

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: P196161

Luminaire Tested: **NAV-AF-03-D-UNV-SL4-800-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196161  
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-SL4-800-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 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: 12195.6 lumens  
Efficiency: N/A  
Efficacy: 98.4 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 - G3

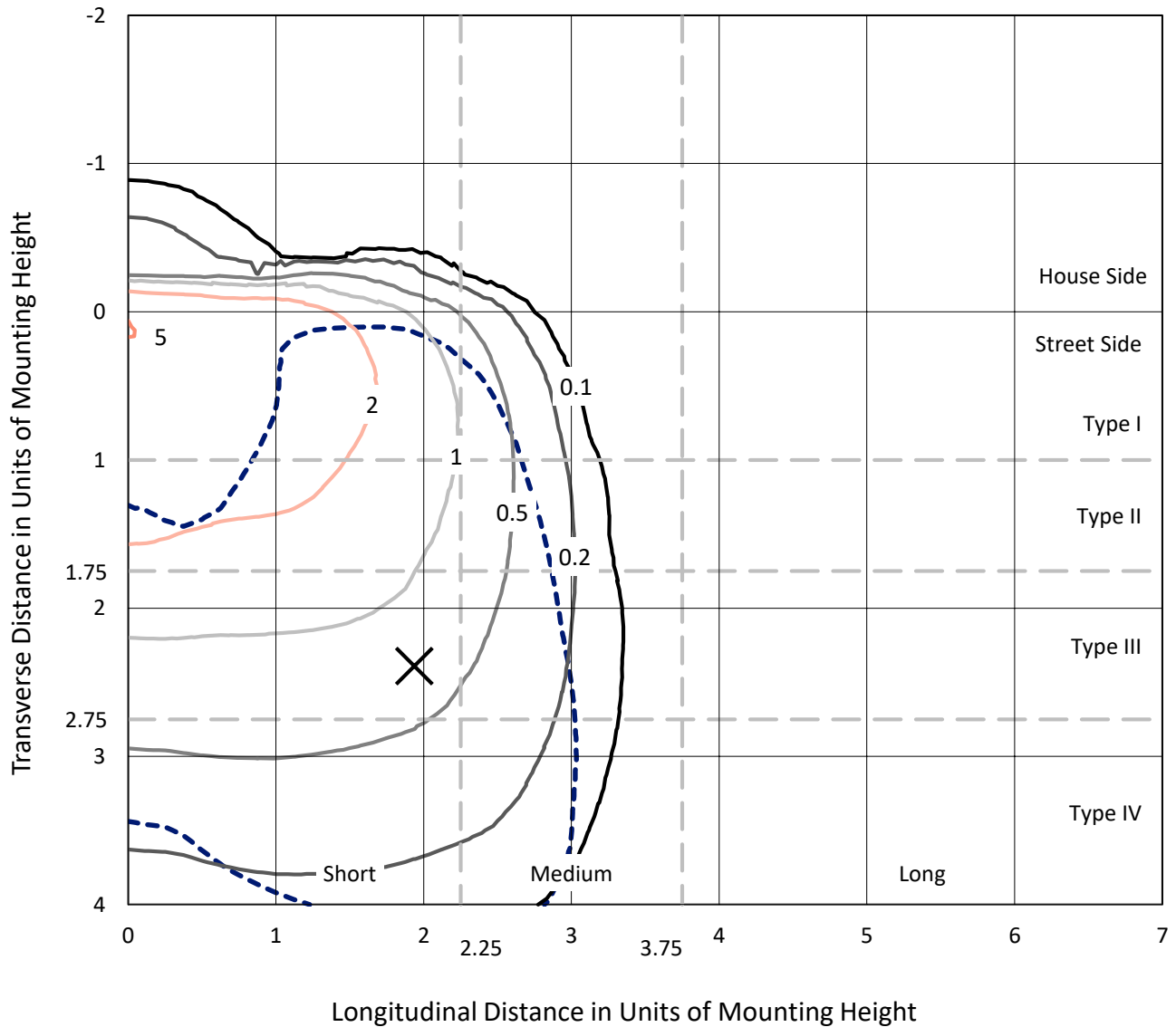
Input Watts (W): 124  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

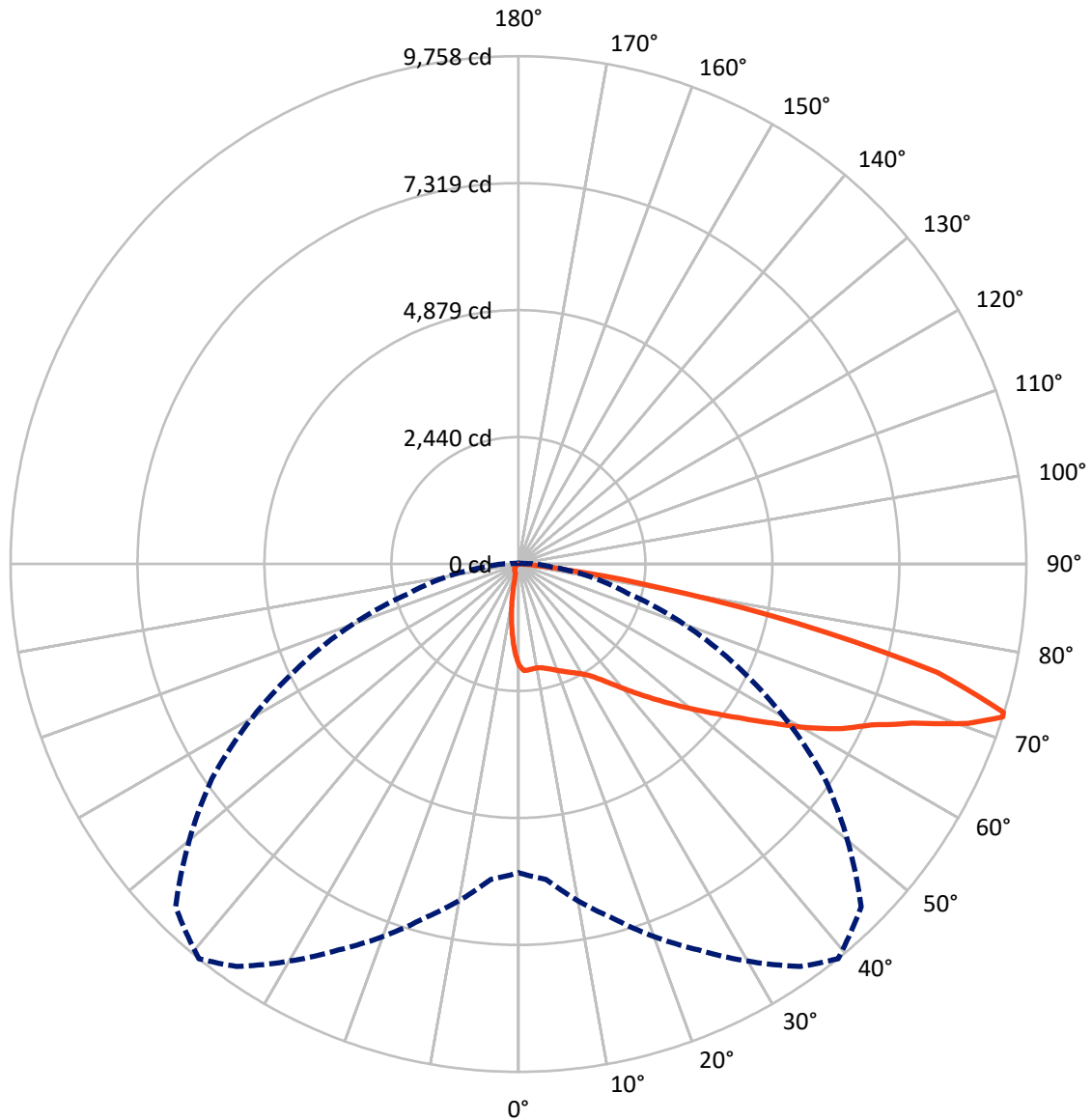
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.1 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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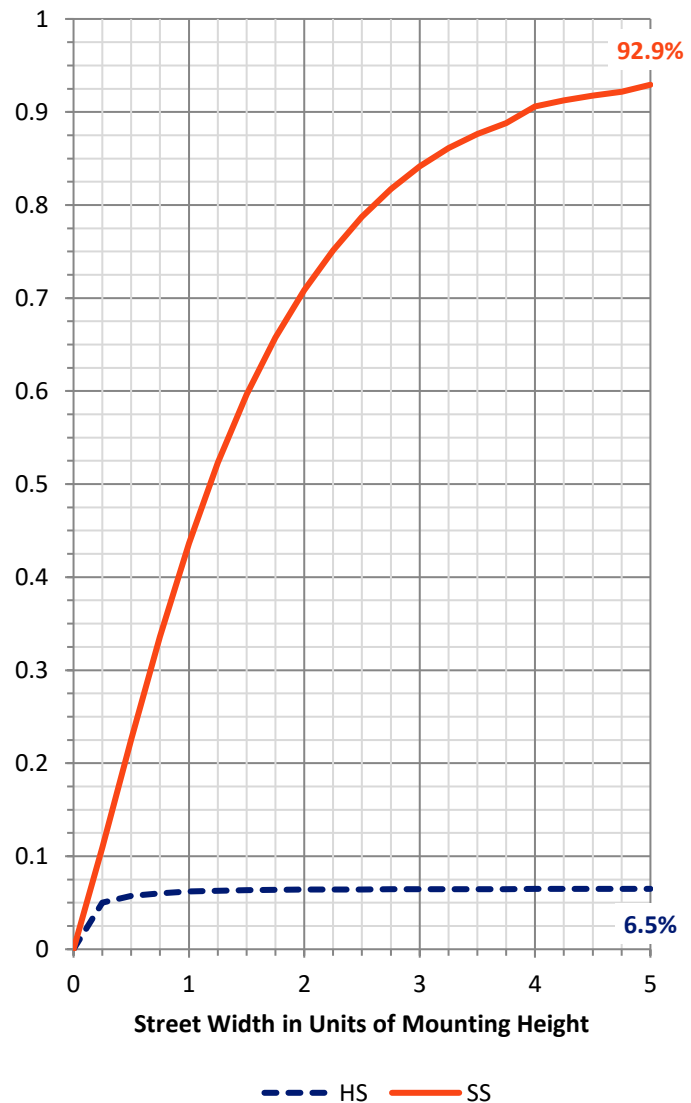
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	799.3	0.0	799.3
	% Fixture	6.6	0.0	6.6
<b>Street Side</b>	Lumens	11396.3	0.0	11396.3
	% Fixture	93.4	0.0	93.4
<b>Total</b>	Lumens	12195.6	0.0	12195.6
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	158.8	1.3
10°-20°	384.4	3.2
20°-30°	638.4	5.2
30°-40°	1017.5	8.3
40°-50°	1679.4	13.8
50°-60°	2536.3	20.8
60°-70°	3303.9	27.1
70°-80°	2232.5	18.3
