

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: P197246

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197246
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
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 80 CRI, 3000K, 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: 10416 lumens
Efficiency: N/A
Efficacy: 92.2 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

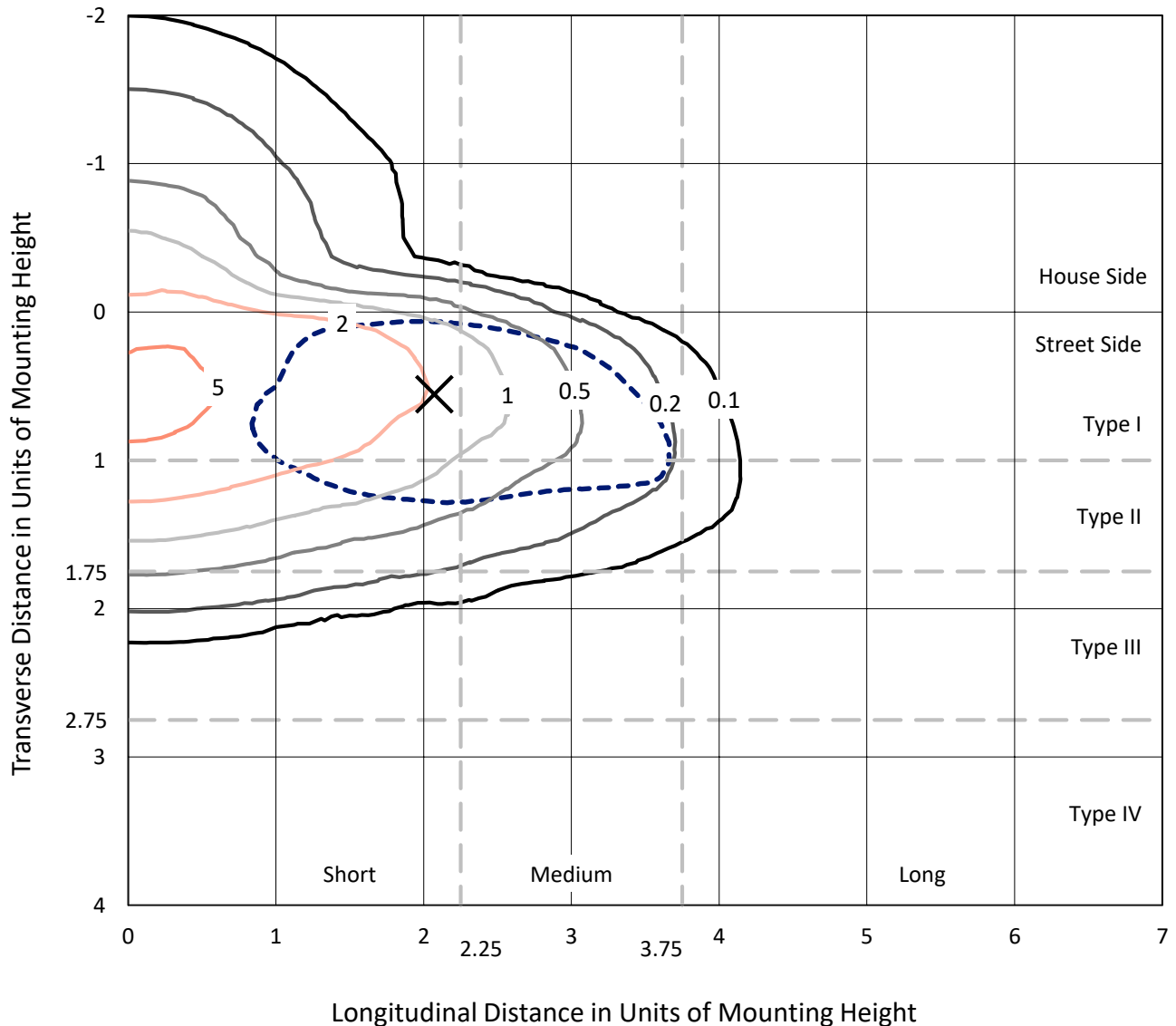
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

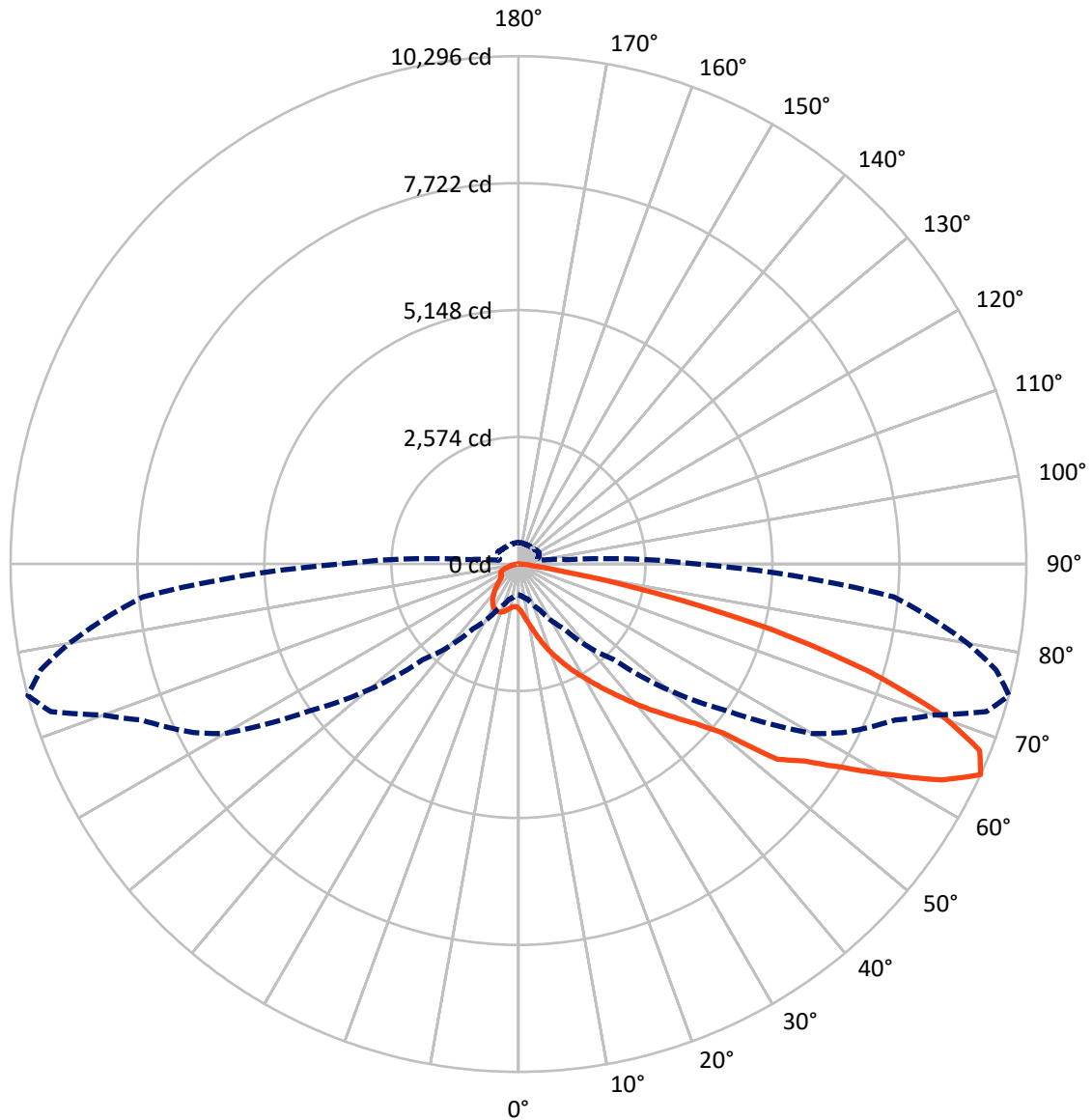
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.5 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	1565.2	0.0	1565.2
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	8850.8	0.0	8850.8
	% Fixture	85.0	0.0	85.0
Total	Lumens	10416.0	0.0	10416.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	106.5	1.0
10°-20°	406.9	3.9
20°-30°	821.3	7.9
30°-40°	1394.7	13.4
40°-50°	1945.3	18.7
50°-60°	2384.2	22.9
60°-70°	2243.2	21.5
70°-80°	983.6	9.4
80°-90°	130.2	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°	10416.0	100.0
0°-180°	10416.0	100.0



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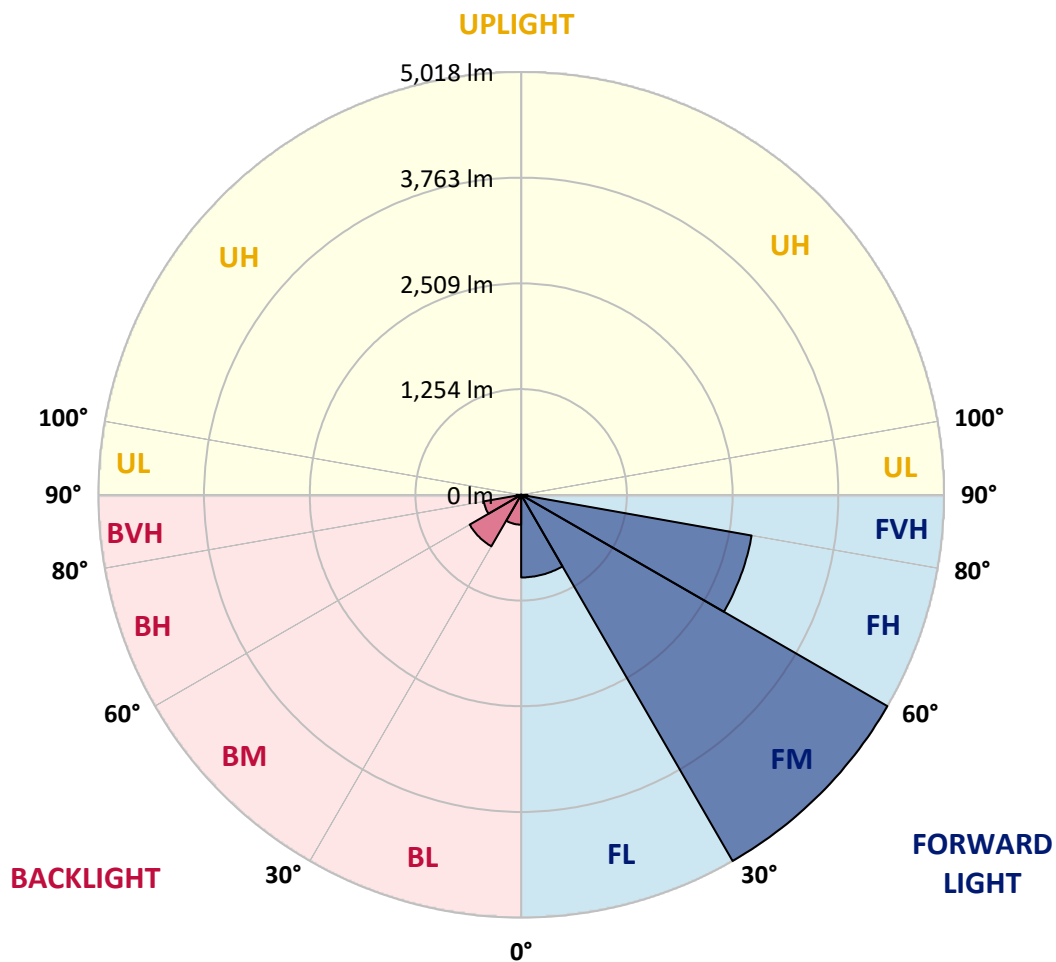
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	980.4	9.4			
FM	(30°-60°)	5018.0	48.2			
FH	(60°-80°)	2777.0	26.7			G2/5000
FVH	(80°-90°)	75.5	0.7			G1/100
BL	(0°-30°)	354.3	3.4	B1/500		
BM	(30°-60°)	706.3	6.8	B1/1000		
BH	(60°-80°)	449.9	4.3	B1/500		G1/500
BVH	(80°-90°)	54.7	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: 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°	902.5	902.5	902.5	902.5	902.5	902.5	902.5	902.5	902.5	902.5	902.5
