

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: P196172

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-1200-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196172
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-02-D-UNV-SL4-1200-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 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: 11134.8 lumens
Efficiency: N/A
Efficacy: 86.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G2

Input Watts (W): 129
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

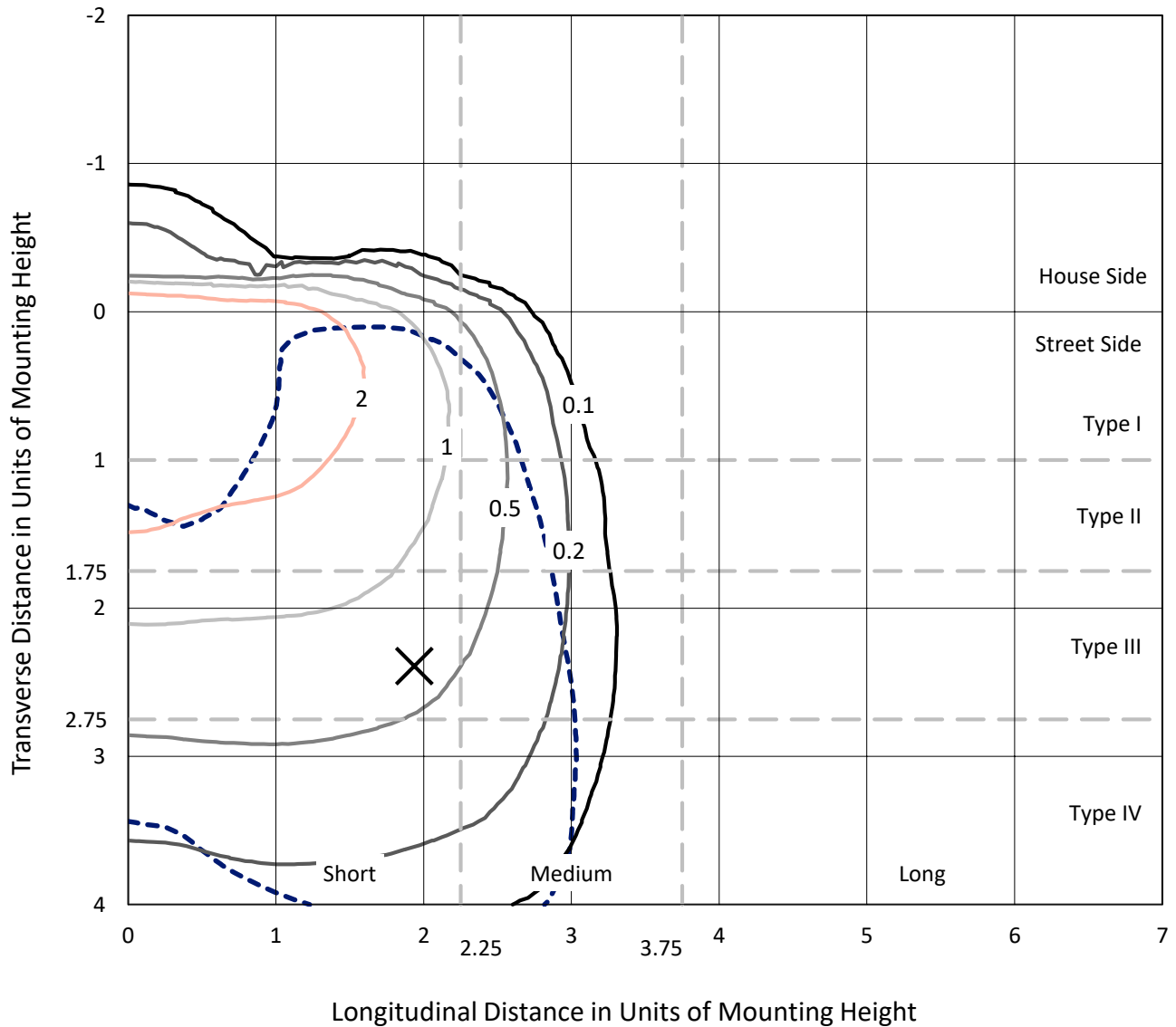


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Iso-Footcandle Lines of Horizontal Illumination

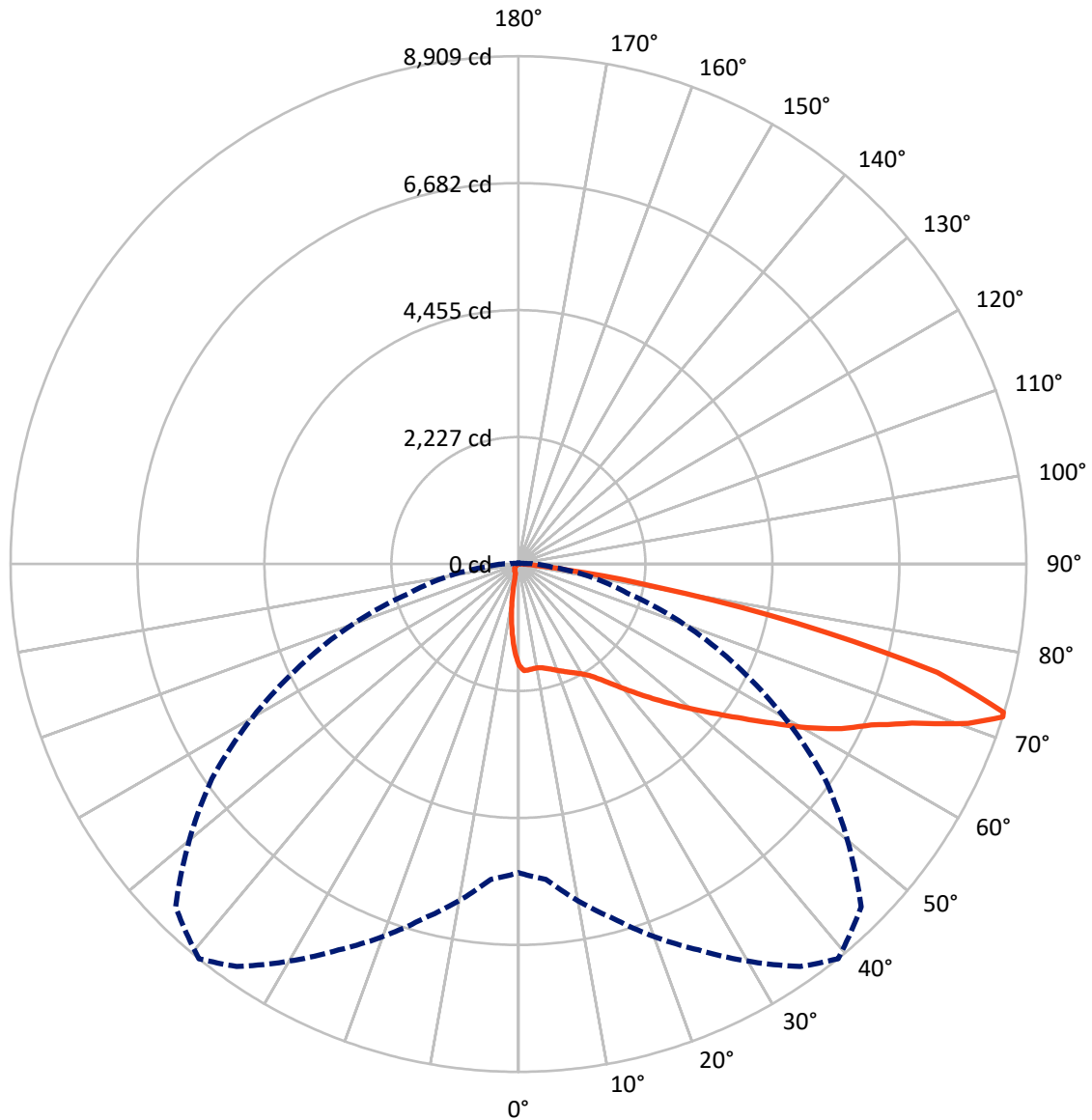
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.7 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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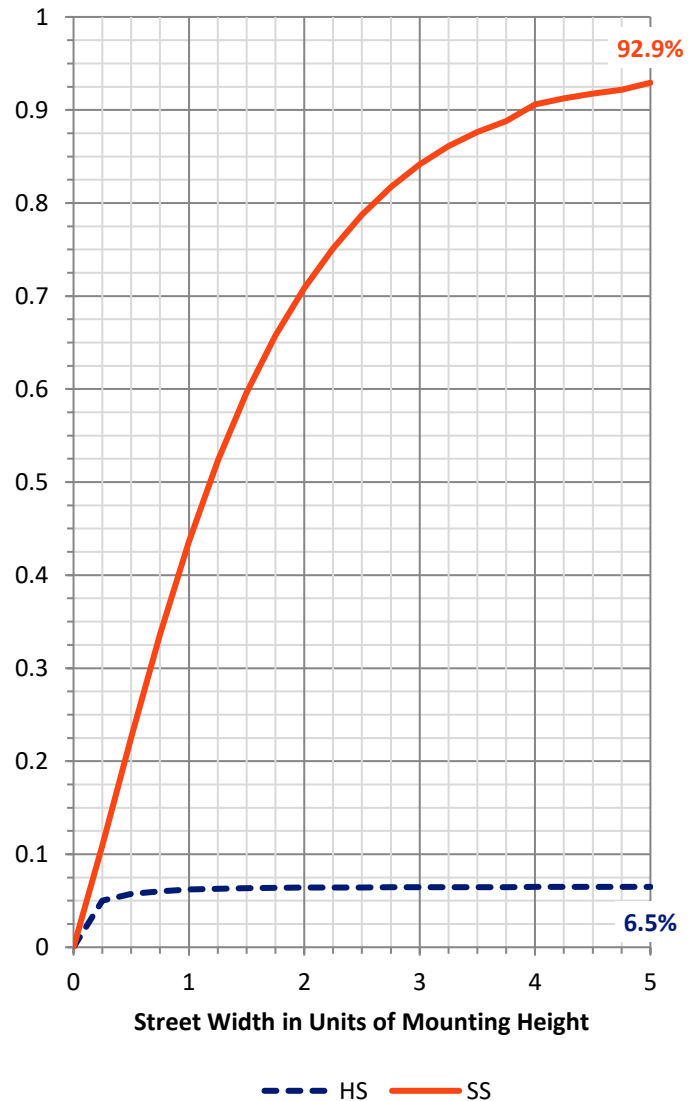
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	729.8	0.0	729.8
	% Fixture	6.6	0.0	6.6
Street Side	Lumens	10405.1	0.0	10405.1
	% Fixture	93.4	0.0	93.4
Total	Lumens	11134.8	0.0	11134.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	145.0	1.3
10°-20°	351.0	3.2
20°-30°	582.9	5.2
30°-40°	929.0	8.3
40°-50°	1533.4	13.8
