

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: P195711

Luminaire Tested: **NAV-AF-03-D-UNV-SL4-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195711
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
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-SL4-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 5000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17281 lumens
Efficiency: N/A
Efficacy: 104.1 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 - G4

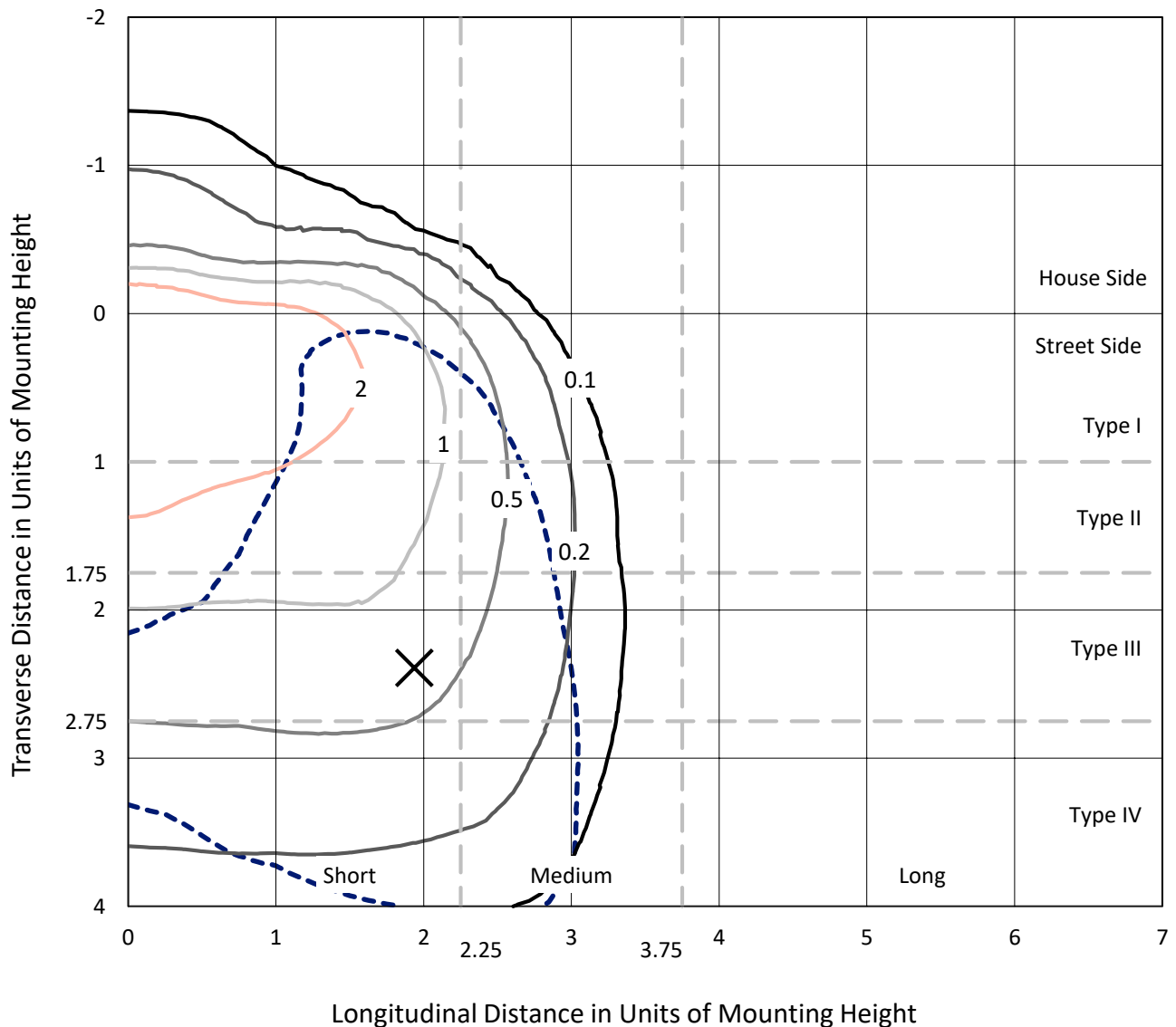
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

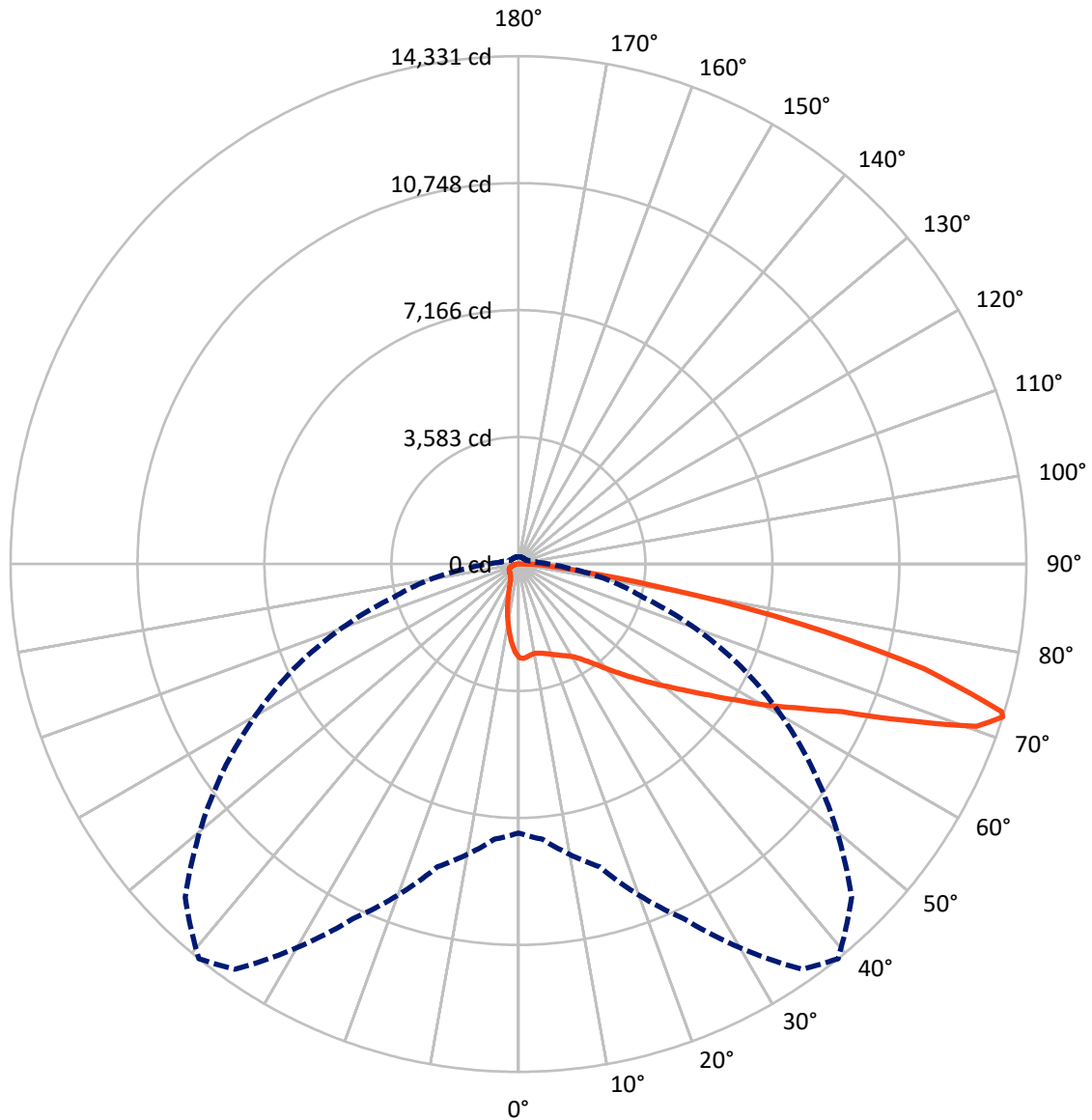
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.2 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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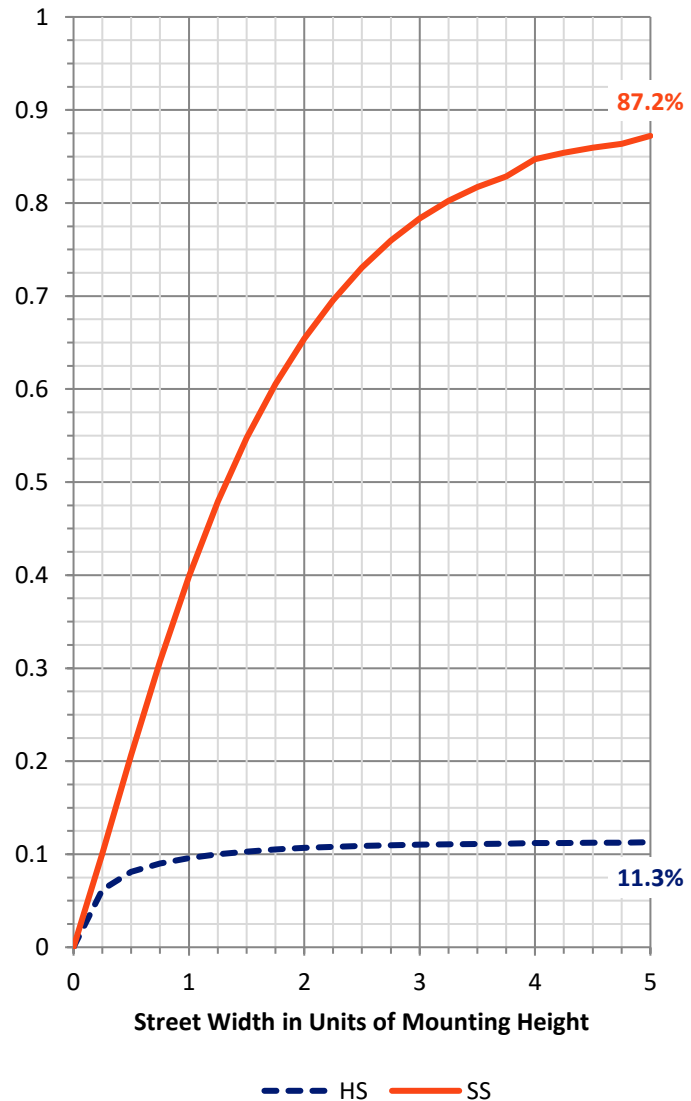
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1981.5	0.0	1981.5
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	15299.5	0.0	15299.5
	% Fixture	88.5	0.0	88.5
Total	Lumens	17281.0	0.0	17281.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	226.8	1.3
10°-20°	569.9	3.3
20°-30°	888.1	5.1
30°-40°	1367.4	7.9
40°-50°	2229.2	12.9
50°-60°	3463.9	20.0
60°-70°	4636.3	26.8
70°-80°	3334.2	19.3
80°-90°	565.2	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°	17281.0	100.0
