

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: P195254

Luminaire Tested: **NAV-AF-02-D-UNV-SLL-7060**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195254
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-7060
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5700K, 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: 10758 lumens
Efficiency: N/A
Efficacy: 95.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G3

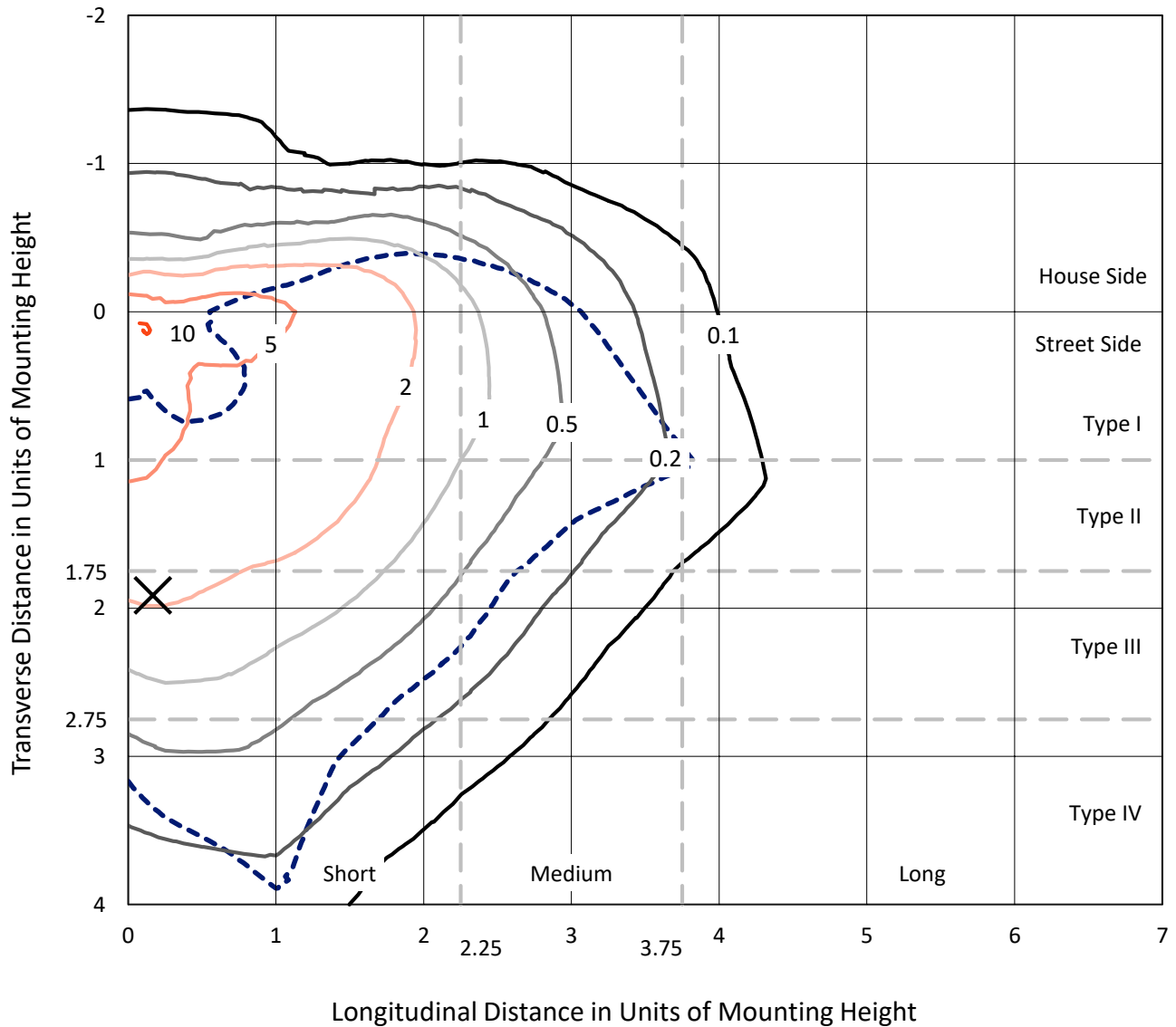
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

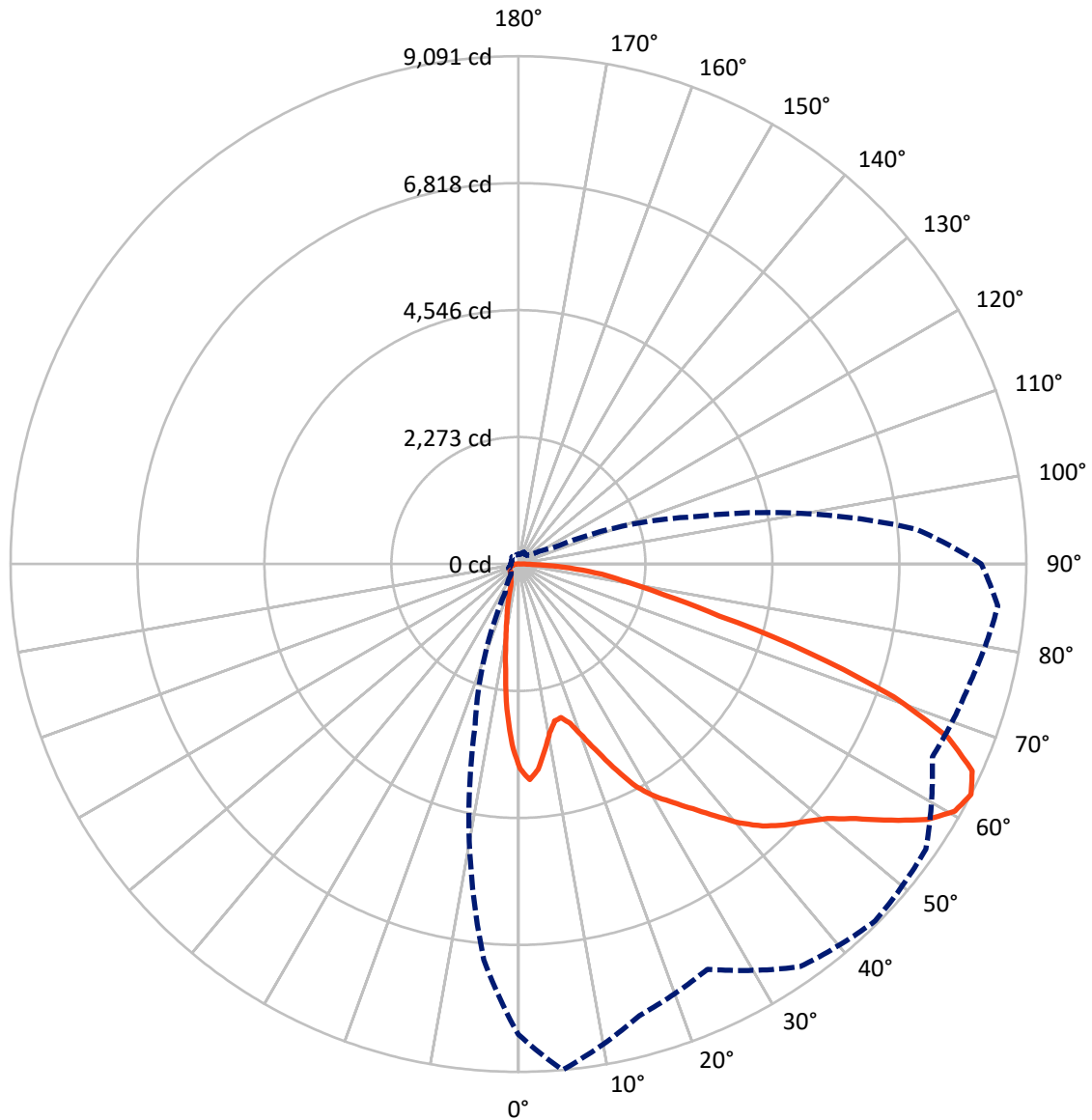
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 10.5 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	1905.8	0.0	1905.8
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	8852.2	0.0	8852.2
	% Fixture	82.3	0.0	82.3
Total	Lumens	10758.0	0.0	10758.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	266.7	2.5
10°-20°	487.2	4.5
20°-30°	700.7	6.5
30°-40°	1073.2	10.0
40°-50°	1569.0	14.6
50°-60°	2282.9	21.2
60°-70°	2645.1	24.6
70°-80°	1378.8	12.8
80°-90°	354.4	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°	10758.0	100.0
0°-180°	10758.0	100.0



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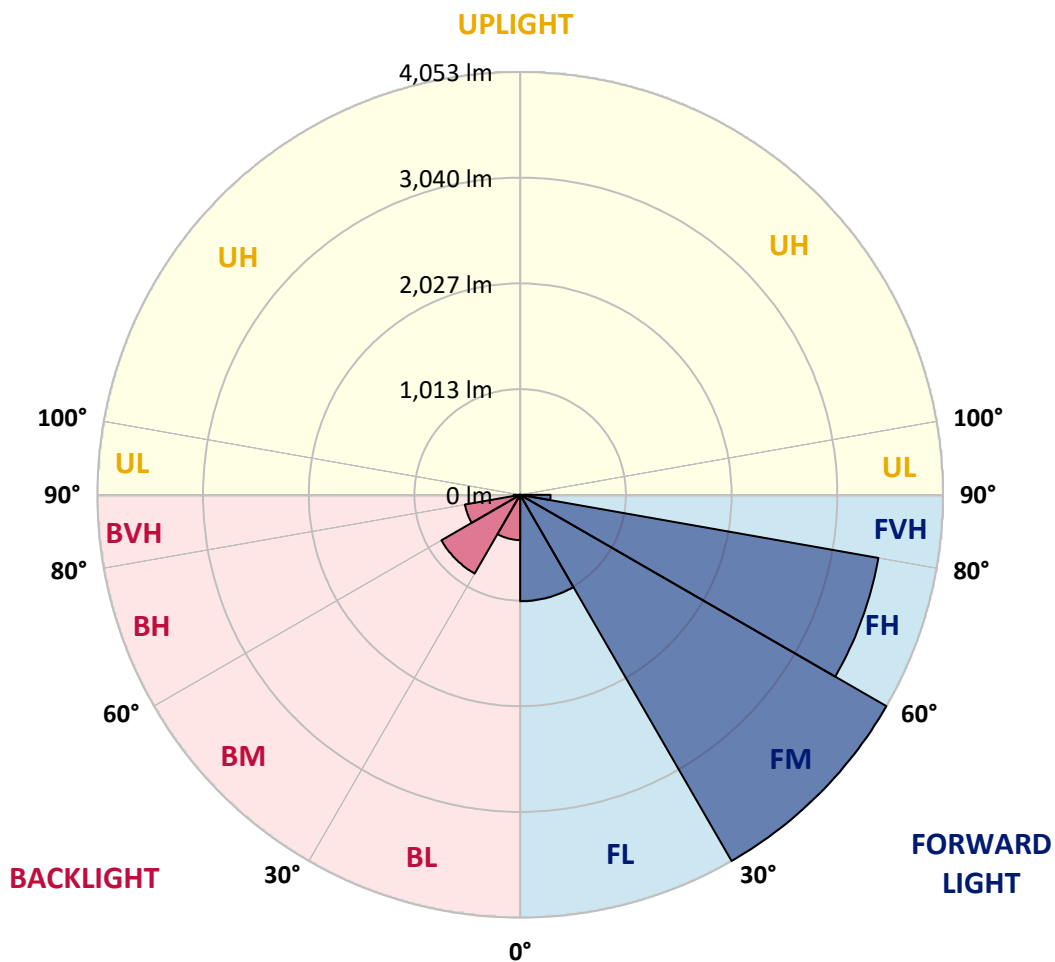
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1021.0	9.5			
FM	(30°-60°)	4053.1	37.7			
FH	(60°-80°)	3486.5	32.4			G2/5000
FVH	(80°-90°)	291.6	2.7			G3/500
BL	(0°-30°)	433.6	4.0	B1/500		
BM	(30°-60°)	872.0	8.1	B1/1000		
BH	(60°-80°)	537.4	5.0	B2/1000		G2/1000
BVH	(80°-90°)	62.8	0.6			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6
2.5°	3786.2	3866.5	3958.6	4078.7	4160.6	4193.3	4220.6	4174.6	4130.2	4046.7	4017.1
