

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: P197234

Luminaire Tested: **NAV-AF-02-D-UNV-T2R-8030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197234
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-8030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 80 CRI, 3000K, 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: 6863 lumens
Efficiency: N/A
Efficacy: 104.0 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): 66
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

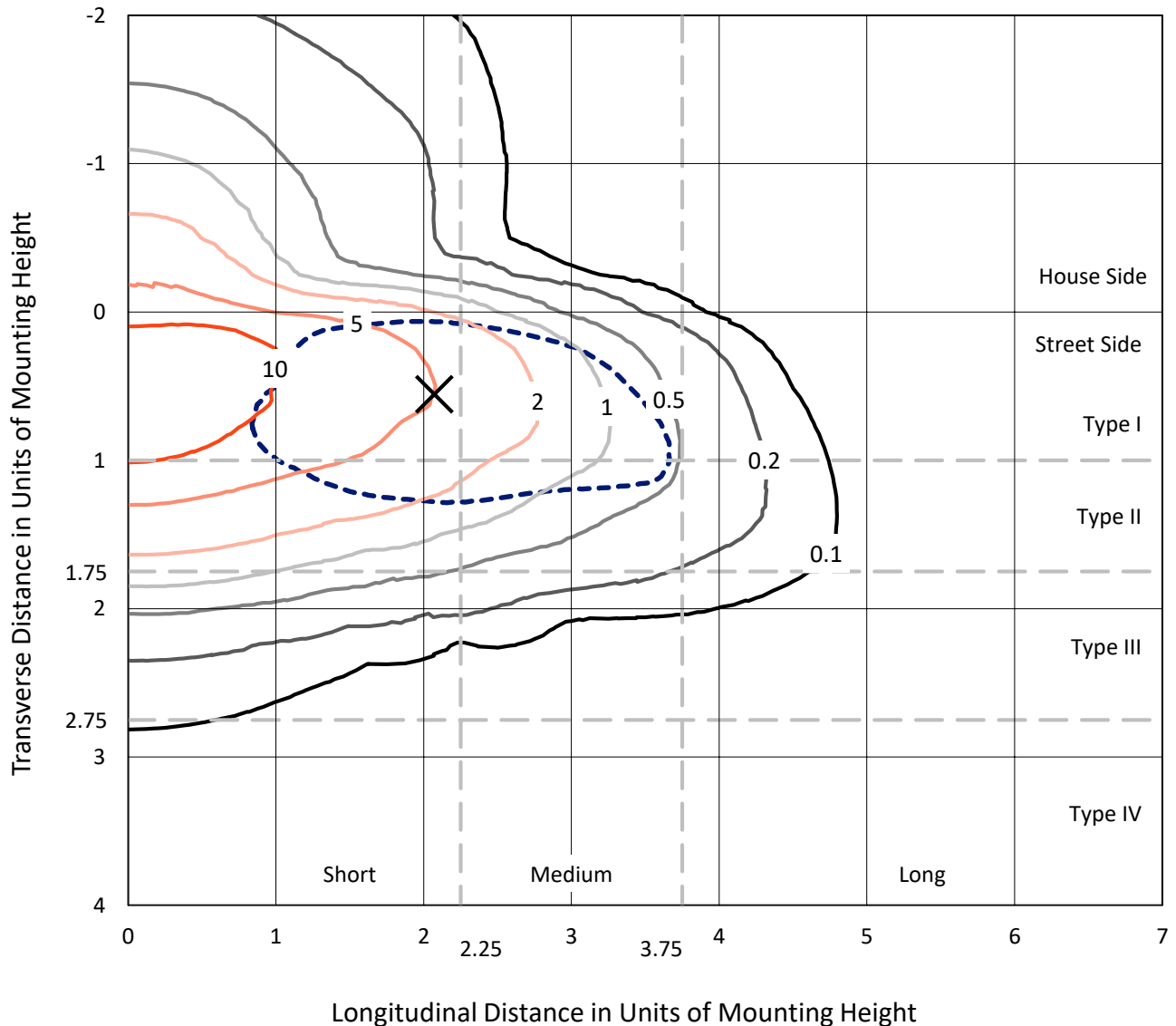


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Iso-Footcandle Lines of Horizontal Illumination

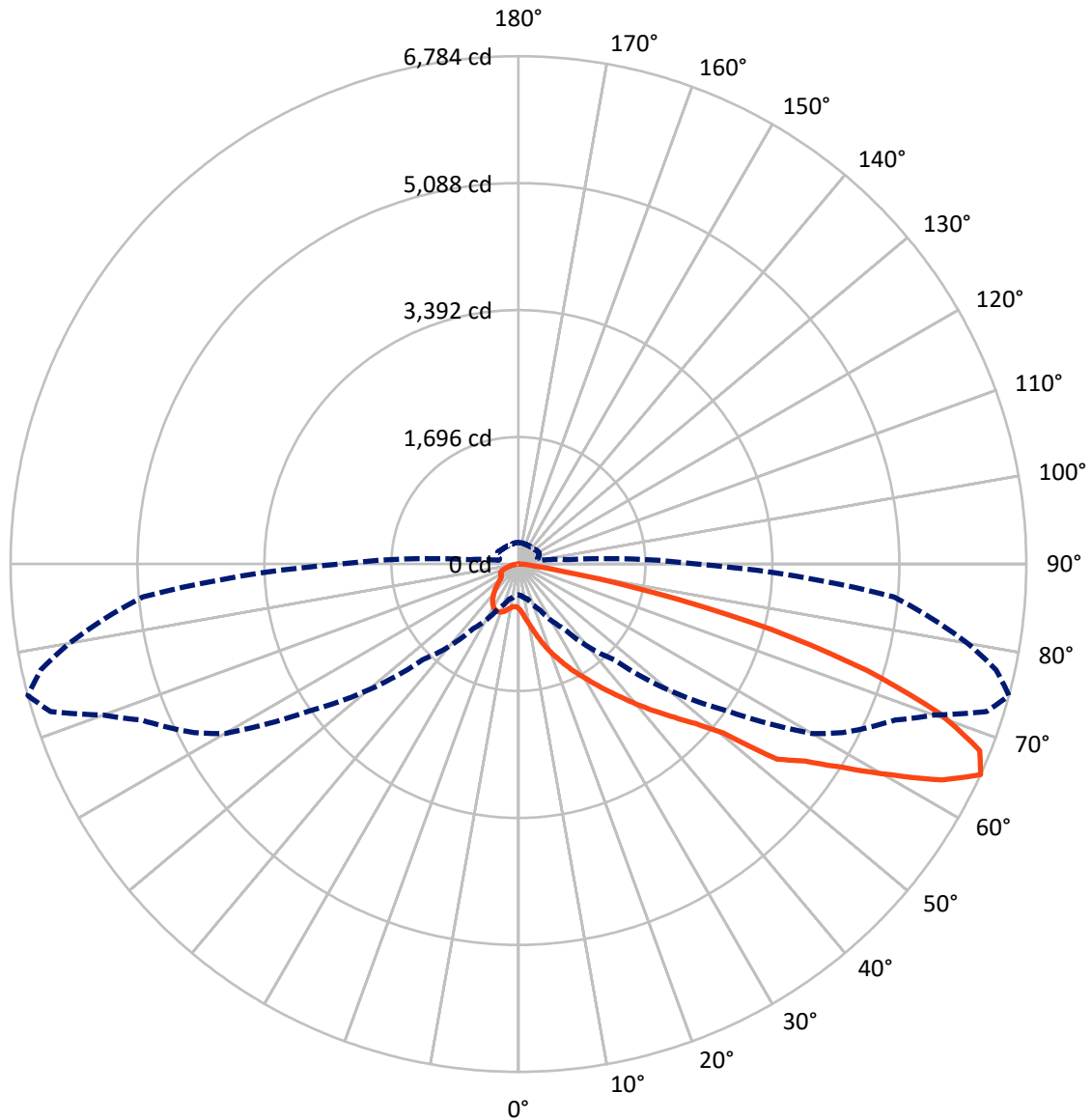
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 17.1 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	1031.3	0.0	1031.3
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	5831.7	0.0	5831.7
	% Fixture	85.0	0.0	85.0
Total	Lumens	6863.0	0.0	6863.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.2	1.0
10°-20°	268.1	3.9
20°-30°	541.1	7.9
30°-40°	919.0	13.4
40°-50°	1281.7	18.7
50°-60°	1570.9	22.9
60°-70°	1478.0	21.5
70°-80°	648.1	9.4
80°-90°	85.8	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°	6863.0	100.0
0°-180°	6863.0	100.0



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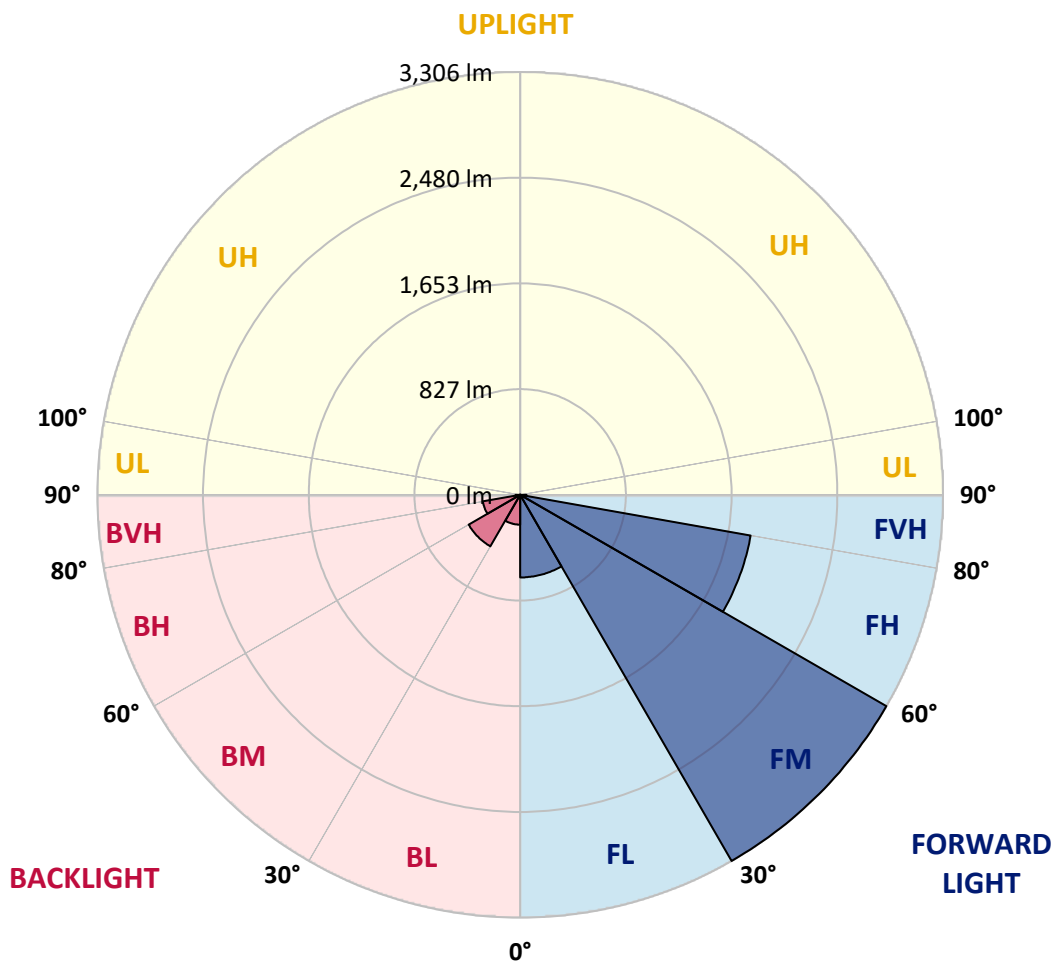
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	646.0	9.4			
FM (30°-60°)	3306.3	48.2			
FH (60°-80°)	1829.7	26.7			G2/5000
FVH (80°-90°)	49.7	0.7			G1/100
BL (0°-30°)	233.5	3.4	B1/500		
BM (30°-60°)	465.4	6.8	B1/1000		
BH (60°-80°)	296.4	4.3	B1/500		G1/500
