

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: NEO-RAY

Report Number: P331900-935

Luminaire Tested: **S123DIP-S340D1025U935-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331900-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S340D1025U935-4F0-1E-UDD-F4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1025 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4411.6 lumens  
Efficiency: N/A  
Efficacy: 118.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

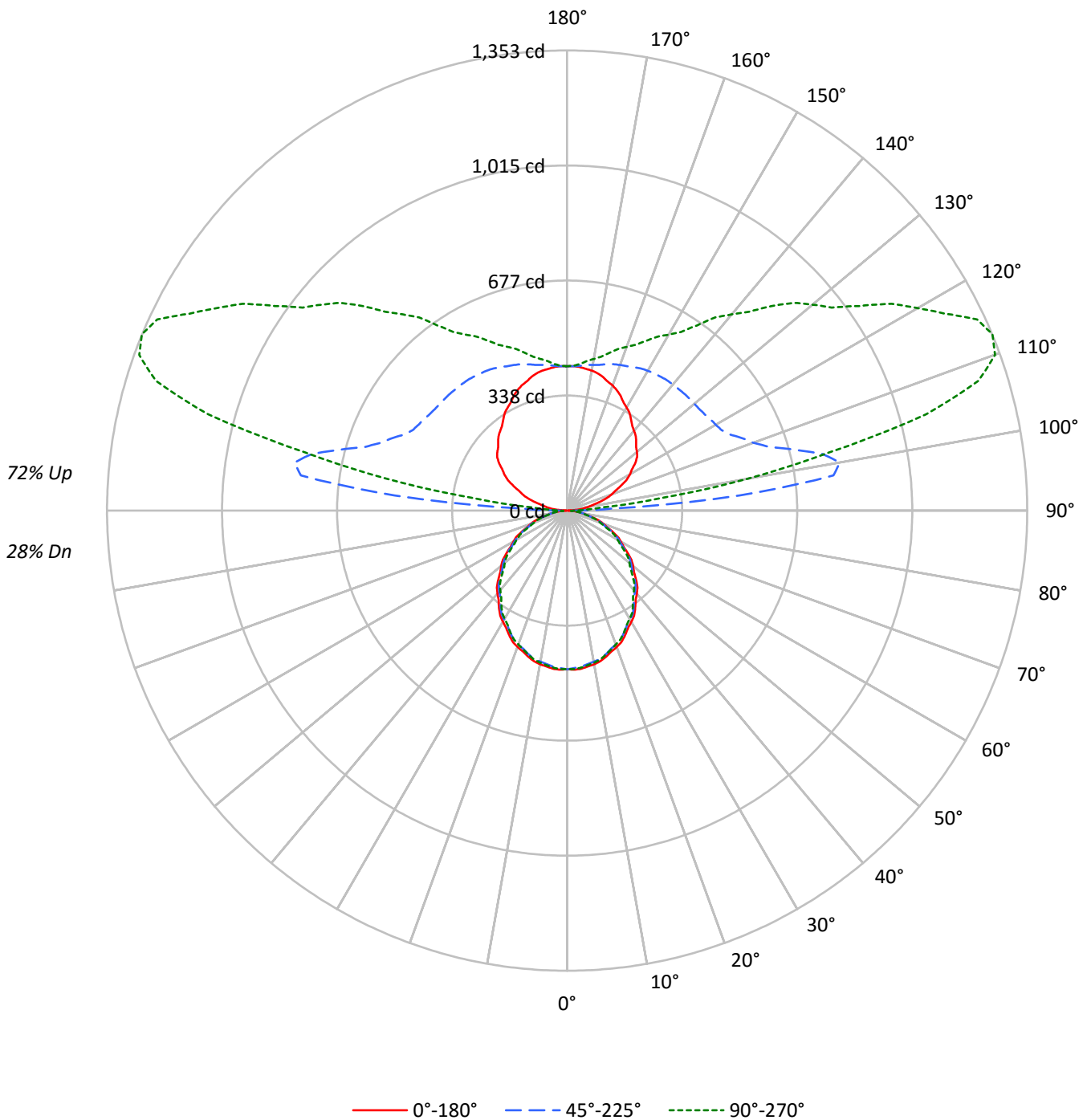
Input Watts (W): 37.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### 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	0
RCR																		
0	102	102	102	102	91	91	91	91	71	71	71	52	52	52	36	36	36	28
1	93	89	85	81	83	79	76	73	62	60	58	46	45	43	31	31	30	23
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25	19
3	77	68	61	55	68	61	55	50	48	44	40	36	33	31	24	23	21	16
4	70	60	52	46	63	54	47	42	42	38	34	32	29	26	22	20	18	14
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	20	18	16	12
6	59	48	40	34	53	43	36	31	34	29	25	26	22	20	18	16	14	11
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	12	9
8	51	39	31	26	45	35	28	24	28	23	20	21	18	15	15	13	11	8
9	47	35	28	23	42	32	25	21	25	21	17	19	16	14	14	11	10	8
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	11	9	7

