

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: P197242

Luminaire Tested: **NAV-AF-04-D-UNV-T2R-8030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197242
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-8030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 80 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: 16855 lumens
Efficiency: N/A
Efficacy: 98.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

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

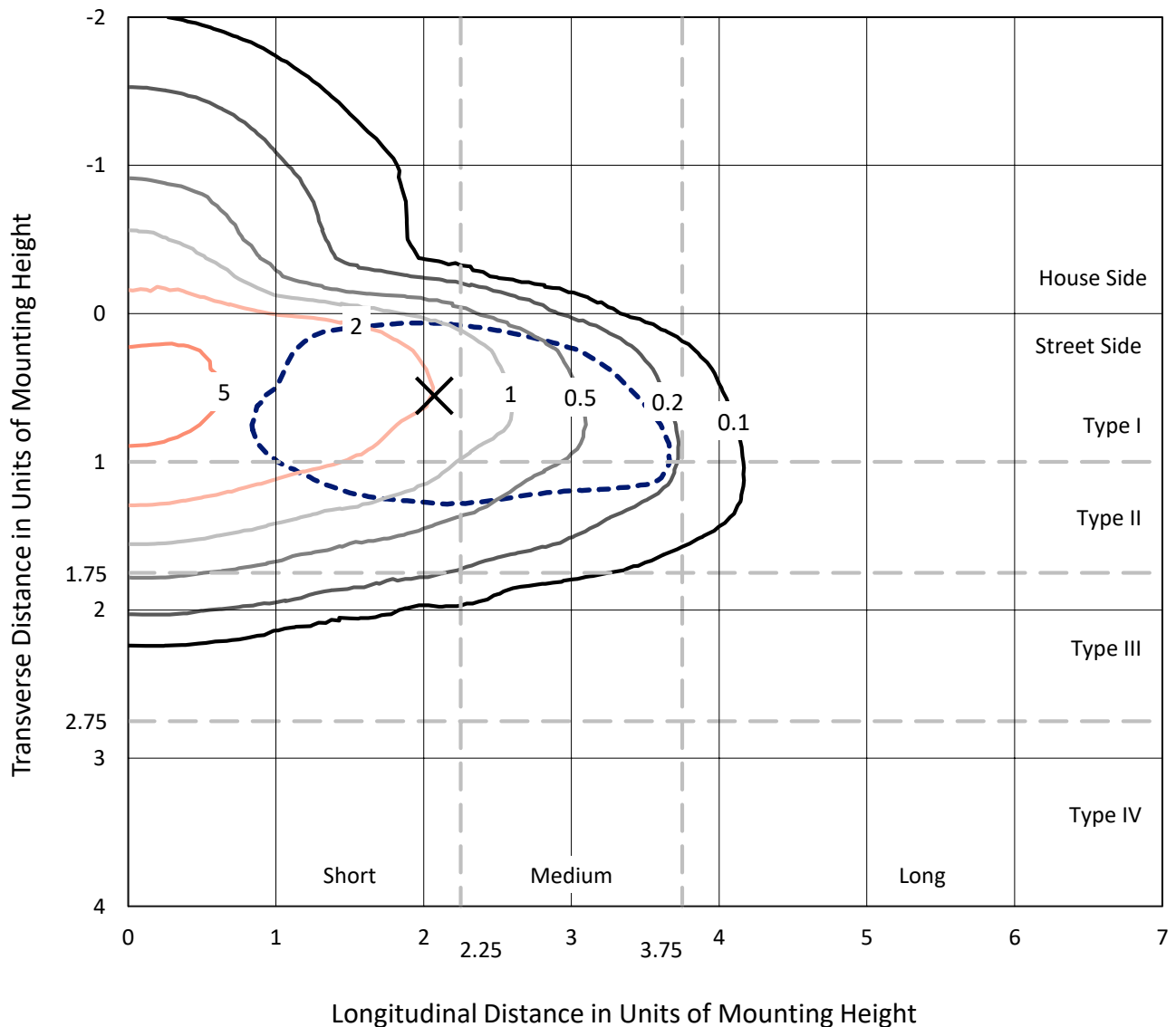


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

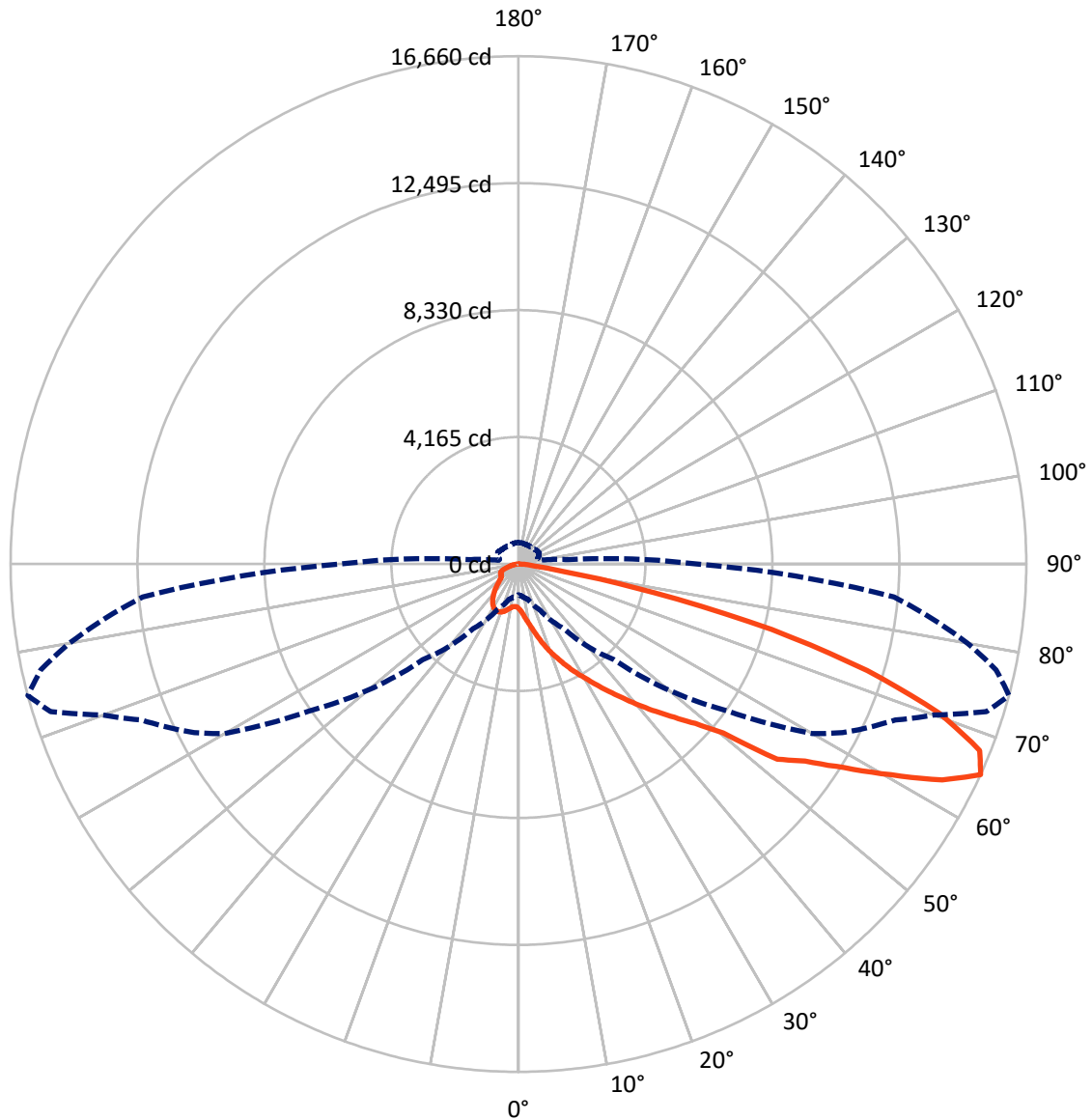


Based on 25 foot mounting height. Maximum calculated value = 6.7 fc
 Type II - Short - Semi-Cutoff

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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	2532.7	0.0	2532.7
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	14322.3	0.0	14322.3
	% Fixture	85.0	0.0	85.0
Total	Lumens	16855.0	0.0	16855.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.4	1.0
10°-20°	658.5	3.9
20°-30°	1329.0	7.9
30°-40°	2256.9	13.4
40°-50°	3147.9	18.7
50°-60°	3858.1	22.9
60°-70°	3629.9	21.5
70°-80°	1591.7	9.4
80°-90°	210.6	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°	16855.0	100.0
0°-180°	16855.0	100.0

Coefficient of Utilization



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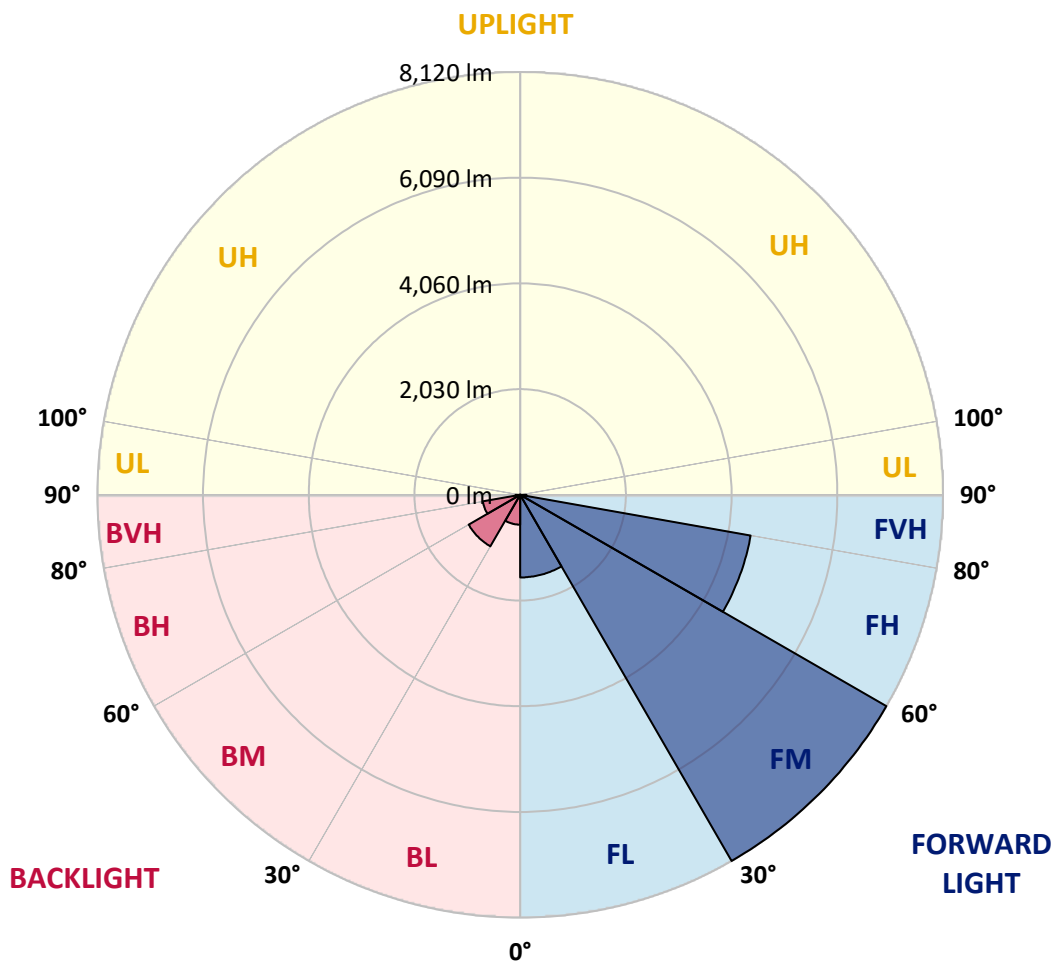
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1586.5	9.4			
FM (30°-60°)	8120.0	48.2			
FH (60°-80°)	4493.7	26.7			G2/5000
FVH (80°-90°)	122.1	0.7			G2/225
BL (0°-30°)	573.4	3.4	B2/1000		
BM (30°-60°)	1142.9	6.8	B2/2500		
BH (60°-80°)	727.9	4.3	B2/1000		G2/1000
