

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: P270369

Luminaire Tested: **NAV-AF-02-D-UNV-SLL-7027**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270369
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24264)
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-SLL-7027
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 2700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT
ELIMINATOR LEFT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9346.6 lumens
Efficiency: N/A
Efficacy: 82.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

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

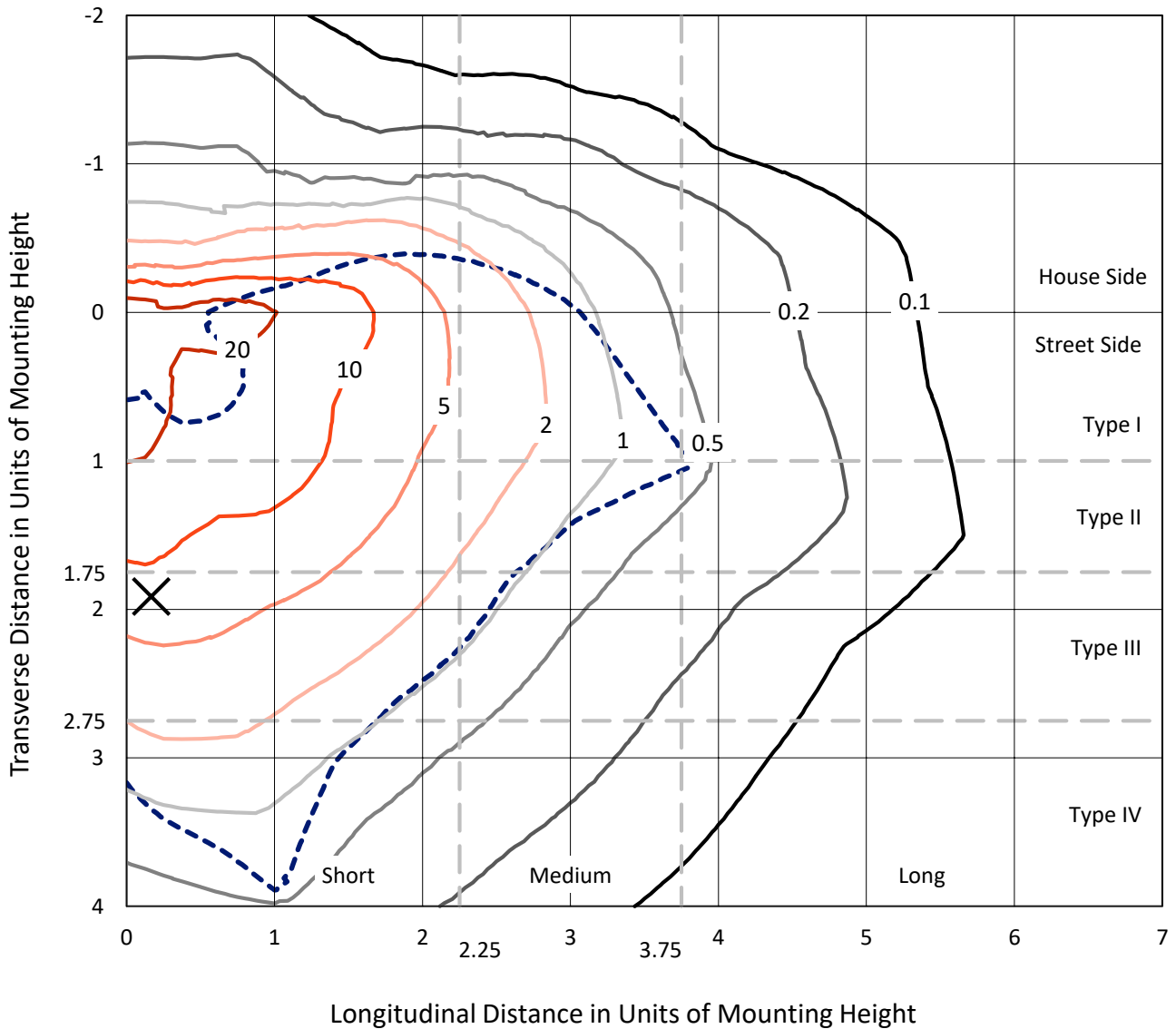


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Iso-Footcandle Lines of Horizontal Illumination

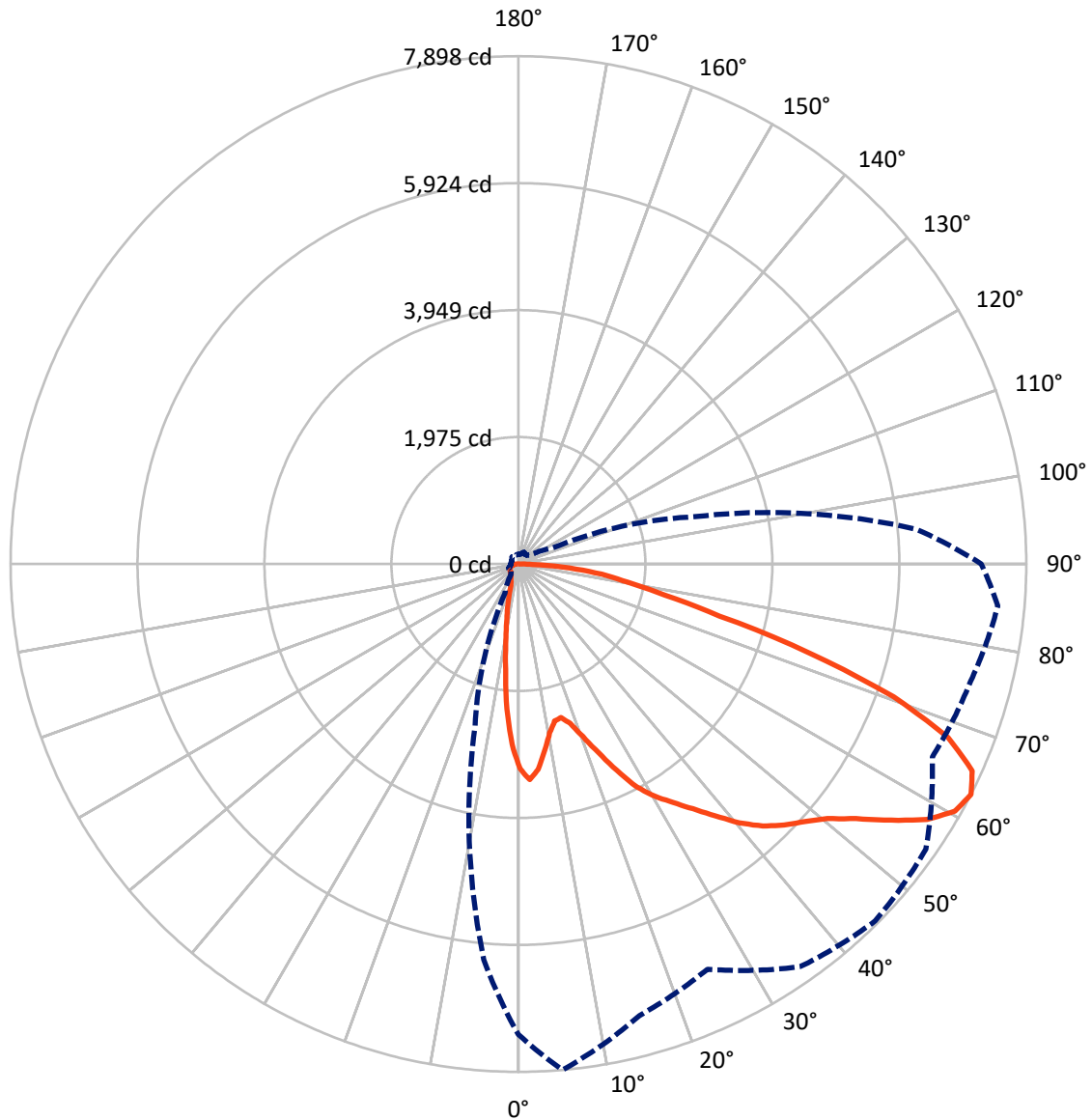
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 36.6 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 5-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1655.8	0.0	1655.8
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	7690.9	0.0	7690.9
	% Fixture	82.3	0.0	82.3
Total	Lumens	9346.6	0.0	9346.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	231.7	2.5
10°-20°	423.3	4.5
20°-30°	608.8	6.5
30°-40°	932.4	10.0
40°-50°	1363.2	14.6
50°-60°	1983.4	21.2
60°-70°	2298.1	24.6
70°-80°	1197.9	12.8
80°-90°	307.9	3.3
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°	9346.6	100.0
0°-180°	9346.6	100.0



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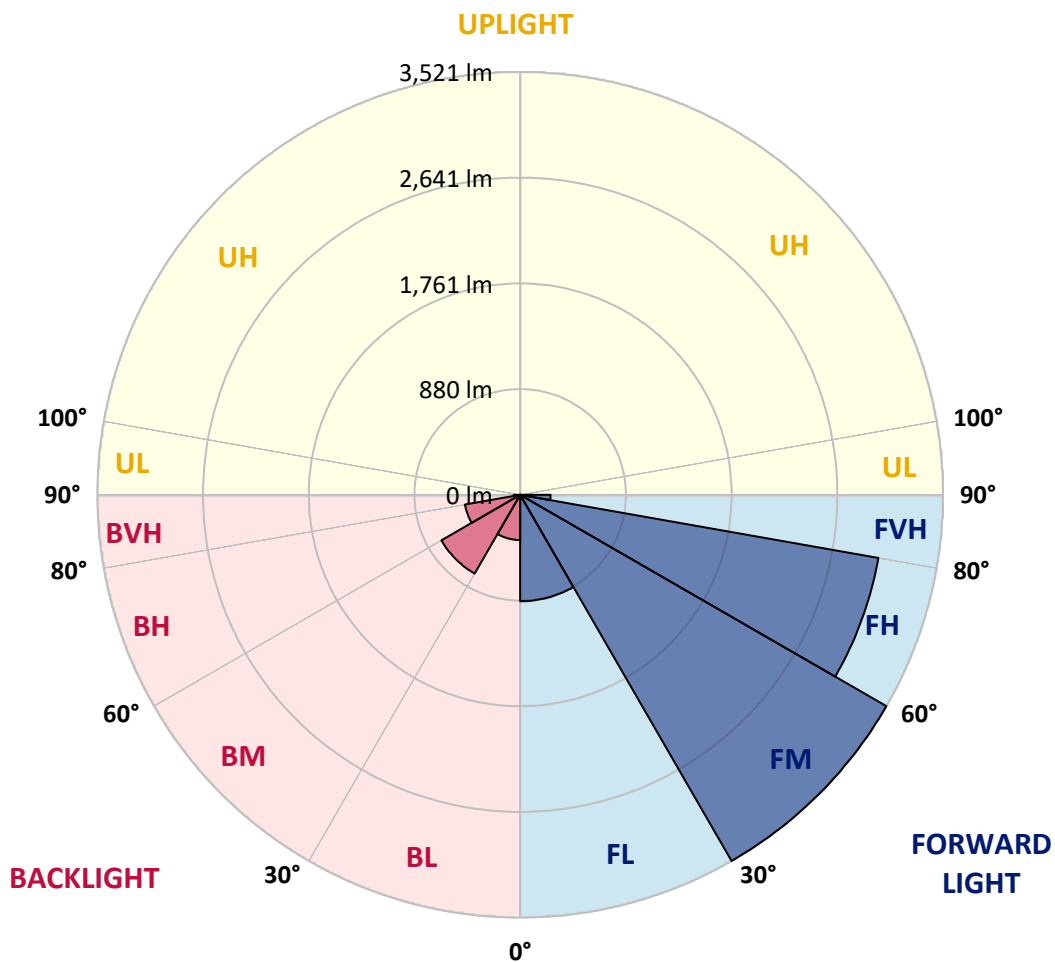
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	887.0	9.5			
FM	(30°-60°)	3521.4	37.7			
FH	(60°-80°)	3029.1	32.4			G2/5000
FVH	(80°-90°)	253.3	2.7			G3/500
BL	(0°-30°)	376.7	4.0	B1/500		