50°-60°	2315.7	20.8
60°-70°	3016.5	27.1
70°-80°	2038.3	18.3
80°-90°	223.2	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°	11134.8	100.0
0°-180°	11134.8	100.0



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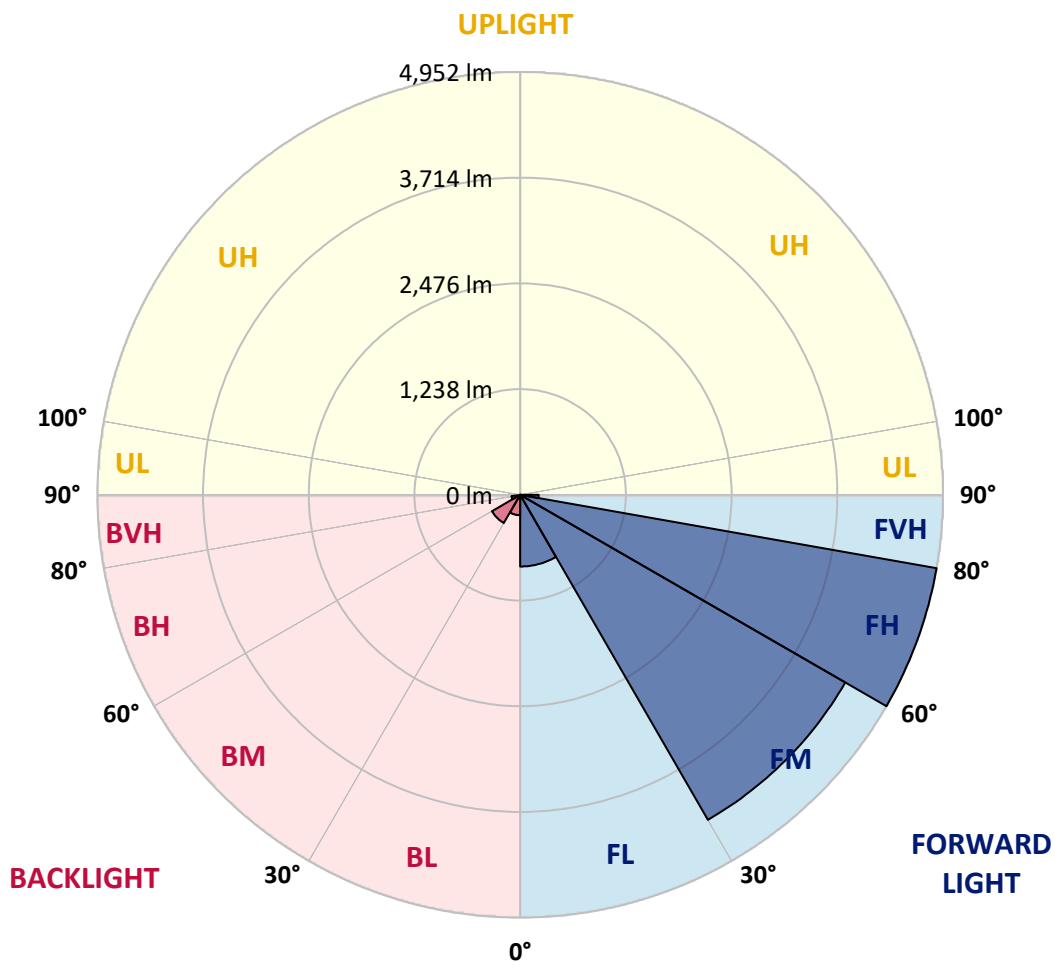
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	839.8	7.5			
FM	(30°-60°)	4396.2	39.5			
FH	(60°-80°)	4952.3	44.5			G2/5000
FVH	(80°-90°)	216.8	1.9			G2/225
BL	(0°-30°)	238.9	2.1	B1/500		
BM	(30°-60°)	381.8	3.4	B1/1000		
BH	(60°-80°)	102.6	0.9	B0/110		G0/110
BVH	(80°-90°)	6.4	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-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	1782.2	1782.2	1782.2	1782.2	1782.2	1782.2	1782.2	1782.2	1782.2	1782.2	1782.2
2.5°	1897.8	1901.3	1896.9	1889.0	1877.6	1870.6	1861.0	1840.0	1813.7	1791.0	1764.7
5°	1912.6	1914.4	1909.1	1894.2	1876.7	1867.1	1854.8	1832.1	1805.0	1773.5	1726.1
7.5°	1917.0	1916.1	1910.0	1891.6	1864.5	1852.3	1831.2	1803.3	1775.2	1746.3	1692.9
10°	1915.3	1915.3	1910.9	1893.4	1862.7	1851.3	1827.7	1797.9	1763.0	1734.1	1677.1
12.5°	1909.1	1912.6	1910.0	1900.3	1877.6	1868.8	1847.9	1818.1	1784.8	1755.1	1694.6
15°	1917.0	1922.2	1927.5	1924.0	1910.9	1903.0	1883.8	1853.1	1826.0	1794.5	1729.7
