

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: P332105-935

Luminaire Tested: **S123DIW-S340D1030U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332105-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S340D1030U935-4F0-1E-UDD-D1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1030 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4317.5 lumens  
Efficiency: N/A  
Efficacy: 113.6 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

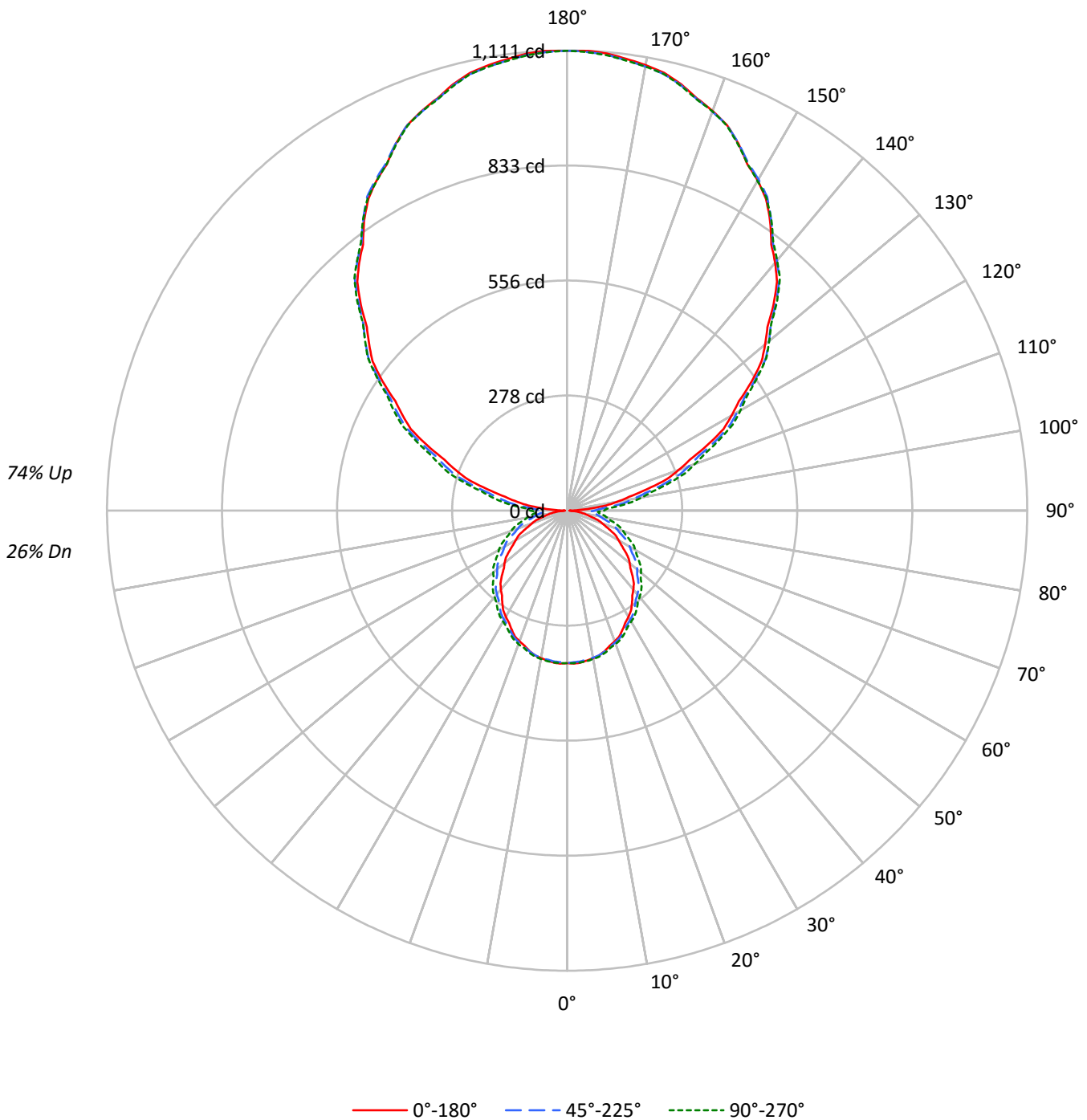
Input Watts (W): 38  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	70	70	70	52	52	52	34	34	34	26
1	92	87	84	80	82	78	75	72	60	58	56	44	43	42	29	29	28	21
2	83	76	70	65	74	68	63	58	53	49	46	39	36	34	26	24	23	17
3	76	67	59	54	67	60	53	48	46	42	38	34	31	29	22	21	19	14
4	69	59	51	45	61	53	46	41	41	36	32	30	27	24	20	18	16	12
5	63	52	44	38	56	47	40	35	36	31	28	27	23	21	18	16	14	10
6	58	46	39	33	52	42	35	30	33	28	24	24	21	18	16	14	12	9
7	54	42	34	29	48	37	31	26	29	24	21	22	18	16	15	13	11	8
8	50	38	30	25	44	34	27	23	27	22	18	20	16	14	13	11	10	7
9	46	34	27	22	41	31	24	20	24	20	16	18	15	12	12	10	9	6
10	43	31	24	20	38	28	22	18	22	18	15	17	13	11	11	9	8	6

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

	0°	45°	90°
0°	3963	3963	3963
5°	3977	3865	3866
10°	3941	3776	3757
15°	3890	3674	3636
20°	3818	3559	3504
25°	3728	3427	3365
30°	3637	3307	3224
35°	3533	3181	3112
40°	3435	3065	2991
45°	3327	2955	2895
50°	3219	2846	2789
55°	3100	2734	2693
60°	2984	2620	2596
65°	2865	2499	2479
70°	2685	2362	2359
75°	2462	2208	2239
80°	2201	2054	2100
85°	1955	1950	2018



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	34.9	0.8
10°-20°	99.5	2.3
20°-30°	148.9	3.4
30°-40°	177.8	4.1
40°-50°	186.0	4.3
50°-60°	174.5	4.0
60°-70°	145.8	3.4
70°-80°	104.3	2.4
80°-90°	65.5	1.5
90°-100°	111.4	2.6
100°-110°	245.2	5.7
110°-120°	387.4	9.0
120°-130°	495.3	11.5
130°-140°	549.4	12.7
140°-150°	536.2	12.4
150°-160°	450.5	10.4
160°-170°	299.9	6.9
170°-180°	105.0	2.4
0°-30°	283.3	6.6
0°-40°	461.0	10.7
0°-60°	821.6	19.0
0°-90°	1137.1	26.3
90°-120°	744.0	17.2
90°-150°	2324.9	53.8
90°-180°	3180.0	73.7
0°-180°	4317.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	368	368	368	368	368	
5°	369	368	366	368	368	35
15°	351	352	352	356	355	99
25°	317	321	322	327	327	146
35°	273	279	284	290	292	171
45°	223	233	243	250	254	172
55°	170	183	198	208	212	152
