

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: P196174

Luminaire Tested: **NAV-AF-04-D-UNV-SL4-1200-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196174  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-04-D-UNV-SL4-1200-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV  
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 22303.4 lumens  
Efficiency: N/A  
Efficacy: 86.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B1 - U0 - G4

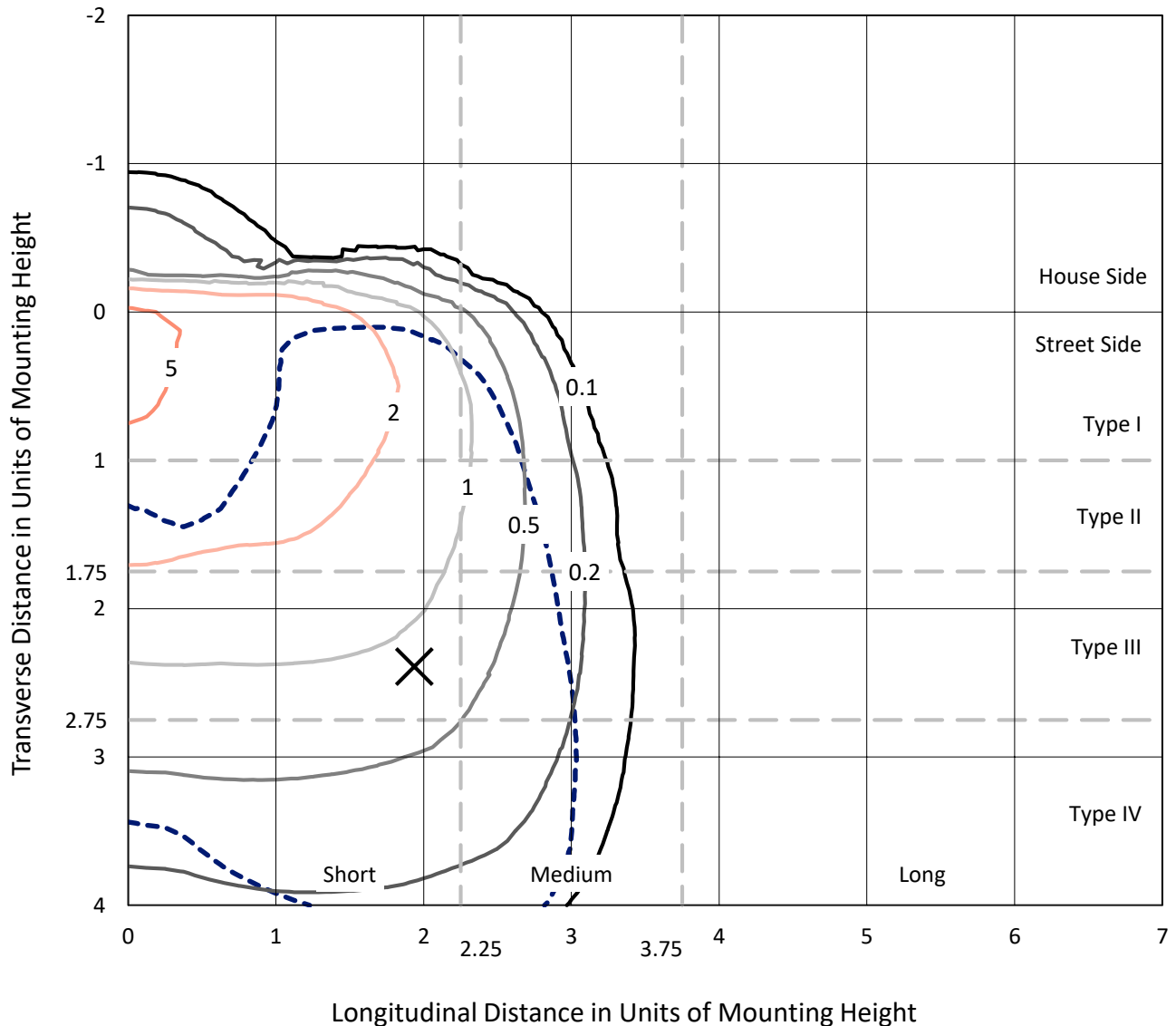
Input Watts (W): 258  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

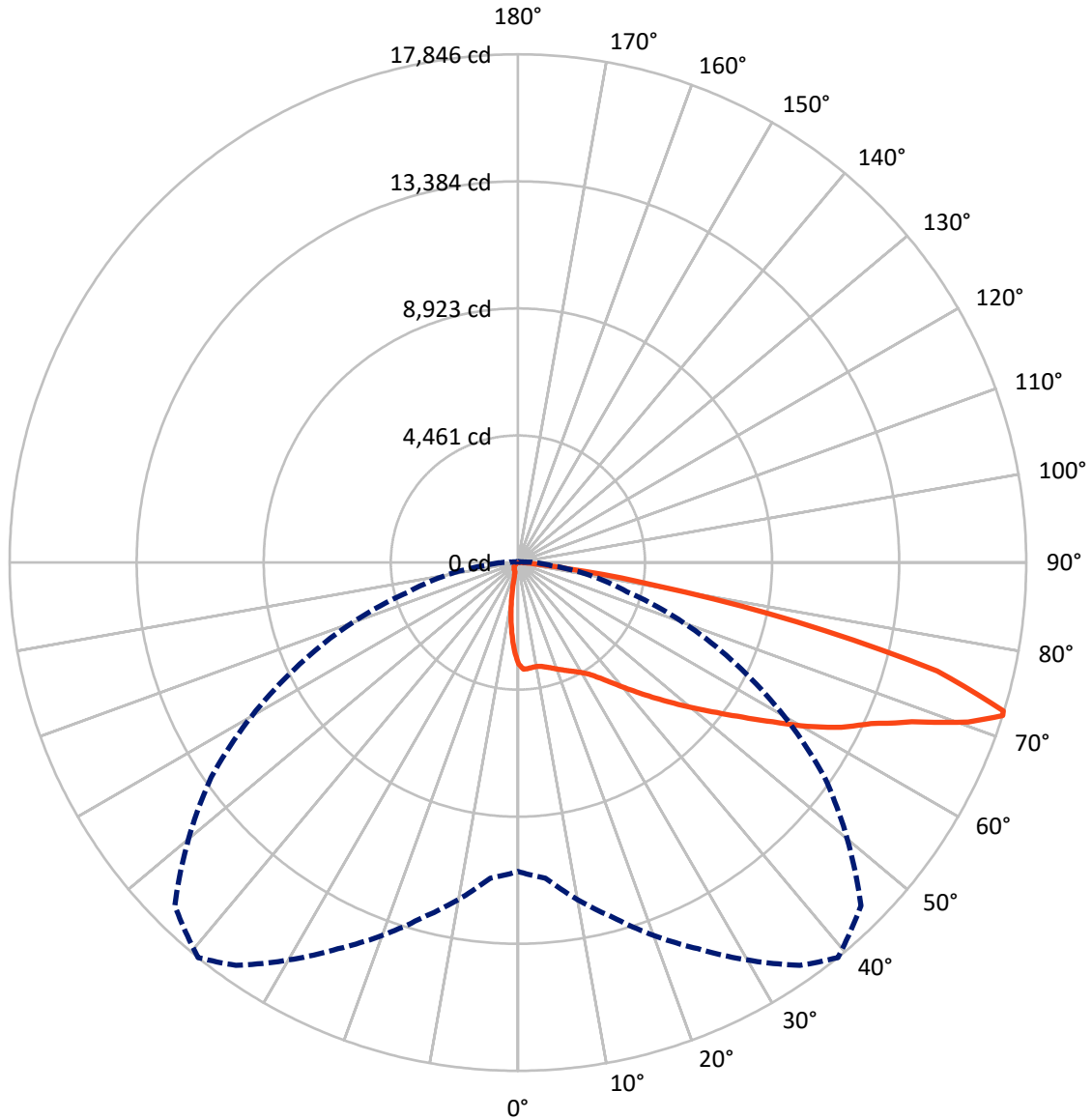


Based on 25 foot mounting height. Maximum calculated value = 6 fc  
 Type IV - Short - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral    - - - Horizontal Cone Through 72-Deg Vertical

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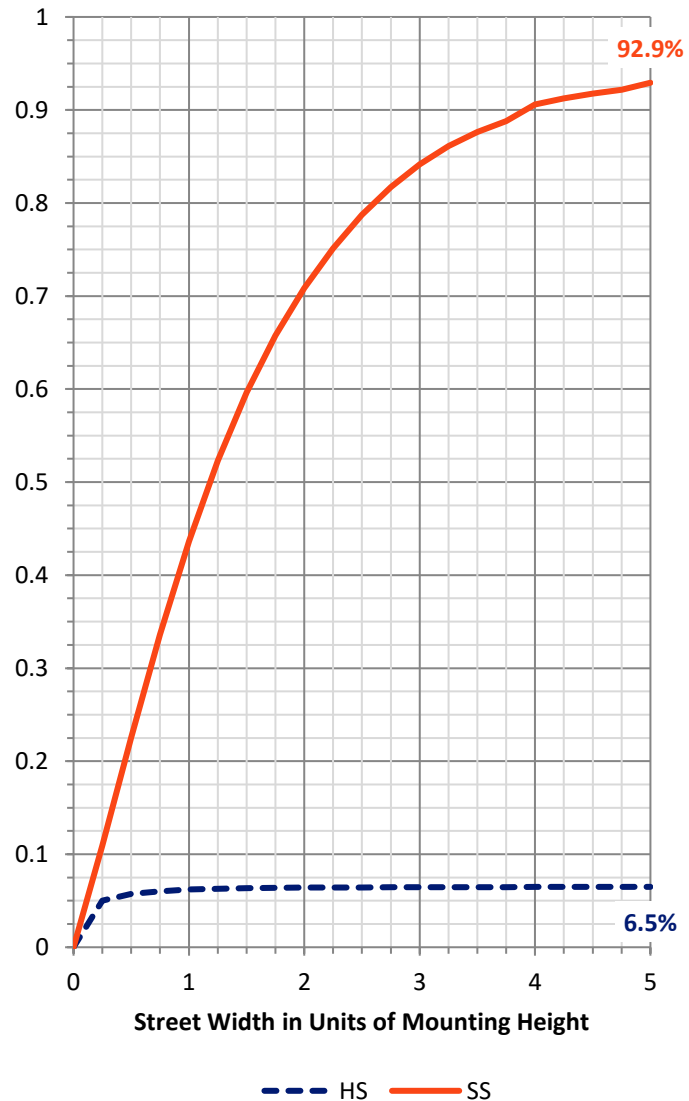
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1461.7	0.0	1461.7
	% Fixture	6.6	0.0	6.6
<b>Street Side</b>	Lumens	20841.7	0.0	20841.7
	% Fixture	93.4	0.0	93.4
<b>Total</b>	Lumens	22303.4	0.0	22303.4
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	290.4	1.3
10°-20°	703.0	3.2
20°-30°	1167.5	5.2
30°-40°	1860.7	8.3
40°-50°	3071.4	13.8
50°-60°	4638.3	20.8
60°-70°	6042.2	27.1
