

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: P195811

Luminaire Tested: **NAV-AF-01-D-UNV-T2R-7050-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195811
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-01-D-UNV-T2R-7050-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 70 CRI, 5000K, 1200mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7023 lumens
Efficiency: N/A
Efficacy: 104.8 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G2

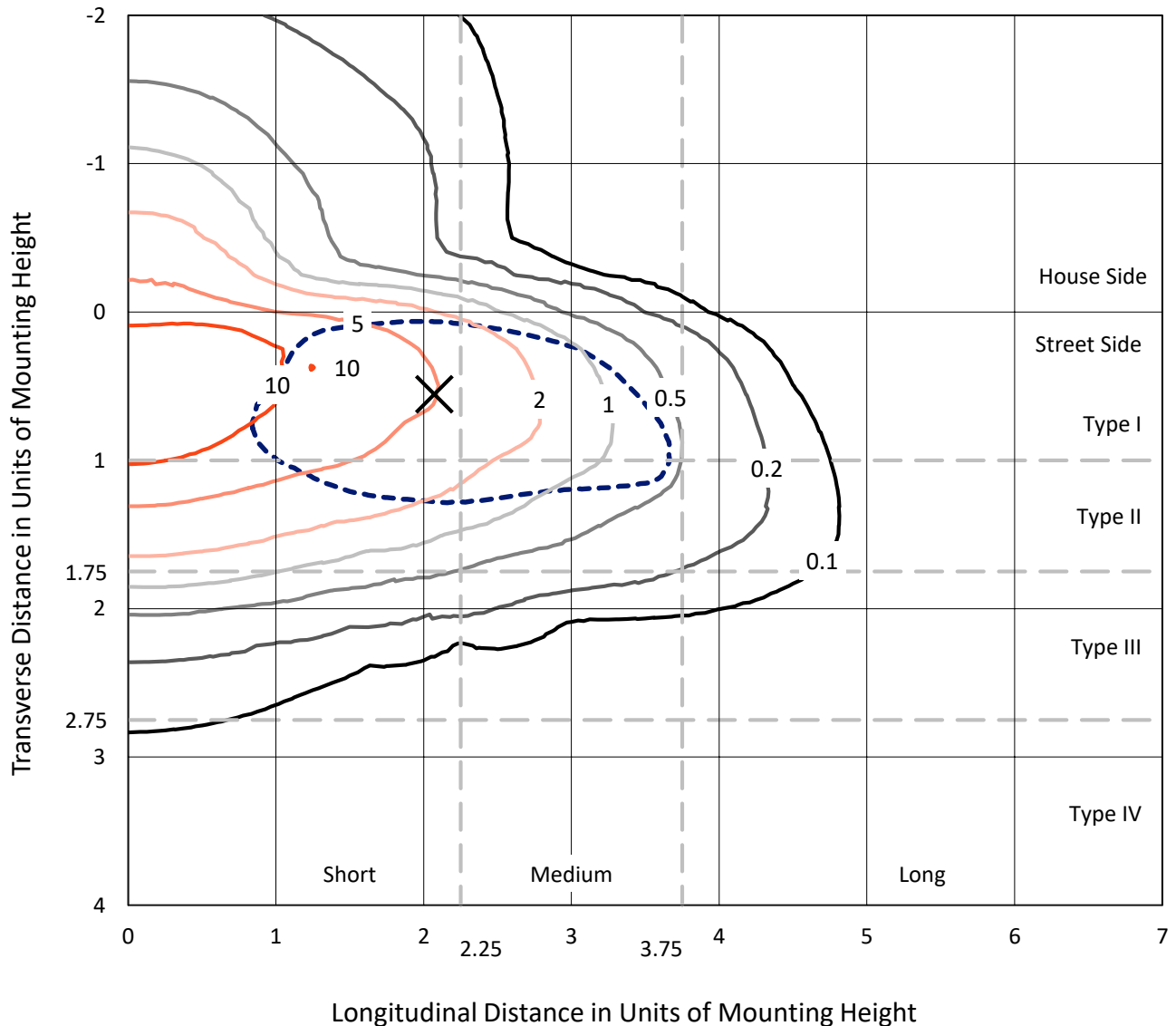
Input Watts (W): 67
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

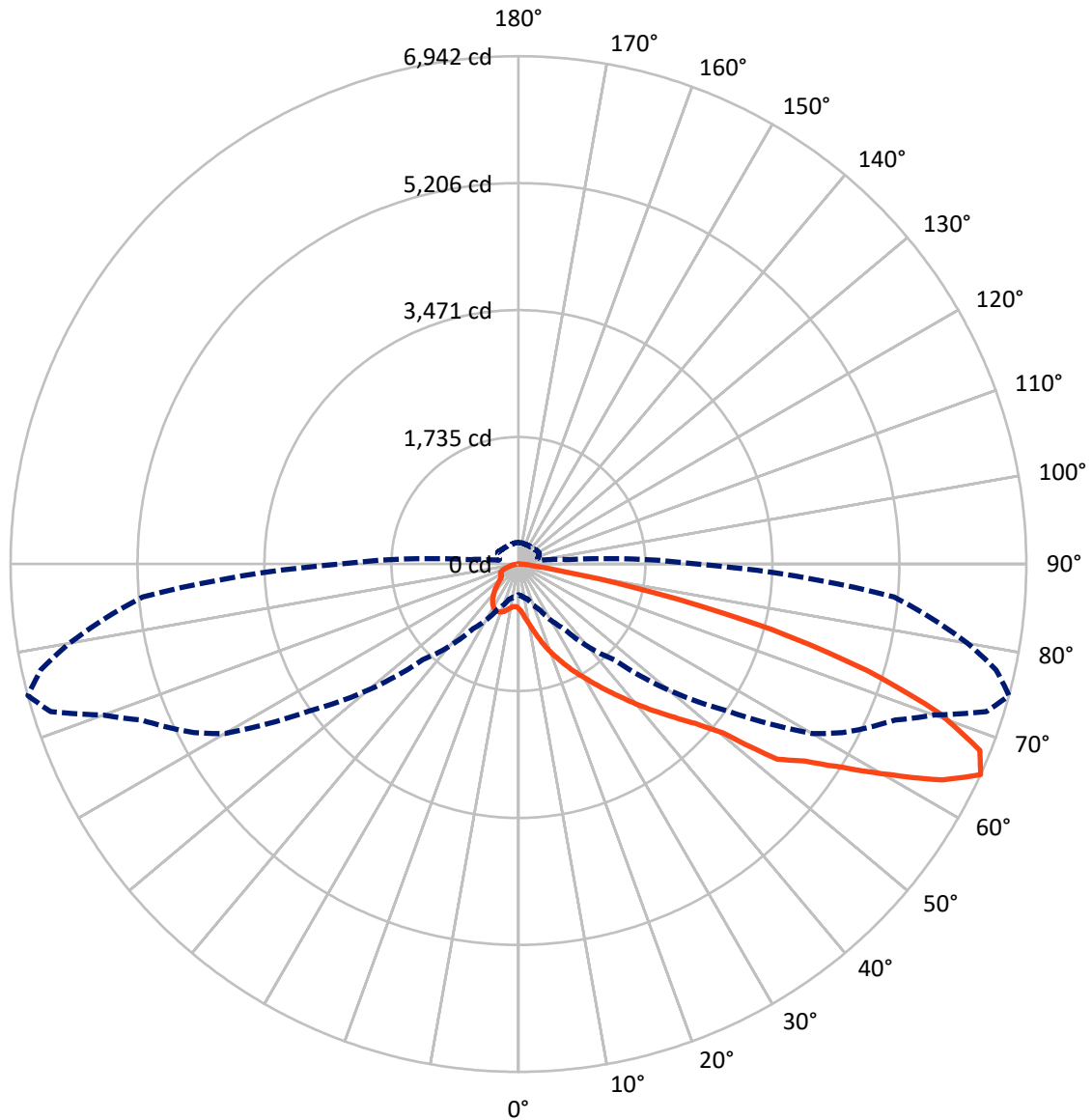
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 17.5 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	1055.3	0.0	1055.3
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	5967.7	0.0	5967.7
	% Fixture	85.0	0.0	85.0
Total	Lumens	7023.0	0.0	7023.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	71.8	1.0
10°-20°	274.4	3.9
20°-30°	553.7	7.9
30°-40°	940.4	13.4
40°-50°	1311.6	18.7
50°-60°	1607.6	22.9
60°-70°	1512.5	21.5
70°-80°	663.2	9.4
80°-90°	87.8	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°	7023.0	100.0
0°-180°	7023.0	100.0



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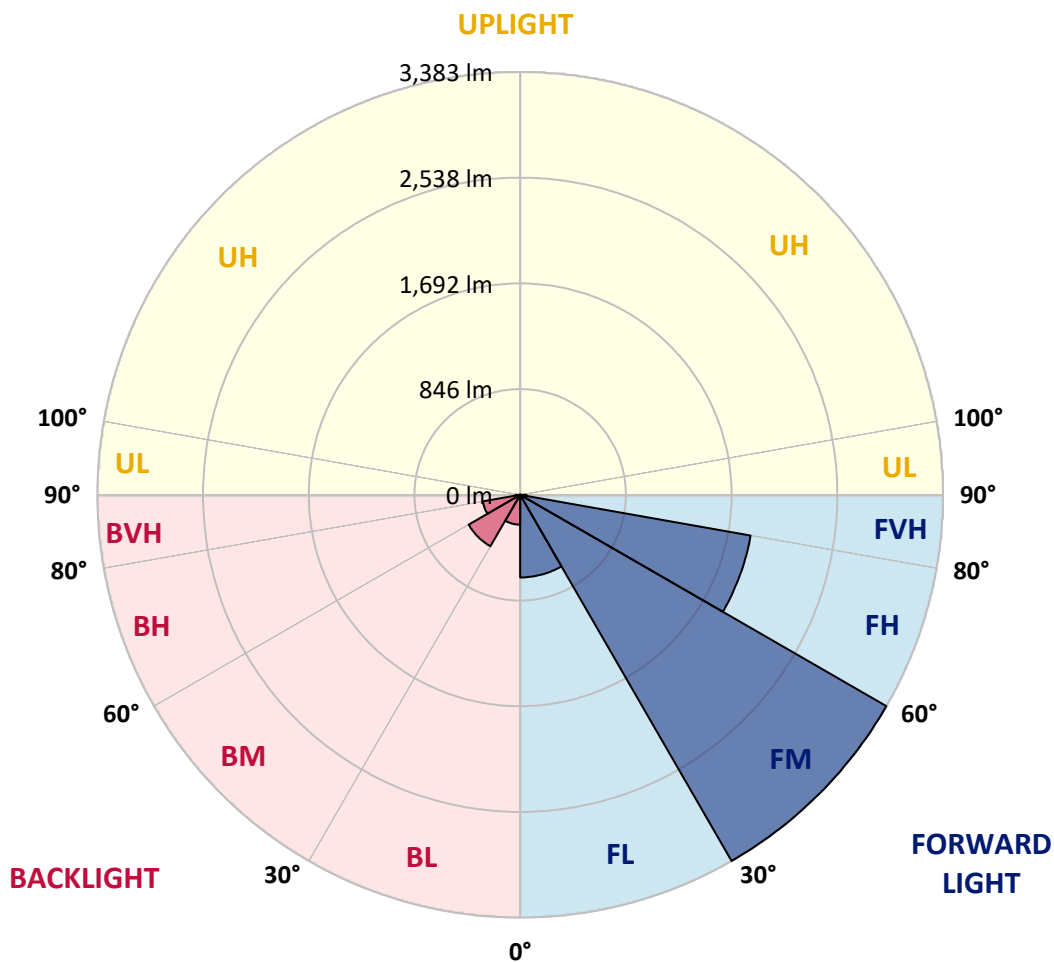
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	661.1	9.4			
FM (30°-60°)	3383.4	48.2			
FH (60°-80°)	1872.4	26.7			G2/5000
FVH (80°-90°)	50.9	0.7			G1/100
BL (0°-30°)	238.9	3.4	B1/500		
BM (30°-60°)	476.2	6.8	B1/1000		
BH (60°-80°)	303.3	4.3	B1/500		G1/500
BVH (80°-90°)	36.9	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°	608.5	608.5	608.5	608.5	608.5	608.5	608.5	608.5	608.5	608.5	608.5