5°	3536.6	3691.0	3944.5	4185.5	4397.7	4519.4	4556.8	4471.8	4320.5	4102.1	3986.6
7.5°	3166.1	3369.7	3726.1	4081.0	4385.2	4588.0	4602.9	4434.4	4136.4	3778.4	3591.2
10°	2842.4	3072.5	3485.1	3882.1	4204.3	4411.7	4371.2	4134.8	3775.3	3368.1	3156.7
12.5°	2654.4	2884.5	3304.9	3708.2	4011.6	4090.4	4007.7	3808.8	3467.9	3060.0	2847.0
15°	2614.6	2851.7	3240.9	3581.0	3769.0	3718.3	3636.4	3535.8	3293.2	2959.4	2753.4
17.5°	2734.7	2999.9	3326.0	3512.4	3504.6	3382.9	3314.3	3333.8	3292.4	3068.6	2853.3
20°	2982.0	3295.6	3542.0	3493.7	3294.0	3123.2	3083.4	3236.3	3427.4	3342.4	3106.0
22.5°	3307.3	3664.5	3836.9	3547.5	3184.0	2999.9	2992.1	3230.8	3673.1	3756.5	3468.7
25°	3674.6	4091.2	4134.1	3642.7	3172.3	2989.0	2982.0	3315.1	3968.7	4166.8	3875.1
27.5°	4123.9	4521.7	4382.1	3769.8	3223.8	3021.0	3025.7	3458.6	4276.8	4572.4	4333.0
30°	4462.4	4827.5	4535.0	3894.6	3306.5	3077.1	3088.8	3613.8	4442.9	4854.0	4698.8
32.5°	4779.1	5088.8	4681.6	4017.8	3427.4	3160.6	3201.2	3807.2	4642.6	5095.8	5044.3
35°	5129.4	5381.3	4844.7	4149.7	3600.5	3307.3	3365.8	3991.3	4840.8	5337.6	5386.8
37.5°	5526.4	5715.9	5021.7	4336.1	3850.1	3578.7	3611.5	4179.3	4978.8	5605.2	5754.1
40°	5939.8	6091.1	5215.2	4584.9	4212.8	3945.3	3960.9	4420.3	5087.2	5882.1	6110.6
42.5°	6294.7	6412.5	5409.4	4893.8	4629.4	4318.9	4332.2	4680.1	5191.0	6120.8	6396.1
45°	6578.6	6665.2	5592.7	5219.1	5074.0	4785.4	4782.3	4944.5	5329.8	6322.0	6615.3
47.5°	6843.0	6889.1	5797.0	5535.7	5535.0	5386.0	5274.4	5256.5	5514.7	6491.3	6806.4
50°	7145.7	7162.9	6066.9	5855.6	6098.1	6074.7	5868.8	5652.7	5754.1	6681.6	7006.8
52.5°	7566.9	7567.7	6401.6	6167.6	6719.8	6793.9	6554.4	6101.3	6108.3	7052.1	7353.2
