

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: P197252

Luminaire Tested: **NAV-AF-02-D-UNV-T2R-8030-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197252
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-8030-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 80 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: 11426 lumens
Efficiency: N/A
Efficacy: 88.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G2

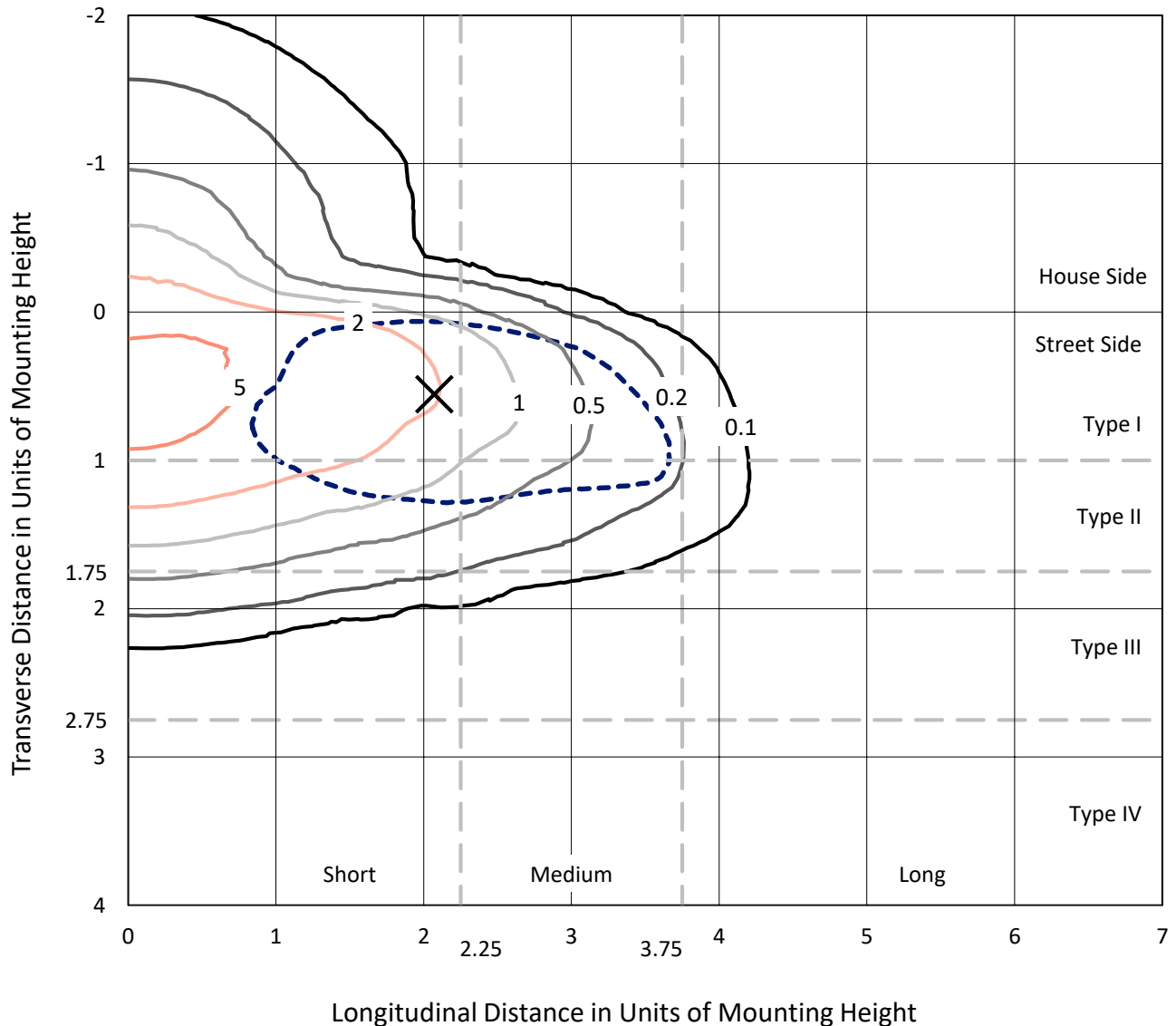
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

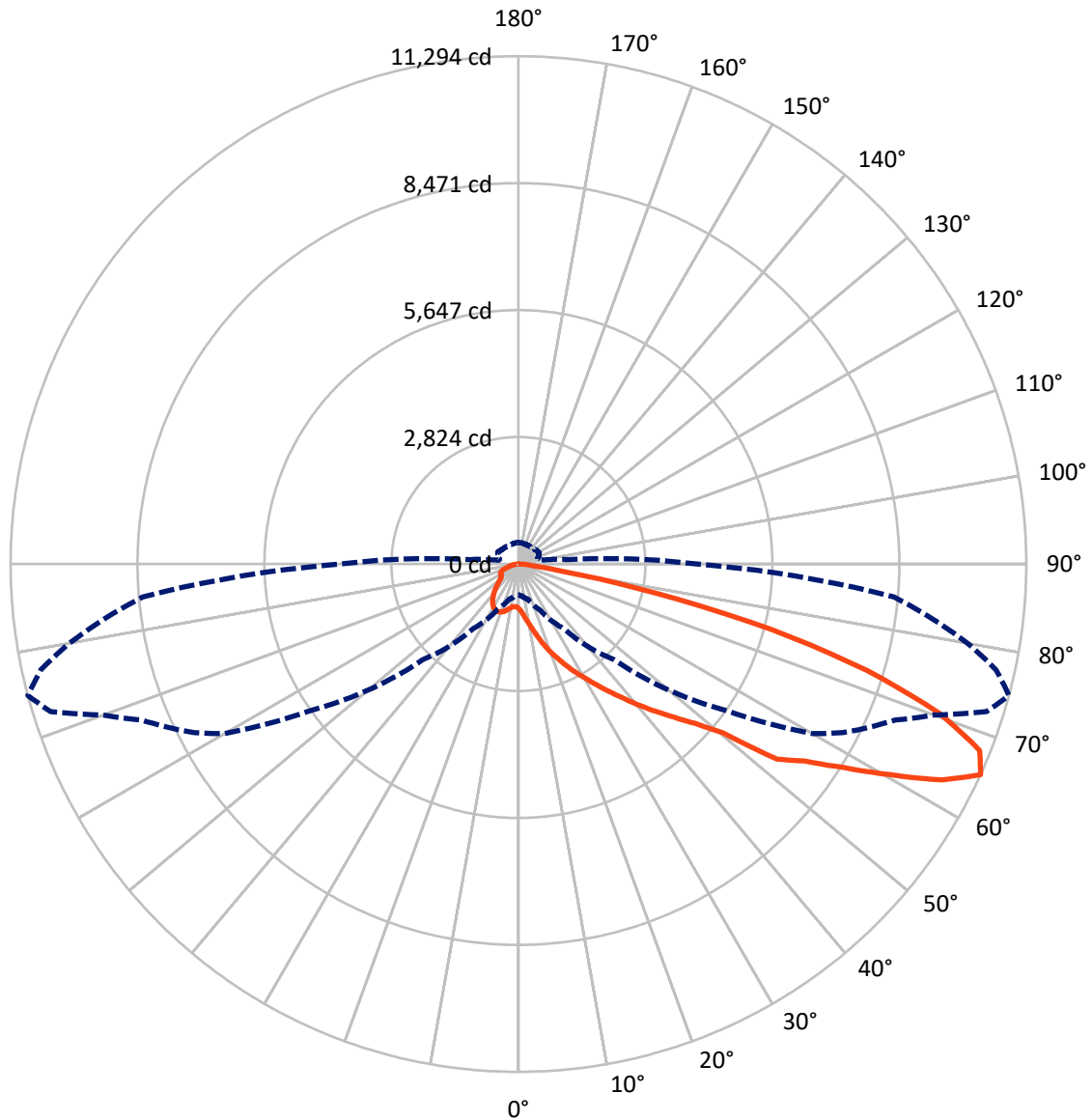
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.1 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
House Side	Lumens	1716.9	0.0	1716.9
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	9709.1	0.0	9709.1
	% Fixture	85.0	0.0	85.0
Total	Lumens	11426.0	0.0	11426.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.9	1.0
10°-20°	446.4	3.9
20°-30°	900.9	7.9
30°-40°	1530.0	13.4
40°-50°	2133.9	18.7
50°-60°	2615.4	22.9
60°-70°	2460.7	21.5
70°-80°	1079.0	9.4
80°-90°	142.8	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°	11426.0	100.0
0°-180°	11426.0	100.0

Coefficient of Utilization



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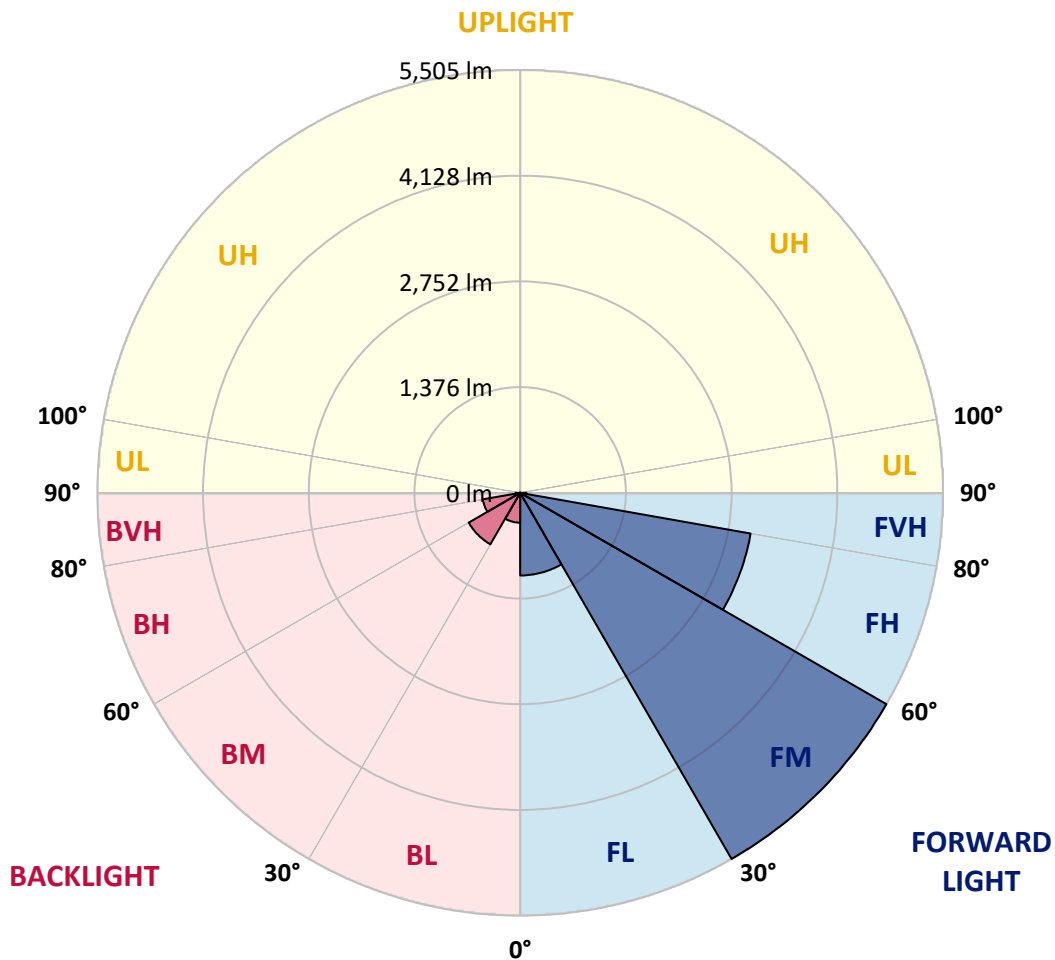
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1075.5	9.4			
FM	(30°-60°)	5504.5	48.2			
FH	(60°-80°)	3046.3	26.7			G2/5000
FVH	(80°-90°)	82.8	0.7			G1/100
BL	(0°-30°)	388.7	3.4	B1/500		
BM	(30°-60°)	774.8	6.8	B1/1000		
BH	(60°-80°)	493.5	4.3	B1/500		G1/500
BVH	(80°-90°)	60.0	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-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°	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0