17.5°	1948.5	1959.9	1972.1	1973.1	1959.1	1945.0	1923.1	1891.6	1865.4	1836.5	1766.4
20°	2008.1	2016.7	2039.6	2044.0	2015.9	1995.8	1965.2	1928.4	1902.1	1877.6	1800.6
22.5°	2096.4	2106.1	2124.5	2118.3	2071.1	2047.4	2008.9	1966.9	1939.7	1925.8	1840.0
25°	2230.3	2233.0	2237.4	2210.3	2132.3	2106.1	2058.8	2011.5	1989.6	1987.9	1896.0
27.5°	2388.0	2391.5	2372.2	2311.8	2200.6	2166.5	2113.1	2070.1	2059.7	2072.8	1966.9
30°	2568.2	2569.1	2515.7	2417.7	2279.4	2241.8	2186.7	2139.3	2149.0	2181.3	2058.0
32.5°	2753.0	2744.2	2670.7	2542.9	2387.1	2341.5	2294.3	2247.0	2275.0	2340.7	2191.0
35°	2921.9	2918.4	2831.7	2682.9	2527.1	2486.9	2452.7	2402.8	2448.3	2555.1	2372.2
37.5°	3090.8	3088.2	2989.3	2834.4	2699.6	2670.7	2645.2	2606.8	2681.2	2837.9	2614.7
40°	3277.3	3272.9	3151.2	3002.5	2900.0	2884.2	2869.4	2852.7	2979.7	3197.6	2916.6
42.5°	3507.5	3488.3	3322.9	3185.4	3120.6	3125.0	3125.8	3142.5	3341.2	3625.6	3272.9
45°	3771.8	3729.0	3495.2	3381.5	3363.1	3389.3	3415.6	3484.8	3762.2	4118.5	3666.8
47.5°	4028.4	3959.2	3694.0	3592.4	3630.0	3684.4	3747.4	3882.2	4234.9	4634.1	4024.0
50°	4248.9	4178.0	3890.9	3806.9	3926.8	4007.3	4119.3	4323.3	4733.9	5069.9	4248.9
52.5°	4422.2	4366.3	4099.3	4043.2	4255.9	4366.3	4542.2	4810.0	5204.8	5357.1	4406.5
55°	4550.1	4522.1	4298.8	4306.7	4621.8	4781.2	5000.0	5302.9	5602.2	5580.3	4524.6
