

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: P195326

Luminaire Tested: **NAV-AF-02-D-UNV-T2R-7060**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P195326  
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-7060  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 5700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12765 lumens  
Efficiency: N/A  
Efficacy: 113.0 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

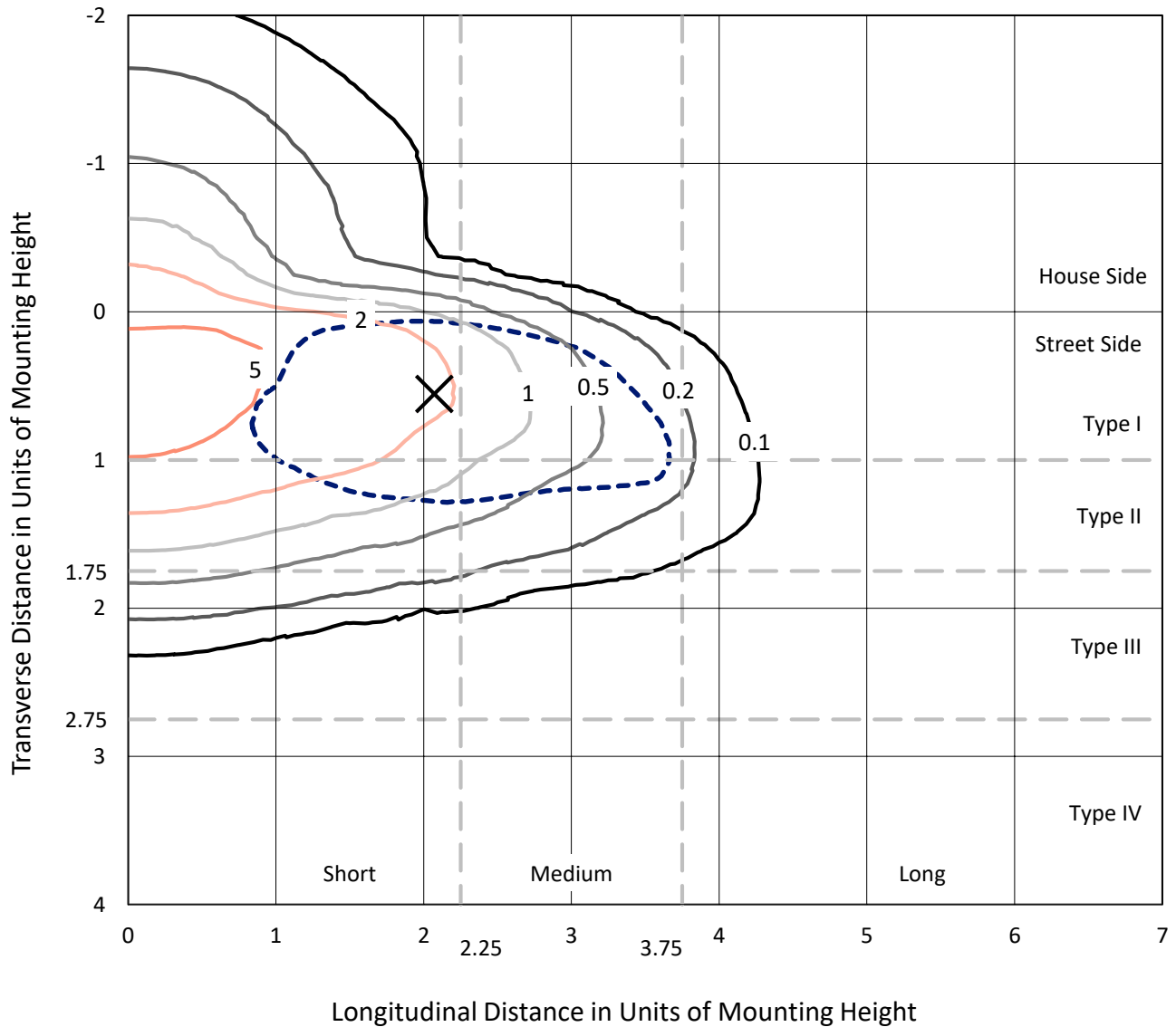
Input Watts (W): 113  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

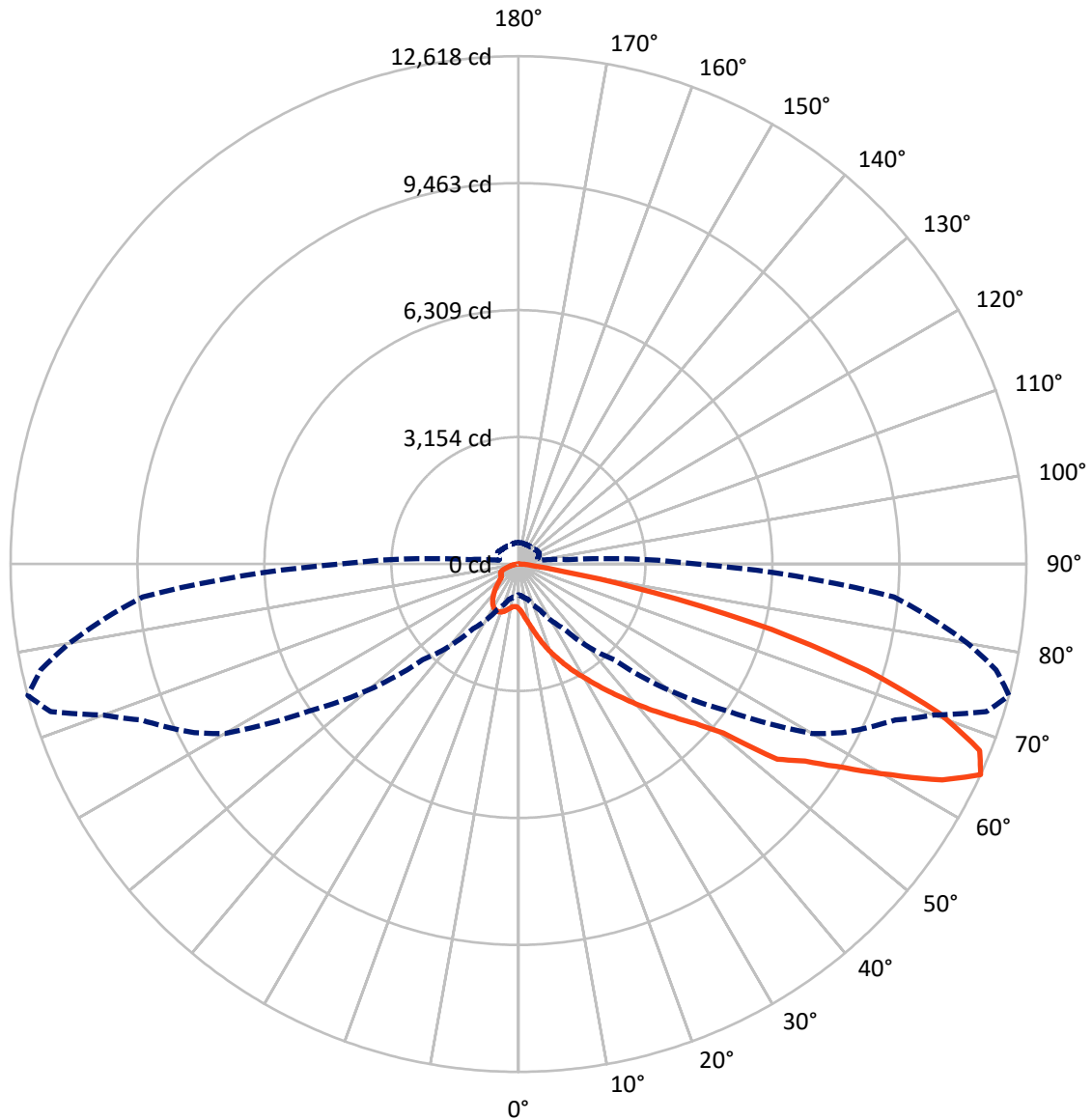
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 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
<b>House Side</b>	Lumens	1918.1	0.0	1918.1
	% Fixture	15.0	0.0	15.0
<b>Street Side</b>	Lumens	10846.9	0.0	10846.9
	% Fixture	85.0	0.0	85.0
<b>Total</b>	Lumens	12765.0	0.0	12765.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	130.6	1.0
10°-20°	498.7	3.9
20°-30°	1006.5	7.9
30°-40°	1709.3	13.4
40°-50°	2384.0	18.7
50°-60°	2921.9	22.9
60°-70°	2749.1	21.5
70°-80°	1205.5	9.4
80°-90°	159.5	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°	12765.0	100.0
0°-180°	12765.0	100.0

**Coefficient of Utilization**



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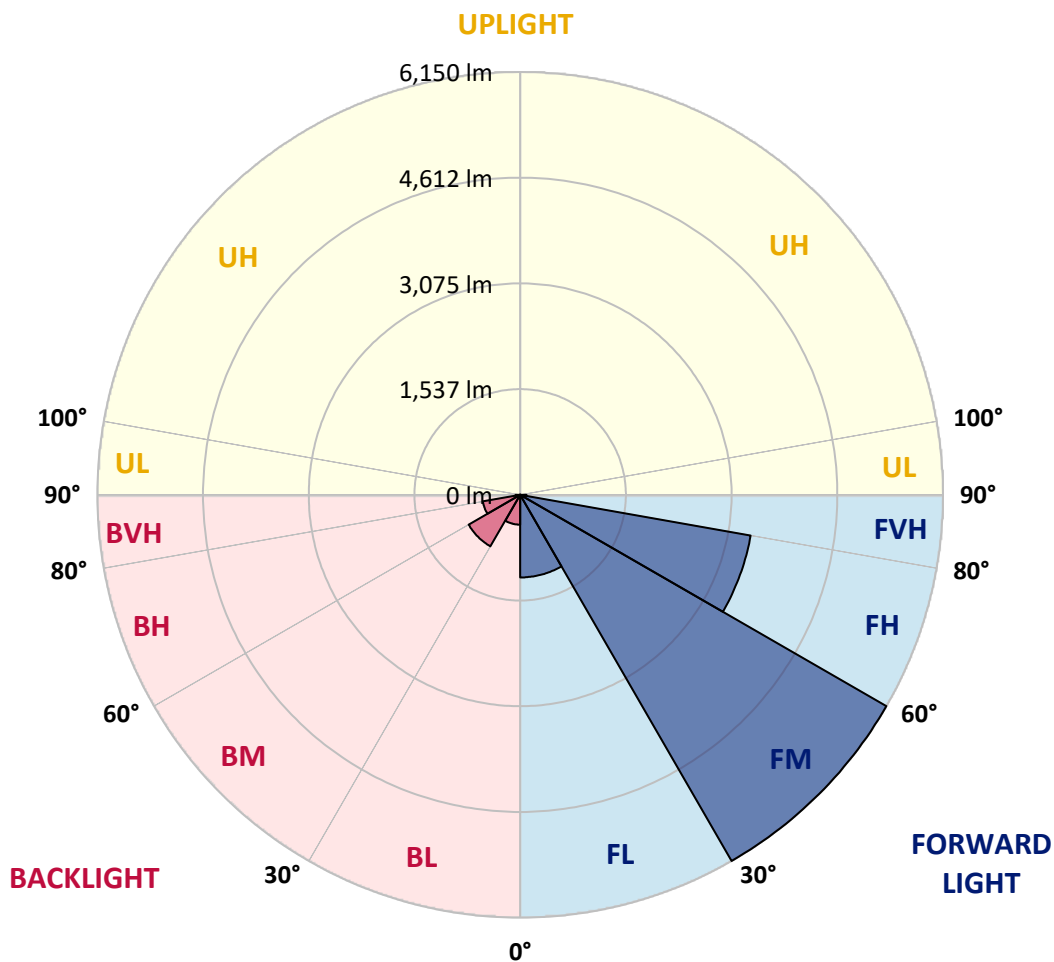
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1201.5	9.4			
FM	(30°-60°)	6149.6	48.2			
FH	(60°-80°)	3403.3	26.7			G2/5000
FVH	(80°-90°)	92.5	0.7			G1/100
BL	(0°-30°)	434.2	3.4	B1/500		
BM	(30°-60°)	865.6	6.8	B1/1000		
BH	(60°-80°)	551.3	4.3	B2/1000		G2/1000
BVH	(80°-90°)	67.0	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°	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0
