

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: P196160

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-800-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196160  
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-SL4-800-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 4000K, 800mA 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: 8201 lumens  
Efficiency: N/A  
Efficacy: 96.5 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

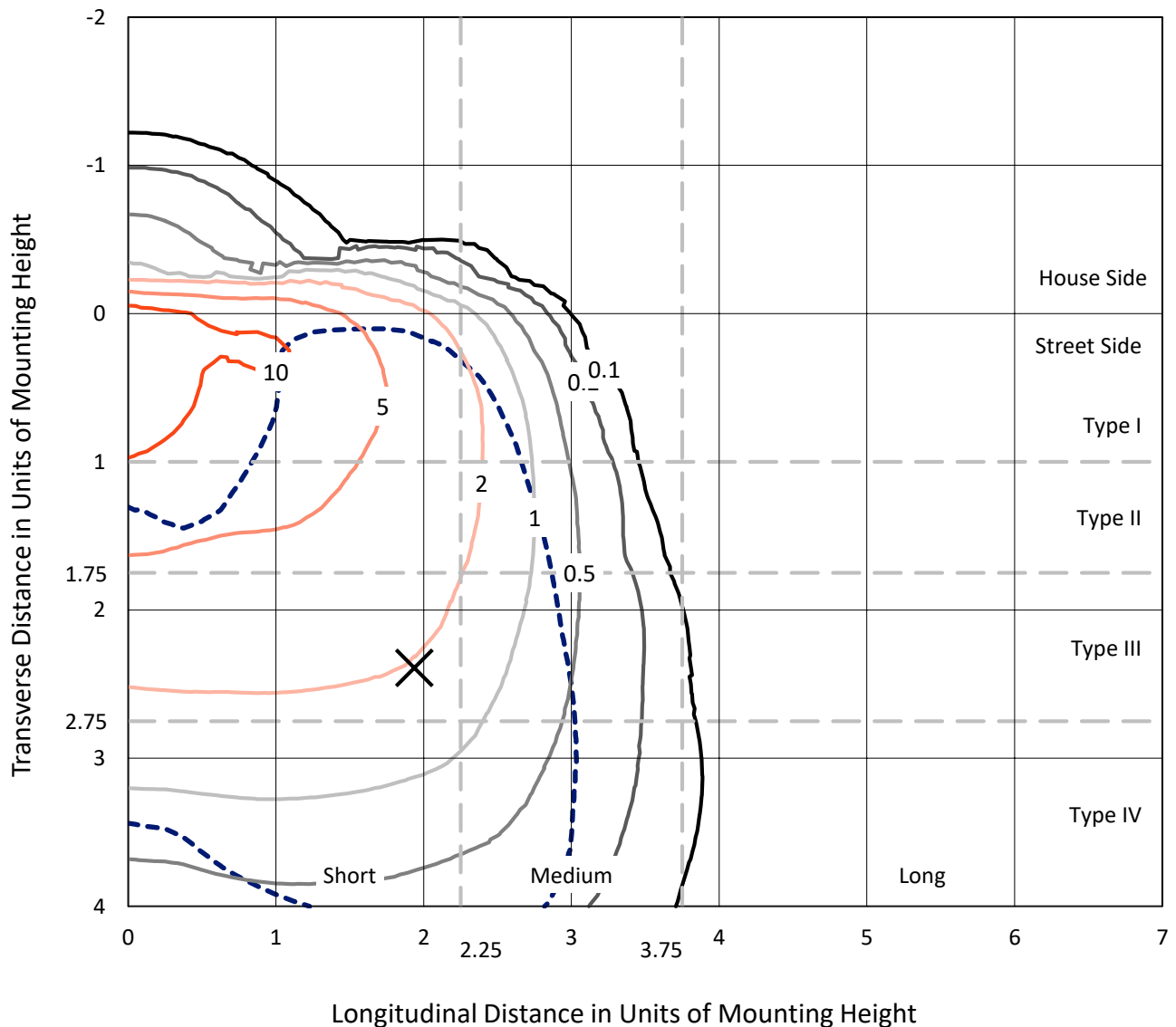
Input Watts (W): 85  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

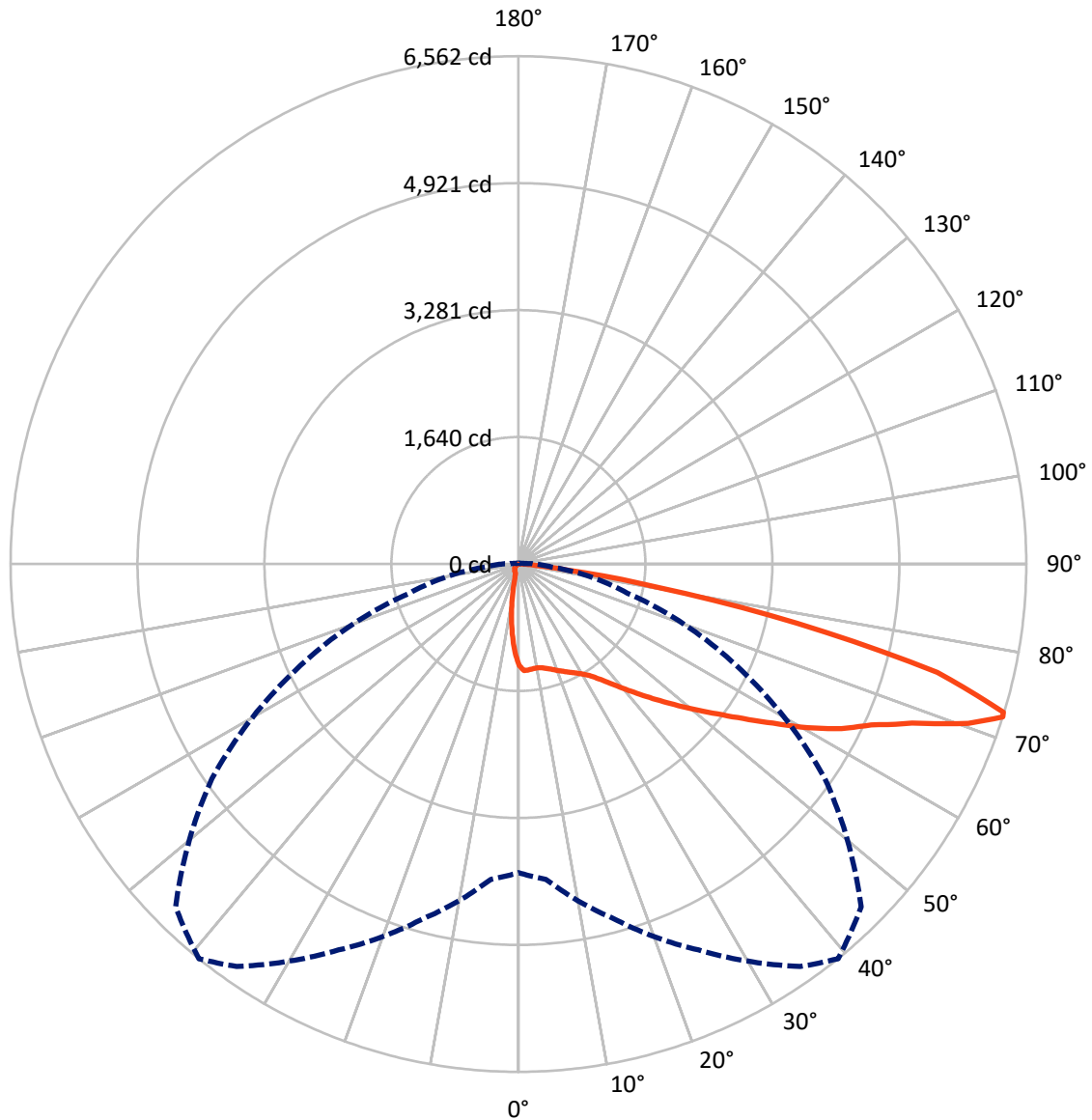
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 13.8 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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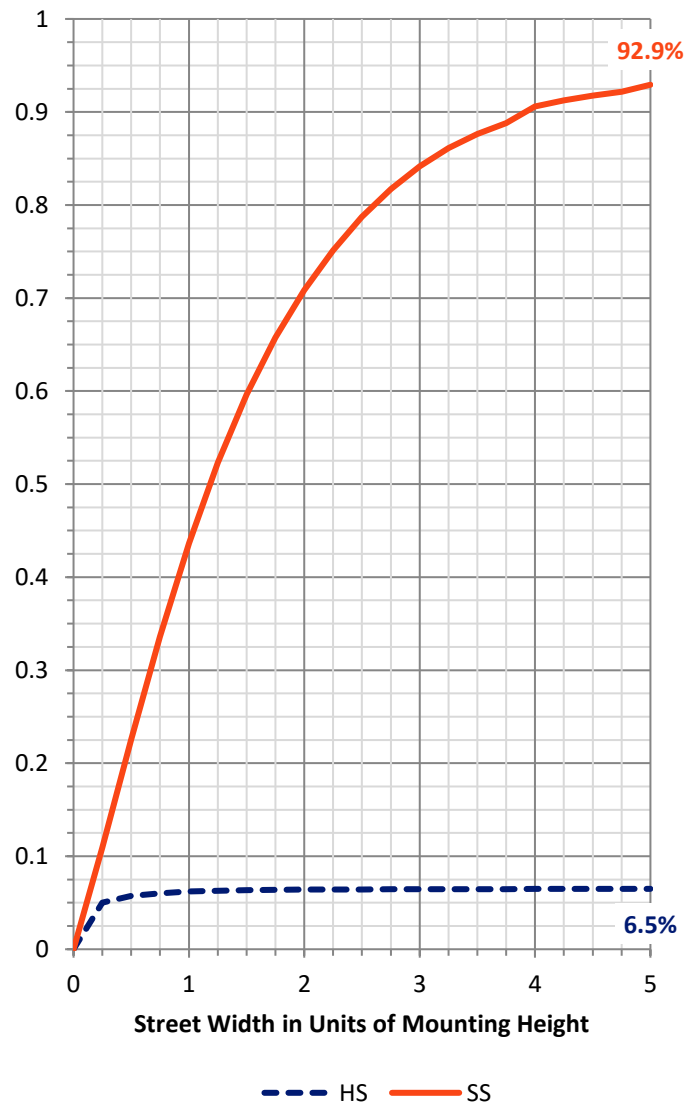
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	537.5	0.0	537.5
	% Fixture	6.6	0.0	6.6
<b>Street Side</b>	Lumens	7663.5	0.0	7663.5
	% Fixture	93.4	0.0	93.4
<b>Total</b>	Lumens	8201.0	0.0	8201.0
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	106.8	1.3
10°-20°	258.5	3.2
20°-30°	429.3	5.2
30°-40°	684.2	8.3
40°-50°	1129.4	13.8
50°-60°	1705.5	20.8
60°-70°	2221.7	27.1
70°-80°	1501.2	18.3
