

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: P196181

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196181
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-05-D-UNV-SL4-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 615mA 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: 19333.8 lumens
Efficiency: N/A
Efficacy: 119.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G4

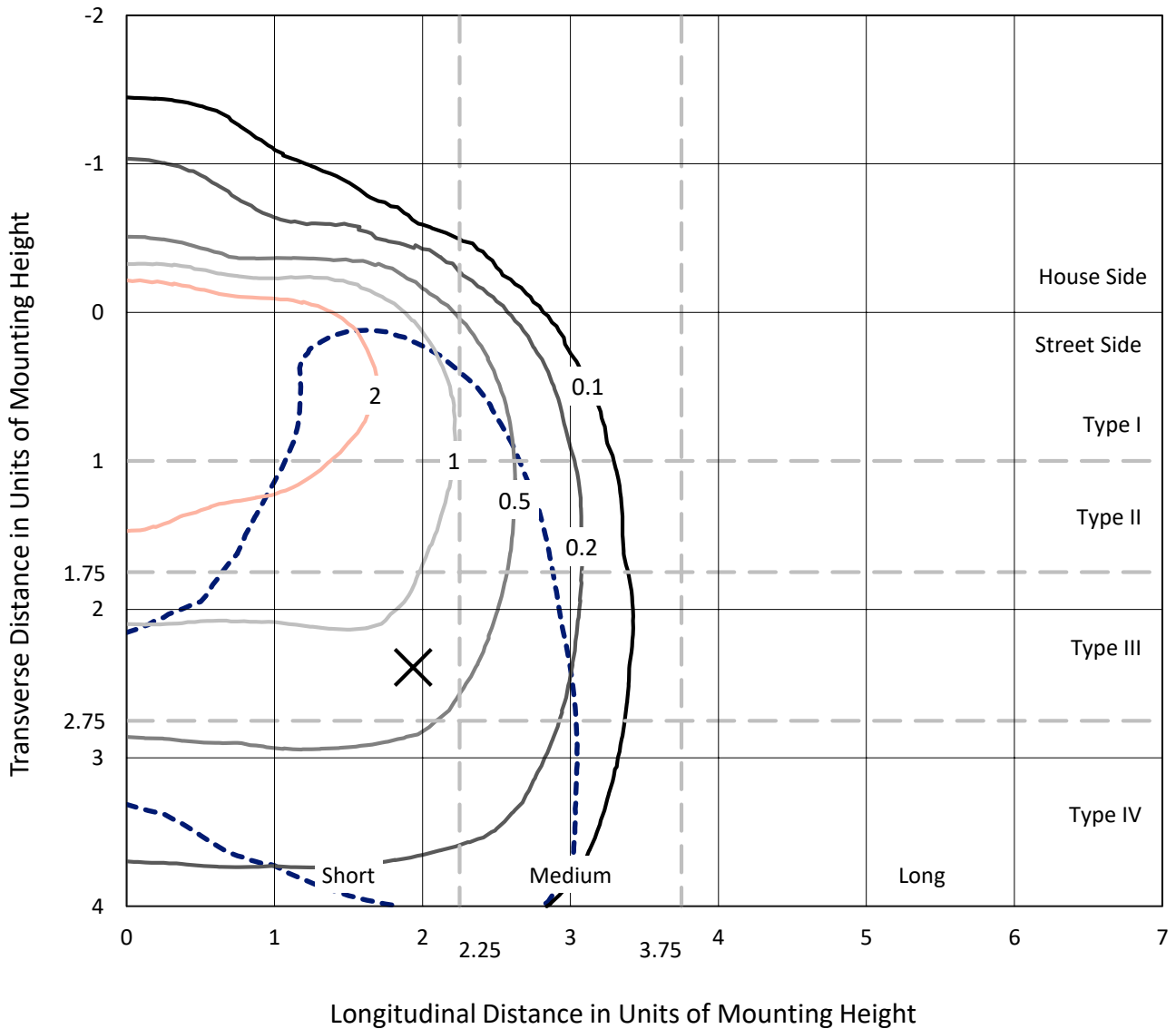
Input Watts (W): 162
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196181
 CATALOG NUMBER: NAV-AF-05-D-UNV-SL4-600