2.5°	766.2	757.3	758.2	745.7	727.3	707.2	690.7	681.8	674.2	671.9	659.4
5°	1002.1	990.9	986.9	958.3	915.4	864.5	814.0	794.4	778.3	768.4	744.3
7.5°	1195.1	1189.3	1183.9	1157.6	1115.1	1049.9	968.6	939.6	912.7	883.3	854.2
10°	1326.5	1324.2	1322.0	1303.7	1268.4	1211.6	1124.1	1092.4	1058.8	1021.3	983.3
12.5°	1425.6	1425.6	1427.4	1412.2	1390.8	1347.0	1267.5	1238.0	1204.0	1164.7	1121.4
15°	1492.2	1494.0	1503.4	1507.8	1496.7	1468.5	1398.8	1372.9	1340.8	1301.9	1259.0
17.5°	1536.4	1540.0	1553.9	1568.6	1582.9	1573.1	1521.2	1497.1	1468.1	1432.3	1392.1
20°	1639.2	1634.7	1635.2	1630.7	1651.7	1659.3	1630.7	1610.6	1587.4	1554.8	1518.1
22.5°	1855.0	1846.5	1824.6	1768.8	1743.3	1740.6	1723.6	1712.9	1695.0	1674.5	1637.9
25°	2136.5	2126.6	2083.3	1991.3	1915.3	1845.2	1813.9	1807.2	1795.6	1781.7	1755.4
27.5°	2427.3	2416.6	2360.7	2244.6	2145.4	2003.8	1906.4	1897.4	1886.7	1880.9	1868.4
30°	2683.3	2671.7	2616.7	2498.8	2379.0	2210.2	2031.0	1999.7	1981.4	1983.2	1976.1
32.5°	2908.0	2897.7	2836.1	2715.9	2594.4	2430.4	2192.7	2144.0	2102.9	2087.8	2093.1
35°	3096.6	3087.2	3019.7	2898.6	2776.2	2640.0	2400.9	2327.7	2260.7	2218.7	2213.7
37.5°	3207.4	3202.0	3154.6	3051.9	2930.4	2830.3	2634.2	2552.8	2454.1	2392.9	2366.1
40°	3201.1	3206.9	3198.9	3152.4	3058.1	2985.3	2877.2	2796.8	2700.3	2609.1	2554.6
42.5°	3110.0	3118.0	3154.2	3178.3	3152.9	3108.6	3089.4	3029.5	2942.9	2846.4	2770.9
45°	2984.9	2992.0	3038.9	3126.0	3198.9	3211.4	3275.3	3245.3	3172.1	3089.9	3006.8
47.5°	2793.2	2807.1	2861.6	3000.1	3173.4	3294.0	3431.2	3445.0	3402.6	3334.7	3256.9