BM	(30°-60°)	757.6	8.1	B1/1000		
BH	(60°-80°)	466.9	5.0	B1/500		G1/500
BVH	(80°-90°)	54.6	0.6			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5
2.5°	3289.5	3359.2	3439.3	3543.6	3614.8	3643.3	3666.9	3626.9	3588.3	3515.7	3490.1
5°	3072.7	3206.8	3427.0	3636.5	3820.9	3926.5	3959.0	3885.2	3753.7	3563.9	3463.7
7.5°	2750.7	2927.5	3237.3	3545.6	3809.9	3986.0	3999.1	3852.7	3593.8	3282.6	3120.1
10°	2469.5	2669.5	3027.8	3372.9	3652.7	3833.0	3797.8	3592.4	3280.0	2926.1	2742.5
12.5°	2306.2	2506.1	2871.3	3221.7	3485.3	3553.8	3481.9	3309.1	3012.9	2658.5	2473.6
15°	2271.5	2477.6	2815.7	3111.2	3274.5	3230.6	3159.3	3071.9	2861.2	2571.0	2392.2
17.5°	2375.9	2606.3	2889.7	3051.6	3044.9	2939.2	2879.4	2896.4	2860.6	2666.0	2479.0
20°	2590.8	2863.2	3077.4	3035.4	2861.8	2713.4	2678.8	2811.8	2977.7	2904.0	2698.5
22.5°	2873.4	3183.8	3333.5	3082.1	2766.3	2606.3	2599.5	2806.9	3191.1	3263.7	3013.6
25°	3192.5	3554.5	3591.8	3164.8	2756.1	2596.9	2590.8	2880.1	3448.1	3620.2	3366.7
27.5°	3582.9	3928.5	3807.1	3275.2	2800.8	2624.7	2628.7	3004.8	3715.7	3972.6	3764.4
30°	3877.1	4194.1	3940.1	3383.6	2872.7	2673.4	2683.6	3139.7	3860.0	4217.3	4082.3
32.5°	4152.1	4421.2	4067.4	3490.8	2977.7	2745.9	2781.2	3307.7	4033.6	4427.2	4382.7
35°	4456.4	4675.3	4209.1	3605.3	3128.2	2873.4	2924.3	3467.6	4205.7	4637.4	4680.1
37.5°	4801.4	4966.0	4362.9	3767.2	3345.0	3109.3	3137.7	3630.9	4325.7	4869.8	4999.2
40°	5160.6	5292.1	4531.1	3983.4	3660.1	3427.8	3441.2	3840.4	4419.8	5110.4	5309.0
42.5°	5468.9	5571.2	4699.8	4251.8	4022.0	3752.3	3763.9	4066.1	4510.0	5317.7	5556.9
45°	5715.6	5790.7	4859.0	4534.4	4408.3	4157.5	4154.9	4295.9	4630.7	5492.5	5747.4
47.5°	5945.3	5985.2	5036.5	4809.5	4808.8	4679.5	4582.4	4567.0	4791.2	5639.6	5913.5
