

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: P195315

Luminaire Tested: **NAV-AF-03-D-UNV-T2R-7060-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195315
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-7060-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 5700K, 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: 12507 lumens
Efficiency: N/A
Efficacy: 130.3 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

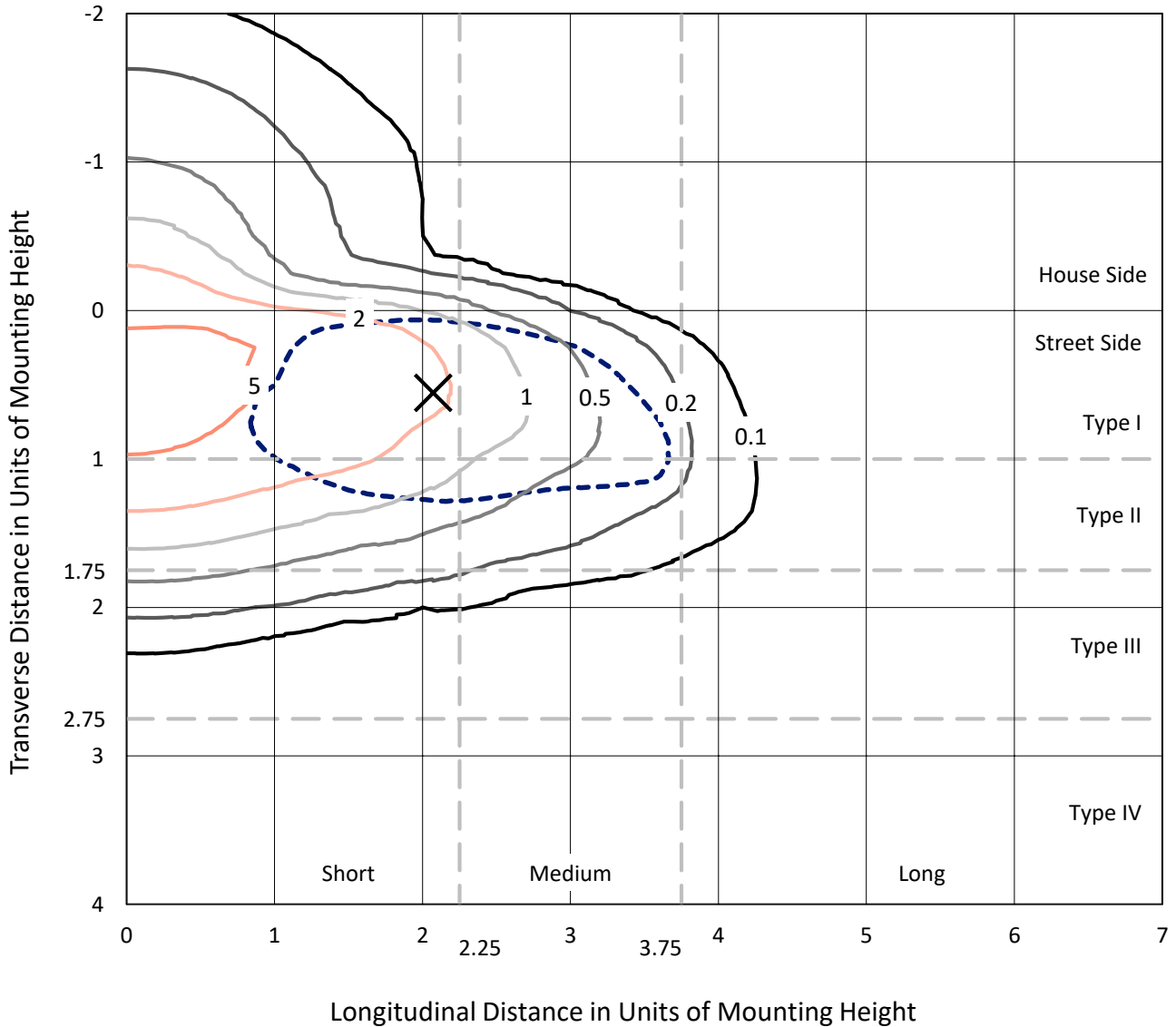


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Iso-Footcandle Lines of Horizontal Illumination

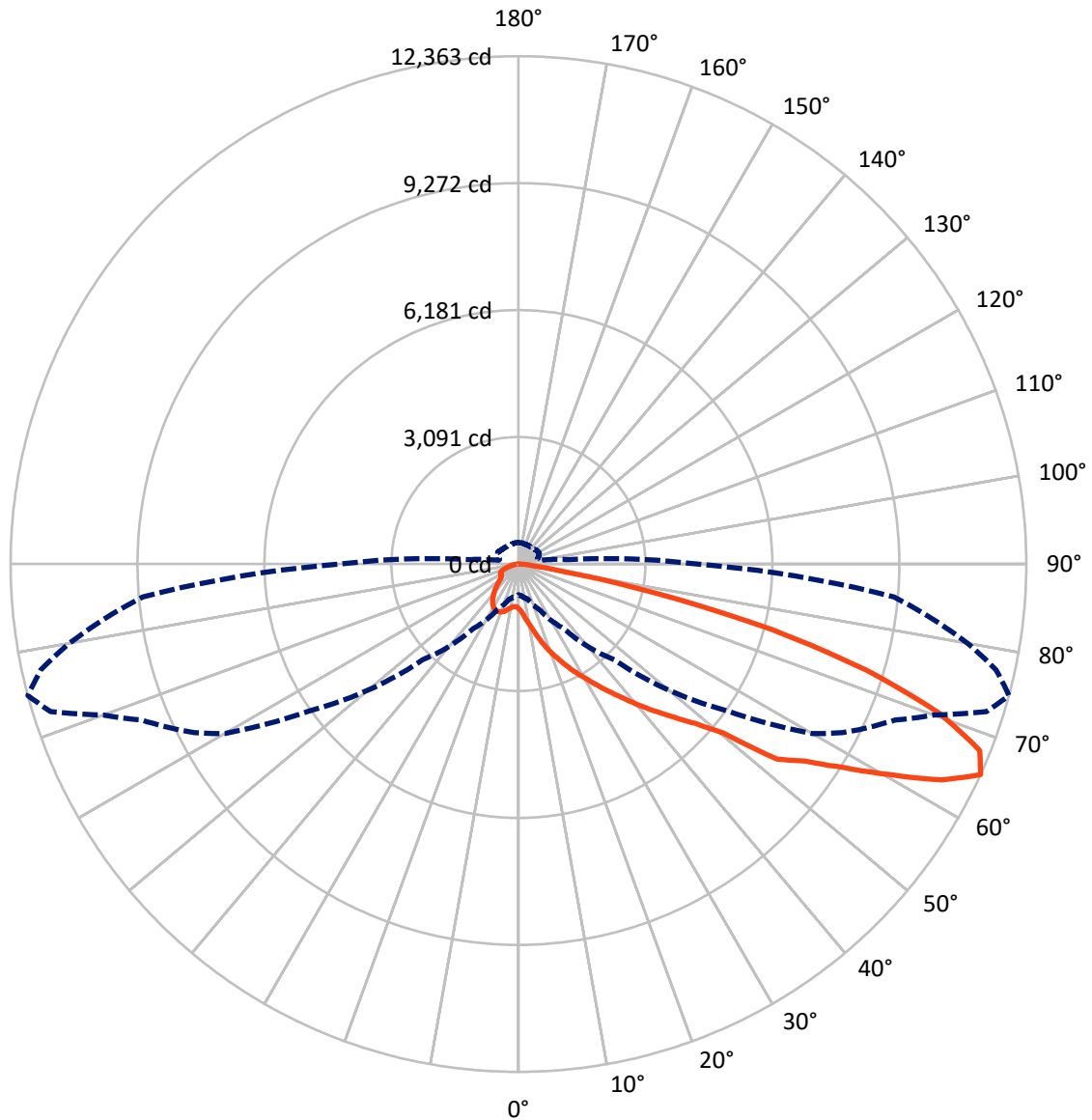
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.8 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
House Side	Lumens	1879.4	0.0	1879.4
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	10627.6	0.0	10627.6
	% Fixture	85.0	0.0	85.0
Total	Lumens	12507.0	0.0	12507.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.9	1.0
10°-20°	488.6	3.9
20°-30°	986.1	7.9
30°-40°	1674.7	13.4
40°-50°	2335.8	18.7
50°-60°	2862.8	22.9
60°-70°	2693.5	21.5
70°-80°	1181.1	9.4
80°-90°	156.3	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°	12507.0	100.0
0°-180°	12507.0	100.0

Coefficient of Utilization



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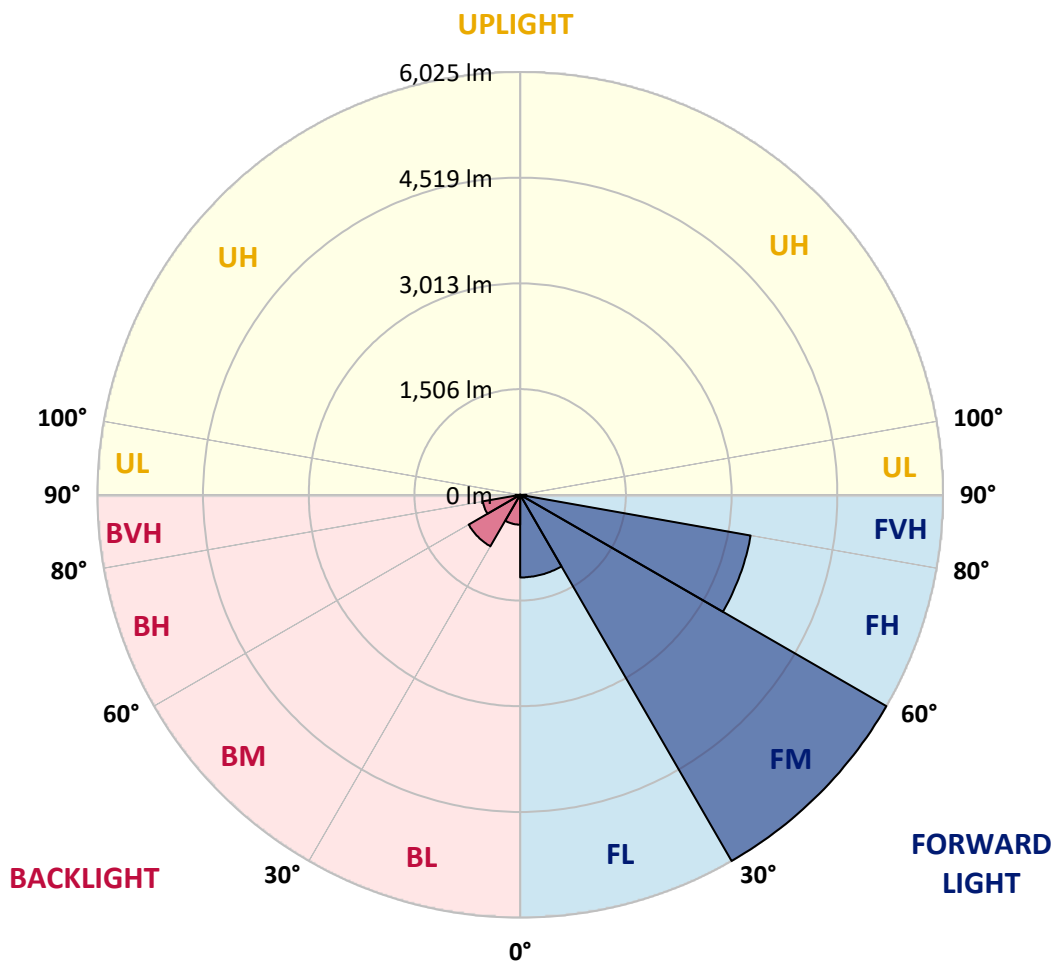
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1177.3	9.4			
FM	(30°-60°)	6025.3	48.2			
FH	(60°-80°)	3334.5	26.7			G2/5000
FVH	(80°-90°)	90.6	0.7			G1/100
BL	(0°-30°)	425.4	3.4	B1/500		
BM	(30°-60°)	848.1	6.8	B1/1000		
BH	(60°-80°)	540.2	4.3	B2/1000		G2/1000
BVH	(80°-90°)	65.7	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°	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7
