

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: P197248

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197248
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
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 80 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20862 lumens
Efficiency: N/A
Efficacy: 92.7 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

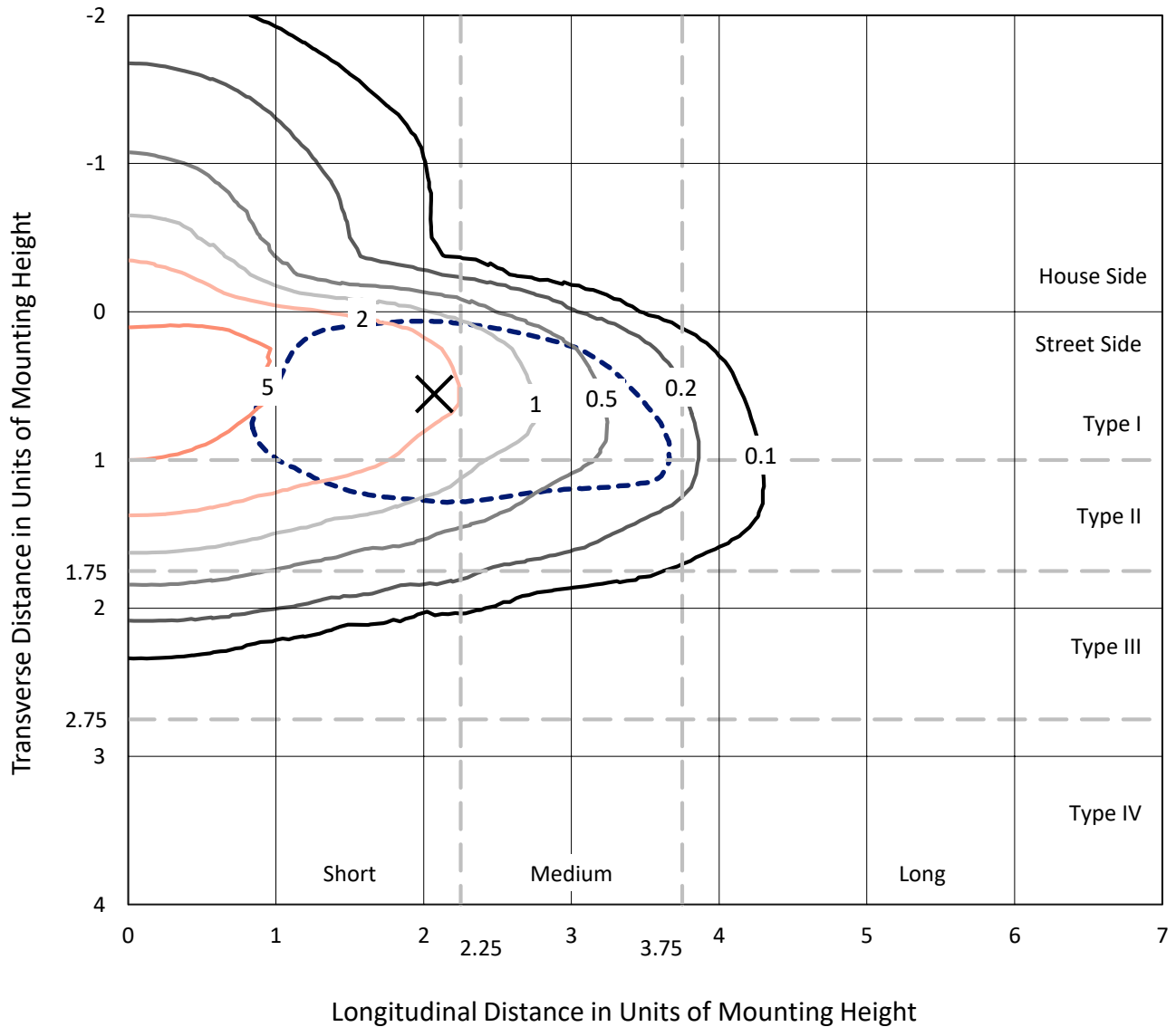
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

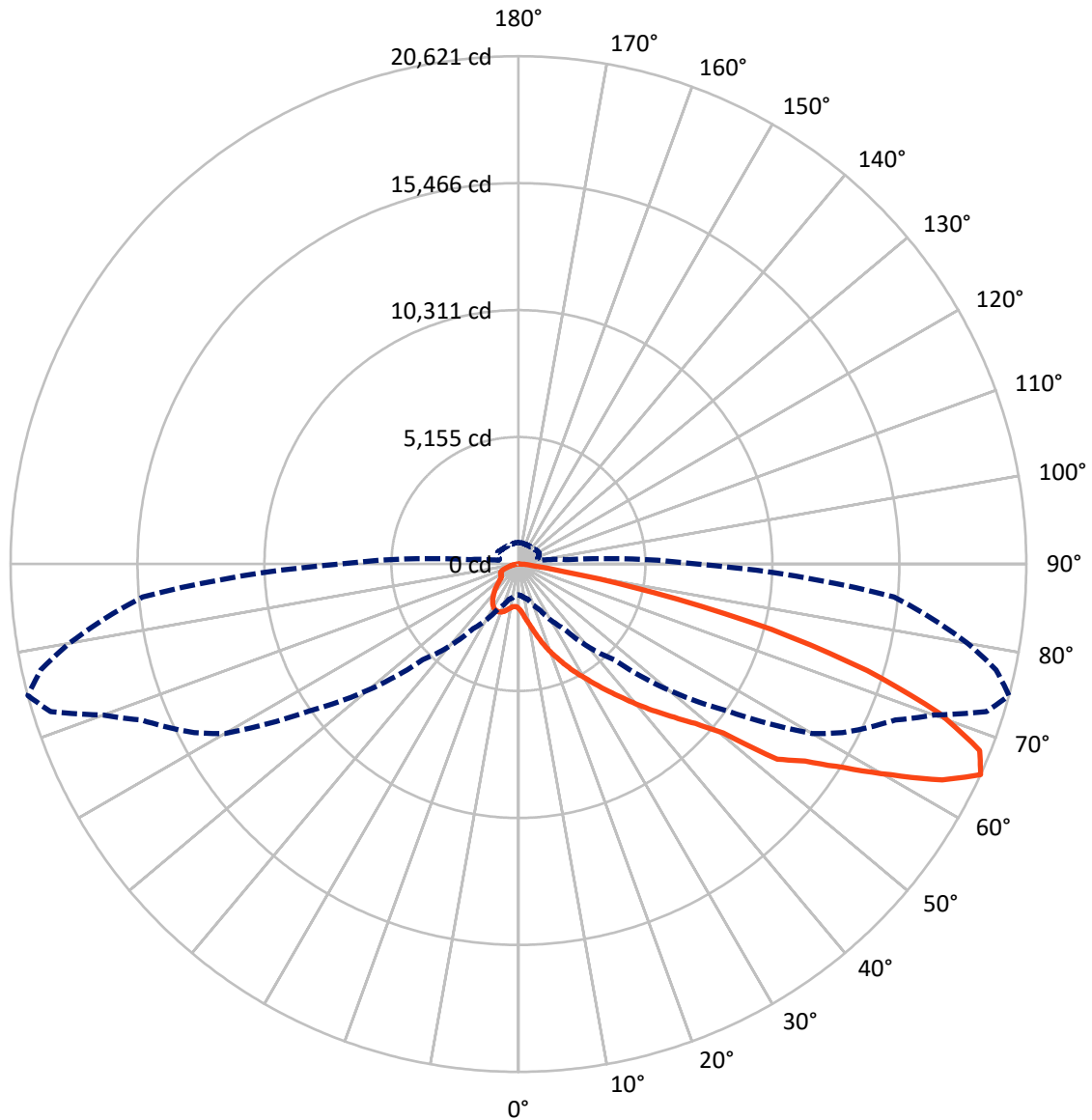
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.3 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	3134.8	0.0	3134.8
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	17727.2	0.0	17727.2
	% Fixture	85.0	0.0	85.0
Total	Lumens	20862.0	0.0	20862.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	213.4	1.0
10°-20°	815.1	3.9
20°-30°	1644.9	7.9
30°-40°	2793.5	13.4
40°-50°	3896.2	18.7
50°-60°	4775.3	22.9
60°-70°	4492.9	21.5
70°-80°	1970.1	9.4
80°-90°	260.7	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°	20862.0	100.0
0°-180°	20862.0	100.0



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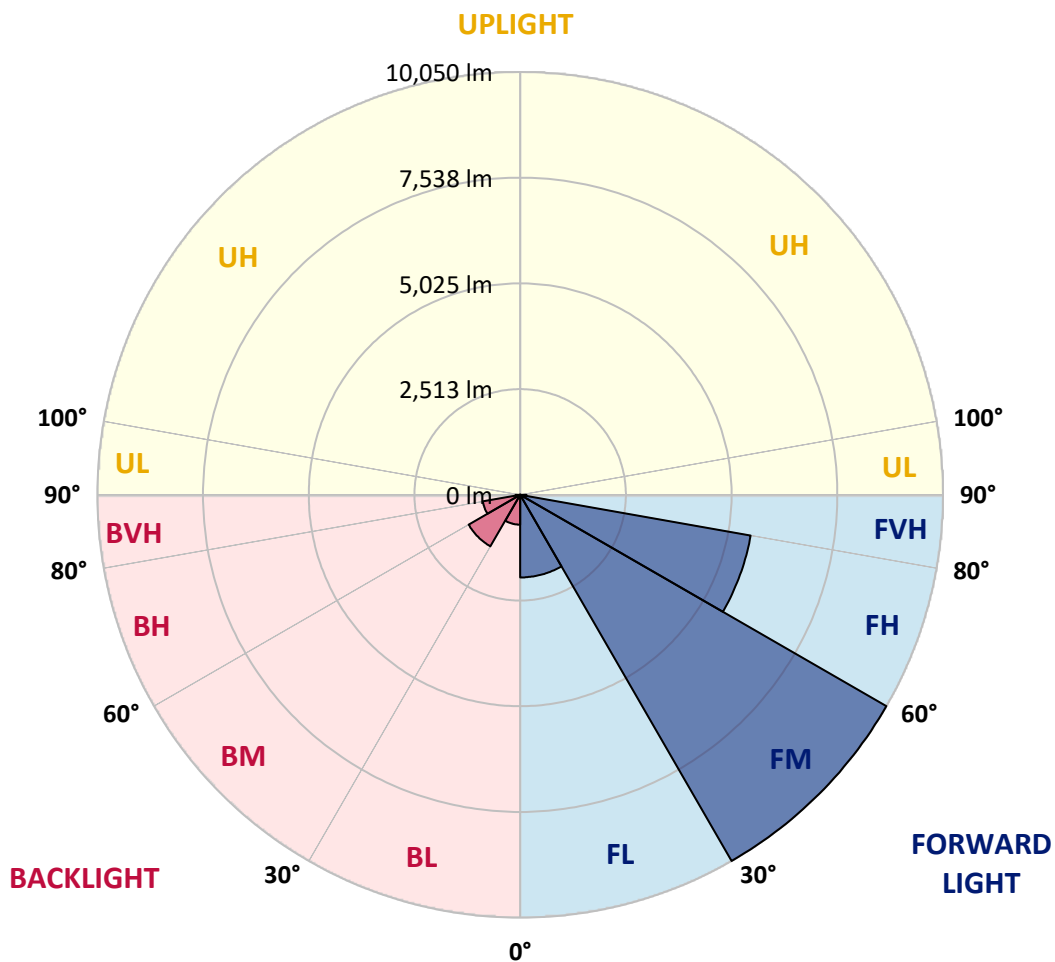
CATALOG NUMBER: NAV-AF-04-D-UNV-T2R-8030

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1963.7	9.4			
FM (30°-60°)	10050.4	48.2			
FH (60°-80°)	5562.0	26.7			G3/7500
FVH (80°-90°)	151.1	0.7			G2/225
BL (0°-30°)	709.7	3.4	B2/1000		
BM (30°-60°)	1414.6	6.8	B2/2500		
BH (60°-80°)	901.0	4.3	B2/1000		G2/1000
BVH (80°-90°)	109.6	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°	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6
2.5°	2276.0	2249.5	2252.2	2215.0	2160.6	2100.9	2051.8	2025.2	2002.7	1996.0	1958.9