50°	2515.8	2534.1	2610.5	2807.5	3076.9	3378.9	3663.1	3715.8	3698.8	3630.0	3551.4
52.5°	2231.6	2249.9	2351.8	2561.3	2921.4	3413.8	3891.4	4026.3	4123.7	4194.7	4208.6
55°	1935.9	1956.4	2068.1	2309.4	2714.1	3369.5	4054.4	4207.7	4306.4	4380.6	4410.5
57.5°	1602.1	1625.3	1733.5	1977.4	2421.0	3191.7	4235.8	4453.0	4599.9	4714.3	4778.6
60°	1219.2	1248.3	1360.4	1606.1	2035.9	2851.3	4316.7	4637.9	4871.6	5043.1	5145.0
62.5°	772.9	802.4	919.0	1174.1	1597.6	2386.2	4087.9	4556.6	4955.1	5208.9	5395.6
65°	421.8	434.7	499.5	691.6	1077.2	1851.4	3508.0	4060.7	4634.8	4994.4	5281.3
67.5°	316.3	318.1	324.8	371.7	573.7	1250.1	2742.7	3248.9	3886.4	4349.3	4692.0
70°	277.0	277.0	277.9	278.3	311.4	677.3	1858.1	2324.1	2908.5	3376.7	3802.5
72.5°	248.4	245.7	244.8	239.5	243.9	347.1	1011.5	1430.1	1922.9	2448.3	2845.5
75°	214.4	214.0	214.0	208.6	211.3	244.4	438.7	686.2	1068.2	1557.4	1948.4
77.5°	185.4	182.3	182.7	179.6	188.1	187.2	208.2	282.8	465.1	818.0	1142.4
80°	152.8	150.6	151.9	150.1	163.5	138.5	140.3	172.9	231.0	358.8	505.7
82.5°	113.0	113.9	122.4	121.5	137.6	93.4	102.8	129.1	155.5	178.7	194.3
85°	66.1	67.5	88.0	92.5	101.0	49.1	63.0	76.8	86.7	96.1	100.1
87.5°	7.1	9.4	49.1	50.5	45.1	14.7	25.5	32.2	34.4	36.6	32.2
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	608.5	608.5	608.5	608.5	608.5	608.5	608.5	608.5	608.5	608.5	608.5
2.5°	655.4	649.6	643.3	639.8	633.5	628.2	618.3	610.3	601.4	595.1	592.4
5°	732.3	718.4	703.7	692.9	679.5	667.9	645.6	618.8	610.3	592.4	587.9
7.5°	832.3	807.3	782.3	761.7	738.5	719.3	681.8	633.5	627.3	598.7	592.4
10°	949.8	913.2	876.1	844.4	810.4	781.0	725.6	657.6	650.9	614.3	608.1
12.5°	1081.2	1036.5	988.7	941.3	901.1	859.6	784.1	695.2	684.5	641.1	632.6
