

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: P270623

Luminaire Tested: **NAV-AF-05-D-UNV-T2R-7027-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270623
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-05-D-UNV-T2R-7027-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 2700K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 22117.7 lumens
Efficiency: N/A
Efficacy: 105.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G3

Input Watts (W): 210
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

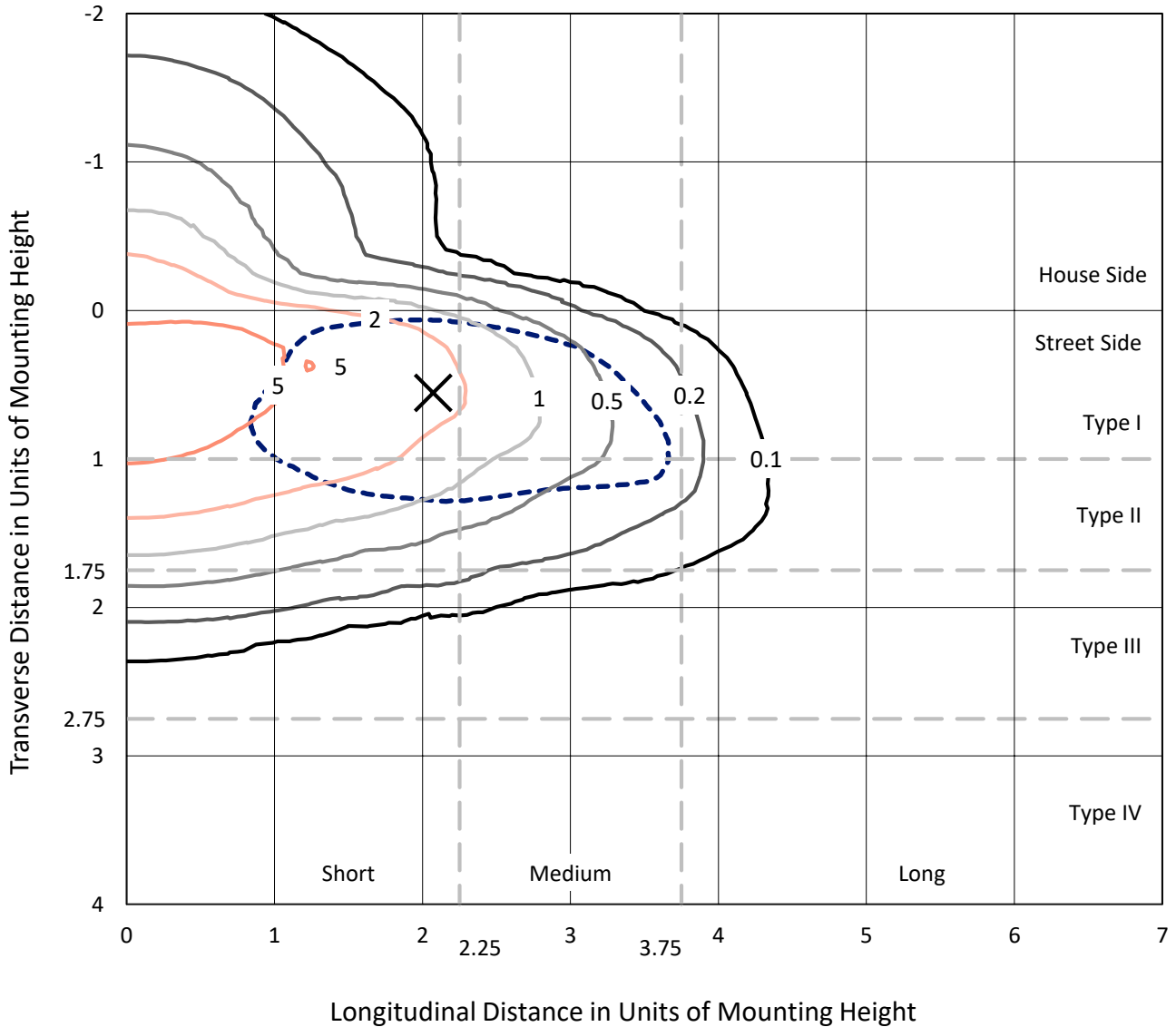


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Iso-Footcandle Lines of Horizontal Illumination

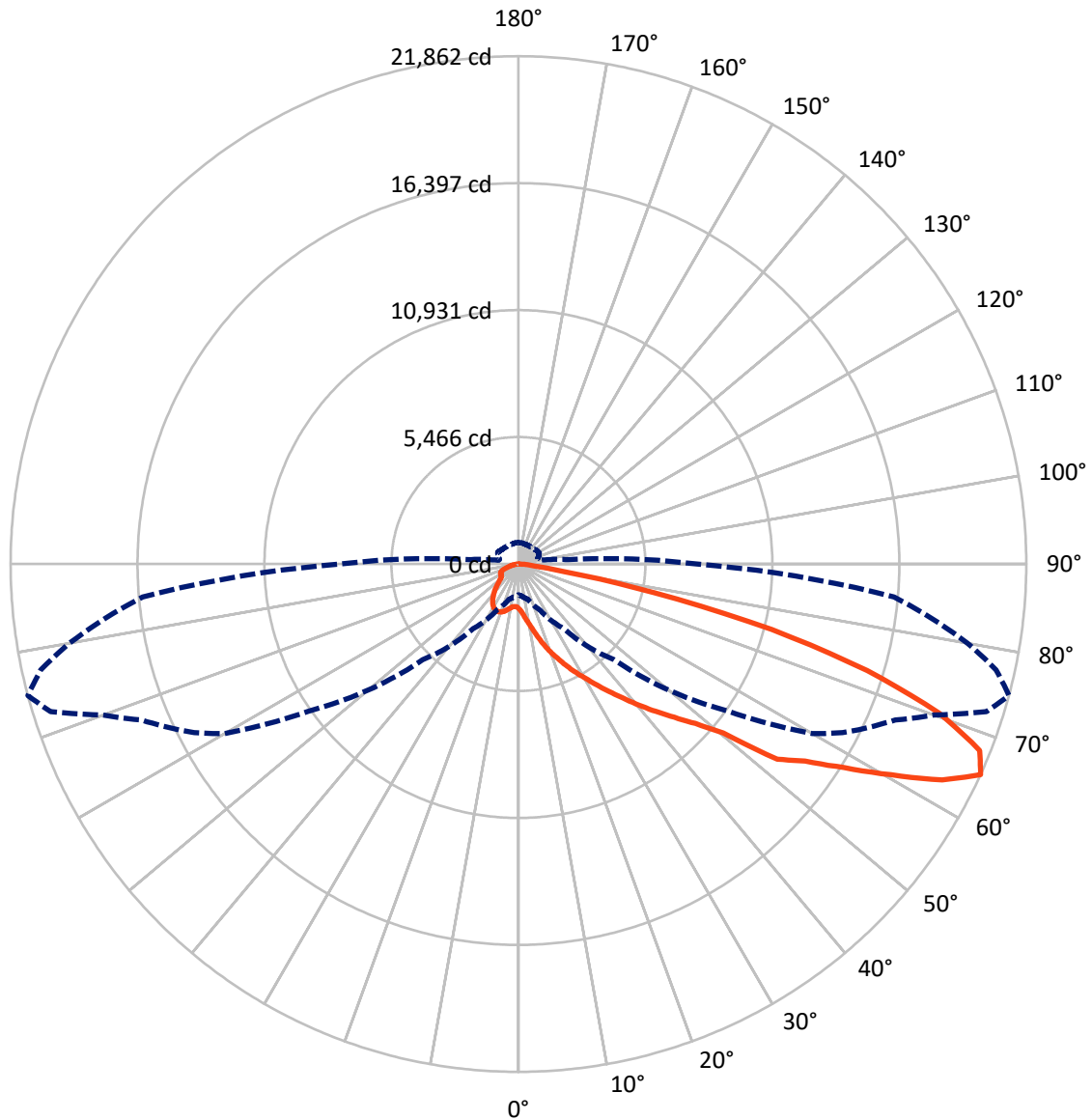
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.8 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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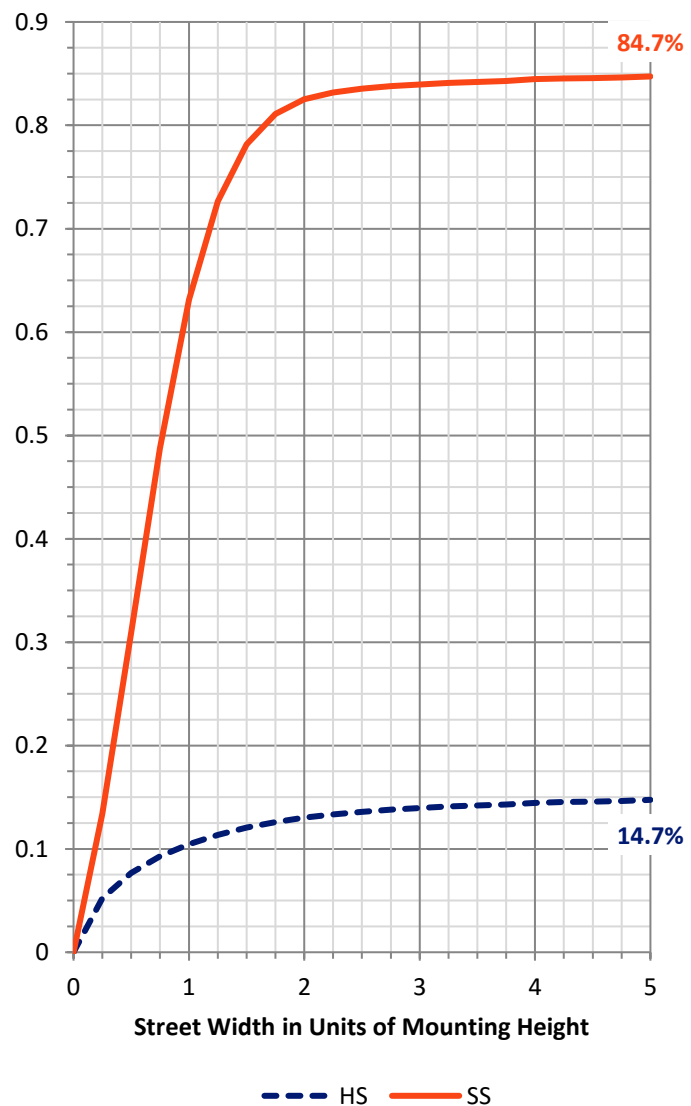
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3323.5	0.0	3323.5
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	18794.2	0.0	18794.2
	% Fixture	85.0	0.0	85.0
Total	Lumens	22117.7	0.0	22117.7
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	226.2	1.0
10°-20°	864.1	3.9
20°-30°	1743.9	7.9
30°-40°	2961.6	13.4
40°-50°	4130.7	18.7
50°-60°	5062.7	22.9
60°-70°	4763.3	21.5
70°-80°	2088.7	9.4
80°-90°	276.4	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°	22117.7	100.0
0°-180°	22117.7	100.0

Coefficient of Utilization



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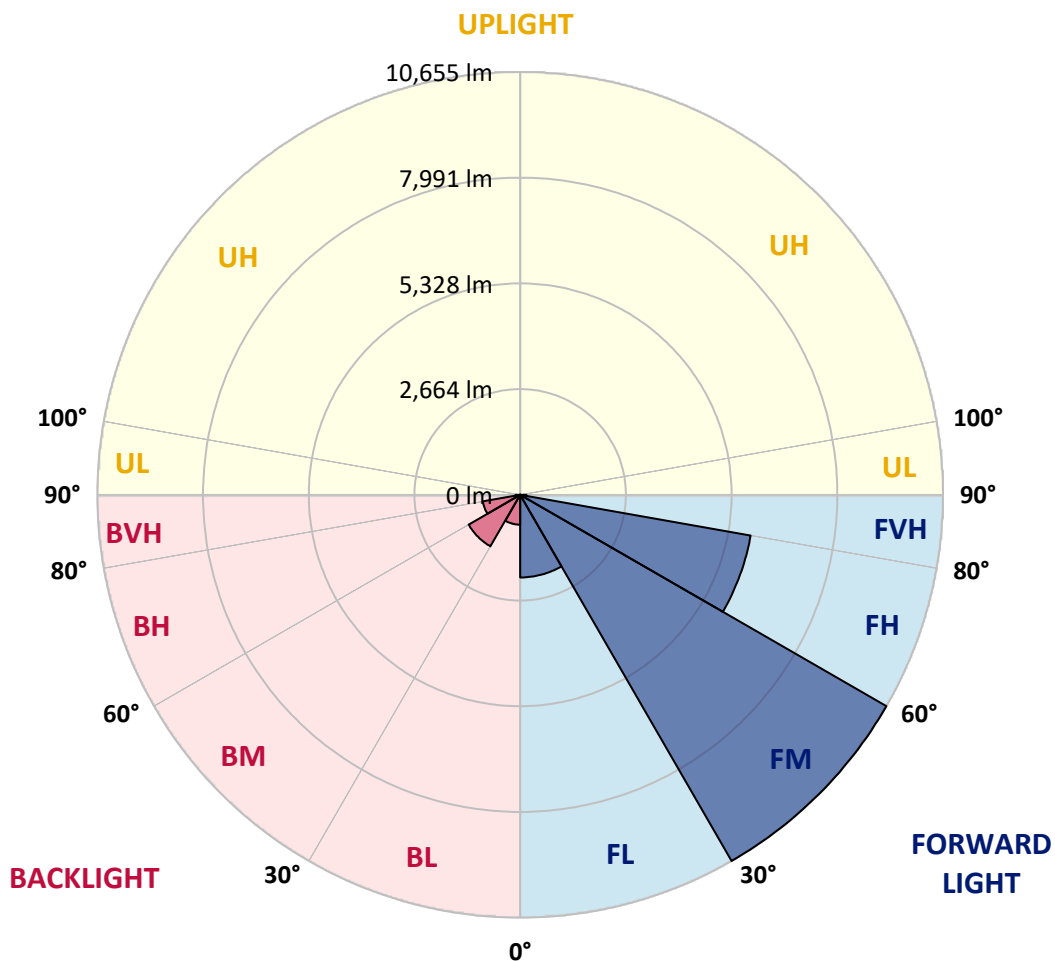
