

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: P270543

Luminaire Tested: **NAV-AF-04-D-UNV-T2R-7027-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270543
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-7027-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 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: 17946.4 lumens
Efficiency: N/A
Efficacy: 104.9 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

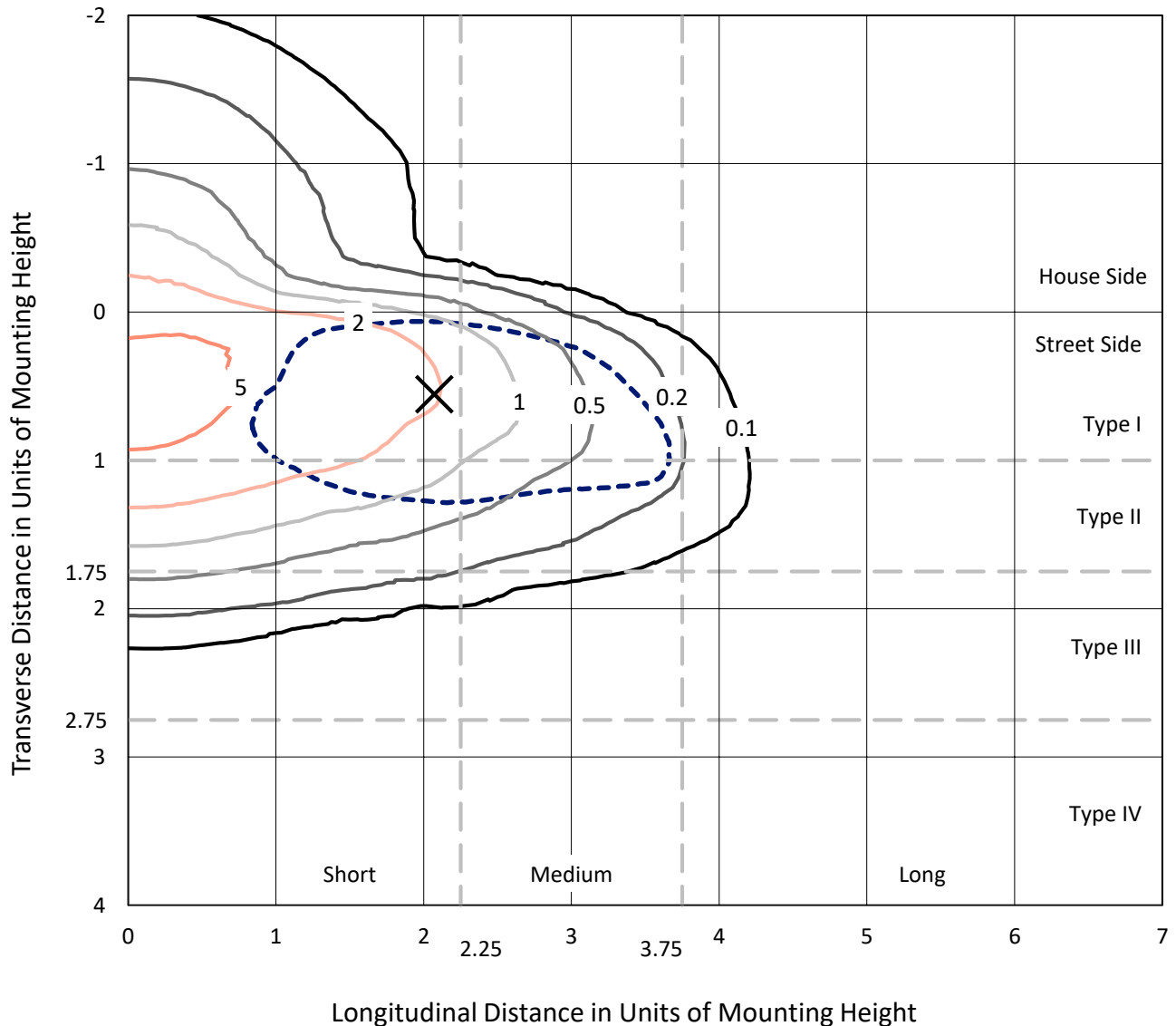


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Iso-Footcandle Lines of Horizontal Illumination

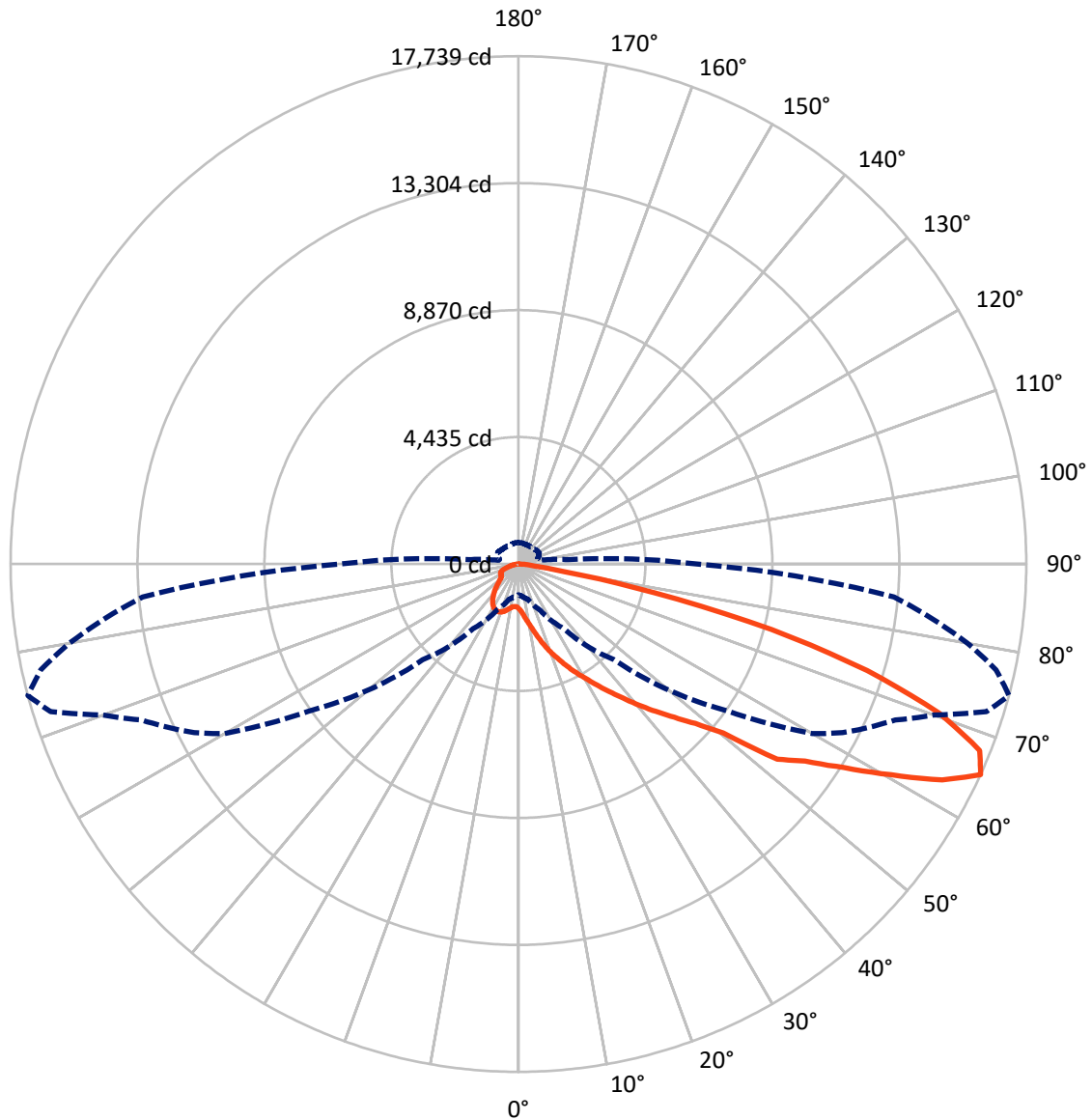
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.1 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	2696.7	0.0	2696.7
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	15249.7	0.0	15249.7
	% Fixture	85.0	0.0	85.0
Total	Lumens	17946.4	0.0	17946.4
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.6	1.0
10°-20°	701.2	3.9
20°-30°	1415.0	7.9
30°-40°	2403.1	13.4
40°-50°	3351.7	18.7
50°-60°	4107.9	22.9
60°-70°	3865.0	21.5
70°-80°	1694.8	9.4
80°-90°	224.2	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°	17946.4	100.0
0°-180°	17946.4	100.0



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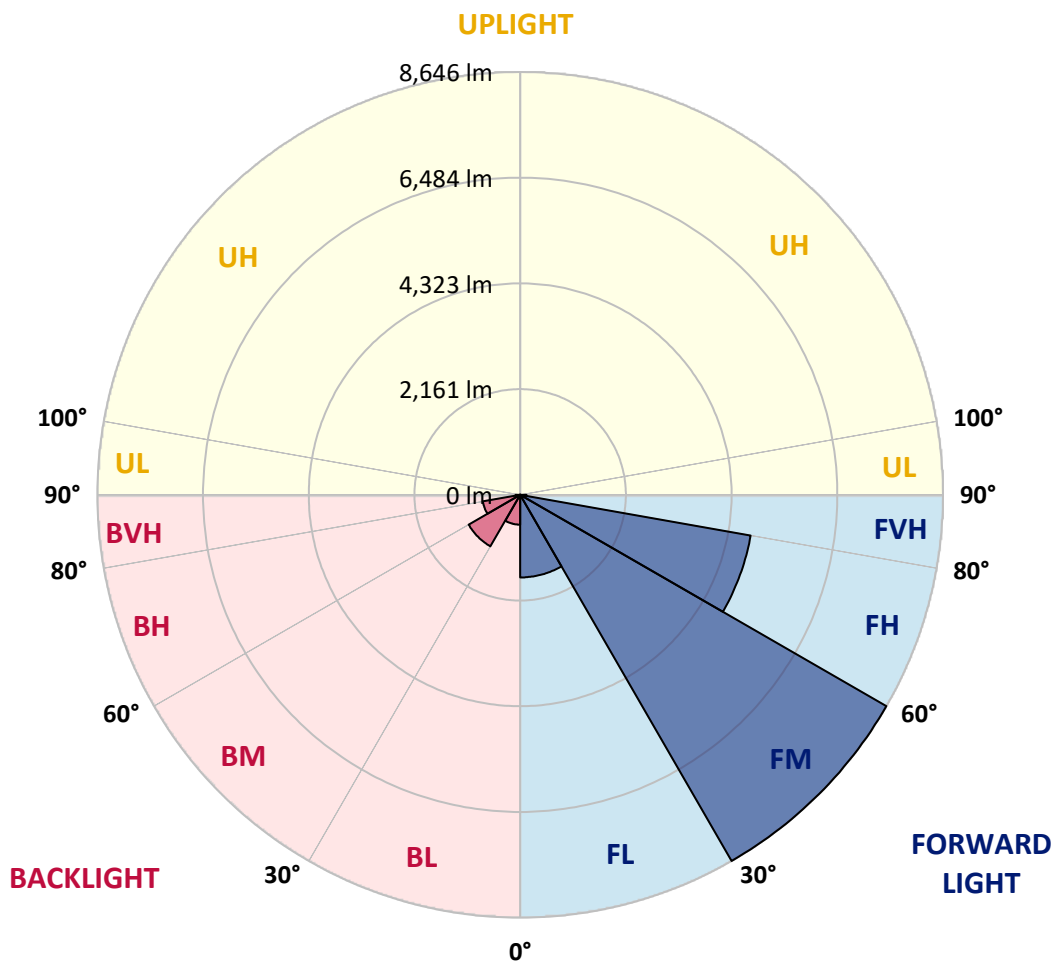
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1689.2	9.4			
FM (30°-60°)	8645.8	48.2			
FH (60°-80°)	4784.7	26.7			G2/5000
FVH (80°-90°)	130.0	0.7			G2/225
BL (0°-30°)	610.5	3.4	B2/1000		
BM (30°-60°)	1216.9	6.8	B2/2500		
BH (60°-80°)	775.1	4.3	B2/1000		G2/1000
BVH (80°-90°)	94.2	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°	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0