70°-80°	4082.8	18.3
80°-90°	447.1	2.0
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°	22303.4	100.0
0°-180°	22303.4	100.0



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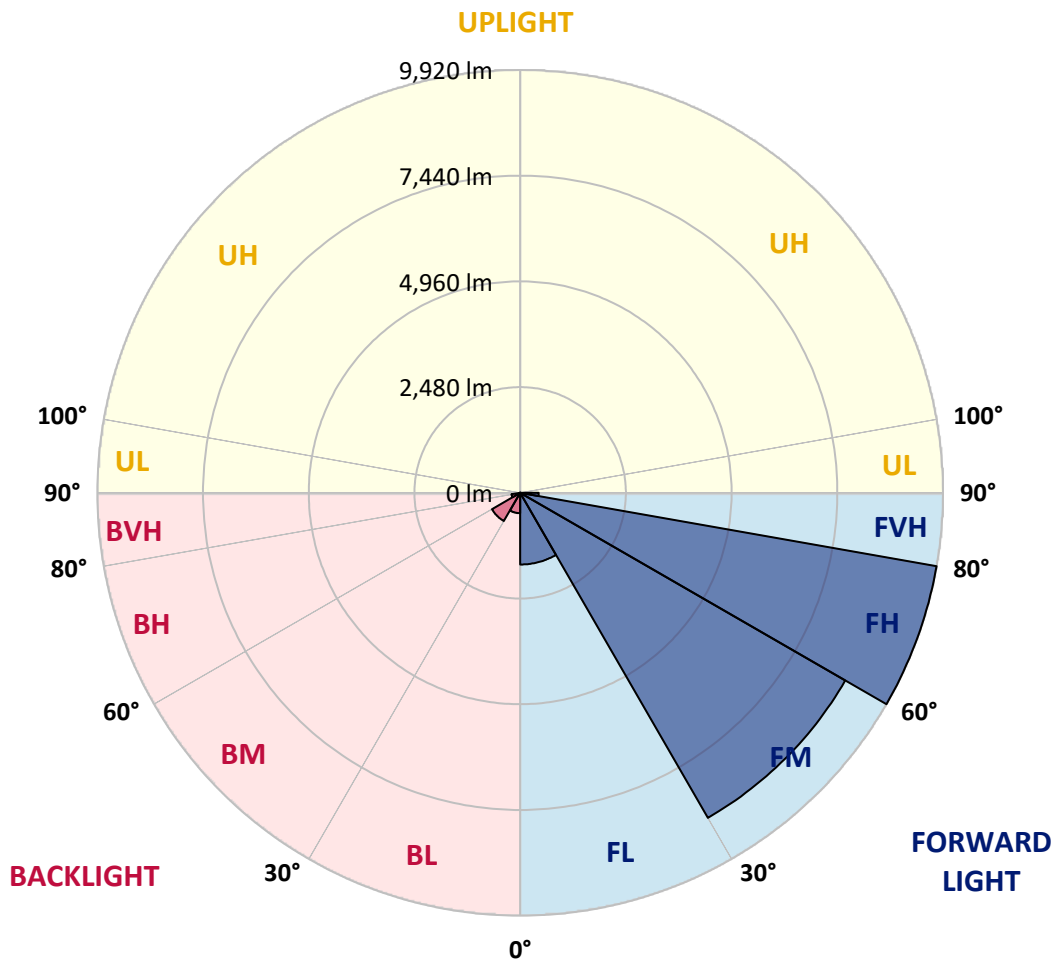
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1682.2	7.5			
FM	(30°-60°)	8805.7	39.5			
FH	(60°-80°)	9919.5	44.5			G4/12000
FVH	(80°-90°)	434.3	1.9			G3/500
BL	(0°-30°)	478.6	2.1	B1/500		
BM	(30°-60°)	764.8	3.4	B1/1000		
BH	(60°-80°)	205.4	0.9	B1/500		G1/500
BVH	(80°-90°)	12.9	0.1			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G4**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	3569.8	3569.8	3569.8	3569.8	3569.8	3569.8	3569.8	3569.8	3569.8	3569.8	3569.8
2.5°	3801.3	3808.2	3799.4	3783.7	3760.9	3746.9	3727.6	3685.5	3632.9	3587.4	3534.7
5°	3831.1	3834.5	3824.0	3794.2	3759.1	3739.9	3715.4	3669.7	3615.4	3552.3	3457.6
7.5°	3839.9	3838.1	3825.8	3789.0	3734.6	3710.0	3668.0	3611.8	3555.8	3497.9	3391.0
10°	3836.3	3836.3	3827.6	3792.5	3731.1	3708.3	3660.9	3601.4	3531.2	3473.3	3359.4
12.5°	3824.0	3831.1	3825.8	3806.5	3760.9	3743.4	3701.3	3641.7	3575.1	3515.5	3394.5
15°	3839.9	3850.4	3860.8	3853.9	3827.6	3811.7	3773.2	3711.8	3657.5	3594.3	3464.6
17.5°	3903.0	3925.8	3950.2	3952.1	3923.9	3895.9	3852.1	3789.0	3736.3	3678.5	3538.3