Iso-Footcandle Lines of Horizontal Illumination

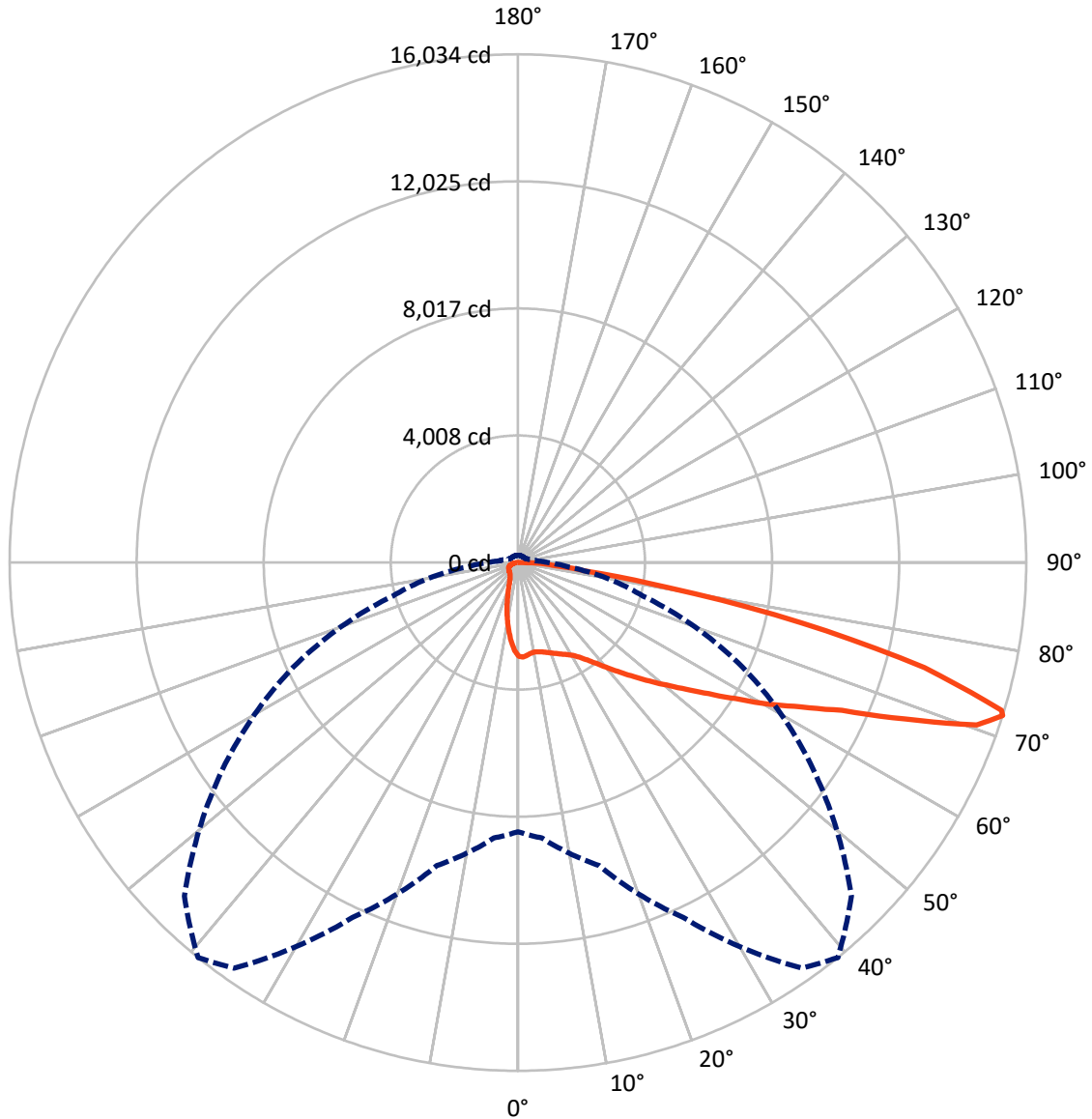
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.7 fc
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P196181
CATALOG NUMBER: NAV-AF-05-D-UNV-SL4-600