80°-90°	164.4	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°	8201.0	100.0
0°-180°	8201.0	100.0



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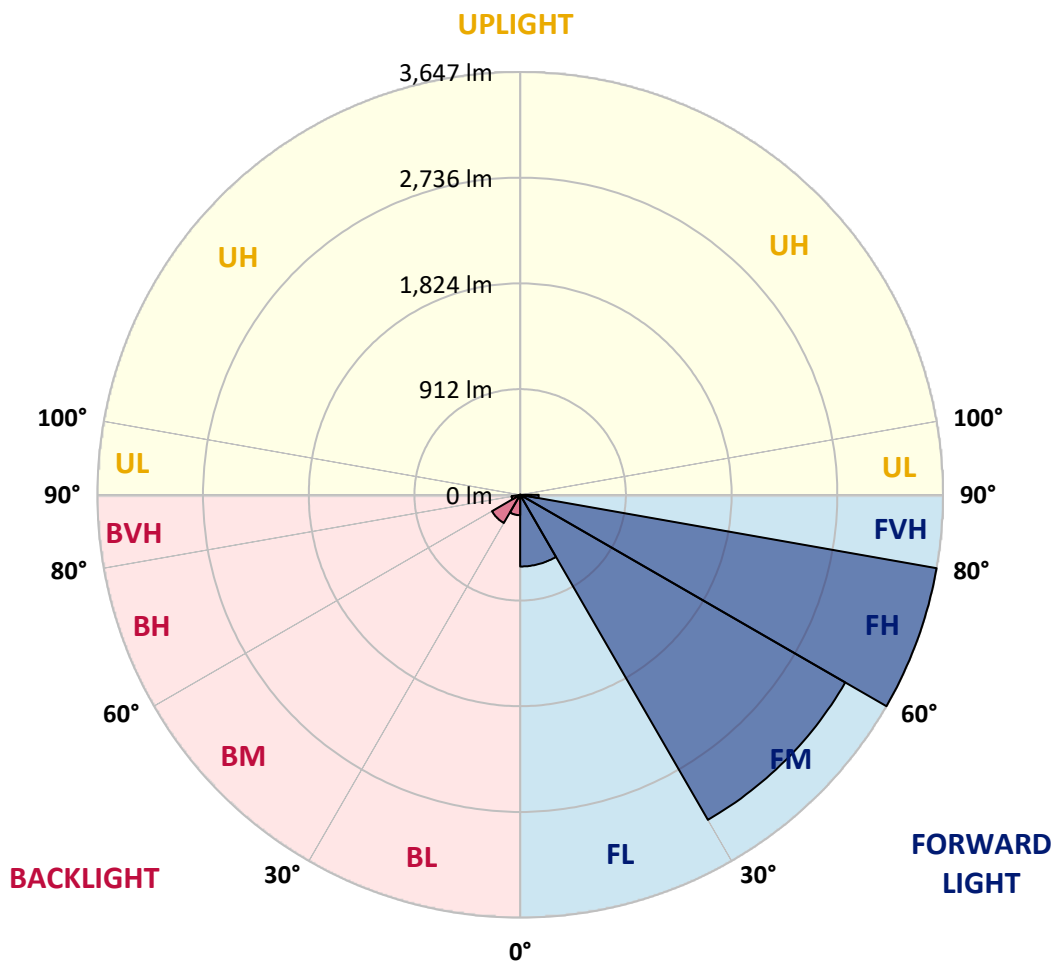
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	618.5	7.5			
FM	(30°-60°)	3237.8	39.5			
FH	(60°-80°)	3647.4	44.5			G2/5000
FVH	(80°-90°)	159.7	1.9			G2/225
BL	(0°-30°)	176.0	2.1	B1/500		
BM	(30°-60°)	281.2	3.4	B1/1000		
BH	(60°-80°)	75.5	0.9	B0/110		G0/110
BVH	(80°-90°)	4.7	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°	1312.7	1312.7	1312.7	1312.7	1312.7	1312.7	1312.7	1312.7	1312.7	1312.7	1312.7
2.5°	1397.8	1400.3	1397.0	1391.3	1382.9	1377.7	1370.7	1355.2	1335.9	1319.1	1299.8
5°	1408.7	1409.9	1406.1	1395.1	1382.2	1375.2	1366.2	1349.4	1329.4	1306.2	1271.3
7.5°	1411.9	1411.3	1406.8	1393.3	1373.2	1364.2	1348.8	1328.1	1307.4	1286.2	1246.9
10°	1410.6	1410.6	1407.4	1394.5	1372.0	1363.6	1346.1	1324.2	1298.4	1277.2	1235.2
12.5°	1406.1	1408.7	1406.8	1399.7	1382.9	1376.5	1360.9	1339.0	1314.6	1292.6	1248.1
15°	1411.9	1415.8	1419.7	1417.1	1407.4	1401.5	1387.4	1364.8	1344.9	1321.7	1274.0
17.5°	1435.1	1443.5	1452.5	1453.2	1442.9	1432.5	1416.4	1393.3	1373.8	1352.5	1301.0
20°	1479.0	1485.4	1502.2	1505.4	1484.7	1470.0	1447.4	1420.3	1400.9	1382.9	1326.2