50°	6208.2	6223.2	5271.1	5087.3	5298.2	5277.8	5098.9	4911.2	4999.2	5804.9	6087.6
52.5°	6574.2	6574.9	5561.8	5358.4	5838.3	5902.7	5694.5	5300.8	5306.9	6126.9	6388.4
55°	7004.5	7034.4	5940.5	5683.0	6403.4	6513.3	6317.3	5763.6	5748.8	6646.0	6876.4
57.5°	7337.3	7495.2	6381.6	6089.0	6931.3	7074.3	6916.4	6243.5	6291.5	7181.4	7279.0
60°	7430.8	7800.2	6821.5	6544.3	7377.9	7592.7	7432.1	6761.9	6822.8	7529.1	7394.8
62.5°	7319.0	7898.3	7269.4	6952.3	7642.9	7848.9	7733.7	7101.5	7255.9	7484.3	7198.9
65°	6987.6	7756.1	7658.5	7125.9	7490.3	7563.5	7533.0	7119.1	7491.1	7061.4	6657.6
67.5°	6213.7	7207.1	7484.9	6755.2	6778.3	6699.6	6659.6	6635.2	7226.9	6379.0	5803.7
70°	5053.4	6192.6	6657.6	5653.3	5482.4	5406.5	5275.0	5600.4	6495.6	5435.0	4776.3
72.5°	3892.5	4737.8	5460.7	4285.6	3930.5	3956.3	3807.1	4282.3	5380.8	4201.6	3646.6
75°	2764.3	3230.6	4358.8	3079.4	2609.0	2607.7	2596.2	3082.1	4245.7	3015.7	2668.1
77.5°	1992.4	2325.8	3414.8	2060.8	1851.4	1875.1	1837.3	2094.7	3309.7	2169.2	1976.8
80°	1589.1	1722.1	2207.2	1374.3	1378.4	1434.0	1425.8	1432.5	2177.4	1570.9	1478.0
82.5°	1141.8	1307.3	1687.5	1053.2	911.5	970.4	981.9	1062.7	1536.3	1110.8	974.5
85°	585.5	796.9	1552.6	912.1	570.0	472.4	543.6	838.3	1334.3	665.5	475.1
87.5°	113.8	221.0	1137.9	507.0	256.1	129.4	213.4	355.1	776.0	120.6	59.0
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5
2.5°	3446.0	3359.2	3277.9	3194.0	3128.8	3049.6	2971.7	2904.0	2838.1	2794.7	2808.3
5°	3361.9	3150.5	2960.9	2784.6	2681.6	2557.6	2447.2	2354.3	2282.5	2236.3	2264.2
7.5°	2979.0	2693.1	2443.0	2210.5	2064.2	1903.6	1774.8	1684.1	1628.4	1597.2	1642.7
10°	2587.4	2266.2	1985.7	1743.7	1599.3	1463.1	1346.6	1250.4	1175.8	1140.6	1158.9
