

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: P270542

Luminaire Tested: **NAV-AF-04-D-UNV-T2R-7027-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P270542  
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-7027-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 70 CRI, 2700K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II  
ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 14634.9 lumens  
Efficiency: N/A  
Efficacy: 113.4 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): 129  
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

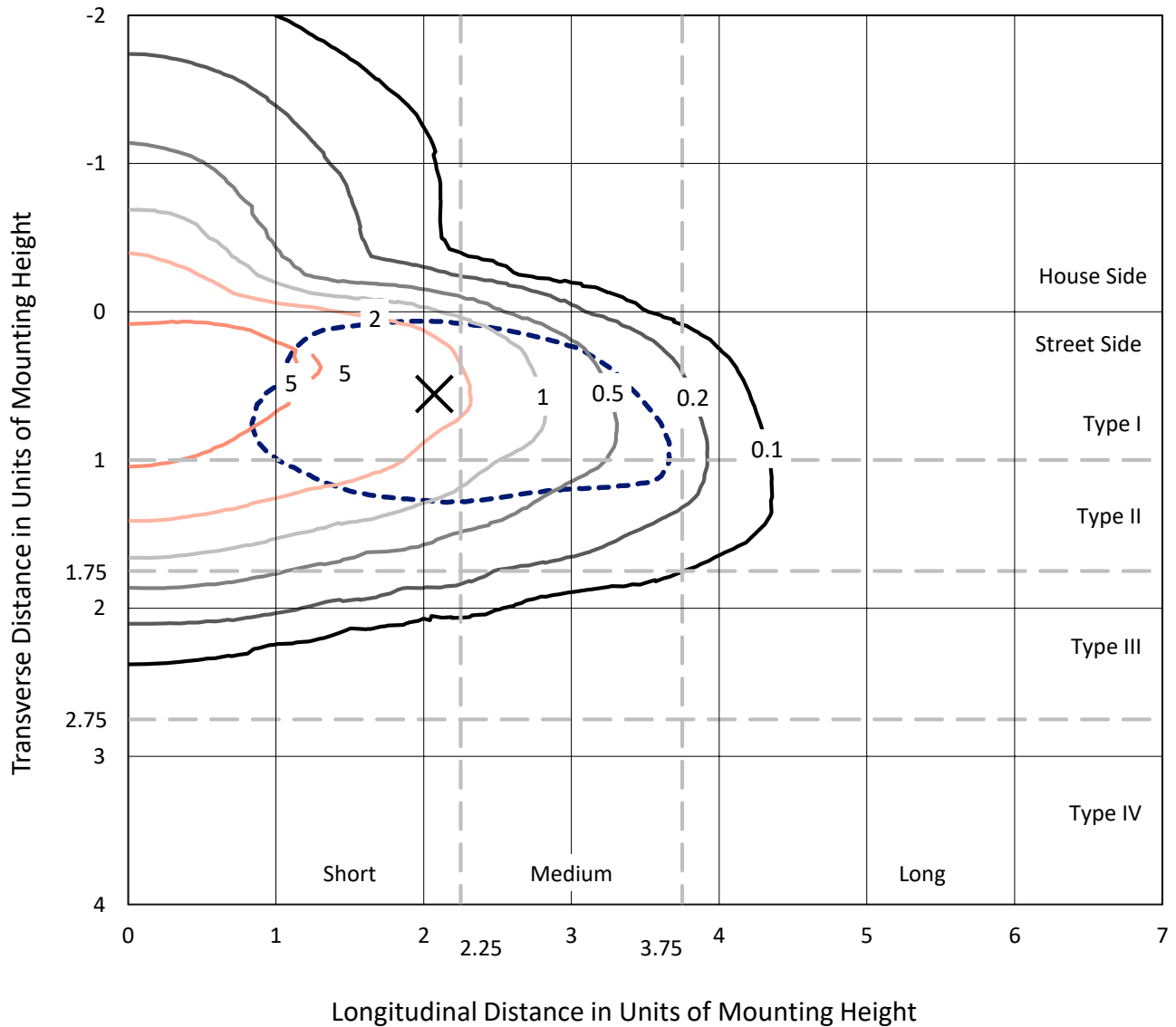


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### Iso-Footcandle Lines of Horizontal Illumination

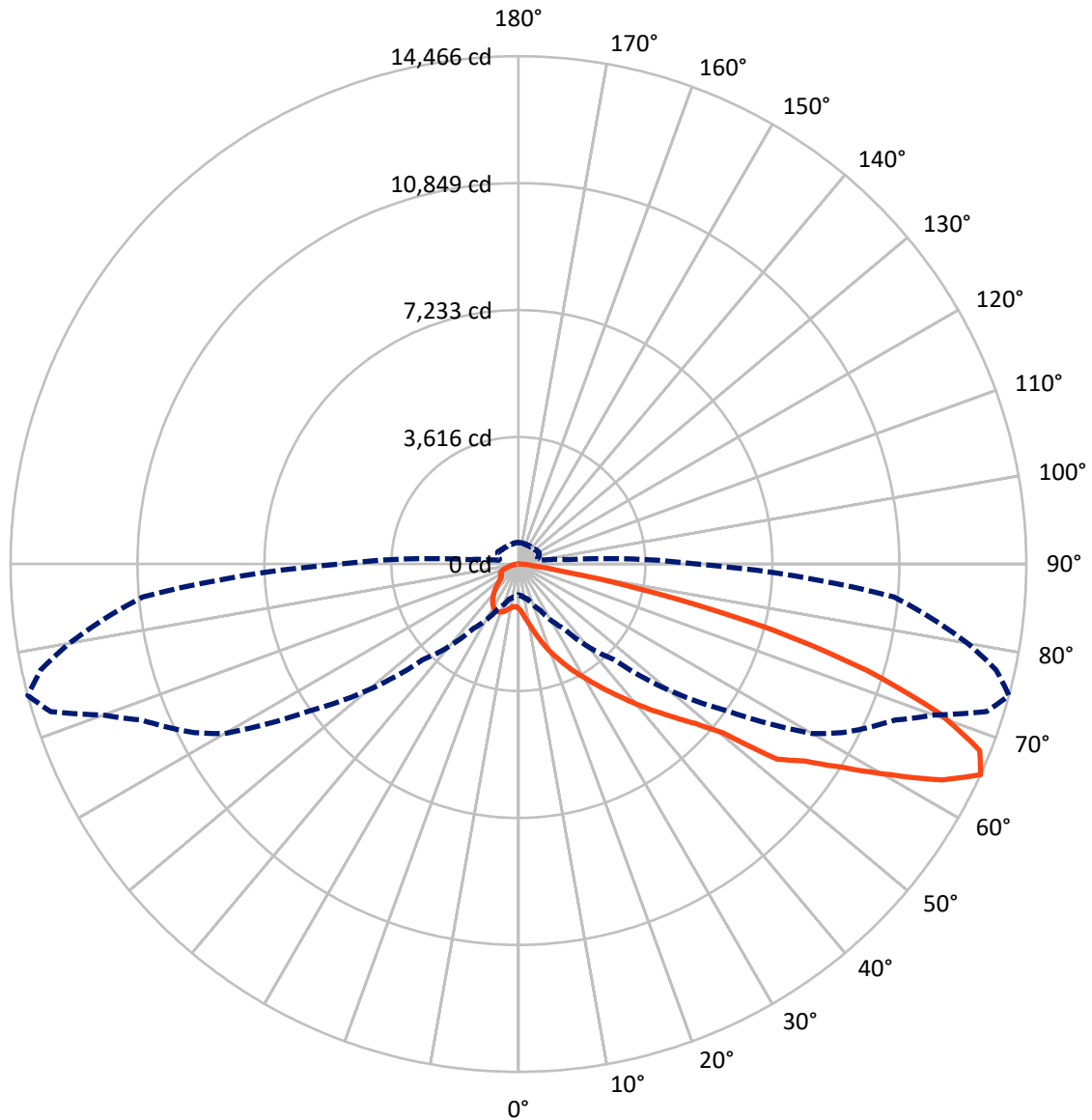
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 9.1 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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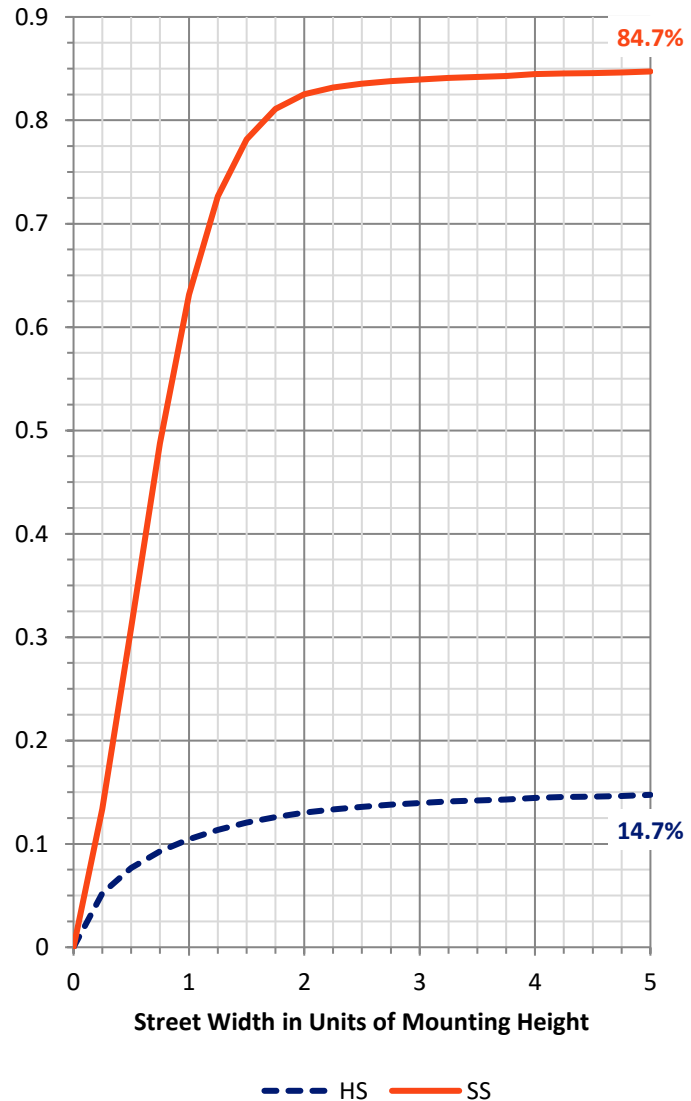
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2199.1	0.0	2199.1
	% Fixture	15.0	0.0	15.0
<b>Street Side</b>	Lumens	12435.8	0.0	12435.8
	% Fixture	85.0	0.0	85.0
<b>Total</b>	Lumens	14634.9	0.0	14634.9
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.7	1.0
10°-20°	571.8	3.9
20°-30°	1153.9	7.9
30°-40°	1959.6	13.4
40°-50°	2733.2	18.7
50°-60°	3349.9	22.9
60°-70°	3151.8	21.5
70°-80°	1382.0	9.4
80°-90°	182.9	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°	14634.9	100.0
0°-180°	14634.9	100.0