2.5°	1136.4	1123.1	1124.5	1105.9	1078.7	1048.9	1024.4	1011.2	999.9	996.6	978.0
5°	1486.2	1469.7	1463.7	1421.3	1357.7	1282.2	1207.3	1178.1	1154.3	1139.7	1103.9
7.5°	1772.5	1763.9	1755.9	1716.8	1653.9	1557.1	1436.6	1393.5	1353.7	1310.0	1266.9
10°	1967.3	1964.0	1960.7	1933.5	1881.2	1797.0	1667.1	1620.1	1570.4	1514.7	1458.4
12.5°	2114.4	2114.4	2117.1	2094.5	2062.7	1997.8	1879.8	1836.1	1785.7	1727.4	1663.2
15°	2213.1	2215.8	2229.7	2236.3	2219.8	2178.0	2074.6	2036.2	1988.5	1930.9	1867.3
17.5°	2278.7	2284.0	2304.6	2326.4	2347.6	2333.1	2256.2	2220.4	2177.4	2124.3	2064.7
20°	2431.1	2424.5	2425.2	2418.5	2449.7	2461.0	2418.5	2388.7	2354.3	2305.9	2251.6
22.5°	2751.2	2738.6	2706.1	2623.3	2585.5	2581.6	2556.4	2540.5	2514.0	2483.5	2429.1
25°	3168.6	3154.1	3089.8	2953.3	2840.6	2736.6	2690.2	2680.3	2663.1	2642.5	2603.4
27.5°	3600.0	3584.1	3501.3	3329.0	3181.9	2971.8	2827.4	2814.1	2798.2	2789.6	2771.1
30°	3979.7	3962.4	3880.9	3706.0	3528.4	3278.0	3012.3	2965.9	2938.7	2941.4	2930.7
32.5°	4313.0	4297.7	4206.3	4028.0	3847.8	3604.6	3252.1	3179.9	3118.9	3096.4	3104.4
35°	4592.6	4578.7	4478.6	4299.1	4117.5	3915.4	3560.9	3452.2	3352.8	3290.5	3283.3
37.5°	4756.9	4749.0	4678.7	4526.3	4346.1	4197.7	3906.8	3786.2	3639.7	3549.0	3509.2
40°	4747.6	4756.3	4744.3	4675.4	4535.6	4427.6	4267.2	4148.0	4004.8	3869.7	3788.8
42.5°	4612.5	4624.4	4678.1	4713.8	4676.1	4610.5	4582.0	4493.2	4364.7	4221.5	4109.5
45°	4426.9	4437.5	4507.1	4636.3	4744.3	4762.9	4857.6	4813.2	4704.6	4582.7	4459.4
47.5°	4142.7	4163.2	4244.1	4449.5	4706.6	4885.5	5088.9	5109.4	5046.5	4945.8	4830.5
50°	3731.2	3758.4	3871.7	4163.9	4563.4	5011.4	5432.8	5511.0	5485.8	5383.8	5267.1