15°	1216.6	1168.3	1112.9	1055.7	1006.1	951.2	856.0	744.3	724.7	673.7	662.1
17.5°	1350.1	1297.9	1239.8	1175.9	1117.8	1052.1	933.7	799.3	765.3	705.9	691.2
20°	1479.3	1426.1	1364.9	1302.3	1230.0	1154.9	1013.3	853.3	801.5	732.7	713.5
22.5°	1596.8	1551.2	1490.0	1418.0	1344.8	1260.3	1094.1	907.4	833.2	753.3	728.7
25°	1720.5	1679.0	1618.2	1548.9	1463.6	1369.8	1177.7	958.8	858.7	764.4	734.0
27.5°	1845.6	1809.9	1752.7	1679.9	1588.3	1484.2	1262.6	1006.1	879.2	768.0	731.4
30°	1979.2	1951.5	1898.8	1817.5	1725.0	1609.7	1355.1	1052.6	892.2	763.1	719.3
32.5°	2105.6	2104.7	2057.8	1973.4	1873.8	1746.9	1452.4	1099.5	898.9	749.2	698.3
35°	2237.0	2255.3	2220.0	2139.6	2034.6	1893.9	1560.1	1149.5	899.3	724.7	671.0
37.5°	2386.2	2418.8	2403.2	2326.8	2216.4	2061.4	1686.6	1205.8	896.7	690.7	631.3
40°	2556.0	2600.6	2600.2	2535.9	2417.9	2249.0	1833.5	1268.8	890.4	648.3	584.4
42.5°	2750.3	2803.5	2818.2	2754.8	2635.5	2454.1	2002.0	1338.1	880.6	606.3	534.8
45°	2972.8	3019.7	3047.4	2988.4	2868.7	2677.5	2195.4	1416.7	868.5	552.2	478.0
47.5°	3210.9	3265.4	3307.0	3256.5	3128.7	2932.1	2424.6	1518.1	864.1	490.6	416.8
50°	3506.2	3562.5	3652.3	3629.6	3559.4	3401.3	2909.4	1757.6	865.8	432.0	365.5
52.5°	4238.9	4368.1	4481.5	4431.1	4264.4	3993.2	3303.4	1890.7	828.3	384.2	329.7
55°	4460.1	4606.6	4774.2	4753.2	4593.2	4319.8	3614.8	2002.0	792.1	349.4	306.5
57.5°	4847.0	5019.9	5254.0	5249.5	5053.4	4745.6	4015.6	2135.1	776.5	329.3	294.9
60°	5256.7	5476.9	5800.4	5850.9	5637.8	5317.4	4489.1	2298.6	778.7	318.1	288.2
62.5°	5556.0	5879.0	6349.5	6500.5	6249.4	5896.5	4980.6	2462.1	765.3	305.1	280.1