12.5°	2306.8	1949.7	1655.5	1493.0	1368.8	1246.9	1126.4	1013.7	919.0	875.6	866.8
15°	2201.7	1779.6	1479.4	1297.7	1174.4	1041.6	911.5	790.9	700.7	663.5	655.4
17.5°	2247.9	1743.0	1375.0	1160.3	981.3	820.1	673.5	559.7	493.3	472.4	474.3
20°	2409.9	1756.5	1291.0	1018.6	797.7	606.5	460.1	381.5	353.0	348.4	353.8
22.5°	2632.2	1812.2	1230.0	896.6	635.7	441.2	342.3	305.0	297.5	296.8	302.2
25°	2925.6	1920.5	1189.4	788.2	502.2	349.7	298.1	277.1	271.1	272.5	277.8
27.5°	3271.2	2058.1	1162.9	694.6	412.7	311.7	278.6	260.1	254.1	255.5	259.5
30°	3586.9	2178.7	1123.6	624.1	370.7	298.1	267.6	249.4	241.3	241.3	244.0
32.5°	3869.5	2283.1	1077.4	571.3	332.1	267.6	242.6	228.3	222.3	224.2	225.7
35°	4120.3	2338.0	1041.6	540.2	300.9	246.7	221.6	206.7	198.5	200.0	201.9
37.5°	4367.0	2358.9	1017.9	523.2	278.6	233.7	210.7	198.5	189.7	188.5	187.7
40°	4601.5	2354.3	995.5	518.4	263.7	224.2	203.9	193.1	184.3	182.3	181.5
42.5°	4804.0	2338.6	974.5	505.6	253.4	217.5	198.5	189.1	180.3	177.5	176.2
45°	4989.0	2329.1	951.5	481.9	258.9	214.9	195.8	185.7	177.5	174.2	172.8
47.5°	5194.4	2363.1	925.8	456.1	257.5	215.6	195.8	184.3	176.2	172.8	171.4
50°	5439.1	2477.6	893.9	420.9	245.2	230.4	195.2	182.3	174.8	172.8	170.0
52.5°	5784.6	2663.3	849.7	375.4	235.9	246.0	194.6	178.9	172.8	169.4	166.0
55°	6258.4	2849.0	792.8	327.3	221.0	235.1	195.8	174.8	168.1	164.7	160.5
57.5°	6646.6	2989.9	721.1	287.4	207.4	222.3	193.9	170.0	162.7	159.3	155.9
60°	6621.6	3003.6	652.6	261.5	199.2	200.0	198.5	166.7	157.9	155.1	152.5
62.5°	6211.6	2836.0	588.8	248.7	193.1	182.3	202.6	162.7	153.2	150.5	148.4
65°	5529.2	2446.4	555.1	248.7	187.7	172.8	176.8	157.3	148.4	145.7	144.4
67.5°	4663.8	1965.9	523.2	254.1	180.3	166.0	160.5	151.9	143.6	140.9	139.5
70°	3738.0	1547.2	500.9	251.4	173.6	158.6	151.9	144.4	136.3	135.6	134.1