Luminous Intensity Polar Plot



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

REPORT NUMBER: P196181

CATALOG NUMBER: NAV-AF-05-D-UNV-SL4-600

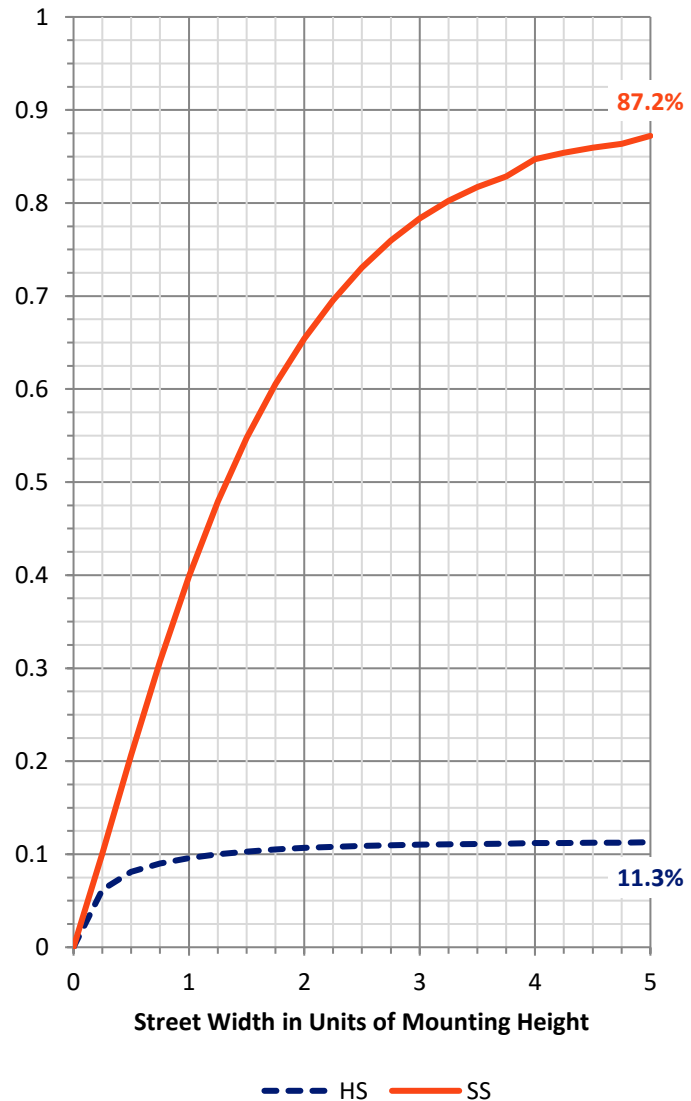
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2216.9	0.0	2216.9
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	17116.9	0.0	17116.9
	% Fixture	88.5	0.0	88.5
Total	Lumens	19333.8	0.0	19333.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	253.7	1.3
10°-20°	637.6	3.3
20°-30°	993.6	5.1
30°-40°	1529.8	7.9
40°-50°	2494.0	12.9
50°-60°	3875.4	20.0
60°-70°	5187.0	26.8
70°-80°	3730.2	19.3
80°-90°	632.4	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°	19333.8	100.0
0°-180°	19333.8	100.0