2.5°	1392.7	1376.4	1378.0	1355.3	1322.0	1285.5	1255.4	1239.2	1225.4	1221.3	1198.6
5°	1821.4	1801.1	1793.8	1741.8	1663.9	1571.3	1479.6	1443.8	1414.6	1396.7	1352.9
7.5°	2172.2	2161.7	2151.9	2104.0	2026.9	1908.3	1760.5	1707.7	1659.0	1605.4	1552.6
10°	2411.0	2406.9	2402.8	2369.6	2305.4	2202.3	2043.1	1985.5	1924.6	1856.3	1787.3
12.5°	2591.2	2591.2	2594.5	2566.9	2527.9	2448.3	2303.8	2250.2	2188.5	2117.0	2038.2
15°	2712.2	2715.5	2732.5	2740.7	2720.4	2669.2	2542.5	2495.4	2437.0	2366.3	2288.4
17.5°	2792.6	2799.1	2824.3	2851.1	2877.1	2859.2	2765.0	2721.2	2668.4	2603.4	2530.3
20°	2979.4	2971.3	2972.1	2964.0	3002.1	3015.9	2964.0	2927.4	2885.2	2825.9	2759.3
22.5°	3371.6	3356.2	3316.4	3214.9	3168.6	3163.7	3132.9	3113.4	3080.9	3043.6	2977.0
25°	3883.2	3865.3	3786.6	3619.3	3481.2	3353.8	3296.9	3284.7	3263.6	3238.4	3190.5
27.5°	4411.9	4392.4	4290.9	4079.7	3899.5	3642.0	3465.0	3448.8	3429.3	3418.7	3396.0
30°	4877.2	4856.0	4756.2	4541.8	4324.2	4017.2	3691.6	3634.7	3601.4	3604.7	3591.7
32.5°	5285.6	5266.9	5154.9	4936.4	4715.6	4417.5	3985.5	3897.0	3822.3	3794.7	3804.4
35°	5628.3	5611.3	5488.6	5268.6	5046.1	4798.4	4363.9	4230.8	4109.0	4032.6	4023.7
37.5°	5829.7	5819.9	5733.9	5547.1	5326.2	5144.3	4787.8	4640.0	4460.6	4349.3	4300.6
40°	5818.3	5828.9	5814.3	5729.8	5558.5	5426.1	5229.6	5083.4	4908.0	4742.4	4643.3
42.5°	5652.7	5667.3	5733.1	5776.9	5730.6	5650.2	5615.3	5506.5	5349.0	5173.6	5036.3
45°	5425.3	5438.3	5523.5	5681.9	5814.3	5837.0	5953.1	5898.7	5765.5	5616.1	5465.1
47.5°	5076.9	5102.1	5201.2	5452.9	5768.0	5987.2	6236.5	6261.7	6184.6	6061.1	5919.8
50°	4572.6	4605.9	4744.8	5102.9	5592.6	6141.5	6658.0	6753.8	6722.9	6597.9	6455.0