5°	2976.8	2943.6	2931.7	2846.7	2719.3	2568.0	2418.0	2359.7	2311.9	2282.7	2211.0
7.5°	3550.1	3532.8	3516.9	3438.6	3312.5	3118.8	2877.2	2791.0	2711.3	2623.8	2537.5
10°	3940.3	3933.6	3927.0	3872.6	3767.8	3599.2	3339.1	3244.9	3145.3	3033.8	2921.0
12.5°	4234.9	4234.9	4240.2	4195.1	4131.4	4001.3	3765.1	3677.5	3576.6	3459.9	3331.1
15°	4432.6	4438.0	4465.8	4479.1	4445.9	4362.3	4155.3	4078.3	3982.7	3867.3	3739.9
17.5°	4564.0	4574.7	4615.8	4659.6	4702.1	4672.9	4518.9	4447.2	4361.0	4254.8	4135.4
20°	4869.3	4856.0	4857.3	4844.1	4906.4	4929.0	4844.1	4784.3	4715.3	4618.4	4509.6
22.5°	5510.3	5485.1	5420.0	5254.1	5178.5	5170.5	5120.1	5088.3	5035.2	4974.1	4865.3
25°	6346.4	6317.2	6188.5	5915.1	5689.4	5481.1	5388.2	5368.3	5333.8	5292.6	5214.3
27.5°	7210.4	7178.5	7012.6	6667.6	6372.9	5952.2	5662.9	5636.4	5604.5	5587.3	5550.1
30°	7970.8	7936.3	7773.1	7422.7	7067.0	6565.4	6033.2	5940.3	5885.9	5891.2	5869.9
32.5°	8638.4	8607.8	8424.7	8067.7	7706.7	7219.6	6513.6	6368.9	6246.8	6201.7	6217.7
35°	9198.4	9170.5	8970.1	8610.5	8246.8	7842.1	7132.1	6914.4	6715.3	6590.6	6576.0
37.5°	9527.5	9511.6	9370.9	9065.7	8704.7	8407.4	7824.8	7583.3	7290.0	7108.2	7028.5
40°	9509.0	9526.2	9502.3	9364.3	9084.3	8867.9	8546.8	8307.9	8021.2	7750.5	7588.6
42.5°	9238.2	9262.1	9369.6	9441.3	9365.6	9234.2	9177.2	8999.3	8741.9	8455.2	8230.9
45°	8866.6	8887.9	9027.2	9286.0	9502.3	9539.5	9729.3	9640.3	9422.7	9178.5	8931.7
47.5°	8297.3	8338.4	8500.3	8911.7	9426.7	9785.0	10192.4	10233.6	10107.5	9905.8	9674.9
50°	7473.1	7527.5	7754.5	8339.7	9140.0	10037.2	10881.2	11037.8	10987.4	10783.0	10549.4
52.5°	6629.1	6683.5	6986.1	7608.5	8678.2	10140.7	11559.4	11960.2	12249.5	12460.5	12501.7