BVH (80°-90°)	36.0	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°	594.6	594.6	594.6	594.6	594.6	594.6	594.6	594.6	594.6	594.6	594.6
2.5°	748.8	740.0	740.9	728.7	710.8	691.1	675.0	666.2	658.8	656.6	644.4
5°	979.3	968.4	964.4	936.5	894.6	844.8	795.5	776.3	760.5	750.9	727.4
7.5°	1167.9	1162.2	1157.0	1131.2	1089.7	1026.0	946.5	918.2	892.0	863.1	834.8
10°	1296.2	1294.1	1291.9	1274.0	1239.5	1184.0	1098.5	1067.5	1034.7	998.0	960.9
12.5°	1393.2	1393.2	1394.9	1380.1	1359.1	1316.3	1238.6	1209.8	1176.6	1138.2	1095.8
15°	1458.2	1460.0	1469.1	1473.5	1462.6	1435.1	1367.0	1341.6	1310.2	1272.2	1230.3
17.5°	1501.4	1504.9	1518.5	1532.9	1546.8	1537.2	1486.6	1463.0	1434.6	1399.7	1360.4
20°	1601.9	1597.5	1597.9	1593.6	1614.1	1621.5	1593.6	1573.9	1551.2	1519.3	1483.5
22.5°	1812.7	1804.4	1783.0	1728.5	1703.6	1701.0	1684.4	1673.9	1656.4	1636.3	1600.5
25°	2087.8	2078.2	2035.8	1945.9	1871.7	1803.1	1772.6	1766.0	1754.7	1741.1	1715.4
27.5°	2372.0	2361.5	2306.9	2193.4	2096.5	1958.1	1862.9	1854.2	1843.7	1838.0	1825.8
30°	2622.2	2610.8	2557.1	2441.9	2324.8	2159.8	1984.7	1954.2	1936.3	1938.0	1931.0
32.5°	2841.8	2831.7	2771.5	2654.0	2535.3	2375.1	2142.8	2095.2	2055.0	2040.2	2045.4
35°	3026.0	3016.8	2950.9	2832.6	2713.0	2579.8	2346.2	2274.6	2209.2	2168.1	2163.3
37.5°	3134.3	3129.0	3082.8	2982.4	2863.6	2765.8	2574.1	2494.7	2398.2	2338.4	2312.2
40°	3128.2	3133.9	3126.0	3080.6	2988.5	2917.3	2811.6	2733.1	2638.8	2549.7	2496.4
42.5°	3039.1	3047.0	3082.3	3105.9	3081.0	3037.8	3019.0	2960.5	2875.8	2781.5	2707.7
45°	2916.9	2923.9	2969.7	3054.8	3126.0	3138.2	3200.6	3171.4	3099.8	3019.5	2938.3
47.5°	2729.6	2743.1	2796.4	2931.7	3101.1	3219.0	3353.0	3366.6	3325.1	3258.7	3182.7
