

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: P196762

Luminaire Tested: **NAV-AF-04-D-UNV-T2R-7030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196762
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-7030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 3000K, 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: 19978 lumens
Efficiency: N/A
Efficacy: 116.8 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

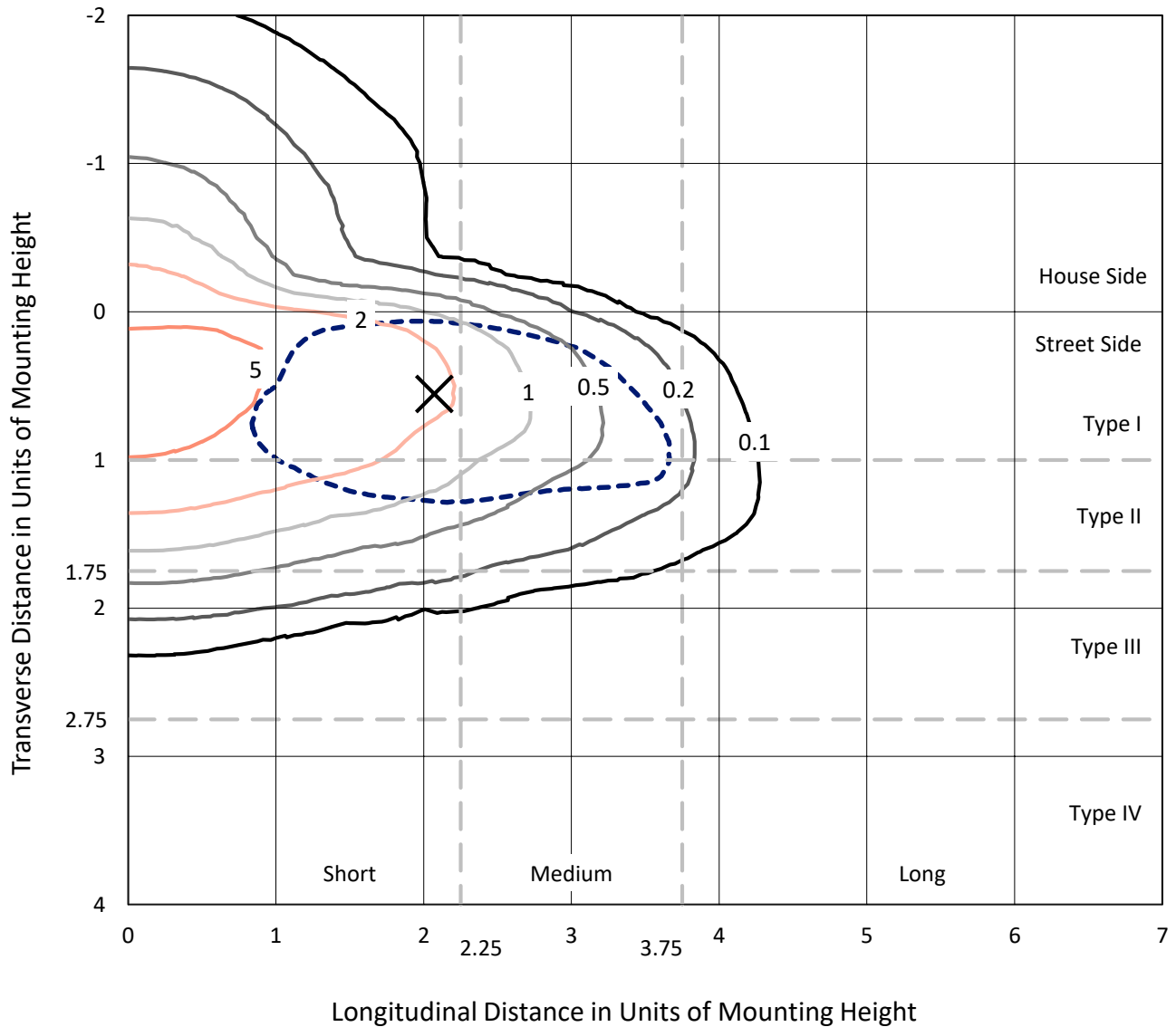
Input Watts (W): 171
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

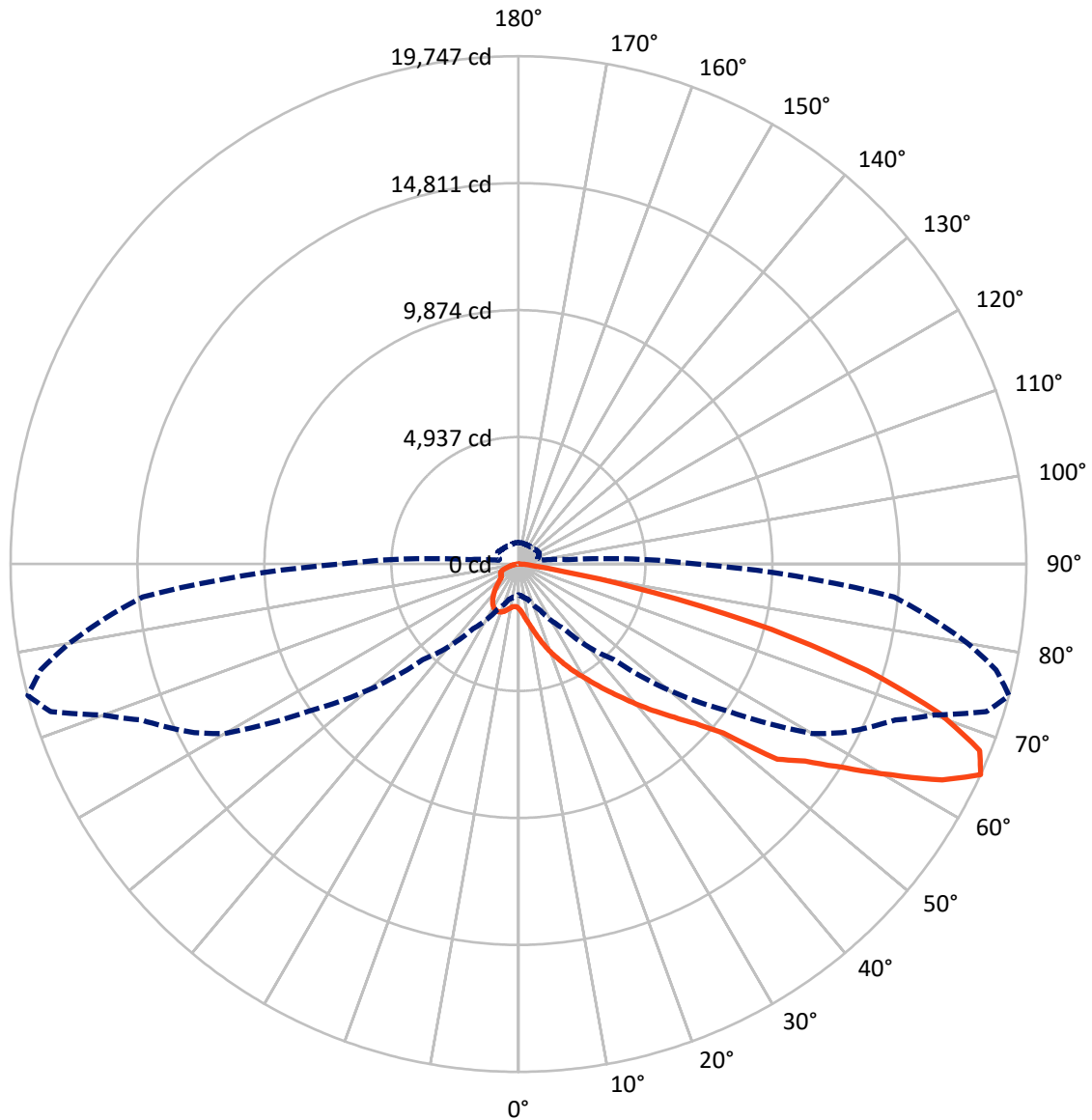
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.9 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	3002.0	0.0	3002.0
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	16976.0	0.0	16976.0
	% Fixture	85.0	0.0	85.0
Total	Lumens	19978.0	0.0	19978.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	204.3	1.0
10°-20°	780.5	3.9
20°-30°	1575.2	7.9
30°-40°	2675.1	13.4
40°-50°	3731.1	18.7
50°-60°	4573.0	22.9
60°-70°	4302.5	21.5
70°-80°	1886.6	9.4
80°-90°	249.6	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°	19978.0	100.0
0°-180°	19978.0	100.0

Coefficient of Utilization



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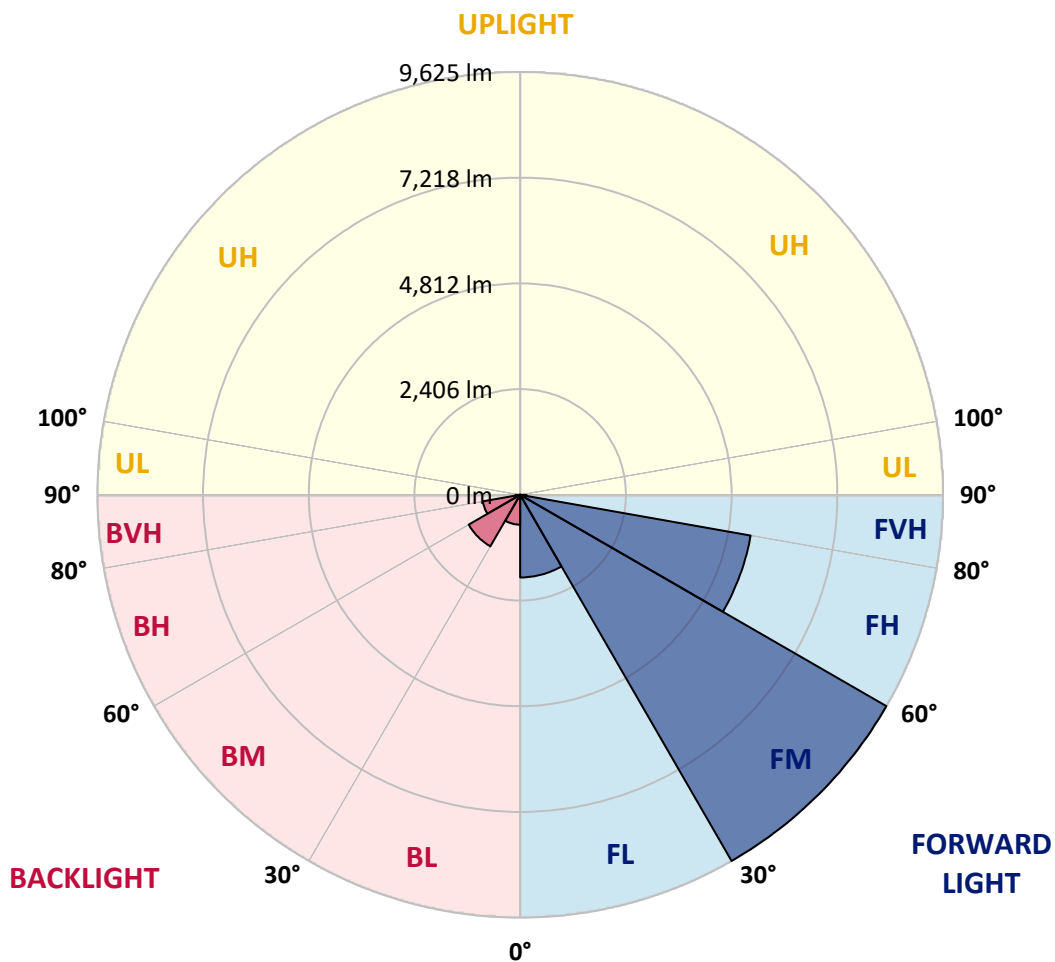
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1880.5	9.4			
FM (30°-60°)	9624.5	48.2			
FH (60°-80°)	5326.3	26.7			G3/7500
FVH (80°-90°)	144.7	0.7			G2/225
BL (0°-30°)	679.6	3.4	B2/1000		
BM (30°-60°)	1354.7	6.8	B2/2500		
BH (60°-80°)	862.8	4.3	B2/1000		G2/1000
BVH (80°-90°)	104.9	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°	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0
