

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: STREETWORKS

Report Number: P256703

Luminaire Tested: **CST-10-9-D-U-T5R-HSS-HM-EX90**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P256703  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-894-5)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: STREETWORKS  
Catalog Number: CST-10-9-D-U-T5R-HSS-HM-EX90  
Description: CELESTEON HIGH MAST LUMINAIRE  
(10) 70 CRI, 4000K LEDS AND TYPE V ROUND WITH EXTERNAL FIELD INSTALLED 90  
DEGREE SHIELD - BLACK  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 78905.1 lumens  
Efficiency: N/A  
Efficacy: 103.8 lumens/watt  
Luminous Opening: Circular (Dia: 2.08' x H: 0')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B5 - U2 - G5

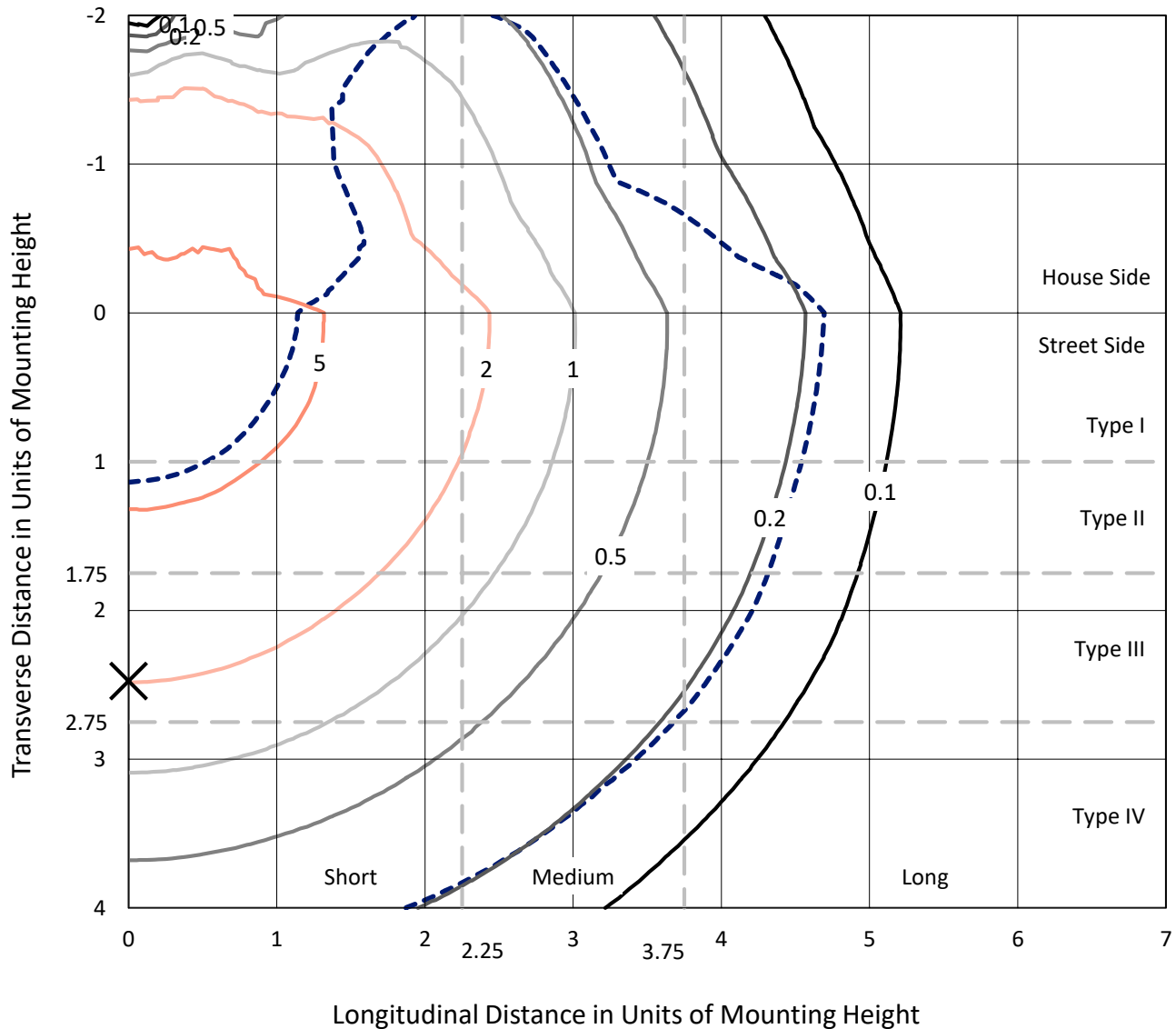
Input Watts (W): 760  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

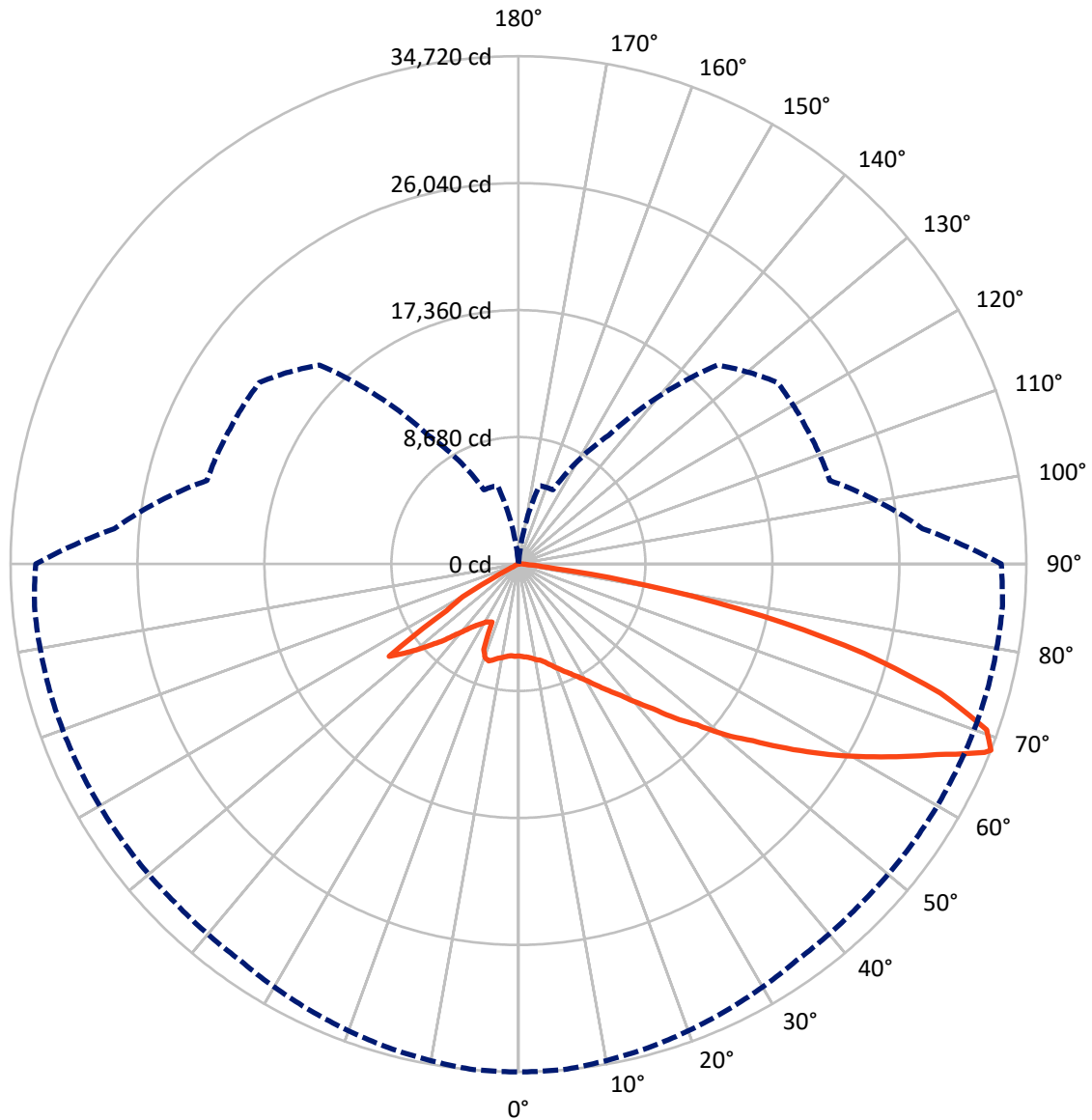
× Max cd  
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 7 fc  
 Type IV - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 0-Deg Lateral      - - - Horizontal Cone Through 68-Deg Vertical

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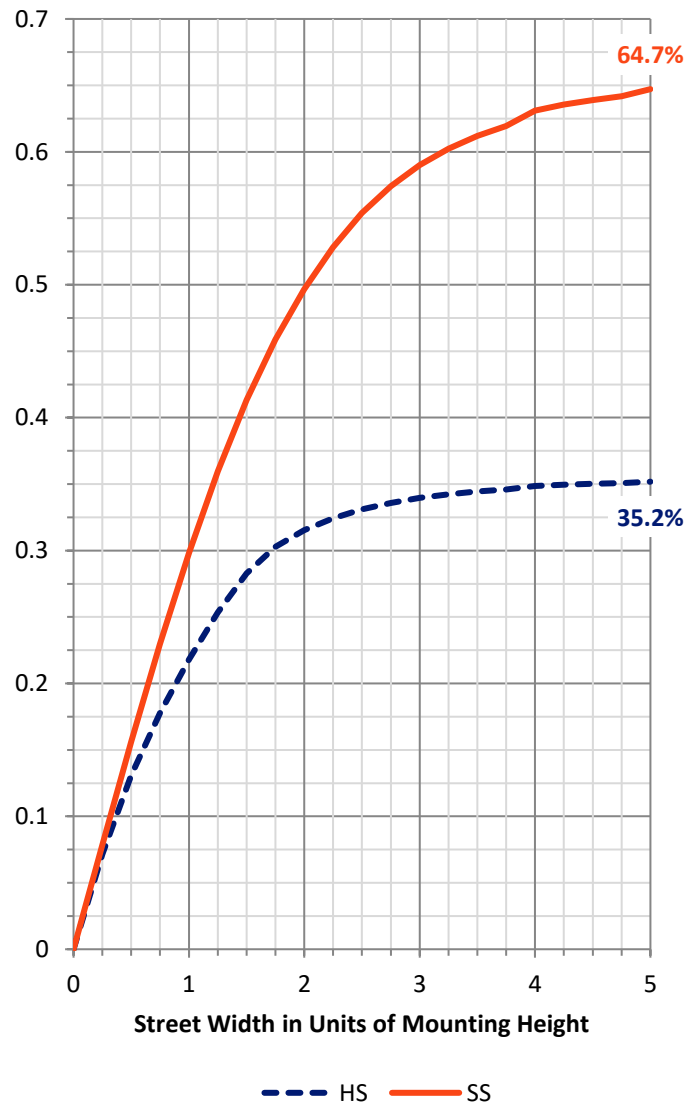
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	27769.2	4.8	27774.0
	% Fixture	35.2	0.0	35.2
<b>Street Side</b>	Lumens	51110.2	20.8	51131.1
	% Fixture	64.8	0.0	64.8
<b>Total</b>	Lumens	78879.4	25.6	78905.1