BVH (80°-90°)	88.5	0.5			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 II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4
2.5°	1838.9	1817.4	1819.6	1789.6	1745.6	1697.3	1657.7	1636.2	1618.0	1612.6	1582.6
5°	2405.0	2378.2	2368.6	2299.9	2197.0	2074.8	1953.6	1906.4	1867.8	1844.2	1786.3
7.5°	2868.2	2854.3	2841.4	2778.2	2676.3	2519.7	2324.6	2254.9	2190.6	2119.8	2050.1
10°	3183.5	3178.1	3172.7	3128.8	3044.1	2907.9	2697.7	2621.6	2541.2	2451.1	2360.0
12.5°	3421.5	3421.5	3425.8	3389.3	3337.9	3232.8	3041.9	2971.2	2889.7	2795.3	2691.3
15°	3581.3	3585.6	3608.1	3618.8	3592.0	3524.4	3357.2	3295.0	3217.8	3124.5	3021.6
17.5°	3687.4	3696.0	3729.2	3764.6	3798.9	3775.3	3651.0	3593.1	3523.4	3437.6	3341.1
20°	3934.0	3923.3	3924.4	3913.7	3964.0	3982.3	3913.7	3865.4	3809.6	3731.4	3643.5
22.5°	4451.9	4431.5	4379.0	4245.0	4183.9	4177.4	4136.7	4110.9	4068.1	4018.7	3930.8
25°	5127.4	5103.8	4999.8	4778.9	4596.7	4428.3	4353.3	4337.2	4309.3	4276.1	4212.8
27.5°	5825.4	5799.7	5665.7	5386.9	5148.9	4809.0	4575.2	4553.8	4528.0	4514.1	4484.1
30°	6439.8	6412.0	6280.1	5997.0	5709.6	5304.3	4874.4	4799.3	4755.4	4759.6	4742.5
32.5°	6979.2	6954.5	6806.5	6518.1	6226.5	5833.0	5262.5	5145.7	5047.0	5010.5	5023.4
35°	7431.7	7409.1	7247.2	6956.7	6662.9	6335.8	5762.2	5586.3	5425.5	5324.7	5312.9
37.5°	7697.6	7684.7	7571.0	7324.4	7032.8	6792.6	6321.9	6126.7	5889.8	5742.9	5678.6
40°	7682.6	7696.5	7677.2	7565.7	7339.4	7164.7	6905.2	6712.2	6480.6	6261.8	6131.0
42.5°	7463.8	7483.1	7570.0	7627.9	7566.8	7460.6	7414.5	7270.8	7062.8	6831.2	6650.0
45°	7163.6	7180.8	7293.3	7502.4	7677.2	7707.2	7860.5	7788.7	7612.9	7415.6	7216.1
47.5°	6703.6	6736.8	6867.7	7200.1	7616.1	7905.6	8234.8	8268.0	8166.1	8003.2	7816.6