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2081.9	9.4			
FM	(30°-60°)	10655.3	48.2			
FH	(60°-80°)	5896.8	26.7			G3/7500
FVH	(80°-90°)	160.2	0.7			G2/225
BL	(0°-30°)	752.4	3.4	B2/1000		
BM	(30°-60°)	1499.7	6.8	B2/2500		
BH	(60°-80°)	955.2	4.3	B2/1000		G2/1000
BVH	(80°-90°)	116.2	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°	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4
2.5°	2413.0	2384.9	2387.8	2348.3	2290.6	2227.3	2175.2	2147.0	2123.2	2116.1	2076.7
5°	3155.9	3120.8	3108.1	3018.0	2883.0	2722.7	2563.7	2501.7	2451.0	2420.0	2344.0
7.5°	3763.8	3745.6	3728.7	3645.6	3512.0	3306.5	3050.5	2958.9	2874.5	2781.7	2690.2
10°	4177.5	4170.4	4163.4	4105.8	3994.6	3815.8	3540.1	3440.1	3334.7	3216.4	3096.8
12.5°	4489.8	4489.8	4495.5	4447.6	4380.0	4242.2	3991.7	3898.9	3791.9	3668.0	3531.6
15°	4699.5	4705.1	4734.6	4748.7	4713.5	4624.8	4405.4	4323.8	4222.5	4100.0	3964.9
17.5°	4838.7	4849.9	4893.6	4940.0	4985.1	4954.2	4790.9	4714.9	4623.4	4510.8	4384.3
20°	5162.4	5148.2	5149.8	5135.6	5201.7	5225.7	5135.6	5072.3	4999.2	4896.4	4781.0
22.5°	5841.9	5815.2	5746.3	5570.4	5490.3	5481.7	5428.3	5394.5	5338.3	5273.5	5158.2
25°	6728.3	6697.5	6561.0	6271.1	6031.8	5811.0	5712.5	5691.4	5654.8	5611.3	5528.2
27.5°	7644.3	7610.6	7434.7	7068.9	6756.5	6310.6	6003.7	5975.6	5941.8	5923.6	5884.2
30°	8450.5	8414.0	8241.0	7869.4	7492.5	6960.5	6396.3	6297.8	6240.2	6245.7	6223.3
32.5°	9158.3	9125.9	8931.8	8553.3	8170.5	7654.2	6905.7	6752.3	6622.8	6575.1	6591.9
35°	9752.1	9722.5	9510.0	9128.8	8743.3	8314.2	7561.4	7330.6	7119.5	6987.2	6971.7
