

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: P196157

Luminaire Tested: **NAV-AF-05-D-UNV-SL4-600-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196157
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-05-D-UNV-SL4-600-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 615mA 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: 16509.4 lumens
Efficiency: N/A
Efficacy: 101.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

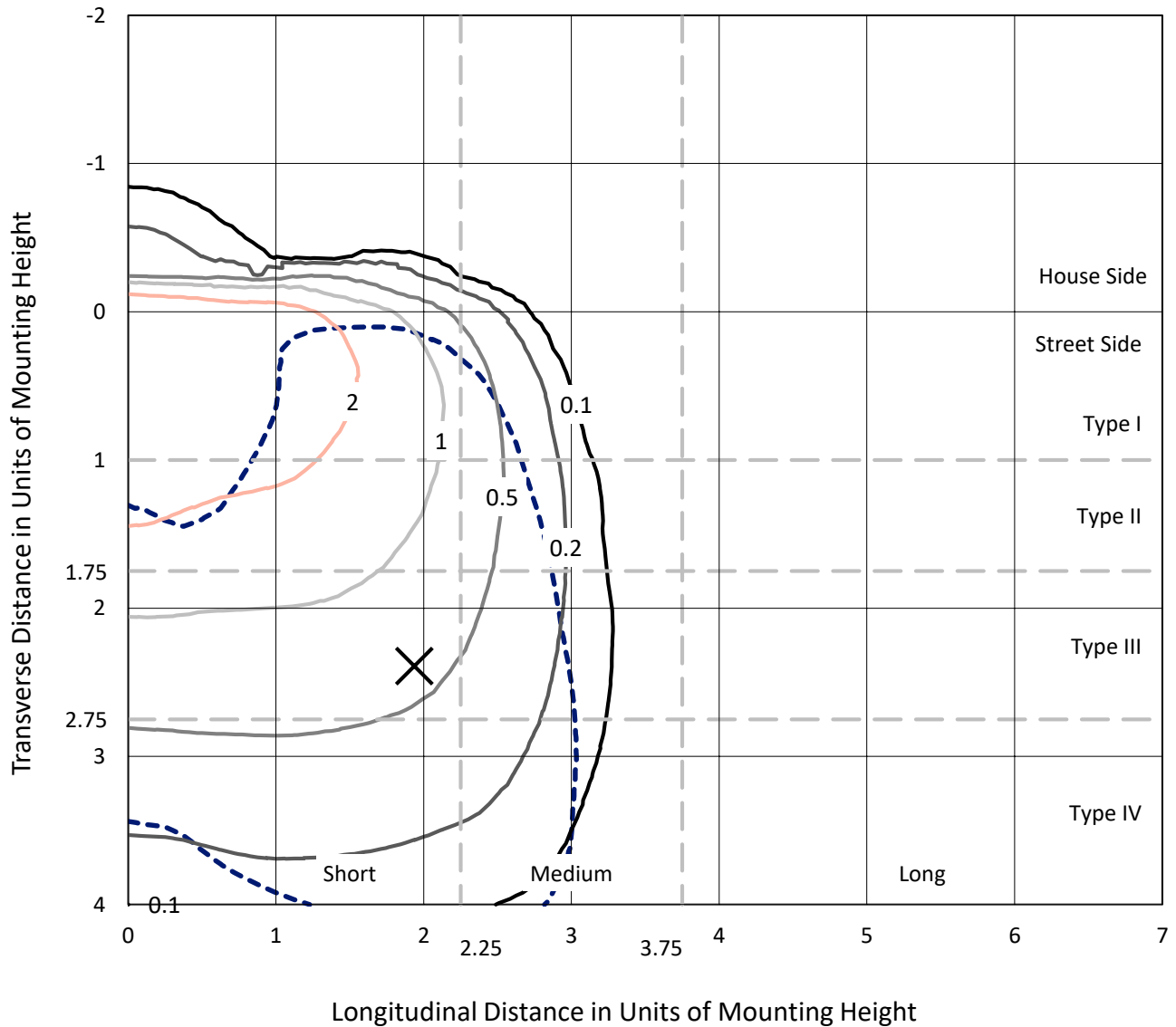
Input Watts (W): 162
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

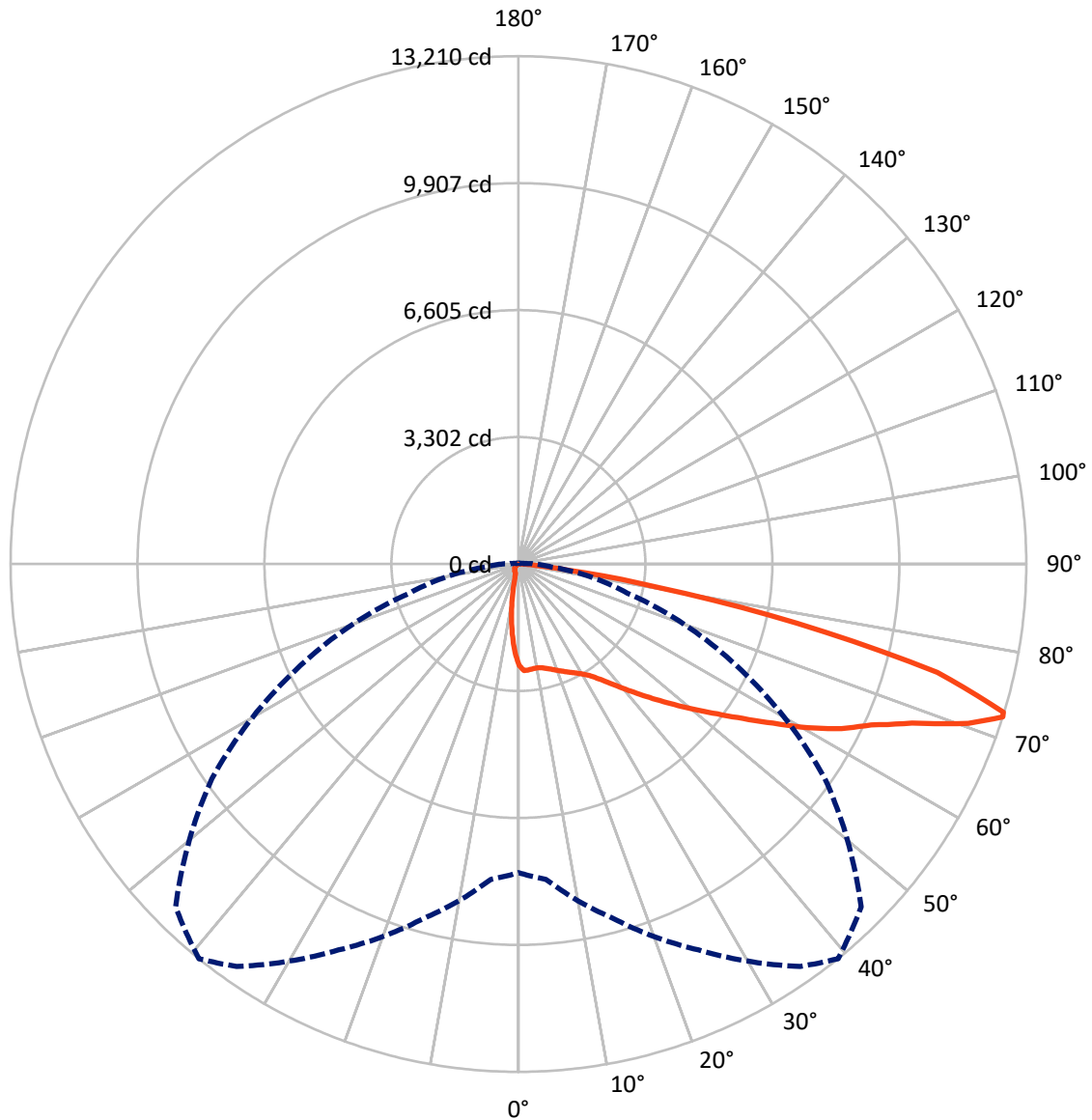
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.4 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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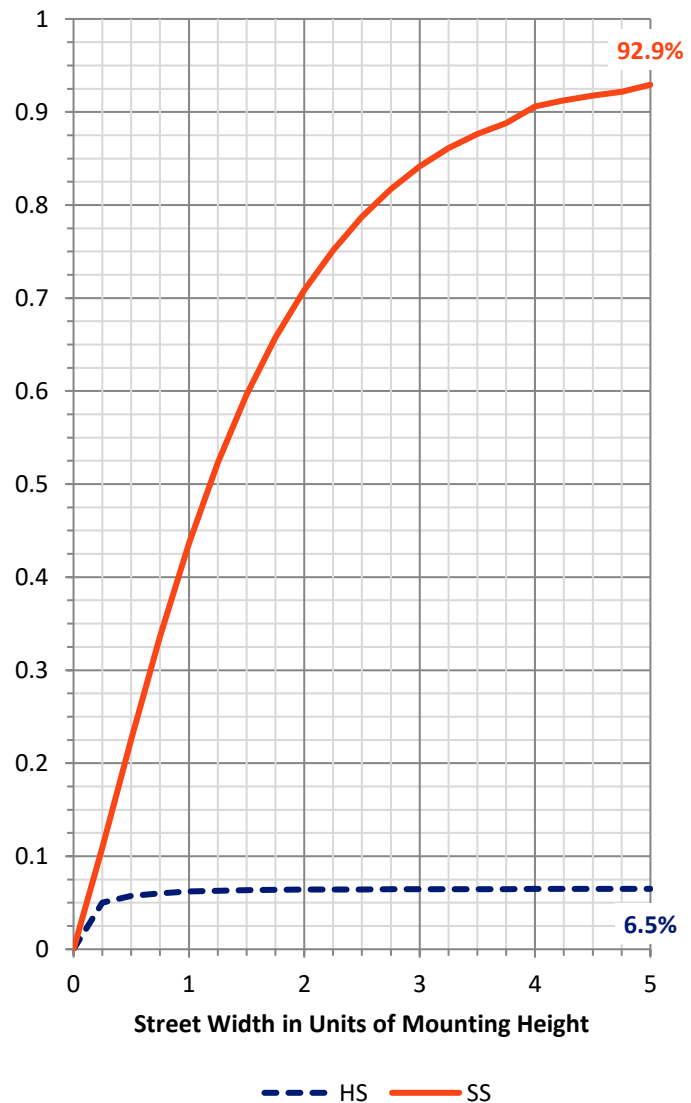
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1082.0	0.0	1082.0
	% Fixture	6.6	0.0	6.6
Street Side	Lumens	15427.4	0.0	15427.4
	% Fixture	93.4	0.0	93.4
Total	Lumens	16509.4	0.0	16509.4
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.9	1.3
10°-20°	520.4	3.2
20°-30°	864.2	5.2
30°-40°	1377.3	8.3
40°-50°	2273.5	13.8
50°-60°	3433.4	20.8
60°-70°	4472.6	27.1
70°-80°	3022.1	18.3
80°-90°	331.0	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°	16509.4	100.0