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	607.5	0.8
10°-20°	1946.3	2.5
20°-30°	3474.6	4.4
30°-40°	5652.4	7.2
40°-50°	9652.7	12.2
50°-60°	16106.0	20.4
60°-70°	22406.7	28.4
70°-80°	17368.7	22.0
80°-90°	1664.3	2.1
90°-100°	20.1	0.0
100°-110°	1.7	0.0
110°-120°	0.9	0.0
120°-130°	0.6	0.0
130°-140°	0.6	0.0
140°-150°	0.7	0.0
150°-160°	0.5	0.0
160°-170°	0.4	0.0
170°-180°	0.1	0.0
0°-90°	78879.4	100.0
0°-180°	78905.1	100.0

**Coefficient of Utilization**



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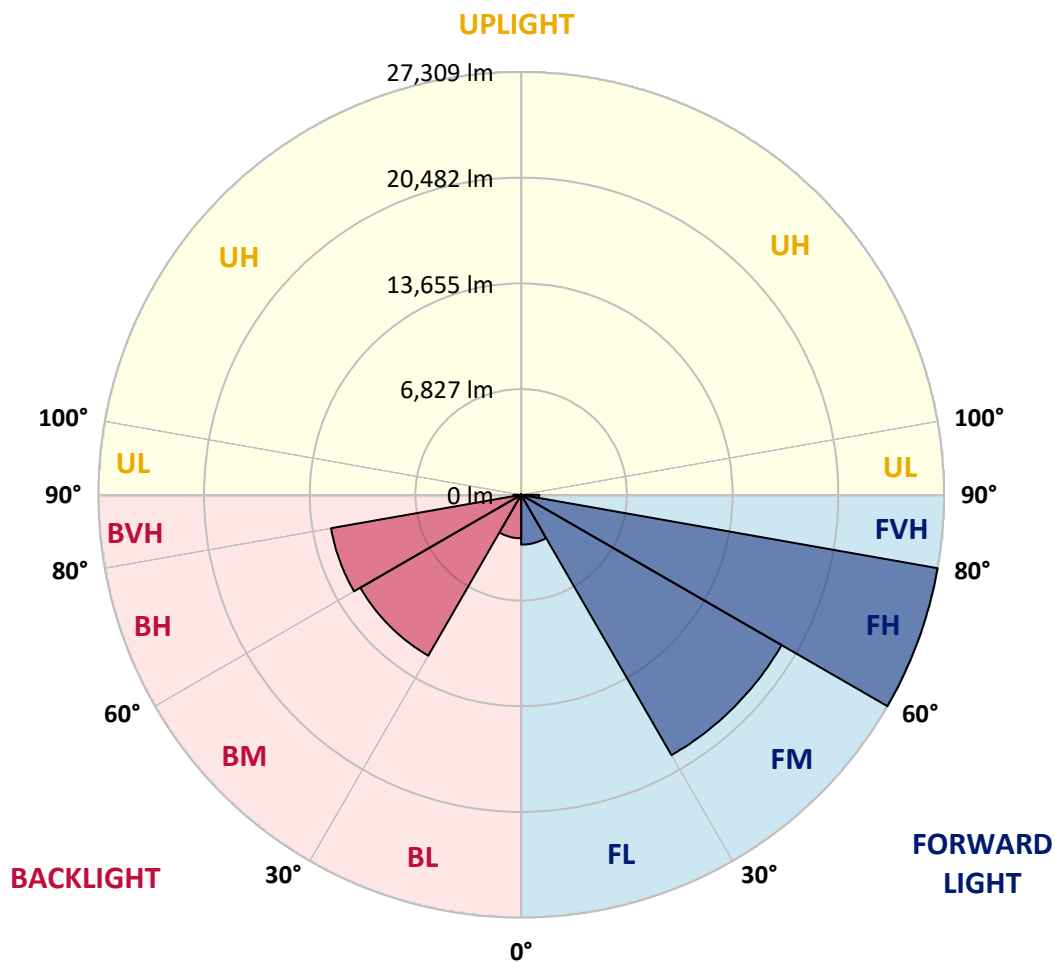
CATALOG NUMBER: CST-10-9-D-U-T5R-HSS-HM-EX90

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	3220.4	4.1			
FM	(30°-60°)	19416.2	24.6			
FH	(60°-80°)	27309.3	34.6			G5
FVH	(80°-90°)	1164.4	1.5			G5
BL	(0°-30°)	2808.0	3.6	B4/5000		
BM	(30°-60°)	11995.0	15.2	B5		
BH	(60°-80°)	12466.1	15.8	B5		G5
BVH	(80°-90°)	500.0	0.6			G3/500
UL	(90°-100°)	20.1	0.0		U2/50	
UH	(100°-180°)	4.8	0.0		U1/10	

**BUG Rating: B5-U2-G5**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	6279.5	6279.5	6279.5	6279.5	6279.5	6279.5	6279.5	6279.5	6279.5	6279.5	6279.5
2.5°	6350.8	6341.9	6335.9	6374.5	6264.7	6309.2	6279.5	6318.1	6309.2	6327.0	6330.0
5°	6395.3	6380.5	6359.7	6401.2	6335.9	6365.6	6333.0	6350.8	6294.4	6341.9	6347.8
7.5°	6496.2	6454.7	6451.7	6463.6	6419.1	6439.8	6383.4	6404.2	6374.5	6356.7	6374.5
10°	6647.7	6612.0	6573.4	6597.2	6523.0	6549.7	6490.3	6508.1	6493.3	6454.7	6490.3
