

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: P196275

Luminaire Tested: **NAV-AF-03-D-UNV-T2R-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196275  
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-03-D-UNV-T2R-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 70 CRI, 4000K, 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: 12794 lumens  
Efficiency: N/A  
Efficacy: 133.3 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')  
IES Classification: Type II - Short - Semi-Cutoff  
BUG Rating: B2 - U0 - G2

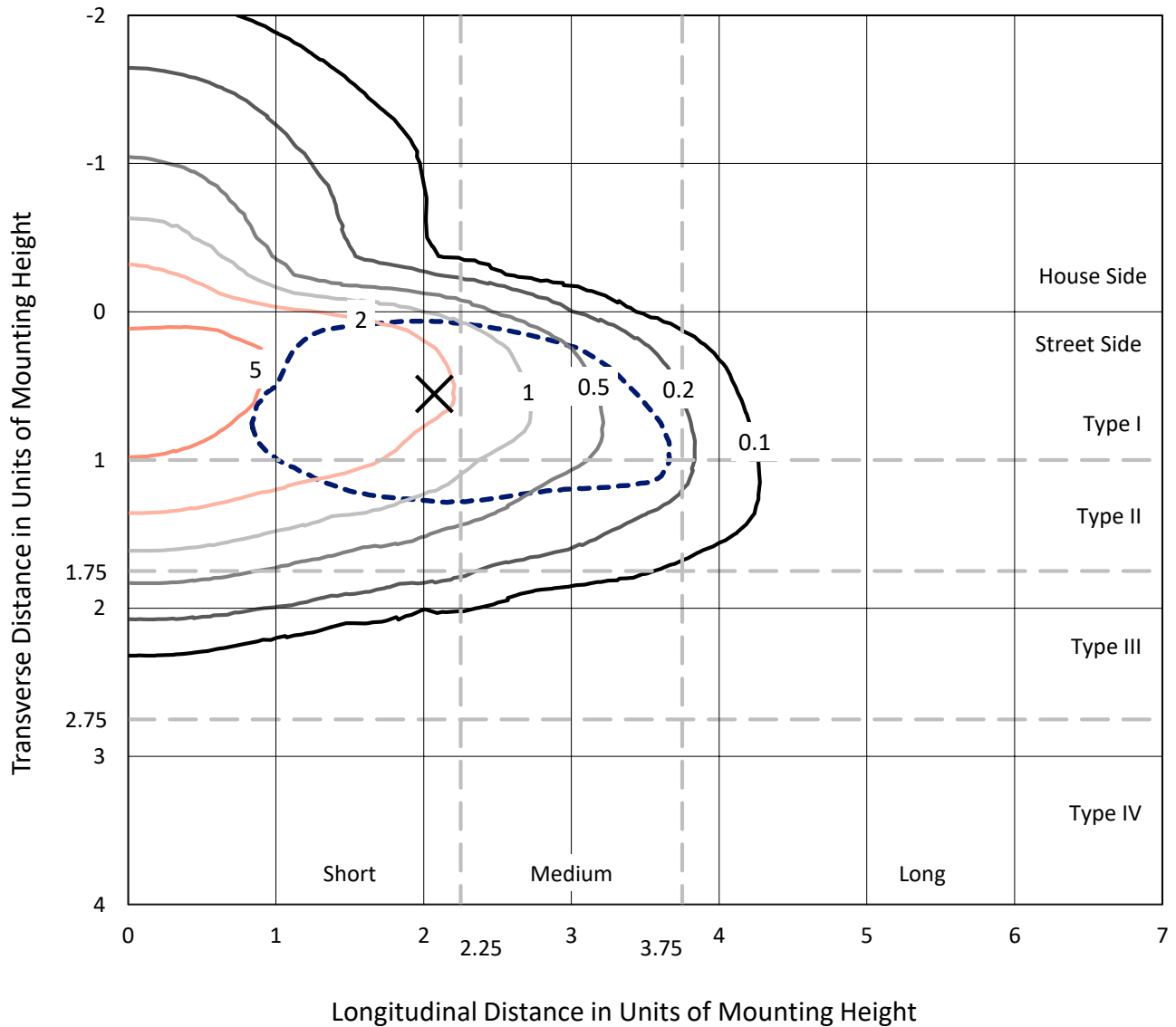
Input Watts (W): 96  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

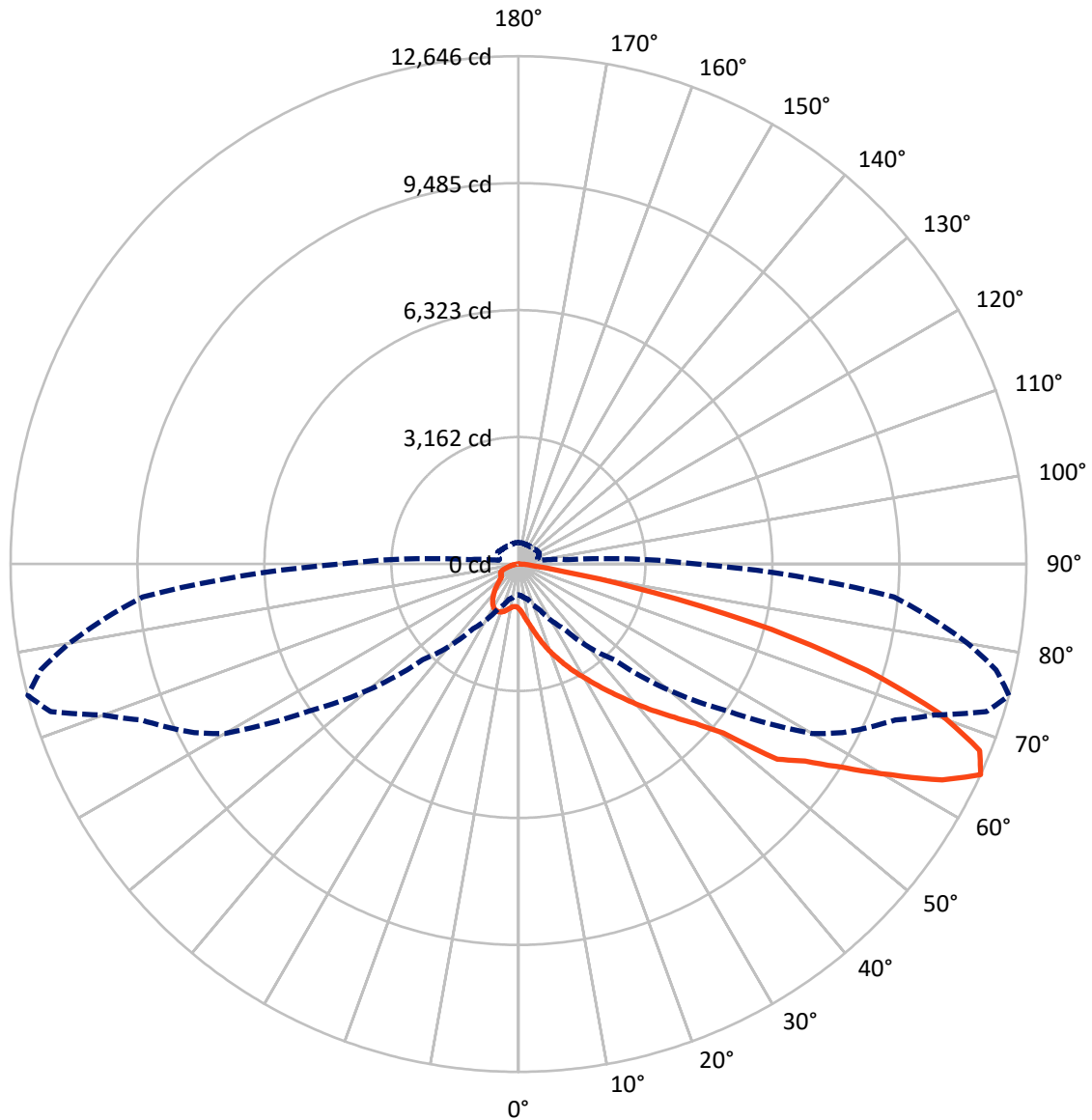
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 8 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	1922.5	0.0	1922.5
	% Fixture	15.0	0.0	15.0
<b>Street Side</b>	Lumens	10871.5	0.0	10871.5
	% Fixture	85.0	0.0	85.0
<b>Total</b>	Lumens	12794.0	0.0	12794.0
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	130.9	1.0
10°-20°	499.9	3.9
20°-30°	1008.8	7.9
30°-40°	1713.2	13.4
40°-50°	2389.4	18.7
50°-60°	2928.5	22.9
60°-70°	2755.4	21.5
70°-80°	1208.2	9.4
80°-90°	159.9	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°	12794.0	100.0
0°-180°	12794.0	100.0



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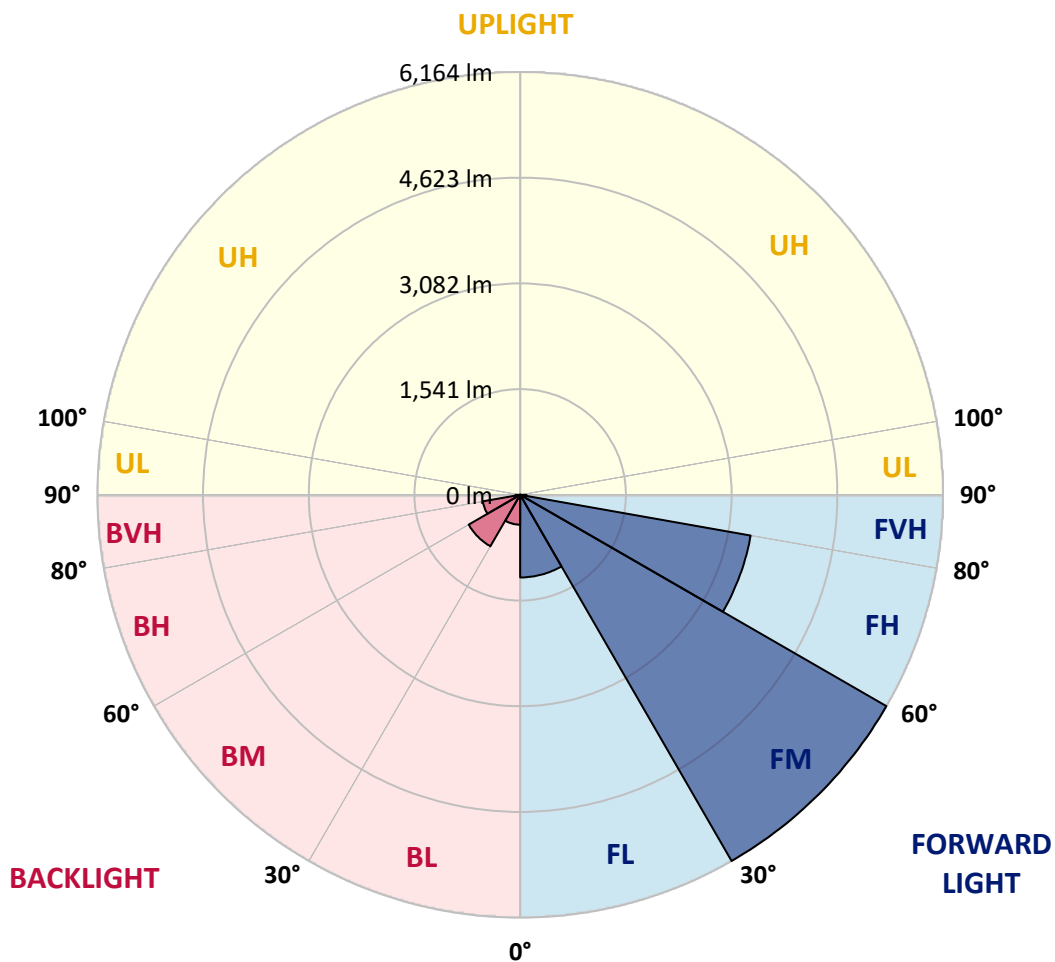
CATALOG NUMBER: NAV-AF-03-D-UNV-T2R-600

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1204.3	9.4			
FM	(30°-60°)	6163.6	48.2			
FH	(60°-80°)	3411.0	26.7			G2/5000
FVH	(80°-90°)	92.7	0.7			G1/100
BL	(0°-30°)	435.2	3.4	B1/500		
BM	(30°-60°)	867.5	6.8	B1/1000		
BH	(60°-80°)	552.6	4.3	B2/1000		G2/1000