2.5°	1364.5	1348.6	1350.2	1327.9	1295.3	1259.5	1230.1	1214.1	1200.6	1196.6	1174.4
5°	1784.6	1764.7	1757.6	1706.6	1630.3	1539.6	1449.6	1414.6	1386.0	1368.5	1325.5
7.5°	2128.3	2118.0	2108.4	2061.5	1985.9	1869.7	1724.9	1673.2	1625.5	1573.0	1521.3
10°	2362.2	2358.3	2354.3	2321.7	2258.8	2157.8	2001.8	1945.3	1885.7	1818.8	1751.2
12.5°	2538.9	2538.9	2542.1	2515.0	2476.8	2398.8	2257.2	2204.7	2144.2	2074.2	1997.0
15°	2657.4	2660.6	2677.3	2685.3	2665.4	2615.3	2491.1	2445.0	2387.7	2318.5	2242.1
17.5°	2736.2	2742.6	2767.2	2793.5	2818.9	2801.4	2709.1	2666.2	2614.5	2550.8	2479.2
20°	2919.2	2911.2	2912.0	2904.1	2941.5	2955.0	2904.1	2868.3	2826.9	2768.8	2703.6
22.5°	3303.5	3288.4	3249.4	3149.9	3104.6	3099.8	3069.6	3050.5	3018.6	2982.0	2916.8
25°	3804.7	3787.2	3710.0	3546.1	3410.9	3286.0	3230.3	3218.3	3197.7	3173.0	3126.1
27.5°	4322.7	4303.6	4204.1	3997.3	3820.6	3568.4	3395.0	3379.1	3360.0	3349.6	3327.3
30°	4778.6	4757.9	4660.0	4450.0	4236.8	3936.0	3617.0	3561.3	3528.6	3531.8	3519.1
32.5°	5178.8	5160.5	5050.7	4836.7	4620.3	4328.3	3905.0	3818.3	3745.1	3718.0	3727.6
35°	5514.5	5497.8	5377.7	5162.1	4944.1	4701.4	4275.7	4145.3	4025.9	3951.1	3942.4
37.5°	5711.9	5702.3	5618.0	5435.0	5218.6	5040.3	4691.1	4546.3	4370.4	4261.4	4213.7
40°	5700.7	5711.1	5696.7	5614.0	5446.1	5316.4	5123.9	4980.7	4808.8	4646.5	4549.4
42.5°	5538.4	5552.7	5617.2	5660.1	5614.8	5536.0	5501.8	5395.2	5240.8	5069.0	4934.5
45°	5315.6	5328.4	5411.9	5567.1	5696.7	5719.0	5832.8	5779.5	5649.0	5502.6	5354.6
47.5°	4974.3	4999.0	5096.0	5342.7	5651.4	5866.2	6110.5	6135.1	6059.6	5938.6	5800.2
50°	4480.2	4512.8	4648.9	4999.8	5479.5	6017.4	6523.4	6617.3	6587.1	6464.5	6324.5