65°	118	133	151	162	167	116
75°	64	83	103	116	121	68
85°	20	40	61	74	79	21
90°	6	35	66	83	89	7
95°	56	78	104	120	124	61
105°	200	212	236	247	252	213
115°	373	380	393	403	406	369
125°	544	547	556	561	560	485
135°	705	710	713	717	717	543
145°	854	856	858	860	859	533
155°	978	978	979	982	976	450
165°	1065	1063	1062	1067	1062	300
175°	1108	1104	1104	1109	1104	105
180°	1110	1110	1110	1110	1110	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2
2.5°	369.9	369.7	369.5	369.3	369.0	368.7	368.1	367.5	367.0	366.4	367.0
5°	368.7	368.5	368.3	368.2	368.0	367.6	367.0	366.5	366.0	365.5	366.2
7.5°	365.1	365.2	365.2	365.2	365.2	365.0	364.5	363.9	363.4	362.9	363.8
10°	361.9	362.1	362.2	362.4	362.6	362.5	362.0	361.5	361.1	360.7	361.5
12.5°	358.0	358.3	358.5	358.8	359.0	359.0	358.7	358.3	358.1	357.7	358.6
15°	351.0	351.3	351.5	351.8	352.1	352.2	352.1	352.0	351.9	351.8	352.8
17.5°	342.2	342.8	343.3	343.8	344.3	344.6	344.6	344.5	344.5	344.5	345.3
20°	335.8	336.3	336.8	337.4	337.9	338.3	338.5	338.6	338.8	339.0	339.8
22.5°	329.1	329.6	330.1	330.6	331.2	331.6	331.8	332.1	332.3	332.6	333.6
25°	316.9	317.8	318.7	319.6	320.5	321.1	321.3	321.6	321.8	322.2	323.3
27.5°	304.7	305.7	306.8	307.8	308.8	309.6	310.1	310.7	311.3	311.9	312.9
30°	296.1	297.2	298.4	299.5	300.7	301.6	302.4	303.1	303.8	304.5	305.6
32.5°	286.5	287.7	289.0	290.3	291.6	292.7	293.7	294.6	295.6	296.4	297.6
35°	272.8	274.2	275.7	277.1	278.5	279.8	280.9	282.1	283.3	284.5	285.8
37.5°	258.4	259.9	261.6	263.2	264.8	266.3	267.7	269.1	270.6	272.0	273.5
40°	248.7	250.4	251.9	253.6	255.1	256.8	258.6	260.5	262.2	264.0	265.5
42.5°	238.2	240.1	242.0	244.0	246.0	247.9	249.8	251.6	253.5	255.3	257.0
45°	223.1	225.2	227.3	229.5	231.6	233.8	236.0	238.2	240.5	242.7	244.4
47.5°	207.2	209.7	212.1	214.6	217.0	219.5	222.0	224.5	227.0	229.6	231.5
50°	197.0	199.5	202.0	204.5	207.0	209.6	212.3	215.2	217.9	220.7	222.7
52.5°	186.1	188.7	191.3	194.0	196.7	199.5	202.5	205.6	208.6	211.6	213.8
55°	170.1	173.1	176.0	178.9	181.8	184.9	188.1	191.4	194.6	197.8	200.2
57.5°	154.5	157.6	160.7	163.8	166.8	170.1	173.6	177.1	180.6	184.2	186.6
60°	143.6	146.8	150.1	153.3	156.4	159.9	163.6	167.2	170.8	174.5	177.0
62.5°	133.4	136.6	139.9	143.2	146.5	150.1	153.9	157.8	161.7	165.6	168.0
65°	117.5	121.1	124.5	127.9	131.5	135.2	139.1	143.0	146.9	150.8	153.5
67.5°	101.5	105.2	108.9	112.5	116.2	120.1	124.1	128.1	132.1	136.1	139.0