22.5°	1544.0	1551.2	1564.7	1560.2	1525.4	1507.9	1479.6	1448.7	1428.7	1418.3	1355.2
25°	1642.8	1644.6	1647.9	1627.9	1570.5	1551.2	1516.3	1481.5	1465.4	1464.1	1396.4
27.5°	1758.8	1761.3	1747.2	1702.7	1620.8	1595.6	1556.3	1524.7	1517.0	1526.7	1448.7
30°	1891.5	1892.3	1852.9	1780.7	1678.9	1651.0	1610.4	1575.7	1582.7	1606.6	1515.7
32.5°	2027.6	2021.1	1967.0	1872.9	1758.1	1724.6	1689.8	1654.9	1675.6	1724.0	1613.7
35°	2152.0	2149.4	2085.6	1976.0	1861.3	1831.6	1806.4	1769.7	1803.3	1881.9	1747.2
37.5°	2276.5	2274.5	2201.7	2087.5	1988.3	1967.0	1948.3	1920.0	1974.7	2090.1	1925.7
40°	2413.8	2410.6	2321.0	2211.3	2135.9	2124.3	2113.3	2101.1	2194.5	2355.1	2148.2
42.5°	2583.4	2569.1	2447.3	2346.1	2298.4	2301.6	2302.3	2314.5	2460.8	2670.4	2410.6
45°	2778.0	2746.4	2574.4	2490.5	2477.0	2496.3	2515.6	2566.6	2771.0	3033.4	2700.7
47.5°	2967.0	2916.0	2720.6	2645.9	2673.6	2713.6	2760.0	2859.2	3119.1	3413.1	2963.7
50°	3129.4	3077.1	2865.7	2803.8	2892.2	2951.4	3034.0	3184.2	3486.5	3734.2	3129.4
52.5°	3257.1	3215.7	3019.1	2977.9	3134.5	3215.7	3345.4	3542.7	3833.4	3945.6	3245.4
55°	3351.2	3330.5	3166.1	3172.0	3404.1	3521.4	3682.5	3905.6	4126.1	4110.0	3332.5
57.5°	3457.6	3441.4	3320.2	3400.8	3728.3	3879.8	4066.1	4245.3	4338.8	4242.2	3417.6
