

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: io LED

Report Number: P273454

Luminaire Tested: **0.05-09W-835-90ASYM-STD-UNV-AN-3F0**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P273454  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1708-246-12)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: 0.05-09W-835-90ASYM-STD-UNV-AN-3F0  
Description: iO LIGHTING SERIES 2.0 LINEAR LED LUMINAIRE. 90 DEGREE ASYMMETRIC OPTIC.  
VERY HIGH OUTPUT  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1108.1 lumens  
Efficiency: N/A  
Efficacy: 59.9 lumens/watt  
Spacing Criteria (0/90/45): 1.03 / 0.97 / 1.19  
Luminous Opening: Rectangular (W 2.92' x L: 0.21' x H: 0')  
CIE Type: Direct

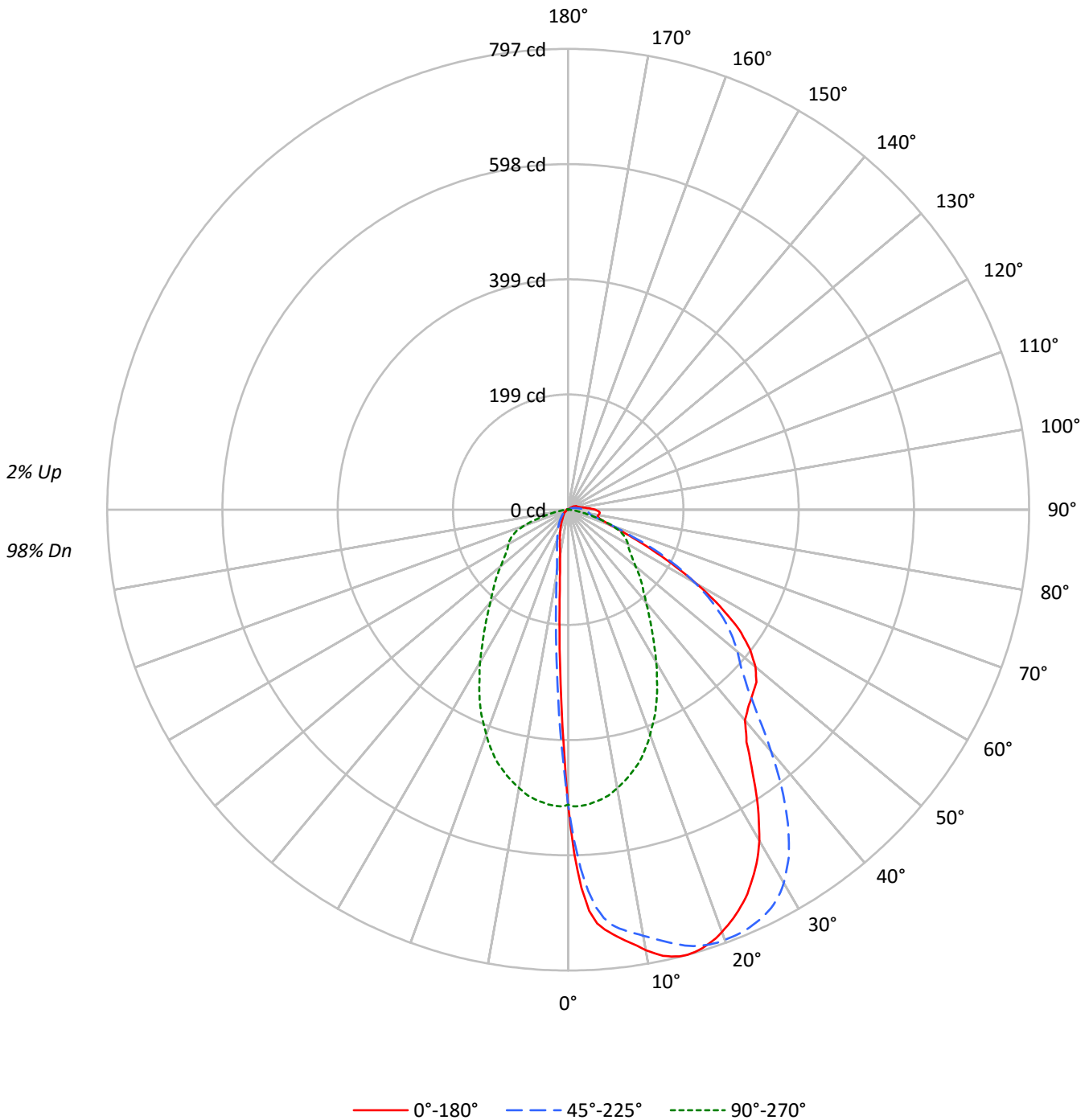
Input Watts (W): 18.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	100	100	100	98					98			
1	109	105	101	98	106	103	99	96	98	95	93	94	91	89	90	88	86	84					84			
2	100	93	87	82	98	91	85	80	87	82	78	84	80	76	80	77	74	72					72			
3	92	83	75	69	90	81	74	68	78	72	67	75	70	65	72	68	64	62					62			
4	85	74	66	59	83	72	65	59	70	63	58	67	61	57	65	60	56	54					54			
5	78	66	58	52	76	65	57	51	63	56	51	61	55	50	59	53	49	47					47			
6	73	60	52	45	71	59	51	45	57	50	45	55	49	44	53	48	44	42					42			
7	67	55	46	40	66	54	46	40	52	45	40	50	44	39	49	43	39	37					37			
8	63	50	42	36	61	49	41	36	48	41	36	46	40	35	45	39	35	33					33			
9	59	46	38	33	57	45	38	33	44	37	32	43	37	32	42	36	32	30					30			
10	55	42	35	30	54	42	35	30	41	34	29	40	34	29	39	33	29	27					27			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	9036	9036	9036
5°	12967	9028	3064
10°	13917	8792	1434
15°	14613	8407	1005
20°	14653	7803	769
25°	14325	7079	582
30°	13523	6226	436
35°	12017	5450	342
40°	10993	4842	296
45°	11298	4499	276
50°	11641	4194	251
55°	11131	4061	207
60°	9102	4227	131
65°	6199	4464	155
70°	3973	4226	192
75°	3751	3039	205
80°	5407	1989	306
85°	11138	1362	610