55°	5750.5	5811.5	6143.3	6860.0	8062.4	10009.3	12043.8	12499.0	12792.3	13012.6	13101.5
57.5°	4759.1	4828.1	5149.3	5873.9	7191.8	9481.1	12582.6	13227.6	13664.2	14004.0	14195.1
60°	3621.8	3708.0	4041.1	4771.1	6047.8	8469.8	12822.8	13777.0	14471.1	14980.8	15283.3
62.5°	2296.0	2383.5	2729.9	3487.7	4745.9	7088.3	12143.3	13535.5	14719.3	15473.1	16027.9
65°	1252.8	1291.3	1483.7	2054.4	3199.7	5499.7	10420.7	12062.4	13767.8	14836.1	15688.1
67.5°	939.6	944.9	964.8	1104.2	1704.0	3713.3	8147.3	9651.0	11544.8	12919.7	13937.6
70°	822.8	822.8	825.5	826.8	925.0	2011.9	5519.6	6903.8	8639.7	10030.5	11295.3
72.5°	737.9	729.9	727.3	711.3	724.6	1031.2	3004.6	4248.2	5712.0	7272.7	8452.6
75°	637.0	635.7	635.7	619.8	627.7	725.9	1303.3	2038.5	3173.2	4626.4	5787.7
77.5°	550.8	541.5	542.8	533.5	558.7	556.1	618.4	840.1	1381.6	2430.0	3393.5
80°	453.9	447.2	451.2	445.9	485.7	411.4	416.7	513.6	686.1	1065.7	1502.3
82.5°	335.8	338.4	363.6	361.0	408.8	277.4	305.2	383.5	461.8	530.9	577.3
85°	196.4	200.4	261.4	274.7	299.9	146.0	187.1	228.3	257.5	285.3	297.3
87.5°	21.2	27.9	146.0	150.0	134.0	43.8	75.6	95.6	102.2	108.8	95.6
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6
2.5°	1946.9	1929.7	1911.1	1900.5	1881.9	1866.0	1836.8	1812.9	1786.3	1767.8	1759.8
5°	2175.2	2134.0	2090.2	2058.4	2018.6	1984.1	1917.7	1838.1	1812.9	1759.8	1746.5
7.5°	2472.5	2398.1	2323.8	2262.8	2193.8	2136.7	2025.2	1881.9	1863.3	1778.4	1759.8
10°	2821.5	2712.7	2602.5	2508.3	2407.4	2319.8	2155.3	1953.6	1933.6	1824.8	1806.2
12.5°	3211.7	3079.0	2937.0	2796.3	2676.8	2553.4	2329.1	2065.0	2033.2	1904.4	1879.2
15°	3613.8	3470.5	3305.9	3136.0	2988.7	2825.5	2542.8	2211.0	2152.6	2001.3	1966.8