20°	4022.1	4039.7	4085.3	4094.1	4038.0	3997.6	3936.2	3862.6	3810.0	3760.9	3606.6
22.5°	4199.2	4218.5	4255.4	4243.1	4148.4	4101.1	4023.9	3939.8	3885.4	3857.3	3685.5
25°	4467.5	4472.8	4481.5	4427.2	4271.1	4218.5	4123.8	4029.2	3985.3	3981.8	3797.7
27.5°	4783.1	4790.2	4751.5	4630.6	4407.9	4339.6	4232.6	4146.6	4125.7	4152.0	3939.8
30°	5144.3	5146.1	5039.1	4842.8	4565.7	4490.3	4379.9	4285.1	4304.5	4369.3	4122.1
32.5°	5514.2	5496.7	5349.4	5093.5	4781.4	4690.2	4595.5	4500.8	4556.9	4688.4	4388.7
35°	5852.6	5845.7	5672.1	5374.0	5061.9	4981.3	4912.8	4812.9	4904.1	5118.0	4751.5
37.5°	6191.0	6185.8	5987.6	5677.3	5407.3	5349.4	5298.6	5221.4	5370.5	5684.3	5237.2
40°	6564.5	6555.8	6312.0	6013.9	5808.8	5777.2	5747.4	5714.1	5968.4	6405.0	5842.2
42.5°	7025.6	6987.1	6655.7	6380.5	6250.6	6259.4	6261.2	6294.5	6692.6	7262.3	6555.8
45°	7555.1	7469.3	7001.1	6773.2	6736.3	6788.9	6841.5	6980.0	7535.9	8249.5	7344.8
47.5°	8068.8	7930.3	7399.1	7195.7	7271.1	7379.8	7506.0	7776.1	8482.6	9282.2	8060.1
50°	8510.7	8368.7	7793.6	7625.3	7865.5	8026.8	8251.2	8659.8	9482.0	10155.3	8510.7
52.5°	8857.8	8745.6	8210.9	8098.7	8524.8	8745.6	9098.1	9634.6	10425.4	10730.4	8826.3
55°	9113.9	9057.7	8610.7	8626.4	9257.6	9576.8	10015.1	10621.7	11221.4	11177.6	9063.0
57.5°	9403.2	9359.4	9029.7	9248.9	10139.6	10551.6	11058.3	11545.7	11799.9	11536.9	9294.4