BVH	(80°-90°)	67.2	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°	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6
2.5°	1395.8	1379.6	1381.2	1358.4	1325.0	1288.4	1258.3	1242.0	1228.2	1224.1	1201.4
5°	1825.6	1805.2	1797.9	1745.8	1667.7	1574.9	1482.9	1447.1	1417.8	1399.9	1355.9
7.5°	2177.1	2166.6	2156.8	2108.8	2031.5	1912.6	1764.5	1711.6	1662.8	1609.1	1556.2
10°	2416.4	2412.4	2408.3	2375.0	2310.6	2207.3	2047.7	1989.9	1929.0	1860.5	1791.4
12.5°	2597.2	2597.2	2600.4	2572.7	2533.6	2453.9	2309.0	2255.3	2193.4	2121.8	2042.8
15°	2718.4	2721.7	2738.7	2746.9	2726.6	2675.3	2548.3	2501.1	2442.5	2371.7	2293.6
17.5°	2799.0	2805.5	2830.7	2857.6	2883.6	2865.7	2771.3	2727.4	2674.5	2609.3	2536.1
20°	2986.2	2978.0	2978.8	2970.8	3009.0	3022.8	2970.8	2934.1	2891.8	2832.3	2765.6
22.5°	3379.3	3363.9	3324.0	3222.2	3175.9	3170.9	3140.0	3120.5	3087.9	3050.4	2983.7
25°	3892.0	3874.1	3795.1	3627.5	3489.2	3361.4	3304.4	3292.2	3271.1	3245.8	3197.8
27.5°	4421.9	4402.4	4300.6	4089.0	3908.3	3650.3	3472.9	3456.7	3437.1	3426.5	3403.7
30°	4888.3	4867.1	4767.0	4552.1	4334.0	4026.3	3700.0	3643.0	3609.6	3612.9	3599.9
32.5°	5297.7	5278.9	5166.6	4947.7	4726.3	4427.6	3994.6	3905.9	3831.1	3803.3	3813.2
35°	5641.1	5624.0	5501.1	5280.6	5057.6	4809.3	4373.8	4240.4	4118.3	4041.8	4032.9
37.5°	5843.0	5833.2	5746.9	5559.7	5338.4	5156.0	4798.8	4650.6	4470.7	4359.2	4310.4
40°	5831.5	5842.2	5827.4	5742.8	5571.1	5438.4	5241.5	5095.0	4919.2	4753.1	4653.8
42.5°	5665.5	5680.1	5746.1	5790.0	5743.7	5663.1	5628.1	5519.0	5361.1	5185.3	5047.8
45°	5437.6	5450.7	5536.1	5694.9	5827.4	5850.3	5966.7	5912.1	5778.6	5628.9	5477.5
47.5°	5088.5	5113.7	5213.0	5465.3	5781.1	6000.8	6250.7	6275.9	6198.7	6074.9	5933.3
