

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: P196203

Luminaire Tested: **NAV-AF-03-D-UNV-SLL-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196203  
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-03-D-UNV-SLL-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 70 CRI, 4000K, 615mA 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: 10782.9 lumens  
Efficiency: N/A  
Efficacy: 112.3 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B2 - U0 - G3

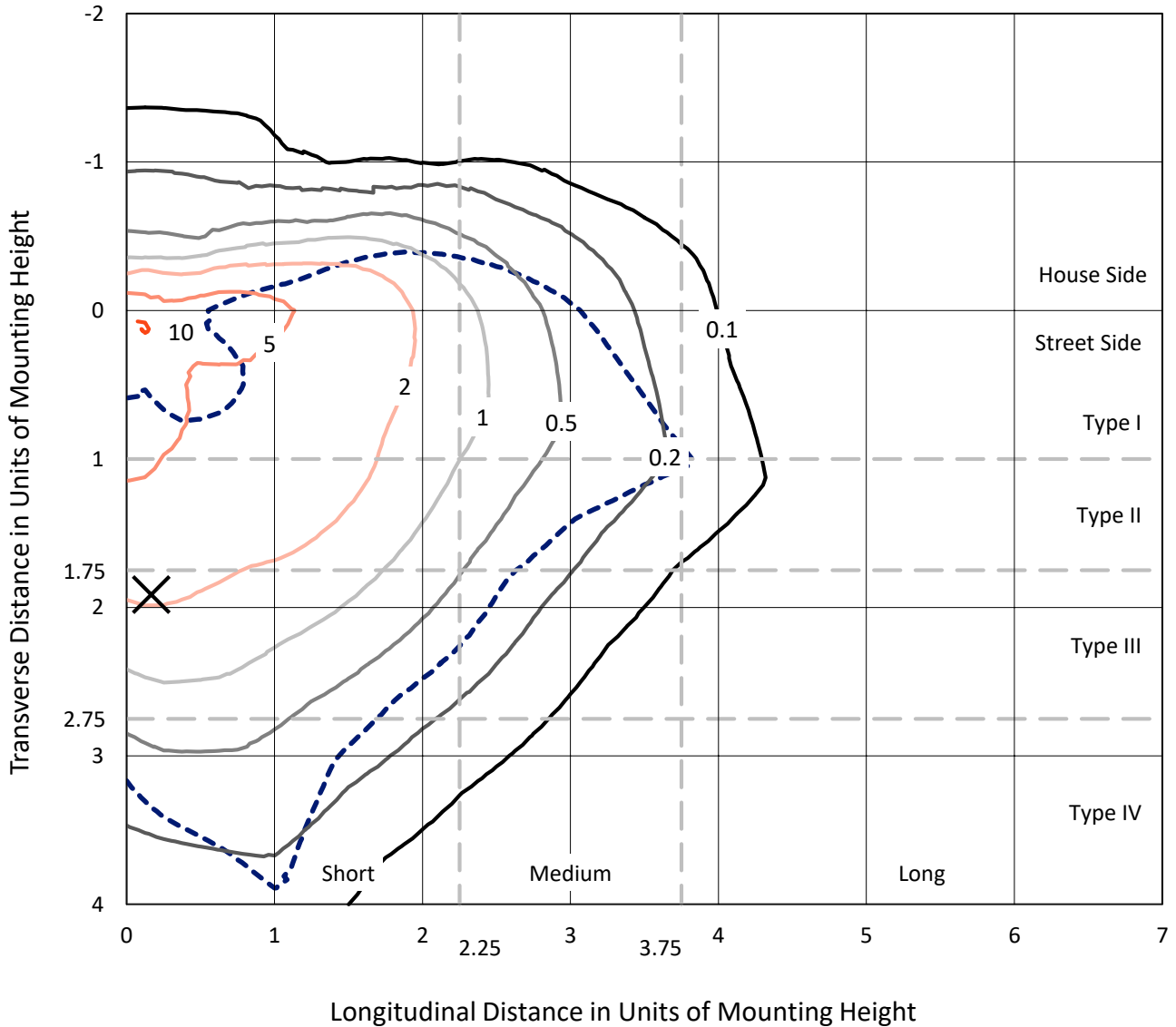
Input Watts (W): 96  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

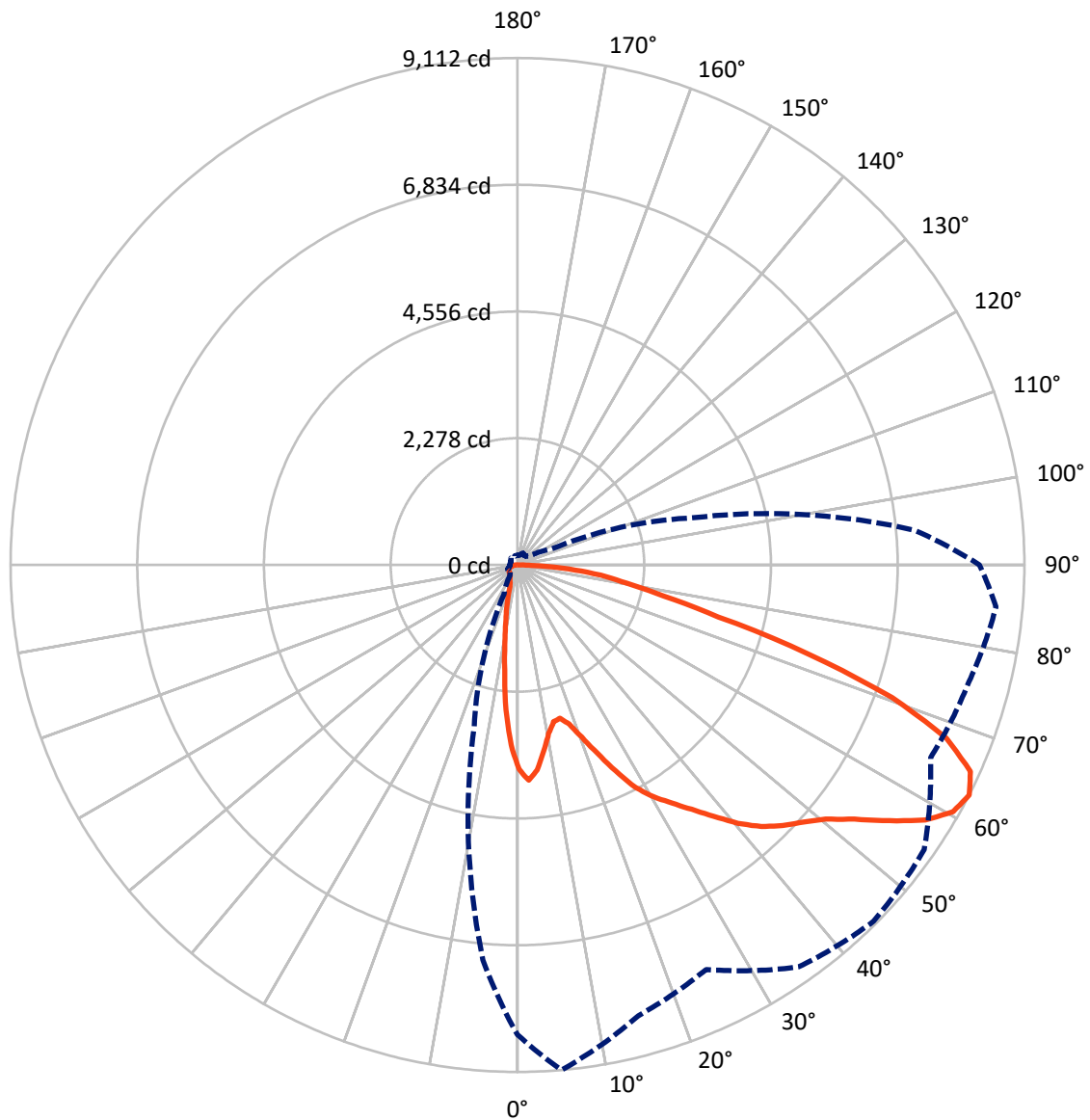
× Max cd  
 - - - 1/2 Max cd



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
<b>House Side</b>	Lumens	1910.2	0.0	1910.2
	% Fixture	17.7	0.0	17.7
<b>Street Side</b>	Lumens	8872.7	0.0	8872.7
	% Fixture	82.3	0.0	82.3
<b>Total</b>	Lumens	10782.9	0.0	10782.9
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	267.3	2.5
10°-20°	488.3	4.5
20°-30°	702.3	6.5
30°-40°	1075.7	10.0
40°-50°	1572.6	14.6
50°-60°	2288.2	21.2
60°-70°	2651.2	24.6
70°-80°	1382.0	12.8
80°-90°	355.3	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°	10782.9	100.0
0°-180°	10782.9	100.0



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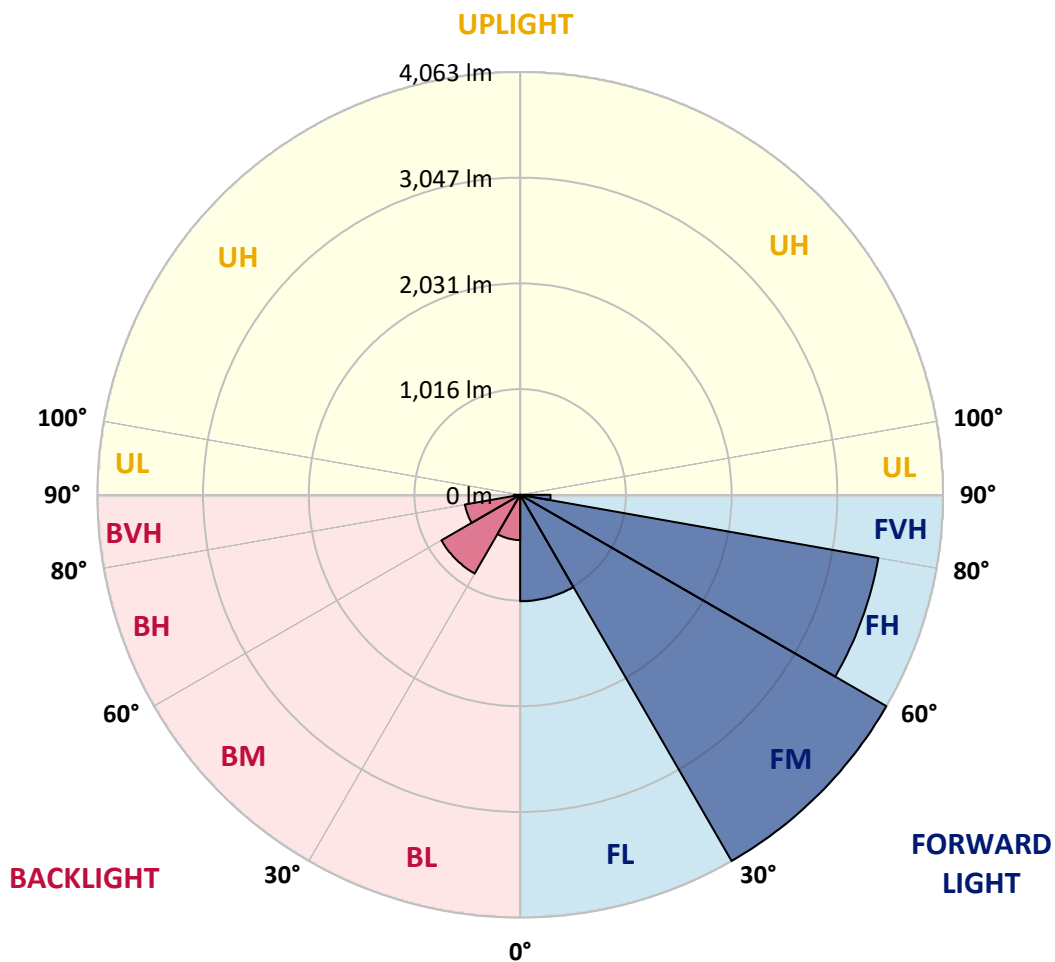
CATALOG NUMBER: NAV-AF-03-D-UNV-SLL-600

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1023.3	9.5			
FM	(30°-60°)	4062.5	37.7			
FH	(60°-80°)	3494.6	32.4			G2/5000
FVH	(80°-90°)	292.3	2.7			G3/500
BL	(0°-30°)	434.6	4.0	B1/500		
BM	(30°-60°)	874.0	8.1	B1/1000		
BH	(60°-80°)	538.6	5.0	B2/1000		G2/1000
BVH	(80°-90°)	63.0	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°	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1