0°-180°	17281.0	100.0

Coefficient of Utilization



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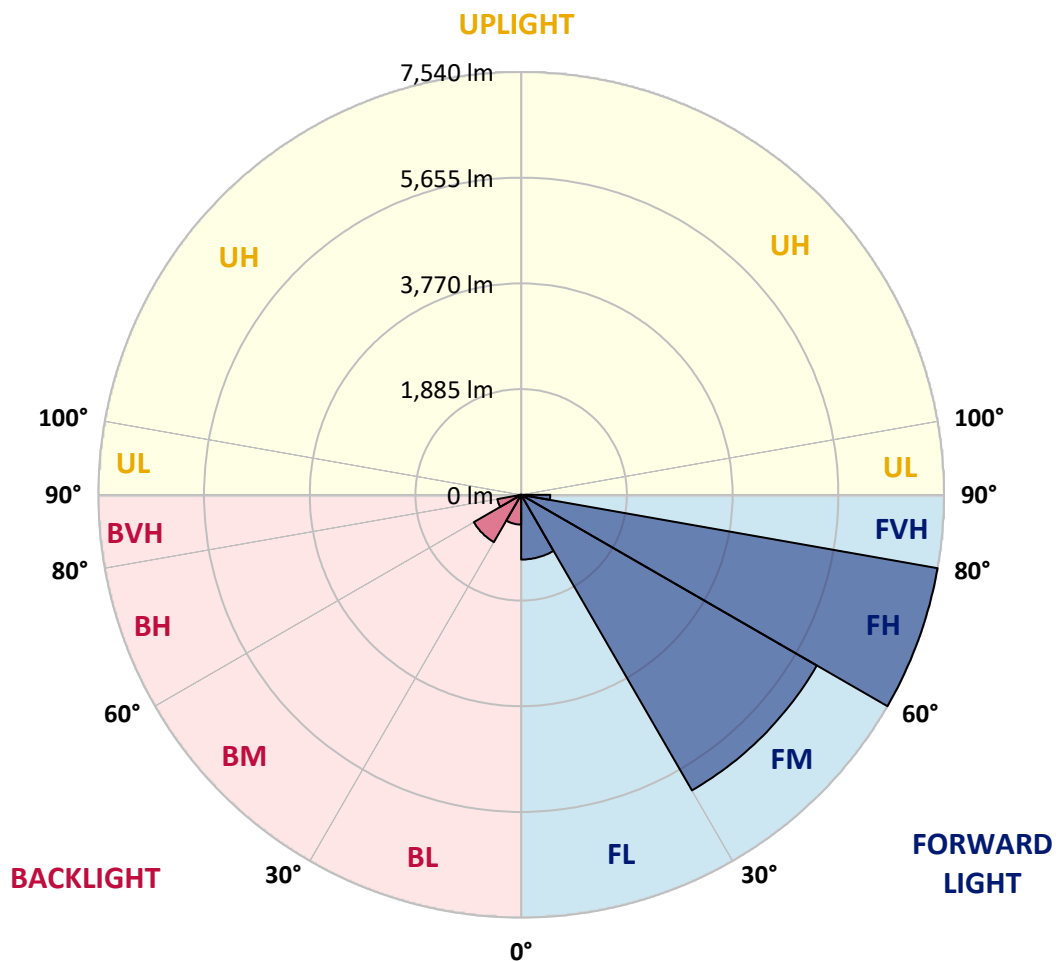
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1154.3	6.7			
FM	(30°-60°)	6086.7	35.2			
FH	(60°-80°)	7540.0	43.6			G4/12000
FVH	(80°-90°)	518.5	3.0			G4/750
BL	(0°-30°)	530.4	3.1	B2/1000		
BM	(30°-60°)	973.8	5.6	B1/1000		
BH	(60°-80°)	430.5	2.5	B1/500		G1/500
BVH	(80°-90°)	46.7	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	2639.1	2639.1	2639.1	2639.1	2639.1	2639.1	2639.1	2639.1	2639.1	2639.1	2639.1
2.5°	2696.0	2697.1	2693.6	2683.2	2673.9	2669.3	2661.2	2647.2	2628.7	2615.9	2605.5
5°	2670.4	2673.9	2671.6	2654.2	2638.0	2628.7	2615.9	2596.2	2571.8	2561.4	2537.0
7.5°	2650.7	2653.0	2646.1	2626.4	2595.0	2583.4	2560.2	2534.7	2512.7	2497.6	2468.6
10°	2636.8	2639.1	2633.3	2613.6	2578.8	2564.9	2537.0	2509.2	2480.2	2461.6	2429.1
12.5°	2617.1	2621.7	2621.7	2612.4	2589.2	2580.0	2552.1	2522.0	2495.3	2475.6	2434.9
15°	2613.6	2619.4	2629.8	2628.7	2621.7	2614.8	2592.7	2562.6	2539.4	2516.2	2466.3
17.5°	2642.6	2655.4	2676.2	2683.2	2678.6	2663.5	2638.0	2610.1	2584.6	2562.6	2501.1
20°	2715.7	2722.6	2754.0	2767.9	2744.7	2722.6	2689.0	2653.0	2629.8	2612.4	2533.6