72.5°	2932.3	1242.8	490.7	251.4	163.3	149.7	143.0	137.6	129.4	128.7	126.8
75°	2349.5	933.2	448.7	246.7	153.2	138.2	132.1	127.4	119.3	120.0	118.5
77.5°	1819.5	660.1	374.8	222.3	140.2	125.4	120.6	117.3	107.7	108.4	108.4
80°	1423.2	429.7	290.7	184.3	125.4	110.4	107.1	104.4	94.2	95.6	95.6
82.5°	975.2	255.5	210.7	148.4	107.7	94.2	93.6	89.4	78.6	79.3	80.7
85°	532.6	168.1	140.2	109.9	84.7	76.5	75.2	73.2	63.1	63.1	63.7
87.5°	98.3	90.1	82.6	72.6	57.0	54.8	52.9	54.8	47.4	46.2	46.2
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5
2.5°	2776.4	2729.7	2697.3	2668.8	2600.2	2605.1	2614.4	2628.0	2585.3	2607.7	2635.4
5°	2236.3	2197.8	2168.6	2123.1	2027.7	1993.8	1972.0	1962.5	1898.8	1912.4	1942.2
7.5°	1648.7	1648.1	1638.0	1587.1	1472.0	1402.2	1356.0	1341.8	1302.5	1317.5	1362.8
10°	1160.9	1173.0	1168.3	1122.9	1019.9	969.8	959.6	988.0	988.8	1017.9	1095.8
12.5°	838.9	832.2	826.1	788.8	711.5	703.5	726.5	765.7	775.2	806.5	887.7
15°	626.2	609.9	606.5	577.4	526.5	534.0	551.0	571.3	572.0	593.6	660.8
17.5°	469.6	469.6	475.1	456.1	419.5	416.1	407.3	401.8	393.7	402.5	439.1
20°	364.6	381.5	395.1	384.2	351.1	334.8	317.8	307.0	300.9	301.7	312.4
22.5°	312.4	325.9	343.6	338.1	310.4	289.3	278.6	271.1	266.3	266.3	272.5
25°	286.0	294.9	311.1	308.4	284.7	267.6	258.9	251.4	246.0	245.2	251.4
27.5°	265.0	270.4	281.2	279.9	255.5	244.7	239.2	234.5	231.0	230.4	236.6
30°	246.0	248.7	254.1	252.2	233.7	223.0	221.0	218.8	216.9	217.5	226.4
32.5°	229.1	231.0	234.5	231.8	214.2	204.6	201.3	198.5	196.5	198.5	208.8
35°	210.1	216.2	220.3	218.8	200.0	188.5	181.0	174.2	171.4	173.6	185.1
37.5°	193.9	203.9	209.5	208.0	188.5	174.8	165.4	164.0	164.0	166.7	178.3
40°	187.7	195.2	200.0	197.8	178.3	164.7	159.3	157.3	157.9	160.5	172.8