52.5°	3309.8	3336.9	3488.0	3798.8	4332.8	5063.0	5771.4	5971.5	6115.9	6221.3	6241.8
55°	2871.1	2901.6	3067.2	3425.1	4025.4	4997.4	6013.2	6240.5	6387.0	6496.9	6541.3
57.5°	2376.1	2410.6	2570.9	2932.7	3590.7	4733.7	6282.3	6604.3	6822.3	6991.9	7087.3
60°	1808.3	1851.3	2017.7	2382.1	3019.5	4228.8	6402.2	6878.6	7225.2	7479.6	7630.7
62.5°	1146.3	1190.1	1363.0	1741.4	2369.5	3539.0	6062.9	6758.0	7349.1	7725.4	8002.4
65°	625.5	644.7	740.8	1025.7	1597.6	2745.9	5202.9	6022.5	6874.0	7407.4	7832.8
67.5°	469.1	471.8	481.7	551.3	850.8	1854.0	4067.8	4818.5	5764.1	6450.6	6958.8
70°	410.8	410.8	412.1	412.8	461.8	1004.5	2755.8	3446.9	4313.6	5008.0	5639.5
72.5°	368.4	364.4	363.1	355.2	361.8	514.9	1500.2	2121.0	2851.9	3631.1	4220.2
75°	318.1	317.4	317.4	309.4	313.4	362.5	650.7	1017.8	1584.3	2309.9	2889.7
77.5°	275.0	270.3	271.0	266.4	279.0	277.6	308.8	419.4	689.8	1213.2	1694.3
80°	226.6	223.3	225.3	222.6	242.5	205.4	208.1	256.4	342.6	532.1	750.1
82.5°	167.6	169.0	181.6	180.2	204.1	138.5	152.4	191.5	230.6	265.0	288.2
85°	98.1	100.1	130.5	137.2	149.8	72.9	93.4	114.0	128.5	142.5	148.4
87.5°	10.6	13.9	72.9	74.9	66.9	21.9	37.8	47.7	51.0	54.3	47.7
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	902.5	902.5	902.5	902.5	902.5	902.5	902.5	902.5	902.5	902.5	902.5
2.5°	972.1	963.4	954.2	948.9	939.6	931.6	917.1	905.1	891.9	882.6	878.6
5°	1086.0	1065.5	1043.6	1027.7	1007.8	990.6	957.5	917.7	905.1	878.6	872.0
7.5°	1234.5	1197.3	1160.2	1129.8	1095.3	1066.8	1011.2	939.6	930.3	887.9	878.6
10°	1408.7	1354.4	1299.4	1252.3	1202.0	1158.3	1076.1	975.4	965.4	911.1	901.8
12.5°	1603.5	1537.3	1466.4	1396.1	1336.5	1274.9	1162.9	1031.0	1015.1	950.9	938.3