65°	5574.3	6039.4	6706.9	6941.9	6687.7	6234.2	5153.9	2430.0	684.9	287.7	267.2
67.5°	5127.6	5733.4	6544.3	6802.1	6542.0	6026.0	4850.1	2124.4	556.7	257.3	244.8
70°	4270.7	4973.9	5815.6	6102.9	5888.0	5365.7	4221.1	1696.8	415.9	217.1	211.3
72.5°	3300.3	3956.1	4720.6	4986.4	4822.0	4362.7	3329.3	1236.7	297.1	176.0	171.6
75°	2359.4	2917.9	3472.7	3574.2	3412.0	2990.2	2160.1	772.5	208.2	144.3	138.1
77.5°	1460.9	1824.2	2023.4	1893.0	1686.1	1401.5	879.2	381.5	138.5	117.5	111.2
80°	648.3	760.8	710.4	633.1	499.9	411.0	268.5	169.3	89.4	90.7	87.1
82.5°	218.0	230.5	224.3	222.9	201.0	176.0	113.9	73.3	50.0	58.1	56.7
85°	106.3	111.2	111.7	115.7	100.5	78.2	30.8	29.0	21.4	31.3	32.6
87.5°	32.2	32.6	29.5	32.2	25.9	17.9	5.8	8.0	4.0	7.6	7.6
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	608.5	608.5	608.5	608.5	608.5	608.5	608.5	608.5	608.5	608.5	608.5
2.5°	587.5	585.7	582.6	579.0	578.1	573.7	572.3	570.1	568.7	566.5	564.7
5°	582.1	579.0	575.4	571.4	571.4	565.2	562.5	559.8	559.8	555.8	554.0
7.5°	587.5	583.5	579.5	575.9	577.2	570.1	567.4	564.7	564.3	560.2	558.5
10°	602.7	598.7	593.8	590.2	588.8	583.0	579.9	575.9	573.2	570.5	567.8
12.5°	625.9	620.6	614.3	606.7	603.6	598.7	593.8	588.4	582.1	579.5	575.4
15°	653.6	644.7	636.2	626.8	618.3	613.4	606.7	598.2	589.7	586.2	580.8
17.5°	676.4	667.0	655.0	643.8	628.6	624.6	615.2	604.9	591.1	589.7	581.7
20°	695.6	681.3	666.6	653.2	629.9	627.7	616.1	604.0	584.4	584.4	574.5
22.5°	706.3	686.7	669.3	651.4	622.3	620.6	607.2	592.9	568.7	569.6	557.6
25°	708.1	684.5	662.6	641.1	607.6	604.5	587.5	571.9	545.5	543.7	531.2
27.5°	701.0	673.3	647.8	621.9	585.7	579.0	560.2	541.5	515.6	511.1	497.7
30°	684.5	651.8	623.2	593.3	555.3	544.6	525.0	505.7	479.4	473.6	461.1