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.3	4.0
10°-20°	122.1	11.0
20°-30°	184.7	16.7
30°-40°	212.3	19.2
40°-50°	203.9	18.4
50°-60°	170.3	15.4
60°-70°	92.2	8.3
70°-80°	33.8	3.1
80°-90°	20.0	1.8
90°-100°	11.8	1.1
100°-110°	6.2	0.6
110°-120°	3.8	0.3
120°-130°	2.0	0.2
130°-140°	0.7	0.1
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°-30°	351.1	31.7
0°-40°	563.4	50.8
0°-60°	937.6	84.6
0°-90°	1083.6	97.8
90°-120°	21.8	2.0
90°-150°	24.5	2.2
90°-180°	24.0	2.2
0°-180°	1108.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	510	510	510	510	510	
5°	729	709	508	238	172	70
15°	797	780	458	74	55	224
25°	733	783	362	43	30	335
35°	556	662	252	26	16	350
45°	451	440	180	16	11	348
55°	360	328	132	8	7	314
65°	148	166	106	4	4	153
75°	55	46	44	3	3	62
85°	55	34	7	2	3	44
90°	47	28	1	2	2	25
95°	33	21	1	2	2	25
105°	18	11	1	1	2	20
115°	15	6	1	1	1	14
125°	7	1	1	1	1	7
135°	1	1	1	1	1	1
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	510.1	510.1	510.1	510.1	510.1	510.1	510.1	510.1	510.1	510.1	510.1
1°	594.7	592.9	594.7	585.6	586.2	589.2	589.2	583.7	586.8	574.0	571.6
2°	654.4	653.1	653.1	645.2	645.2	647.7	646.4	639.7	639.7	626.4	620.9
3°	694.5	692.7	692.1	686.0	686.0	687.2	686.0	680.5	678.1	666.5	659.8
4°	717.1	716.4	714.6	710.4	710.4	711.6	710.4	706.7	704.9	695.1	689.1
5°	729.2	729.2	726.8	723.7	723.7	725.0	723.1	721.3	718.9	713.4	709.1
6°	738.4	737.1	736.5	732.9	732.9	733.5	732.3	730.4	728.6	725.0	721.9
7°	746.9	745.7	744.4	740.8	741.4	740.8	739.6	737.1	735.9	732.9	729.8
8°	755.4	754.2	753.6	749.3	749.3	748.7	747.5	744.4	743.2	739.6	736.5
9°	763.9	762.7	762.1	757.8	757.8	757.2	755.4	753.0	749.9	745.7	742.0
10°	773.7	772.4	771.8	767.6	767.0	765.7	763.9	761.5	757.2	753.0	748.1
11°	781.6	781.6	779.1	776.1	774.9	774.3	772.4	770.0	765.1	759.7	754.8
12°	788.9	788.9	786.4	783.4	782.2	781.6	779.7	777.3	771.8	767.6	760.9
13°	793.1	793.1	791.3	788.3	788.3	787.7	785.8	784.0	778.5	774.3	767.6
14°	796.2	796.2	794.4	791.3	791.9	791.3	790.1	788.9	784.0	780.4	774.3
15°	796.8	797.4	795.0	792.5	793.7	793.1	792.5	791.3	788.9	785.2	780.4
16°	795.6	796.8	794.4	791.9	793.7	793.1	793.1	791.9	791.3	788.9	785.2
17°	793.1	794.4	792.5	790.1	792.5	791.9	791.9	791.9	792.5	790.7	788.3
18°	788.9	790.7	789.5	787.7	790.1	790.7	790.7	790.1	792.5	791.9	790.7
19°	784.0	785.8	785.2	784.0	786.4	787.7	787.7	788.3	791.3	791.9	791.9
20°	777.3	779.7	779.1	778.5	782.2	782.8	784.0	785.2	789.5	790.7	791.9
21°	770.0	773.1	773.1	772.4	776.1	777.9	779.7	781.6	786.4	788.9	791.3
22°	762.1	765.1	765.1	765.1	769.4	771.8	773.7	777.9	783.4	787.7	790.7
23°	753.0	756.0	756.0	756.6	761.5	764.5	767.0	771.8	779.1	785.2	788.9
24°	743.8	746.3	746.9	747.5	753.0	756.0	758.4	764.5	773.7	781.6	785.8
25°	732.9	735.9	735.9	737.1	743.2	746.3	749.3	756.6	767.0	776.1	782.8
26°	720.1	723.7	725.0	726.2	732.3	735.3	739.0	746.9	759.1	768.8	778.5
27°	707.3	711.0	712.8	712.8	720.7	723.7	728.0	736.5	750.5	760.9	773.1
28°	693.3	697.0	697.0	700.0	707.3	711.0	715.2	725.0	739.6	751.1	765.7
29°	678.1	681.7	681.7	685.4	692.7	697.0	701.2	712.2	725.6	740.2	756.6