50°	6037.7	6081.7	6265.1	6737.9	7384.5	8109.3	8791.2	8917.8	8877.0	8711.9	8523.2
52.5°	5355.8	5399.8	5644.2	6147.1	7011.3	8192.9	9339.2	9663.0	9896.7	10067.2	10100.4
55°	4646.0	4695.3	4963.4	5542.4	6513.8	8086.8	9730.5	10098.3	10335.3	10513.3	10585.1
57.5°	3845.0	3900.8	4160.3	4745.7	5810.4	7660.0	10165.9	10687.0	11039.7	11314.2	11468.6
60°	2926.1	2995.8	3265.0	3854.7	4886.2	6843.0	10359.9	11130.9	11691.6	12103.4	12347.8
62.5°	1855.0	1925.7	2205.6	2817.8	3834.3	5726.8	9810.9	10935.7	11892.1	12501.2	12949.4
65°	1012.2	1043.3	1198.8	1659.8	2585.2	4443.3	8419.2	9745.5	11123.4	11986.5	12674.9
67.5°	759.1	763.4	779.5	892.1	1376.7	3000.1	6582.4	7797.3	9327.4	10438.2	11260.6
70°	664.8	664.8	666.9	668.0	747.3	1625.5	4459.4	5577.8	6980.2	8103.9	9125.8
72.5°	596.2	589.7	587.6	574.7	585.4	833.1	2427.5	3432.2	4614.9	5875.8	6829.1
75°	514.7	513.6	513.6	500.7	507.2	586.5	1052.9	1647.0	2563.7	3737.8	4676.0
77.5°	445.0	437.5	438.5	431.0	451.4	449.3	499.7	678.7	1116.2	1963.3	2741.7
80°	366.7	361.3	364.6	360.3	392.4	332.4	336.7	415.0	554.3	861.0	1213.8
82.5°	271.3	273.4	293.8	291.6	330.2	224.1	246.6	309.9	373.1	428.9	466.4
85°	158.7	161.9	211.2	222.0	242.3	117.9	151.2	184.4	208.0	230.5	240.2
87.5°	17.2	22.5	117.9	121.2	108.3	35.4	61.1	77.2	82.6	87.9	77.2
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°	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4
2.5°	1573.0	1559.0	1544.0	1535.4	1520.4	1507.6	1484.0	1464.7	1443.2	1428.2	1421.8
5°	1757.4	1724.2	1688.8	1663.0	1630.9	1603.0	1549.4	1485.0	1464.7	1421.8	1411.1
7.5°	1997.6	1937.5	1877.5	1828.2	1772.4	1726.3	1636.2	1520.4	1505.4	1436.8	1421.8
10°	2279.6	2191.6	2102.7	2026.5	1945.0	1874.3	1741.3	1578.3	1562.2	1474.3	1459.3