2.5°	1957.9	1935.0	1937.5	1905.5	1858.7	1807.3	1765.0	1742.2	1722.8	1717.1	1685.1
5°	2560.8	2532.2	2521.9	2448.9	2339.2	2209.1	2080.1	2029.9	1988.8	1963.7	1902.0
7.5°	3054.0	3039.1	3025.4	2958.1	2849.7	2682.9	2475.1	2400.9	2332.4	2257.1	2182.8
10°	3389.7	3383.8	3378.2	3331.4	3241.2	3096.2	2872.4	2791.4	2705.8	2609.8	2512.7
12.5°	3643.0	3643.0	3647.6	3608.9	3554.1	3442.1	3238.8	3163.6	3076.8	2976.4	2865.6
15°	3813.1	3817.7	3841.7	3853.1	3824.5	3752.7	3574.5	3508.3	3426.1	3326.9	3217.2
17.5°	3926.2	3935.4	3970.7	4008.3	4044.9	4019.7	3887.3	3825.7	3751.5	3660.1	3557.4
20°	4188.7	4177.4	4178.5	4167.1	4220.7	4240.1	4167.1	4115.7	4056.3	3972.9	3879.4
22.5°	4740.1	4718.4	4662.6	4519.8	4454.8	4447.9	4404.5	4377.1	4331.4	4278.9	4185.4
25°	5459.4	5434.2	5323.5	5088.4	4894.3	4715.1	4635.2	4618.0	4588.4	4553.0	4485.5
27.5°	6202.6	6175.3	6032.6	5735.7	5482.3	5120.3	4871.5	4848.6	4821.3	4806.4	4774.4
30°	6856.9	6827.2	6686.8	6385.3	6079.4	5647.9	5190.0	5110.1	5063.2	5067.9	5049.6
32.5°	7431.0	7404.8	7247.3	6940.1	6629.6	6210.6	5603.3	5478.9	5373.8	5335.0	5348.7
35°	7912.9	7888.8	7716.5	7407.2	7094.3	6746.1	6135.3	5948.0	5776.8	5669.6	5656.9
37.5°	8196.0	8182.3	8061.3	7798.6	7488.2	7232.4	6731.2	6523.4	6271.2	6114.8	6046.2
40°	8180.1	8194.9	8174.2	8055.6	7814.6	7628.5	7352.3	7146.8	6900.2	6667.3	6528.1
42.5°	7947.1	7967.6	8060.1	8121.8	8056.7	7943.7	7894.7	7741.7	7520.2	7273.5	7080.6
45°	7627.5	7645.7	7765.6	7988.2	8174.2	8206.2	8369.5	8293.1	8105.8	7895.7	7683.5
47.5°	7137.7	7173.1	7312.4	7666.2	8109.2	8417.5	8767.9	8803.4	8695.0	8521.4	8322.7
50°	6428.7	6475.5	6670.8	7174.3	7862.7	8634.4	9360.5	9495.3	9451.8	9276.0	9075.0
52.5°	5702.6	5749.4	6009.8	6545.1	7465.4	8723.4	9943.9	10288.6	10537.6	10719.0	10754.5