50°	2458.4	2476.3	2551.0	2743.5	3006.8	3301.9	3579.6	3631.1	3614.5	3547.3	3470.5
52.5°	2180.8	2198.7	2298.2	2503.0	2854.9	3336.0	3802.7	3934.6	4029.7	4099.2	4112.7
55°	1891.7	1911.8	2021.0	2256.7	2652.3	3292.8	3962.1	4111.8	4208.3	4280.8	4310.0
57.5°	1565.6	1588.3	1694.0	1932.4	2365.9	3119.0	4139.3	4351.5	4495.1	4606.9	4669.8
60°	1191.5	1219.8	1329.4	1569.5	1989.5	2786.3	4218.3	4532.3	4760.6	4928.2	5027.8
62.5°	755.3	784.1	898.1	1147.4	1561.2	2331.8	3994.8	4452.8	4842.2	5090.2	5272.7
65°	412.1	424.8	488.1	675.8	1052.6	1809.2	3428.1	3968.2	4529.2	4880.7	5160.9
67.5°	309.1	310.9	317.4	363.2	560.6	1221.6	2680.2	3174.9	3797.9	4250.2	4585.1
70°	270.7	270.7	271.6	272.0	304.3	661.9	1815.8	2271.1	2842.2	3299.8	3715.8
72.5°	242.7	240.1	239.3	234.0	238.4	339.2	988.4	1397.5	1879.1	2392.5	2780.6
75°	209.6	209.1	209.1	203.9	206.5	238.8	428.7	670.6	1043.9	1522.0	1904.0
77.5°	181.2	178.1	178.6	175.5	183.8	182.9	203.5	276.4	454.5	799.4	1116.4
80°	149.3	147.1	148.4	146.7	159.8	135.3	137.1	169.0	225.7	350.6	494.2
82.5°	110.5	111.3	119.6	118.8	134.5	91.2	100.4	126.2	151.9	174.6	189.9
85°	64.6	65.9	86.0	90.4	98.7	48.0	61.6	75.1	84.7	93.9	97.8
87.5°	7.0	9.2	48.0	49.3	44.1	14.4	24.9	31.4	33.6	35.8	31.4
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	594.6	594.6	594.6	594.6	594.6	594.6	594.6	594.6	594.6	594.6	594.6
2.5°	640.5	634.8	628.7	625.2	619.1	613.8	604.2	596.4	587.7	581.5	578.9
5°	715.6	702.0	687.6	677.2	664.1	652.7	630.9	604.7	596.4	578.9	574.6
7.5°	813.4	788.9	764.5	744.4	721.7	702.9	666.2	619.1	613.0	585.0	578.9
10°	928.2	892.4	856.2	825.2	792.0	763.2	709.0	642.7	636.1	600.3	594.2