37.5°	10101.0	10084.2	9935.0	9611.3	9228.6	8913.5	8295.8	8039.7	7728.7	7536.1	7451.6
40°	10081.3	10099.6	10074.2	9928.0	9631.1	9401.8	9061.3	8807.9	8504.1	8216.9	8045.3
42.5°	9794.3	9819.6	9933.5	10009.5	9929.3	9790.1	9729.5	9541.0	9268.1	8964.1	8726.3
45°	9400.4	9422.9	9570.5	9845.0	10074.2	10113.7	10314.9	10220.6	9989.8	9731.0	9469.3
47.5°	8796.7	8840.3	9011.9	9448.2	9994.1	10373.9	10805.9	10849.5	10715.9	10502.1	10257.1
50°	7923.0	7980.6	8221.2	8841.7	9690.1	10641.3	11536.2	11702.2	11648.7	11432.0	11184.3
52.5°	7028.1	7085.7	7406.5	8066.4	9200.5	10751.0	12255.1	12680.0	12986.7	13210.6	13254.1
55°	6096.6	6161.4	6513.2	7272.9	8547.6	10611.8	12768.7	13251.3	13562.3	13795.8	13890.1
57.5°	5045.6	5118.7	5459.2	6227.5	7624.6	10051.8	13340.0	14023.8	14486.6	14846.8	15049.5
60°	3839.7	3931.3	4284.3	5058.3	6411.8	8979.5	13594.6	14606.4	15342.2	15882.5	16203.3
62.5°	2434.1	2527.0	2894.2	3697.7	5031.4	7515.0	12874.1	14350.2	15605.3	16404.5	16992.6
65°	1328.2	1369.0	1573.0	2178.1	3392.3	5830.7	11048.0	12788.5	14596.4	15729.1	16632.4
67.5°	996.2	1001.8	1022.9	1170.6	1806.6	3936.8	8637.7	10231.9	12239.6	13697.4	14776.5
70°	872.3	872.3	875.2	876.6	980.7	2133.0	5851.7	7319.3	9159.7	10634.2	11975.1
72.5°	782.3	773.9	771.0	754.1	768.2	1093.2	3185.5	4503.9	6055.8	7710.5	8961.3
75°	675.3	674.0	674.0	657.1	665.6	769.7	1381.8	2161.2	3364.2	4904.8	6136.1
77.5°	583.9	574.0	575.5	565.7	592.3	589.6	655.7	890.6	1464.6	2576.2	3597.7
80°	481.2	474.1	478.3	472.8	515.0	436.1	441.7	544.6	727.4	1129.9	1592.8