30°	661.1	664.7	665.3	668.4	676.3	680.5	685.4	697.6	711.0	727.4	745.7
32.5°	611.1	615.4	615.4	622.1	628.2	635.5	639.1	652.5	670.2	688.4	710.4
35°	555.7	560.0	559.4	563.0	572.8	577.0	584.4	598.4	616.6	639.1	662.3
37.5°	506.4	508.9	507.7	510.7	517.4	524.1	529.6	540.5	558.8	582.5	606.3
40°	475.4	476.0	474.8	474.2	477.2	479.7	482.7	489.4	502.8	522.9	546.0
42.5°	461.4	459.6	457.7	455.9	454.1	454.1	452.9	454.1	459.0	470.5	487.0
45°	451.0	450.4	448.0	445.6	441.9	440.7	438.3	433.4	430.4	432.8	439.5
47.5°	441.3	439.5	437.0	434.6	430.4	428.5	424.3	417.0	411.5	407.8	406.0
50°	422.4	420.0	417.6	415.7	412.1	410.3	406.0	399.3	393.8	387.1	381.7
52.5°	395.7	392.6	391.4	389.6	385.9	383.5	379.8	375.0	370.1	365.2	356.7
55°	360.4	358.5	357.3	357.9	353.7	352.4	350.0	343.9	339.7	334.8	328.1
57.5°	311.0	309.8	310.4	313.5	312.9	313.5	313.5	310.4	306.8	300.7	292.8
60°	256.9	255.7	256.9	259.9	260.5	262.4	264.2	266.6	267.2	262.4	253.8
62.5°	200.9	199.0	199.7	201.5	201.5	203.9	206.4	210.6	214.9	215.5	213.0
65°	147.9	146.1	146.1	146.7	146.1	147.9	149.1	150.3	155.2	161.9	165.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
67.5°	105.9	104.7	104.7	104.7	104.7	105.3	104.7	105.9	108.3	112.6	117.5
70°	76.7	76.1	76.1	76.1	75.5	76.1	76.7	76.7	77.9	79.7	82.2
72.5°	62.1	61.5	61.5	60.9	59.7	59.7	59.0	58.4	57.8	58.4	59.7
75°	54.8	54.8	54.2	53.6	52.3	51.7	50.5	49.3	48.1	46.9	46.3
77.5°	52.3	52.3	51.7	50.5	49.3	48.1	47.5	45.0	43.2	41.4	39.6
80°	53.0	52.3	51.7	50.5	48.7	48.1	46.9	44.4	42.0	39.0	36.5
82.5°	54.2	54.2	53.6	51.7	49.9	48.7	47.5	45.0	42.0	39.0	35.3
85°	54.8	54.2	53.6	51.7	49.9	48.7	46.9	43.8	40.8	37.7	34.1
87.5°	51.7	51.1	50.5	48.7	46.3	45.7	43.8	40.8	38.3	34.7	31.7
90°	46.9	45.7	45.0	43.2	41.4	40.2	39.0	35.9	33.5	31.0	28.0
92.5°	39.6	39.0	38.3	36.5	35.3	34.1	32.9	30.4	28.6	26.8	25.0
95°	32.9	32.3	31.7	30.4	29.2	28.6	27.4	25.6	24.3	22.5	21.3
97.5°	27.4	26.8	26.2	25.6	24.3	23.7	23.1	21.9	20.7	19.5	18.3
100°	23.1	23.1	22.5	21.9	20.7	20.1	19.5	18.9	17.7	16.4	15.8
102.5°	20.1	20.1	19.5	18.9	18.3	17.7	17.0	16.4	15.2	14.0	13.4
105°	18.3	17.7	17.7	17.0	16.4	15.8	15.2	14.0	12.8	12.2	11.0
107.5°	17.0	16.4	16.4	15.8	14.6	14.6	14.0	12.8	11.6	10.3	9.7
110°	15.8	15.8	15.2	14.6	14.0	13.4	12.8	12.2	10.3	9.1	7.9
112.5°	15.2	15.2	14.6	14.0	13.4	12.8	12.2	11.0	9.7	8.5	6.7
115°	14.6	14.0	14.0	13.4	12.2	11.6	11.0	9.7	8.5	6.7	5.5
117.5°	12.8	12.8	12.8	11.6	11.0	10.3	9.7	8.5	7.3	5.5	4.3
120°	11.6	11.0	11.0	10.3	9.1	8.5	8.5	7.3	5.5	4.3	3.0
122.5°	9.7	9.1	9.1	8.5	7.9	7.3	6.7	5.5	4.3	3.0	2.4
125°	7.3	7.3	7.3	6.7	6.1	5.5	4.9	4.3	3.0	2.4	1.2
127.5°	6.1	5.5	5.5	4.9	4.3	4.3	3.7	3.0	1.8	1.2	1.2
130°	4.3	4.3	3.7	3.7	3.0	2.4	1.8	1.2	1.2	1.2	1.2
132.5°	2.4	2.4	2.4	1.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2
135°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	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):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	510.1	510.1	510.1	510.1	510.1	510.1	510.1	510.1	510.1	510.1	510.1
1°	567.9	554.5	549.7	546.0	541.7	535.7	532.0	527.7	519.8	513.1	505.2