2.5°	2179.6	2154.1	2156.8	2121.2	2069.1	2011.9	1964.8	1939.4	1917.8	1911.5	1875.9
5°	2850.7	2818.9	2807.4	2726.1	2604.0	2459.2	2315.6	2259.7	2213.9	2186.0	2117.3
7.5°	3399.7	3383.1	3367.9	3293.0	3172.3	2986.6	2755.3	2672.7	2596.4	2512.6	2429.9
10°	3773.4	3766.9	3760.6	3708.5	3608.1	3446.7	3197.6	3107.4	3012.1	2905.3	2797.2
12.5°	4055.4	4055.4	4060.5	4017.4	3956.4	3831.8	3605.5	3521.7	3425.1	3313.3	3190.0
15°	4244.8	4249.9	4276.6	4289.3	4257.5	4177.5	3979.2	3905.5	3814.0	3703.5	3581.4
17.5°	4370.7	4380.9	4420.2	4462.1	4502.8	4474.8	4327.4	4258.8	4176.2	4074.5	3960.1
20°	4662.9	4650.3	4651.5	4638.8	4698.5	4720.1	4638.8	4581.6	4515.5	4422.7	4318.6
22.5°	5276.7	5252.6	5190.4	5031.5	4959.1	4951.4	4903.1	4872.6	4821.8	4763.3	4659.2
25°	6077.4	6049.4	5926.2	5664.4	5448.4	5248.9	5159.9	5140.8	5107.8	5068.4	4993.3
27.5°	6904.8	6874.4	6715.5	6385.0	6102.9	5700.0	5423.0	5397.5	5367.1	5350.5	5314.9
30°	7633.1	7600.1	7443.8	7108.2	6767.6	6287.3	5777.5	5688.6	5636.4	5641.6	5621.2
32.5°	8272.3	8243.1	8067.7	7725.8	7380.1	6913.7	6237.6	6099.1	5982.2	5939.0	5954.2
35°	8808.7	8781.9	8590.1	8245.7	7897.4	7509.8	6829.9	6621.4	6430.8	6311.4	6297.3
37.5°	9123.8	9108.6	8973.9	8681.5	8335.9	8051.2	7493.2	7261.9	6981.1	6807.0	6730.7
40°	9106.1	9122.6	9099.6	8967.6	8699.3	8492.1	8184.6	7955.9	7681.4	7422.1	7267.1
42.5°	8846.8	8869.6	8972.6	9041.2	8968.8	8843.0	8788.4	8618.1	8371.5	8096.9	7882.2
45°	8491.0	8511.3	8644.7	8892.5	9099.6	9135.2	9317.0	9231.9	9023.4	8789.6	8553.3
47.5°	7945.7	7985.1	8140.2	8534.1	9027.2	9370.4	9760.5	9800.0	9679.3	9486.1	9264.9
50°	7156.5	7208.6	7426.0	7986.5	8752.8	9611.9	10420.2	10570.2	10521.8	10326.1	10102.4
52.5°	6348.2	6400.3	6690.1	7286.1	8310.5	9711.0	11069.6	11453.4	11730.5	11932.5	11972.0