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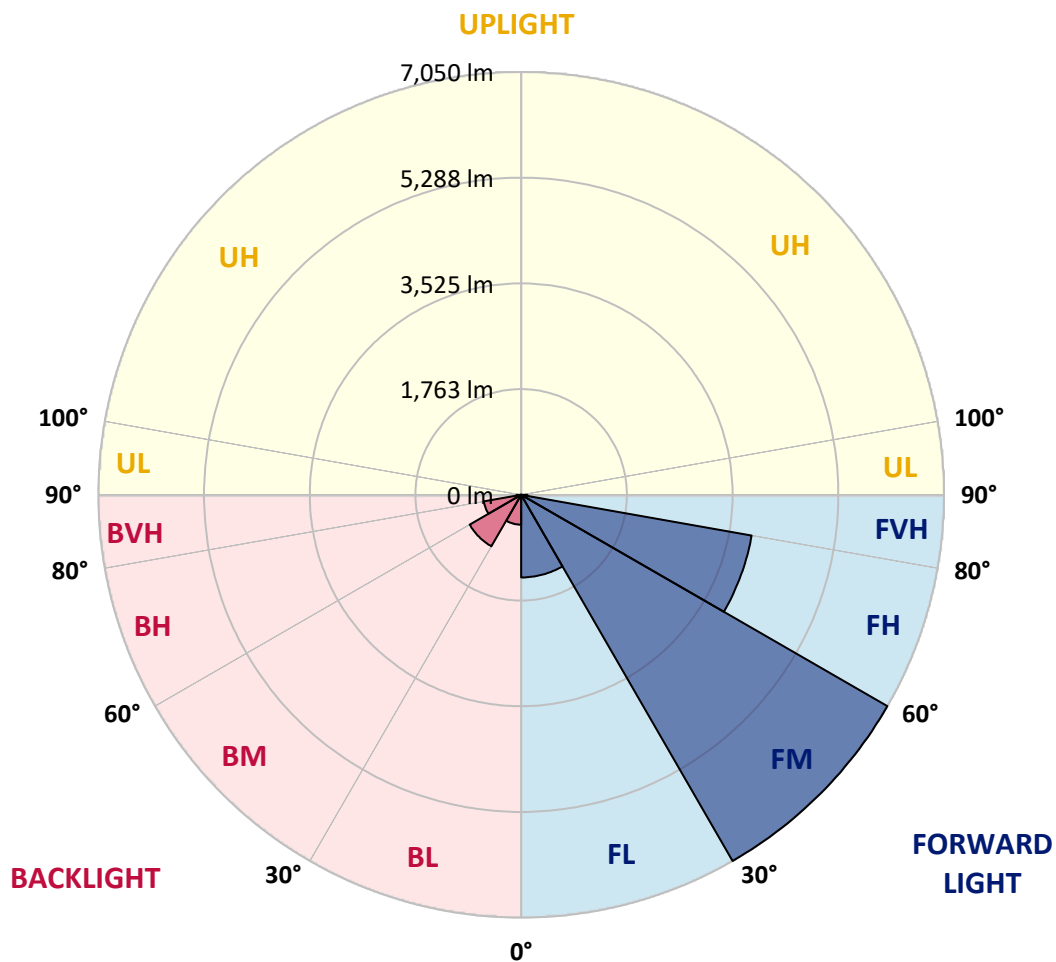
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1377.5	9.4			
FM	(30°-60°)	7050.4	48.2			
FH	(60°-80°)	3901.8	26.7			G2/5000
FVH	(80°-90°)	106.0	0.7			G2/225
BL	(0°-30°)	497.8	3.4	B1/500		
BM	(30°-60°)	992.4	6.8	B1/1000		
BH	(60°-80°)	632.1	4.3	B2/1000		G2/1000
BVH	(80°-90°)	76.9	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°	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0
2.5°	1596.6	1578.1	1579.8	1553.9	1515.7	1473.8	1439.4	1420.7	1404.9	1400.2	1374.1
5°	2088.2	2064.9	2056.6	1997.0	1907.6	1801.6	1696.3	1655.3	1621.8	1601.3	1551.1
7.5°	2490.5	2478.3	2467.1	2412.2	2323.7	2187.8	2018.4	1957.9	1902.0	1840.5	1780.1
10°	2764.2	2759.5	2754.8	2716.7	2643.2	2524.9	2342.4	2276.2	2206.4	2128.3	2049.2
12.5°	2970.9	2970.9	2974.6	2942.8	2898.2	2806.9	2641.2	2579.8	2509.1	2427.1	2336.9
15°	3109.6	3113.3	3132.7	3142.1	3118.8	3060.2	2915.0	2860.9	2793.9	2712.9	2623.6
17.5°	3201.6	3209.1	3238.0	3268.8	3298.5	3278.1	3170.1	3119.8	3059.3	2984.8	2900.9
20°	3415.9	3406.6	3407.5	3398.2	3441.9	3457.8	3398.2	3356.2	3307.9	3239.8	3163.6
22.5°	3865.4	3847.8	3802.2	3685.8	3632.7	3627.1	3591.9	3569.4	3532.2	3489.3	3413.0
25°	4452.0	4431.6	4341.2	4149.5	3991.2	3845.0	3779.9	3765.9	3741.7	3712.9	3657.9
27.5°	5058.1	5035.8	4919.4	4677.4	4470.7	4175.5	3972.6	3954.0	3931.6	3919.6	3893.4
30°	5591.6	5567.3	5452.9	5207.0	4957.6	4605.7	4232.4	4167.1	4129.0	4132.7	4117.8
32.5°	6059.8	6038.4	5909.9	5659.5	5406.3	5064.6	4569.4	4467.9	4382.2	4350.5	4361.7