50°	4583.0	4616.4	4755.6	5114.5	5605.3	6155.5	6673.1	6769.2	6738.3	6612.9	6469.7
52.5°	4065.4	4098.8	4284.3	4666.1	5322.1	6218.9	7089.0	7334.9	7512.2	7641.6	7666.9
55°	3526.6	3564.1	3767.5	4207.0	4944.4	6138.4	7386.1	7665.3	7845.1	7980.2	8034.8
57.5°	2918.6	2960.9	3158.0	3602.3	4410.5	5814.5	7716.5	8112.1	8379.9	8588.2	8705.4
60°	2221.1	2274.0	2478.3	2925.9	3708.9	5194.2	7863.8	8449.1	8874.7	9187.2	9372.8
62.5°	1408.0	1461.8	1674.2	2138.9	2910.5	4347.0	7447.2	8300.9	9026.9	9489.2	9829.4
65°	768.3	792.0	909.9	1259.9	1962.3	3372.8	6390.7	7397.5	8443.3	9098.5	9621.1
67.5°	576.2	579.5	591.7	677.2	1045.0	2277.3	4996.5	5918.7	7080.0	7923.3	8547.6
70°	504.6	504.6	506.3	507.1	567.3	1233.9	3384.9	4233.9	5298.5	6151.4	6927.1
72.5°	452.6	447.6	446.0	436.3	444.4	632.4	1842.6	2605.3	3503.0	4460.2	5183.7
75°	390.7	389.8	389.8	380.1	384.9	445.2	799.2	1250.1	1946.1	2837.3	3549.4
77.5°	337.8	332.0	332.9	327.1	342.7	341.1	379.3	515.2	847.3	1490.2	2081.1
80°	278.3	274.3	276.7	273.4	297.9	252.3	255.5	315.0	420.7	653.6	921.4
82.5°	205.9	207.6	223.0	221.4	250.7	170.1	187.2	235.2	283.3	325.6	354.0
85°	120.5	122.9	160.3	168.5	183.9	89.5	114.8	139.9	157.9	175.0	182.3
87.5°	13.0	17.1	89.5	92.0	82.2	26.9	46.4	58.6	62.7	66.7	58.6
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):**

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6
2.5°	1194.0	1183.5	1172.0	1165.4	1154.1	1144.4	1126.5	1111.7	1095.5	1084.1	1079.2
5°	1333.9	1308.8	1281.9	1262.3	1238.0	1216.8	1176.1	1127.3	1111.7	1079.2	1071.1
7.5°	1516.3	1470.7	1425.2	1387.7	1345.4	1310.4	1242.0	1154.1	1142.7	1090.7	1079.2
10°	1730.3	1663.6	1596.0	1538.3	1476.4	1422.7	1321.8	1198.1	1185.8	1119.1	1107.8
