

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: P196772

Luminaire Tested: **NAV-AF-02-D-UNV-T2R-7030-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196772
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-02-D-UNV-T2R-7030-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 3000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13542.7 lumens
Efficiency: N/A
Efficacy: 105.0 lumens/watt
Luminous Opening: Rectangular (W 0.5' 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

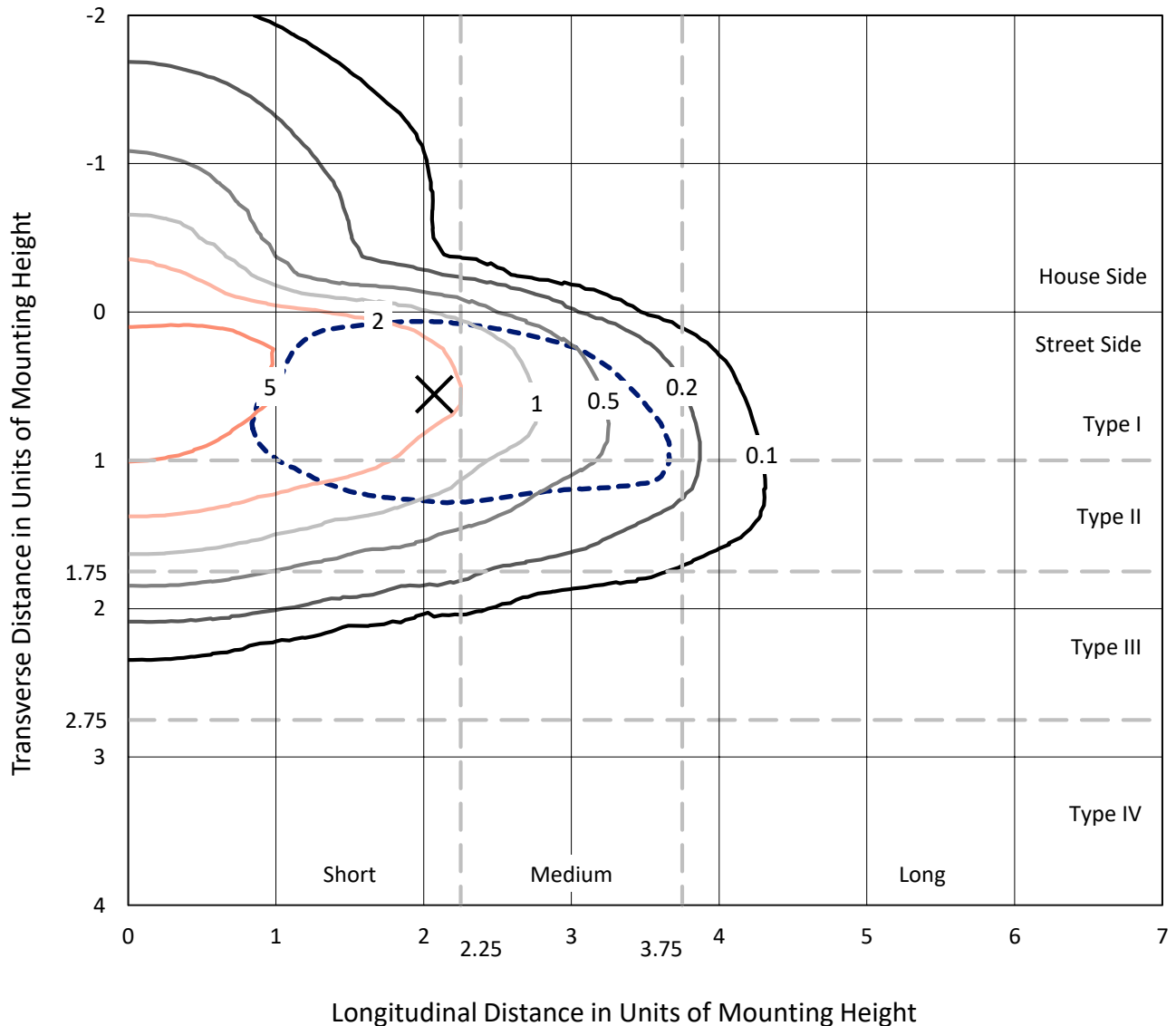


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Iso-Footcandle Lines of Horizontal Illumination

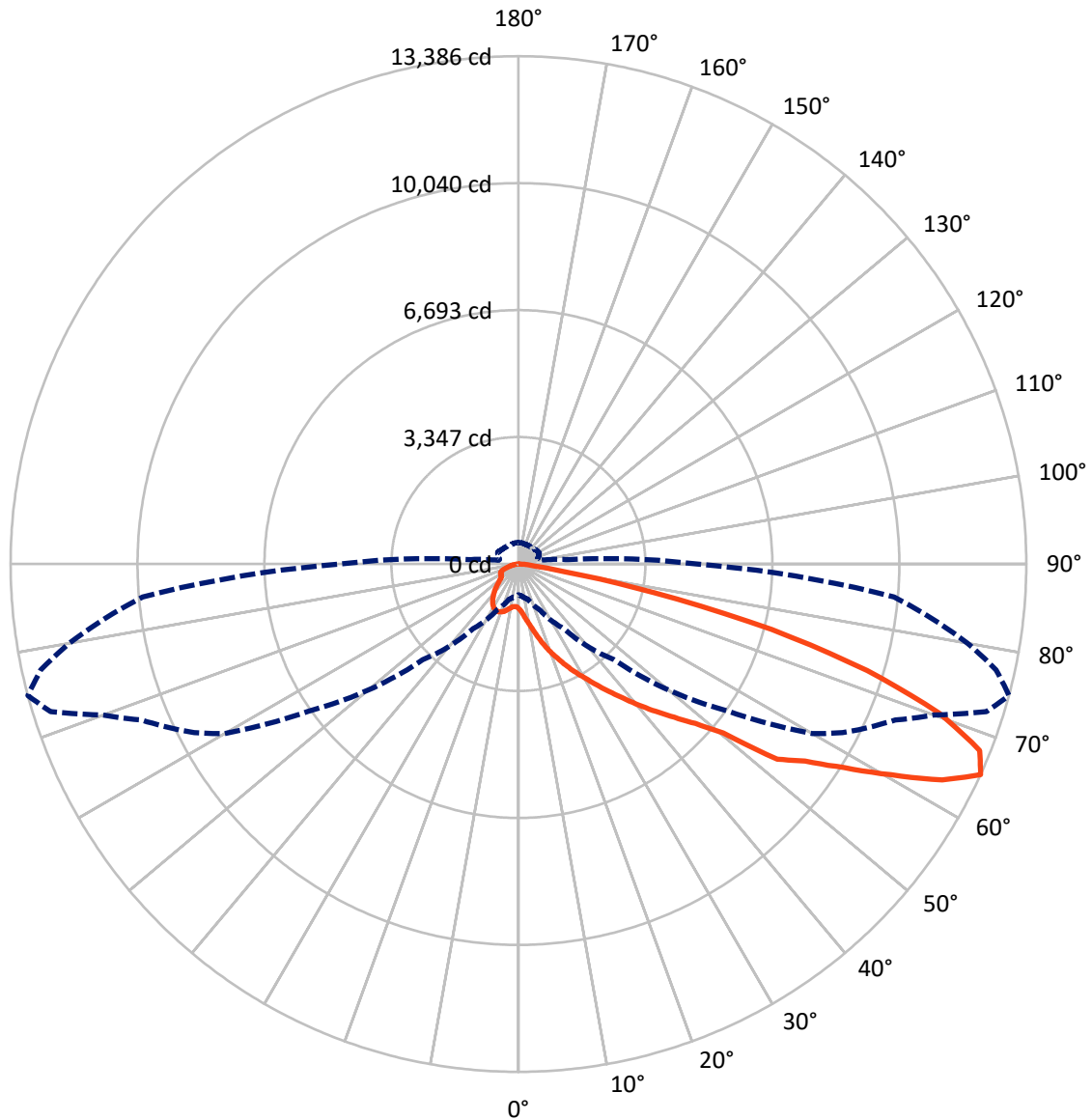
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 8.4 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	2035.0	0.0	2035.0
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	11507.7	0.0	11507.7
	% Fixture	85.0	0.0	85.0
Total	Lumens	13542.7	0.0	13542.7
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.5	1.0
10°-20°	529.1	3.9
20°-30°	1067.8	7.9
30°-40°	1813.4	13.4
40°-50°	2529.2	18.7
50°-60°	3099.9	22.9
60°-70°	2916.6	21.5
70°-80°	1278.9	9.4
80°-90°	169.2	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°	13542.7	100.0
0°-180°	13542.7	100.0

Coefficient of Utilization



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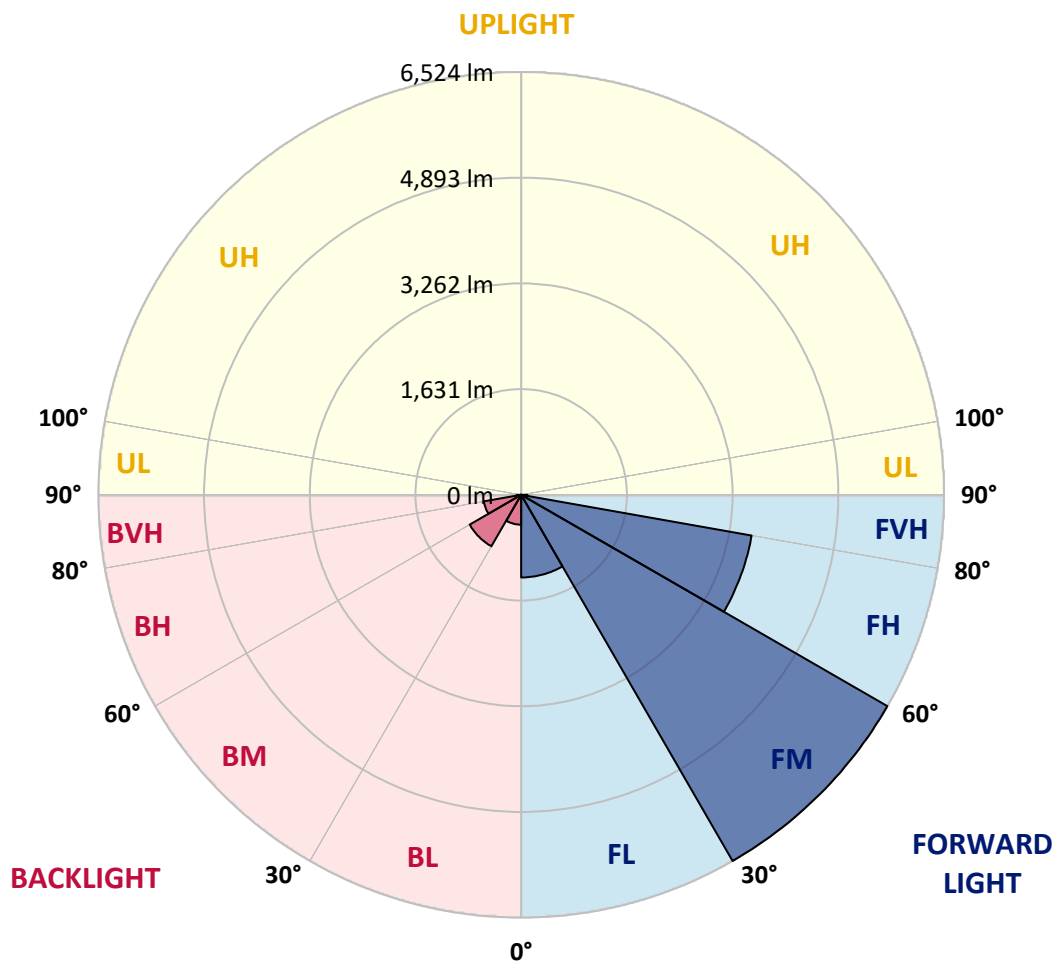
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1274.7	9.4			
FM (30°-60°)	6524.2	48.2			
FH (60°-80°)	3610.6	26.7			G2/5000
FVH (80°-90°)	98.1	0.7			G1/100
BL (0°-30°)	460.7	3.4	B1/500		
BM (30°-60°)	918.3	6.8	B1/1000		
BH (60°-80°)	584.9	4.3	B2/1000		G2/1000