60°	9699.5	9713.5	9538.2	10002.8	11230.2	11686.0	12127.9	12248.8	12296.2	11901.7	9538.2
62.5°	9924.0	9983.5	9999.3	10816.4	12348.8	12738.0	12929.2	12843.2	12832.7	12390.9	9518.9
65°	10181.6	10337.7	10597.2	11708.8	13365.7	13621.7	13758.5	13883.0	13620.0	12536.4	8582.6
67.5°	10627.0	10872.4	11456.3	12802.9	14540.4	14919.2	15306.7	15175.2	13737.4	11058.3	6538.2
70°	11226.7	11526.5	12557.4	14231.9	16134.3	16768.9	17093.3	15071.7	11663.3	7641.0	3448.8
72°	10847.9	11119.7	12897.6	14961.3	17263.4	17845.5	17033.7	13146.6	8454.6	3960.8	1155.4
72.5°	10479.7	10760.2	12788.8	14952.5	17375.6	17820.9	16646.2	12387.3	7481.6	3082.4	796.1
75°	7271.1	7625.3	10963.7	13441.2	15690.6	15201.5	12736.2	7500.8	2710.6	529.5	263.0
77.5°	3759.1	4032.7	6650.4	9497.9	10935.5	10015.1	7527.1	3254.2	750.4	280.5	173.6
80°	2330.2	2465.2	3110.4	4679.7	5680.9	4969.0	3320.8	1315.0	480.4	166.5	138.5
82.5°	1206.3	1309.8	1958.4	1888.4	2098.8	1744.5	1225.6	1101.1	296.3	103.4	142.0
85°	396.3	420.8	1202.8	1255.4	897.7	603.1	543.5	1050.3	85.9	66.6	121.0
87.5°	52.6	61.4	422.6	718.8	441.8	273.5	326.1	370.0	29.8	36.8	33.3
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):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3569.8	3569.8	3569.8	3569.8	3569.8	3569.8	3569.8	3569.8	3569.8	3569.8	3569.8