55°	8062.2	8096.5	6837.6	6541.2	7370.3	7496.7	7271.3	6634.0	6616.8	7649.6	7914.8
57.5°	8445.2	8626.9	7345.4	7008.4	7978.0	8142.5	7960.8	7186.3	7241.6	8265.8	8378.1
60°	8552.8	8977.9	7851.6	7532.6	8492.0	8739.3	8554.4	7783.0	7853.2	8665.9	8511.5
62.5°	8424.1	9091.0	8367.2	8002.1	8797.0	9034.1	8901.5	8173.7	8351.6	8614.5	8286.1
65°	8042.7	8927.2	8814.9	8201.8	8621.5	8705.7	8670.6	8194.0	8622.3	8127.7	7662.8
67.5°	7151.9	8295.4	8615.2	7775.2	7801.7	7711.2	7665.2	7637.1	8318.0	7342.3	6680.0
70°	5816.5	7127.7	7662.8	6506.9	6310.3	6222.9	6071.6	6446.0	7476.4	6255.7	5497.5
72.5°	4480.4	5453.1	6285.3	4932.8	4524.1	4553.7	4382.1	4928.9	6193.3	4836.1	4197.2
75°	3181.7	3718.3	5017.0	3544.4	3003.0	3001.5	2988.2	3547.5	4886.8	3471.1	3070.9
77.5°	2293.2	2677.0	3930.5	2372.0	2131.0	2158.3	2114.6	2411.0	3809.6	2496.8	2275.3
80°	1829.1	1982.0	2540.5	1581.9	1586.5	1650.5	1641.1	1648.9	2506.2	1808.1	1701.2
82.5°	1314.3	1504.6	1942.2	1212.1	1049.1	1117.0	1130.2	1223.1	1768.3	1278.4	1121.7
85°	673.9	917.3	1787.0	1049.9	656.0	543.7	625.6	964.9	1535.8	766.0	546.8
87.5°	131.0	254.3	1309.6	583.4	294.8	149.0	245.7	408.7	893.1	138.8	67.9
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6
2.5°	3966.4	3866.5	3772.9	3676.2	3601.3	3510.1	3420.4	3342.4	3266.7	3216.8	3232.4
5°	3869.6	3626.3	3407.9	3205.1	3086.5	2943.8	2816.6	2709.8	2627.1	2574.0	2606.0
7.5°	3428.9	3099.8	2811.9	2544.4	2375.9	2191.1	2042.9	1938.3	1874.4	1838.5	1890.7
10°	2978.1	2608.4	2285.4	2007.0	1840.8	1684.0	1549.9	1439.1	1353.3	1312.8	1333.8
12.5°	2655.2	2244.1	1905.6	1718.4	1575.6	1435.2	1296.4	1166.9	1057.7	1007.8	997.6
15°	2534.3	2048.3	1702.8	1493.7	1351.8	1198.9	1049.1	910.3	806.5	763.6	754.3