17.5°	4010.6	3855.3	3682.8	3493.0	3320.5	3125.4	2773.7	2374.3	2273.4	2096.9	2053.1
20°	4394.2	4236.2	4054.4	3868.6	3653.6	3430.7	3010.0	2534.8	2380.9	2176.5	2119.4
22.5°	4743.2	4607.8	4426.0	4212.3	3994.7	3743.9	3250.2	2695.4	2475.1	2237.6	2164.6
25°	5110.8	4987.4	4806.9	4601.2	4347.7	4069.0	3498.3	2848.0	2550.8	2270.7	2180.5
27.5°	5482.4	5376.2	5206.4	4990.0	4718.0	4408.8	3750.5	2988.7	2611.8	2281.4	2172.5
30°	5879.2	5796.9	5640.3	5398.8	5124.1	4781.7	4025.2	3126.7	2650.3	2266.8	2136.7
32.5°	6254.8	6252.2	6112.8	5862.0	5566.0	5189.1	4314.5	3266.1	2670.2	2225.6	2074.3
35°	6645.0	6699.4	6594.6	6355.7	6043.8	5625.7	4634.4	3414.7	2671.5	2152.6	1993.4
37.5°	7088.3	7185.1	7138.7	6911.7	6583.9	6123.4	5010.0	3582.0	2663.6	2051.8	1875.2
40°	7592.6	7725.3	7724.0	7532.8	7182.5	6680.8	5446.6	3769.1	2645.0	1925.7	1735.9
42.5°	8169.9	8327.8	8371.6	8183.1	7828.8	7290.0	5946.9	3974.8	2615.8	1800.9	1588.6
45°	8830.8	8970.1	9052.4	8877.2	8521.6	7953.6	6521.6	4208.4	2580.0	1640.3	1420.0
47.5°	9538.2	9700.1	9823.5	9673.5	9294.0	8710.0	7202.4	4509.6	2566.7	1457.2	1238.2
50°	10415.4	10582.6	10849.4	10781.7	10573.3	10103.5	8642.3	5221.0	2572.0	1283.3	1085.6
52.5°	12591.9	12975.4	13312.5	13162.6	12667.6	11862.0	9812.9	5616.5	2460.5	1141.3	979.4
55°	13248.8	13684.1	14181.8	14119.4	13644.3	12832.1	10737.9	5946.9	2353.0	1037.8	910.4
57.5°	14398.1	14911.7	15607.2	15593.9	15011.3	14096.9	11928.3	6342.4	2306.6	978.1	875.9
60°	15615.1	16269.4	17230.3	17380.2	16747.2	15795.6	13335.1	6828.1	2313.2	944.9	856.0
62.5°	16504.3	17463.8	18861.3	19309.9	18564.0	17515.6	14795.0	7313.9	2273.4	906.4	832.1
65°	16558.7	17940.3	19923.0	20621.1	19866.0	18518.9	15309.9	7218.3	2034.5	854.7	793.6