52.5°	3974.2	4006.8	4188.2	4561.4	5202.7	6079.4	6930.0	7170.3	7343.7	7470.2	7494.9
55°	3447.5	3484.1	3683.0	4112.6	4833.5	6000.7	7220.4	7493.3	7669.1	7801.2	7854.5
57.5°	2853.1	2894.5	3087.1	3521.5	4311.5	5684.0	7543.4	7930.1	8191.9	8395.5	8510.1
60°	2171.3	2223.0	2422.7	2860.3	3625.7	5077.7	7687.4	8259.5	8675.6	8981.1	9162.5
62.5°	1376.4	1429.0	1636.6	2090.9	2845.2	4249.5	7280.1	8114.7	8824.4	9276.3	9608.9
65°	751.1	774.2	889.5	1231.6	1918.3	3297.1	6247.3	7231.5	8253.9	8894.4	9405.2
67.5°	563.3	566.5	578.4	662.0	1021.6	2226.2	4884.4	5785.9	6921.2	7745.5	8355.8
70°	493.3	493.3	494.9	495.7	554.6	1206.2	3309.0	4138.9	5179.6	6013.4	6771.7
72.5°	442.4	437.6	436.0	426.5	434.4	618.2	1801.3	2546.8	3424.4	4360.1	5067.4
75°	381.9	381.1	381.1	371.6	376.3	435.2	781.3	1222.1	1902.4	2773.6	3469.8
77.5°	330.2	324.6	325.4	319.8	335.0	333.4	370.8	503.6	828.3	1456.8	2034.4
80°	272.1	268.1	270.5	267.3	291.2	246.6	249.8	307.9	411.3	638.9	900.7
82.5°	201.3	202.9	218.0	216.4	245.1	166.3	183.0	229.9	276.9	318.3	346.1
85°	117.8	120.1	156.7	164.7	179.8	87.5	112.2	136.8	154.4	171.1	178.2
87.5°	12.7	16.7	87.5	89.9	80.4	26.3	45.4	57.3	61.3	65.2	57.3
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°	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7
2.5°	1167.2	1156.9	1145.7	1139.3	1128.2	1118.7	1101.2	1086.8	1070.9	1059.8	1055.0
5°	1304.0	1279.4	1253.1	1234.0	1210.2	1189.5	1149.7	1102.0	1086.8	1055.0	1047.1
7.5°	1482.3	1437.7	1393.2	1356.6	1315.2	1281.0	1214.1	1128.2	1117.1	1066.2	1055.0
10°	1691.5	1626.3	1560.2	1503.8	1443.3	1390.8	1292.1	1171.2	1159.2	1094.0	1082.9
12.5°	1925.4	1845.9	1760.7	1676.4	1604.8	1530.8	1396.3	1238.0	1218.9	1141.7	1126.6