REPORT NUMBER: P196181

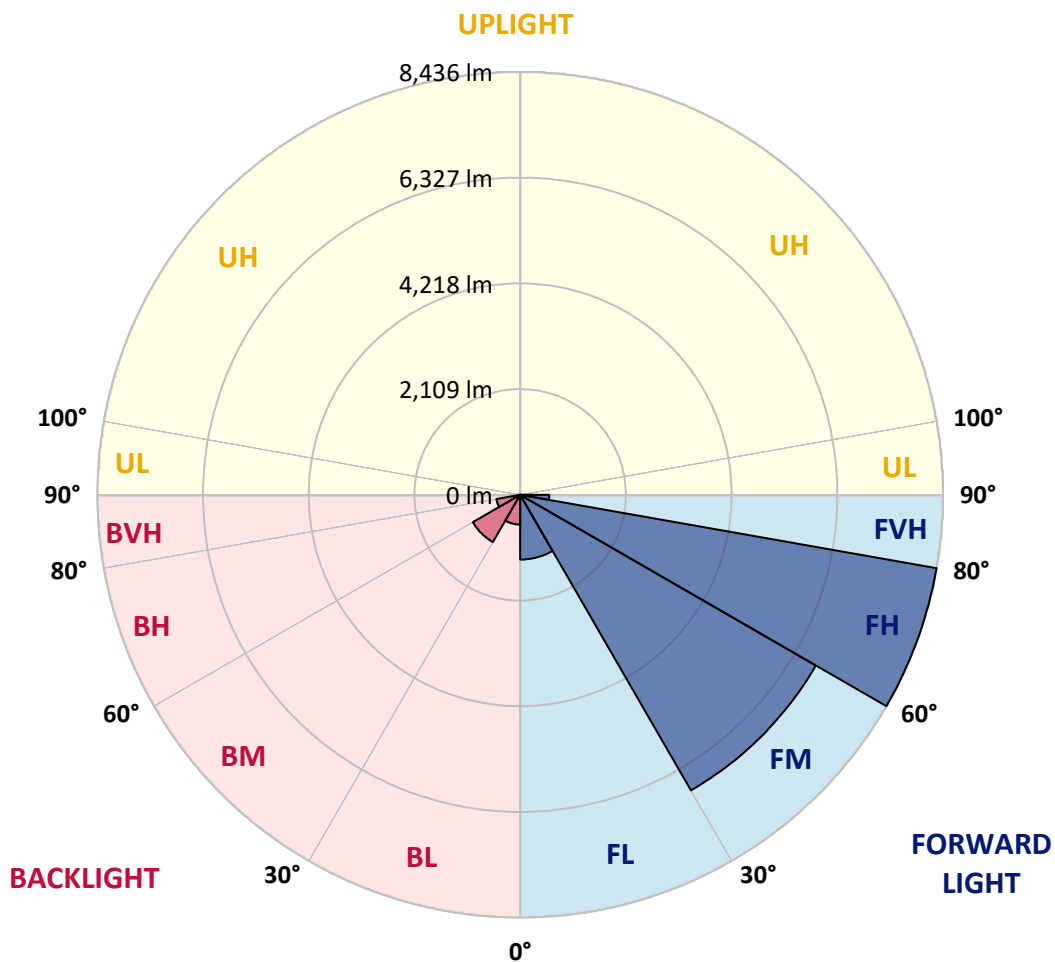
CATALOG NUMBER: NAV-AF-05-D-UNV-SL4-600

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1291.5	6.7			
FM	(30°-60°)	6809.7	35.2			
FH	(60°-80°)	8435.6	43.6			G4/12000
FVH	(80°-90°)	580.1	3.0			G4/750
BL	(0°-30°)	593.5	3.1	B2/1000		
BM	(30°-60°)	1089.5	5.6	B2/2500		
BH	(60°-80°)	481.6	2.5	B1/500		G1/500
BVH	(80°-90°)	52.3	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