55°	4946.8	4999.3	5284.8	5901.2	6935.6	8610.4	10360.6	10752.3	11004.4	11194.0	11270.5
57.5°	4093.9	4153.4	4429.6	5053.0	6186.6	8156.0	10824.0	11379.0	11754.5	12046.8	12211.2
60°	3115.6	3189.8	3476.4	4104.3	5202.5	7286.2	11030.7	11851.6	12448.7	12887.1	13147.5
62.5°	1975.1	2050.4	2348.3	3000.2	4082.5	6097.6	10446.2	11643.8	12662.1	13310.6	13787.8
65°	1077.7	1110.8	1276.4	1767.2	2752.5	4731.1	8964.4	10376.6	11843.7	12762.7	13495.5
67.5°	808.2	812.8	829.9	949.9	1465.9	3194.4	7008.7	8302.1	9931.3	11114.1	11989.8
70°	707.9	707.9	710.1	711.3	795.8	1730.8	4748.3	5939.0	7432.2	8628.7	9716.6
72.5°	634.7	627.9	625.6	611.9	623.3	887.0	2584.8	3654.5	4913.6	6256.3	7271.2
75°	548.0	546.9	546.9	533.1	540.1	624.5	1121.2	1753.6	2729.7	3979.9	4978.8
77.5°	473.8	465.9	466.9	458.9	480.7	478.3	532.1	722.6	1188.5	2090.4	2919.2
80°	390.5	384.7	388.2	383.5	417.8	353.9	358.5	441.8	590.2	916.8	1292.3
82.5°	288.9	291.1	312.8	310.5	351.6	238.6	262.6	329.9	397.3	456.7	496.7
85°	169.1	172.4	224.9	236.3	258.1	125.7	160.9	196.4	221.5	245.4	255.7
87.5°	18.2	24.0	125.7	128.9	115.3	37.6	65.0	82.3	87.9	93.7	82.3
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0
2.5°	1674.8	1660.0	1644.0	1634.8	1618.8	1605.2	1580.1	1559.5	1536.7	1520.7	1513.9
5°	1871.2	1835.7	1798.0	1770.6	1736.5	1706.8	1649.6	1581.1	1559.5	1513.9	1502.4
7.5°	2126.8	2063.0	1999.1	1946.5	1887.2	1838.1	1742.2	1618.8	1602.8	1529.9	1513.9
10°	2427.2	2333.5	2238.8	2157.8	2071.0	1995.7	1854.0	1680.5	1663.4	1569.8	1553.8
12.5°	2762.8	2648.7	2526.6	2405.5	2302.7	2196.5	2003.6	1776.4	1749.0	1638.2	1616.6
15°	3108.8	2985.4	2843.9	2697.8	2570.9	2430.6	2187.5	1902.0	1851.8	1721.6	1692.0