12.5°	1056.6	1012.9	966.2	919.9	880.6	840.0	766.2	679.3	668.9	626.5	618.2
15°	1188.8	1141.7	1087.5	1031.7	983.2	929.5	836.5	727.4	708.2	658.4	647.0
17.5°	1319.4	1268.3	1211.5	1149.1	1092.4	1028.2	912.5	781.1	747.9	689.8	675.4
20°	1445.6	1393.6	1333.8	1272.7	1201.9	1128.6	990.2	833.9	783.2	716.0	697.2
22.5°	1560.4	1515.8	1456.0	1385.7	1314.1	1231.6	1069.2	886.7	814.2	736.1	712.1
25°	1681.3	1640.7	1581.3	1513.7	1430.3	1338.6	1150.9	936.9	839.1	747.0	717.3
27.5°	1803.6	1768.6	1712.7	1641.6	1552.1	1450.4	1233.8	983.2	859.2	750.5	714.7
30°	1934.1	1907.0	1855.5	1776.1	1685.7	1573.0	1324.2	1028.6	871.9	745.7	702.9
32.5°	2057.7	2056.8	2010.9	1928.4	1831.1	1707.1	1419.4	1074.5	878.4	732.2	682.4
35°	2186.0	2203.9	2169.4	2090.8	1988.2	1850.7	1524.6	1123.3	878.9	708.2	655.8
37.5°	2331.8	2363.7	2348.4	2273.8	2165.9	2014.4	1648.1	1178.4	876.2	675.0	616.9
40°	2497.7	2541.4	2541.0	2478.1	2362.8	2197.8	1791.8	1239.9	870.1	633.5	571.1
42.5°	2687.7	2739.6	2754.0	2692.0	2575.5	2398.2	1956.4	1307.6	860.5	592.5	522.6
45°	2905.1	2950.9	2978.0	2920.4	2803.4	2616.5	2145.4	1384.4	848.7	539.6	467.2
47.5°	3137.8	3191.0	3231.6	3182.3	3057.4	2865.3	2369.4	1483.5	844.4	479.4	407.3
50°	3426.4	3481.4	3569.1	3546.9	3478.3	3323.8	2843.1	1717.5	846.1	422.2	357.1
52.5°	4142.4	4268.6	4379.4	4330.1	4167.3	3902.3	3228.2	1847.7	809.4	375.5	322.2
55°	4358.5	4501.7	4665.4	4644.9	4488.6	4221.4	3532.5	1956.4	774.1	341.4	299.5
57.5°	4736.6	4905.5	5134.3	5129.9	4938.3	4637.5	3924.1	2086.5	758.8	321.8	288.2
60°	5136.9	5352.2	5668.3	5717.6	5509.3	5196.3	4386.9	2246.3	761.0	310.9	281.6
62.5°	5429.4	5745.1	6204.8	6352.4	6107.0	5762.1	4867.1	2406.1	747.9	298.2	273.7