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

	0°	45°	90°
0°	5022	5022	5022
5°	5046	4976	5010
10°	5012	4933	4964
15°	4953	4878	4886
20°	4885	4798	4802
25°	4793	4703	4694
30°	4692	4598	4561
35°	4586	4486	4428
40°	4477	4363	4295
45°	4354	4250	4147
50°	4232	4113	3997
55°	4074	3969	3847
60°	3914	3800	3679
65°	3769	3617	3505
70°	3559	3408	3257
75°	3256	3136	3003
80°	2938	2814	2783
85°	2569	2482	2384



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.0	1.0
10°-20°	124.1	2.8
20°-30°	183.3	4.2
30°-40°	214.1	4.9
40°-50°	215.3	4.9
50°-60°	189.1	4.3
60°-70°	140.9	3.2
70°-80°	80.3	1.8
80°-90°	26.3	0.6
90°-100°	236.3	5.4
100°-110°	669.0	15.2
110°-120°	658.1	14.9
120°-130°	525.0	11.9
130°-140°	413.9	9.4
140°-150°	308.9	7.0
150°-160°	215.3	4.9
160°-170°	126.5	2.9
170°-180°	41.2	0.9
0°-30°	351.4	8.0
0°-40°	565.5	12.8
0°-60°	969.9	22.0
0°-90°	1217.4	27.6
90°-120°	1563.5	35.4
90°-150°	2811.2	63.7
90°-180°	3194.0	72.4
0°-180°	4411.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	467	467	467	467	467	
5°	467	465	460	464	464	44
15°	444	443	438	441	438	125
25°	404	401	396	396	395	186
35°	349	346	341	339	337	218
45°	286	284	279	275	272	221
55°	217	216	212	207	205	194
65°	148	146	142	139	138	146
75°	78	77	75	73	72	84
85°	21	20	20	19	19	23
90°	2	10	22	24	25	3
95°	29	95	510	149	100	32
105°	100	147	691	1208	1093	106
115°	176	220	529	1159	1330	174
125°	245	289	493	894	1048	217
135°	287	342	486	736	850	222
145°	327	375	480	604	664	205
155°	372	401	465	529	551	171
165°	406	418	445	472	480	115
175°	424	424	427	433	432	40
180°	425	425	425	425	425	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6
2.5°	468.2	467.9	467.6	467.4	467.0	466.5	465.7	464.9	464.2	463.4	464.1
5°	467.0	466.5	466.1	465.6	465.2	464.5	463.5	462.5	461.5	460.5	461.4
7.5°	462.4	461.9	461.5	461.1	460.6	459.9	458.9	457.9	456.8	455.8	456.6
10°	458.6	458.1	457.6	457.2	456.8	456.0	454.8	453.7	452.5	451.3	452.1
12.5°	453.4	453.1	452.6	452.3	451.9	451.2	450.1	449.0	447.9	446.9	447.5
15°	444.5	444.2	443.8	443.4	443.1	442.3	441.2	440.0	438.9	437.7	438.4
17.5°	434.1	433.7	433.3	432.7	432.3	431.5	430.3	429.2	428.0	426.9	427.3
20°	426.5	425.9	425.4	424.8	424.3	423.4	422.3	421.1	420.0	418.9	419.2
22.5°	417.8	417.2	416.7	416.2	415.7	414.8	413.6	412.5	411.3	410.2	410.4
25°	403.6	403.0	402.5	402.0	401.5	400.6	399.4	398.3	397.1	396.0	396.1
27.5°	388.4	387.9	387.4	386.8	386.3	385.5	384.3	383.0	381.8	380.5	380.6
30°	377.5	377.0	376.6	376.2	375.7	374.9	373.7	372.4	371.2	369.9	369.9
32.5°	366.6	366.0	365.4	364.8	364.3	363.4	362.5	361.5	360.6	359.6	359.1
35°	349.0	348.5	347.9	347.4	346.9	346.0	344.9	343.7	342.6	341.4	340.9
37.5°	331.1	330.4	329.7	329.0	328.4	327.4	326.2	325.0	323.9	322.7	322.1
40°	318.6	318.0	317.5	316.9	316.4	315.5	314.3	313.0	311.8	310.5	309.8
42.5°	306.0	305.4	304.8	304.2	303.6	302.6	301.4	300.1	298.9	297.6	297.0
45°	286.0	285.7	285.3	285.0	284.6	283.9	282.7	281.5	280.3	279.2	278.2
47.5°	266.2	265.7	265.2	264.7	264.2	263.4	262.3	261.1	260.1	259.0	258.0
50°	252.7	252.3	251.8	251.4	251.0	250.1	249.0	247.9	246.7	245.6	244.5