55°	5506.8	5565.3	5883.1	6569.3	7720.8	9585.2	11533.5	11969.5	12250.2	12461.2	12546.4
57.5°	4557.4	4623.6	4931.1	5625.0	6887.0	9079.3	12049.4	12667.2	13085.2	13410.6	13593.6
60°	3468.3	3550.9	3870.0	4568.9	5791.5	8111.0	12279.5	13193.3	13858.0	14346.0	14635.9
62.5°	2198.7	2282.5	2614.2	3339.9	4544.7	6787.9	11628.8	12962.0	14095.6	14817.5	15348.7
65°	1199.7	1236.6	1420.9	1967.3	3064.1	5266.7	9979.2	11551.3	13184.5	14207.5	15023.3
67.5°	899.7	904.8	923.9	1057.4	1631.9	3556.0	7802.1	9242.0	11055.6	12372.3	13347.1
70°	788.0	788.0	790.5	791.8	885.9	1926.7	5285.8	6611.3	8273.6	9605.5	10816.6
72.5°	706.6	699.0	696.4	681.2	693.9	987.4	2877.4	4068.2	5469.9	6964.6	8094.4
75°	610.0	608.8	608.8	593.5	601.2	695.2	1248.1	1952.1	3038.7	4430.4	5542.4
77.5°	527.4	518.6	519.8	510.9	535.1	532.5	592.3	804.4	1323.0	2327.0	3249.7
80°	434.7	428.3	432.1	426.9	465.1	394.0	399.1	491.8	657.0	1020.6	1438.6
82.5°	321.6	324.1	348.2	345.7	391.4	265.6	292.3	367.3	442.3	508.4	552.9
85°	188.2	191.9	250.4	263.1	287.3	139.9	179.1	218.6	246.6	273.2	284.7
87.5°	20.3	26.7	139.9	143.5	128.4	41.9	72.4	91.6	97.9	104.3	91.6
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°	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0
2.5°	1864.4	1847.9	1830.1	1819.9	1802.1	1786.9	1759.0	1736.0	1710.7	1692.9	1685.3
5°	2083.0	2043.5	2001.6	1971.1	1933.1	1900.0	1836.4	1760.1	1736.0	1685.3	1672.5
7.5°	2367.6	2296.5	2225.4	2166.9	2100.8	2046.2	1939.4	1802.1	1784.3	1703.1	1685.3
10°	2702.0	2597.7	2492.2	2402.1	2305.5	2221.6	2063.9	1870.7	1851.7	1747.5	1729.7
12.5°	3075.6	2948.5	2812.6	2677.8	2563.4	2445.2	2230.4	1977.5	1947.0	1823.7	1799.6
15°	3460.7	3323.4	3165.8	3003.2	2862.0	2705.8	2435.1	2117.3	2061.4	1916.5	1883.5