42.5°	182.3	189.1	190.4	186.4	166.7	157.9	154.5	151.9	153.2	156.6	168.7
45°	177.5	183.0	182.3	176.2	157.3	151.2	151.2	149.1	149.7	152.5	165.4
47.5°	174.2	176.8	175.4	169.4	150.5	145.7	147.7	147.7	149.1	151.2	164.0
50°	168.7	170.8	169.4	164.0	145.0	140.9	143.0	145.7	147.1	149.1	160.5
52.5°	163.3	164.7	164.0	158.6	139.5	136.9	136.9	139.5	142.3	145.0	155.1
55°	157.9	159.3	160.0	155.9	135.6	132.8	132.1	132.1	134.8	138.9	149.7
57.5°	153.8	153.8	155.1	152.5	131.5	128.1	124.7	125.4	128.7	132.1	143.0
60°	149.1	149.7	151.9	149.1	126.0	120.6	117.9	121.4	122.7	126.0	137.6
62.5°	145.0	145.0	146.3	144.4	121.4	115.9	113.8	117.3	117.3	120.6	132.1
65°	141.7	140.9	140.9	140.2	116.6	111.1	109.9	111.1	111.7	115.3	126.8
67.5°	138.9	135.6	135.6	136.9	111.7	106.4	105.7	105.7	106.4	110.4	120.6
70°	132.8	130.2	129.4	134.1	107.1	100.3	100.3	99.0	100.3	102.3	113.1
72.5°	126.0	124.1	123.3	130.2	102.3	93.6	92.2	91.4	92.2	94.2	104.4
75°	117.3	115.9	117.3	127.4	97.6	86.1	84.0	83.4	83.4	84.0	95.0
77.5°	107.1	105.7	115.9	118.5	95.0	77.3	75.2	73.9	72.6	72.6	84.7
80°	95.0	94.2	111.7	100.3	90.8	67.7	64.4	62.3	60.9	60.4	72.6
82.5°	82.6	81.3	95.6	78.6	75.2	55.5	50.8	46.7	44.7	44.7	55.5
85°	67.7	67.2	75.2	57.6	52.2	40.7	33.9	30.5	27.8	27.8	35.9
87.5°	49.4	48.1	46.7	34.6	26.4	18.2	12.8	12.1	10.8	10.2	14.9
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5	3186.5
2.5°	2676.8	2733.2	2839.5	2926.9	3043.5	3137.1	3243.4	3289.5
5°	1997.1	2086.0	2248.5	2387.4	2579.9	2758.2	2961.4	3072.7
7.5°	1432.5	1564.0	1687.5	1860.8	2101.4	2340.8	2603.6	2750.7
10°	1185.3	1305.9	1411.5	1534.9	1720.7	1989.7	2303.4	2469.5
12.5°	981.9	1112.1	1223.9	1356.0	1511.8	1755.2	2113.1	2306.2
15°	752.9	894.5	1028.6	1188.0	1379.1	1657.0	2056.1	2271.5