22.5°	2825.9	2835.2	2860.7	2861.8	2813.1	2786.4	2743.5	2699.4	2677.4	2670.4	2577.6
25°	3002.2	2999.9	3006.9	2977.9	2889.7	2858.4	2806.2	2755.1	2740.0	2754.0	2642.6
27.5°	3213.3	3207.5	3185.5	3110.1	2976.7	2936.1	2873.4	2828.2	2828.2	2860.7	2730.8
30°	3457.0	3451.2	3379.2	3252.8	3079.9	3033.5	2967.4	2919.9	2944.2	3006.9	2850.2
32.5°	3714.5	3693.6	3592.7	3423.3	3227.3	3176.2	3112.4	3063.7	3110.1	3216.8	3021.9
35°	3956.9	3945.3	3821.2	3620.5	3417.5	3374.6	3330.5	3270.2	3344.4	3510.3	3264.4
37.5°	4207.5	4198.2	4046.3	3832.8	3649.5	3620.5	3583.4	3541.6	3661.1	3879.2	3592.7
40°	4487.1	4468.5	4277.1	4063.7	3919.8	3905.9	3886.2	3874.6	4067.1	4392.0	4008.0
42.5°	4803.8	4767.8	4520.7	4317.7	4214.5	4226.1	4215.6	4262.0	4556.7	4983.6	4502.2
45°	5165.7	5093.8	4763.2	4588.0	4540.4	4586.8	4608.9	4727.2	5135.6	5666.9	5054.3
47.5°	5504.4	5411.6	5028.8	4881.5	4908.2	4988.2	5050.9	5259.7	5770.1	6342.0	5618.1
50°	5816.5	5712.1	5313.0	5185.4	5315.4	5429.0	5559.0	5853.6	6445.3	7036.9	6135.5
52.5°	6047.4	5971.9	5597.3	5517.2	5782.9	5933.7	6141.3	6513.7	7127.4	7699.3	6597.2
55°	6226.0	6185.4	5874.5	5897.7	6311.8	6527.6	6779.3	7207.4	7848.9	8293.2	6968.4
57.5°	6432.5	6402.3	6191.2	6357.1	6968.4	7239.9	7536.9	8012.5	8535.7	8816.4	7259.6
60°	6650.6	6650.6	6543.9	6910.4	7789.8	8100.6	8396.5	8766.5	9220.1	9287.4	7377.9