0°-180°	16509.4	100.0



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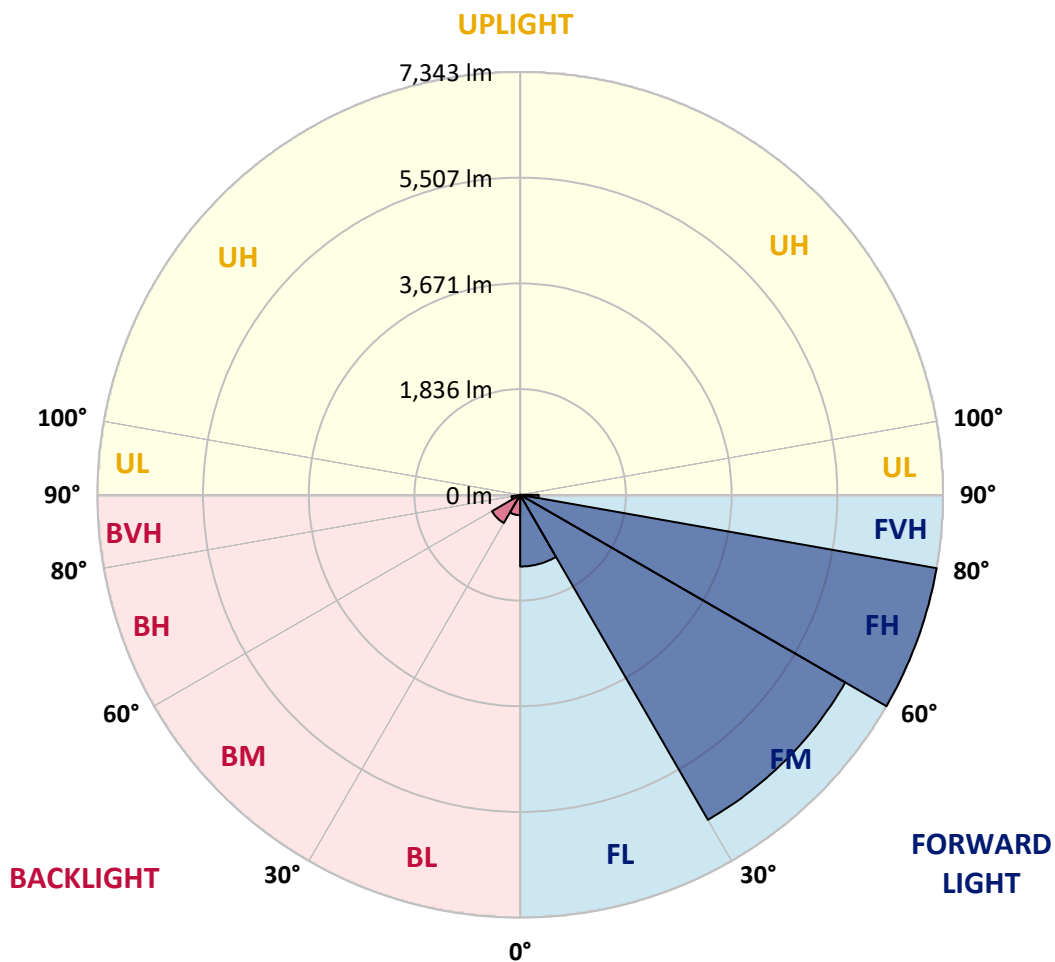
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1245.2	7.5			
FM	(30°-60°)	6518.1	39.5			
FH	(60°-80°)	7342.6	44.5			G3/7500
FVH	(80°-90°)	321.5	1.9			G3/500
BL	(0°-30°)	354.3	2.1	B1/500		
BM	(30°-60°)	566.1	3.4	B1/1000		
BH	(60°-80°)	152.1	0.9	B1/500		G1/500
BVH	(80°-90°)	9.5	0.1			G0/10
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°	39°	45°	55°	65°	75°	85°
0°	2642.5	2642.5	2642.5	2642.5	2642.5	2642.5	2642.5	2642.5	2642.5	2642.5	2642.5
2.5°	2813.7	2818.9	2812.5	2800.7	2783.9	2773.5	2759.2	2728.1	2689.1	2655.4	2616.5
5°	2835.8	2838.4	2830.6	2808.5	2782.6	2768.3	2750.2	2716.4	2676.1	2629.5	2559.4
7.5°	2842.3	2841.0	2831.9	2804.6	2764.4	2746.3	2715.1	2673.6	2632.1	2589.2	2510.0
10°	2839.7	2839.7	2833.3	2807.3	2761.9	2745.0	2709.9	2665.8	2613.8	2571.1	2486.7
12.5°	2830.6	2835.8	2831.9	2817.6	2783.9	2771.0	2739.8	2695.7	2646.4	2602.2	2512.7
15°	2842.3	2850.0	2857.9	2852.7	2833.3	2821.5	2793.0	2747.5	2707.3	2660.6	2564.5
17.5°	2889.0	2905.9	2924.1	2925.3	2904.6	2883.8	2851.4	2804.6	2765.8	2722.9	2619.1
20°	2977.3	2990.3	3024.0	3030.5	2989.0	2959.1	2913.7	2859.1	2820.3	2783.9	2669.7