BVH (80°-90°)	71.1	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°	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5
2.5°	1477.5	1460.2	1462.0	1437.9	1402.6	1363.8	1331.9	1314.7	1300.0	1295.7	1271.6
5°	1932.4	1910.8	1903.1	1848.0	1765.3	1667.1	1569.7	1531.9	1500.7	1481.8	1435.3
7.5°	2304.6	2293.4	2283.1	2232.1	2150.3	2024.6	1867.8	1811.7	1760.0	1703.3	1647.2
10°	2557.9	2553.5	2549.2	2513.9	2445.9	2336.4	2167.6	2106.4	2041.8	1969.4	1896.2
12.5°	2749.1	2749.1	2752.6	2723.3	2681.9	2597.5	2444.1	2387.4	2321.8	2246.0	2162.5
15°	2877.5	2880.9	2898.9	2907.6	2886.1	2831.8	2697.4	2647.5	2585.4	2510.4	2427.7
17.5°	2962.8	2969.6	2996.3	3024.9	3052.3	3033.4	2933.5	2886.9	2830.9	2762.1	2684.5
20°	3160.9	3152.3	3153.1	3144.6	3185.0	3199.6	3144.6	3105.8	3061.0	2998.1	2927.5
22.5°	3577.0	3560.6	3518.4	3410.7	3361.7	3356.5	3323.7	3303.0	3268.6	3228.9	3158.3
25°	4119.8	4100.8	4017.3	3839.8	3693.3	3558.0	3497.8	3484.9	3462.4	3435.7	3385.0
27.5°	4680.6	4660.0	4552.3	4328.3	4137.0	3864.0	3676.1	3658.9	3638.3	3627.0	3602.9
30°	5174.3	5151.9	5045.9	4818.5	4587.6	4261.9	3916.5	3856.2	3820.8	3824.3	3810.5
32.5°	5607.6	5587.8	5469.0	5237.3	5002.9	4686.6	4228.4	4134.5	4055.1	4025.8	4036.2
35°	5971.2	5953.1	5823.0	5589.6	5353.4	5090.7	4629.9	4488.5	4359.3	4278.3	4268.9
37.5°	6184.8	6174.6	6083.2	5885.0	5650.7	5457.7	5079.6	4922.6	4732.3	4614.3	4562.6
40°	6172.8	6184.0	6168.4	6078.8	5897.2	5756.7	5548.1	5393.1	5207.1	5031.3	4926.2
42.5°	5997.0	6012.5	6082.4	6128.9	6079.7	5994.5	5957.4	5842.0	5674.8	5488.7	5343.1
45°	5755.8	5769.7	5860.0	6028.1	6168.4	6192.6	6315.8	6258.1	6116.8	5958.2	5798.1
47.5°	5386.3	5412.9	5518.0	5785.1	6119.4	6352.0	6616.5	6643.2	6561.3	6430.4	6280.4