2.5°	1246.6	1232.0	1233.5	1213.1	1183.3	1150.6	1123.7	1109.2	1096.8	1093.2	1072.9
5°	1630.4	1612.2	1605.6	1559.1	1489.4	1406.5	1324.4	1292.4	1266.2	1250.2	1211.0
7.5°	1944.4	1934.9	1926.2	1883.3	1814.3	1708.1	1575.8	1528.6	1485.0	1437.0	1389.8
10°	2158.1	2154.4	2150.8	2121.0	2063.6	1971.3	1828.8	1777.2	1722.7	1661.6	1599.8
12.5°	2319.4	2319.4	2322.3	2297.6	2262.7	2191.5	2062.1	2014.1	1958.9	1894.9	1824.4
15°	2427.7	2430.6	2445.9	2453.2	2435.0	2389.2	2275.8	2233.7	2181.3	2118.1	2048.3
17.5°	2499.7	2505.5	2528.0	2552.0	2575.3	2559.3	2475.0	2435.7	2388.5	2330.3	2264.9
20°	2666.9	2659.6	2660.3	2653.1	2687.2	2699.6	2653.1	2620.4	2582.6	2529.5	2469.9
22.5°	3018.0	3004.1	2968.5	2877.7	2836.2	2831.9	2804.3	2786.8	2757.7	2724.3	2664.7
25°	3475.9	3459.9	3389.4	3239.6	3116.1	3002.0	2951.1	2940.2	2921.3	2898.7	2855.9
27.5°	3949.1	3931.6	3840.8	3651.8	3490.4	3260.0	3101.5	3087.0	3069.6	3060.1	3039.8
30°	4365.6	4346.7	4257.3	4065.4	3870.6	3595.8	3304.3	3253.5	3223.7	3226.6	3214.9
32.5°	4731.2	4714.5	4614.2	4418.6	4220.9	3954.2	3567.5	3488.2	3421.4	3396.6	3405.4
35°	5037.9	5022.7	4912.9	4715.9	4516.8	4295.1	3906.2	3787.0	3677.9	3609.6	3601.6
37.5°	5218.2	5209.5	5132.4	4965.2	4767.5	4604.7	4285.6	4153.3	3992.7	3893.1	3849.5
40°	5208.0	5217.5	5204.4	5128.8	4975.4	4856.9	4681.0	4550.2	4393.2	4244.9	4156.2
42.5°	5059.7	5072.8	5131.7	5170.9	5129.5	5057.5	5026.3	4928.9	4787.9	4630.9	4508.0
45°	4856.2	4867.8	4944.2	5085.9	5204.4	5224.7	5328.7	5280.0	5160.8	5027.0	4891.8
47.5°	4544.4	4566.9	4655.6	4880.9	5162.9	5359.2	5582.3	5604.9	5535.8	5425.3	5298.9