60°	3566.5	3571.6	3507.2	3678.0	4129.3	4297.0	4459.5	4504.0	4521.3	4376.3	3507.2
62.5°	3649.1	3671.0	3676.8	3977.2	4540.7	4683.8	4754.1	4722.5	4718.6	4556.1	3500.1
65°	3743.8	3801.2	3896.6	4305.4	4914.6	5008.8	5059.0	5104.8	5008.1	4609.6	3155.8
67.5°	3907.6	3997.8	4212.5	4707.6	5346.6	5485.8	5628.3	5579.9	5051.2	4066.1	2404.1
70°	4128.0	4238.3	4617.4	5233.1	5932.6	6165.9	6285.2	5541.9	4288.6	2809.6	1268.2
72°	3988.8	4088.7	4742.5	5501.3	6347.8	6561.8	6263.3	4834.1	3108.7	1456.4	424.8
72.5°	3853.5	3956.6	4702.5	5498.1	6389.0	6552.8	6120.8	4554.9	2750.9	1133.4	292.7
75°	2673.6	2803.8	4031.3	4942.3	5769.4	5589.6	4683.2	2758.1	996.8	194.7	96.7
77.5°	1382.2	1482.9	2445.4	3492.4	4021.0	3682.5	2767.7	1196.5	275.9	103.1	63.8
80°	856.8	906.4	1143.7	1720.7	2088.9	1827.1	1221.1	483.5	176.7	61.3	50.9
82.5°	443.6	481.6	720.2	694.4	771.7	641.5	450.6	404.9	108.9	38.1	52.2
85°	145.7	154.8	442.2	461.7	330.1	221.8	199.9	386.2	31.6	24.4	44.5
87.5°	19.3	22.6	155.4	264.3	162.4	100.6	119.9	136.1	10.9	13.5	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



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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1312.7	1312.7	1312.7	1312.7	1312.7	1312.7	1312.7	1312.7	1312.7	1312.7	1312.7