52.5°	238.6	238.3	238.0	237.7	237.4	236.6	235.4	234.2	233.0	231.7	230.9
55°	217.1	217.0	216.9	216.8	216.7	216.0	214.9	213.7	212.6	211.5	210.4
57.5°	196.5	196.2	195.9	195.6	195.3	194.7	193.7	192.8	191.9	191.0	190.1
60°	181.8	181.7	181.6	181.5	181.4	180.8	179.7	178.7	177.6	176.5	175.7
62.5°	168.6	168.3	168.2	167.9	167.6	167.0	165.9	164.9	163.8	162.7	162.0
65°	148.0	147.6	147.1	146.7	146.3	145.6	144.7	143.8	142.9	142.0	141.3
67.5°	126.3	125.9	125.5	125.1	124.8	124.2	123.6	122.9	122.2	121.5	120.9
70°	113.1	112.6	112.1	111.5	111.0	110.5	109.9	109.3	108.8	108.3	107.7
72.5°	99.4	98.9	98.6	98.2	97.7	97.3	96.7	96.1	95.5	94.9	94.3
75°	78.3	77.8	77.5	77.1	76.8	76.5	76.2	75.9	75.7	75.4	75.0
77.5°	59.5	59.3	59.2	59.0	58.7	58.5	58.2	57.9	57.5	57.2	56.9
80°	47.4	47.1	46.8	46.6	46.2	46.1	45.9	45.7	45.5	45.4	45.2
82.5°	35.5	35.4	35.4	35.3	35.2	35.2	35.1	35.1	35.1	35.0	34.9
85°	20.8	20.7	20.5	20.3	20.1	20.1	20.1	20.1	20.1	20.1	19.9
87.5°	8.7	8.8	9.0	9.2	9.4	9.6	10.0	10.5	10.9	11.4	11.1
90°	1.7	3.4	5.2	7.7	9.5	11.2	13.8	16.4	18.9	21.5	20.7
92.5°	10.7	15.8	23.1	29.7	36.9	49.7	72.2	109.2	145.4	132.2	99.7
95°	29.2	31.8	41.2	55.9	78.2	111.8	184.8	312.8	453.7	509.6	413.4
97.5°	49.9	50.7	58.1	70.8	92.8	129.1	198.9	343.3	578.2	789.8	845.0
100°	63.6	64.5	70.5	82.5	103.1	136.6	196.8	324.0	550.0	813.9	983.2
102.5°	78.0	79.6	84.9	96.3	114.9	145.6	199.6	307.5	508.8	769.2	990.1
105°	99.7	102.3	107.5	117.8	134.1	160.7	207.2	295.7	458.1	691.0	937.6
107.5°	122.7	125.3	130.3	140.4	155.8	180.5	221.2	294.8	425.8	621.9	845.8
110°	139.2	141.8	146.1	155.6	170.1	194.2	232.9	298.3	413.4	582.7	788.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	154.4	157.0	161.3	170.7	185.3	208.7	244.6	305.1	406.5	556.6	737.9
115°	176.2	179.6	184.8	193.4	208.0	231.2	263.8	316.2	403.9	528.6	677.3
117.5°	198.0	202.0	206.3	214.1	230.5	252.0	284.3	331.1	405.4	512.0	640.6
120°	213.1	215.7	220.0	228.6	245.0	266.4	297.4	342.1	408.2	504.5	621.4
122.5°	226.2	228.8	233.1	242.4	258.0	280.9	311.1	352.4	413.0	499.6	605.5
125°	245.0	246.7	251.8	261.2	277.6	300.8	330.9	368.7	420.3	493.4	585.3
127.5°	259.2	261.7	268.1	277.8	295.8	319.0	348.1	382.1	428.5	490.3	567.4
130°	268.1	270.7	278.4	288.8	306.8	330.0	358.3	391.1	434.0	488.2	557.8
132.5°	275.0	278.3	286.7	299.1	317.1	339.7	367.3	399.3	438.2	487.5	548.8
135°	287.1	290.5	300.0	312.8	330.9	354.0	380.7	409.9	444.4	486.5	537.2
137.5°	298.4	302.0	311.3	325.0	342.9	364.4	390.0	417.8	448.4	484.6	527.0
140°	306.0	310.2	318.8	332.6	349.8	371.3	396.2	422.0	451.2	483.9	520.8
142.5°	314.2	317.8	327.1	339.5	356.6	376.8	401.1	426.1	453.2	482.5	515.3
145°	327.4	330.0	337.8	350.7	365.2	385.0	407.3	430.6	454.6	480.4	507.9
147.5°	340.9	342.4	350.0	361.1	375.2	392.1	412.5	433.3	454.6	477.2	500.7
150°	349.8	350.7	357.5	368.7	380.7	396.2	415.9	434.0	454.6	474.4	495.8
152.5°	358.7	358.9	365.8	375.6	386.2	401.1	418.0	435.4	452.5	471.0	490.4
155°	372.1	372.1	377.3	385.9	395.4	407.3	422.0	435.8	450.3	464.9	482.2
157.5°	382.8	383.5	387.6	395.2	403.2	412.5	424.2	436.6	447.5	459.6	472.9