70°	90.2	94.1	97.9	101.8	105.6	109.7	113.9	118.2	122.5	126.7	129.7
72.5°	80.0	83.9	87.6	91.5	95.3	99.4	103.8	108.3	112.7	117.2	120.1
75°	63.8	68.0	72.2	76.4	80.6	84.9	89.4	93.8	98.2	102.7	105.6
77.5°	49.7	53.9	58.1	62.3	66.6	70.9	75.4	79.9	84.4	88.9	92.0
80°	39.7	44.1	48.5	52.9	57.2	61.7	66.3	70.9	75.6	80.2	83.3
82.5°	31.1	35.5	40.0	44.3	48.8	53.4	58.1	62.8	67.5	72.2	75.3
85°	19.6	24.1	28.6	33.1	37.5	42.1	46.8	51.5	56.2	61.0	64.0
87.5°	10.8	15.7	20.5	25.3	30.1	35.1	40.1	45.2	50.3	55.3	58.5
90°	6.1	12.4	18.7	25.0	31.3	38.0	45.0	52.2	59.2	66.3	70.1
92.5°	26.0	31.3	36.5	41.8	47.0	52.6	58.5	64.4	70.3	76.3	79.8
95°	55.9	60.7	65.5	70.3	75.3	80.6	86.5	92.4	98.3	104.3	107.8
97.5°	95.3	99.5	103.7	107.8	111.9	116.7	121.9	127.3	132.5	137.8	141.4
100°	122.3	126.2	130.3	134.3	138.3	142.8	147.9	153.0	158.1	163.2	166.3
102.5°	153.3	156.6	159.9	163.2	166.3	170.7	176.0	181.3	186.6	191.9	195.0
105°	199.5	202.0	204.5	207.1	209.6	213.6	219.2	224.8	230.4	235.9	238.4
107.5°	252.7	254.8	256.8	258.9	261.0	264.2	268.5	272.8	277.2	281.5	284.5
110°	285.9	287.9	289.9	291.9	293.9	296.9	300.8	304.8	308.7	312.6	315.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	320.8	322.4	323.9	325.5	327.0	329.5	333.0	336.6	340.0	343.5	346.7
115°	372.7	374.4	376.0	377.7	379.4	381.6	384.4	387.2	390.0	392.9	395.2
117.5°	425.3	426.4	427.4	428.5	429.6	431.3	433.8	436.4	438.9	441.3	443.4
120°	457.8	459.4	461.1	462.6	464.3	466.1	468.0	470.0	472.0	473.9	475.8
122.5°	492.0	493.1	494.2	495.2	496.4	498.0	500.3	502.7	504.9	507.2	508.7
125°	543.8	544.3	544.9	545.5	546.1	547.5	549.7	551.9	554.1	556.3	557.4
127.5°	591.9	593.1	594.3	595.4	596.5	598.0	599.7	601.4	603.1	604.9	605.5
130°	624.1	625.5	627.0	628.4	629.9	631.2	632.4	633.6	634.8	636.0	636.9
132.5°	655.8	657.4	658.8	660.4	661.9	663.2	664.2	665.2	666.2	667.2	667.9
135°	704.7	705.8	706.9	708.0	709.0	710.0	710.8	711.5	712.3	713.1	713.9
137.5°	750.0	750.9	751.8	752.7	753.6	754.6	755.6	756.7	757.8	758.8	759.4
140°	781.1	782.0	783.1	784.0	785.0	785.7	786.2	786.6	787.0	787.6	788.7
142.5°	809.7	810.6	811.5	812.4	813.3	814.0	814.3	814.8	815.2	815.5	816.6
145°	854.4	854.7	855.0	855.2	855.6	856.0	856.6	857.2	857.7	858.3	858.8
147.5°	893.0	893.7	894.4	895.2	895.9	896.5	897.0	897.6	898.1	898.6	898.9
150°	920.2	920.7	921.0	921.4	921.8	922.2	922.6	923.0	923.3	923.8	923.8
152.5°	942.6	943.1	943.7	944.3	944.8	945.1	945.4	945.6	945.9	946.1	946.4