65°	5447.3	5901.8	6554.1	6783.8	6535.3	6092.2	5036.5	2374.6	669.3	281.2	261.1
67.5°	5010.8	5602.8	6395.2	6647.1	6393.0	5888.7	4739.6	2076.0	544.0	251.5	239.3
70°	4173.4	4860.6	5683.1	5963.8	5753.8	5243.5	4124.9	1658.2	406.5	212.2	206.5
72.5°	3225.1	3866.0	4613.0	4872.8	4712.1	4263.3	3253.5	1208.5	290.3	172.0	167.7
75°	2305.6	2851.4	3393.6	3492.7	3334.2	2922.1	2110.9	754.9	203.5	141.0	134.9
77.5°	1427.7	1782.6	1977.3	1849.8	1647.7	1369.6	859.2	372.8	135.3	114.8	108.7
80°	633.5	743.5	694.2	618.6	488.5	401.7	262.4	165.5	87.3	88.6	85.1
82.5°	213.1	225.3	219.2	217.9	196.5	172.0	111.3	71.6	48.9	56.8	55.4
85°	103.9	108.7	109.1	113.1	98.2	76.4	30.1	28.4	21.0	30.6	31.9
87.5°	31.4	31.9	28.8	31.4	25.3	17.5	5.7	7.9	3.9	7.4	7.4
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°	594.6	594.6	594.6	594.6	594.6	594.6	594.6	594.6	594.6	594.6	594.6
2.5°	574.1	572.4	569.3	565.8	564.9	560.6	559.3	557.1	555.8	553.6	551.9
5°	568.9	565.8	562.3	558.4	558.4	552.3	549.7	547.0	547.0	543.1	541.4
7.5°	574.1	570.2	566.3	562.8	564.1	557.1	554.5	551.9	551.4	547.5	545.7
10°	589.0	585.0	580.2	576.7	575.4	569.8	566.7	562.8	560.1	557.5	554.9
12.5°	611.7	606.4	600.3	592.9	589.8	585.0	580.2	575.0	568.9	566.3	562.3
15°	638.7	630.0	621.7	612.5	604.2	599.4	592.9	584.6	576.3	572.8	567.6
17.5°	661.0	651.8	640.0	629.1	614.3	610.4	601.2	591.1	577.6	576.3	568.4
20°	679.8	665.8	651.4	638.3	615.6	613.4	602.1	590.3	571.1	571.1	561.5
22.5°	690.3	671.0	654.0	636.5	608.2	606.4	593.3	579.4	555.8	556.7	544.9
25°	692.0	668.9	647.5	626.5	593.8	590.7	574.1	558.8	533.1	531.3	519.1
27.5°	685.0	657.9	633.1	607.7	572.4	565.8	547.5	529.1	503.8	499.5	486.4