17.5°	3450.1	3316.5	3168.1	3004.9	2856.4	2688.5	2386.1	2042.4	1955.7	1803.8	1766.2
20°	3780.1	3644.2	3487.8	3328.0	3143.0	2951.2	2589.3	2180.5	2048.1	1872.3	1823.2
22.5°	4080.3	3963.9	3807.5	3623.7	3436.3	3220.7	2796.0	2318.7	2129.3	1924.9	1862.0
25°	4396.6	4290.3	4135.1	3958.1	3740.2	3500.3	3009.4	2449.9	2194.3	1953.4	1875.8
27.5°	4716.2	4624.8	4478.7	4292.6	4058.6	3792.6	3226.4	2570.9	2246.8	1962.4	1869.0
30°	5057.5	4986.9	4852.0	4644.2	4408.0	4113.3	3462.6	2689.7	2279.9	1950.0	1838.1
32.5°	5380.7	5378.4	5258.5	5042.7	4788.1	4463.9	3711.5	2809.5	2297.1	1914.6	1784.5
35°	5716.4	5763.2	5672.9	5467.4	5199.1	4839.4	3986.7	2937.5	2298.1	1851.8	1714.8
37.5°	6097.6	6181.0	6141.1	5945.8	5663.9	5267.7	4309.8	3081.4	2291.2	1765.0	1613.1
40°	6531.4	6645.7	6644.5	6480.1	6178.7	5747.1	4685.4	3242.3	2275.3	1656.6	1493.3
42.5°	7028.1	7164.0	7201.6	7039.5	6734.7	6271.2	5115.8	3419.3	2250.3	1549.2	1366.6
45°	7596.6	7716.5	7787.2	7636.6	7330.6	6842.0	5610.2	3620.2	2219.4	1411.1	1221.5
47.5°	8205.1	8344.4	8450.5	8321.5	7995.0	7492.8	6195.8	3879.4	2207.9	1253.6	1065.2
50°	8959.8	9103.7	9333.1	9274.9	9095.6	8691.6	7434.6	4491.3	2212.5	1103.9	933.9
52.5°	10832.1	11162.0	11452.0	11323.0	10897.2	10204.1	8441.5	4831.5	2116.6	981.8	842.5
55°	11397.2	11771.7	12199.8	12146.2	11737.4	11038.7	9237.2	5115.8	2024.2	892.7	783.2
57.5°	12385.9	12827.7	13426.0	13414.5	12913.3	12126.7	10261.2	5456.0	1984.1	841.4	753.5
60°	13432.9	13995.7	14822.3	14951.2	14406.7	13588.1	11471.4	5873.8	1989.9	812.8	736.4
62.5°	14197.7	15023.2	16225.4	16611.2	15969.6	15067.7	12727.2	6291.6	1955.7	779.8	715.8
65°	14244.6	15433.1	17138.7	17739.2	17089.5	15930.7	13170.2	6209.5	1750.2	735.3	682.7