35°	6452.7	6433.2	6292.6	6040.4	5785.3	5501.3	5003.2	4850.5	4710.8	4623.3	4613.1
37.5°	6683.7	6672.5	6573.7	6359.7	6106.4	5897.9	5489.2	5319.8	5114.1	4986.4	4930.5
40°	6670.6	6682.8	6666.0	6569.1	6372.7	6220.9	5995.6	5828.1	5627.0	5437.0	5323.4
42.5°	6480.7	6497.4	6572.9	6623.2	6570.1	6477.9	6437.9	6313.1	6132.5	5931.4	5774.0
45°	6220.0	6234.9	6332.6	6514.1	6666.0	6692.1	6825.1	6762.8	6610.1	6438.8	6265.6
47.5°	5820.6	5849.5	5963.0	6251.7	6613.0	6864.3	7150.1	7179.0	7090.5	6949.0	6787.0
50°	5242.5	5280.6	5439.9	5850.4	6411.8	7041.2	7633.3	7743.1	7707.7	7564.4	7400.5
52.5°	4650.3	4688.6	4900.9	5337.4	6087.9	7113.8	8109.0	8390.2	8593.1	8741.1	8770.1
55°	4034.0	4076.9	4309.6	4812.3	5655.8	7021.6	8448.7	8768.1	8973.9	9128.4	9190.7
57.5°	3338.6	3387.0	3612.3	4120.6	5045.2	6651.1	8826.8	9279.3	9585.5	9824.0	9958.0
60°	2540.6	2601.2	2835.0	3346.9	4242.5	5941.6	8995.3	9664.8	10151.7	10509.1	10721.5
62.5°	1610.7	1672.0	1915.0	2446.7	3329.3	4972.5	8518.6	9495.3	10325.7	10854.5	11243.6
65°	878.8	905.9	1040.9	1441.2	2244.7	3858.1	7310.1	8461.9	9658.1	10407.7	11005.3
67.5°	659.1	662.9	676.9	774.6	1195.5	2604.9	5715.3	6770.3	8098.8	9063.3	9777.3
70°	577.3	577.3	579.0	580.0	648.9	1411.3	3872.1	4843.0	6060.9	7036.6	7923.7
72.5°	517.7	512.0	510.1	499.0	508.4	723.3	2107.9	2980.1	4007.0	5101.8	5929.5
75°	446.8	446.0	446.0	434.8	440.3	509.2	914.2	1430.0	2226.0	3245.4	4060.1
77.5°	386.5	379.9	380.8	374.2	391.9	390.0	433.8	589.3	969.2	1704.7	2380.6