82.5°	356.0	358.9	385.6	382.7	433.3	294.0	323.6	406.7	489.7	562.8	612.0
85°	208.2	212.4	277.1	291.2	318.0	154.8	198.3	242.1	272.9	302.5	315.1
87.5°	22.5	29.6	154.8	159.0	142.1	46.4	80.2	101.2	108.3	115.4	101.2
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4
2.5°	2064.0	2045.8	2026.0	2014.9	1995.1	1978.2	1947.3	1922.1	1893.8	1874.1	1865.7
5°	2306.0	2262.6	2216.1	2182.3	2140.1	2103.6	2033.1	1948.8	1922.1	1865.7	1851.6
7.5°	2621.3	2542.6	2463.7	2399.0	2325.8	2265.3	2147.0	1995.1	1975.5	1885.5	1865.7
10°	2991.4	2876.0	2759.1	2659.3	2552.4	2459.5	2285.0	2071.1	2050.0	1934.7	1914.9
12.5°	3404.9	3264.4	3113.7	2964.5	2837.9	2707.1	2469.4	2189.3	2155.6	2019.1	1992.4
15°	3831.4	3679.4	3504.8	3324.7	3168.6	2995.6	2695.9	2344.0	2282.1	2121.7	2085.1
17.5°	4251.9	4087.4	3904.6	3703.4	3520.4	3313.6	2940.7	2517.2	2410.2	2223.0	2176.7
20°	4658.6	4491.2	4298.5	4101.5	3873.5	3637.1	3191.0	2687.4	2524.1	2307.6	2247.0
22.5°	5028.7	4885.2	4692.3	4465.8	4235.1	3969.3	3445.8	2857.7	2624.0	2372.2	2294.8
25°	5418.4	5287.6	5096.3	4878.2	4609.5	4313.9	3708.9	3019.5	2704.3	2407.4	2311.8
27.5°	5812.5	5699.8	5519.7	5290.4	5001.9	4674.2	3976.3	3168.6	2769.0	2418.6	2303.3
30°	6233.1	6145.8	5979.8	5723.8	5432.5	5069.4	4267.5	3314.9	2809.8	2403.1	2265.3
32.5°	6631.3	6628.5	6480.7	6214.8	5901.1	5501.5	4574.2	3462.6	2830.9	2359.6	2199.2
35°	7045.0	7102.7	6991.5	6738.2	6407.6	5964.3	4913.3	3620.3	2832.4	2282.1	2113.4
37.5°	7515.0	7617.5	7568.4	7327.7	6980.2	6492.1	5311.5	3797.6	2823.9	2175.2	1988.0