15°	1804.3	1732.7	1650.6	1565.8	1492.2	1410.7	1269.6	1103.9	1074.8	999.2	982.0
17.5°	2002.4	1924.9	1838.8	1744.0	1657.9	1560.5	1384.9	1185.4	1135.1	1046.9	1025.1
20°	2193.9	2115.1	2024.3	1931.5	1824.2	1712.9	1502.8	1265.6	1188.7	1086.7	1058.2
22.5°	2368.2	2300.6	2209.8	2103.1	1994.5	1869.2	1622.7	1345.8	1235.8	1117.2	1080.7
25°	2551.7	2490.1	2400.0	2297.3	2170.7	2031.6	1746.7	1422.0	1273.5	1133.7	1088.7
27.5°	2737.3	2684.3	2599.4	2491.4	2355.6	2201.2	1872.6	1492.2	1304.0	1139.0	1084.7
30°	2935.4	2894.3	2816.1	2695.5	2558.4	2387.4	2009.7	1561.1	1323.2	1131.7	1066.8
32.5°	3122.9	3121.6	3052.0	2926.8	2779.0	2590.8	2154.2	1630.7	1333.2	1111.2	1035.7
35°	3317.7	3344.9	3292.5	3173.3	3017.6	2808.8	2313.9	1704.9	1333.8	1074.8	995.2
37.5°	3539.0	3587.4	3564.2	3450.9	3287.2	3057.3	2501.4	1788.4	1329.9	1024.4	936.3
40°	3790.8	3857.1	3856.4	3761.0	3586.1	3335.6	2719.4	1881.8	1320.6	961.5	866.7
42.5°	4079.1	4157.9	4179.8	4085.7	3908.8	3639.7	2969.2	1984.5	1306.0	899.2	793.2
45°	4409.0	4478.6	4519.7	4432.2	4254.7	3971.1	3256.1	2101.2	1288.1	819.0	709.0
47.5°	4762.2	4843.1	4904.7	4829.8	4640.3	4348.7	3596.0	2251.6	1281.5	727.6	618.2
50°	5200.2	5283.7	5416.9	5383.1	5279.1	5044.5	4315.0	2606.7	1284.1	640.7	542.0
52.5°	6286.9	6478.4	6646.7	6571.8	6324.7	5922.5	4899.4	2804.2	1228.5	569.8	489.0
55°	6614.9	6832.2	7080.7	7049.6	6812.4	6406.8	5361.2	2969.2	1174.8	518.2	454.6
57.5°	7188.7	7445.2	7792.4	7785.7	7494.8	7038.3	5955.6	3166.6	1151.6	488.3	437.3
60°	7796.3	8123.0	8602.7	8677.6	8361.5	7886.5	6658.0	3409.2	1154.9	471.8	427.4
62.5°	8240.3	8719.4	9417.1	9641.1	9268.7	8745.2	7386.8	3651.7	1135.1	452.6	415.5