12.5°	2594.8	2487.6	2372.9	2259.2	2162.7	2063.0	1881.8	1668.4	1642.7	1538.7	1518.3
15°	2919.7	2803.9	2670.9	2533.7	2414.7	2282.8	2054.4	1786.3	1739.2	1616.9	1589.1
17.5°	3240.3	3114.8	2975.4	2822.1	2682.7	2525.1	2241.0	1918.2	1836.7	1694.1	1658.7
20°	3550.2	3422.6	3275.7	3125.6	2951.9	2771.7	2431.8	2048.0	1923.6	1758.5	1712.4
22.5°	3832.2	3722.8	3575.9	3403.3	3227.4	3024.8	2625.9	2177.7	1999.7	1807.8	1748.8
25°	4129.2	4029.5	3883.6	3717.4	3512.6	3287.5	2826.4	2301.0	2060.8	1834.6	1761.7
27.5°	4429.4	4343.6	4206.4	4031.6	3811.8	3562.0	3030.1	2414.7	2110.2	1843.2	1755.2
30°	4750.0	4683.5	4557.0	4361.8	4139.9	3863.3	3252.1	2526.2	2141.3	1831.4	1726.3
32.5°	5053.4	5051.3	4938.7	4736.1	4496.9	4192.4	3485.8	2638.8	2157.3	1798.1	1675.9
35°	5368.7	5412.6	5327.9	5134.9	4883.0	4545.2	3744.2	2758.9	2158.4	1739.2	1610.5
37.5°	5726.8	5805.1	5767.5	5584.2	5319.4	4947.3	4047.7	2894.0	2152.0	1657.7	1515.1
40°	6134.3	6241.5	6240.4	6086.0	5802.9	5397.6	4400.4	3045.1	2137.0	1555.8	1402.5
42.5°	6600.7	6728.3	6763.7	6611.4	6325.1	5889.8	4804.7	3211.3	2113.4	1455.0	1283.5
45°	7134.6	7247.2	7313.7	7172.2	6884.8	6425.9	5269.0	3400.1	2084.4	1325.3	1147.3
47.5°	7706.1	7837.0	7936.7	7815.5	7508.9	7037.1	5819.0	3643.5	2073.7	1177.3	1000.4
50°	8414.9	8550.0	8765.5	8710.8	8542.5	8162.9	6982.4	4218.2	2078.0	1036.9	877.1
52.5°	10173.4	10483.2	10755.6	10634.4	10234.5	9583.6	7928.1	4537.7	1987.9	922.1	791.3
55°	10704.1	11055.8	11457.9	11407.5	11023.6	10367.4	8675.4	4804.7	1901.1	838.5	735.6
57.5°	11632.7	12047.6	12609.5	12598.7	12128.0	11389.3	9637.2	5124.2	1863.5	790.2	707.7
60°	12615.9	13144.5	13920.8	14042.0	13530.5	12761.7	10773.8	5516.6	1868.9	763.4	691.6
62.5°	13334.3	14109.5	15238.6	15601.0	14998.4	14151.3	11953.3	5909.1	1836.7	732.3	672.3