2°	613.0	595.9	587.4	577.7	571.6	561.8	552.7	541.1	527.1	513.1	497.3
3°	650.1	631.8	619.1	605.7	598.4	586.2	571.0	553.9	533.2	511.9	488.2
4°	679.3	661.1	646.4	630.6	622.1	608.7	588.6	566.1	538.1	510.7	479.7
5°	700.6	684.2	669.6	652.5	643.4	629.4	605.1	575.8	543.0	507.7	469.9
6°	715.2	700.6	687.2	671.4	662.3	647.7	620.3	586.8	547.8	505.8	459.6
7°	725.0	712.8	701.2	687.2	677.5	664.1	634.3	597.1	551.5	502.8	449.2
8°	732.3	721.3	711.6	699.4	690.9	677.5	647.1	606.9	555.1	499.1	438.9
9°	737.1	726.8	718.9	707.9	700.6	689.1	658.0	614.2	557.0	494.3	426.7
10°	743.2	731.7	724.4	715.2	708.5	698.8	668.4	622.1	559.4	488.8	414.5
11°	749.3	736.5	729.2	720.7	714.6	706.1	676.9	628.8	561.2	483.3	401.7
12°	754.8	741.4	734.1	725.6	720.1	711.6	684.2	635.5	563.0	477.8	389.6
13°	761.5	745.7	738.4	730.4	724.4	716.4	690.9	641.6	564.3	471.7	376.8
14°	767.0	752.4	742.6	734.1	728.6	720.7	696.4	647.7	564.9	465.0	364.0
15°	772.4	757.8	746.9	737.1	731.7	723.7	701.2	651.9	565.5	458.4	350.6
16°	777.9	763.3	751.1	740.2	735.3	727.4	705.5	656.2	565.5	451.0	337.2
17°	783.4	769.4	755.4	743.8	739.0	731.7	709.1	660.4	564.9	442.5	323.2
18°	788.3	774.3	761.5	748.1	743.2	735.3	712.8	664.1	563.7	433.4	310.4
19°	790.7	778.5	765.7	753.0	746.3	739.0	716.4	667.7	561.8	424.3	296.4
20°	791.9	782.2	770.0	756.6	748.7	741.4	719.5	670.8	559.4	413.9	282.4
21°	792.5	785.2	773.1	760.3	752.4	744.4	722.5	673.2	557.0	403.6	269.7
22°	793.1	787.1	777.3	764.5	755.4	747.5	725.6	676.9	555.7	393.8	256.9
23°	791.9	787.7	779.1	767.0	759.1	749.9	728.6	679.9	553.3	384.7	244.1
24°	790.1	788.3	781.6	770.0	762.7	753.0	731.7	682.4	550.3	373.1	231.9
25°	788.9	788.3	782.2	771.8	765.7	756.6	733.5	684.2	546.6	362.2	220.4
26°	786.4	787.7	783.4	774.9	768.2	759.1	735.9	685.4	541.7	350.6	208.8
27°	782.8	785.8	784.6	777.9	771.2	762.7	739.0	686.6	536.3	338.4	198.4
28°	778.5	784.0	785.2	780.4	774.3	765.7	742.6	689.1	530.8	326.3	188.1
29°	773.1	781.0	784.0	782.2	777.9	770.0	745.7	692.1	524.7	315.9	179.0
30°	765.1	776.7	782.8	783.4	780.4	773.1	748.7	693.3	519.2	304.4	171.0
32.5°	737.1	759.7	774.3	785.2	785.8	781.0	757.8	697.6	502.8	276.4	152.2
35°	694.5	728.6	756.6	779.1	785.2	788.3	769.4	702.4	485.7	252.0	134.5
37.5°	644.6	681.7	724.4	761.5	776.1	785.2	778.5	706.7	465.0	228.9	123.0
40°	583.7	625.1	675.7	729.8	751.1	773.1	782.2	707.9	443.1	209.4	112.6
42.5°	520.4	562.4	616.0	679.9	712.2	745.1	776.7	703.7	417.0	193.0	104.7
45°	462.0	497.9	550.3	620.9	659.2	702.4	758.4	690.3	390.8	179.6	98.6
47.5°	413.9	437.7	482.7	553.3	595.3	648.9	732.3	672.0	362.8	166.2	93.1
50°	379.8	390.2	420.6	480.9	521.7	579.5	692.7	652.5	337.8	152.2	86.4
52.5°	351.8	352.4	367.0	409.0	446.2	502.2	636.7	625.1	317.7	140.6	79.7
55°	321.4	317.1	322.0	347.6	373.1	418.8	561.8	591.7	302.5	131.5	72.4
57.5°	287.9	280.0	280.0	292.8	308.6	342.7	467.5	541.7	289.1	124.2	66.3
60°	248.4	239.2	236.2	242.9	252.0	275.1	379.2	473.6	273.9	119.3	61.5
62.5°	205.7	197.2	194.2	196.6	200.9	217.3	292.8	390.8	253.2	113.8	56.6
65°	163.7	156.4	152.2	153.4	155.2	168.0	219.1	300.7	224.0	106.5	52.3