80°-90°	244.5	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°	12195.6	100.0
0°-180°	12195.6	100.0



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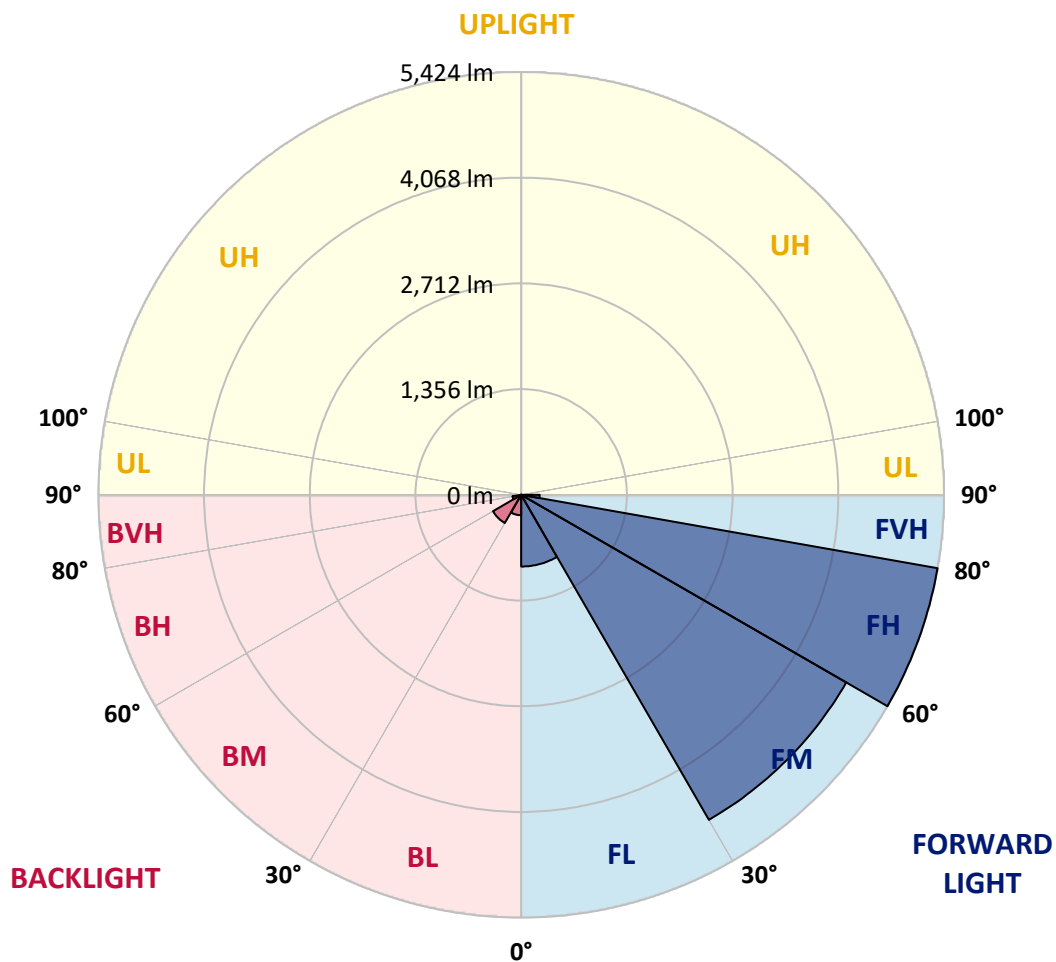
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	919.8	7.5			
FM	(30°-60°)	4815.0	39.5			
FH	(60°-80°)	5424.1	44.5			G3/7500
FVH	(80°-90°)	237.5	1.9			G3/500
BL	(0°-30°)	261.7	2.1	B1/500		
BM	(30°-60°)	418.2	3.4	B1/1000		
BH	(60°-80°)	112.3	0.9	B1/500		G1/500
BVH	(80°-90°)	7.0	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-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	1952.0	1952.0	1952.0	1952.0	1952.0	1952.0	1952.0	1952.0	1952.0	1952.0	1952.0
2.5°	2078.5	2082.4	2077.6	2068.9	2056.5	2048.9	2038.2	2015.3	1986.5	1961.6	1932.8
5°	2094.8	2096.7	2091.0	2074.7	2055.5	2045.0	2031.6	2006.6	1977.0	1942.4	1890.6
7.5°	2099.6	2098.7	2091.9	2071.8	2042.1	2028.7	2005.7	1975.0	1944.3	1912.7	1854.2
10°	2097.8	2097.8	2093.0	2073.7	2040.2	2027.7	2001.8	1969.3	1930.9	1899.2	1836.9
12.5°	2091.0	2094.8	2091.9	2081.4	2056.5	2046.9	2023.9	1991.3	1954.9	1922.2	1856.1
15°	2099.6	2105.3	2111.2	2107.3	2093.0	2084.3	2063.2	2029.6	2000.0	1965.4	1894.5
17.5°	2134.2	2146.7	2160.1	2161.0	2145.6	2130.3	2106.4	2071.8	2043.0	2011.4	1934.7