17.5°	2587.3	2006.2	1582.6	1335.4	1129.5	943.8	775.3	644.3	567.8	543.7	546.0
20°	2773.7	2021.8	1485.9	1172.4	918.1	698.1	529.6	439.1	406.4	400.9	407.2
22.5°	3029.6	2085.8	1415.7	1032.0	731.7	507.8	393.9	351.0	342.4	341.6	347.9
25°	3367.3	2210.6	1368.9	907.2	578.0	402.5	343.2	319.0	312.0	313.6	319.8
27.5°	3765.1	2368.9	1338.5	799.5	475.0	358.8	320.6	299.5	292.5	294.1	298.7
30°	4128.6	2507.7	1293.3	718.4	426.7	343.2	308.1	287.0	277.7	277.7	280.8
32.5°	4453.9	2627.9	1240.2	657.6	382.2	308.1	279.2	262.9	255.8	258.2	259.7
35°	4742.5	2691.0	1198.9	621.7	346.3	283.9	255.1	237.9	228.5	230.1	232.4
37.5°	5026.4	2715.2	1171.6	602.2	320.6	269.1	242.6	228.5	218.4	216.8	216.1
40°	5296.3	2709.8	1145.8	596.7	303.4	258.2	234.8	222.3	212.2	209.8	209.0
42.5°	5529.5	2691.8	1121.7	581.9	291.7	250.4	228.5	217.6	207.5	204.4	202.8
45°	5742.4	2680.9	1095.1	554.6	298.0	247.3	225.4	213.7	204.4	200.5	198.9
47.5°	5978.8	2719.9	1065.5	524.9	296.4	248.0	225.4	212.2	202.8	198.9	197.3
50°	6260.4	2851.7	1028.8	484.4	282.4	265.2	224.6	209.8	201.2	198.9	195.8
52.5°	6658.2	3065.4	978.1	432.1	271.4	283.1	223.9	205.9	198.9	195.0	191.1
55°	7203.4	3279.2	912.6	376.7	254.3	270.7	225.4	201.2	193.4	189.5	184.9
57.5°	7650.4	3441.4	829.9	330.7	238.7	255.8	223.1	195.8	187.2	183.3	179.4
60°	7621.5	3457.0	751.2	301.1	229.3	230.1	228.5	191.9	181.7	178.6	175.5
62.5°	7149.6	3264.4	677.8	286.3	222.3	209.8	233.2	187.2	176.3	173.2	170.8
65°	6364.1	2815.8	638.8	286.3	216.1	198.9	203.6	181.0	170.8	167.7	166.1
67.5°	5368.0	2262.8	602.2	292.5	207.5	191.1	184.9	174.7	165.4	162.2	160.7
70°	4302.5	1780.8	576.4	289.4	199.7	182.5	174.7	166.1	156.8	156.0	154.4
72.5°	3375.1	1430.5	564.7	289.4	188.0	172.4	164.6	158.3	149.0	148.2	145.9
