

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: P195677

Luminaire Tested: **NAV-AF-05-D-UNV-SL4-7050-600-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195677
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-SL4-7050-600-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 5000K, 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: 16139 lumens
Efficiency: N/A
Efficacy: 99.6 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

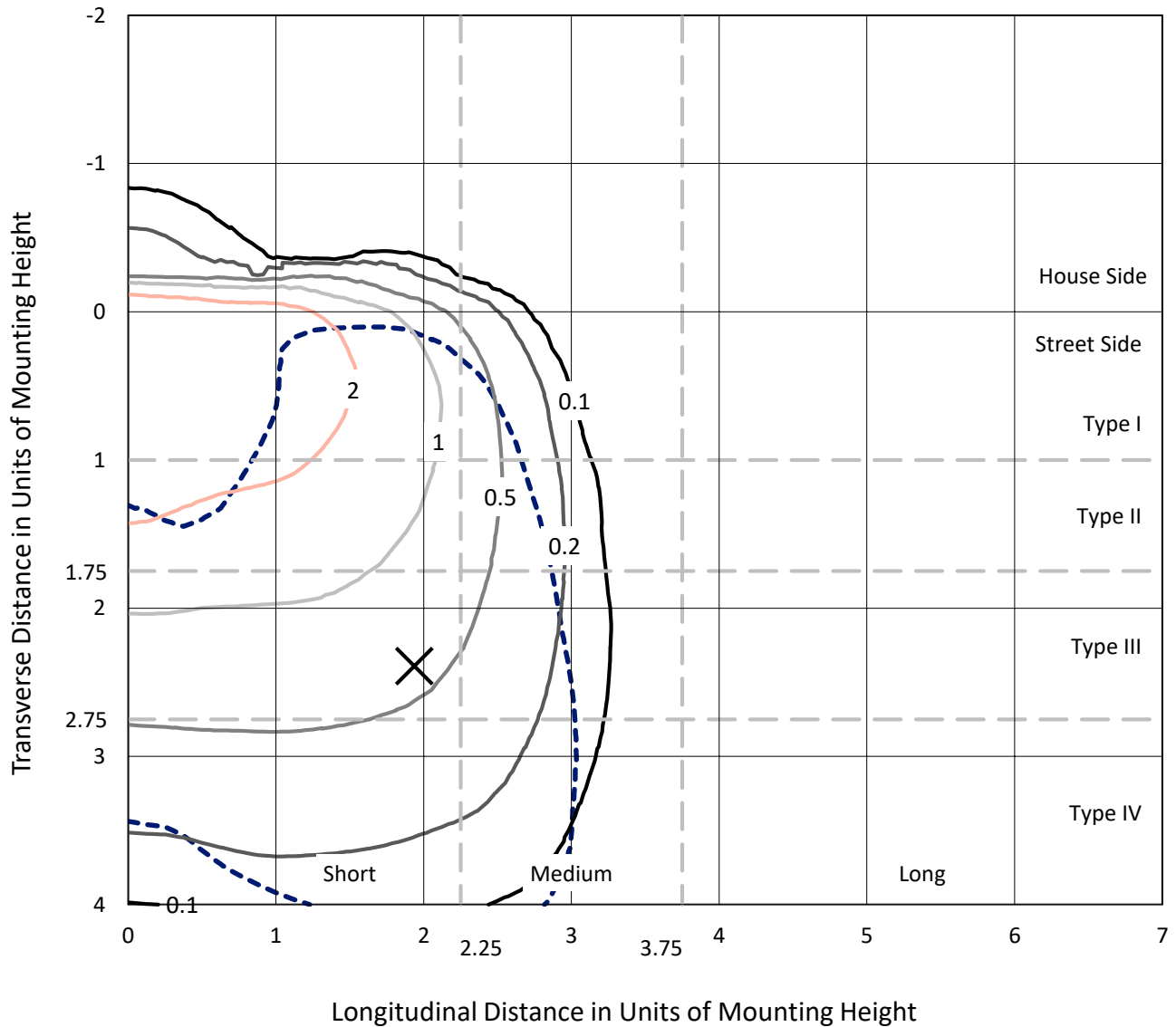


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

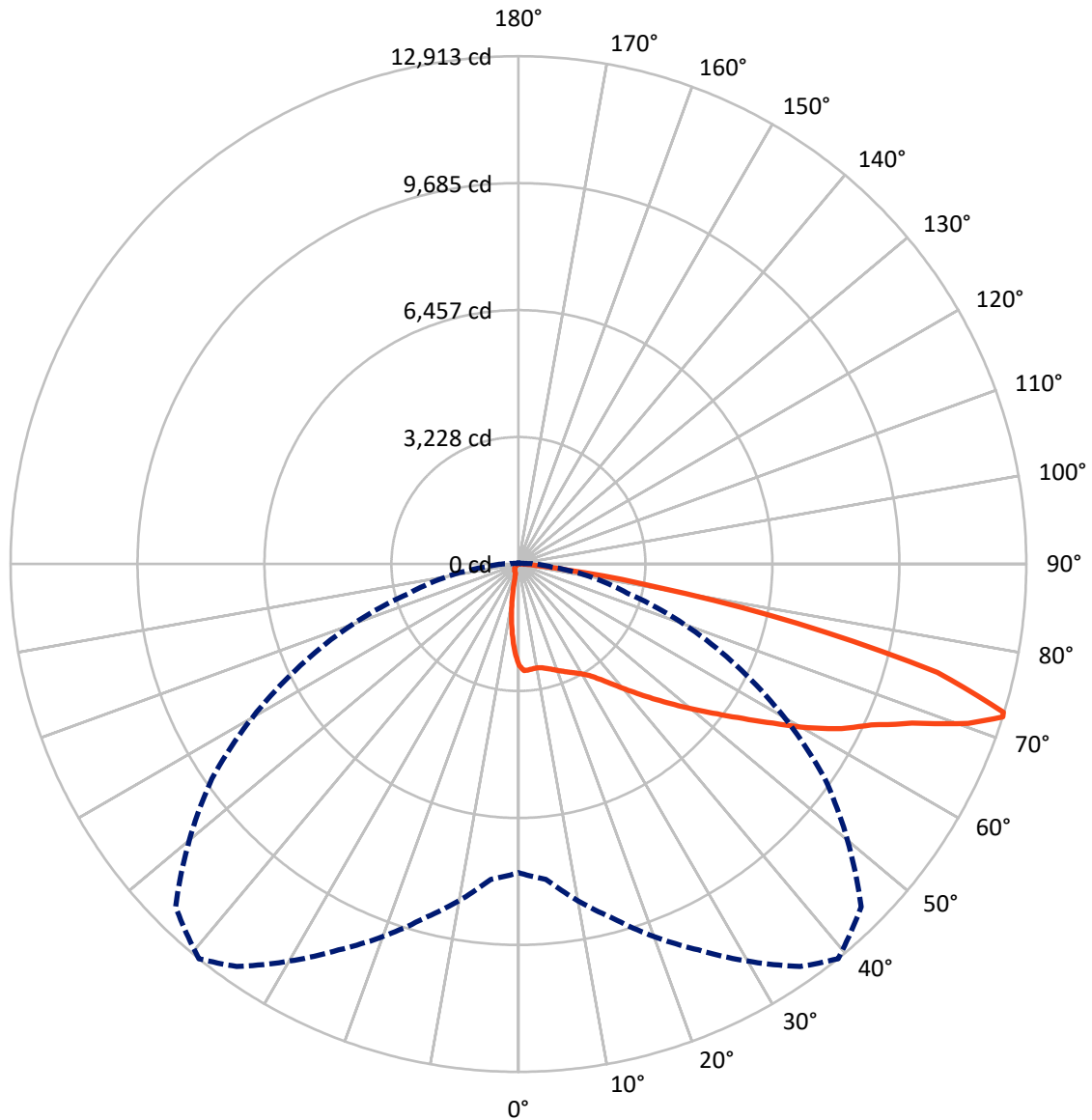


Based on 25 foot mounting height. Maximum calculated value = 4.3 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



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

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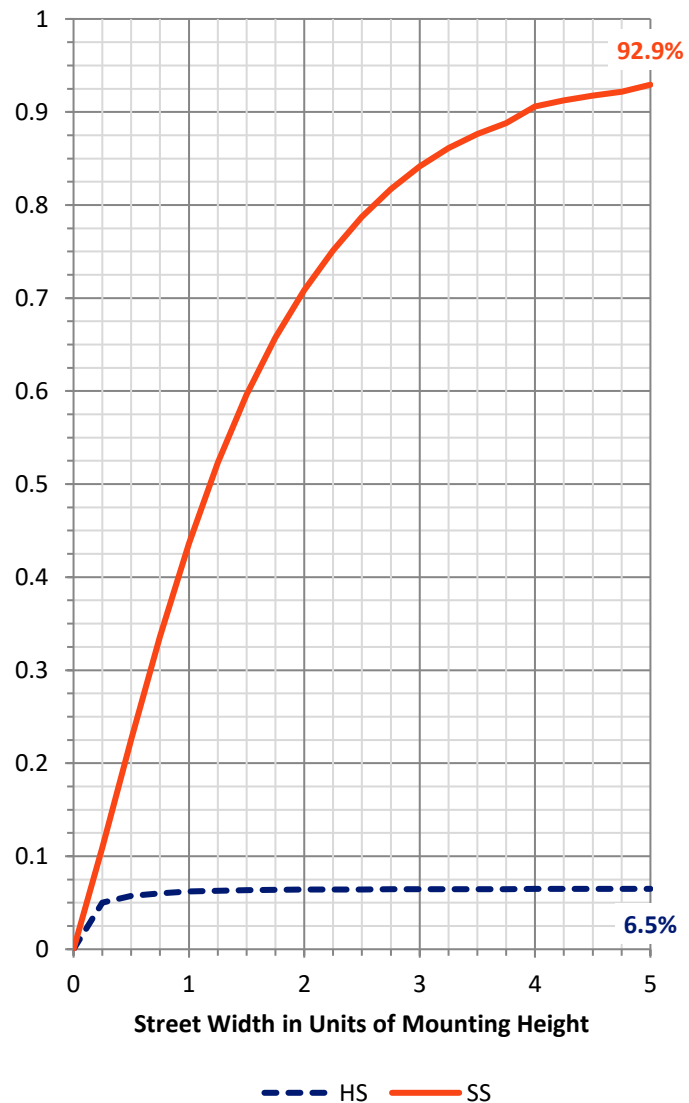
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1057.7	0.0	1057.7
	% Fixture	6.6	0.0	6.6
Street Side	Lumens	15081.3	0.0	15081.3
	% Fixture	93.4	0.0	93.4
Total	Lumens	16139.0	0.0	16139.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	210.1	1.3
10°-20°	508.7	3.2
20°-30°	844.8	5.2
30°-40°	1346.4	8.3
40°-50°	2222.5	13.8
50°-60°	3356.4	20.8
60°-70°	4372.2	27.1
70°-80°	2954.3	18.3