17.5°	3840.7	3692.0	3526.8	3345.1	3179.8	2992.9	2656.2	2273.6	2177.1	2008.0	1966.1
20°	4208.0	4056.7	3882.6	3704.7	3498.8	3285.3	2882.4	2427.4	2280.0	2084.3	2029.6
22.5°	4542.2	4412.6	4238.5	4033.9	3825.3	3585.3	3112.5	2581.2	2370.3	2142.8	2072.8
25°	4894.3	4776.0	4603.2	4406.2	4163.6	3896.6	3350.1	2727.3	2442.7	2174.5	2088.1
27.5°	5250.1	5148.4	4985.7	4778.6	4518.1	4222.0	3591.6	2862.0	2501.2	2184.6	2080.6
30°	5630.1	5551.4	5401.3	5170.0	4907.0	4579.0	3854.6	2994.2	2538.0	2170.8	2046.2
32.5°	5989.8	5987.3	5853.8	5613.6	5330.2	4969.2	4131.7	3127.6	2557.1	2131.3	1986.5
35°	6363.5	6415.6	6315.1	6086.4	5787.7	5387.3	4438.0	3270.0	2558.3	2061.4	1908.9
37.5°	6787.9	6880.7	6836.3	6618.9	6305.1	5864.0	4797.7	3430.2	2550.6	1964.8	1795.7
40°	7270.8	7398.0	7396.7	7213.7	6878.2	6397.7	5215.8	3609.4	2532.9	1844.1	1662.4
42.5°	7823.7	7975.0	8016.9	7836.4	7497.1	6981.1	5694.9	3806.4	2505.0	1724.6	1521.3
45°	8456.6	8590.1	8668.8	8501.1	8160.5	7616.6	6245.3	4030.0	2470.7	1570.8	1359.8
47.5°	9134.0	9289.1	9407.2	9263.6	8900.1	8341.0	6897.2	4318.6	2457.9	1395.5	1185.8
50°	9974.1	10134.3	10389.7	10324.9	10125.3	9675.5	8276.2	4999.7	2463.0	1228.9	1039.6
52.5°	12058.4	12425.6	12748.5	12604.9	12130.8	11359.3	9397.1	5378.5	2356.2	1093.0	937.9
55°	12687.5	13104.3	13580.9	13521.2	13066.2	12288.4	10282.9	5694.9	2253.4	993.8	871.9
57.5°	13788.1	14279.9	14945.9	14933.1	14375.2	13499.5	11422.9	6073.7	2208.7	936.7	838.8
60°	14953.6	15580.1	16500.3	16643.8	16037.6	15126.4	12770.1	6538.8	2215.2	904.8	819.8
62.5°	15805.0	16723.9	18062.2	18491.7	17777.5	16773.5	14168.0	7003.9	2177.1	868.1	796.8
65°	15857.2	17180.2	19078.9	19747.4	19024.2	17734.2	14661.2	6912.5	1948.3	818.5	760.0
