

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: P196155

Luminaire Tested: **NAV-AF-03-D-UNV-SL4-600-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196155
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-03-D-UNV-SL4-600-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 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: 9945.1 lumens
Efficiency: N/A
Efficacy: 103.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G2

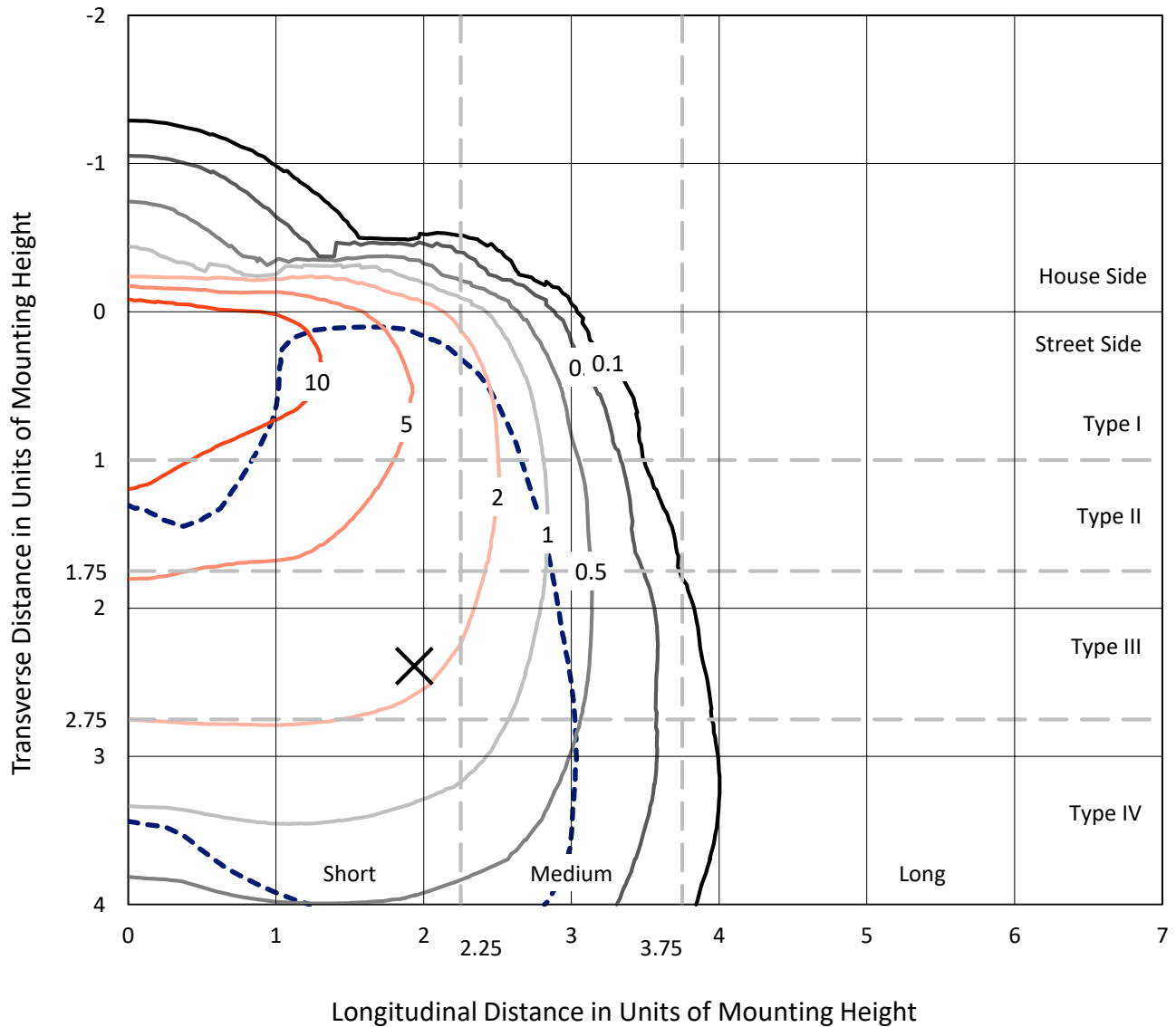
Input Watts (W): 96
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

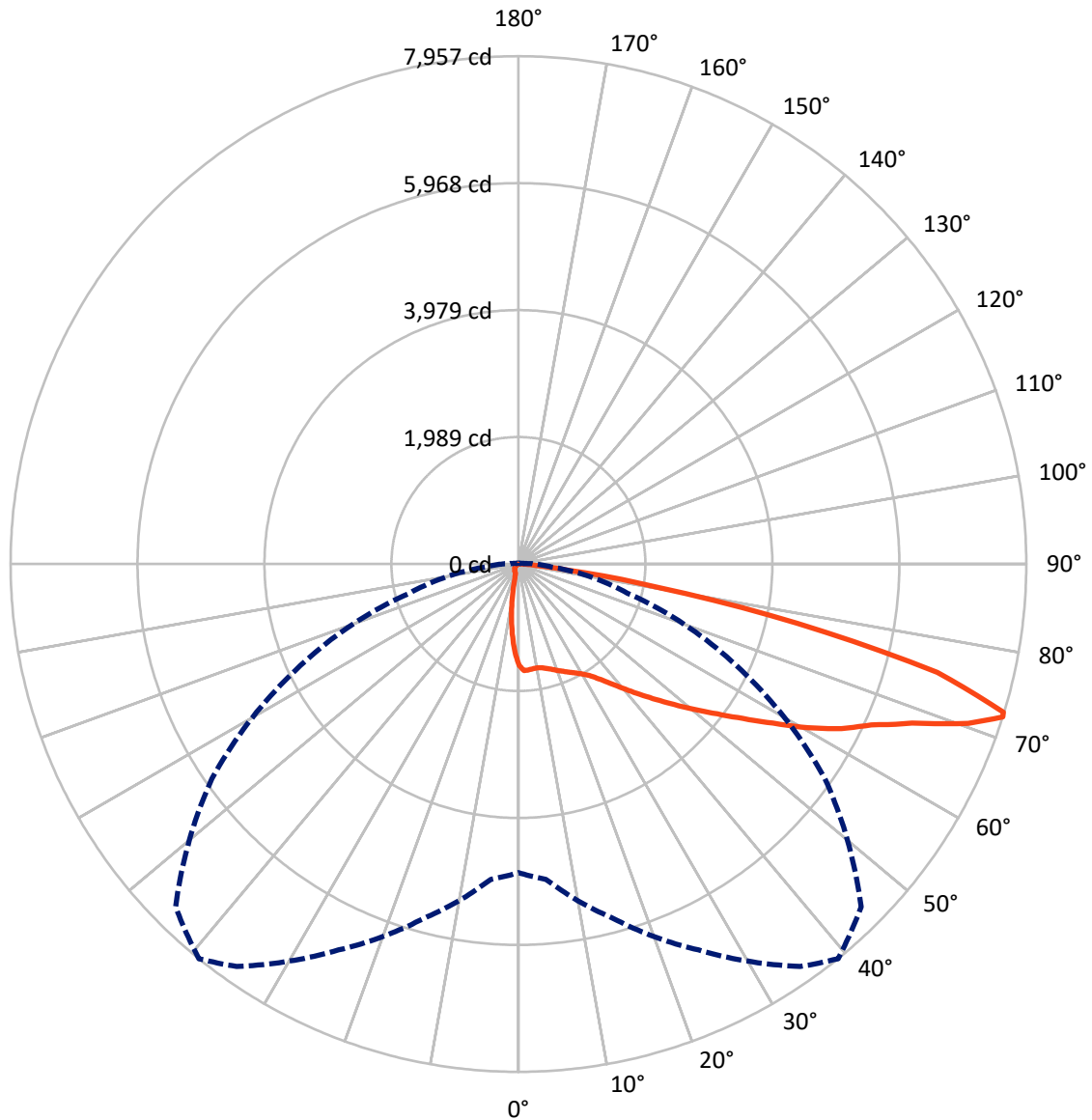
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 16.7 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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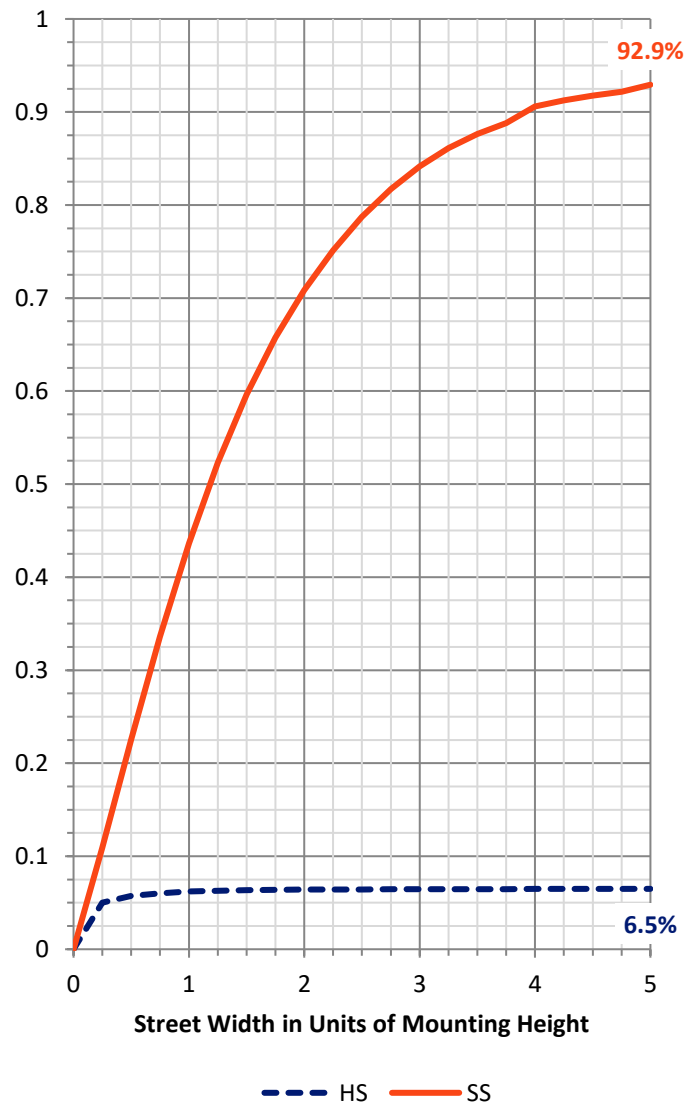
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	651.8	0.0	651.8
	% Fixture	6.6	0.0	6.6
Street Side	Lumens	9293.3	0.0	9293.3
	% Fixture	93.4	0.0	93.4
Total	Lumens	9945.1	0.0	9945.1
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.5	1.3
10°-20°	313.5	3.2
20°-30°	520.6	5.2
30°-40°	829.7	8.3
40°-50°	1369.5	13.8
50°-60°	2068.2	20.8
60°-70°	2694.2	27.1
70°-80°	1820.5	18.3