50°	4851.2	4886.5	5033.9	5413.8	5933.4	6515.6	7063.6	7165.2	7132.6	6999.8	6848.3
52.5°	4303.2	4338.5	4535.1	4939.1	5633.5	6582.9	7503.8	7764.1	7951.8	8088.8	8115.6
55°	3733.0	3772.6	3988.0	4453.2	5233.7	6497.5	7818.3	8113.8	8304.2	8447.2	8505.0
57.5°	3089.5	3134.2	3342.7	3813.0	4668.5	6154.7	8168.1	8586.8	8870.2	9090.8	9214.8
60°	2351.0	2407.1	2623.4	3097.2	3925.9	5498.3	8324.0	8943.4	9394.0	9724.8	9921.3
62.5°	1490.4	1547.3	1772.1	2264.1	3080.8	4601.4	7882.9	8786.6	9555.2	10044.4	10404.5
65°	813.3	838.2	963.2	1333.6	2077.1	3570.1	6764.7	7830.4	8937.4	9630.9	10184.0
67.5°	610.0	613.4	626.3	716.7	1106.1	2410.6	5288.9	6264.9	7494.4	8386.8	9047.6
70°	534.2	534.2	535.9	536.7	600.5	1306.0	3583.0	4481.6	5608.5	6511.5	7332.4
72.5°	479.0	473.8	472.1	461.7	470.4	669.4	1950.5	2757.7	3707.9	4721.1	5487.0
75°	413.5	412.7	412.7	402.3	407.5	471.2	846.0	1323.3	2059.9	3003.2	3757.1
77.5°	357.5	351.5	352.4	346.4	362.7	361.0	401.4	545.3	896.8	1577.4	2202.8
80°	294.7	290.3	293.0	289.4	315.3	267.0	270.5	333.5	445.4	691.8	975.2
82.5°	218.0	219.7	236.1	234.4	265.4	180.1	198.2	249.0	299.8	344.6	374.8
85°	127.5	130.1	169.7	178.3	194.7	94.7	121.5	148.1	167.1	185.2	193.0
87.5°	13.7	18.1	94.7	97.4	87.0	28.4	49.0	62.1	66.3	70.7	62.1
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°	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5
2.5°	1263.8	1252.6	1240.6	1233.6	1221.6	1211.2	1192.3	1176.8	1159.6	1147.5	1142.5
5°	1412.0	1385.3	1356.9	1336.2	1310.3	1287.9	1244.9	1193.2	1176.8	1142.5	1133.8
7.5°	1605.0	1556.7	1508.6	1468.9	1424.0	1387.0	1314.7	1221.6	1209.6	1154.5	1142.5
10°	1831.6	1760.9	1689.4	1628.3	1562.9	1505.9	1399.1	1268.2	1255.3	1184.6	1172.6
12.5°	2084.8	1998.7	1906.6	1815.3	1737.7	1657.6	1511.9	1340.5	1319.9	1236.3	1219.9