REPORT NUMBER: P196181

CATALOG NUMBER: NAV-AF-05-D-UNV-SL4-600

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	2952.6	2952.6	2952.6	2952.6	2952.6	2952.6	2952.6	2952.6	2952.6	2952.6	2952.6
2.5°	3016.2	3017.5	3013.6	3002.0	2991.5	2986.4	2977.3	2961.7	2941.0	2926.7	2915.0
5°	2987.6	2991.5	2989.0	2969.5	2951.3	2941.0	2926.7	2904.6	2877.4	2865.7	2838.4
7.5°	2965.6	2968.2	2960.4	2938.3	2903.3	2890.3	2864.4	2835.8	2811.2	2794.3	2761.9
10°	2950.0	2952.6	2946.1	2924.1	2885.1	2869.6	2838.4	2807.3	2774.9	2754.1	2717.7
12.5°	2928.0	2933.1	2933.1	2922.8	2896.8	2886.5	2855.3	2821.5	2791.6	2769.6	2724.2
15°	2924.1	2930.5	2942.2	2941.0	2933.1	2925.3	2900.7	2866.9	2841.0	2815.1	2759.2
17.5°	2956.5	2970.8	2994.2	3002.0	2996.7	2979.9	2951.3	2920.2	2891.6	2866.9	2798.2
20°	3038.3	3046.0	3081.1	3096.7	3070.7	3046.0	3008.4	2968.2	2942.2	2922.8	2834.5
22.5°	3161.5	3172.0	3200.5	3201.8	3147.3	3117.4	3069.5	3020.1	2995.4	2987.6	2883.8
25°	3358.9	3356.2	3364.1	3331.5	3232.9	3197.9	3139.5	3082.4	3065.5	3081.1	2956.5
27.5°	3595.1	3588.5	3563.9	3479.6	3330.3	3284.9	3214.8	3164.2	3164.2	3200.5	3055.1
30°	3867.6	3861.1	3780.6	3639.1	3445.8	3393.8	3319.9	3266.7	3293.9	3364.1	3188.8
32.5°	4155.7	4132.3	4019.5	3829.9	3610.6	3553.5	3482.1	3427.6	3479.6	3598.9	3381.0
35°	4427.0	4414.0	4275.1	4050.6	3823.5	3775.4	3726.1	3658.7	3741.7	3927.3	3652.1
37.5°	4707.3	4696.9	4526.9	4288.1	4083.0	4050.6	4009.0	3962.3	4096.0	4340.0	4019.5
40°	5020.1	4999.4	4785.2	4546.4	4385.5	4369.8	4347.8	4334.9	4550.3	4913.6	4484.1
42.5°	5374.4	5334.2	5057.8	4830.6	4715.1	4728.1	4716.4	4768.3	5098.0	5575.6	5037.0
45°	5779.4	5698.9	5329.0	5133.0	5079.8	5131.7	5156.4	5288.8	5745.6	6340.0	5654.8
47.5°	6158.3	6054.4	5626.2	5461.3	5491.2	5580.8	5650.9	5884.4	6455.5	7095.4	6285.5
50°	6507.4	6390.6	5944.2	5801.4	5946.7	6074.0	6219.3	6548.9	7210.9	7872.7	6864.3
52.5°	6765.7	6681.3	6262.1	6172.6	6469.8	6638.5	6870.9	7287.4	7974.0	8613.9	7380.9
55°	6965.6	6920.2	6572.4	6598.2	7061.6	7303.1	7584.7	8063.5	8781.3	9278.4	7796.2
57.5°	7196.6	7162.8	6926.6	7112.3	7796.2	8099.9	8432.2	8964.2	9549.6	9863.7	8121.9
60°	7440.6	7440.6	7321.2	7731.3	8715.0	9062.9	9393.9	9807.8	10315.3	10390.6	8254.3
62.5°	7624.9	7672.9	7715.7	8390.7	9587.2	10019.4	10382.8	10780.0	11108.3	10650.1	7942.9
65°	7892.3	7994.8	8236.2	9152.4	10667.0	11232.9	11723.5	12057.0	11750.7	10443.8	6926.6
67.5°	8351.7	8503.5	9017.5	10286.8	12320.5	13168.0	13644.3	13068.1	11624.8	9144.7	5305.6
70°	8765.7	8979.9	9858.5	11726.1	14469.7	15349.7	15130.4	12833.1	10124.6	6703.4	3264.1
72°	8490.6	8724.1	9897.5	12352.9	15618.3	16033.6	14877.3	11373.1	7823.4	4090.8	1609.3
72.5°	8310.1	8552.9	9771.5	12337.4	15649.5	15946.7	14525.6	10792.9	7101.8	3579.5	1301.7
75°	6942.3	7149.9	8402.3	10934.4	13791.0	13245.9	11335.4	6985.0	3264.1	1156.3	669.7
77.5°	4533.4	4691.8	5793.6	7575.6	9659.9	9135.6	6899.4	3270.6	1223.9	702.2	503.6
80°	2277.7	2390.6	3100.6	3983.1	5213.5	4796.8	3185.0	1582.1	819.0	507.5	395.9
82.5°	1584.7	1688.5	2135.0	2033.7	2179.1	2109.0	1497.7	1319.9	612.5	320.6	207.7
85°	1329.0	1436.7	1766.3	1449.7	1186.2	1081.2	1073.3	1247.3	404.9	158.4	175.2
87.5°	1159.0	1322.5	1457.5	1059.1	813.8	717.7	790.4	1143.5	128.5	87.0	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