67.5°	14586.2	16309.5	18616.2	19349.6	18609.9	17142.0	13796.9	6043.1	1583.6	732.0	696.4
70°	12148.6	14149.0	16543.4	17360.6	16749.3	15263.6	12007.5	4826.8	1183.2	617.7	601.2
72.5°	9388.2	11253.9	13428.4	14184.6	13717.0	12410.4	9470.8	3517.8	845.1	500.7	488.1
75°	6711.7	8300.3	9878.7	10167.2	9705.9	8506.2	6144.8	2197.4	592.3	410.5	392.7
77.5°	4155.9	5189.2	5755.9	5384.9	4796.4	3986.9	2501.2	1085.4	394.0	334.3	316.5
80°	1844.1	2164.3	2020.7	1800.9	1422.1	1169.2	763.8	481.8	254.1	258.0	247.8
82.5°	620.1	655.8	638.0	634.1	571.9	500.7	324.1	208.4	142.4	165.2	161.3
85°	302.4	316.5	317.7	329.2	285.9	222.5	87.7	82.6	60.9	88.9	92.8
87.5°	91.6	92.8	83.9	91.6	73.8	50.8	16.5	22.8	11.5	21.7	21.7
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°	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0
2.5°	1671.2	1666.2	1657.3	1647.1	1644.6	1631.9	1628.1	1621.6	1617.9	1611.5	1606.4
5°	1656.1	1647.1	1636.9	1625.4	1625.4	1607.7	1600.1	1592.5	1592.5	1581.0	1575.9
7.5°	1671.2	1659.7	1648.4	1638.3	1642.0	1621.6	1614.1	1606.4	1605.1	1593.8	1588.6
10°	1714.5	1703.1	1689.0	1678.9	1675.1	1658.5	1649.6	1638.3	1630.5	1622.9	1615.3
12.5°	1780.5	1765.3	1747.5	1725.9	1717.0	1703.1	1689.0	1673.8	1656.1	1648.4	1636.9
15°	1859.4	1833.9	1809.8	1783.1	1759.0	1745.0	1725.9	1701.7	1677.5	1667.4	1652.2
17.5°	1924.2	1897.5	1863.2	1831.4	1788.1	1776.8	1750.0	1720.9	1681.4	1677.5	1654.7
20°	1978.8	1938.2	1896.2	1858.1	1792.0	1785.7	1752.6	1718.3	1662.4	1662.4	1634.4
22.5°	2009.3	1953.3	1903.9	1853.0	1770.3	1765.3	1727.2	1686.5	1617.9	1620.5	1586.1
25°	2014.4	1947.0	1884.7	1823.7	1728.5	1719.5	1671.2	1626.8	1551.8	1546.7	1511.0
27.5°	1994.1	1915.2	1842.7	1769.1	1666.2	1647.1	1593.8	1540.3	1466.6	1453.9	1415.8