50°	4093.0	4122.8	4247.1	4567.6	5005.9	5497.3	5959.6	6045.4	6017.7	5905.8	5777.9
52.5°	3630.7	3660.5	3826.2	4167.1	4753.0	5554.0	6331.0	6550.5	6709.0	6824.6	6847.1
55°	3149.5	3183.0	3364.7	3757.2	4415.7	5482.0	6596.3	6845.6	7006.3	7126.9	7175.6
57.5°	2606.5	2644.3	2820.2	3217.1	3938.9	5192.7	6891.4	7244.7	7483.8	7669.9	7774.6
60°	1983.6	2030.9	2213.3	2613.1	3312.3	4638.9	7023.0	7545.6	7925.8	8204.9	8370.6
62.5°	1257.5	1305.5	1495.2	1910.2	2599.3	3882.2	6650.8	7413.3	8061.7	8474.5	8778.4
65°	686.2	707.2	812.6	1125.2	1752.5	3012.1	5707.4	6606.5	7540.5	8125.6	8592.3
67.5°	514.6	517.5	528.4	604.8	933.3	2033.8	4462.2	5285.8	6323.0	7076.1	7633.6
70°	450.7	450.7	452.1	452.8	506.6	1101.9	3023.0	3781.2	4731.9	5493.7	6186.4
72.5°	404.1	399.8	398.3	389.6	396.9	564.8	1645.6	2326.7	3128.4	3983.2	4629.4
75°	348.9	348.2	348.2	339.4	343.8	397.6	713.8	1116.5	1737.9	2533.9	3169.9
77.5°	301.6	296.6	297.3	292.2	306.0	304.6	338.7	460.1	756.7	1330.9	1858.6
80°	248.6	245.0	247.1	244.2	266.0	225.3	228.2	281.3	375.8	583.7	822.8
82.5°	183.9	185.4	199.2	197.7	223.9	151.9	167.2	210.1	252.9	290.7	316.2
85°	107.6	109.8	143.2	150.5	164.3	80.0	102.5	125.0	141.0	156.3	162.8
87.5°	11.6	15.3	80.0	82.1	73.4	24.0	41.4	52.3	56.0	59.6	52.3
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°	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0
2.5°	1066.3	1056.9	1046.7	1040.9	1030.7	1022.0	1006.0	992.9	978.4	968.2	963.8
5°	1191.3	1168.8	1144.8	1127.4	1105.6	1086.7	1050.3	1006.7	992.9	963.8	956.6
7.5°	1354.2	1313.4	1272.7	1239.3	1201.5	1170.3	1109.2	1030.7	1020.5	974.0	963.8
10°	1545.3	1485.7	1425.4	1373.8	1318.5	1270.6	1180.4	1069.9	1059.0	999.4	989.3