67.5°	15231.6	17031.2	19439.9	20205.7	19433.3	17900.5	14407.4	6310.6	1653.6	764.4	727.3
70°	12686.1	14775.0	17275.4	18128.7	17490.4	15939.0	12538.8	5040.5	1235.6	645.0	627.7
72.5°	9803.6	11751.8	14022.6	14812.2	14323.8	12959.5	9889.8	3673.5	882.5	522.9	509.6
75°	7008.6	8667.6	10315.9	10617.1	10135.4	8882.5	6416.7	2294.6	618.4	428.7	410.1
77.5°	4339.7	5418.7	6010.6	5623.1	5008.6	4163.2	2611.8	1133.4	411.4	349.0	330.5
80°	1925.7	2260.1	2110.2	1880.6	1485.1	1221.0	797.6	503.0	265.4	269.4	258.8
82.5°	647.6	684.8	666.2	662.2	597.2	522.9	338.4	217.7	148.6	172.5	168.5
85°	315.9	330.5	331.8	343.7	298.6	232.2	91.6	86.3	63.7	92.9	96.9
87.5°	95.6	96.9	87.6	95.6	77.0	53.1	17.3	23.9	11.9	22.6	22.6
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6
2.5°	1745.2	1739.9	1730.6	1720.0	1717.3	1704.0	1700.1	1693.4	1689.4	1682.8	1677.5
5°	1729.3	1720.0	1709.4	1697.4	1697.4	1678.8	1670.9	1662.9	1662.9	1651.0	1645.7
7.5°	1745.2	1733.2	1721.3	1710.7	1714.7	1693.4	1685.5	1677.5	1676.2	1664.2	1658.9
10°	1790.3	1778.4	1763.8	1753.2	1749.2	1731.9	1722.6	1710.7	1702.7	1694.8	1686.8
12.5°	1859.3	1843.4	1824.8	1802.3	1793.0	1778.4	1763.8	1747.8	1729.3	1721.3	1709.4
15°	1941.6	1915.1	1889.8	1862.0	1836.8	1822.2	1802.3	1777.0	1751.8	1741.2	1725.3
17.5°	2009.3	1981.4	1945.6	1912.4	1867.3	1855.3	1827.5	1796.9	1755.8	1751.8	1727.9
20°	2066.4	2023.9	1980.1	1940.3	1871.3	1864.6	1830.1	1794.3	1735.9	1735.9	1706.7
22.5°	2098.2	2039.8	1988.1	1935.0	1848.7	1843.4	1803.6	1761.1	1689.4	1692.1	1656.3
25°	2103.5	2033.2	1968.1	1904.4	1804.9	1795.6	1745.2	1698.7	1620.4	1615.1	1578.0
27.5°	2082.3	2000.0	1924.4	1847.4	1739.9	1720.0	1664.2	1608.5	1531.5	1518.2	1478.4
30°	2033.2	1936.3	1851.4	1762.4	1649.6	1617.8	1559.4	1502.3	1424.0	1406.8	1369.6