TEST NUMBER: P273454

CATALOG NUMBER: 0.05-09W-835-90ASYM-STD-UNV-AN-3F0

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
67.5°	121.7	120.5	118.1	118.7	121.1	126.0	161.3	217.9	183.8	96.8	46.9
70°	86.4	89.5	90.7	91.3	91.9	95.0	115.7	151.6	137.0	81.6	40.8
72.5°	61.5	64.5	68.2	70.0	70.6	71.8	83.4	103.5	96.8	63.3	32.3
75°	46.9	48.1	50.5	54.2	54.2	55.4	60.9	70.0	65.7	44.4	24.3
77.5°	38.3	38.3	39.6	42.0	42.6	43.2	45.7	48.7	43.2	29.8	16.4
80°	34.7	33.5	32.9	33.5	34.1	34.1	34.7	33.5	28.6	19.5	10.3
82.5°	32.3	30.4	28.6	28.0	27.4	26.8	26.2	23.1	18.9	11.6	5.5
85°	31.0	28.0	25.6	23.7	23.1	21.9	20.1	16.4	12.2	6.7	3.0
87.5°	28.6	25.6	23.1	20.7	19.5	18.3	15.2	11.6	7.3	3.7	1.2
90°	25.6	23.1	20.7	17.7	16.4	15.2	12.2	7.9	4.3	1.2	1.2
92.5°	22.5	20.7	18.3	15.8	14.0	12.8	9.1	5.5	2.4	1.2	1.2
95°	19.5	18.3	15.8	13.4	12.2	10.3	7.3	3.7	1.2	1.2	1.2
97.5°	17.0	15.8	13.4	11.0	9.7	8.5	4.9	1.8	1.2	1.2	1.2
100°	14.6	13.4	11.6	9.1	7.9	6.1	3.0	1.2	1.2	1.2	1.2
102.5°	12.2	11.0	9.1	6.7	5.5	4.3	1.8	1.2	1.2	1.2	1.2
105°	9.7	8.5	7.3	4.9	3.7	2.4	1.2	1.2	1.2	1.2	1.2
107.5°	8.5	6.7	5.5	3.7	2.4	1.8	1.2	1.2	1.2	1.2	1.2
110°	6.7	5.5	3.7	2.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2
112.5°	5.5	3.7	2.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
115°	4.3	2.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
117.5°	3.0	1.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
120°	1.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
122.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
125°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
127.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
130°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
132.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
135°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P273454

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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P273454

CATALOG NUMBER: 0.05-09W-835-90ASYM-STD-UNV-AN-3F0

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	510.1	510.1	510.1	510.1	510.1	510.1	510.1	510.1	510.1	510.1	510.1
1°	494.9	485.1	476.6	473.0	468.1	462.6	460.8	448.0	442.5	438.3	433.4
2°	479.7	463.2	448.0	444.4	432.8	420.6	413.3	395.0	384.1	376.2	367.0
3°	464.4	440.1	419.4	412.1	397.5	379.2	366.4	344.5	329.3	318.4	306.2
4°	447.4	417.0	390.2	379.2	362.8	339.7	322.6	298.3	280.0	267.2	253.8
5°	431.0	394.4	361.6	348.2	329.3	302.5	282.4	257.5	238.0	224.6	210.6