80°-90°	323.6	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°	16139.0	100.0
0°-180°	16139.0	100.0

Coefficient of Utilization



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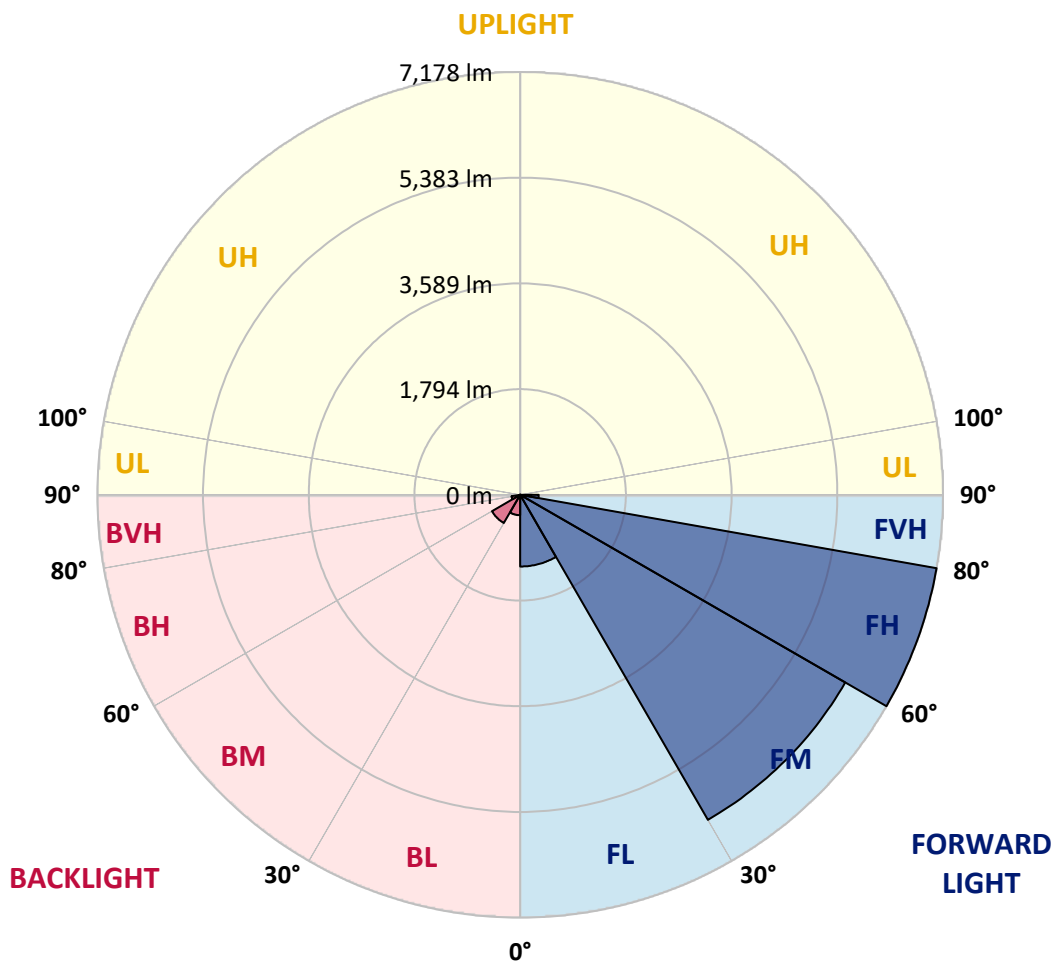
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1217.3	7.5			
FM	(30°-60°)	6371.9	39.5			
FH	(60°-80°)	7177.9	44.5			G3/7500
FVH	(80°-90°)	314.3	1.9			G3/500
BL	(0°-30°)	346.3	2.1	B1/500		
BM	(30°-60°)	553.4	3.4	B1/1000		
BH	(60°-80°)	148.7	0.9	B1/500		G1/500
BVH	(80°-90°)	9.3	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°	2583.2	2583.2	2583.2	2583.2	2583.2	2583.2	2583.2	2583.2	2583.2	2583.2	2583.2
2.5°	2750.6	2755.7	2749.4	2737.9	2721.4	2711.3	2697.3	2666.9	2628.8	2595.8	2557.8
5°	2772.2	2774.7	2767.1	2745.5	2720.2	2706.2	2688.5	2655.5	2616.1	2570.5	2502.0
7.5°	2778.5	2777.3	2768.4	2741.7	2702.4	2684.7	2654.2	2613.6	2573.0	2531.1	2453.7
10°	2776.0	2776.0	2769.7	2744.3	2699.9	2683.4	2649.1	2606.0	2555.2	2513.4	2430.9
12.5°	2767.1	2772.2	2768.4	2754.4	2721.4	2708.8	2678.3	2635.2	2587.0	2543.8	2456.3
15°	2778.5	2786.1	2793.8	2788.7	2769.7	2758.2	2730.3	2685.9	2646.6	2600.9	2507.0
17.5°	2824.2	2840.7	2858.5	2859.7	2839.4	2819.1	2787.4	2741.7	2703.7	2661.8	2560.3