75°	2704.3	1074.1	516.4	283.9	176.3	159.1	152.1	146.6	137.3	138.1	136.5
77.5°	2094.3	759.7	431.3	255.8	161.5	144.3	138.8	134.9	124.0	124.8	124.8
80°	1638.0	494.5	334.6	212.2	144.3	127.1	123.2	120.1	108.4	110.0	110.0
82.5°	1122.4	294.1	242.6	170.8	124.0	108.4	107.6	103.0	90.5	91.3	92.8
85°	613.1	193.4	161.5	126.4	97.5	88.1	86.6	84.2	72.5	72.5	73.3
87.5°	113.1	103.7	95.2	83.5	65.5	63.2	60.8	63.2	54.6	53.0	53.0
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6
2.5°	3195.7	3141.9	3104.4	3071.7	2992.9	2998.4	3009.3	3024.9	2975.7	3001.5	3033.5
5°	2574.0	2529.6	2496.0	2443.8	2333.8	2294.8	2269.8	2258.9	2185.6	2201.2	2235.5
7.5°	1897.8	1897.0	1885.3	1826.8	1694.2	1613.8	1560.8	1544.4	1499.2	1516.3	1568.6
10°	1336.2	1350.2	1344.7	1292.5	1173.9	1116.2	1104.5	1137.3	1138.0	1171.6	1261.3
12.5°	965.7	957.9	950.8	907.9	819.0	809.7	836.2	881.4	892.3	928.2	1021.8
15°	720.7	702.0	698.1	664.6	606.1	614.6	634.1	657.6	658.3	683.3	760.5
17.5°	540.5	540.5	546.8	524.9	482.8	478.9	468.8	462.5	453.2	463.3	505.4
20°	419.6	439.1	454.7	442.3	404.0	385.3	365.8	353.3	346.3	347.1	359.6
22.5°	359.6	375.2	395.5	389.2	357.2	333.1	320.6	312.0	306.5	306.5	313.6
25°	329.2	339.3	358.0	354.9	327.6	308.1	298.0	289.4	283.1	282.4	289.4
27.5°	305.0	311.2	323.7	322.1	294.1	281.6	275.3	269.9	266.0	265.2	272.2
30°	283.1	286.3	292.5	290.2	269.1	256.6	254.3	251.9	249.6	250.4	260.5
32.5°	263.6	266.0	269.9	266.8	246.5	235.6	231.7	228.5	226.2	228.5	240.2
35°	241.8	248.8	253.5	251.9	230.1	216.8	208.3	200.5	197.3	199.7	212.9
37.5°	223.1	234.8	241.0	239.5	216.8	201.2	190.3	188.8	188.8	191.9	205.1
40°	216.1	224.6	230.1	227.8	205.1	189.5	183.3	181.0	181.7	184.9	198.9
42.5°	209.8	217.6	219.2	214.5	191.9	181.7	177.8	174.7	176.3	180.2	194.2