15°	2345.9	2252.9	2146.1	2035.7	1940.1	1834.1	1650.7	1435.3	1397.4	1299.2	1276.8
17.5°	2603.5	2502.7	2390.7	2267.5	2155.5	2028.8	1800.6	1541.2	1475.8	1361.2	1332.8
20°	2852.5	2749.9	2631.9	2511.4	2371.8	2227.0	1953.9	1645.6	1545.6	1412.9	1375.9
22.5°	3079.0	2991.2	2873.2	2734.4	2593.2	2430.4	2109.9	1749.8	1606.7	1452.5	1405.2
25°	3317.7	3237.6	3120.5	2986.9	2822.3	2641.5	2271.0	1848.7	1655.9	1474.0	1415.5
27.5°	3558.9	3490.1	3379.7	3239.3	3062.7	2861.9	2434.7	1940.1	1695.4	1480.9	1410.3
30°	3816.5	3763.1	3661.5	3504.7	3326.3	3104.0	2613.1	2029.7	1720.5	1471.5	1387.0
32.5°	4060.3	4058.7	3968.2	3805.3	3613.2	3368.6	2800.8	2120.1	1733.4	1444.7	1346.5
35°	4313.7	4348.9	4280.9	4125.8	3923.4	3652.0	3008.5	2216.7	1734.3	1397.4	1293.9
37.5°	4601.4	4664.3	4634.1	4486.8	4274.0	3975.1	3252.2	2325.2	1729.0	1331.9	1217.3
40°	4928.8	5014.9	5014.0	4890.0	4662.5	4336.9	3535.6	2446.8	1717.0	1250.0	1126.9
42.5°	5303.6	5406.0	5434.4	5312.1	5082.0	4732.3	3860.4	2580.2	1698.1	1169.1	1031.2
45°	5732.5	5823.0	5876.4	5762.7	5531.8	5163.0	4233.5	2731.9	1674.8	1064.8	921.8
47.5°	6191.7	6296.8	6377.0	6279.6	6033.2	5654.1	4675.4	2927.5	1666.2	945.9	803.8
50°	6761.2	6869.7	7043.0	6999.0	6863.7	6558.8	5610.3	3389.2	1669.6	833.1	704.7
52.5°	8174.1	8423.2	8641.9	8544.5	8223.2	7700.3	6370.1	3646.0	1597.3	740.9	635.8
55°	8600.6	8883.1	9206.1	9165.8	8857.3	8330.0	6970.5	3860.4	1527.5	673.7	591.0
57.5°	9346.6	9680.1	10131.5	10122.9	9744.7	9151.1	7743.3	4117.2	1497.3	634.9	568.5
60°	10136.6	10561.3	11185.1	11282.4	10871.6	10253.8	8656.6	4432.5	1501.7	613.4	555.7
62.5°	10713.9	11336.7	12243.9	12535.1	12051.0	11370.4	9604.2	4747.9	1475.8	588.5	540.2