6°	413.9	371.3	333.6	317.7	298.3	268.4	247.1	221.6	202.1	188.7	175.9
7°	396.3	348.2	307.4	289.7	269.7	238.6	215.5	191.7	172.9	160.7	147.3
8°	379.2	326.3	282.4	264.2	243.5	211.8	189.3	166.8	147.9	136.3	126.6
9°	361.6	305.0	258.1	239.2	219.1	187.5	166.2	144.3	129.0	119.3	110.2
10°	343.9	284.3	236.2	217.3	197.8	167.4	146.1	127.8	113.8	105.3	98.0
11°	326.9	264.8	216.1	196.6	178.3	148.5	130.3	113.8	101.7	94.3	88.3
12°	309.8	245.9	197.8	179.0	160.7	133.9	116.9	102.9	92.5	86.4	81.0
13°	293.4	228.3	180.8	163.1	145.5	121.1	105.9	93.7	85.2	79.7	74.9
14°	277.0	210.6	166.2	147.3	132.7	110.8	97.4	86.4	79.1	74.3	70.0
15°	261.7	195.4	151.0	135.1	121.7	101.7	90.1	80.3	74.3	69.4	65.7
16°	246.5	180.8	138.8	124.8	112.0	94.3	83.4	75.5	70.0	65.1	62.1
17°	231.3	168.0	128.4	115.0	103.5	87.7	78.5	71.2	65.7	61.5	58.4
18°	217.9	155.8	118.7	106.5	96.2	82.2	73.7	67.0	62.1	58.4	54.8
19°	204.5	144.3	110.2	99.2	90.1	77.9	70.0	63.9	59.0	54.8	51.7
20°	191.7	134.5	102.9	93.1	84.6	73.7	66.3	60.3	55.4	51.7	48.7
21°	180.2	125.4	96.8	87.7	79.7	70.0	63.3	57.2	52.3	48.7	46.3
22°	169.2	117.5	91.3	82.8	76.1	67.0	60.3	54.2	49.9	46.3	43.8
23°	158.3	110.8	86.4	78.5	72.4	63.3	57.2	51.1	47.5	44.4	42.0
24°	147.9	104.7	82.2	74.9	69.4	60.9	54.2	48.7	45.0	42.0	39.6
25°	139.4	99.2	77.9	71.8	65.7	57.8	51.7	46.9	43.2	40.2	37.7
26°	132.1	93.7	74.3	68.8	63.3	54.8	49.3	44.4	41.4	38.3	35.9
27°	124.8	89.5	71.2	65.7	60.3	52.3	46.9	42.6	39.6	36.5	34.1
28°	118.7	85.2	68.2	62.7	57.8	50.5	45.0	40.8	37.7	34.7	32.3
29°	112.6	81.6	65.7	60.3	55.4	48.1	43.2	39.0	35.9	32.9	30.4
30°	107.1	77.9	62.7	57.8	53.0	46.3	41.4	37.1	34.1	31.0	28.0
32.5°	96.2	70.6	57.2	52.3	48.1	42.0	37.7	33.5	29.8	26.8	25.0
35°	87.0	64.5	51.7	47.5	43.8	38.3	33.5	29.8	26.2	23.7	21.9
37.5°	79.7	59.0	47.5	43.2	40.2	34.7	30.4	26.2	23.1	20.7	18.9
40°	73.0	54.8	43.8	40.2	36.5	31.7	26.8	23.1	20.1	18.3	16.4
42.5°	68.8	51.1	40.2	37.1	34.1	28.6	24.3	20.7	17.7	15.8	14.0
45°	65.1	48.1	37.7	34.1	31.0	26.2	21.9	18.3	15.8	14.0	12.2
47.5°	61.5	45.0	35.3	31.7	28.6	23.7	19.5	16.4	14.0	12.2	11.0
50°	57.8	42.0	32.9	29.2	26.2	21.3	17.7	14.6	12.2	10.3	9.1
52.5°	53.6	39.0	29.8	26.8	23.7	19.5	15.8	12.8	10.3	9.1	8.5
55°	49.3	35.9	27.4	24.3	21.9	17.7	14.0	11.0	8.5	7.9	7.3
57.5°	43.8	32.3	24.3	21.9	19.5	15.8	11.6	9.1	7.3	6.7	6.7
60°	39.6	28.6	21.3	19.5	17.7	13.4	9.7	7.3	6.1	5.5	5.5
62.5°	35.3	25.0	18.9	17.0	15.2	11.6	7.9	6.1	5.5	4.9	4.3
65°	31.0	21.3	16.4	14.6	12.8	9.1	6.1	4.9	4.3	3.7	3.7