45°	204.4	210.6	209.8	202.8	181.0	173.9	173.9	171.6	172.4	175.5	190.3
47.5°	200.5	203.6	202.0	195.0	173.2	167.7	170.0	170.0	171.6	173.9	188.8
50°	194.2	196.6	195.0	188.8	166.9	162.2	164.6	167.7	169.3	171.6	184.9
52.5°	188.0	189.5	188.8	182.5	160.7	157.6	157.6	160.7	163.8	166.9	178.6
55°	181.7	183.3	184.1	179.4	156.0	152.9	152.1	152.1	155.2	159.9	172.4
57.5°	177.1	177.1	178.6	175.5	151.3	147.4	143.5	144.3	148.2	152.1	164.6
60°	171.6	172.4	174.7	171.6	145.1	138.8	135.7	139.6	141.2	145.1	158.3
62.5°	166.9	166.9	168.5	166.1	139.6	133.4	131.0	134.9	134.9	138.8	152.1
65°	163.0	162.2	162.2	161.5	134.2	127.9	126.4	127.9	128.7	132.6	145.9
67.5°	159.9	156.0	156.0	157.6	128.7	122.5	121.7	121.7	122.5	127.1	138.8
70°	152.9	149.8	149.0	154.4	123.2	115.4	115.4	113.9	115.4	117.8	130.3
72.5°	145.1	142.7	142.0	149.8	117.8	107.6	106.1	105.3	106.1	108.4	120.1
75°	134.9	133.4	134.9	146.6	112.3	99.1	96.7	95.9	95.9	96.7	109.2
77.5°	123.2	121.7	133.4	136.5	109.2	88.9	86.6	85.0	83.5	83.5	97.5
80°	109.2	108.4	128.7	115.4	104.5	78.0	74.1	71.8	70.2	69.4	83.5
82.5°	95.2	93.6	110.0	90.5	86.6	64.0	58.5	53.8	51.5	51.5	64.0
85°	78.0	77.2	86.6	66.3	60.1	46.8	39.0	35.1	32.0	32.0	41.3
87.5°	56.9	55.4	53.8	39.8	30.4	21.1	14.8	14.0	12.5	11.7	17.2
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6	3667.6
2.5°	3081.0	3145.8	3268.3	3368.9	3503.0	3610.7	3733.1	3786.2
5°	2298.7	2400.9	2588.1	2748.0	2969.5	3174.6	3408.7	3536.6
7.5°	1648.9	1800.3	1942.2	2141.9	2418.8	2694.2	2996.8	3166.1
10°	1364.2	1503.1	1624.8	1766.7	1980.5	2290.1	2651.3	2842.4
12.5°	1130.2	1280.0	1408.7	1560.8	1740.2	2020.2	2432.1	2654.4
15°	866.6	1029.6	1184.1	1367.4	1587.3	1907.1	2366.6	2614.6