65°	13378.3	14494.5	16096.4	16660.4	16050.3	14962.0	12369.3	5831.9	1643.7	690.5	641.2
67.5°	12306.0	13760.0	15706.1	16324.8	15700.7	14462.3	11640.2	5098.5	1336.0	617.6	587.6
70°	10249.5	11937.2	13957.3	14646.7	14131.0	12877.5	10130.5	4072.3	998.2	521.1	507.2
72.5°	7920.6	9494.6	11329.2	11967.2	11572.6	10470.4	7990.3	2967.9	713.0	422.5	411.7
75°	5662.5	7002.8	8334.5	8577.9	8188.7	7176.5	5184.3	1853.9	499.7	346.3	331.3
77.5°	3506.2	4377.9	4856.1	4543.1	4046.6	3363.6	2110.2	915.7	332.4	282.0	267.0
80°	1555.8	1826.0	1704.9	1519.4	1199.8	986.5	644.4	406.4	214.4	217.7	209.1
82.5°	523.3	553.3	538.3	535.0	482.5	422.5	273.4	175.8	120.1	139.4	136.2
85°	255.2	267.0	268.1	277.7	241.3	187.6	74.0	69.7	51.5	75.1	78.3
87.5°	77.2	78.3	70.8	77.2	62.2	42.9	13.9	19.3	9.7	18.2	18.2
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4
2.5°	1410.0	1405.7	1398.2	1389.6	1387.5	1376.7	1373.5	1368.2	1365.0	1359.6	1355.3
5°	1397.1	1389.6	1381.0	1371.4	1371.4	1356.4	1349.9	1343.5	1343.5	1333.9	1329.6
7.5°	1410.0	1400.3	1390.7	1382.1	1385.3	1368.2	1361.7	1355.3	1354.2	1344.6	1340.3
10°	1446.4	1436.8	1425.0	1416.4	1413.2	1399.3	1391.8	1382.1	1375.7	1369.2	1362.8
12.5°	1502.2	1489.3	1474.3	1456.1	1448.6	1436.8	1425.0	1412.1	1397.1	1390.7	1381.0
15°	1568.7	1547.2	1526.9	1504.3	1484.0	1472.2	1456.1	1435.7	1415.3	1406.8	1393.9
17.5°	1623.4	1600.8	1571.9	1545.1	1508.6	1499.0	1476.5	1451.8	1418.6	1415.3	1396.0
20°	1669.5	1635.2	1599.8	1567.6	1511.8	1506.5	1478.6	1449.7	1402.5	1402.5	1378.9
22.5°	1695.2	1648.0	1606.2	1563.3	1493.6	1489.3	1457.2	1422.9	1365.0	1367.1	1338.1
25°	1699.5	1642.7	1590.1	1538.7	1458.2	1450.7	1410.0	1372.5	1309.2	1304.9	1274.9
27.5°	1682.3	1615.9	1554.7	1492.5	1405.7	1389.6	1344.6	1299.5	1237.4	1226.6	1194.5