65°	10749.2	11646.1	12933.1	13386.3	12896.1	12021.7	9938.6	4685.8	1320.7	554.8	515.1
67.5°	9887.6	11056.0	12619.6	13116.7	12615.3	11620.2	9352.7	4096.5	1073.5	496.2	472.1
70°	8235.3	9591.4	11214.4	11768.4	11354.0	10346.9	8139.6	3272.1	802.1	418.7	407.5
72.5°	6364.1	7628.8	9102.8	9615.5	9298.4	8412.8	6420.1	2384.7	572.9	339.5	330.8
75°	4549.7	5626.7	6696.6	6892.2	6579.5	5766.1	4165.4	1489.5	401.4	278.3	266.1
77.5°	2817.1	3517.6	3901.8	3650.3	3251.3	2702.6	1695.4	735.8	267.0	226.6	214.4
80°	1250.0	1467.2	1369.8	1220.8	964.0	792.5	517.8	326.4	172.3	175.0	168.0
82.5°	420.4	444.5	432.4	429.9	387.7	339.5	219.7	141.3	96.4	112.0	109.4
85°	205.1	214.4	215.3	223.1	193.8	150.8	59.4	56.0	41.3	60.3	63.0
87.5°	62.1	63.0	56.9	62.1	49.9	34.4	11.3	15.6	7.7	14.6	14.6
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°	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5
2.5°	1132.9	1129.4	1123.4	1116.5	1114.8	1106.1	1103.6	1099.2	1096.8	1092.4	1089.0
5°	1122.5	1116.5	1109.6	1101.9	1101.9	1089.9	1084.6	1079.5	1079.5	1071.8	1068.3
7.5°	1132.9	1125.2	1117.4	1110.5	1113.2	1099.2	1094.1	1089.0	1088.1	1080.3	1076.9
10°	1162.2	1154.5	1144.9	1138.1	1135.5	1124.3	1118.3	1110.5	1105.3	1100.1	1095.0
12.5°	1207.0	1196.6	1184.6	1169.9	1163.9	1154.5	1144.9	1134.6	1122.5	1117.4	1109.6
15°	1260.5	1243.2	1226.8	1208.7	1192.3	1182.8	1169.9	1153.6	1137.2	1130.3	1120.0
17.5°	1304.3	1286.2	1263.0	1241.4	1212.1	1204.4	1186.3	1166.5	1139.8	1137.2	1121.6
20°	1341.3	1313.9	1285.4	1259.5	1214.8	1210.5	1188.0	1164.8	1126.9	1126.9	1107.9
22.5°	1362.0	1324.1	1290.6	1256.1	1200.1	1196.6	1170.8	1143.3	1096.8	1098.5	1075.2
25°	1365.5	1319.9	1277.7	1236.3	1171.7	1165.7	1132.9	1102.8	1051.9	1048.5	1024.3