20°	2910.5	2923.2	2956.2	2962.5	2921.9	2892.7	2848.3	2795.0	2757.0	2721.4	2609.8
22.5°	3038.6	3052.6	3079.2	3070.3	3001.8	2967.6	2911.8	2850.9	2811.5	2791.2	2666.9
25°	3232.7	3236.6	3242.9	3203.6	3090.6	3052.6	2984.1	2915.6	2883.8	2881.3	2748.1
27.5°	3461.1	3466.2	3438.3	3350.7	3189.6	3140.1	3062.7	3000.6	2985.3	3004.4	2850.9
30°	3722.5	3723.7	3646.4	3504.3	3303.8	3249.2	3169.3	3100.8	3114.8	3161.7	2982.8
32.5°	3990.2	3977.5	3870.9	3685.7	3459.8	3393.9	3325.4	3256.9	3297.5	3392.6	3175.7
35°	4235.0	4230.0	4104.4	3888.7	3662.8	3604.5	3555.0	3482.7	3548.7	3703.4	3438.3
37.5°	4479.9	4476.1	4332.7	4108.2	3912.8	3870.9	3834.1	3778.3	3886.1	4113.2	3789.7
40°	4750.2	4743.8	4567.5	4351.8	4203.3	4180.5	4158.9	4134.8	4318.8	4634.7	4227.4
42.5°	5083.8	5055.9	4816.1	4616.9	4523.1	4529.4	4530.7	4554.8	4842.8	5255.1	4743.8
45°	5467.0	5404.8	5066.1	4901.1	4874.5	4912.6	4950.6	5050.8	5453.0	5969.4	5314.7
47.5°	5838.7	5738.5	5354.1	5206.9	5261.5	5340.1	5431.5	5626.9	6138.2	6716.7	5832.4
50°	6158.5	6055.7	5639.5	5517.7	5691.6	5808.3	5970.7	6266.3	6861.3	7348.5	6158.5
52.5°	6409.7	6328.5	5941.5	5860.3	6168.6	6328.5	6583.5	6971.7	7543.9	7764.7	6386.8
55°	6594.9	6554.3	6230.8	6242.2	6698.9	6929.8	7247.0	7686.0	8119.9	8088.2	6558.1
57.5°	6804.2	6772.5	6534.0	6692.6	7337.1	7635.3	8001.9	8354.6	8538.6	8348.3	6725.6