80°	318.4	313.8	316.6	312.8	340.7	288.6	292.3	360.3	481.3	747.6	1053.9
82.5°	235.5	237.4	255.1	253.2	286.7	194.7	214.2	269.0	324.0	372.3	405.0
85°	137.8	140.6	183.4	192.7	210.5	102.3	131.2	160.2	180.6	200.1	208.5
87.5°	14.9	19.6	102.3	105.2	94.1	30.7	53.1	67.1	71.7	76.4	67.1
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°	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0
2.5°	1365.8	1353.7	1340.6	1333.2	1320.1	1309.0	1288.4	1271.7	1253.1	1240.1	1234.5
5°	1526.0	1497.0	1466.4	1443.9	1416.1	1391.8	1345.3	1289.4	1271.7	1234.5	1225.2
7.5°	1734.4	1682.3	1630.2	1587.3	1538.9	1498.9	1420.7	1320.1	1307.2	1247.6	1234.5
10°	1979.3	1903.0	1825.6	1759.6	1688.9	1627.4	1511.9	1370.5	1356.5	1280.2	1267.1
12.5°	2252.9	2160.0	2060.4	1961.5	1877.8	1791.2	1633.8	1448.6	1426.2	1336.0	1318.4
15°	2535.0	2434.5	2319.2	2199.9	2096.6	1982.1	1783.9	1551.1	1510.1	1404.0	1379.7
17.5°	2813.5	2704.5	2583.5	2450.3	2329.3	2192.6	1945.8	1665.5	1594.9	1471.0	1440.3
20°	3082.5	2971.8	2844.3	2713.9	2563.0	2406.6	2111.5	1778.3	1670.2	1526.8	1486.9
22.5°	3327.4	3232.5	3104.9	2955.0	2802.4	2626.4	2280.0	1890.8	1736.3	1569.7	1518.5
25°	3585.2	3498.7	3372.1	3227.8	3049.9	2854.5	2454.1	1997.9	1789.3	1593.0	1529.6
27.5°	3846.0	3771.4	3652.2	3500.5	3309.7	3092.8	2631.0	2096.6	1832.3	1600.4	1524.1
30°	4124.3	4066.5	3956.8	3787.3	3594.6	3354.5	2823.7	2193.4	1859.2	1590.2	1498.9
32.5°	4387.9	4386.0	4288.1	4112.3	3904.7	3640.2	3026.7	2291.1	1873.1	1561.3	1455.2
35°	4661.6	4699.8	4626.1	4458.6	4239.8	3946.6	3251.1	2395.5	1874.1	1510.1	1398.3