12.5°	1969.6	1888.3	1801.1	1714.9	1641.6	1565.9	1428.3	1266.4	1246.9	1167.9	1152.5
15°	2216.2	2128.4	2027.4	1923.2	1832.9	1732.8	1559.4	1355.9	1320.1	1227.3	1206.2
17.5°	2459.6	2364.3	2258.6	2142.2	2036.4	1916.7	1701.1	1456.1	1394.2	1286.0	1259.0
20°	2694.8	2598.0	2486.5	2372.5	2240.7	2103.9	1845.9	1554.6	1460.2	1334.7	1299.8
22.5°	2908.9	2825.8	2714.3	2583.3	2449.9	2296.0	1993.2	1653.0	1518.0	1372.2	1327.5
25°	3134.3	3058.6	2947.9	2821.8	2666.3	2495.4	2145.4	1746.6	1564.3	1392.5	1337.2
27.5°	3362.2	3297.1	3192.9	3060.3	2893.4	2703.8	2300.1	1832.9	1601.7	1399.1	1332.4
30°	3605.6	3555.1	3459.0	3310.9	3142.4	2932.5	2468.6	1917.5	1625.4	1390.1	1310.4
32.5°	3835.9	3834.2	3748.8	3595.0	3413.5	3182.3	2646.0	2003.0	1637.5	1364.9	1272.1
35°	4075.1	4108.6	4044.2	3897.7	3706.5	3450.1	2842.2	2094.2	1638.4	1320.1	1222.4
37.5°	4347.0	4406.5	4377.9	4238.8	4037.7	3755.4	3072.4	2196.7	1633.4	1258.3	1150.0
40°	4656.3	4737.7	4736.9	4619.6	4404.8	4097.1	3340.2	2311.5	1622.1	1181.0	1064.6
42.5°	5010.3	5107.2	5134.1	5018.5	4801.2	4470.7	3647.0	2437.6	1604.2	1104.5	974.3
45°	5415.7	5501.1	5551.6	5444.1	5226.1	4877.6	3999.5	2580.9	1582.2	1006.0	870.8
47.5°	5849.4	5948.8	6024.5	5932.5	5699.7	5341.6	4417.0	2765.6	1574.1	893.6	759.3
50°	6387.4	6490.0	6653.6	6612.0	6484.3	6196.2	5300.1	3201.8	1577.3	787.1	665.7
52.5°	7722.3	7957.4	8164.2	8072.2	7768.6	7274.6	6017.9	3444.4	1509.0	699.9	600.7
55°	8125.1	8392.1	8697.3	8659.1	8367.6	7869.6	6585.2	3647.0	1443.1	636.5	558.3
57.5°	8829.9	9145.0	9571.4	9563.3	9205.9	8645.2	7315.3	3889.6	1414.5	599.9	537.2
60°	9576.3	9977.6	10566.8	10658.7	10270.5	9686.9	8178.0	4187.4	1418.6	579.5	525.0
62.5°	10121.6	10710.1	11567.1	11842.2	11384.7	10741.8	9073.3	4485.3	1394.2	555.9	510.4