65°	8267.5	8957.2	9947.2	10295.7	9918.7	9246.1	7643.9	3604.0	1015.8	426.7	396.2
67.5°	7604.8	8503.3	9706.0	10088.3	9702.7	8937.4	7193.4	3150.7	825.6	381.7	363.1
70°	6333.9	7376.9	8625.3	9051.3	8732.6	7958.0	6260.4	2516.6	616.9	322.0	313.4
72.5°	4894.7	5867.5	7001.2	7395.5	7151.6	6470.4	4937.8	1834.1	440.6	261.1	254.4
75°	3499.3	4327.5	5150.5	5300.9	5060.4	4434.9	3203.7	1145.7	308.8	214.0	204.7
77.5°	2166.8	2705.5	3001.0	2807.5	2500.7	2078.6	1304.0	565.9	205.4	174.3	165.0
80°	961.5	1128.4	1053.6	938.9	741.5	609.6	398.2	251.1	132.5	134.5	129.2
82.5°	323.4	341.9	332.6	330.6	298.2	261.1	169.0	108.7	74.2	86.1	84.2
85°	157.7	165.0	165.7	171.6	149.1	116.0	45.7	43.1	31.8	46.4	48.4
87.5°	47.7	48.4	43.7	47.7	38.4	26.5	8.6	11.9	6.0	11.3	11.3
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	902.5	902.5	902.5	902.5	902.5	902.5	902.5	902.5	902.5	902.5	902.5
2.5°	871.3	868.7	864.1	858.8	857.4	850.8	848.8	845.5	843.5	840.2	837.5
5°	863.4	858.8	853.4	847.5	847.5	838.2	834.2	830.3	830.3	824.3	821.6
7.5°	871.3	865.4	859.4	854.1	856.1	845.5	841.5	837.5	836.9	830.9	828.3
10°	893.9	887.9	880.6	875.3	873.3	864.7	860.1	854.1	850.1	846.2	842.2
12.5°	928.3	920.4	911.1	899.8	895.2	887.9	880.6	872.7	863.4	859.4	853.4
15°	969.4	956.2	943.6	929.6	917.1	909.8	899.8	887.2	874.7	869.4	861.4
17.5°	1003.2	989.3	971.4	954.8	932.3	926.3	912.4	897.2	876.6	874.7	862.7
20°	1031.7	1010.5	988.6	968.7	934.3	931.0	913.7	895.9	866.7	866.7	852.1
22.5°	1047.6	1018.4	992.6	966.1	923.0	920.4	900.5	879.3	843.5	844.8	826.9
25°	1050.2	1015.1	982.7	950.9	901.2	896.5	871.3	848.1	809.1	806.4	787.9
27.5°	1039.6	998.6	960.8	922.4	868.7	858.8	830.9	803.1	764.7	758.0	738.2