12.5°	6751.6	6763.5	6736.7	6754.6	6689.2	6665.5	6644.7	6641.7	6632.8	6576.4	6567.5
15°	6983.2	6989.1	6941.6	6953.5	6938.6	6926.8	6897.1	6873.3	6825.8	6790.2	6766.4
17.5°	7286.0	7253.4	7208.8	7220.7	7262.3	7208.8	7191.0	7146.5	7078.2	7018.8	7006.9
20°	7603.7	7582.9	7541.3	7565.1	7562.1	7526.5	7535.4	7461.2	7363.2	7312.7	7274.1
22.5°	7957.0	7927.3	7897.6	7942.2	7906.5	7882.8	7873.9	7823.4	7701.7	7645.3	7636.4
25°	8310.3	8295.5	8316.3	8301.4	8250.9	8233.1	8245.0	8227.2	8084.7	8016.4	7974.8
27.5°	8752.7	8717.1	8749.7	8731.9	8678.5	8681.5	8684.4	8687.4	8527.1	8438.0	8378.6
30°	9257.5	9245.6	9287.1	9230.7	9180.3	9212.9	9239.6	9180.3	9040.7	8910.1	8889.3
32.5°	9913.6	9839.4	9886.9	9815.6	9738.4	9815.6	9863.1	9744.4	9631.5	9465.3	9495.0
35°	10641.0	10617.3	10617.3	10525.2	10483.7	10605.4	10652.9	10537.1	10361.9	10216.4	10180.8
37.5°	11413.0	11436.7	11510.9	11472.4	11433.8	11508.0	11614.9	11460.5	11234.8	11080.4	11038.9
40°	12437.3	12496.7	12547.1	12496.7	12452.1	12499.6	12621.4	12419.5	12262.1	12179.0	12089.9
42.5°	13538.8	13639.7	13607.1	13613.0	13651.6	13719.9	13841.6	13657.6	13476.5	13473.5	13342.8
45°	15029.3	15029.3	14961.0	15026.3	15020.3	15189.6	15243.0	15142.1	14990.7	14946.1	14833.3
47.5°	16421.7	16567.2	16540.5	16635.5	16561.3	16703.8	16884.9	16798.8	16623.6	16466.3	16442.5
50°	18363.5	18327.9	18292.2	18434.7	18422.9	18520.8	18687.1	18633.7	18390.2	18212.1	18179.4
52.5°	20070.7	20257.7	20213.2	20427.0	20308.2	20447.7	20646.7	20637.8	20340.9	20165.7	20115.2