65°	10154.9	11002.2	12218.2	12646.3	12183.2	11357.1	9389.1	4426.8	1247.7	524.2	486.7
67.5°	9341.1	10444.7	11922.0	12391.5	11917.9	10977.8	8835.6	3870.0	1014.2	468.8	446.0
70°	7780.1	9061.1	10594.5	11117.8	10726.4	9774.9	7689.7	3091.2	757.7	395.6	384.9
72.5°	6012.3	7207.0	8599.6	9083.9	8784.4	7947.7	6065.2	2252.8	541.2	320.7	312.5
75°	4298.1	5315.6	6326.4	6511.2	6215.8	5447.4	3935.2	1407.3	379.3	262.9	251.5
77.5°	2661.4	3323.2	3686.1	3448.5	3071.6	2553.2	1601.7	695.1	252.3	214.1	202.6
80°	1181.0	1386.1	1294.1	1153.3	910.7	748.8	489.2	308.4	162.8	165.2	158.7
82.5°	397.2	419.9	408.6	406.1	366.2	320.7	207.6	133.5	91.1	105.8	103.3
85°	193.7	202.6	203.5	210.8	183.1	142.4	56.2	52.9	39.1	57.0	59.4
87.5°	58.6	59.4	53.7	58.6	47.2	32.5	10.5	14.6	7.4	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°	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6
2.5°	1070.3	1067.0	1061.3	1054.8	1053.2	1045.0	1042.6	1038.5	1036.0	1032.1	1028.8
5°	1060.5	1054.8	1048.3	1041.0	1041.0	1029.6	1024.7	1019.8	1019.8	1012.5	1009.2
7.5°	1070.3	1062.9	1055.6	1049.1	1051.6	1038.5	1033.7	1028.8	1028.0	1020.6	1017.3
10°	1097.9	1090.7	1081.7	1075.1	1072.7	1062.1	1056.4	1049.1	1044.2	1039.3	1034.5
12.5°	1140.3	1130.5	1119.1	1105.3	1099.6	1090.7	1081.7	1072.0	1060.5	1055.6	1048.3
15°	1190.7	1174.4	1159.0	1141.9	1126.5	1117.5	1105.3	1089.9	1074.3	1067.9	1058.0
17.5°	1232.2	1215.2	1193.2	1172.8	1145.2	1137.8	1120.7	1102.0	1076.8	1074.3	1059.7
20°	1267.2	1241.1	1214.3	1189.9	1147.5	1143.6	1122.4	1100.4	1064.6	1064.6	1046.7
22.5°	1286.8	1251.0	1219.3	1186.6	1133.7	1130.5	1106.1	1080.0	1036.0	1037.7	1015.8
25°	1290.0	1246.9	1207.0	1167.9	1106.9	1101.2	1070.3	1041.8	993.8	990.5	967.7