TEST NUMBER: P273454

CATALOG NUMBER: 0.05-09W-835-90ASYM-STD-UNV-AN-3F0

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
67.5°	26.8	17.7	13.4	11.6	10.3	6.7	4.9	3.7	3.0	3.0	3.0
70°	21.9	14.6	10.3	9.1	7.3	4.9	3.7	3.0	3.0	3.0	3.0
72.5°	17.0	11.0	7.9	6.7	4.9	3.7	3.0	3.0	3.0	3.0	3.0
75°	12.2	7.9	4.9	4.3	3.0	2.4	2.4	2.4	3.0	3.0	3.0
77.5°	8.5	5.5	3.0	2.4	2.4	2.4	2.4	2.4	3.0	3.0	3.0
80°	5.5	3.0	1.8	2.4	2.4	2.4	2.4	2.4	2.4	3.0	3.0
82.5°	3.0	1.8	1.8	1.8	1.8	2.4	2.4	2.4	2.4	2.4	2.4
85°	1.2	1.8	1.8	1.8	1.8	1.8	2.4	2.4	2.4	2.4	2.4
87.5°	1.2	1.2	1.8	1.8	1.8	1.8	1.8	1.8	2.4	2.4	2.4
90°	1.2	1.2	1.2	1.8	1.8	1.8	1.8	1.8	1.8	2.4	2.4
92.5°	1.2	1.2	1.2	1.2	1.2	1.8	1.8	1.8	1.8	1.8	1.8
95°	1.2	1.2	1.2	1.2	1.2	1.2	1.8	1.8	1.8	1.8	1.8
97.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.8	1.8	1.8	1.8
100°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.8	1.8
102.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
105°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
107.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
110°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
112.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
115°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
117.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
120°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
122.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
125°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
127.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
130°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
132.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
135°	1.2	1.2	1.2	1.8	1.2	1.8	1.8	1.8	1.2	1.2	1.2
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P273454