80°-90°	199.4	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°	9945.1	100.0
0°-180°	9945.1	100.0



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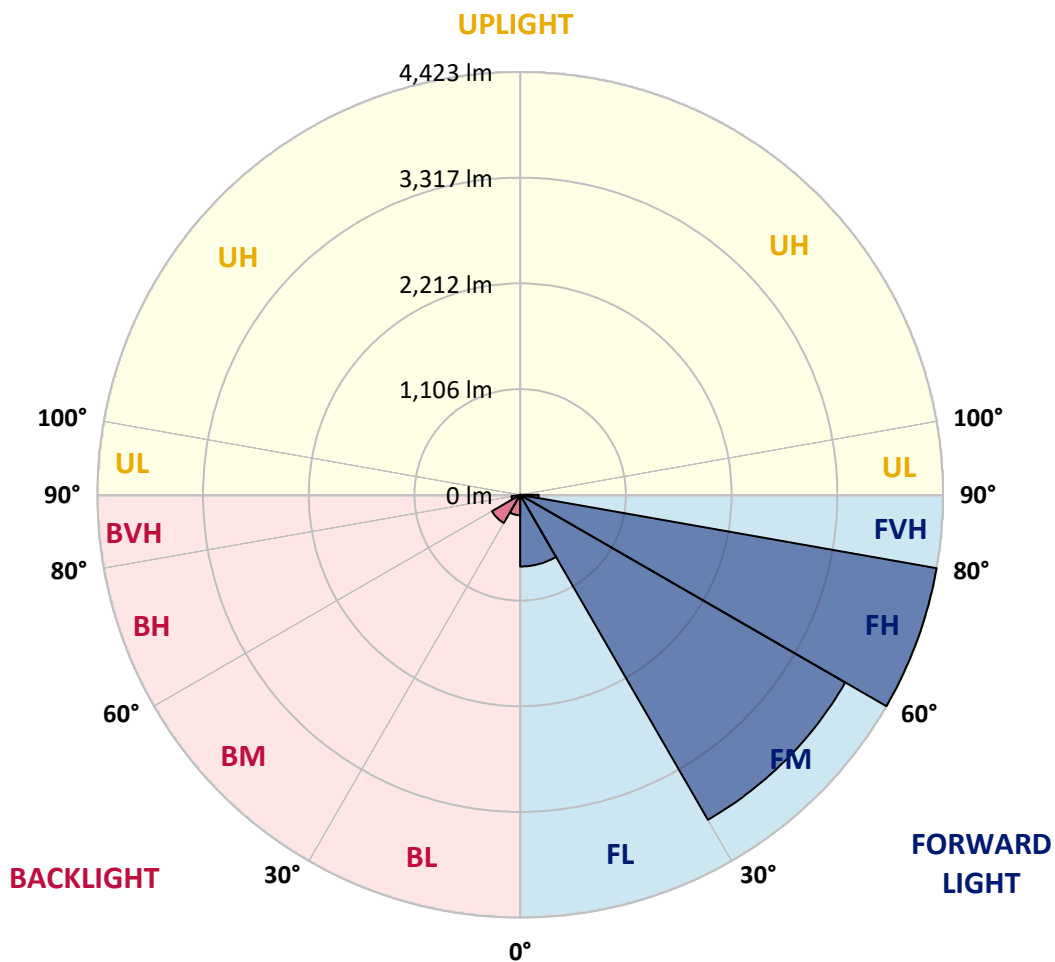
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	750.1	7.5			
FM	(30°-60°)	3926.5	39.5			
FH	(60°-80°)	4423.1	44.5			G2/5000
FVH	(80°-90°)	193.6	1.9			G2/225
BL	(0°-30°)	213.4	2.1	B1/500		
BM	(30°-60°)	341.0	3.4	B1/1000		
BH	(60°-80°)	91.6	0.9	B0/110		G0/110
BVH	(80°-90°)	5.7	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°	1591.8	1591.8	1591.8	1591.8	1591.8	1591.8	1591.8	1591.8	1591.8	1591.8	1591.8
2.5°	1695.0	1698.1	1694.2	1687.2	1677.0	1670.8	1662.2	1643.4	1619.9	1599.6	1576.2
5°	1708.2	1709.9	1705.2	1691.9	1676.2	1667.6	1656.7	1636.3	1612.1	1583.9	1541.8
7.5°	1712.2	1711.4	1706.0	1689.5	1665.3	1654.3	1635.6	1610.5	1585.6	1559.7	1512.0
10°	1710.6	1710.6	1706.7	1691.0	1663.7	1653.5	1632.4	1605.8	1574.6	1548.7	1498.0
12.5°	1705.2	1708.2	1706.0	1697.3	1677.0	1669.1	1650.4	1623.8	1594.2	1567.6	1513.6
15°	1712.2	1716.9	1721.5	1718.5	1706.7	1699.6	1682.4	1655.1	1630.9	1602.8	1544.9
17.5°	1740.3	1750.5	1761.4	1762.2	1749.8	1737.2	1717.6	1689.5	1666.1	1640.3	1577.7
20°	1793.5	1801.3	1821.7	1825.6	1800.5	1782.6	1755.2	1722.3	1698.9	1677.0	1608.2