27.5°	1277.1	1226.5	1180.2	1132.9	1067.0	1054.8	1020.6	986.4	939.3	931.1	906.6
30°	1246.9	1187.4	1135.4	1080.8	1011.7	992.2	956.4	921.4	873.3	862.8	839.9
32.5°	1198.9	1131.3	1073.5	1019.0	942.4	918.1	882.3	847.3	800.9	792.7	771.6
35°	1135.4	1059.7	998.6	940.9	864.4	839.1	805.0	774.0	731.7	728.4	713.8
37.5°	1055.6	976.7	911.6	856.2	783.8	770.8	735.8	713.0	678.0	681.2	673.9
40°	965.3	884.8	822.9	774.0	711.4	699.9	678.8	661.7	631.6	640.6	641.4
42.5°	874.1	793.5	737.3	693.5	639.8	632.4	617.8	607.9	585.2	603.1	610.4
45°	770.8	695.9	647.8	614.5	574.6	574.6	567.3	566.5	551.0	576.2	583.6
47.5°	670.6	612.0	578.7	558.3	530.7	543.7	541.2	547.8	536.3	562.4	568.9
50°	594.9	554.2	533.9	524.2	504.6	525.0	529.9	538.8	529.1	551.8	556.7
52.5°	547.0	520.1	508.7	506.3	492.4	517.6	525.8	533.9	522.5	543.7	542.9
55°	520.1	502.2	498.1	503.0	492.4	516.8	525.0	530.7	520.9	535.5	534.7
57.5°	510.4	500.5	503.0	510.4	503.0	523.3	527.4	533.9	524.2	530.7	533.9
60°	509.5	509.5	519.2	529.1	524.2	538.8	541.2	540.4	531.4	532.2	533.9
62.5°	504.6	516.8	533.1	548.6	547.0	564.9	566.5	555.9	548.6	540.4	538.0
65°	489.2	509.5	533.1	554.2	557.5	585.2	588.4	577.9	573.0	559.1	548.6
67.5°	455.0	481.0	508.7	534.7	540.4	577.9	585.2	589.2	591.7	582.8	568.9
70°	397.2	424.0	452.6	482.6	490.8	532.2	547.8	566.5	581.1	594.1	589.2
72.5°	323.2	347.5	371.9	399.7	411.8	455.0	475.4	507.9	530.7	564.1	577.9
75°	256.4	271.0	285.7	302.8	312.5	354.9	380.1	419.2	450.1	496.4	527.4
77.5°	201.8	209.2	216.5	223.8	227.9	251.5	271.8	310.9	346.7	405.3	450.9
80°	155.5	159.5	160.3	162.8	161.1	172.6	179.8	203.5	234.4	292.2	345.9
82.5°	100.1	103.3	105.0	109.0	101.0	115.6	120.5	122.9	139.2	181.5	219.7