62.5°	6815.3	6858.2	6896.5	7499.7	8569.3	8955.6	9280.4	9635.4	9928.9	9519.4	7099.5
65°	7054.3	7145.9	7361.7	8180.7	9534.5	10040.3	10478.8	10776.9	10503.1	9334.9	6191.2
67.5°	7464.9	7600.7	8060.0	9194.6	11012.4	11769.9	12195.6	11680.6	10390.6	8173.7	4742.3
70°	7835.0	8026.4	8811.8	10481.1	12933.4	13719.9	13523.9	11470.6	9049.6	5991.7	2917.5
72°	7589.1	7797.9	8846.6	11041.4	13960.1	14331.3	13297.7	10165.5	6992.8	3656.5	1438.5
72.5°	7427.8	7644.7	8734.0	11027.5	13987.9	14253.6	12983.3	9647.0	6347.8	3199.4	1163.5
75°	6205.1	6390.7	7510.2	9773.4	12326.7	11839.5	10131.9	6243.4	2917.5	1033.6	598.6
77.5°	4052.1	4193.6	5178.5	6771.2	8634.3	8165.6	6166.8	2923.3	1093.9	627.6	450.1
80°	2035.9	2136.8	2771.4	3560.2	4659.9	4287.6	2846.8	1414.1	732.0	453.6	353.8
82.5°	1416.4	1509.2	1908.3	1817.8	1947.7	1885.1	1338.7	1179.8	547.5	286.5	185.6
85°	1187.9	1284.2	1578.8	1295.8	1060.3	966.3	959.4	1114.8	361.9	141.5	156.6
87.5°	1035.9	1182.1	1302.7	946.6	727.4	641.5	706.5	1022.0	114.8	77.7	47.6
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°	2639.1	2639.1	2639.1	2639.1	2639.1	2639.1	2639.1	2639.1	2639.1	2639.1	2639.1
2.5°	2588.1	2584.6	2567.2	2540.5	2520.8	2508.0	2483.7	2482.5	2484.8	2464.0	2472.1
5°	2515.0	2501.1	2455.8	2394.3	2344.5	2296.9	2244.7	2227.3	2212.2	2180.9	2184.4