22.5°	1872.4	1881.1	1897.5	1892.0	1849.8	1828.6	1794.3	1756.7	1732.5	1720.0	1643.4
25°	1992.1	1994.4	1998.3	1974.1	1904.5	1881.1	1838.9	1796.6	1777.1	1775.5	1693.4
27.5°	2132.8	2135.9	2118.7	2064.8	1965.5	1935.0	1887.3	1849.0	1839.6	1851.3	1756.7
30°	2293.9	2294.7	2246.9	2159.3	2035.9	2002.2	1953.0	1910.8	1919.4	1948.3	1838.0
32.5°	2458.9	2451.0	2385.3	2271.2	2132.0	2091.3	2049.2	2006.9	2032.0	2090.6	1956.9
35°	2609.8	2606.6	2529.1	2396.3	2257.1	2221.1	2190.6	2146.0	2186.8	2282.1	2118.7
37.5°	2760.6	2758.3	2669.9	2531.5	2411.1	2385.3	2362.6	2328.2	2394.7	2534.7	2335.3
40°	2927.2	2923.2	2814.5	2681.7	2590.2	2576.1	2562.8	2548.0	2661.3	2856.0	2605.0
42.5°	3132.8	3115.5	2967.8	2845.0	2787.1	2791.1	2791.8	2806.8	2984.2	3238.3	2923.2
45°	3368.9	3330.5	3121.8	3020.2	3003.8	3027.2	3050.6	3112.4	3360.3	3678.4	3275.1
47.5°	3597.9	3536.1	3299.3	3208.6	3242.2	3290.6	3347.0	3467.4	3782.5	4139.0	3594.0
50°	3794.9	3731.6	3475.2	3400.1	3507.2	3579.2	3679.2	3861.4	4228.1	4528.3	3794.9
52.5°	3949.7	3899.7	3661.2	3611.2	3801.2	3899.7	4056.8	4296.1	4648.7	4784.8	3935.7
55°	4063.9	4038.9	3839.5	3846.5	4128.0	4270.3	4465.8	4736.3	5003.7	4984.1	4041.3
57.5°	4192.9	4173.3	4026.3	4124.1	4521.2	4705.0	4930.9	5148.3	5261.6	5144.3	4144.4