67.5°	13102.9	14650.9	16723.0	17381.8	16717.4	15398.7	12393.8	5428.5	1422.6	657.6	625.6
70°	10913.1	12710.1	14861.0	15595.1	15046.0	13711.4	10786.4	4335.9	1062.9	554.9	540.1
72.5°	8433.5	10109.4	12062.8	12742.1	12322.1	11148.3	8507.7	3160.1	759.2	449.8	438.5
75°	6029.2	7456.2	8874.1	9133.2	8718.9	7641.2	5519.9	1973.9	532.1	368.8	352.8
77.5°	3733.3	4661.5	5170.6	4837.3	4308.6	3581.5	2246.8	975.0	353.9	300.3	284.3
80°	1656.6	1944.2	1815.2	1617.8	1277.5	1050.3	686.1	432.8	228.3	231.8	222.6
82.5°	557.0	589.1	573.1	569.6	513.7	449.8	291.1	187.2	127.9	148.4	144.9
85°	271.6	284.3	285.4	295.7	256.8	199.9	78.8	74.2	54.7	79.9	83.4
87.5°	82.3	83.4	75.4	82.3	66.3	45.6	14.8	20.5	10.3	19.5	19.5
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0
2.5°	1501.2	1496.8	1488.8	1479.6	1477.4	1465.9	1462.5	1456.7	1453.4	1447.6	1443.0
5°	1487.7	1479.6	1470.4	1460.1	1460.1	1444.2	1437.4	1430.6	1430.6	1420.2	1415.6
7.5°	1501.2	1490.9	1480.8	1471.7	1475.0	1456.7	1450.0	1443.0	1441.9	1431.7	1427.0
10°	1540.1	1529.9	1517.2	1508.2	1504.8	1489.8	1481.8	1471.7	1464.7	1457.9	1451.0
12.5°	1599.4	1585.8	1569.8	1550.4	1542.4	1529.9	1517.2	1503.6	1487.7	1480.8	1470.4
15°	1670.3	1647.4	1625.8	1601.8	1580.1	1567.5	1550.4	1528.6	1506.9	1497.8	1484.2
17.5°	1728.5	1704.5	1673.7	1645.2	1606.3	1596.1	1572.0	1545.9	1510.4	1506.9	1486.4
20°	1777.6	1741.1	1703.4	1669.1	1609.8	1604.1	1574.4	1543.6	1493.3	1493.3	1468.2
22.5°	1805.0	1754.7	1710.3	1664.6	1590.3	1585.8	1551.6	1515.0	1453.4	1455.7	1424.8
25°	1809.5	1749.0	1693.0	1638.2	1552.7	1544.6	1501.2	1461.4	1394.0	1389.4	1357.3
27.5°	1791.3	1720.4	1655.3	1589.2	1496.8	1479.6	1431.7	1383.7	1317.5	1306.0	1271.8
30°	1749.0	1665.6	1592.7	1516.1	1419.1	1391.7	1341.4	1292.3	1225.0	1210.1	1178.1