30°	668.9	637.0	609.0	579.8	542.7	532.2	513.0	494.2	468.5	462.8	450.6
32.5°	643.1	606.9	575.9	546.6	505.6	492.5	473.3	454.5	429.6	425.2	413.9
35°	609.0	568.4	535.7	504.7	463.7	450.1	431.8	415.2	392.5	390.7	382.9
37.5°	566.3	523.9	489.0	459.3	420.4	413.5	394.7	382.5	363.7	365.4	361.5
40°	517.8	474.6	441.4	415.2	381.6	375.5	364.1	354.9	338.8	343.6	344.0
42.5°	468.9	425.7	395.6	372.0	343.2	339.2	331.4	326.1	313.9	323.5	327.4
45°	413.5	373.3	347.5	329.6	308.2	308.2	304.3	303.9	295.6	309.1	313.0
47.5°	359.8	328.3	310.4	299.5	284.7	291.6	290.3	293.8	287.7	301.7	305.2
50°	319.1	297.3	286.4	281.2	270.7	281.6	284.2	289.0	283.8	296.0	298.6
52.5°	293.4	279.0	272.9	271.6	264.1	277.7	282.0	286.4	280.3	291.6	291.2
55°	279.0	269.4	267.2	269.8	264.1	277.2	281.6	284.7	279.4	287.3	286.8
57.5°	273.7	268.5	269.8	273.7	269.8	280.7	282.9	286.4	281.2	284.7	286.4
60°	273.3	273.3	278.5	283.8	281.2	289.0	290.3	289.9	285.1	285.5	286.4
62.5°	270.7	277.2	286.0	294.3	293.4	303.0	303.9	298.2	294.3	289.9	288.6
65°	262.4	273.3	286.0	297.3	299.1	313.9	315.7	310.0	307.4	299.9	294.3
67.5°	244.1	258.0	272.9	286.8	289.9	310.0	313.9	316.1	317.4	312.6	305.2
70°	213.1	227.5	242.7	258.9	263.3	285.5	293.8	303.9	311.7	318.7	316.1
72.5°	173.3	186.4	199.5	214.4	220.9	244.1	255.0	272.4	284.7	302.6	310.0
75°	137.5	145.4	153.2	162.4	167.7	190.4	203.9	224.8	241.4	266.3	282.9
77.5°	108.3	112.2	116.1	120.1	122.2	134.9	145.8	166.8	186.0	217.4	241.9
80°	83.4	85.6	86.0	87.3	86.4	92.6	96.5	109.1	125.7	156.7	185.6
82.5°	53.7	55.4	56.3	58.5	54.1	62.0	64.6	65.9	74.7	97.4	117.9
85°	30.1	30.6	31.0	31.9	25.8	33.6	34.1	31.9	31.0	40.2	45.4