2.5°	3794.9	3875.4	3967.7	4088.1	4170.3	4203.1	4230.4	4184.3	4139.8	4056.1	4026.3
5°	3544.7	3699.6	3953.7	4195.2	4407.9	4529.8	4567.4	4482.2	4330.5	4111.5	3995.9
7.5°	3173.4	3377.5	3734.8	4090.5	4395.4	4598.7	4613.5	4444.6	4146.0	3787.2	3599.5
10°	2848.9	3079.6	3493.2	3891.1	4214.0	4422.0	4381.3	4144.4	3784.0	3375.9	3164.0
12.5°	2660.5	2891.2	3312.5	3716.8	4020.9	4099.9	4017.0	3817.7	3476.0	3067.1	2853.6
15°	2620.7	2858.3	3248.5	3589.3	3777.8	3726.9	3644.9	3544.0	3300.9	2966.3	2759.8
17.5°	2741.1	3006.9	3333.7	3520.5	3512.7	3390.8	3321.9	3341.5	3300.0	3075.7	2859.9
20°	2988.9	3303.2	3550.3	3501.8	3301.6	3130.4	3090.5	3243.8	3435.3	3350.1	3113.2
22.5°	3314.9	3673.0	3845.8	3555.7	3191.4	3006.9	2999.1	3238.3	3681.6	3765.3	3476.7
25°	3683.1	4100.6	4143.7	3651.1	3179.6	2995.9	2988.9	3322.7	3977.8	4176.5	3884.0
27.5°	4133.4	4532.2	4392.2	3778.6	3231.3	3028.0	3032.6	3466.6	4286.7	4583.0	4343.0
30°	4472.8	4838.7	4545.5	3903.6	3314.2	3084.3	3096.0	3622.2	4453.2	4865.3	4709.7
32.5°	4790.2	5100.6	4692.5	4027.2	3435.3	3168.0	3208.6	3816.0	4653.4	5107.6	5056.0
35°	5141.2	5393.8	4855.8	4159.3	3608.9	3314.9	3373.6	4000.6	4852.0	5350.0	5399.2
37.5°	5539.2	5729.1	5033.3	4346.1	3859.1	3587.0	3619.8	4189.0	4990.4	5618.1	5767.5
40°	5953.6	6105.2	5227.3	4595.5	4222.6	3954.4	3970.1	4430.6	5099.0	5895.7	6124.8
42.5°	6309.3	6427.3	5421.9	4905.2	4640.1	4328.9	4342.2	4690.9	5203.0	6134.9	6410.9
45°	6593.8	6680.7	5605.7	5231.2	5085.7	4796.4	4793.3	4956.0	5342.2	6336.7	6630.6
47.5°	6858.9	6905.0	5810.5	5548.6	5547.8	5398.4	5286.7	5268.7	5527.4	6506.3	6822.2
50°	7162.3	7179.5	6081.0	5869.1	6112.2	6088.8	5882.4	5665.8	5767.5	6697.1	7023.1
52.5°	7584.5	7585.2	6416.4	6181.8	6735.4	6809.7	6569.6	6115.4	6122.5	7068.4	7370.3