40°	8049.5	8190.2	8188.9	7986.2	7614.8	7083.0	5774.5	3995.9	2804.1	2041.6	1840.4
42.5°	8661.5	8829.0	8875.4	8675.7	8300.0	7728.7	6304.8	4213.9	2773.2	1909.3	1684.2
45°	9362.3	9510.0	9597.3	9411.5	9034.4	8432.3	6914.2	4461.6	2735.2	1739.1	1505.5
47.5°	10112.3	10283.8	10414.8	10255.8	9853.4	9234.2	7636.0	4781.0	2721.1	1544.9	1312.8
50°	11042.2	11219.7	11502.3	11430.7	11209.7	10711.7	9162.5	5535.3	2726.8	1360.7	1151.0
52.5°	13349.8	13756.5	14113.8	13954.8	13430.0	12575.9	10403.5	5954.5	2608.6	1210.0	1038.4
55°	14046.3	14507.7	15035.4	14969.3	14465.5	13604.6	11384.2	6304.8	2494.7	1100.3	965.1
57.5°	15264.8	15809.4	16546.6	16532.4	15914.8	14945.5	12646.2	6724.2	2445.4	1037.0	928.7
60°	16555.0	17248.6	18267.4	18426.4	17755.2	16746.4	14137.7	7239.1	2452.5	1001.8	907.6
62.5°	17497.7	18515.0	19996.6	20472.2	19681.4	18569.9	15685.5	7754.1	2410.2	960.9	882.1
65°	17555.3	19020.2	21122.1	21862.3	21061.8	19633.5	16231.4	7652.8	2157.0	906.1	841.4
67.5°	16148.4	18056.3	20610.1	21421.9	20602.9	18978.0	15274.6	6690.3	1753.1	810.5	771.0
70°	13449.8	15664.4	18315.3	19219.9	18543.2	16898.3	13293.6	5343.8	1310.0	683.8	665.6
72.5°	10393.7	12459.1	14866.6	15703.8	15185.9	13739.5	10485.1	3894.6	935.7	554.3	540.3
75°	7430.5	9189.2	10936.8	11256.1	10745.4	9417.2	6803.0	2432.7	655.7	454.5	434.8
77.5°	4600.9	5744.9	6372.3	5961.5	5310.2	4413.8	2769.0	1201.7	436.1	370.0	350.3
80°	2041.6	2396.1	2237.1	1993.8	1574.5	1294.5	845.7	533.2	281.3	285.7	274.3
82.5°	686.7	726.0	706.3	702.1	633.1	554.3	358.9	230.8	157.7	183.0	178.8
85°	334.9	350.3	351.7	364.4	316.7	246.2	97.0	91.4	67.6	98.5	102.8