60°	4325.0	4331.3	4253.1	4460.3	5007.5	5210.8	5407.8	5461.7	5482.9	5307.0	4253.1
62.5°	4425.1	4451.7	4458.7	4823.0	5506.3	5679.9	5765.1	5726.8	5722.1	5525.1	4244.5
65°	4540.1	4609.6	4725.3	5220.9	5959.8	6074.0	6134.9	6190.4	6073.2	5590.0	3827.0
67.5°	4738.6	4848.1	5108.4	5708.9	6483.7	6652.5	6825.2	6766.6	6125.5	4930.9	2915.4
70°	5006.0	5139.7	5599.4	6346.0	7194.3	7477.3	7621.9	6720.5	5200.7	3407.1	1537.8
72°	4837.1	4958.2	5751.0	6671.3	7697.8	7957.3	7595.4	5862.1	3769.9	1766.1	515.3
72.5°	4672.9	4798.0	5702.5	6667.4	7747.8	7946.4	7422.6	5523.5	3336.0	1374.4	355.0
75°	3242.2	3400.1	4888.7	5993.5	6996.5	6778.4	5679.1	3344.6	1208.7	236.1	117.2
77.5°	1676.2	1798.1	2965.4	4235.1	4876.2	4465.8	3356.3	1451.1	334.6	125.1	77.4
80°	1039.0	1099.3	1386.9	2086.7	2533.1	2215.7	1480.7	586.4	214.2	74.3	61.8
82.5°	537.9	584.0	873.3	842.0	935.8	778.0	546.5	491.0	132.2	46.1	63.3
85°	176.7	187.6	536.3	559.8	400.3	268.9	242.3	468.3	38.3	29.7	53.9
87.5°	23.4	27.3	188.4	320.6	197.0	121.9	145.5	165.0	13.3	16.4	14.8
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°	1591.8	1591.8	1591.8	1591.8	1591.8	1591.8	1591.8	1591.8	1591.8	1591.8	1591.8