30°	1642.7	1564.4	1495.8	1423.9	1332.8	1307.1	1259.9	1213.8	1150.5	1136.6	1106.5
32.5°	1579.4	1490.4	1414.3	1342.4	1241.6	1209.5	1162.3	1116.2	1055.1	1044.4	1016.5
35°	1495.8	1396.0	1315.6	1239.5	1138.7	1105.5	1060.4	1019.7	963.9	959.6	940.3
37.5°	1390.7	1286.7	1200.9	1128.0	1032.6	1015.4	969.3	939.3	893.2	897.5	887.8
40°	1271.7	1165.5	1084.0	1019.7	937.1	922.1	894.2	871.7	832.1	843.8	844.9
42.5°	1151.6	1045.4	971.4	913.5	842.8	833.1	813.8	801.0	770.9	794.5	804.2
45°	1015.4	916.8	853.5	809.5	757.0	757.0	747.3	746.3	725.9	759.1	768.8
47.5°	883.5	806.3	762.4	735.6	699.1	716.3	713.0	721.6	706.6	740.9	749.5
50°	783.8	730.2	703.4	690.5	664.8	691.6	698.0	709.8	697.0	727.0	733.4
52.5°	720.5	685.2	670.1	666.9	648.7	681.9	692.7	703.4	688.4	716.3	715.2
55°	685.2	661.6	656.2	662.6	648.7	680.9	691.6	699.1	686.2	705.5	704.5
57.5°	672.3	659.4	662.6	672.3	662.6	689.4	694.8	703.4	690.5	699.1	703.4
60°	671.2	671.2	684.1	697.0	690.5	709.8	713.0	712.0	700.2	701.2	703.4
62.5°	664.8	680.9	702.3	722.7	720.5	744.1	746.3	732.3	722.7	712.0	708.7
65°	644.4	671.2	702.3	730.2	734.5	770.9	775.2	761.3	754.9	736.6	722.7
67.5°	599.4	633.7	670.1	704.5	712.0	761.3	770.9	776.3	779.5	767.7	749.5
70°	523.3	558.6	596.2	635.8	646.6	701.2	721.6	746.3	765.6	782.7	776.3
72.5°	425.7	457.8	490.0	526.5	542.6	599.4	626.2	669.1	699.1	743.1	761.3
75°	337.8	357.1	376.4	398.9	411.7	467.5	500.7	552.2	592.9	654.1	694.8
77.5°	265.9	275.6	285.2	294.9	300.2	331.3	358.1	409.6	456.8	534.0	594.0
80°	204.8	210.2	211.2	214.4	212.3	227.3	237.0	268.1	308.8	384.9	455.7
82.5°	131.9	136.2	138.3	143.7	133.0	152.3	158.7	161.9	183.4	239.1	289.5
85°	74.0	75.1	76.1	78.3	63.3	82.6	83.6	78.3	76.1	98.6	111.5