55°	8080.9	8115.3	6853.5	6556.3	7387.4	7514.1	7288.1	6649.4	6632.2	7667.3	7933.1
57.5°	8464.7	8646.9	7362.4	7024.6	7996.4	8161.4	7979.2	7202.9	7258.4	8285.0	8397.5
60°	8572.6	8998.7	7869.8	7550.0	8511.7	8759.5	8574.2	7801.0	7871.4	8686.0	8531.2
62.5°	8443.6	9112.1	8386.6	8020.7	8817.3	9055.1	8922.1	8192.7	8370.9	8634.4	8305.2
65°	8061.4	8948.0	8835.3	8220.8	8641.5	8725.9	8690.7	8213.0	8642.2	8146.6	7680.6
67.5°	7168.5	8314.6	8635.2	7793.1	7819.7	7729.1	7683.0	7654.7	8337.4	7359.3	6695.5
70°	5830.0	7144.3	7680.6	6521.9	6324.9	6237.3	6085.6	6461.0	7493.7	6270.2	5510.2
72.5°	4490.8	5465.7	6299.9	4944.2	4534.5	4564.3	4392.2	4940.3	6207.7	4847.3	4207.0
75°	3189.0	3726.9	5028.6	3552.6	3010.0	3008.4	2995.2	3555.7	4898.1	3479.1	3078.1
77.5°	2298.6	2683.2	3939.6	2377.5	2135.9	2163.3	2119.6	2416.6	3818.4	2502.6	2280.6
80°	1833.3	1986.6	2546.4	1585.6	1590.2	1654.3	1644.9	1652.8	2512.0	1812.3	1705.2
82.5°	1317.4	1508.1	1946.8	1215.0	1051.6	1119.5	1132.8	1225.9	1772.4	1281.5	1124.2
85°	675.5	919.4	1791.2	1052.3	657.6	544.9	627.1	967.1	1539.4	767.7	548.1
87.5°	131.3	254.9	1312.7	584.8	295.5	149.4	246.2	409.7	895.2	139.1	68.0
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°	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1
2.5°	3975.6	3875.4	3781.6	3684.7	3609.7	3518.2	3428.3	3350.1	3274.3	3224.2	3239.9
5°	3878.6	3634.6	3415.7	3212.5	3093.6	2950.6	2823.1	2716.0	2633.2	2580.0	2612.1
7.5°	3436.9	3106.9	2818.4	2550.3	2381.4	2196.2	2047.5	1942.8	1878.8	1842.7	1895.1
10°	2985.0	2614.4	2290.7	2011.6	1845.1	1688.0	1553.5	1442.5	1356.4	1315.8	1336.9
12.5°	2661.3	2249.3	1910.0	1722.3	1579.2	1438.6	1299.4	1169.6	1060.2	1010.1	999.9
15°	2540.1	2053.1	1706.7	1497.2	1354.9	1201.7	1051.6	912.4	808.4	765.4	756.1