2.5°	1560.5	1550.4	1518.3	1486.2	1449.5	1415.9	1389.3	1372.1	1379.9	1354.1	1358.1
5°	1515.9	1490.1	1419.8	1344.0	1261.8	1185.2	1124.2	1078.9	1070.3	1031.2	1032.8
7.5°	1472.9	1430.7	1316.5	1191.5	1055.5	945.2	845.2	757.6	726.3	694.3	675.5
10°	1449.5	1391.6	1229.8	1047.6	856.1	694.3	553.5	443.2	397.2	363.6	347.1
12.5°	1456.5	1379.9	1164.9	917.1	665.3	459.7	312.7	232.2	204.1	188.4	182.9
15°	1480.0	1382.2	1106.3	789.6	484.0	278.3	183.7	157.1	154.8	154.1	153.2
17.5°	1501.9	1384.6	1044.5	656.7	323.7	177.5	147.7	145.5	145.5	145.5	145.5
20°	1524.5	1385.4	976.5	517.6	212.7	145.5	139.1	137.6	139.1	139.1	139.1
22.5°	1551.1	1390.8	910.8	382.3	157.1	136.8	132.9	132.2	132.9	132.9	132.2
25°	1583.9	1402.6	839.6	273.6	142.3	131.3	127.5	126.6	127.5	126.6	126.6
27.5°	1627.7	1418.2	756.8	196.2	136.1	125.8	121.9	121.9	121.9	121.2	121.2
30°	1684.1	1436.9	645.8	154.8	129.8	120.4	117.2	117.2	116.5	115.7	115.7
32.5°	1764.6	1467.4	524.6	139.9	122.8	113.3	110.3	111.0	110.3	109.5	108.6
35°	1878.8	1515.2	405.0	132.2	115.7	106.3	103.2	103.2	103.2	101.7	101.7
37.5°	2040.6	1587.8	303.3	124.3	108.6	99.3	95.3	95.3	94.6	93.0	93.8
40°	2240.7	1679.4	219.7	117.2	101.7	91.5	88.4	86.7	85.2	83.7	83.7
42.5°	2481.5	1768.5	165.0	110.3	94.6	85.2	81.3	79.8	76.6	75.1	74.3