30°	1015.1	966.8	924.3	880.0	823.6	807.7	778.6	750.1	711.0	702.4	683.8
32.5°	976.0	921.0	874.0	829.6	767.3	747.4	718.3	689.8	652.0	645.4	628.2
35°	924.3	862.7	813.0	766.0	703.7	683.2	655.3	630.1	595.7	593.0	581.1
37.5°	859.4	795.1	742.1	697.1	638.1	627.5	599.0	580.5	552.0	554.6	548.6
40°	785.9	720.3	669.9	630.1	579.1	569.8	552.6	538.7	514.2	521.5	522.1
42.5°	711.6	646.1	600.3	564.5	520.8	514.9	502.9	495.0	476.4	491.0	497.0
45°	627.5	566.5	527.4	500.3	467.8	467.8	461.8	461.2	448.6	469.1	475.1
47.5°	546.0	498.3	471.1	454.6	432.0	442.6	440.6	445.9	436.7	457.9	463.2
50°	484.4	451.2	434.7	426.7	410.8	427.4	431.4	438.7	430.7	449.3	453.2
52.5°	445.3	423.4	414.1	412.1	400.9	421.4	428.0	434.7	425.4	442.6	442.0
55°	423.4	408.8	405.5	409.5	400.9	420.8	427.4	432.0	424.1	436.0	435.3
57.5°	415.5	407.5	409.5	415.5	409.5	426.1	429.4	434.7	426.7	432.0	434.7
60°	414.8	414.8	422.7	430.7	426.7	438.7	440.6	440.0	432.7	433.4	434.7
62.5°	410.8	420.8	434.0	446.6	445.3	459.9	461.2	452.6	446.6	440.0	438.0
65°	398.2	414.8	434.0	451.2	453.9	476.4	479.1	470.5	466.5	455.2	446.6
67.5°	370.4	391.6	414.1	435.3	440.0	470.5	476.4	479.7	481.7	474.4	463.2
70°	323.4	345.2	368.4	392.9	399.6	433.4	445.9	461.2	473.1	483.7	479.7
72.5°	263.1	282.9	302.8	325.3	335.3	370.4	387.0	413.5	432.0	459.2	470.5
75°	208.7	220.7	232.6	246.5	254.4	288.9	309.4	341.2	366.4	404.2	429.4
77.5°	164.3	170.3	176.3	182.2	185.5	204.7	221.3	253.1	282.3	330.0	367.1
80°	126.6	129.9	130.5	132.5	131.2	140.5	146.4	165.7	190.8	237.9	281.6
82.5°	81.5	84.2	85.5	88.8	82.2	94.1	98.1	100.1	113.3	147.8	178.9
85°	45.7	46.4	47.0	48.4	39.1	51.0	51.7	48.4	47.0	61.0	68.9