52.5°	4056.2	4089.5	4274.6	4655.5	5310.0	6204.9	7072.9	7318.2	7495.2	7624.3	7649.5
55°	3518.6	3556.0	3759.0	4197.5	4933.2	6124.5	7369.3	7647.9	7827.3	7962.1	8016.5
57.5°	2912.0	2954.2	3150.7	3594.1	4400.5	5801.3	7699.0	8093.7	8360.8	8568.7	8685.7
60°	2216.1	2268.9	2472.7	2919.3	3700.5	5182.5	7846.0	8429.9	8854.6	9166.4	9351.5
62.5°	1404.8	1458.4	1670.4	2134.1	2903.9	4337.1	7430.2	8282.1	9006.4	9467.7	9807.1
65°	766.6	790.1	907.9	1257.1	1957.8	3365.1	6376.2	7380.7	8424.2	9077.9	9599.2
67.5°	574.9	578.2	590.4	675.6	1042.7	2272.1	4985.2	5905.2	7064.0	7905.3	8528.1
70°	503.5	503.5	505.1	505.9	566.0	1231.1	3377.3	4224.3	5286.4	6137.5	6911.3
72.5°	451.5	446.6	445.0	435.3	443.4	631.0	1838.5	2599.4	3495.1	4450.0	5171.9
75°	389.8	389.0	389.0	379.2	384.1	444.2	797.4	1247.3	1941.6	2830.8	3541.3
77.5°	337.0	331.3	332.1	326.4	341.9	340.2	378.4	514.0	845.3	1486.9	2076.4
80°	277.7	273.7	276.1	272.8	297.2	251.7	255.0	314.3	419.8	652.1	919.2
82.5°	205.4	207.1	222.5	220.9	250.1	169.7	186.8	234.7	282.6	324.8	353.2
85°	120.2	122.6	160.0	168.1	183.5	89.3	114.5	139.7	157.5	174.6	181.9
87.5°	13.0	17.1	89.3	91.8	82.0	26.8	46.3	58.5	62.5	66.6	58.5
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):**

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0
2.5°	1191.3	1180.7	1169.3	1162.9	1151.5	1141.7	1123.9	1109.3	1093.0	1081.6	1076.8
5°	1330.9	1305.8	1279.0	1259.5	1235.1	1214.0	1173.4	1124.7	1109.3	1076.8	1068.7
7.5°	1512.8	1467.4	1421.9	1384.5	1342.3	1307.4	1239.2	1151.5	1140.1	1088.1	1076.8
10°	1726.4	1659.8	1592.4	1534.8	1473.1	1419.5	1318.8	1195.3	1183.2	1116.6	1105.2
12.5°	1965.2	1884.0	1797.1	1711.0	1637.9	1562.4	1425.1	1263.5	1244.1	1165.3	1149.9