17.5°	2593.3	2010.8	1586.3	1338.4	1132.1	946.0	777.1	645.8	569.2	544.9	547.3
20°	2780.2	2026.5	1489.4	1175.1	920.2	699.7	530.8	440.2	407.3	401.8	408.2
22.5°	3036.6	2090.6	1419.0	1034.3	733.4	508.9	394.9	351.8	343.2	342.5	348.7
25°	3375.1	2215.7	1372.1	909.3	579.3	403.5	344.0	319.8	312.7	314.3	320.6
27.5°	3773.9	2374.4	1341.6	801.4	476.1	359.7	321.3	300.2	293.2	294.7	299.4
30°	4138.1	2513.6	1296.3	720.1	427.7	344.0	308.8	287.8	278.3	278.3	281.4
32.5°	4464.2	2634.0	1243.1	659.1	383.1	308.8	279.9	263.5	256.5	258.8	260.3
35°	4753.4	2697.3	1201.7	623.1	347.1	284.6	255.6	238.4	229.0	230.7	233.0
37.5°	5038.0	2721.6	1174.2	603.5	321.3	269.8	243.2	229.0	218.9	217.4	216.6
40°	5308.6	2716.0	1148.5	598.1	304.1	258.8	235.3	222.8	212.7	210.3	209.5
42.5°	5542.3	2698.0	1124.2	583.3	292.4	250.9	229.0	218.1	208.0	204.8	203.3
45°	5755.7	2687.1	1097.6	555.9	298.7	247.9	226.0	214.2	204.8	200.9	199.4
47.5°	5992.7	2726.2	1068.0	526.2	297.1	248.6	226.0	212.7	203.3	199.4	197.8
50°	6274.9	2858.3	1031.2	485.5	283.1	265.9	225.2	210.3	201.7	199.4	196.2
52.5°	6673.6	3072.5	980.4	433.1	272.1	283.8	224.3	206.4	199.4	195.5	191.5
55°	7220.1	3286.7	914.7	377.6	254.9	271.3	226.0	201.7	193.8	190.0	185.3
57.5°	7668.0	3449.4	831.9	331.5	239.3	256.5	223.6	196.2	187.6	183.7	179.8
60°	7639.2	3465.0	752.9	301.8	229.9	230.7	229.0	192.3	182.2	179.0	175.9
62.5°	7166.2	3271.9	679.4	286.9	222.8	210.3	233.7	187.6	176.7	173.6	171.2
65°	6378.8	2822.3	640.3	286.9	216.6	199.4	204.1	181.4	171.2	168.1	166.5
67.5°	5380.5	2268.1	603.5	293.2	208.0	191.5	185.3	175.1	165.7	162.6	161.0
70°	4312.6	1784.8	577.8	290.0	200.2	182.9	175.1	166.5	157.1	156.4	154.8
72.5°	3382.9	1433.9	566.0	290.0	188.4	172.8	165.0	158.7	149.4	148.5	146.2