2.5°	1286.9	1278.5	1252.0	1225.6	1195.3	1167.6	1145.6	1131.5	1137.9	1116.7	1119.8
5°	1250.0	1228.8	1170.8	1108.3	1040.5	977.3	927.1	889.7	882.6	850.4	851.6
7.5°	1214.7	1179.8	1085.7	982.5	870.3	779.5	696.9	624.7	598.9	572.5	557.0
10°	1195.3	1147.5	1014.2	863.9	705.9	572.5	456.4	365.5	327.5	299.8	286.2
12.5°	1201.0	1137.9	960.7	756.3	548.6	379.1	257.9	191.5	168.3	155.4	150.9
15°	1220.4	1139.9	912.3	651.1	399.1	229.6	151.5	129.6	127.7	127.1	126.3
17.5°	1238.5	1141.8	861.3	541.6	266.9	146.4	121.8	119.9	119.9	119.9	119.9
20°	1257.2	1142.4	805.3	426.8	175.3	119.9	114.8	113.4	114.8	114.8	114.8
22.5°	1279.1	1146.9	751.1	315.3	129.6	112.8	109.6	108.9	109.6	109.6	108.9
25°	1306.2	1156.7	692.4	225.7	117.3	108.3	105.1	104.4	105.1	104.4	104.4
27.5°	1342.3	1169.5	624.1	161.8	112.2	103.8	100.6	100.6	100.6	99.9	99.9
30°	1388.7	1185.0	532.5	127.7	107.0	99.3	96.7	96.7	96.1	95.4	95.4
32.5°	1455.1	1210.2	432.6	115.4	101.2	93.5	90.9	91.6	90.9	90.2	89.6
35°	1549.3	1249.4	334.0	108.9	95.4	87.7	85.1	85.1	85.1	83.8	83.8
37.5°	1682.7	1309.4	250.1	102.5	89.6	81.8	78.7	78.7	78.1	76.7	77.3
40°	1847.8	1384.9	181.2	96.7	83.8	75.4	72.8	71.6	70.3	68.9	68.9
42.5°	2046.3	1458.3	136.1	90.9	78.1	70.3	67.0	65.8	63.2	61.9	61.3