12.5°	1759.0	1686.3	1608.6	1531.5	1466.1	1398.5	1275.7	1131.0	1113.6	1043.1	1029.2
15°	1979.3	1900.8	1810.6	1717.6	1636.9	1547.5	1392.7	1211.0	1179.0	1096.1	1077.2
17.5°	2196.6	2111.5	2017.1	1913.1	1818.6	1711.8	1519.2	1300.4	1245.1	1148.5	1124.5
20°	2406.7	2320.2	2220.6	2118.8	2001.1	1879.0	1648.5	1388.3	1304.0	1192.1	1160.8
22.5°	2597.8	2523.7	2424.1	2307.1	2187.9	2050.5	1780.1	1476.3	1355.6	1225.5	1185.5
25°	2799.2	2731.6	2632.7	2520.0	2381.2	2228.6	1916.0	1559.9	1397.0	1243.7	1194.2
27.5°	3002.7	2944.5	2851.5	2733.0	2584.0	2414.7	2054.1	1636.9	1430.5	1249.5	1189.9
30°	3220.0	3175.0	3089.2	2956.9	2806.4	2618.9	2204.6	1712.5	1451.6	1241.5	1170.3
32.5°	3425.7	3424.3	3347.9	3210.6	3048.5	2842.1	2363.0	1788.8	1462.5	1219.0	1136.1
35°	3639.4	3669.2	3611.8	3481.0	3310.2	3081.2	2538.2	1870.2	1463.2	1179.0	1091.8
37.5°	3882.2	3935.3	3909.8	3785.5	3606.0	3353.8	2743.9	1961.8	1458.8	1123.7	1027.1
40°	4158.4	4231.1	4230.4	4125.7	3933.8	3659.0	2983.1	2064.3	1448.6	1054.7	950.7
42.5°	4474.6	4561.1	4585.1	4481.9	4287.8	3992.7	3257.1	2177.0	1432.7	986.4	870.1
45°	4836.6	4912.9	4958.0	4862.0	4667.2	4356.1	3571.8	2304.9	1413.0	898.4	777.7
47.5°	5224.0	5312.7	5380.3	5298.1	5090.3	4770.4	3944.7	2469.9	1405.8	798.1	678.2
50°	5704.5	5796.0	5942.1	5905.1	5791.0	5533.6	4733.4	2859.5	1408.7	702.9	594.6
52.5°	6896.5	7106.6	7291.2	7209.1	6937.9	6496.7	5374.5	3076.1	1347.6	625.1	536.4
55°	7256.3	7494.7	7767.3	7733.1	7472.9	7028.1	5881.1	3257.1	1288.7	568.4	498.6
57.5°	7885.8	8167.1	8548.0	8540.7	8221.6	7720.8	6533.1	3473.7	1263.3	535.7	479.7
60°	8552.3	8910.7	9436.9	9519.1	9172.3	8651.2	7303.6	3739.7	1266.9	517.5	468.8