15°	2166.5	2080.6	1981.9	1880.1	1791.8	1693.9	1524.4	1325.5	1290.5	1199.8	1179.1
17.5°	2404.4	2311.3	2207.9	2094.1	1990.7	1873.7	1662.9	1423.4	1362.9	1257.1	1230.8
20°	2634.3	2539.7	2430.7	2319.3	2190.4	2056.7	1804.5	1519.7	1427.4	1304.8	1270.6
22.5°	2843.6	2762.4	2653.4	2525.3	2394.9	2244.5	1948.5	1615.9	1483.9	1341.4	1297.7
25°	3064.0	2990.0	2881.8	2758.5	2606.5	2439.4	2097.3	1707.4	1529.2	1361.3	1307.2
27.5°	3286.8	3223.1	3121.3	2991.6	2828.5	2643.1	2248.5	1791.8	1565.8	1367.7	1302.5
30°	3524.7	3475.3	3381.4	3236.6	3071.9	2866.7	2413.2	1874.5	1588.9	1358.9	1281.0
32.5°	3749.8	3748.2	3664.7	3514.3	3336.9	3110.9	2586.6	1958.1	1600.8	1334.3	1243.6
35°	3983.7	4016.4	3953.5	3810.3	3623.3	3372.7	2778.4	2047.2	1601.6	1290.5	1195.0
37.5°	4249.5	4307.6	4279.7	4143.7	3947.1	3671.1	3003.5	2147.4	1596.8	1230.1	1124.2
40°	4551.8	4631.4	4630.6	4516.0	4306.0	4005.2	3265.3	2259.6	1585.7	1154.5	1040.7
42.5°	4897.9	4992.6	5018.9	4905.9	4693.5	4370.4	3565.2	2382.9	1568.2	1079.7	952.4
45°	5294.2	5377.7	5427.0	5322.0	5108.8	4768.2	3909.8	2523.0	1546.7	983.4	851.3
47.5°	5718.2	5815.3	5889.3	5799.4	5571.8	5221.8	4317.9	2703.6	1538.8	873.6	742.3
50°	6244.1	6344.4	6504.3	6463.7	6338.8	6057.2	5181.2	3130.0	1541.9	769.4	650.8
52.5°	7549.0	7778.9	7981.0	7891.1	7594.3	7111.4	5882.9	3367.1	1475.1	684.2	587.2
55°	7942.8	8203.8	8502.2	8464.8	8179.9	7693.0	6437.5	3565.2	1410.7	622.2	545.8
57.5°	8631.8	8939.8	9356.7	9348.7	8999.4	8451.2	7151.2	3802.3	1382.8	586.4	525.1
60°	9361.4	9753.7	10329.7	10419.6	10040.1	9469.6	7994.5	4093.5	1386.8	566.5	513.2
62.5°	9894.5	10469.8	11307.6	11576.5	11129.3	10500.8	8869.7	4384.7	1362.9	543.4	498.9