15°	2211.2	2123.5	2022.8	1918.9	1828.7	1728.8	1555.9	1352.9	1317.1	1224.6	1203.5
17.5°	2454.0	2359.0	2253.4	2137.3	2031.7	1912.4	1697.2	1452.8	1391.0	1283.0	1256.2
20°	2688.7	2592.1	2480.8	2367.1	2235.6	2099.1	1841.7	1551.0	1456.8	1331.8	1296.8
22.5°	2902.3	2819.4	2708.2	2577.4	2444.3	2290.8	1988.7	1649.3	1514.5	1369.1	1324.5
25°	3127.2	3051.7	2941.2	2815.4	2660.3	2489.7	2140.6	1742.7	1560.8	1389.4	1334.2
27.5°	3354.6	3289.6	3185.7	3053.3	2886.8	2697.6	2294.8	1828.7	1598.1	1395.9	1329.3
30°	3597.4	3547.0	3451.2	3303.4	3135.3	2925.8	2462.9	1913.2	1621.7	1387.0	1307.4
32.5°	3827.2	3825.6	3740.3	3586.8	3405.7	3175.1	2640.0	1998.4	1633.8	1361.8	1269.2
35°	4065.9	4099.2	4035.1	3888.9	3698.1	3442.3	2835.7	2089.4	1634.7	1317.1	1219.7
37.5°	4337.1	4396.4	4368.0	4229.1	4028.6	3746.8	3065.5	2191.7	1629.8	1255.4	1147.4
40°	4645.7	4726.9	4726.1	4609.2	4394.8	4087.8	3332.6	2306.2	1618.4	1178.3	1062.2
42.5°	4999.0	5095.6	5122.4	5007.1	4790.3	4460.6	3638.8	2432.1	1600.5	1101.9	972.0
45°	5403.4	5488.6	5539.0	5431.8	5214.2	4866.6	3990.4	2575.0	1578.6	1003.7	868.9
47.5°	5836.2	5935.3	6010.8	5919.0	5686.8	5329.5	4407.0	2759.3	1570.5	891.6	757.6
50°	6373.0	6475.3	6638.5	6597.1	6469.6	6182.1	5288.1	3194.6	1573.7	785.3	664.3
52.5°	7704.7	7939.4	8145.7	8053.9	7751.0	7258.1	6004.3	3436.6	1505.5	698.4	599.3
55°	8106.7	8373.0	8677.5	8639.4	8348.7	7851.7	6570.3	3638.8	1439.8	635.0	557.1
57.5°	8809.9	9124.2	9549.7	9541.6	9185.1	8625.6	7298.7	3880.8	1411.3	598.5	536.0
60°	9554.6	9954.9	10542.8	10634.6	10247.2	9665.0	8159.5	4178.0	1415.4	578.2	523.8
62.5°	10098.6	10685.7	11540.8	11815.3	11358.9	10717.4	9052.7	4475.2	1391.0	554.6	509.2