32.5°	1681.6	1586.9	1505.9	1429.4	1322.0	1287.8	1237.5	1188.5	1123.4	1112.0	1082.3
35°	1592.7	1486.4	1400.8	1319.8	1212.4	1177.0	1129.1	1085.7	1026.4	1021.8	1001.3
37.5°	1480.8	1369.9	1278.6	1201.0	1099.4	1081.2	1032.1	1000.2	950.9	955.5	945.2
40°	1354.0	1241.0	1154.2	1085.7	997.7	981.8	952.2	928.2	885.9	898.5	899.7
42.5°	1226.1	1113.1	1034.4	972.7	897.3	887.0	866.5	852.9	820.8	845.9	856.3
45°	1081.2	976.1	908.7	862.0	806.0	806.0	795.8	794.6	772.9	808.2	818.5
47.5°	940.7	858.5	811.7	783.2	744.3	762.7	759.2	768.3	752.4	788.9	798.1
50°	834.5	777.5	748.9	735.3	707.9	736.4	743.2	755.7	742.1	774.1	780.8
52.5°	767.2	729.6	713.6	710.1	690.6	726.1	737.5	748.9	732.9	762.7	761.6
55°	729.6	704.5	698.7	705.6	690.6	724.9	736.4	744.3	730.7	751.3	750.1
57.5°	715.8	702.1	705.6	715.8	705.6	734.0	739.8	748.9	735.3	744.3	748.9
60°	714.7	714.7	728.3	742.1	735.3	755.7	759.2	758.1	745.6	746.6	748.9
62.5°	707.9	724.9	747.7	769.5	767.2	792.3	794.6	779.8	769.5	758.1	754.7
65°	686.1	714.7	747.7	777.5	782.1	820.8	825.5	810.6	803.8	784.3	769.5
67.5°	638.2	674.7	713.6	750.1	758.1	810.6	820.8	826.6	829.9	817.5	798.1
70°	557.0	594.8	634.7	677.1	688.5	746.6	768.3	794.6	815.1	833.4	826.6
72.5°	453.3	487.5	521.7	560.5	577.7	638.2	666.7	712.4	744.3	791.1	810.6
75°	359.6	380.2	400.7	424.7	438.5	497.8	533.1	587.9	631.4	696.5	739.8
77.5°	283.1	293.3	303.6	314.0	319.6	352.8	381.3	436.0	486.3	568.5	632.4
80°	218.1	223.8	224.9	228.3	226.1	242.1	252.3	285.4	328.8	409.8	485.3
82.5°	140.4	144.9	147.3	153.0	141.6	162.1	169.1	172.4	195.2	254.6	308.3
85°	78.8	79.9	81.0	83.4	67.4	87.9	89.0	83.4	81.0	105.0	118.8
87.5°	19.5	18.2	19.5	19.5	7.9	18.2	18.2	12.5	9.2	17.1	13.7