62.5°	9039.3	9564.8	10330.2	10575.9	10167.4	9593.2	8103.1	4005.8	1245.1	496.5	455.7
65°	9069.1	9825.8	10911.7	11294.1	10880.5	10142.7	8385.1	3953.4	1114.3	468.1	434.7
67.5°	8342.3	9327.9	10647.1	11066.6	10643.5	9804.0	7890.9	3456.3	905.7	418.7	398.3
70°	6948.1	8092.2	9461.6	9929.0	9579.4	8729.7	6867.4	2760.6	676.7	353.3	343.8
72.5°	5369.4	6436.4	7680.1	8112.6	7845.1	7097.9	5416.6	2012.0	483.4	286.4	279.1
75°	3838.6	4747.2	5649.9	5814.9	5551.1	4864.9	3514.4	1256.8	338.7	234.8	224.6
77.5°	2376.9	2967.8	3292.0	3079.7	2743.2	2280.2	1430.5	620.7	225.3	191.2	181.0
80°	1054.7	1237.9	1155.7	1030.0	813.4	668.7	436.8	275.5	145.4	147.6	141.7
82.5°	354.7	375.1	364.9	362.7	327.1	286.4	185.4	119.2	81.4	94.5	92.3
85°	173.0	181.0	181.7	188.3	163.5	127.2	50.2	47.2	34.9	50.9	53.1
87.5°	52.3	53.1	48.0	52.3	42.2	29.1	9.4	13.1	6.5	12.4	12.4
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0
2.5°	955.8	952.9	947.8	942.0	940.6	933.3	931.1	927.5	925.3	921.7	918.8
5°	947.1	942.0	936.2	929.7	929.7	919.5	915.1	910.8	910.8	904.2	901.3
7.5°	955.8	949.3	942.7	936.9	939.1	927.5	923.1	918.8	918.0	911.5	908.6
10°	980.5	974.0	966.0	960.2	958.0	948.6	943.5	936.9	932.6	928.2	923.8
12.5°	1018.3	1009.6	999.4	987.1	982.0	974.0	966.0	957.3	947.1	942.7	936.2
15°	1063.4	1048.9	1035.1	1019.8	1006.0	998.0	987.1	973.3	959.5	953.6	944.9
17.5°	1100.5	1085.2	1065.6	1047.4	1022.7	1016.2	1000.9	984.2	961.6	959.5	946.4
20°	1131.7	1108.5	1084.5	1062.7	1024.9	1021.2	1002.3	982.7	950.7	950.7	934.8
22.5°	1149.2	1117.2	1088.8	1059.8	1012.5	1009.6	987.8	964.6	925.3	926.8	907.1
25°	1152.1	1113.6	1077.9	1043.1	988.5	983.5	955.8	930.4	887.5	884.6	864.2
27.5°	1140.5	1095.4	1054.0	1011.8	952.9	942.0	911.5	881.0	838.8	831.5	809.7