87.5°	7.4	7.0	7.4	7.4	3.1	7.0	7.0	4.8	3.5	6.5	5.2
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°	594.6	594.6	594.6	594.6	594.6	594.6
2.5°	547.9	547.0	547.5	545.3	544.4	544.9
5°	539.2	537.4	537.4	536.1	534.4	534.4
7.5°	543.1	539.6	538.3	535.7	533.1	533.5
10°	549.2	543.1	538.8	534.8	531.8	531.8
12.5°	553.2	542.2	535.7	530.5	527.0	527.0
15°	554.0	537.4	527.8	522.2	518.7	518.7
17.5°	548.8	527.8	515.6	508.2	504.3	505.1
20°	535.7	509.9	495.5	487.7	483.7	484.2
22.5°	515.2	485.5	468.9	459.7	455.8	455.8
25°	487.2	454.9	437.0	429.6	426.1	426.1
27.5°	455.4	422.2	406.5	400.8	398.6	398.6
30°	419.6	392.1	380.7	376.8	373.3	373.3
32.5°	389.4	369.8	365.9	360.6	351.5	351.0
35°	365.4	363.2	360.2	344.5	331.4	329.6
37.5°	352.3	365.4	346.2	319.1	308.7	308.2
40°	345.3	357.6	324.4	311.3	310.0	310.0
42.5°	328.8	337.5	323.1	315.7	315.7	316.1
45°	311.3	318.7	326.1	319.6	321.8	322.2
47.5°	299.1	313.9	326.1	320.5	324.8	327.4
50°	287.7	309.5	319.6	319.6	324.4	324.8
52.5°	285.1	303.4	313.5	318.3	318.7	316.5
55°	285.5	298.6	308.7	314.8	312.2	312.2
57.5°	285.1	296.0	304.7	306.9	308.2	308.2
60°	285.5	292.5	299.5	298.6	303.0	303.0
62.5°	286.8	287.7	291.2	290.3	296.9	296.9
65°	289.9	281.6	279.4	280.3	288.2	287.7
67.5°	295.6	273.3	266.3	266.8	278.1	276.4
70°	303.9	262.0	251.5	248.9	268.1	265.0
72.5°	306.5	248.9	232.3	229.6	241.0	232.3
75°	294.3	238.4	211.7	203.0	198.2	195.6
77.5°	262.4	231.8	190.4	172.0	164.6	162.8
80°	217.4	218.3	162.4	140.6	163.3	162.8
82.5°	164.2	188.6	130.1	121.8	118.3	98.7
85°	79.5	141.9	100.0	83.8	50.2	47.6
87.5°	7.0	59.4	57.6	37.5	17.0	16.2
90°	0.0	0.0	0.0	0.0	0.0	0.0

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