57.5°	4694.4	4672.6	4508.0	4617.4	5062.1	5267.8	5520.8	5764.1	5891.1	5759.7	4640.2
60°	4842.4	4849.4	4761.8	4993.8	5606.6	5834.2	6054.7	6115.2	6138.8	5941.8	4761.8
62.5°	4954.5	4984.2	4992.1	5400.0	6165.0	6359.4	6454.8	6411.9	6406.6	6186.1	4752.2
65°	5083.1	5161.0	5290.6	5845.6	6672.7	6800.6	6868.8	6931.0	6799.7	6258.7	4284.8
67.5°	5305.4	5428.0	5719.5	6391.8	7259.3	7448.3	7641.7	7576.1	6858.3	5520.8	3264.1
70°	5604.8	5754.5	6269.3	7105.2	8054.9	8371.8	8533.8	7524.4	5822.7	3814.8	1721.8
72°	5415.7	5551.5	6439.1	7469.3	8618.7	8909.3	8504.0	6563.4	4220.9	1977.4	576.8
72.5°	5231.9	5372.0	6384.7	7464.9	8674.6	8897.0	8310.6	6184.4	3735.1	1538.8	397.4
75°	3630.0	3806.9	5473.5	6710.4	7833.5	7589.3	6358.5	3744.7	1353.3	264.3	131.3
77.5°	1876.7	2013.3	3320.2	4741.8	5459.5	5000.0	3757.8	1624.7	374.6	140.0	86.6
80°	1163.3	1230.7	1552.8	2336.3	2836.1	2480.8	1657.9	656.5	239.9	83.2	69.2
82.5°	602.2	653.9	977.7	942.8	1047.8	870.9	611.8	549.7	147.9	51.7	70.9
85°	197.8	210.1	600.5	626.8	448.2	301.2	271.4	524.4	42.9	33.2	60.4
87.5°	26.3	30.6	210.9	358.9	220.5	136.6	162.9	184.7	14.8	18.4	16.7
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°	1782.2	1782.2	1782.2	1782.2	1782.2	1782.2	1782.2	1782.2	1782.2	1782.2	1782.2