65°	9927.1	10755.4	11944.1	12362.6	11909.9	11102.3	9178.4	4327.5	1219.7	512.4	475.8
67.5°	9131.5	10210.4	11654.5	12113.5	11650.5	10731.5	8637.4	3783.2	991.4	458.3	436.0
70°	7605.5	8857.8	10356.8	10868.4	10485.7	9555.6	7517.2	3021.8	740.7	386.7	376.3
72.5°	5877.4	7045.3	8406.7	8880.1	8587.3	7769.4	5929.1	2202.3	529.1	313.5	305.5
75°	4201.7	5196.3	6184.5	6365.1	6076.3	5325.2	3846.9	1375.7	370.8	257.0	245.9
77.5°	2601.7	3248.6	3603.4	3371.1	3002.7	2495.9	1565.8	679.5	246.6	209.3	198.1
80°	1154.5	1355.0	1265.1	1127.4	890.3	732.0	478.2	301.5	159.1	161.5	155.1
82.5°	388.3	410.5	399.4	397.0	358.0	313.5	202.9	130.5	89.1	103.4	101.0
85°	189.4	198.1	198.9	206.1	179.0	139.2	54.9	51.7	38.2	55.7	58.1
87.5°	57.3	58.1	52.5	57.3	46.1	31.8	10.3	14.3	7.2	13.5	13.5
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°	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7
2.5°	1046.3	1043.1	1037.5	1031.1	1029.6	1021.6	1019.2	1015.2	1012.8	1008.9	1005.7
5°	1036.7	1031.1	1024.8	1017.6	1017.6	1006.5	1001.7	996.9	996.9	989.8	986.6
7.5°	1046.3	1039.1	1031.9	1025.6	1028.0	1015.2	1010.5	1005.7	1004.9	997.7	994.5
10°	1073.3	1066.2	1057.4	1051.0	1048.6	1038.3	1032.7	1025.6	1020.8	1016.0	1011.3
12.5°	1114.7	1105.1	1094.0	1080.5	1074.9	1066.2	1057.4	1047.9	1036.7	1031.9	1024.8
15°	1164.0	1148.1	1133.0	1116.3	1101.2	1092.4	1080.5	1065.4	1050.2	1043.9	1034.3
17.5°	1204.6	1187.9	1166.4	1146.5	1119.5	1112.3	1095.6	1077.3	1052.6	1050.2	1035.9
20°	1238.8	1213.3	1187.1	1163.2	1121.8	1117.9	1097.2	1075.7	1040.7	1040.7	1023.2
22.5°	1257.9	1222.9	1191.9	1160.0	1108.3	1105.1	1081.3	1055.8	1012.8	1014.4	993.0
25°	1261.1	1218.9	1179.9	1141.7	1082.1	1076.5	1046.3	1018.4	971.5	968.3	946.0