17.5°	515.6	667.5	832.9	1027.3	1257.7	1615.6	2110.3	2375.9
20°	350.3	461.5	641.1	871.4	1148.7	1596.0	2229.6	2590.8
22.5°	287.9	338.1	473.0	725.1	1059.2	1617.6	2423.4	2873.4
25°	264.3	291.4	367.9	596.4	990.8	1675.2	2685.7	3192.5
27.5°	249.4	272.5	322.6	504.2	927.8	1753.9	3004.8	3582.9
30°	240.6	262.2	304.3	456.8	870.2	1821.7	3279.4	3877.1
32.5°	221.0	237.2	271.7	429.7	828.7	1876.5	3521.3	4152.1
35°	197.2	216.9	245.2	412.1	827.5	1902.3	3748.9	4456.4
37.5°	188.5	207.4	228.3	402.5	835.6	1923.9	4027.6	4801.4
40°	183.0	200.0	216.9	401.3	842.4	1940.9	4299.8	5160.6
42.5°	178.3	195.2	214.9	391.8	839.6	1964.0	4541.1	5468.9
45°	176.8	193.9	219.5	377.5	838.9	1999.8	4732.9	5715.6
47.5°	175.4	201.3	218.2	361.8	836.2	2075.8	4949.1	5945.3
50°	174.2	214.9	208.8	340.2	815.9	2205.2	5239.9	6208.2
52.5°	173.6	216.9	198.5	310.4	779.3	2396.9	5665.4	6574.2
55°	170.8	206.0	181.0	271.1	726.5	2603.6	6121.5	7004.5
57.5°	164.7	183.7	170.8	232.4	650.6	2747.9	6458.4	7337.3
60°	179.7	157.9	164.0	212.8	559.7	2773.7	6473.2	7430.8
62.5°	171.4	143.6	157.3	206.0	496.0	2605.7	6177.0	7319.0
65°	136.9	136.3	151.2	212.8	486.6	2229.6	5677.0	6987.6
67.5°	124.7	130.9	145.0	221.0	492.7	1756.5	4940.9	6213.7
70°	116.6	124.1	136.9	228.3	503.5	1383.7	3978.0	5053.4
72.5°	108.4	114.5	128.7	235.9	496.0	1091.7	3183.8	3892.5
75°	98.3	103.7	117.3	216.2	425.5	802.4	2529.7	2764.3
77.5°	86.7	91.4	103.0	170.8	319.8	558.3	1894.7	1992.4
80°	74.6	76.5	85.3	124.7	208.8	334.1	1442.0	1589.1
82.5°	59.0	59.6	65.0	91.4	130.2	213.4	1000.3	1141.8
85°	38.0	39.3	42.0	64.4	87.5	136.9	511.0	585.5
87.5°	12.8	14.9	14.9	31.3	42.7	75.8	156.6	113.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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