60°	7018.7	7028.8	6901.9	7238.2	8126.3	8456.1	8775.9	8863.4	8897.7	8612.2	6901.9
62.5°	7181.1	7224.2	7235.6	7826.8	8935.7	9217.4	9355.7	9293.5	9285.9	8966.2	6888.0
65°	7367.6	7480.5	7668.3	8472.6	9671.6	9856.8	9955.8	10045.9	9855.6	9071.5	6210.5
67.5°	7689.8	7867.4	8289.9	9264.3	10521.6	10795.7	11076.1	10980.9	9940.6	8001.9	4731.1
70°	8123.7	8340.7	9086.7	10298.3	11674.9	12134.2	12368.9	10906.1	8439.6	5529.2	2495.6
72°	7849.7	8046.3	9332.8	10826.1	12492.0	12913.2	12325.8	9513.0	6117.9	2866.1	836.1
72.5°	7583.2	7786.2	9254.2	10819.8	12573.2	12895.5	12045.4	8963.6	5413.7	2230.4	576.0
75°	5261.5	5517.7	7933.4	9726.1	11353.9	11000.0	9216.1	5427.7	1961.5	383.2	190.3
77.5°	2720.2	2918.1	4812.3	6872.8	7913.1	7247.0	5446.7	2354.8	543.0	203.0	125.6
80°	1686.2	1783.8	2250.7	3386.3	4110.7	3595.6	2403.0	951.6	347.6	120.5	100.2
82.5°	872.9	947.7	1417.2	1366.4	1518.7	1262.4	886.8	796.8	214.4	74.9	102.8
85°	286.7	304.5	870.4	908.4	649.6	436.4	393.3	760.0	62.2	48.2	87.5
87.5°	38.1	44.4	305.8	520.2	319.7	197.9	236.0	267.7	21.6	26.6	24.1
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°	2583.2	2583.2	2583.2	2583.2	2583.2	2583.2	2583.2	2583.2	2583.2	2583.2	2583.2
2.5°	2532.4	2515.9	2463.9	2411.9	2352.2	2297.7	2254.5	2226.6	2239.3	2197.5	2203.8