7.5°	2438.4	2414.1	2335.2	2234.3	2138.0	2049.8	1962.8	1919.9	1887.4	1846.8	1846.8
10°	2393.2	2354.9	2234.3	2086.9	1933.8	1805.0	1675.1	1597.4	1540.5	1488.3	1484.9
12.5°	2390.9	2332.9	2164.7	1961.6	1751.7	1570.7	1393.2	1273.7	1189.1	1127.6	1121.8
15°	2409.4	2328.2	2106.7	1844.5	1580.0	1344.5	1125.3	973.3	865.4	797.0	790.0
17.5°	2425.7	2322.4	2044.0	1721.5	1412.9	1126.4	882.8	725.0	622.9	567.3	561.5
20°	2440.8	2309.7	1964.0	1591.6	1228.5	922.2	690.2	562.6	495.3	464.0	460.5
22.5°	2462.8	2298.1	1880.4	1445.4	1047.5	750.6	569.6	477.9	442.0	426.9	424.6
25°	2498.8	2299.2	1799.2	1295.8	881.6	625.3	493.0	436.2	416.5	406.0	406.0
27.5°	2551.0	2313.1	1719.2	1143.8	741.3	539.4	447.8	414.1	401.4	393.3	390.9
30°	2627.5	2338.7	1634.5	1000.0	629.9	480.3	421.1	400.2	389.8	382.8	381.7
32.5°	2738.9	2383.9	1545.2	868.9	545.2	438.5	401.4	388.6	380.5	374.7	373.5
35°	2904.8	2464.0	1458.2	757.5	484.9	408.3	385.1	374.7	370.1	367.7	366.6
37.5°	3148.4	2592.7	1375.8	670.5	445.5	388.6	368.9	363.1	360.8	360.8	360.8
40°	3454.6	2762.1	1301.6	609.0	423.4	373.5	357.3	352.7	352.7	353.8	353.8
42.5°	3827.0	2974.4	1237.8	567.3	410.7	363.1	349.2	346.9	345.7	345.7	346.9
45°	4259.7	3224.9	1198.3	534.8	401.4	357.3	343.4	342.2	337.6	335.3	335.3
47.5°	4694.7	3492.9	1196.0	516.2	389.8	350.3	337.6	337.6	328.3	323.7	324.8