75°	2710.6	1076.6	517.6	284.6	176.7	159.5	152.4	147.0	137.6	138.4	136.8
77.5°	2099.2	761.5	432.3	256.5	161.8	144.6	139.1	135.2	124.3	125.1	125.1
80°	1641.8	495.7	335.4	212.7	144.6	127.5	123.6	120.4	108.6	110.3	110.3
82.5°	1125.0	294.7	243.2	171.2	124.3	108.6	107.9	103.2	90.7	91.5	93.0
85°	614.5	193.8	161.8	126.6	97.7	88.4	86.7	84.4	72.7	72.7	73.4
87.5°	113.3	103.9	95.3	83.7	65.7	63.3	61.0	63.3	54.7	53.2	53.2
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°	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1
2.5°	3203.1	3149.2	3111.6	3078.8	2999.8	3005.3	3016.3	3031.9	2982.6	3008.4	3040.5
5°	2580.0	2535.5	2501.8	2449.5	2339.2	2300.1	2275.1	2264.2	2190.6	2206.3	2240.7
7.5°	1902.2	1901.4	1889.7	1831.0	1698.1	1617.6	1564.4	1548.0	1502.6	1519.9	1572.3
10°	1339.2	1353.4	1347.8	1295.5	1176.6	1118.8	1107.0	1139.9	1140.7	1174.2	1264.2
12.5°	967.9	960.0	953.1	910.0	820.9	811.5	838.1	883.4	894.4	930.4	1024.2
15°	722.4	703.7	699.7	666.1	607.4	616.1	635.7	659.1	659.9	684.9	762.3
17.5°	541.8	541.8	548.1	526.2	484.0	480.1	469.8	463.6	454.2	464.4	506.7
20°	420.6	440.2	455.8	443.2	405.0	386.3	366.6	354.1	347.1	347.9	360.4
22.5°	360.4	376.0	396.4	390.2	358.0	333.8	321.3	312.7	307.3	307.3	314.3
25°	329.9	340.1	358.9	355.7	328.4	308.8	298.7	290.0	283.8	283.1	290.0
27.5°	305.7	311.9	324.5	322.8	294.7	282.2	276.0	270.5	266.6	265.9	272.8
30°	283.8	286.9	293.2	290.8	269.8	257.2	254.9	252.6	250.2	250.9	261.2
32.5°	264.2	266.6	270.5	267.4	247.0	236.1	232.2	229.0	226.7	229.0	240.8
35°	242.3	249.4	254.1	252.6	230.7	217.4	208.8	200.9	197.8	200.2	213.4
37.5°	223.6	235.3	241.6	240.0	217.4	201.7	190.8	189.2	189.2	192.3	205.6
40°	216.6	225.2	230.7	228.3	205.6	190.0	183.7	181.4	182.2	185.3	199.4