32.5°	1954.9	1844.7	1750.5	1661.6	1536.8	1497.0	1438.6	1381.6	1305.9	1292.6	1258.1
35°	1851.4	1727.9	1628.4	1534.2	1409.4	1368.3	1312.5	1262.1	1193.1	1187.8	1163.9
37.5°	1721.3	1592.6	1486.4	1396.2	1278.0	1256.8	1199.7	1162.6	1105.5	1110.8	1098.9
40°	1574.0	1442.6	1341.7	1262.1	1159.9	1141.3	1106.8	1079.0	1029.9	1044.5	1045.8
42.5°	1425.3	1294.0	1202.4	1130.7	1043.1	1031.2	1007.3	991.4	954.2	983.4	995.4
45°	1256.8	1134.7	1056.4	1002.0	937.0	937.0	925.0	923.7	898.5	939.6	951.6
47.5°	1093.6	998.0	943.6	910.4	865.3	886.5	882.5	893.2	874.6	917.1	927.7
50°	970.1	903.8	870.6	854.7	822.8	856.0	864.0	878.6	862.6	899.8	907.8
52.5°	891.8	848.0	829.5	825.5	802.9	844.1	857.3	870.6	852.0	886.5	885.2
55°	848.0	818.8	812.2	820.2	802.9	842.7	856.0	865.3	849.4	873.3	871.9
57.5°	832.1	816.2	820.2	832.1	820.2	853.4	860.0	870.6	854.7	865.3	870.6
60°	830.8	830.8	846.7	862.6	854.7	878.6	882.5	881.2	866.6	867.9	870.6
62.5°	822.8	842.7	869.3	894.5	891.8	921.0	923.7	906.4	894.5	881.2	877.2
65°	797.6	830.8	869.3	903.8	909.1	954.2	959.5	942.3	934.3	911.7	894.5
67.5°	741.9	784.3	829.5	871.9	881.2	942.3	954.2	960.8	964.8	950.2	927.7
70°	647.6	691.4	737.9	787.0	800.3	867.9	893.2	923.7	947.6	968.8	960.8
72.5°	526.9	566.7	606.5	651.6	671.5	741.9	775.0	828.1	865.3	919.7	942.3
75°	418.0	441.9	465.8	493.7	509.6	578.6	619.8	683.5	733.9	809.6	860.0
77.5°	329.1	341.1	353.0	365.0	371.6	410.1	443.3	507.0	565.4	660.9	735.2
80°	253.5	260.1	261.4	265.4	262.8	281.4	293.3	331.8	382.2	476.4	564.0
82.5°	163.2	168.5	171.2	177.8	164.6	188.5	196.4	200.4	226.9	296.0	358.3
85°	91.6	92.9	94.2	96.9	78.3	102.2	103.5	96.9	94.2	122.1	138.0
87.5°	22.6	21.2	22.6	22.6	9.3	21.2	21.2	14.6	10.6	19.9	15.9