22.5°	3108.3	3122.7	3149.9	3140.8	3070.7	3035.7	2978.6	2916.3	2876.0	2855.3	2728.1
25°	3306.9	3310.9	3317.3	3277.1	3161.5	3122.7	3052.6	2982.5	2950.0	2947.4	2811.2
27.5°	3540.5	3545.8	3517.2	3427.6	3262.8	3212.2	3133.0	3069.5	3053.8	3073.4	2916.3
30°	3807.9	3809.2	3730.1	3584.7	3379.6	3323.8	3242.0	3172.0	3186.3	3234.3	3051.3
32.5°	4081.8	4068.8	3959.7	3770.3	3539.2	3471.8	3401.7	3331.6	3373.2	3470.5	3248.6
35°	4332.2	4327.1	4198.6	3977.9	3746.9	3687.2	3636.6	3562.6	3630.1	3788.4	3517.2
37.5°	4582.7	4578.8	4432.1	4202.5	4002.6	3959.7	3922.1	3865.0	3975.3	4207.6	3876.7
40°	4859.2	4852.7	4672.3	4451.7	4299.8	4276.4	4254.4	4229.7	4417.9	4741.1	4324.4
42.5°	5200.5	5171.9	4926.6	4722.9	4626.9	4633.4	4634.7	4659.3	4953.9	5375.7	4852.7
45°	5592.5	5528.8	5182.4	5013.6	4986.4	5025.3	5064.2	5166.7	5578.2	6106.4	5436.7
47.5°	5972.7	5870.2	5477.0	5326.4	5382.3	5462.7	5556.2	5756.0	6279.1	6870.9	5966.3
50°	6299.8	6194.7	5768.9	5644.3	5822.2	5941.6	6107.7	6410.1	7018.8	7517.2	6299.8
52.5°	6556.8	6473.7	6077.9	5994.8	6310.2	6473.7	6734.6	7131.7	7717.0	7942.9	6533.4
55°	6746.3	6704.7	6373.8	6385.5	6852.6	7088.8	7413.3	7862.4	8306.3	8273.8	6708.6
57.5°	6960.4	6927.9	6684.0	6846.2	7505.5	7810.5	8185.6	8546.3	8734.6	8539.9	6880.0