2.5°	3499.7	3476.9	3405.0	3333.1	3250.7	3175.3	3115.7	3077.1	3094.6	3036.8	3045.5
5°	3399.8	3341.9	3184.0	3014.0	2829.9	2658.0	2521.3	2419.6	2400.4	2312.7	2316.2
7.5°	3303.3	3208.6	2952.6	2672.0	2367.0	2119.8	1895.3	1699.0	1628.8	1556.9	1514.9
10°	3250.7	3120.9	2758.0	2349.5	1919.9	1556.9	1241.4	994.1	890.7	815.3	778.5
12.5°	3266.5	3094.6	2612.5	2056.6	1492.1	1030.9	701.3	520.8	457.7	422.6	410.3
15°	3319.1	3100.0	2481.0	1770.8	1085.4	624.2	412.0	352.4	347.2	345.5	343.6
17.5°	3368.2	3105.2	2342.5	1472.8	725.9	398.0	331.3	326.1	326.1	326.1	326.1
20°	3419.0	3106.9	2189.9	1160.7	476.9	326.1	312.1	308.6	312.1	312.1	312.1
22.5°	3478.6	3119.2	2042.6	857.3	352.4	306.9	298.1	296.3	298.1	298.1	296.3
25°	3552.3	3145.5	1883.0	613.7	319.1	294.6	285.8	284.1	285.8	284.1	284.1
27.5°	3650.5	3180.6	1697.3	440.1	305.0	282.3	273.5	273.5	273.5	271.8	271.8
30°	3776.7	3222.6	1448.3	347.2	291.0	270.1	263.0	263.0	261.3	259.5	259.5
32.5°	3957.3	3291.0	1176.5	313.8	275.3	254.2	247.2	249.0	247.2	245.5	243.7
35°	4213.3	3397.9	908.3	296.3	259.5	238.4	231.4	231.4	231.4	227.9	227.9
37.5°	4576.2	3561.0	680.3	278.8	243.7	222.7	213.9	213.9	212.2	208.7	210.4
40°	5025.0	3766.2	492.7	263.0	227.9	205.1	198.1	194.7	191.1	187.6	187.6
42.5°	5565.1	3966.1	370.0	247.2	212.2	191.1	182.4	178.8	171.9	168.3	166.5