42.5°	210.3	218.1	219.7	215.0	192.3	182.2	178.3	175.1	176.7	180.6	194.7
45°	204.8	211.1	210.3	203.3	181.4	174.3	174.3	172.0	172.8	175.9	190.8
47.5°	200.9	204.1	202.4	195.5	173.6	168.1	170.4	170.4	172.0	174.3	189.2
50°	194.7	197.0	195.5	189.2	167.4	162.6	165.0	168.1	169.6	172.0	185.3
52.5°	188.4	190.0	189.2	182.9	161.0	157.9	157.9	161.0	164.2	167.4	179.0
55°	182.2	183.7	184.5	179.8	156.4	153.2	152.4	152.4	155.6	160.3	172.8
57.5°	177.5	177.5	179.0	175.9	151.7	147.7	143.8	144.6	148.5	152.4	165.0
60°	172.0	172.8	175.1	172.0	145.5	139.1	136.1	139.9	141.5	145.5	158.7
62.5°	167.4	167.4	168.9	166.5	139.9	133.7	131.3	135.2	135.2	139.1	152.4
65°	163.4	162.6	162.6	161.8	134.5	128.2	126.6	128.2	129.0	132.9	146.2
67.5°	160.3	156.4	156.4	157.9	129.0	122.8	121.9	121.9	122.8	127.5	139.1
70°	153.2	150.1	149.4	154.8	123.6	115.7	115.7	114.2	115.7	118.0	130.5
72.5°	145.5	143.1	142.3	150.1	118.0	107.9	106.3	105.6	106.3	108.6	120.4
75°	135.2	133.7	135.2	147.0	112.6	99.3	97.0	96.2	96.2	97.0	109.5
77.5°	123.6	121.9	133.7	136.8	109.5	89.1	86.7	85.2	83.7	83.7	97.7
80°	109.5	108.6	129.0	115.7	104.8	78.2	74.3	71.9	70.4	69.6	83.7
82.5°	95.3	93.8	110.3	90.7	86.7	64.1	58.6	53.9	51.6	51.6	64.1
85°	78.2	77.4	86.7	66.5	60.1	47.0	39.1	35.2	32.0	32.0	41.4
87.5°	57.1	55.5	53.9	39.9	30.5	21.1	14.8	14.1	12.5	11.8	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°	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1	3676.1
2.5°	3088.2	3153.0	3275.8	3376.7	3511.2	3619.0	3741.7	3794.9
5°	2304.0	2406.4	2594.1	2754.4	2976.4	3182.0	3416.6	3544.7
7.5°	1652.8	1804.5	1946.8	2146.9	2424.4	2700.4	3003.8	3173.4
10°	1367.4	1506.6	1628.5	1770.8	1985.0	2295.4	2657.4	2848.9
12.5°	1132.8	1283.0	1412.0	1564.4	1744.2	2024.9	2437.7	2660.5