60°	7179.8	7190.1	7060.3	7404.3	8312.8	8650.2	8977.3	9066.8	9101.9	8809.9	7060.3
62.5°	7345.9	7390.0	7401.7	8006.4	9140.8	9428.9	9570.4	9506.8	9499.0	9172.0	7046.1
65°	7536.7	7652.2	7844.3	8667.1	9893.6	10083.0	10184.3	10276.5	10081.8	9279.7	6353.0
67.5°	7866.3	8048.0	8480.2	9476.9	10763.1	11043.5	11330.3	11232.9	10168.7	8185.6	4839.7
70°	8310.1	8532.1	9295.2	10534.7	11942.8	12412.7	12652.8	11156.4	8633.3	5656.1	2552.9
72°	8029.9	8231.0	9547.0	11074.6	12778.7	13209.6	12608.7	9731.3	6258.3	2931.9	855.3
72.5°	7757.2	7964.9	9466.6	11068.1	12861.8	13191.5	12321.9	9169.3	5537.9	2281.6	589.2
75°	5382.3	5644.3	8115.5	9949.3	11614.5	11252.5	9427.6	5552.3	2006.5	392.0	194.7
77.5°	2782.6	2985.1	4922.7	7030.5	8094.7	7413.3	5571.7	2408.8	555.5	207.7	128.5
80°	1724.9	1824.7	2302.4	3464.0	4205.0	3678.1	2458.2	973.4	355.6	123.3	102.5
82.5°	892.9	969.5	1449.7	1397.8	1553.6	1291.4	907.2	815.1	219.3	76.6	105.2
85°	293.3	311.5	890.4	929.2	664.5	446.4	402.3	777.4	63.6	49.3	89.5
87.5°	39.0	45.4	312.8	532.1	327.0	202.4	241.4	273.8	22.1	27.2	24.7
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°	2642.5	2642.5	2642.5	2642.5	2642.5	2642.5	2642.5	2642.5	2642.5	2642.5	2642.5
2.5°	2590.5	2573.6	2520.4	2467.3	2406.2	2350.4	2306.2	2277.7	2290.7	2247.9	2254.4