45°	2268.7	1536.4	112.8	83.8	71.6	64.4	61.9	59.3	56.1	54.1	53.5
47.5°	2456.3	1584.0	100.6	76.7	65.2	58.7	56.1	52.2	48.4	47.1	47.1
50°	2569.1	1564.1	90.2	69.7	58.7	52.9	49.6	44.5	41.9	40.6	40.0
52.5°	2632.4	1504.8	81.8	63.8	52.9	46.4	41.9	37.4	36.1	34.8	34.8
55°	2675.5	1419.0	72.8	58.0	47.7	40.6	35.5	32.2	31.0	30.3	29.7
57.5°	2716.8	1314.6	64.4	52.9	42.6	36.1	30.3	29.1	26.4	25.8	25.8
60°	2729.0	1170.8	56.8	47.1	38.1	31.6	26.4	24.4	21.9	21.3	21.3
62.5°	2573.0	931.6	50.3	40.0	33.6	27.1	23.2	20.7	18.0	18.0	18.0
65°	2150.1	632.5	43.2	34.8	29.7	23.2	19.9	16.8	15.4	15.4	15.4
67.5°	1497.7	352.6	36.7	29.7	25.2	19.3	16.8	14.2	13.5	14.2	14.2
70°	675.0	139.9	31.0	24.4	20.7	16.2	14.2	12.3	13.5	13.5	13.5
72°	202.4	74.8	25.8	19.9	16.8	14.2	12.3	11.6	12.9	13.5	13.5
72.5°	150.2	67.0	24.4	19.3	16.8	13.5	11.6	11.6	12.9	13.5	13.5
75°	77.3	45.7	18.7	14.2	12.3	10.9	9.7	10.9	12.9	12.9	12.9
77.5°	60.6	37.4	15.4	10.9	10.3	9.7	9.0	10.3	11.6	11.6	11.6
80°	56.8	24.4	12.3	10.3	9.0	8.4	8.4	9.0	10.3	10.9	10.9
82.5°	57.4	19.9	10.9	9.7	8.4	7.8	7.8	8.4	9.7	10.3	10.3
85°	36.7	13.5	9.7	8.4	7.8	7.1	7.1	7.8	9.0	9.7	9.7
87.5°	12.3	10.3	8.4	7.8	6.4	6.4	6.4	6.4	7.8	8.4	9.0
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)