30°	1947.0	1854.2	1773.0	1687.7	1579.8	1549.2	1493.3	1438.6	1363.7	1347.1	1311.5
32.5°	1872.0	1766.6	1676.4	1591.2	1471.7	1433.6	1377.6	1323.0	1250.6	1237.9	1204.8
35°	1773.0	1654.7	1559.4	1469.2	1349.7	1310.3	1256.9	1208.6	1142.6	1137.5	1114.6
37.5°	1648.4	1525.0	1423.4	1337.0	1223.9	1203.6	1148.9	1113.4	1058.6	1063.7	1052.2
40°	1507.3	1381.5	1284.9	1208.6	1110.7	1093.0	1060.0	1033.3	986.2	1000.2	1001.5
42.5°	1364.9	1239.1	1151.5	1082.8	998.9	987.4	964.6	949.4	913.7	941.7	953.2
45°	1203.6	1086.6	1011.6	959.6	897.2	897.2	885.9	884.6	860.4	899.7	911.2
47.5°	1047.2	955.7	903.6	871.9	828.6	849.0	845.1	855.3	837.6	878.2	888.4
50°	929.0	865.5	833.7	818.5	788.0	819.8	827.3	841.3	826.1	861.7	869.2
52.5°	854.1	812.2	794.4	790.5	768.8	808.3	821.0	833.7	815.9	849.0	847.8
55°	812.2	784.2	777.8	785.5	768.8	807.0	819.8	828.6	813.4	836.3	835.0
57.5°	796.8	781.6	785.5	796.8	785.5	817.1	823.6	833.7	818.5	828.6	833.7
60°	795.6	795.6	810.8	826.1	818.5	841.3	845.1	843.9	830.0	831.1	833.7
62.5°	788.0	807.0	832.4	856.6	854.1	882.0	884.6	868.1	856.6	843.9	840.1
65°	763.8	795.6	832.4	865.5	870.6	913.7	918.9	902.4	894.8	873.1	856.6
67.5°	710.4	751.1	794.4	835.0	843.9	902.4	913.7	920.2	923.9	910.0	888.4
70°	620.1	662.1	706.6	753.7	766.4	831.1	855.3	884.6	907.4	927.7	920.2
72.5°	504.6	542.7	580.8	624.0	643.1	710.4	742.2	793.0	828.6	880.7	902.4
75°	400.3	423.2	446.1	472.8	488.1	554.2	593.5	654.5	702.9	775.3	823.6
77.5°	315.2	326.5	338.0	349.5	355.8	392.7	424.5	485.4	541.4	632.9	704.0
80°	242.8	249.1	250.4	254.1	251.7	269.5	280.9	317.7	366.0	456.2	540.2
82.5°	156.3	161.3	164.0	170.3	157.6	180.5	188.2	191.9	217.3	283.4	343.2
85°	87.7	88.9	90.2	92.8	75.0	97.9	99.1	92.8	90.2	116.9	132.2
87.5°	21.7	20.3	21.7	21.7	8.8	20.3	20.3	13.9	10.2	19.0	15.3