45°	6170.0	4178.2	306.9	227.9	194.7	175.3	168.3	161.3	152.5	147.3	145.6
47.5°	6680.3	4308.0	273.5	208.7	177.1	159.6	152.5	142.0	131.6	128.0	128.0
50°	6987.1	4253.6	245.5	189.3	159.6	143.7	135.0	121.0	114.0	110.5	108.7
52.5°	7158.9	4092.3	222.7	173.6	143.7	126.2	114.0	101.7	98.2	94.7	94.7
55°	7276.4	3859.1	198.1	157.8	129.7	110.5	96.5	87.7	84.2	82.4	80.6
57.5°	7388.6	3575.1	175.3	143.7	115.7	98.2	82.4	78.9	71.9	70.2	70.2
60°	7421.9	3184.0	154.3	128.0	103.4	85.9	71.9	66.6	59.6	57.9	57.9
62.5°	6997.6	2533.5	136.8	108.7	91.1	73.7	63.1	56.1	49.1	49.1	49.1
65°	5847.4	1720.0	117.4	94.7	80.6	63.1	54.3	45.6	42.0	42.0	42.0
67.5°	4073.0	959.1	99.9	80.6	68.3	52.6	45.6	38.6	36.8	38.6	38.6
70°	1835.8	380.4	84.2	66.6	56.1	43.9	38.6	33.3	36.8	36.8	36.8
72°	550.6	203.4	70.2	54.3	45.6	38.6	33.3	31.6	35.1	36.8	36.8
72.5°	408.6	182.4	66.6	52.6	45.6	36.8	31.6	31.6	35.1	36.8	36.8
75°	210.4	124.5	50.8	38.6	33.3	29.8	26.3	29.8	35.1	35.1	35.1
77.5°	164.8	101.7	42.0	29.8	28.0	26.3	24.6	28.0	31.6	31.6	31.6
80°	154.3	66.6	33.3	28.0	24.6	22.8	22.8	24.6	28.0	29.8	29.8
82.5°	156.0	54.3	29.8	26.3	22.8	21.1	21.1	22.8	26.3	28.0	28.0
85°	99.9	36.8	26.3	22.8	21.1	19.3	19.3	21.1	24.6	26.3	26.3
87.5°	33.3	28.0	22.8	21.1	17.5	17.5	17.5	17.5	21.1	22.8	24.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)