65°	10131.9	10977.3	12190.5	12617.6	12155.5	11331.3	9367.8	4416.7	1244.9	523.0	485.6
67.5°	9319.9	10421.0	11894.9	12363.4	11890.8	10952.9	8815.6	3861.3	1011.8	467.7	445.0
70°	7762.4	9040.5	10570.4	11092.6	10702.0	9752.7	7672.2	3084.2	756.0	394.7	384.1
72.5°	5998.6	7190.7	8580.1	9063.3	8764.4	7929.6	6051.4	2247.7	540.0	319.9	311.8
75°	4288.4	5303.5	6312.0	6496.4	6201.6	5435.0	3926.3	1404.0	378.4	262.3	250.9
77.5°	2655.4	3315.6	3677.8	3440.6	3064.7	2547.4	1598.1	693.5	251.7	213.6	202.2
80°	1178.3	1382.9	1291.2	1150.7	908.7	747.1	488.0	307.8	162.4	164.8	158.3
82.5°	396.3	419.0	407.6	405.2	365.4	319.9	207.1	133.2	90.9	105.6	103.1
85°	193.3	202.2	203.0	210.3	182.7	142.1	56.0	52.8	39.0	56.8	59.3
87.5°	58.5	59.3	53.6	58.5	47.1	32.5	10.6	14.6	7.3	13.8	13.8
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°	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0
2.5°	1067.8	1064.6	1058.9	1052.4	1050.8	1042.7	1040.2	1036.2	1033.7	1029.7	1026.4
5°	1058.1	1052.4	1045.9	1038.6	1038.6	1027.2	1022.4	1017.5	1017.5	1010.2	1006.9
7.5°	1067.8	1060.5	1053.2	1046.7	1049.2	1036.2	1031.3	1026.4	1025.6	1018.3	1015.1
10°	1095.5	1088.1	1079.2	1072.7	1070.3	1059.7	1054.0	1046.7	1041.9	1037.0	1032.1
12.5°	1137.7	1127.9	1116.6	1102.8	1097.1	1088.1	1079.2	1069.5	1058.1	1053.2	1045.9
15°	1188.0	1171.8	1156.4	1139.3	1123.9	1114.9	1102.8	1087.3	1071.9	1065.4	1055.7
17.5°	1229.4	1212.4	1190.5	1170.2	1142.6	1135.2	1118.2	1099.5	1074.3	1071.9	1057.3
20°	1264.4	1238.4	1211.6	1187.2	1145.0	1140.9	1119.8	1097.9	1062.2	1062.2	1044.3
22.5°	1283.8	1248.1	1216.4	1184.0	1131.2	1127.9	1103.6	1077.6	1033.7	1035.4	1013.4
25°	1287.1	1244.1	1204.3	1165.3	1104.4	1098.7	1067.8	1039.4	991.5	988.3	965.5