85°	56.2	57.0	57.8	59.4	48.0	62.7	63.5	59.4	57.8	74.9	84.6
87.5°	13.8	13.0	13.8	13.8	5.7	13.0	13.0	9.0	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°	1108.6	1108.6	1108.6	1108.6	1108.6	1108.6
2.5°	1021.4	1019.8	1020.6	1016.5	1015.0	1015.8
5°	1005.2	1001.9	1001.9	999.4	996.3	996.3
7.5°	1012.5	1006.0	1003.5	998.6	993.8	994.6
10°	1023.9	1012.5	1004.3	997.1	991.3	991.3
12.5°	1031.2	1010.9	998.6	988.9	982.3	982.3
15°	1032.9	1001.9	984.0	973.4	966.9	966.9
17.5°	1023.1	984.0	961.2	947.4	940.1	941.6
20°	998.6	950.6	923.7	909.1	901.8	902.7
22.5°	960.3	905.0	874.1	857.0	849.7	849.7
25°	908.3	848.1	814.7	800.9	794.3	794.3
27.5°	848.8	787.1	757.7	747.2	743.1	743.1
30°	782.1	730.9	709.7	702.4	695.9	695.9
32.5°	726.0	689.4	682.0	672.3	655.2	654.4
35°	681.2	677.2	671.5	642.2	617.8	614.5
37.5°	656.8	681.2	645.4	594.9	575.4	574.6
40°	643.7	666.6	604.8	580.3	577.9	577.9
42.5°	612.8	629.1	602.3	588.4	588.4	589.2
45°	580.3	594.1	607.9	595.8	599.9	600.7
47.5°	557.5	585.2	607.9	597.4	605.6	610.4
50°	536.3	577.0	595.8	595.8	604.8	605.6
52.5°	531.4	565.7	584.4	593.3	594.1	590.0
55°	532.2	556.7	575.4	586.9	582.0	582.0
57.5°	531.4	551.8	568.1	572.1	574.6	574.6
60°	532.2	545.3	558.3	556.7	564.9	564.9
62.5°	534.7	536.3	542.9	541.2	553.4	553.4
65°	540.4	525.0	520.9	522.5	537.2	536.3
67.5°	551.0	509.5	496.4	497.3	518.4	515.2
70°	566.5	488.4	468.8	463.9	499.7	494.1
72.5°	571.3	463.9	433.0	428.1	449.3	433.0
75°	548.6	444.4	394.8	378.5	369.5	364.6
77.5°	489.2	432.2	354.9	320.7	306.9	303.6
80°	405.3	406.9	302.8	262.1	304.4	303.6
82.5°	306.1	351.6	242.5	227.1	220.5	183.9
85°	148.1	264.5	186.4	156.3	93.6	88.7
87.5°	13.0	110.7	107.4	70.0	31.7	30.1
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)