32.5°	658.1	621.0	589.3	559.4	517.4	504.0	484.3	465.1	439.6	435.2	423.5
35°	623.2	581.7	548.2	516.5	474.5	460.6	441.9	424.9	401.6	399.9	391.8
37.5°	579.5	536.1	500.4	470.0	430.2	423.1	403.9	391.4	372.2	373.9	369.9
40°	529.9	485.6	451.7	424.9	390.5	384.2	372.6	363.2	346.7	351.6	352.1
42.5°	479.8	435.6	404.8	380.6	351.2	347.1	339.1	333.7	321.2	331.1	335.1
45°	423.1	382.0	355.6	337.3	315.4	315.4	311.4	311.0	302.5	316.3	320.3
47.5°	368.1	336.0	317.7	306.5	291.3	298.4	297.1	300.7	294.4	308.7	312.3
50°	326.6	304.2	293.1	287.7	277.0	288.2	290.8	295.8	290.4	302.9	305.6
52.5°	300.2	285.5	279.2	277.9	270.3	284.1	288.6	293.1	286.8	298.4	298.0
55°	285.5	275.7	273.4	276.1	270.3	283.7	288.2	291.3	285.9	294.0	293.5
57.5°	280.1	274.8	276.1	280.1	276.1	287.3	289.5	293.1	287.7	291.3	293.1
60°	279.7	279.7	285.0	290.4	287.7	295.8	297.1	296.7	291.7	292.2	293.1
62.5°	277.0	283.7	292.6	301.1	300.2	310.1	311.0	305.1	301.1	296.7	295.3
65°	268.5	279.7	292.6	304.2	306.0	321.2	323.0	317.2	314.5	306.9	301.1
67.5°	249.7	264.0	279.2	293.5	296.7	317.2	321.2	323.5	324.8	319.9	312.3
70°	218.0	232.8	248.4	264.9	269.4	292.2	300.7	311.0	319.0	326.1	323.5
72.5°	177.4	190.8	204.2	219.4	226.1	249.7	260.9	278.8	291.3	309.6	317.2
75°	140.7	148.8	156.8	166.2	171.6	194.8	208.6	230.1	247.1	272.5	289.5
77.5°	110.8	114.8	118.8	122.9	125.1	138.1	149.2	170.7	190.3	222.5	247.5
80°	85.3	87.6	88.0	89.4	88.5	94.7	98.7	111.7	128.7	160.4	189.9
82.5°	55.0	56.7	57.6	59.9	55.4	63.4	66.1	67.5	76.4	99.6	120.6
85°	30.8	31.3	31.7	32.6	26.4	34.4	34.8	32.6	31.7	41.1	46.5
87.5°	7.6	7.1	7.6	7.6	3.1	7.1	7.1	4.9	3.6	6.7	5.4