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):

	135°	145°	155°	165°	175°	180°
0°	1731.0	1731.0	1731.0	1731.0	1731.0	1731.0
2.5°	1594.9	1592.5	1593.8	1587.3	1584.8	1586.1
5°	1569.6	1564.5	1564.5	1560.7	1555.7	1555.7
7.5°	1581.0	1570.8	1567.0	1559.4	1551.8	1553.0
10°	1598.8	1581.0	1568.3	1556.8	1547.9	1547.9
12.5°	1610.3	1578.5	1559.4	1544.2	1534.0	1534.0
15°	1612.7	1564.5	1536.5	1520.1	1509.9	1509.9
17.5°	1597.5	1536.5	1500.9	1479.4	1467.9	1470.4
20°	1559.4	1484.4	1442.4	1419.6	1408.2	1409.5
22.5°	1499.7	1413.3	1364.9	1338.3	1326.9	1326.9
25°	1418.3	1324.3	1272.3	1250.6	1240.4	1240.4
27.5°	1325.6	1228.9	1183.2	1166.7	1160.4	1160.4
30°	1221.3	1141.3	1108.2	1096.8	1086.6	1086.6
32.5°	1133.7	1076.4	1065.1	1049.8	1023.1	1021.8
35°	1063.7	1057.4	1048.5	1002.8	964.6	959.6
37.5°	1025.6	1063.7	1007.8	929.0	898.5	897.2
40°	1005.3	1040.9	944.3	906.2	902.4	902.4
42.5°	957.0	982.5	940.5	918.9	918.9	920.2
45°	906.2	927.7	949.4	930.4	936.7	937.9
47.5°	870.6	913.7	949.4	932.8	945.5	953.2
50°	837.6	901.1	930.4	930.4	944.3	945.5
52.5°	830.0	883.3	912.6	926.5	927.7	921.4
55°	831.1	869.2	898.5	916.3	908.7	908.7
57.5°	830.0	861.7	887.0	893.4	897.2	897.2
60°	831.1	851.4	871.9	869.2	882.0	882.0
62.5°	835.0	837.6	847.8	845.1	864.2	864.2
65°	843.9	819.8	813.4	815.9	838.8	837.6
67.5°	860.4	795.6	775.3	776.5	809.6	804.4
70°	884.6	762.5	732.0	724.4	780.3	771.5
72.5°	892.2	724.4	676.1	668.4	701.6	676.1
75°	856.6	693.9	616.4	591.0	577.0	569.4
77.5°	763.8	674.9	554.2	500.7	479.1	474.0
80°	632.9	635.5	472.8	409.2	475.3	474.0
82.5°	477.9	549.0	378.7	354.5	344.3	287.3
85°	231.3	413.0	291.0	243.9	146.2	138.5
87.5°	20.3	172.8	167.7	109.3	49.6	47.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)