20°	2199.3	2209.0	2233.8	2238.6	2207.9	2185.9	2152.4	2112.1	2083.3	2056.5	1972.1
22.5°	2296.2	2306.8	2326.8	2320.2	2268.4	2242.5	2200.3	2154.2	2124.6	2109.2	2015.3
25°	2442.9	2445.8	2450.6	2420.8	2335.5	2306.8	2255.0	2203.1	2179.2	2177.2	2076.6
27.5°	2615.5	2619.3	2598.2	2532.0	2410.3	2372.8	2314.4	2267.4	2255.9	2270.3	2154.2
30°	2812.9	2813.9	2755.4	2648.0	2496.5	2455.3	2394.9	2343.2	2353.7	2389.2	2254.0
32.5°	3015.2	3005.6	2925.1	2785.1	2614.5	2564.6	2512.9	2461.1	2491.8	2563.6	2399.7
35°	3200.3	3196.4	3101.5	2938.5	2767.9	2723.8	2686.4	2631.7	2681.6	2798.6	2598.2
37.5°	3385.3	3382.4	3274.1	3104.3	2956.7	2925.1	2897.3	2855.2	2936.6	3108.2	2863.8
40°	3589.5	3584.7	3451.4	3288.5	3176.3	3159.1	3142.7	3124.5	3263.5	3502.3	3194.5
42.5°	3841.7	3820.5	3639.4	3488.9	3417.9	3422.7	3423.6	3441.8	3659.5	3971.1	3584.7
45°	4131.2	4084.2	3828.2	3703.6	3683.4	3712.2	3741.0	3816.7	4120.7	4510.9	4016.1
47.5°	4412.1	4336.4	4045.9	3934.7	3975.9	4035.3	4104.4	4252.0	4638.4	5075.6	4407.3
50°	4653.7	4576.1	4261.6	4169.5	4300.9	4389.1	4511.8	4735.2	5184.8	5553.0	4653.7
52.5°	4843.6	4782.2	4489.7	4428.4	4661.4	4782.2	4974.9	5268.3	5700.6	5867.4	4826.3
55°	4983.5	4952.8	4708.3	4717.0	5062.2	5236.6	5476.3	5808.0	6135.9	6111.9	4955.7