45°	2751.2	1863.1	136.8	101.7	86.7	78.2	75.1	71.9	68.0	65.7	64.9
47.5°	2978.7	1920.9	121.9	93.0	79.0	71.1	68.0	63.3	58.6	57.1	57.1
50°	3115.5	1896.7	109.5	84.4	71.1	64.1	60.1	53.9	50.8	49.2	48.5
52.5°	3192.1	1824.7	99.3	77.4	64.1	56.3	50.8	45.3	43.8	42.2	42.2
55°	3244.6	1720.8	88.4	70.4	57.9	49.2	43.0	39.1	37.5	36.7	36.0
57.5°	3294.6	1594.2	78.2	64.1	51.6	43.8	36.7	35.2	32.0	31.3	31.3
60°	3309.5	1419.8	68.8	57.1	46.1	38.3	32.0	29.7	26.6	25.8	25.8
62.5°	3120.2	1129.7	61.0	48.5	40.6	32.8	28.1	25.1	21.9	21.9	21.9
65°	2607.4	767.0	52.4	42.2	36.0	28.1	24.2	20.4	18.7	18.7	18.7
67.5°	1816.1	427.7	44.6	36.0	30.5	23.4	20.4	17.2	16.4	17.2	17.2
70°	818.6	169.6	37.5	29.7	25.1	19.5	17.2	14.8	16.4	16.4	16.4
72°	245.5	90.7	31.3	24.2	20.4	17.2	14.8	14.1	15.7	16.4	16.4
72.5°	182.2	81.3	29.7	23.4	20.4	16.4	14.1	14.1	15.7	16.4	16.4
75°	93.8	55.5	22.7	17.2	14.8	13.3	11.8	13.3	15.7	15.7	15.7
77.5°	73.4	45.3	18.7	13.3	12.5	11.8	10.9	12.5	14.1	14.1	14.1
80°	68.8	29.7	14.8	12.5	10.9	10.1	10.1	10.9	12.5	13.3	13.3
82.5°	69.6	24.2	13.3	11.8	10.1	9.4	9.4	10.1	11.8	12.5	12.5
85°	44.6	16.4	11.8	10.1	9.4	8.6	8.6	9.4	10.9	11.8	11.8
87.5°	14.8	12.5	10.1	9.4	7.8	7.8	7.8	7.8	9.4	10.1	10.9
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)