5°	2516.6	2473.7	2356.9	2231.1	2094.7	1967.5	1866.3	1791.1	1776.8	1711.9	1714.5
7.5°	2445.2	2375.1	2185.6	1978.0	1752.1	1569.1	1403.0	1257.6	1205.8	1152.5	1121.4
10°	2406.2	2310.2	2041.5	1739.1	1421.2	1152.5	918.9	735.9	659.3	603.5	576.2
12.5°	2417.9	2290.7	1933.8	1522.4	1104.5	763.1	519.1	385.4	338.7	312.8	303.7
15°	2456.8	2294.6	1836.5	1310.8	803.3	462.1	305.0	260.9	257.0	255.6	254.4
17.5°	2493.1	2298.5	1733.9	1090.2	537.4	294.6	245.3	241.4	241.4	241.4	241.4
20°	2530.8	2299.8	1621.1	859.2	353.0	241.4	231.0	228.4	231.0	231.0	231.0
22.5°	2575.0	2308.9	1512.0	634.6	260.9	227.1	220.7	219.3	220.7	220.7	219.3
25°	2629.5	2328.3	1393.9	454.3	236.2	218.0	211.5	210.2	211.5	210.2	210.2
27.5°	2702.1	2354.3	1256.3	325.8	225.9	209.0	202.4	202.4	202.4	201.2	201.2
30°	2795.6	2385.4	1072.1	257.0	215.4	199.9	194.7	194.7	193.3	192.1	192.1
32.5°	2929.2	2436.1	870.8	232.3	203.8	188.2	183.0	184.3	183.0	181.7	180.4
35°	3118.8	2515.2	672.3	219.3	192.1	176.5	171.3	171.3	171.3	168.7	168.7
37.5°	3387.4	2635.9	503.6	206.3	180.4	164.8	158.4	158.4	157.0	154.5	155.7
40°	3719.7	2787.8	364.7	194.7	168.7	151.8	146.7	144.0	141.5	138.9	138.9
42.5°	4119.4	2935.8	273.8	183.0	157.0	141.5	134.9	132.4	127.2	124.6	123.3