55°	22226.2	22350.9	22342.0	22561.7	22398.4	22582.5	22748.7	22766.6	22442.9	22193.5	22270.7
57.5°	24470.8	24574.7	24515.3	24696.4	24536.1	24788.5	24889.4	24824.1	24634.1	24319.4	24435.2
60°	26718.3	26807.4	26875.7	26890.6	26798.5	26947.0	27042.0	27098.4	26798.5	26439.3	26578.8
62.5°	29001.5	29102.5	29043.1	29066.9	28811.5	29013.4	29132.2	29147.0	28802.6	28484.9	28582.9
65°	31406.5	31546.0	31332.2	31189.7	30875.0	30872.0	31029.4	31056.1	30812.6	30587.0	30548.4
67.5°	34384.4	34446.7	33989.5	33511.5	32980.0	32864.2	32974.1	33036.5	33176.0	33170.1	32994.9
68°	34719.9	34708.0	34244.9	33674.8	33104.7	32971.1	33024.6	33104.7	33196.8	33214.6	33003.8
70°	33956.9	33811.4	33547.1	32828.6	32264.5	31914.2	31727.1	31875.6	31626.2	31629.1	31234.2
72.5°	30162.4	30144.6	29657.7	29301.4	28799.6	28217.7	27950.5	27947.5	27971.3	27799.1	27392.3
75°	24432.2	24455.9	23888.9	23642.4	23488.0	23378.2	23434.6	23609.8	23627.6	23624.6	23482.1
77.5°	17039.3	17137.3	16985.8	16585.0	17015.5	17383.7	18093.3	18455.5	18339.7	18687.1	18906.8
80°	8930.9	9126.8	9132.8	9414.8	9762.2	10097.7	10709.3	11258.6	10854.8	10676.7	10492.6
82.5°	2348.5	2419.8	2526.6	2363.4	2413.8	2464.3	2939.3	2894.8	2672.1	2790.9	2969.0
85°	671.0	691.8	662.1	599.7	549.3	504.7	516.6	436.4	380.0	377.1	365.2
87.5°	472.1	507.7	448.3	386.0	347.4	323.6	311.7	264.2	213.8	187.0	148.5
90°	219.7	216.7	187.0	145.5	127.7	121.7	121.7	95.0	53.4	32.7	29.7
92.5°	92.0	95.0	77.2	62.3	53.4	41.6	32.7	20.8	11.9	5.9	3.0