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°	1807.6	1807.6	1807.6	1807.6	1807.6	1807.6
2.5°	1665.6	1662.9	1664.2	1657.6	1654.9	1656.3
5°	1639.0	1633.7	1633.7	1629.7	1624.4	1624.4
7.5°	1651.0	1640.3	1636.4	1628.4	1620.4	1621.8
10°	1669.5	1651.0	1637.7	1625.7	1616.5	1616.5
12.5°	1681.5	1648.3	1628.4	1612.5	1601.9	1601.9
15°	1684.1	1633.7	1604.5	1587.3	1576.6	1576.6
17.5°	1668.2	1604.5	1567.4	1544.8	1532.8	1535.5
20°	1628.4	1550.1	1506.3	1482.4	1470.5	1471.8
22.5°	1566.0	1475.8	1425.3	1397.5	1385.5	1385.5
25°	1481.1	1382.9	1328.5	1305.9	1295.3	1295.3
27.5°	1384.2	1283.3	1235.6	1218.3	1211.7	1211.7
30°	1275.4	1191.8	1157.3	1145.3	1134.7	1134.7
32.5°	1183.8	1124.1	1112.1	1096.2	1068.3	1067.0
35°	1110.8	1104.2	1094.9	1047.1	1007.3	1002.0
37.5°	1071.0	1110.8	1052.4	970.1	938.3	937.0
40°	1049.8	1086.9	986.1	946.3	942.3	942.3
42.5°	999.3	1025.9	982.1	959.5	959.5	960.8
45°	946.3	968.8	991.4	971.5	978.1	979.4
47.5°	909.1	954.2	991.4	974.1	987.4	995.4
50°	874.6	940.9	971.5	971.5	986.1	987.4
52.5°	866.6	922.4	952.9	967.5	968.8	962.2
55°	867.9	907.8	938.3	956.9	948.9	948.9
57.5°	866.6	899.8	926.3	933.0	937.0	937.0
60°	867.9	889.2	910.4	907.8	921.0	921.0
62.5°	871.9	874.6	885.2	882.5	902.5	902.5
65°	881.2	856.0	849.4	852.0	875.9	874.6
67.5°	898.5	830.8	809.6	810.9	845.4	840.1
70°	923.7	796.3	764.4	756.5	814.9	805.6
72.5°	931.7	756.5	706.0	698.1	732.6	706.0
75°	894.5	724.6	643.7	617.1	602.5	594.6
77.5°	797.6	704.7	578.6	522.9	500.3	495.0
80°	660.9	663.6	493.7	427.3	496.4	495.0
82.5°	499.0	573.3	395.5	370.3	359.7	299.9
85°	241.5	431.3	303.9	254.8	152.6	144.7
87.5°	21.2	180.5	175.2	114.1	51.8	49.1
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)