REPORT NUMBER: P196181

CATALOG NUMBER: NAV-AF-05-D-UNV-SL4-600

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2952.6	2952.6	2952.6	2952.6	2952.6	2952.6	2952.6	2952.6	2952.6	2952.6	2952.6
2.5°	2895.5	2891.6	2872.1	2842.3	2820.3	2806.0	2778.7	2777.4	2780.0	2756.6	2765.8
5°	2813.7	2798.2	2747.5	2678.8	2622.9	2569.8	2511.3	2491.9	2475.0	2439.9	2443.8
7.5°	2728.1	2700.8	2612.6	2499.7	2392.0	2293.4	2196.0	2148.0	2111.6	2066.2	2066.2
10°	2677.5	2634.6	2499.7	2334.9	2163.5	2019.4	1874.1	1787.1	1723.6	1665.2	1661.3
12.5°	2674.9	2610.0	2421.8	2194.6	1959.8	1757.3	1558.7	1425.1	1330.3	1261.5	1255.1
15°	2695.7	2604.7	2356.9	2063.6	1767.7	1504.2	1258.9	1088.9	968.2	891.6	883.8
17.5°	2713.8	2598.3	2286.8	1926.0	1580.8	1260.2	987.7	811.2	696.9	634.6	628.2
20°	2730.7	2584.0	2197.3	1780.7	1374.4	1031.7	772.2	629.4	554.1	519.1	515.3
22.5°	2755.3	2571.1	2103.8	1617.1	1172.0	839.7	637.2	534.7	494.5	477.6	475.1
25°	2795.6	2572.3	2013.0	1449.7	986.3	699.5	551.6	487.9	466.0	454.3	454.3
27.5°	2853.9	2588.0	1923.5	1279.7	829.3	603.5	500.9	463.3	449.1	440.0	437.4
30°	2939.7	2616.5	1828.6	1118.7	704.7	537.4	471.2	447.7	436.1	428.3	427.0
32.5°	3064.2	2667.0	1728.8	972.1	610.0	490.6	449.1	434.8	425.6	419.2	417.9
35°	3249.8	2756.6	1631.4	847.5	542.5	456.8	430.9	419.2	414.0	411.4	410.1
37.5°	3522.3	2900.7	1539.2	750.1	498.4	434.8	412.8	406.2	403.7	403.7	403.7
40°	3865.0	3090.2	1456.2	681.4	473.7	417.9	399.8	394.6	394.6	395.9	395.9
42.5°	4281.7	3327.7	1384.8	634.6	459.4	406.2	390.7	388.1	386.8	386.8	388.1
45°	4765.7	3608.0	1340.7	598.3	449.1	399.8	384.1	382.9	377.7	375.1	375.1
47.5°	5252.4	3907.9	1338.1	577.6	436.1	392.0	377.7	377.7	367.3	362.1	363.4
50°	5706.6	4176.5	1366.7	572.3	428.3	380.2	371.2	372.5	358.2	351.7	350.5
52.5°	6072.6	4381.5	1401.6	578.9	428.3	369.9	359.5	366.0	350.5	342.6	341.4
55°	6355.6	4524.3	1414.6	593.1	433.5	360.8	349.1	359.5	347.8	337.5	337.5
57.5°	6558.0	4569.7	1358.9	599.7	441.3	359.5	338.7	358.2	351.7	338.7	338.7
60°	6484.1	4306.3	1151.2	574.9	440.0	356.9	330.9	360.8	364.7	350.5	350.5
62.5°	5906.5	3602.8	924.0	519.1	417.9	347.8	321.8	358.2	373.8	368.6	366.0
65°	4808.6	2642.4	716.4	453.0	380.2	328.4	302.4	334.8	353.0	358.2	359.5
67.5°	3388.7	1672.9	556.8	385.4	333.6	299.8	280.3	295.9	302.4	305.0	310.2
70°	1853.4	905.9	442.5	324.5	285.5	271.3	257.0	258.3	255.6	253.1	255.6
72°	930.6	591.8	373.8	281.6	253.1	244.0	237.5	233.6	233.6	229.8	231.0
72.5°	800.8	550.2	360.8	271.3	245.3	237.5	232.3	228.4	227.1	224.5	225.9
75°	533.4	436.1	301.1	227.1	209.0	203.8	206.3	202.4	203.8	201.2	202.4
77.5°	430.9	375.1	255.6	192.1	179.1	171.3	176.5	177.8	180.4	177.8	176.5
80°	360.8	319.3	214.1	158.4	149.2	142.8	145.4	154.5	155.7	147.9	146.7
82.5°	233.6	257.0	168.7	123.3	114.2	111.6	118.2	127.2	129.8	119.4	116.8
85°	196.0	206.3	122.0	84.4	75.3	72.6	85.6	94.7	101.3	90.8	88.3
87.5°	54.5	101.3	59.7	40.2	33.8	33.8	41.5	49.3	58.4	59.7	59.7
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)