95°	32.7	35.6	29.7	23.8	20.8	17.8	14.8	11.9	5.9	3.0	3.0
97.5°	8.9	8.9	8.9	8.9	8.9	8.9	8.9	5.9	5.9	3.0	3.0
100°	0.0	0.0	0.0	3.0	5.9	5.9	5.9	5.9	3.0	3.0	3.0
102.5°	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
105°	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
107.5°	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
110°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0
112.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0
115°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0
117.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0
120°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
122.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0
125°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0
130°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0
165°	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
167.5°	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0
170°	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
172.5°	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
175°	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
177.5°	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
180°	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):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	6279.5	6279.5	6279.5	6279.5	6279.5	6279.5	6279.5	6279.5	6279.5	6279.5
2.5°	6324.0	6309.2	6303.3	6229.0	6249.8	6205.3	6309.2	6279.5	6273.6	6315.1
5°	6338.9	6270.6	6312.2	6264.7	6276.5	6211.2	6294.4	6258.7	6261.7	6282.5
7.5°	6347.8	6309.2	6350.8	6267.6	6300.3	6276.5	6335.9	6300.3	6335.9	6353.7
10°	6436.9	6419.1	6389.4	6365.6	6389.4	6333.0	6407.2	6401.2	6422.0	6475.5
12.5°	6558.6	6537.8	6508.1	6466.6	6484.4	6463.6	6520.0	6525.9	6564.5	6591.3
15°	6739.7	6713.0	6698.1	6656.6	6662.5	6647.7	6680.3	6686.3	6763.5	6754.6
17.5°	6995.0	6965.4	6977.2	6938.6	6923.8	6888.2	6828.8	6808.0	6900.0	6926.8
20°	7274.1	7241.5	7256.3	7223.7	6947.5	6386.4	6763.5	7021.8	6825.8	6811.0
22.5°	7591.8	7556.2	7568.1	7517.6	7176.2	6125.1	5329.4	5264.1	6012.3	6315.1
25°	7942.2	7894.7	7888.7	7823.4	6701.1	5546.2	5457.1	5341.3	4795.0	4361.5
27.5°	8375.6	8304.4	8268.8	7283.0	6653.6	5762.9	5629.3	5216.6	4423.9	4450.6
30°	8844.8	8740.8	8072.8	7422.6	7001.0	6018.2	5840.1	4572.3	4578.3	4566.4
32.5°	9379.2	9147.6	7909.5	7850.1	7416.6	6291.4	4848.4	4795.0	4800.9	4818.7
35°	10079.9	8491.4	8458.8	8461.7	7924.4	6086.5	5136.4	5086.0	5091.9	5103.8
37.5°	10228.3	9153.5	9159.5	9091.2	8464.7	5561.0	5486.8	5483.8	5471.9	5460.1
40°	10347.1	9987.8	9901.7	9791.9	7847.2	5988.5	5964.8	5947.0	5955.9	5979.6
42.5°	11276.4	11006.2	10923.1	10792.4	8049.1	6635.8	6558.6	6537.8	6561.6	6549.7
45°	12511.5	12285.9	12122.6	9978.9	8892.3	7339.5	7277.1	7250.4	7259.3	7333.5
47.5°	13817.9	13684.3	13185.5	10780.6	9875.0	8170.8	8108.4	8066.9	8081.7	8063.9
50°	15240.1	15118.3	12205.7	11989.0	10961.7	9067.4	8975.4	8960.5	8966.5	8963.5