27.5°	1351.7	1298.3	1249.2	1199.2	1129.4	1116.5	1080.3	1044.2	994.1	985.6	959.8
30°	1319.9	1256.9	1201.9	1144.1	1070.8	1050.2	1012.3	975.2	924.5	913.2	889.1
32.5°	1269.0	1197.5	1136.3	1078.6	997.6	971.8	933.8	896.8	847.8	839.1	816.7
35°	1201.9	1121.6	1057.1	995.9	914.9	888.3	852.0	819.3	774.5	771.1	755.5
37.5°	1117.4	1033.8	964.9	906.3	829.6	815.8	778.8	754.7	717.7	721.1	713.4
40°	1021.8	936.5	871.1	819.3	753.1	740.9	718.5	700.5	668.5	678.1	678.8
42.5°	925.3	839.9	780.5	734.0	677.2	669.4	653.9	643.5	619.4	638.4	646.2
45°	815.8	736.6	685.8	650.4	608.2	608.2	600.5	599.7	583.2	610.0	617.8
47.5°	709.8	647.9	612.5	591.0	561.7	575.5	572.9	579.8	567.7	595.4	602.2
50°	629.8	586.7	565.2	554.8	534.2	555.7	560.8	570.4	560.0	584.1	589.2
52.5°	579.0	550.5	538.4	535.9	521.1	547.9	556.5	565.2	553.1	575.5	574.6
55°	550.5	531.5	527.2	532.4	521.1	547.1	555.7	561.7	551.3	566.8	566.1
57.5°	540.2	529.8	532.4	540.2	532.4	554.0	558.4	565.2	554.8	561.7	565.2
60°	539.3	539.3	549.7	560.0	554.8	570.4	572.9	572.1	562.5	563.4	565.2
62.5°	534.2	547.1	564.4	580.7	579.0	597.8	599.7	588.5	580.7	572.1	569.5
65°	517.8	539.3	564.4	586.7	590.1	619.4	622.9	611.7	606.5	591.8	580.7
67.5°	481.7	509.1	538.4	566.1	572.1	611.7	619.4	623.8	626.3	616.9	602.2
70°	420.4	448.8	479.0	510.9	519.5	563.4	579.8	599.7	615.1	628.9	623.8
72.5°	342.0	367.8	393.7	423.1	436.0	481.7	503.1	537.5	561.7	597.0	611.7
75°	271.4	287.0	302.4	320.4	330.8	375.7	402.3	443.7	476.4	525.5	558.4
77.5°	213.7	221.4	229.1	236.9	241.3	266.1	287.8	329.1	367.0	429.1	477.3
80°	164.6	168.8	169.7	172.3	170.6	182.7	190.4	215.3	248.1	309.3	366.1
82.5°	106.0	109.4	111.1	115.5	106.8	122.4	127.5	130.1	147.3	192.1	232.6
85°	59.4	60.3	61.1	63.0	50.8	66.3	67.2	63.0	61.1	79.2	89.6