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):

	135°	145°	155°	165°	175°	180°
0°	608.5	608.5	608.5	608.5	608.5	608.5
2.5°	560.7	559.8	560.2	558.0	557.1	557.6
5°	551.8	550.0	550.0	548.6	546.8	546.8
7.5°	555.8	552.2	550.9	548.2	545.5	546.0
10°	562.0	555.8	551.3	547.3	544.2	544.2
12.5°	566.1	554.9	548.2	542.8	539.3	539.3
15°	567.0	550.0	540.1	534.3	530.8	530.8
17.5°	561.6	540.1	527.6	520.0	516.0	516.9
20°	548.2	521.8	507.1	499.0	495.0	495.5
22.5°	527.2	496.8	479.8	470.4	466.4	466.4
25°	498.6	465.5	447.2	439.6	436.0	436.0
27.5°	466.0	432.0	415.9	410.1	407.9	407.9
30°	429.3	401.2	389.6	385.6	382.0	382.0
32.5°	398.5	378.4	374.4	369.0	359.6	359.2
35°	373.9	371.7	368.6	352.5	339.1	337.3
37.5°	360.5	373.9	354.3	326.6	315.9	315.4
40°	353.4	365.9	331.9	318.5	317.2	317.2
42.5°	336.4	345.4	330.6	323.0	323.0	323.5
45°	318.5	326.1	333.7	327.0	329.3	329.7
47.5°	306.0	321.2	333.7	327.9	332.4	335.1
50°	294.4	316.8	327.0	327.0	331.9	332.4
52.5°	291.7	310.5	320.8	325.7	326.1	323.9
55°	292.2	305.6	315.9	322.1	319.4	319.4
57.5°	291.7	302.9	311.8	314.1	315.4	315.4
60°	292.2	299.3	306.5	305.6	310.1	310.1
62.5°	293.5	294.4	298.0	297.1	303.8	303.8
65°	296.7	288.2	285.9	286.8	294.9	294.4
67.5°	302.5	279.7	272.5	273.0	284.6	282.8
70°	311.0	268.1	257.3	254.7	274.3	271.2
72.5°	313.6	254.7	237.7	235.0	246.6	237.7
75°	301.1	243.9	216.7	207.7	202.8	200.2
77.5°	268.5	237.2	194.8	176.0	168.4	166.6
80°	222.5	223.4	166.2	143.9	167.1	166.6
82.5°	168.0	193.0	133.1	124.6	121.1	101.0
85°	81.3	145.2	102.3	85.8	51.4	48.7
87.5°	7.1	60.8	59.0	38.4	17.4	16.5
90°	0.0	0.0	0.0	0.0	0.0	0.0

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