27.5°	1248.4	1199.0	1153.7	1107.5	1043.1	1031.1	997.7	964.3	918.2	910.2	886.3
30°	1218.9	1160.8	1109.9	1056.6	989.0	969.9	934.9	900.7	853.7	843.4	821.1
32.5°	1172.0	1105.9	1049.4	996.1	921.3	897.5	862.5	828.3	782.9	774.9	754.3
35°	1109.9	1035.9	976.2	919.8	845.0	820.3	786.9	756.6	715.3	712.1	697.8
37.5°	1031.9	954.8	891.1	837.0	766.2	753.5	719.3	697.0	662.8	665.9	658.8
40°	943.6	864.9	804.4	756.6	695.4	684.2	663.6	646.9	617.4	626.2	627.0
42.5°	854.5	775.7	720.8	677.9	625.4	618.2	603.9	594.3	572.1	589.6	596.7
45°	753.5	680.3	633.3	600.7	561.7	561.7	554.6	553.8	538.6	563.3	570.5
47.5°	655.6	598.3	565.7	545.8	518.8	531.5	529.1	535.5	524.3	549.8	556.1
50°	581.6	541.8	521.9	512.4	493.3	513.2	518.0	526.7	517.2	539.4	544.2
52.5°	534.7	508.4	497.3	494.9	481.4	506.0	514.0	521.9	510.8	531.5	530.7
55°	508.4	490.9	486.9	491.7	481.4	505.2	513.2	518.8	509.2	523.5	522.7
57.5°	498.9	489.3	491.7	498.9	491.7	511.6	515.6	521.9	512.4	518.8	521.9
60°	498.1	498.1	507.6	517.2	512.4	526.7	529.1	528.3	519.5	520.3	521.9
62.5°	493.3	505.2	521.1	536.3	534.7	552.2	553.8	543.4	536.3	528.3	525.9
65°	478.2	498.1	521.1	541.8	545.0	572.1	575.2	564.9	560.1	546.6	536.3
67.5°	444.8	470.2	497.3	522.7	528.3	564.9	572.1	576.0	578.4	569.7	556.1
70°	388.3	414.5	442.4	471.8	479.8	520.3	535.5	553.8	568.1	580.8	576.0
72.5°	315.9	339.7	363.6	390.7	402.6	444.8	464.7	496.5	518.8	551.4	564.9
75°	250.6	264.9	279.3	296.0	305.5	346.9	371.6	409.8	440.0	485.3	515.6
77.5°	197.3	204.5	211.6	218.8	222.8	245.9	265.7	303.9	338.9	396.2	440.8
80°	152.0	155.9	156.7	159.1	157.5	168.7	175.8	198.9	229.1	285.6	338.1
82.5°	97.9	101.0	102.6	106.6	98.7	113.0	117.8	120.1	136.1	177.4	214.8
85°	54.9	55.7	56.5	58.1	46.9	61.3	62.1	58.1	56.5	73.2	82.7