2.5°	1747.2	1735.8	1699.9	1664.0	1622.9	1585.3	1555.5	1536.3	1545.0	1516.1	1520.5
5°	1697.3	1668.4	1589.7	1504.8	1412.8	1327.0	1258.7	1208.0	1198.4	1154.6	1156.3
7.5°	1649.1	1601.8	1474.1	1334.0	1181.7	1058.2	946.2	848.2	813.1	777.3	756.3
10°	1622.9	1558.2	1376.9	1172.9	958.5	777.3	619.7	496.3	444.7	407.0	388.6
12.5°	1630.8	1545.0	1304.3	1026.7	744.9	514.7	350.2	259.9	228.4	210.9	204.8
15°	1657.0	1547.6	1238.6	884.1	541.9	311.6	205.7	175.9	173.3	172.5	171.5
17.5°	1681.5	1550.3	1169.4	735.3	362.4	198.7	165.4	162.9	162.9	162.9	162.9
20°	1706.9	1551.1	1093.3	579.5	238.1	162.9	155.8	154.1	155.8	155.8	155.8
22.5°	1736.7	1557.2	1019.8	428.0	175.9	153.1	148.8	147.9	148.8	148.8	147.9
25°	1773.5	1570.3	940.1	306.4	159.3	147.1	142.7	141.8	142.7	141.8	141.8
27.5°	1822.5	1587.8	847.3	219.7	152.3	141.0	136.6	136.6	136.6	135.6	135.6
30°	1885.5	1608.9	723.0	173.3	145.3	134.8	131.3	131.3	130.4	129.5	129.5
32.5°	1975.6	1643.1	587.4	156.7	137.4	126.9	123.5	124.3	123.5	122.5	121.6
35°	2103.5	1696.5	453.5	147.9	129.5	119.1	115.6	115.6	115.6	113.8	113.8
37.5°	2284.7	1777.8	339.6	139.2	121.6	111.2	106.8	106.8	105.9	104.1	105.1
40°	2508.7	1880.3	246.0	131.3	113.8	102.4	98.9	97.2	95.4	93.7	93.7
42.5°	2778.3	1980.0	184.7	123.5	105.9	95.4	91.0	89.3	85.8	84.0	83.2