87.5°	101.2	102.8	92.9	101.2	81.6	56.2	18.2	25.3	12.7	24.0	24.0
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°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4
2.5°	1850.1	1844.6	1834.8	1823.5	1820.7	1806.6	1802.4	1795.4	1791.1	1784.2	1778.5
5°	1833.4	1823.5	1812.2	1799.6	1799.6	1779.9	1771.5	1763.1	1763.1	1750.3	1744.7
7.5°	1850.1	1837.6	1824.8	1813.7	1817.9	1795.4	1786.9	1778.5	1777.0	1764.5	1758.8
10°	1898.1	1885.5	1869.9	1858.7	1854.5	1836.1	1826.3	1813.7	1805.2	1796.8	1788.3
12.5°	1971.2	1954.4	1934.7	1910.8	1901.0	1885.5	1869.9	1853.1	1833.4	1824.8	1812.2
15°	2058.5	2030.3	2003.6	1974.0	1947.3	1931.8	1910.8	1883.9	1857.2	1845.9	1829.0
17.5°	2130.2	2100.6	2062.7	2027.6	1979.7	1967.0	1937.5	1905.1	1861.5	1857.2	1832.0
20°	2190.7	2145.7	2099.2	2057.1	1983.8	1976.9	1940.2	1902.3	1840.4	1840.4	1809.5
22.5°	2224.6	2162.6	2107.8	2051.4	1960.0	1954.4	1912.1	1867.0	1791.1	1793.9	1755.9
25°	2230.1	2155.6	2086.7	2019.1	1913.6	1903.7	1850.1	1801.0	1718.0	1712.3	1673.0
27.5°	2207.7	2120.4	2040.2	1958.6	1844.6	1823.5	1764.5	1705.3	1623.6	1609.7	1567.5
30°	2155.6	2052.8	1962.7	1868.6	1748.9	1715.1	1653.2	1592.8	1509.7	1491.5	1452.0
32.5°	2072.5	1955.8	1855.9	1761.5	1629.3	1587.1	1525.2	1464.6	1384.5	1370.5	1333.9
35°	1962.7	1832.0	1726.5	1626.6	1494.2	1450.7	1391.6	1338.0	1265.0	1259.2	1233.9
37.5°	1824.8	1688.5	1575.8	1480.1	1355.0	1332.5	1271.9	1232.6	1172.1	1177.7	1165.0
40°	1668.7	1529.5	1422.5	1338.0	1229.7	1210.0	1173.5	1143.9	1091.8	1107.3	1108.8
