2	56.8	53.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)