57.5°	5141.7	5117.7	4937.5	5057.4	5544.4	5769.6	6046.8	6313.2	6452.3	6308.5	5082.2
60°	5303.7	5311.4	5215.5	5469.6	6140.7	6390.0	6631.6	6697.8	6723.7	6507.9	5215.5
62.5°	5426.4	5459.1	5467.7	5914.5	6752.4	6965.3	7069.7	7022.8	7017.0	6775.4	5205.0
65°	5567.4	5652.7	5794.6	6402.4	7308.5	7448.4	7523.2	7591.3	7447.5	6855.0	4693.0
67.5°	5810.9	5945.1	6264.3	7000.7	7950.8	8157.9	8369.8	8297.9	7511.7	6046.8	3575.1
70°	6138.8	6302.7	6866.5	7782.1	8822.3	9169.3	9346.7	8241.3	6377.5	4178.1	1885.8
72°	5931.7	6080.3	7052.4	8180.9	9439.7	9758.0	9314.2	7188.6	4623.0	2165.8	631.8
72.5°	5730.4	5883.8	6993.0	8176.1	9501.1	9744.6	9102.2	6773.5	4090.9	1685.4	435.3
75°	3975.9	4169.5	5995.0	7349.7	8579.7	8312.3	6964.2	4101.5	1482.3	289.5	143.8
77.5°	2055.5	2205.1	3636.5	5193.5	5979.7	5476.3	4115.8	1779.4	410.3	153.4	94.9
80°	1274.2	1347.9	1700.8	2558.9	3106.3	2717.1	1815.8	719.0	262.7	91.0	75.7
82.5°	659.6	716.2	1070.9	1032.6	1147.6	953.9	670.1	602.1	162.0	56.6	77.6
85°	216.7	230.1	657.7	686.5	490.9	329.8	297.2	574.3	47.0	36.4	66.2
87.5°	28.7	33.6	231.1	393.1	241.6	149.6	178.3	202.3	16.3	20.2	18.2
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°	1952.0	1952.0	1952.0	1952.0	1952.0	1952.0	1952.0	1952.0	1952.0	1952.0	1952.0