45°	4567.2	3092.8	227.1	168.7	144.0	129.8	124.6	119.4	112.9	109.0	107.7
47.5°	4944.8	3188.8	202.4	154.5	131.0	118.2	112.9	105.2	97.4	94.7	94.7
50°	5171.9	3148.6	181.7	140.1	118.2	106.4	99.9	89.5	84.4	81.7	80.5
52.5°	5299.2	3029.2	164.8	128.5	106.4	93.4	84.4	75.3	72.6	70.1	70.1
55°	5386.1	2856.6	146.7	116.8	96.1	81.7	71.4	64.9	62.3	61.0	59.7
57.5°	5469.2	2646.4	129.8	106.4	85.6	72.6	61.0	58.4	53.2	51.9	51.9
60°	5493.9	2356.9	114.2	94.7	76.6	63.6	53.2	49.3	44.1	42.9	42.9
62.5°	5179.7	1875.4	101.3	80.5	67.5	54.5	46.7	41.5	36.3	36.3	36.3
65°	4328.3	1273.2	87.0	70.1	59.7	46.7	40.2	33.8	31.1	31.1	31.1
67.5°	3014.9	709.9	74.0	59.7	50.6	39.0	33.8	28.5	27.2	28.5	28.5
70°	1358.9	281.6	62.3	49.3	41.5	32.4	28.5	24.7	27.2	27.2	27.2
72°	407.5	150.6	51.9	40.2	33.8	28.5	24.7	23.3	26.0	27.2	27.2
72.5°	302.4	134.9	49.3	39.0	33.8	27.2	23.3	23.3	26.0	27.2	27.2
75°	155.7	92.2	37.6	28.5	24.7	22.1	19.4	22.1	26.0	26.0	26.0
77.5°	122.0	75.3	31.1	22.1	20.8	19.4	18.2	20.8	23.3	23.3	23.3
80°	114.2	49.3	24.7	20.8	18.2	16.9	16.9	18.2	20.8	22.1	22.1
82.5°	115.5	40.2	22.1	19.4	16.9	15.5	15.5	16.9	19.4	20.8	20.8
85°	74.0	27.2	19.4	16.9	15.5	14.3	14.3	15.5	18.2	19.4	19.4
87.5°	24.7	20.8	16.9	15.5	13.0	13.0	13.0	13.0	15.5	16.9	18.2
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)