45°	3080.3	2085.9	153.1	113.8	97.2	87.6	84.0	80.5	76.1	73.6	72.6
47.5°	3335.0	2150.8	136.6	104.1	88.4	79.7	76.1	70.9	65.7	63.9	63.9
50°	3488.3	2123.5	122.5	94.5	79.7	71.8	67.4	60.4	56.9	55.1	54.3
52.5°	3574.0	2043.0	111.2	86.6	71.8	63.0	56.9	50.7	49.0	47.3	47.3
55°	3632.7	1926.6	98.9	78.8	64.8	55.1	48.2	43.8	42.0	41.1	40.3
57.5°	3688.7	1784.8	87.6	71.8	57.8	49.0	41.1	39.4	35.9	35.0	35.0
60°	3705.3	1589.7	77.0	63.9	51.7	42.9	35.9	33.2	29.8	28.8	28.8
62.5°	3493.5	1264.9	68.2	54.3	45.5	36.7	31.5	28.0	24.6	24.6	24.6
65°	2919.3	858.7	58.6	47.3	40.3	31.5	27.1	22.7	21.0	21.0	21.0
67.5°	2033.4	478.8	49.9	40.3	34.2	26.3	22.7	19.2	18.4	19.2	19.2
70°	916.5	190.0	42.0	33.2	28.0	21.9	19.2	16.7	18.4	18.4	18.4
72°	274.9	101.6	35.0	27.1	22.7	19.2	16.7	15.8	17.5	18.4	18.4
72.5°	204.0	91.0	33.2	26.3	22.7	18.4	15.8	15.8	17.5	18.4	18.4
75°	105.1	62.2	25.4	19.2	16.7	14.8	13.1	14.8	17.5	17.5	17.5
77.5°	82.2	50.7	21.0	14.8	14.0	13.1	12.3	14.0	15.8	15.8	15.8
80°	77.0	33.2	16.7	14.0	12.3	11.4	11.4	12.3	14.0	14.8	14.8
82.5°	77.9	27.1	14.8	13.1	11.4	10.5	10.5	11.4	13.1	14.0	14.0
85°	49.9	18.4	13.1	11.4	10.5	9.6	9.6	10.5	12.3	13.1	13.1
87.5°	16.7	14.0	11.4	10.5	8.8	8.8	8.8	8.8	10.5	11.4	12.3
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)