2.5°	1913.6	1901.2	1861.9	1822.6	1777.5	1736.3	1703.7	1682.5	1692.2	1660.6	1665.4
5°	1859.0	1827.4	1741.1	1648.1	1547.4	1453.4	1378.6	1323.1	1312.5	1264.6	1266.5
7.5°	1806.2	1754.5	1614.5	1461.1	1294.3	1159.1	1036.4	929.0	890.7	851.4	828.4
10°	1777.5	1706.6	1508.1	1284.7	1049.9	851.4	678.8	543.6	487.0	445.8	425.6
12.5°	1786.2	1692.2	1428.6	1124.6	815.9	563.7	383.5	284.8	250.2	231.1	224.3
15°	1814.9	1695.0	1356.6	968.3	593.4	341.4	225.3	192.7	189.9	188.8	187.9
17.5°	1841.7	1697.9	1280.8	805.4	396.9	217.7	181.2	178.3	178.3	178.3	178.3
20°	1869.5	1698.9	1197.5	634.6	260.8	178.3	170.6	168.8	170.6	170.6	170.6
22.5°	1902.2	1705.6	1117.0	468.8	192.7	167.8	163.0	162.0	163.0	163.0	162.0
25°	1942.4	1720.0	1029.7	335.5	174.5	161.1	156.3	155.3	156.3	155.3	155.3
27.5°	1996.1	1739.1	928.0	240.6	166.8	154.4	149.6	149.6	149.6	148.6	148.6
30°	2065.1	1762.1	791.9	189.9	159.2	147.6	143.8	143.8	142.8	141.9	141.9
32.5°	2163.8	1799.6	643.3	171.7	150.5	139.0	135.1	136.2	135.1	134.2	133.3
35°	2303.9	1858.0	496.6	162.0	141.9	130.4	126.5	126.5	126.5	124.6	124.6
37.5°	2502.3	1947.2	371.9	152.4	133.3	121.7	116.9	116.9	116.0	114.1	115.1
40°	2747.7	2059.4	269.4	143.8	124.6	112.2	108.3	106.4	104.5	102.6	102.6
42.5°	3043.1	2168.7	202.3	135.1	116.0	104.5	99.7	97.8	93.9	92.1	91.0