30°	1113.6	1060.5	1014.0	965.3	903.5	886.1	854.1	822.8	779.9	770.5	750.1
32.5°	1070.7	1010.3	958.7	910.0	841.7	819.9	787.9	756.7	715.2	708.0	689.1
35°	1014.0	946.4	891.9	840.3	771.9	749.4	718.9	691.3	653.5	650.5	637.5
37.5°	942.7	872.2	814.1	764.7	700.0	688.3	657.1	636.7	605.5	608.4	601.8
40°	862.1	790.1	734.9	691.3	635.3	625.1	606.2	590.9	564.0	572.0	572.8
42.5°	780.7	708.7	658.5	619.3	571.3	564.8	551.7	543.0	522.6	538.6	545.2
45°	688.3	621.5	578.6	548.8	513.2	513.2	506.6	505.9	492.1	514.6	521.2
47.5°	598.9	546.6	516.8	498.6	473.9	485.5	483.4	489.2	479.0	502.3	508.1
50°	531.3	495.0	476.8	468.1	450.7	468.8	473.2	481.2	472.5	492.8	497.2
52.5°	488.5	464.5	454.3	452.1	439.8	462.3	469.6	476.8	466.6	485.5	484.8
55°	464.5	448.5	444.8	449.2	439.8	461.6	468.8	473.9	465.2	478.3	477.6
57.5°	455.7	447.0	449.2	455.7	449.2	467.4	471.0	476.8	468.1	473.9	476.8
60°	455.0	455.0	463.7	472.5	468.1	481.2	483.4	482.6	474.6	475.4	476.8
62.5°	450.7	461.6	476.1	489.9	488.5	504.4	505.9	496.5	489.9	482.6	480.5
65°	436.8	455.0	476.1	495.0	497.9	522.6	525.5	516.1	511.7	499.4	489.9
67.5°	406.3	429.6	454.3	477.6	482.6	516.1	522.6	526.3	528.4	520.4	508.1
70°	354.7	378.7	404.1	431.0	438.3	475.4	489.2	505.9	519.0	530.6	526.3
72.5°	288.6	310.4	332.2	356.9	367.8	406.3	424.5	453.6	473.9	503.7	516.1
75°	229.0	242.0	255.1	270.4	279.1	316.9	339.4	374.3	402.0	443.4	471.0
77.5°	180.3	186.8	193.3	199.9	203.5	224.6	242.8	277.7	309.6	362.0	402.7
80°	138.8	142.5	143.2	145.4	143.9	154.1	160.6	181.7	209.3	260.9	308.9
82.5°	89.4	92.3	93.8	97.4	90.1	103.2	107.6	109.8	124.3	162.1	196.3
85°	50.2	50.9	51.6	53.1	42.9	56.0	56.7	53.1	51.6	66.9	75.6