87.5°	13.5	12.7	13.5	13.5	5.6	12.7	12.7	8.8	6.4	11.9	9.5
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):

	135°	145°	155°	165°	175°	180°
0°	1083.7	1083.7	1083.7	1083.7	1083.7	1083.7
2.5°	998.5	996.9	997.7	993.7	992.2	993.0
5°	982.6	979.4	979.4	977.0	973.9	973.9
7.5°	989.8	983.4	981.0	976.2	971.5	972.3
10°	1000.9	989.8	981.8	974.7	969.1	969.1
12.5°	1008.1	988.2	976.2	966.7	960.3	960.3
15°	1009.7	979.4	961.9	951.6	945.2	945.2
17.5°	1000.1	961.9	939.6	926.1	919.0	920.5
20°	976.2	929.3	903.0	888.7	881.6	882.4
22.5°	938.8	884.7	854.5	837.8	830.6	830.6
25°	887.9	829.1	796.4	782.9	776.5	776.5
27.5°	829.8	769.4	740.7	730.4	726.4	726.4
30°	764.6	714.5	693.8	686.6	680.3	680.3
32.5°	709.7	673.9	666.7	657.2	640.5	639.7
35°	665.9	662.0	656.4	627.8	603.9	600.7
37.5°	642.1	665.9	630.9	581.6	562.5	561.7
40°	629.3	651.6	591.2	567.3	564.9	564.9
42.5°	599.1	615.0	588.8	575.2	575.2	576.0
45°	567.3	580.8	594.3	582.4	586.4	587.2
47.5°	545.0	572.1	594.3	584.0	592.0	596.7
50°	524.3	564.1	582.4	582.4	591.2	592.0
52.5°	519.5	553.0	571.3	580.0	580.8	576.8
55°	520.3	544.2	562.5	573.7	568.9	568.9
57.5°	519.5	539.4	555.4	559.3	561.7	561.7
60°	520.3	533.1	545.8	544.2	552.2	552.2
62.5°	522.7	524.3	530.7	529.1	541.0	541.0
65°	528.3	513.2	509.2	510.8	525.1	524.3
67.5°	538.6	498.1	485.3	486.1	506.8	503.6
70°	553.8	477.4	458.3	453.5	488.5	483.0
72.5°	558.5	453.5	423.3	418.5	439.2	423.3
75°	536.3	434.4	385.9	370.0	361.2	356.4
77.5°	478.2	422.5	346.9	313.5	300.0	296.8
80°	396.2	397.8	296.0	256.2	297.6	296.8
82.5°	299.2	343.7	237.1	222.0	215.6	179.8
85°	144.8	258.6	182.2	152.8	91.5	86.7
87.5°	12.7	108.2	105.0	68.4	31.0	29.4
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)