15°	868.6	1032.0	1186.8	1370.5	1591.0	1911.6	2372.0	2620.7
17.5°	594.9	770.1	960.9	1185.2	1451.1	1863.8	2434.6	2741.1
20°	404.2	532.4	739.6	1005.5	1325.2	1841.2	2572.2	2988.9
22.5°	332.3	390.2	545.7	836.6	1222.0	1866.2	2795.8	3314.9
25°	304.9	336.1	424.5	688.0	1143.0	1932.7	3098.3	3683.1
27.5°	287.8	314.3	372.1	581.6	1070.3	2023.4	3466.6	4133.4
30°	277.5	302.6	351.1	526.9	1003.8	2101.6	3783.2	4472.8
32.5°	254.9	273.6	313.5	495.7	956.2	2164.9	4062.3	4790.2
35°	227.5	250.2	283.1	475.4	954.6	2194.5	4325.0	5141.2
37.5°	217.4	239.3	263.5	464.4	964.0	2219.6	4646.3	5539.2
40°	211.1	230.7	250.2	462.9	971.8	2239.1	4960.6	5953.6
42.5°	205.6	225.2	247.9	451.9	968.6	2265.7	5238.9	6309.3
45°	204.1	223.6	253.3	435.5	967.9	2307.2	5460.2	6593.8
47.5°	202.4	232.2	251.7	417.5	964.7	2394.7	5709.6	6858.9
50°	200.9	247.9	240.8	392.5	941.3	2544.1	6045.0	7162.3
52.5°	200.2	250.2	229.0	358.0	899.1	2765.3	6536.0	7584.5
55°	197.0	237.6	208.8	312.7	838.1	3003.8	7062.1	8080.9
57.5°	190.0	211.9	197.0	268.1	750.5	3170.2	7450.8	8464.7
60°	207.1	182.2	189.2	245.5	645.8	3200.0	7468.0	8572.6
62.5°	197.8	165.7	181.4	237.6	572.3	3006.1	7126.3	8443.6
65°	157.9	157.1	174.3	245.5	561.4	2572.2	6549.3	8061.4
67.5°	143.8	150.9	167.4	254.9	568.4	2026.5	5700.3	7168.5
70°	134.5	143.1	157.9	263.5	580.9	1596.5	4589.3	5830.0
72.5°	125.1	132.2	148.5	272.1	572.3	1259.6	3673.0	4490.8
75°	113.3	119.6	135.2	249.4	491.0	925.7	2918.6	3189.0
77.5°	100.0	105.6	118.9	197.0	369.0	644.3	2185.9	2298.6
80°	86.0	88.4	98.5	143.8	240.8	385.4	1663.7	1833.3
82.5°	68.0	68.8	75.1	105.6	150.1	246.2	1154.0	1317.4
85°	43.8	45.3	48.5	74.3	100.9	157.9	589.5	675.5
87.5°	14.8	17.2	17.2	36.0	49.2	87.6	180.6	131.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)