37.5°	4972.5	5040.4	5007.8	4848.6	4618.6	4295.6	3514.4	2512.7	1868.6	1439.4	1315.5
40°	5326.2	5419.4	5418.4	5284.4	5038.6	4686.6	3820.9	2644.0	1855.4	1351.0	1217.7
42.5°	5731.2	5842.0	5872.8	5740.6	5492.0	5114.1	4171.8	2788.3	1835.0	1263.3	1114.3
45°	6194.9	6292.6	6350.4	6227.5	5978.0	5579.6	4575.0	2952.2	1809.8	1150.6	996.2
47.5°	6691.0	6804.8	6891.3	6786.1	6519.8	6110.1	5052.5	3163.6	1800.6	1022.2	868.7
50°	7306.5	7423.9	7610.9	7563.5	7417.2	7087.6	6062.8	3662.6	1804.2	900.3	761.6
52.5°	8833.4	9102.3	9338.9	9233.7	8886.5	8321.3	6883.8	3940.0	1726.1	800.7	687.1
55°	9294.1	9599.6	9948.6	9904.9	9571.6	9001.8	7532.6	4171.8	1650.6	728.0	638.6
57.5°	10100.5	10460.8	10948.5	10939.3	10530.6	9889.1	8367.8	4449.2	1618.0	686.1	614.5
60°	10954.1	11413.1	12087.1	12192.3	11748.4	11080.8	9354.7	4790.0	1622.8	662.9	600.4
62.5°	11578.0	12251.1	13231.3	13546.0	13022.8	12287.3	10378.7	5130.7	1594.9	635.9	583.8
65°	11616.2	12585.3	13976.2	14465.9	13936.1	12991.2	10740.0	5063.7	1427.2	599.6	556.7
67.5°	10685.1	11947.5	13637.3	14174.4	13632.7	12557.3	10106.9	4426.8	1160.0	536.3	510.1
70°	8899.4	10364.9	12118.9	12717.5	12269.7	11181.4	8796.2	3536.0	866.8	452.4	440.3
72.5°	6877.3	8244.0	9836.9	10390.9	10048.4	9091.1	6937.8	2577.0	619.1	366.8	357.4
75°	4916.7	6080.4	7236.7	7447.9	7110.1	6231.3	4501.3	1609.8	433.8	300.8	287.6
77.5°	3044.4	3801.3	4216.6	3944.6	3513.6	2920.6	1832.3	795.1	288.6	244.9	231.9
80°	1351.0	1585.5	1480.2	1319.3	1041.8	856.5	559.6	352.9	186.2	189.1	181.5