42.5°	1511.2	1371.8	1274.8	1198.8	1106.0	1093.2	1067.9	1051.0	1011.6	1042.7	1055.2
45°	1332.5	1203.0	1119.9	1062.2	993.3	993.3	980.7	979.3	952.6	996.2	1008.8
47.5°	1159.4	1058.1	1000.4	965.1	917.3	939.8	935.7	947.0	927.2	972.2	983.6
50°	1028.5	958.2	923.0	906.1	872.3	907.6	916.0	931.5	914.6	954.0	962.4
52.5°	945.6	899.2	879.4	875.2	851.2	894.8	908.9	923.0	903.3	939.8	938.5
55°	899.2	868.1	861.0	869.5	851.2	893.5	907.6	917.3	900.6	925.9	924.4
57.5°	882.1	865.2	869.5	882.1	869.5	904.8	911.8	923.0	906.1	917.3	923.0
60°	880.8	880.8	897.6	914.6	906.1	931.5	935.7	934.2	918.7	920.3	923.0
62.5°	872.3	893.5	921.7	948.3	945.6	976.5	979.3	960.9	948.3	934.2	930.0
65°	845.7	880.8	921.7	958.2	963.8	1011.6	1017.3	998.9	990.6	966.7	948.3
67.5°	786.6	831.6	879.4	924.4	934.2	998.9	1011.6	1018.7	1022.9	1007.4	983.6
70°	686.7	733.0	782.3	834.3	848.4	920.3	947.0	979.3	1004.7	1027.1	1018.7
72.5°	558.6	600.7	642.9	690.8	711.9	786.6	821.7	878.0	917.3	975.1	998.9
75°	443.3	468.6	493.9	523.4	540.3	613.5	657.1	724.7	778.1	858.3	911.8
77.5°	348.9	361.6	374.2	386.9	393.9	434.8	470.0	537.5	599.3	700.7	779.5
80°	268.8	275.8	277.1	281.3	278.6	298.2	311.0	351.7	405.2	505.1	598.0
82.5°	173.1	178.8	181.5	188.6	174.5	199.9	208.2	212.4	240.6	313.8	380.0
85°	97.0	98.5	99.9	102.8	83.1	108.3	109.8	102.8	99.9	129.4	146.3
87.5°	24.0	22.5	24.0	24.0	9.8	22.5	22.5	15.5	11.3	21.1	16.9
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):

	135°	145°	155°	165°	175°	180°
0°	1916.4	1916.4	1916.4	1916.4	1916.4	1916.4
2.5°	1765.8	1763.1	1764.5	1757.4	1754.6	1755.9
5°	1737.7	1732.0	1732.0	1727.8	1722.2	1722.2