87.5°	12.4	11.6	12.4	12.4	5.1	11.6	11.6	8.0	5.8	10.9	8.7
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°	990.0	990.0	990.0	990.0	990.0	990.0
2.5°	912.2	910.8	911.5	907.9	906.4	907.1
5°	897.7	894.8	894.8	892.6	889.7	889.7
7.5°	904.2	898.4	896.2	891.9	887.5	888.2
10°	914.4	904.2	897.0	890.4	885.3	885.3
12.5°	920.9	902.8	891.9	883.1	877.3	877.3
15°	922.4	894.8	878.8	869.3	863.5	863.5
17.5°	913.7	878.8	858.4	846.1	839.5	841.0
20°	891.9	849.0	825.0	811.9	805.4	806.1
22.5°	857.7	808.3	780.7	765.4	758.8	758.8
25°	811.2	757.4	727.6	715.2	709.4	709.4
27.5°	758.1	702.9	676.7	667.3	663.6	663.6
30°	698.5	652.7	633.8	627.3	621.5	621.5
32.5°	648.4	615.7	609.1	600.4	585.1	584.4
35°	608.4	604.8	599.7	573.5	551.7	548.8
37.5°	586.6	608.4	576.4	531.3	513.9	513.2
40°	575.0	595.3	540.1	518.3	516.1	516.1
42.5°	547.3	561.9	537.9	525.5	525.5	526.3
45°	518.3	530.6	543.0	532.1	535.7	536.4
47.5°	497.9	522.6	543.0	533.5	540.8	545.2
50°	479.0	515.3	532.1	532.1	540.1	540.8
52.5°	474.6	505.2	521.9	529.9	530.6	527.0
55°	475.4	497.2	513.9	524.1	519.7	519.7
57.5°	474.6	492.8	507.4	511.0	513.2	513.2
60°	475.4	487.0	498.6	497.2	504.4	504.4
62.5°	477.6	479.0	484.8	483.4	494.3	494.3
65°	482.6	468.8	465.2	466.6	479.7	479.0
67.5°	492.1	455.0	443.4	444.1	463.0	460.1
70°	505.9	436.1	418.7	414.3	446.3	441.2
72.5°	510.3	414.3	386.7	382.3	401.2	386.7
75°	489.9	396.9	352.5	338.0	330.0	325.6
77.5°	436.8	386.0	316.9	286.4	274.0	271.1
80°	362.0	363.4	270.4	234.1	271.8	271.1
82.5°	273.3	314.0	216.6	202.8	197.0	164.3
85°	132.3	236.2	166.5	139.6	83.6	79.2
87.5°	11.6	98.9	95.9	62.5	28.3	26.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)