160°	391.1	391.1	394.5	401.3	407.3	415.9	426.3	436.6	446.1	455.5	466.7
162.5°	397.3	397.3	400.0	405.4	410.8	418.0	427.0	435.9	443.3	451.3	460.5
165°	406.5	405.6	407.3	411.6	415.1	421.1	428.0	434.0	439.2	445.2	452.0
167.5°	413.5	412.5	413.4	416.6	419.0	422.8	427.8	432.7	435.1	439.0	444.0
170°	417.7	415.9	416.8	419.4	421.1	422.8	427.1	430.6	432.3	434.9	439.2
172.5°	420.4	419.4	419.6	421.5	422.5	423.5	427.1	429.9	430.2	431.4	434.4
175°	423.7	422.8	422.0	423.7	423.7	424.6	426.3	428.0	427.1	427.1	428.9
177.5°	425.2	424.6	423.9	424.6	424.6	424.6	425.2	426.6	425.2	424.6	425.2
180°	424.6	424.6	424.6	424.6	424.6	424.6	424.6	424.6	424.6	424.6	424.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	466.6	466.6	466.6	466.6	466.6	466.6	466.6	466.6
2.5°	464.8	465.5	466.2	466.6	466.5	466.4	466.3	466.2
5°	462.4	463.2	464.2	464.5	464.3	464.2	463.9	463.7
7.5°	457.4	458.2	459.0	459.3	459.3	459.2	459.1	458.9
10°	453.0	453.7	454.5	454.9	454.7	454.5	454.3	454.2
12.5°	448.0	448.6	449.2	449.4	449.4	449.2	449.1	449.0
15°	439.1	439.8	440.6	440.7	440.1	439.5	439.0	438.5
17.5°	427.8	428.3	428.9	429.0	428.8	428.6	428.4	428.3
20°	419.6	419.9	420.3	420.3	420.0	419.7	419.5	419.2
22.5°	410.7	411.0	411.3	411.3	411.0	410.6	410.3	409.9
25°	396.1	396.2	396.3	396.2	396.0	395.7	395.5	395.2
27.5°	380.6	380.7	380.7	380.6	380.3	380.0	379.6	379.3
30°	369.9	369.9	369.9	369.5	368.9	368.3	367.7	367.0
32.5°	358.6	358.1	357.7	357.2	356.9	356.5	356.2	355.9
35°	340.4	339.8	339.2	338.8	338.4	337.9	337.4	337.0
37.5°	321.4	320.8	320.1	319.7	319.4	319.1	318.8	318.6
40°	309.1	308.4	307.6	307.1	306.8	306.4	306.1	305.7
42.5°	296.3	295.5	294.8	294.3	293.9	293.6	293.3	292.8
45°	277.1	276.0	274.9	274.2	273.7	273.3	272.9	272.4
47.5°	256.9	255.9	254.8	254.1	253.7	253.3	252.9	252.5
50°	243.6	242.5	241.6	240.8	240.3	239.8	239.3	238.7
52.5°	230.1	229.2	228.3	227.6	227.1	226.6	226.1	225.6
55°	209.5	208.4	207.5	206.8	206.4	205.9	205.4	205.0
57.5°	189.2	188.3	187.4	186.8	186.2	185.7	185.2	184.7
60°	175.0	174.1	173.3	172.7	172.2	171.8	171.3	170.9
62.5°	161.1	160.3	159.5	158.9	158.7	158.3	158.1	157.7
65°	140.6	139.9	139.1	138.7	138.4	138.1	137.8	137.6
67.5°	120.2	119.6	119.0	118.5	118.1	117.7	117.4	117.0
70°	107.1	106.4	105.8	105.3	104.9	104.4	103.9	103.5
72.5°	93.8	93.2	92.6	92.2	92.0	91.8	91.5	91.3
75°	74.6	74.0	73.6	73.3	73.0	72.8	72.5	72.2
77.5°	56.6	56.3	56.0	55.9	55.9	55.9	55.9	55.9
80°	45.1	45.0	44.9	44.9	44.9	44.9	44.9	44.9
82.5°	34.8	34.6	34.4	34.3	34.3	34.2	34.1	34.0
85°	19.7	19.5	19.4	19.3	19.3	19.3	19.3	19.3
87.5°	11.2	11.3	11.5	11.7	11.5	11.7	11.9	11.7
90°	21.5	22.4	23.2	24.9	24.0	24.9	25.7	24.9
92.5°	72.3	57.4	50.7	46.2	44.7	42.1	43.0	41.4
95°	309.4	209.7	164.2	133.2	116.9	109.2	103.1	99.7
97.5°	771.3	617.8	506.9	404.1	340.7	302.0	278.8	271.4
100°	1013.3	943.7	843.1	721.1	634.3	571.5	538.0	538.9
102.5°	1093.7	1091.5	1032.9	955.5	887.9	838.3	810.3	790.5
105°	1117.2	1203.2	1219.5	1197.2	1157.6	1125.0	1097.5	1093.2
107.5°	1049.6	1189.1	1264.4	1295.0	1295.7	1284.7	1275.4	1267.5
110°	984.9	1143.1	1251.3	1311.5	1335.6	1342.5	1340.7	1339.0