82.5°	454.4	480.5	467.4	464.6	419.0	366.8	237.4	152.7	104.3	121.0	118.2
85°	221.6	231.9	232.8	241.1	209.5	163.0	64.3	60.5	44.6	65.1	67.9
87.5°	67.1	67.9	61.4	67.1	54.0	37.2	12.0	16.8	8.4	15.8	15.8
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°	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0
2.5°	1224.3	1220.5	1214.0	1206.6	1204.6	1195.5	1192.6	1188.0	1185.1	1180.6	1176.8
5°	1213.2	1206.6	1199.1	1190.8	1190.8	1177.7	1172.1	1166.5	1166.5	1158.2	1154.4
7.5°	1224.3	1215.9	1207.5	1200.0	1202.8	1188.0	1182.3	1176.8	1175.8	1167.4	1163.8
10°	1255.9	1247.6	1237.2	1229.9	1227.1	1215.0	1208.4	1200.0	1194.4	1188.8	1183.2
12.5°	1304.2	1293.2	1280.2	1264.4	1257.7	1247.6	1237.2	1226.1	1213.2	1207.5	1199.1
15°	1362.1	1343.4	1325.8	1306.1	1288.4	1278.3	1264.4	1246.6	1228.9	1221.4	1210.2
17.5°	1409.5	1389.9	1364.9	1341.6	1309.9	1301.6	1282.1	1260.6	1231.8	1228.9	1212.2
20°	1449.5	1419.9	1389.0	1361.1	1312.8	1308.0	1283.9	1258.7	1217.7	1217.7	1197.4
22.5°	1472.0	1430.9	1394.7	1357.3	1297.0	1293.2	1265.3	1235.3	1185.1	1187.0	1161.9
25°	1475.6	1426.2	1380.7	1336.0	1266.2	1259.7	1224.3	1191.7	1136.7	1133.0	1106.9
27.5°	1460.7	1403.1	1350.0	1296.0	1220.5	1206.6	1167.4	1128.5	1074.4	1065.1	1037.2
30°	1426.2	1358.3	1298.7	1236.3	1157.2	1134.9	1094.0	1053.9	998.9	986.9	960.7
32.5°	1371.4	1294.1	1228.1	1165.6	1078.1	1050.2	1009.2	969.2	916.1	906.7	882.6
35°	1298.7	1212.2	1142.4	1076.2	988.8	959.8	920.8	885.4	837.0	833.3	816.5
37.5°	1207.5	1117.2	1042.8	979.4	896.6	881.6	841.6	815.5	775.5	779.2	770.8