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):

	135°	145°	155°	165°	175°	180°
0°	1555.0	1555.0	1555.0	1555.0	1555.0	1555.0
2.5°	1432.7	1430.6	1431.7	1425.9	1423.6	1424.8
5°	1410.0	1405.4	1405.4	1402.0	1397.5	1397.5
7.5°	1420.2	1411.1	1407.6	1400.8	1394.0	1395.1
10°	1436.2	1420.2	1408.8	1398.5	1390.5	1390.5
12.5°	1446.5	1418.0	1400.8	1387.2	1378.0	1378.0
15°	1448.7	1405.4	1380.2	1365.5	1356.4	1356.4
17.5°	1435.0	1380.2	1348.3	1329.0	1318.6	1320.9
20°	1400.8	1333.4	1295.7	1275.2	1265.0	1266.2
22.5°	1347.2	1269.6	1226.1	1202.2	1192.0	1192.0
25°	1274.1	1189.6	1142.9	1123.4	1114.3	1114.3
27.5°	1190.8	1103.9	1062.9	1048.1	1042.4	1042.4
30°	1097.1	1025.2	995.5	985.3	976.1	976.1
32.5°	1018.4	966.9	956.8	943.0	919.1	917.9
35°	955.5	949.9	941.9	900.8	866.5	862.0
37.5°	921.3	955.5	905.3	834.5	807.1	806.0
40°	903.1	935.0	848.3	814.0	810.6	810.6
42.5°	859.7	882.6	844.9	825.5	825.5	826.6
45°	814.0	833.4	852.9	835.8	841.4	842.5
47.5°	782.1	820.8	852.9	837.9	849.3	856.3
50°	752.4	809.5	835.8	835.8	848.3	849.3
52.5°	745.6	793.5	819.8	832.3	833.4	827.7
55°	746.6	780.8	807.1	823.1	816.3	816.3
57.5°	745.6	774.1	796.8	802.5	806.0	806.0
60°	746.6	764.8	783.2	780.8	792.3	792.3
62.5°	750.1	752.4	761.6	759.2	776.3	776.3
65°	758.1	736.4	730.7	732.9	753.5	752.4
67.5°	772.9	714.7	696.5	697.5	727.3	722.6
70°	794.6	685.0	657.6	650.7	700.9	693.0
72.5°	801.5	650.7	607.3	600.4	630.3	607.3
75°	769.5	623.3	553.7	530.9	518.3	511.5
77.5°	686.1	606.3	497.8	449.8	430.4	425.8
80°	568.5	570.9	424.7	367.6	427.0	425.8
82.5°	429.3	493.2	340.2	318.4	309.3	258.1
85°	207.8	371.0	261.4	219.1	131.3	124.4
87.5°	18.2	155.2	150.6	98.2	44.6	42.2
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)