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	920.9	1082.5	1203.9	1281.3	1325.3	1346.5	1353.1	1353.4
115°	836.2	985.8	1112.1	1205.7	1270.2	1308.0	1325.3	1329.6
117.5°	774.9	904.0	1017.4	1112.4	1179.7	1223.0	1247.8	1253.5
120°	742.5	858.6	961.7	1048.5	1116.4	1164.5	1185.2	1190.3
122.5°	717.1	822.2	917.7	998.3	1058.7	1102.0	1124.6	1131.2
125°	683.3	777.0	859.5	928.2	983.2	1021.0	1042.5	1048.5
127.5°	653.7	737.2	811.7	874.2	923.2	955.5	974.9	980.4
130°	635.2	712.5	782.0	840.5	886.1	917.1	935.0	941.9
132.5°	617.9	689.1	753.9	809.6	852.4	883.3	899.3	904.1
135°	594.7	655.7	711.6	760.6	802.7	828.5	844.0	850.0
137.5°	573.6	623.6	671.8	714.2	749.6	775.8	788.8	792.7
140°	561.2	605.0	646.3	683.3	715.9	739.9	753.7	752.9
142.5°	549.5	587.2	622.9	655.0	682.9	704.2	716.6	715.7
145°	535.5	563.8	591.2	616.2	637.7	655.7	662.6	664.3
147.5°	523.9	546.4	568.6	586.3	602.6	614.8	621.4	622.1
150°	515.7	535.5	553.5	569.8	582.7	592.1	597.3	597.3
152.5°	508.1	525.1	541.1	554.7	564.8	573.6	576.7	576.7
155°	496.7	510.5	523.4	533.7	541.5	548.3	550.0	550.9
157.5°	484.7	496.2	506.2	514.3	521.0	526.2	527.5	527.4
160°	477.9	487.3	495.8	501.9	507.9	513.1	513.1	512.2
162.5°	469.6	477.7	485.6	490.9	494.9	499.3	499.3	498.4
165°	458.9	464.1	470.1	474.4	477.9	481.3	480.4	480.4
167.5°	449.6	453.6	457.0	460.1	461.7	464.1	463.2	463.2
170°	443.5	446.1	449.4	451.2	452.0	453.7	452.9	452.9
172.5°	438.0	439.9	442.6	443.7	443.8	445.6	444.0	443.3
175°	430.6	431.4	433.2	433.2	433.2	434.0	433.2	432.3
177.5°	425.9	426.6	427.3	427.3	426.6	427.3	425.9	425.9
180°	424.6	424.6	424.6	424.6	424.6	424.6	424.6	424.6

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