27.5°	1274.1	1223.8	1177.5	1130.4	1064.6	1052.4	1018.3	984.2	937.1	929.0	904.6
30°	1244.1	1184.8	1132.8	1078.4	1009.4	989.9	954.2	919.2	871.3	860.8	838.0
32.5°	1196.1	1128.7	1071.1	1016.7	940.4	916.0	880.3	845.3	799.1	790.9	769.8
35°	1132.8	1057.3	996.4	938.7	862.4	837.2	803.1	772.3	730.0	726.8	712.2
37.5°	1053.2	974.5	909.5	854.3	782.0	769.0	734.1	711.4	676.4	679.7	672.4
40°	963.1	882.7	821.0	772.3	709.7	698.4	677.2	660.2	630.1	639.1	639.9
42.5°	872.1	791.7	735.7	691.9	638.3	631.0	616.3	606.6	583.9	601.7	609.0
45°	769.0	694.3	646.4	613.1	573.3	573.3	566.0	565.2	549.8	574.9	582.2
47.5°	669.1	610.7	577.4	557.1	529.5	542.4	540.0	546.5	535.1	561.1	567.6
50°	593.6	553.0	532.7	523.0	503.5	523.8	528.6	537.6	527.8	550.6	555.4
52.5°	545.7	518.9	507.5	505.1	491.3	516.5	524.6	532.7	521.3	542.4	541.6
55°	518.9	501.0	497.0	501.8	491.3	515.7	523.8	529.5	519.7	534.3	533.5
57.5°	509.2	499.4	501.8	509.2	501.8	522.1	526.2	532.7	523.0	529.5	532.7
60°	508.3	508.3	518.1	527.8	523.0	537.6	540.0	539.2	530.3	531.1	532.7
62.5°	503.5	515.7	531.9	547.3	545.7	563.6	565.2	554.6	547.3	539.2	536.8
65°	488.0	508.3	531.9	553.0	556.3	583.9	587.1	576.6	571.7	557.9	547.3
67.5°	453.9	479.9	507.5	533.5	539.2	576.6	583.9	587.9	590.4	581.4	567.6
70°	396.3	423.1	451.5	481.5	489.7	531.1	546.5	565.2	579.8	592.8	587.9
72.5°	322.4	346.7	371.1	398.7	410.9	453.9	474.2	506.7	529.5	562.7	576.6
75°	255.8	270.4	285.0	302.1	311.8	354.1	379.2	418.2	449.1	495.3	526.2
77.5°	201.4	208.7	216.0	223.3	227.4	250.9	271.2	310.2	345.9	404.4	449.9
80°	155.1	159.2	160.0	162.4	160.8	172.2	179.5	203.0	233.9	291.5	345.1
82.5°	99.9	103.1	104.8	108.8	100.7	115.3	120.2	122.6	138.9	181.1	219.3
85°	56.0	56.8	57.7	59.3	47.9	62.5	63.3	59.3	57.7	74.7	84.5