40°	1104.1	1012.0	941.2	885.4	813.7	800.7	776.5	756.9	722.4	732.7	733.6
42.5°	1000.0	907.7	843.5	793.3	731.8	723.3	706.6	695.5	669.3	689.9	698.3
45°	881.6	796.0	741.1	703.0	657.3	657.3	648.9	647.9	630.3	659.1	667.5
47.5°	767.2	700.0	662.0	638.6	607.1	621.8	619.1	626.6	613.5	643.4	650.7
50°	680.6	634.1	610.8	599.6	577.3	600.4	606.0	616.3	605.2	631.1	636.8
52.5°	625.6	594.9	581.9	579.0	563.2	592.2	601.4	610.8	597.7	621.8	621.0
55°	594.9	574.5	569.7	575.4	563.2	591.2	600.4	607.1	595.8	612.6	611.7
57.5°	583.8	572.6	575.4	583.8	575.4	598.6	603.3	610.8	599.6	607.1	610.8
60°	582.8	582.8	594.0	605.2	599.6	616.3	619.1	618.2	608.0	609.0	610.8
62.5°	577.3	591.2	609.8	627.5	625.6	646.2	647.9	635.9	627.5	618.2	615.3
65°	559.6	582.8	609.8	634.1	637.7	669.3	673.1	661.1	655.5	639.7	627.5
67.5°	520.4	550.2	581.9	611.7	618.2	661.1	669.3	674.1	676.9	666.6	650.7
70°	454.4	485.1	517.7	552.1	561.4	609.0	626.6	647.9	664.7	679.7	674.1
72.5°	369.7	397.5	425.4	457.1	471.2	520.4	543.7	580.9	607.1	645.3	661.1
75°	293.2	310.1	326.8	346.3	357.4	405.9	434.8	479.4	514.9	567.9	603.3
77.5°	230.9	239.3	247.7	256.0	260.7	287.6	311.0	355.6	396.6	463.6	515.7
80°	177.9	182.4	183.4	186.2	184.3	197.4	205.7	232.8	268.1	334.2	395.7
82.5°	114.5	118.2	120.2	124.8	115.4	132.2	137.8	140.6	159.2	207.6	251.3
85°	64.3	65.1	66.0	67.9	54.9	71.7	72.7	67.9	66.0	85.7	96.8
87.5°	15.8	14.9	15.8	15.8	6.5	14.9	14.9	10.2	7.5	14.0	11.1
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°	1268.0	1268.0	1268.0	1268.0	1268.0	1268.0
2.5°	1168.4	1166.5	1167.4	1162.9	1161.0	1161.9