52.5°	16784.0	14239.5	13526.9	13301.3	12107.7	10005.6	9973.0	9892.8	9910.6	9892.8
55°	18595.1	14999.6	14981.8	14717.5	13396.3	11095.3	11056.7	10943.9	10234.3	10854.8
57.5°	20314.1	16451.4	16451.4	16196.1	14714.5	12179.0	12116.6	12033.5	7274.1	5866.8
60°	22196.5	17906.3	17864.7	17653.9	15985.3	13212.2	10739.0	10715.2	4394.2	4409.0
62.5°	23823.5	19203.7	19277.9	19082.0	17208.5	9892.8	4976.1	4875.2	433.5	668.0
65°	25646.5	20637.8	20726.8	20524.9	18532.7	10492.6	5400.7	5350.2	98.0	89.1
67.5°	27713.0	22068.8	21866.9	21644.3	19307.6	10804.3	5611.5	5566.9	26.7	17.8
68°	27730.8	22039.1	21777.9	21626.5	19233.4	10744.9	5593.7	5552.1	26.7	17.8
70°	26305.7	20928.7	20667.5	20706.1	18313.0	10275.8	5362.1	5284.9	26.7	17.8
72.5°	23078.3	18624.8	18330.8	18123.0	16240.6	9135.7	4806.9	4661.4	26.7	17.8
75°	19747.1	15783.4	15296.5	14839.2	13066.7	7476.0	3942.9	3779.6	26.7	17.8
77.5°	15563.7	12030.5	11338.7	11038.9	9818.6	5522.4	2930.4	2752.3	26.7	14.8
80°	8601.3	6903.0	6315.1	6131.1	5614.4	3245.2	1680.5	1573.6	23.8	14.8
82.5°	2223.8	1668.6	1454.8	1404.4	1318.3	769.0	409.7	388.9	20.8	11.9
85°	317.7	234.6	258.3	305.8	293.9	198.9	142.5	121.7	17.8	8.9
87.5°	166.3	139.5	163.3	184.1	187.0	115.8	59.4	32.7	8.9	0.0
90°	26.7	26.7	29.7	32.7	32.7	14.8	11.9	0.0	0.0	0.0
92.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	3.0	5.9	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
112.5°	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)