17.5°	593.6	768.3	958.6	1182.5	1447.7	1859.5	2429.0	2734.7
20°	403.3	531.2	737.9	1003.1	1322.1	1836.9	2566.2	2982.0
22.5°	331.5	389.2	544.4	834.6	1219.2	1861.9	2789.3	3307.3
25°	304.2	335.4	423.5	686.4	1140.4	1928.2	3091.2	3674.6
27.5°	287.0	313.6	371.3	580.3	1067.8	2018.7	3458.6	4123.9
30°	276.9	301.9	350.2	525.7	1001.5	2096.7	3774.5	4462.4
32.5°	254.3	273.0	312.8	494.5	954.0	2159.9	4052.9	4779.1
35°	227.0	249.6	282.4	474.2	952.4	2189.5	4315.0	5129.4
37.5°	216.8	238.7	262.9	463.3	961.8	2214.5	4635.6	5526.4
40°	210.6	230.1	249.6	461.8	969.6	2234.0	4949.2	5939.8
42.5°	205.1	224.6	247.3	450.8	966.4	2260.5	5226.9	6294.7
45°	203.6	223.1	252.7	434.5	965.7	2301.8	5447.6	6578.6
47.5°	202.0	231.7	251.2	416.5	962.5	2389.2	5696.4	6843.0
50°	200.5	247.3	240.2	391.6	939.1	2538.2	6031.1	7145.7
52.5°	199.7	249.6	228.5	357.2	897.0	2758.9	6520.9	7566.9
55°	196.6	237.1	208.3	312.0	836.2	2996.8	7045.8	8062.2
57.5°	189.5	211.4	196.6	267.5	748.8	3162.9	7433.5	8445.2
60°	206.7	181.7	188.8	244.9	644.3	3192.6	7450.7	8552.8
62.5°	197.3	165.4	181.0	237.1	571.0	2999.1	7109.8	8424.1
65°	157.6	156.8	173.9	244.9	560.0	2566.2	6534.2	8042.7
67.5°	143.5	150.5	166.9	254.3	567.1	2021.8	5687.1	7151.9
70°	134.2	142.7	157.6	262.9	579.5	1592.8	4578.7	5816.5
72.5°	124.8	131.8	148.2	271.4	571.0	1256.6	3664.5	4480.4
75°	113.1	119.3	134.9	248.8	489.8	923.5	2911.8	3181.7
77.5°	99.8	105.3	118.6	196.6	368.2	642.7	2180.9	2293.2
80°	85.8	88.1	98.3	143.5	240.2	384.5	1659.9	1829.1
82.5°	67.9	68.6	74.9	105.3	149.8	245.7	1151.3	1314.3
85°	43.7	45.2	48.4	74.1	100.6	157.6	588.1	673.9
87.5°	14.8	17.2	17.2	35.9	49.1	87.4	180.2	131.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)