87.5°	11.3	10.6	11.3	11.3	4.6	10.6	10.6	7.3	5.3	9.9	8.0
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°	902.5	902.5	902.5	902.5	902.5	902.5
2.5°	831.6	830.3	830.9	827.6	826.3	826.9
5°	818.3	815.7	815.7	813.7	811.0	811.0
7.5°	824.3	819.0	817.0	813.0	809.1	809.7
10°	833.6	824.3	817.7	811.7	807.1	807.1
12.5°	839.5	823.0	813.0	805.1	799.8	799.8
15°	840.9	815.7	801.1	792.5	787.2	787.2
17.5°	832.9	801.1	782.5	771.3	765.3	766.6
20°	813.0	773.9	752.1	740.1	734.2	734.8
22.5°	781.9	736.8	711.6	697.7	691.8	691.8
25°	739.5	690.4	663.3	652.0	646.7	646.7
27.5°	691.1	640.7	616.9	608.3	605.0	605.0
30°	636.8	595.0	577.8	571.8	566.5	566.5
32.5°	591.1	561.2	555.3	547.3	533.4	532.7
35°	554.6	551.3	546.7	522.8	502.9	500.3
37.5°	534.7	554.6	525.5	484.4	468.5	467.8
40°	524.1	542.7	492.3	472.4	470.5	470.5
42.5°	498.9	512.2	490.3	479.1	479.1	479.7
45°	472.4	483.7	495.0	485.0	488.3	489.0
47.5°	453.9	476.4	495.0	486.4	493.0	497.0
50°	436.7	469.8	485.0	485.0	492.3	493.0
52.5°	432.7	460.5	475.8	483.0	483.7	480.4
55°	433.4	453.2	468.5	477.7	473.8	473.8
57.5°	432.7	449.3	462.5	465.8	467.8	467.8
60°	433.4	444.0	454.6	453.2	459.9	459.9
62.5°	435.3	436.7	442.0	440.6	450.6	450.6
65°	440.0	427.4	424.1	425.4	437.3	436.7
67.5°	448.6	414.8	404.2	404.9	422.1	419.4
70°	461.2	397.6	381.7	377.7	406.8	402.2
72.5°	465.2	377.7	352.5	348.5	365.8	352.5
75°	446.6	361.8	321.4	308.1	300.8	296.9
77.5°	398.2	351.8	288.9	261.1	249.8	247.2
80°	330.0	331.3	246.5	213.4	247.8	247.2
82.5°	249.1	286.3	197.5	184.9	179.6	149.8
85°	120.6	215.4	151.7	127.2	76.2	72.2
87.5°	10.6	90.1	87.5	57.0	25.8	24.5
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)