5°	2460.1	2418.2	2304.0	2181.0	2047.7	1923.4	1824.4	1750.9	1736.9	1673.5	1676.0
7.5°	2390.3	2321.8	2136.6	1933.6	1712.8	1533.9	1371.5	1229.4	1178.7	1126.6	1096.2
10°	2352.2	2258.4	1995.7	1700.1	1389.3	1126.6	898.3	719.4	644.5	590.0	563.3
12.5°	2363.7	2239.3	1890.4	1488.2	1079.7	746.0	507.5	376.8	331.1	305.8	296.9
15°	2401.7	2243.1	1795.3	1281.4	785.3	451.7	298.2	255.0	251.2	249.9	248.7
17.5°	2437.2	2246.9	1695.0	1065.7	525.3	288.0	239.8	236.0	236.0	236.0	236.0
20°	2474.0	2248.2	1584.7	839.9	345.1	236.0	225.8	223.3	225.8	225.8	225.8
22.5°	2517.2	2257.1	1478.1	620.4	255.0	222.0	215.7	214.4	215.7	215.7	214.4
25°	2570.5	2276.1	1362.6	444.1	230.9	213.1	206.8	205.5	206.8	205.5	205.5
27.5°	2641.5	2301.5	1228.1	318.5	220.8	204.3	197.9	197.9	197.9	196.7	196.7
30°	2732.9	2331.9	1048.0	251.2	210.6	195.4	190.3	190.3	189.0	187.8	187.8
32.5°	2863.5	2381.4	851.3	227.1	199.2	184.0	178.9	180.2	178.9	177.6	176.4
35°	3048.8	2458.8	657.2	214.4	187.8	172.5	167.5	167.5	167.5	164.9	164.9
37.5°	3311.4	2576.8	492.3	201.7	176.4	161.1	154.8	154.8	153.5	151.0	152.2
40°	3636.2	2725.3	356.5	190.3	164.9	148.4	143.4	140.8	138.3	135.8	135.8
42.5°	4027.0	2869.9	267.7	178.9	153.5	138.3	131.9	129.4	124.3	121.8	120.5