5°	1149.8	1146.1	1146.1	1143.3	1139.5	1139.5
7.5°	1158.2	1150.6	1147.9	1142.4	1136.7	1137.7
10°	1171.2	1158.2	1148.8	1140.5	1134.0	1134.0
12.5°	1179.6	1156.3	1142.4	1131.1	1123.7	1123.7
15°	1181.5	1146.1	1125.5	1113.4	1106.1	1106.1
17.5°	1170.2	1125.5	1099.5	1083.6	1075.4	1077.2
20°	1142.4	1087.4	1056.6	1039.9	1031.6	1032.5
22.5°	1098.5	1035.2	1000.0	980.3	972.0	972.0
25°	1039.0	970.1	931.9	916.1	908.6	908.6
27.5°	971.1	900.3	866.8	854.6	849.9	849.9
30°	894.7	836.1	811.8	803.4	796.0	796.0
32.5°	830.5	788.5	780.2	768.9	749.5	748.5
35°	779.2	774.6	768.1	734.5	706.6	703.0
37.5°	751.3	779.2	738.2	680.6	658.2	657.3
40°	736.4	762.5	691.8	663.8	661.1	661.1
42.5°	701.0	719.6	688.9	673.1	673.1	674.1
45°	663.8	679.7	695.5	681.5	686.1	687.1
47.5°	637.7	669.3	695.5	683.3	692.7	698.3
50°	613.5	660.1	681.5	681.5	691.8	692.7
52.5°	608.0	647.0	668.5	678.7	679.7	674.9
55°	609.0	636.8	658.2	671.3	665.6	665.6
57.5°	608.0	631.1	649.8	654.4	657.3	657.3
60°	609.0	623.8	638.6	636.8	646.2	646.2
62.5°	611.7	613.5	621.0	619.1	633.0	633.0
65°	618.2	600.4	595.8	597.7	614.5	613.5
67.5°	630.3	582.8	567.9	568.8	593.1	589.3
70°	647.9	558.6	536.3	530.7	571.6	565.2
72.5°	653.5	530.7	495.2	489.7	513.9	495.2
75°	627.5	508.4	451.6	433.0	422.7	417.2
77.5°	559.6	494.3	405.9	366.8	351.0	347.3
80°	463.6	465.5	346.3	299.8	348.3	347.3
82.5°	350.1	402.3	277.4	259.7	252.3	210.5
85°	169.4	302.5	213.2	178.8	107.1	101.5
87.5°	14.9	126.7	122.9	80.0	36.3	34.5
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)