CATALOG NUMBER: 0.05-09W-835-90ASYM-STD-UNV-AN-3F0

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	510.1	510.1	510.1	510.1	510.1	510.1	510.1	510.1
1°	439.5	430.4	427.9	414.5	415.1	411.5	413.3	413.3
2°	368.9	357.9	353.7	340.9	339.7	334.8	335.4	334.8
3°	305.0	293.4	288.5	276.4	273.9	269.0	269.0	268.4
4°	250.2	238.6	233.1	223.4	220.4	215.5	214.9	213.0
5°	205.7	194.8	189.3	182.0	178.3	174.1	173.5	172.3
6°	169.8	160.7	155.2	148.5	144.9	141.2	141.2	140.0
7°	141.8	133.9	129.7	124.8	121.7	118.7	118.1	117.5
8°	121.1	112.6	110.8	107.1	104.7	102.3	101.7	100.4
9°	105.9	98.6	97.4	94.3	91.9	90.1	89.5	88.9
10°	93.7	88.3	87.0	84.6	82.8	81.0	81.0	79.7
11°	84.0	80.3	79.1	77.3	75.5	74.3	74.3	73.7
12°	77.3	74.3	73.0	71.8	70.0	68.8	68.8	68.2
13°	71.8	68.8	68.2	67.0	65.1	63.9	63.9	63.3
14°	67.0	64.5	63.3	62.7	60.9	60.3	59.7	59.0
15°	63.3	60.3	59.7	58.4	56.6	56.0	55.4	54.8
16°	59.0	56.6	55.4	54.2	53.0	52.3	51.7	51.7
17°	55.4	53.0	52.3	51.7	49.9	49.3	48.7	48.7
18°	52.3	49.9	49.3	48.7	46.9	46.3	46.3	45.7
19°	49.3	47.5	46.3	45.7	44.4	43.8	43.2	43.2
20°	46.9	45.0	43.8	43.2	42.0	41.4	41.4	40.8
21°	44.4	42.6	41.4	40.8	39.6	39.0	39.0	38.3
22°	42.0	40.2	39.6	39.0	37.7	37.1	36.5	36.5
23°	40.2	38.3	37.1	36.5	35.3	34.7	34.1	34.1
24°	37.7	35.9	35.3	34.7	33.5	32.3	32.3	31.7
25°	35.9	34.1	32.9	32.3	31.0	30.4	29.8	29.8
26°	34.1	31.7	31.0	30.4	29.2	28.6	28.0	28.0
27°	31.7	29.8	29.2	28.6	27.4	26.8	26.2	26.2
28°	29.8	28.0	27.4	26.8	25.6	25.0	25.0	24.3
29°	28.0	26.2	25.6	25.0	24.3	23.7	23.1	23.1
30°	26.2	25.0	24.3	23.7	23.1	21.9	21.9	21.3
32.5°	23.1	21.3	20.7	20.7	19.5	18.9	18.9	18.3
35°	20.1	18.3	17.7	17.7	17.0	16.4	16.4	15.8
37.5°	17.0	15.8	15.8	15.2	14.6	14.6	14.0	14.6
40°	15.2	14.0	13.4	13.4	12.8	12.8	12.8	12.8
42.5°	12.8	12.2	12.2	11.6	11.6	11.6	11.6	11.6
45°	11.6	11.0	11.0	11.0	11.0	11.0	11.0	11.0
47.5°	10.3	9.7	9.7	9.7	9.7	9.7	9.7	9.7
50°	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
52.5°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
55°	7.3	7.3	6.7	6.7	6.7	6.7	6.7	6.7
57.5°	6.1	6.1	5.5	5.5	5.5	5.5	4.9	4.9
60°	4.9	4.3	4.3	4.3	3.7	3.7	3.7	3.7
62.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
65°	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7



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**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
67.5°	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7
70°	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
72.5°	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7
75°	3.0	3.0	3.0	3.0	3.0	3.7	3.0	3.0
77.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
80°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
82.5°	2.4	3.0	3.0	3.0	3.0	3.0	3.0	3.0
85°	2.4	2.4	2.4	3.0	3.0	3.0	3.0	3.0
87.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
90°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
92.5°	1.8	2.4	2.4	2.4	2.4	2.4	2.4	2.4
95°	1.8	1.8	1.8	1.8	1.8	2.4	2.4	2.4
97.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
100°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
102.5°	1.2	1.8	1.8	1.8	1.8	1.8	1.8	1.8
105°	1.2	1.2	1.2	1.2	1.8	1.8	1.8	1.8
107.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
110°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
112.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
115°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
117.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
120°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
122.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
125°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
127.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
130°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
132.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
135°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





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**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)