87.5°	13.8	13.0	13.8	13.8	5.7	13.0	13.0	8.9	6.5	12.2	9.7
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°	1106.0	1106.0	1106.0	1106.0	1106.0	1106.0
2.5°	1019.1	1017.5	1018.3	1014.2	1012.6	1013.4
5°	1002.9	999.6	999.6	997.2	993.9	993.9
7.5°	1010.2	1003.7	1001.3	996.4	991.5	992.3
10°	1021.6	1010.2	1002.1	994.8	989.1	989.1
12.5°	1028.9	1008.6	996.4	986.6	980.1	980.1
15°	1030.5	999.6	981.8	971.2	964.7	964.7
17.5°	1020.7	981.8	959.0	945.2	937.9	939.5
20°	996.4	948.5	921.7	907.1	899.7	900.6
22.5°	958.2	903.0	872.1	855.1	847.8	847.8
25°	906.2	846.2	812.9	799.1	792.6	792.6
27.5°	847.0	785.3	756.0	745.5	741.4	741.4
30°	780.4	729.2	708.1	700.8	694.3	694.3
32.5°	724.3	687.8	680.5	670.8	653.7	652.9
35°	679.7	675.6	669.9	640.7	616.3	613.1
37.5°	655.3	679.7	644.0	593.6	574.1	573.3
40°	642.3	665.1	603.4	579.0	576.6	576.6
42.5°	611.5	627.7	600.9	587.1	587.1	587.9
45°	579.0	592.8	606.6	594.4	598.5	599.3
47.5°	556.3	583.9	606.6	596.0	604.2	609.0
50°	535.1	575.7	594.4	594.4	603.4	604.2
52.5°	530.3	564.4	583.1	592.0	592.8	588.7
55°	531.1	555.4	574.1	585.5	580.6	580.6
57.5°	530.3	550.6	566.8	570.9	573.3	573.3
60°	531.1	544.1	557.1	555.4	563.6	563.6
62.5°	533.5	535.1	541.6	540.0	552.2	552.2
65°	539.2	523.8	519.7	521.3	536.0	535.1
67.5°	549.8	508.3	495.3	496.2	517.3	514.0
70°	565.2	487.2	467.7	462.9	498.6	492.9
72.5°	570.1	462.9	432.0	427.1	448.3	432.0
75°	547.3	443.4	393.8	377.6	368.7	363.8
77.5°	488.0	431.2	354.1	319.9	306.1	302.9
80°	404.4	406.0	302.1	261.5	303.7	302.9
82.5°	305.3	350.8	242.0	226.6	220.1	183.5
85°	147.8	263.9	186.0	155.9	93.4	88.5
87.5°	13.0	110.4	107.2	69.8	31.7	30.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)