50°	5100.7	3733.0	1221.5	511.6	382.8	339.9	331.8	332.9	320.2	314.4	313.2
52.5°	5427.9	3916.3	1252.9	517.4	382.8	330.6	321.3	327.1	313.2	306.3	305.1
55°	5680.8	4043.9	1264.5	530.1	387.5	322.5	312.1	321.3	310.9	301.6	301.6
57.5°	5861.7	4084.5	1214.6	535.9	394.4	321.3	302.8	320.2	314.4	302.8	302.8
60°	5795.6	3849.1	1029.0	513.9	393.3	319.0	295.8	322.5	326.0	313.2	313.2
62.5°	5279.4	3220.3	826.0	464.0	373.5	310.9	287.7	320.2	334.1	329.5	327.1
65°	4298.0	2361.9	640.3	404.9	339.9	293.5	270.3	299.3	315.5	320.2	321.3
67.5°	3028.9	1495.3	497.7	344.5	298.1	268.0	250.6	264.5	270.3	272.6	277.3
70°	1656.6	809.7	395.6	290.0	255.2	242.5	229.7	230.9	228.5	226.2	228.5
72°	831.8	529.0	334.1	251.7	226.2	218.1	212.3	208.8	208.8	205.3	206.5
72.5°	715.8	491.9	322.5	242.5	219.2	212.3	207.6	204.2	203.0	200.7	201.8
75°	476.8	389.8	269.1	203.0	186.8	182.1	184.4	181.0	182.1	179.8	181.0
77.5°	385.1	335.3	228.5	171.7	160.1	153.1	157.8	158.9	161.2	158.9	157.8
80°	322.5	285.4	191.4	141.5	133.4	127.6	129.9	138.0	139.2	132.2	131.1
82.5°	208.8	229.7	150.8	110.2	102.1	99.8	105.6	113.7	116.0	106.7	104.4
85°	175.2	184.4	109.0	75.4	67.3	65.0	76.6	84.7	90.5	81.2	78.9
87.5°	48.7	90.5	53.4	36.0	30.2	30.2	37.1	44.1	52.2	53.4	53.4
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)