87.5°	14.6	13.7	14.6	14.6	6.0	13.7	13.7	9.5	6.9	12.9	10.4
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°	1173.5	1173.5	1173.5	1173.5	1173.5	1173.5
2.5°	1081.2	1079.5	1080.3	1075.9	1074.3	1075.2
5°	1063.9	1060.6	1060.6	1057.9	1054.5	1054.5
7.5°	1071.8	1064.8	1062.2	1057.1	1051.9	1052.8
10°	1083.8	1071.8	1063.1	1055.3	1049.3	1049.3
12.5°	1091.5	1069.9	1057.1	1046.7	1039.8	1039.8
15°	1093.2	1060.6	1041.6	1030.5	1023.5	1023.5
17.5°	1083.0	1041.6	1017.4	1002.8	995.1	996.8
20°	1057.1	1006.3	977.9	962.3	954.6	955.5
22.5°	1016.5	957.9	925.3	907.2	899.4	899.4
25°	961.5	897.7	862.4	847.8	840.9	840.9
27.5°	898.5	833.1	802.1	790.9	786.5	786.5
30°	827.9	773.7	751.2	743.5	736.6	736.6
32.5°	768.5	729.8	721.9	711.6	693.6	692.7
35°	721.1	716.7	710.7	679.7	653.9	650.4
37.5°	695.2	721.1	683.2	629.8	609.1	608.2
40°	681.4	705.6	640.1	614.2	611.7	611.7
42.5°	648.7	665.9	637.5	622.9	622.9	623.8
45°	614.2	628.9	643.5	630.7	634.9	635.8
47.5°	590.1	619.4	643.5	632.4	641.1	646.2
50°	567.7	610.9	630.7	630.7	640.1	641.1
52.5°	562.5	598.7	618.6	628.0	628.9	624.6
55°	563.4	589.2	609.1	621.1	616.0	616.0
57.5°	562.5	584.1	601.4	605.7	608.2	608.2
60°	563.4	577.2	591.0	589.2	597.8	597.8
62.5°	566.1	567.7	574.6	572.9	585.8	585.8
65°	572.1	555.7	551.3	553.1	568.5	567.7
67.5°	583.2	539.3	525.5	526.4	548.8	545.3
70°	599.7	516.9	496.2	491.1	529.0	523.0
72.5°	604.8	491.1	458.4	453.2	475.6	458.4
75°	580.7	470.4	417.8	400.7	391.1	386.0
77.5°	517.8	457.5	375.7	339.5	324.8	321.3
80°	429.1	430.8	320.4	277.4	322.2	321.3
82.5°	324.0	372.1	256.8	240.4	233.5	194.7
85°	156.8	280.0	197.3	165.4	99.1	93.9
87.5°	13.7	117.1	113.7	74.1	33.7	31.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)