45°	4464.7	3023.4	222.0	164.9	140.8	126.9	121.8	116.7	110.4	106.6	105.3
47.5°	4833.9	3117.3	197.9	151.0	128.1	115.5	110.4	102.8	95.2	92.6	92.6
50°	5055.9	3078.0	177.6	137.0	115.5	104.0	97.7	87.5	82.5	79.9	78.7
52.5°	5180.3	2961.2	161.1	125.6	104.0	91.3	82.5	73.6	71.0	68.5	68.5
55°	5265.3	2792.5	143.4	114.2	93.9	79.9	69.8	63.4	60.9	59.6	58.4
57.5°	5346.5	2587.0	126.9	104.0	83.7	71.0	59.6	57.1	52.0	50.7	50.7
60°	5370.6	2304.0	111.6	92.6	74.9	62.2	52.0	48.2	43.1	41.9	41.9
62.5°	5063.5	1833.3	99.0	78.7	66.0	53.3	45.7	40.6	35.5	35.5	35.5
65°	4231.2	1244.6	85.0	68.5	58.4	45.7	39.3	33.0	30.4	30.4	30.4
67.5°	2947.3	694.0	72.3	58.4	49.5	38.1	33.0	27.9	26.6	27.9	27.9
70°	1328.4	275.3	60.9	48.2	40.6	31.7	27.9	24.1	26.6	26.6	26.6
72°	398.4	147.2	50.7	39.3	33.0	27.9	24.1	22.8	25.4	26.6	26.6
72.5°	295.6	131.9	48.2	38.1	33.0	26.6	22.8	22.8	25.4	26.6	26.6
75°	152.2	90.1	36.8	27.9	24.1	21.6	19.0	21.6	25.4	25.4	25.4
77.5°	119.3	73.6	30.4	21.6	20.3	19.0	17.8	20.3	22.8	22.8	22.8
80°	111.6	48.2	24.1	20.3	17.8	16.5	16.5	17.8	20.3	21.6	21.6
82.5°	112.9	39.3	21.6	19.0	16.5	15.2	15.2	16.5	19.0	20.3	20.3
85°	72.3	26.6	19.0	16.5	15.2	14.0	14.0	15.2	17.8	19.0	19.0
87.5°	24.1	20.3	16.5	15.2	12.7	12.7	12.7	12.7	15.2	16.5	17.8
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)