45°	3373.8	2284.7	167.8	124.6	106.4	95.9	92.1	88.2	83.4	80.5	79.6
47.5°	3652.8	2355.7	149.6	114.1	96.9	87.3	83.4	77.6	71.9	70.0	70.0
50°	3820.5	2325.9	134.2	103.5	87.3	78.7	73.9	66.2	62.3	60.4	59.4
52.5°	3914.5	2237.7	121.7	94.9	78.7	69.0	62.3	55.6	53.7	51.8	51.8
55°	3978.8	2110.1	108.3	86.3	71.0	60.4	52.7	48.0	46.0	45.0	44.1
57.5°	4040.1	1954.9	95.9	78.7	63.3	53.7	45.0	43.2	39.3	38.4	38.4
60°	4058.4	1741.1	84.4	70.0	56.6	47.0	39.3	36.4	32.6	31.6	31.6
62.5°	3826.3	1385.4	74.8	59.4	49.8	40.3	34.5	30.7	26.8	26.8	26.8
65°	3197.4	940.5	64.2	51.8	44.1	34.5	29.8	25.0	23.0	23.0	23.0
67.5°	2227.2	524.5	54.6	44.1	37.4	28.7	25.0	21.1	20.2	21.1	21.1
70°	1003.8	208.1	46.0	36.4	30.7	23.9	21.1	18.2	20.2	20.2	20.2
72°	301.1	111.2	38.4	29.8	25.0	21.1	18.2	17.3	19.1	20.2	20.2
72.5°	223.4	99.7	36.4	28.7	25.0	20.2	17.3	17.3	19.1	20.2	20.2
75°	115.1	68.0	27.8	21.1	18.2	16.3	14.4	16.3	19.1	19.1	19.1
77.5°	90.1	55.6	23.0	16.3	15.3	14.4	13.4	15.3	17.3	17.3	17.3
80°	84.4	36.4	18.2	15.3	13.4	12.5	12.5	13.4	15.3	16.3	16.3
82.5°	85.3	29.8	16.3	14.4	12.5	11.5	11.5	12.5	14.4	15.3	15.3
85°	54.6	20.2	14.4	12.5	11.5	10.5	10.5	11.5	13.4	14.4	14.4
87.5°	18.2	15.3	12.5	11.5	9.6	9.6	9.6	9.6	11.5	12.5	13.4
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)