7.5°	1750.3	1739.1	1734.8	1726.5	1718.0	1719.4
10°	1770.0	1750.3	1736.2	1723.6	1713.7	1713.7
12.5°	1782.6	1747.6	1726.5	1709.6	1698.2	1698.2
15°	1785.6	1732.0	1701.1	1682.7	1671.6	1671.6
17.5°	1768.7	1701.1	1661.7	1637.8	1625.2	1627.9
20°	1726.5	1643.4	1596.9	1571.7	1559.0	1560.4
22.5°	1660.2	1564.6	1511.2	1481.6	1468.9	1468.9
25°	1570.2	1466.2	1408.5	1384.5	1373.2	1373.2
27.5°	1467.6	1360.7	1310.0	1291.7	1284.5	1284.5
30°	1352.2	1263.5	1226.9	1214.2	1203.0	1203.0
32.5°	1255.0	1191.7	1179.0	1162.1	1132.7	1131.2
35°	1177.7	1170.6	1160.8	1110.1	1067.9	1062.2
37.5°	1135.5	1177.7	1115.8	1028.5	994.8	993.3
40°	1113.0	1152.3	1045.4	1003.1	998.9	998.9
42.5°	1059.6	1087.6	1041.1	1017.3	1017.3	1018.7
45°	1003.1	1027.1	1051.0	1029.9	1037.0	1038.4
47.5°	963.8	1011.6	1051.0	1032.7	1046.9	1055.2
50°	927.2	997.6	1029.9	1029.9	1045.4	1046.9
52.5°	918.7	977.8	1010.2	1025.8	1027.1	1020.0
55°	920.3	962.4	994.8	1014.5	1006.0	1006.0
57.5°	918.7	954.0	982.0	989.2	993.3	993.3
60°	920.3	942.7	965.1	962.4	976.5	976.5
62.5°	924.4	927.2	938.5	935.7	956.8	956.8
65°	934.2	907.6	900.6	903.3	928.7	927.2
67.5°	952.6	880.8	858.3	859.7	896.2	890.6
70°	979.3	844.1	810.5	801.9	863.9	854.1
72.5°	987.7	801.9	748.6	740.2	776.7	748.6
75°	948.3	768.2	682.4	654.2	638.8	630.3
77.5°	845.7	747.1	613.5	554.3	530.4	524.8
80°	700.7	703.6	523.4	453.0	526.2	524.8
82.5°	529.0	607.9	419.2	392.6	381.3	318.0
85°	256.0	457.2	322.2	270.1	161.9	153.4
87.5°	22.5	191.3	185.7	121.0	54.8	52.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)