87.5°	18.2	17.2	18.2	18.2	7.5	17.2	17.2	11.8	8.6	16.1	12.9
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°	1460.4	1460.4	1460.4	1460.4	1460.4	1460.4
2.5°	1345.7	1343.5	1344.6	1339.2	1337.1	1338.1
5°	1324.2	1319.9	1319.9	1316.7	1312.4	1312.4
7.5°	1333.9	1325.3	1322.1	1315.6	1309.2	1310.3
10°	1348.9	1333.9	1323.1	1313.5	1306.0	1306.0
12.5°	1358.5	1331.7	1315.6	1302.8	1294.2	1294.2
15°	1360.7	1319.9	1296.3	1282.4	1273.8	1273.8
17.5°	1347.8	1296.3	1266.3	1248.1	1238.4	1240.6
20°	1315.6	1252.4	1217.0	1197.7	1188.0	1189.1
22.5°	1265.2	1192.3	1151.6	1129.1	1119.4	1119.4
25°	1196.6	1117.3	1073.3	1055.1	1046.5	1046.5
27.5°	1118.3	1036.9	998.2	984.3	978.9	978.9
30°	1030.4	962.9	935.0	925.3	916.8	916.8
32.5°	956.4	908.2	898.5	885.7	863.1	862.1
35°	897.5	892.1	884.6	846.0	813.8	809.5
37.5°	865.3	897.5	850.3	783.8	758.1	757.0
40°	848.1	878.2	796.7	764.5	761.3	761.3
42.5°	807.4	828.8	793.5	775.2	775.2	776.3
45°	764.5	782.7	801.0	784.9	790.2	791.3
47.5°	734.5	770.9	801.0	787.0	797.7	804.2
50°	706.6	760.2	784.9	784.9	796.7	797.7
52.5°	700.2	745.2	769.9	781.7	782.7	777.4
55°	701.2	733.4	758.1	773.1	766.6	766.6
57.5°	700.2	727.0	748.4	753.8	757.0	757.0
60°	701.2	718.4	735.6	733.4	744.1	744.1
62.5°	704.5	706.6	715.2	713.0	729.1	729.1
65°	712.0	691.6	686.2	688.4	707.7	706.6
67.5°	725.9	671.2	654.1	655.1	683.0	678.7
70°	746.3	643.3	617.6	611.2	658.4	650.8
72.5°	752.7	611.2	570.4	564.0	591.9	570.4
75°	722.7	585.4	520.0	498.6	486.8	480.4
77.5°	644.4	569.4	467.5	422.5	404.2	399.9
80°	534.0	536.1	398.9	345.3	401.0	399.9
82.5°	403.2	463.2	319.5	299.2	290.6	242.3
85°	195.1	348.5	245.5	205.9	123.3	116.9
87.5°	17.2	145.8	141.5	92.2	41.8	39.7
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)