155°	977.8	977.8	977.8	977.8	977.8	977.9	978.1	978.4	978.5	978.7	979.5
157.5°	1007.9	1007.6	1007.4	1007.1	1006.9	1006.9	1007.0	1007.2	1007.4	1007.5	1008.3
160°	1026.7	1026.3	1025.9	1025.5	1025.1	1024.9	1024.9	1024.9	1024.9	1024.9	1025.9
162.5°	1043.4	1042.9	1042.3	1041.8	1041.3	1041.0	1041.2	1041.4	1041.6	1041.7	1042.7
165°	1065.1	1064.5	1063.9	1063.3	1062.7	1062.5	1062.5	1062.5	1062.5	1062.5	1063.6
167.5°	1082.4	1081.6	1080.8	1080.0	1079.3	1078.9	1079.1	1079.3	1079.4	1079.5	1080.7
170°	1092.1	1091.3	1090.5	1089.8	1089.0	1088.6	1088.6	1088.6	1088.6	1088.6	1089.9
172.5°	1099.8	1099.0	1098.2	1097.4	1096.7	1096.3	1096.3	1096.3	1096.3	1096.3	1097.5
175°	1107.8	1107.1	1106.3	1105.5	1104.7	1104.3	1104.3	1104.3	1104.3	1104.3	1105.5
177.5°	1111.1	1110.5	1109.9	1109.2	1108.6	1108.4	1108.4	1108.4	1108.4	1108.4	1109.2
180°	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	368.2	368.2	368.2	368.2	368.2	368.2	368.2	368.2
2.5°	367.5	368.1	368.7	368.9	368.9	368.8	368.7	368.6
5°	366.9	367.6	368.3	368.7	368.6	368.4	368.3	368.2
7.5°	364.7	365.6	366.4	366.9	366.8	366.6	366.5	366.4
10°	362.5	363.3	364.2	364.5	364.4	364.2	364.0	363.9
12.5°	359.4	360.2	361.0	361.4	361.2	361.0	360.8	360.7
15°	353.6	354.5	355.4	355.8	355.7	355.6	355.5	355.4
17.5°	346.0	346.9	347.7	348.0	347.8	347.8	347.7	347.5
20°	340.6	341.4	342.2	342.7	342.8	342.9	342.9	343.0
22.5°	334.6	335.6	336.7	337.2	337.1	337.0	337.0	336.9
25°	324.4	325.6	326.7	327.4	327.4	327.4	327.4	327.4
27.5°	313.8	314.9	315.9	316.4	316.5	316.6	316.6	316.7
30°	306.6	307.7	308.8	309.3	309.3	309.3	309.3	309.3
32.5°	298.8	299.9	301.0	301.7	302.0	302.1	302.4	302.6
35°	287.1	288.4	289.8	290.7	291.0	291.4	291.7	292.1
37.5°	275.0	276.6	278.1	279.0	279.2	279.6	279.8	280.1
40°	267.0	268.5	270.0	271.0	271.3	271.7	272.1	272.4
42.5°	258.6	260.3	261.9	263.0	263.6	264.0	264.5	265.0
45°	246.1	247.8	249.5	250.7	251.4	252.1	252.9	253.6
47.5°	233.4	235.4	237.3	238.5	239.0	239.6	240.1	240.7
50°	224.7	226.8	228.9	230.2	230.8	231.4	232.0	232.7
52.5°	215.9	218.0	220.2	221.6	222.4	223.2	223.9	224.6
55°	202.6	205.0	207.4	209.0	209.7	210.4	211.1	211.8
57.5°	189.0	191.4	193.8	195.4	196.3	197.2	198.0	198.8
60°	179.5	182.0	184.5	186.2	187.2	188.2	189.2	190.2
62.5°	170.5	173.0	175.5	177.2	178.1	179.0	179.9	180.9
65°	156.2	158.9	161.5	163.3	164.2	165.1	166.0	166.9
67.5°	141.9	144.8	147.7	149.6	150.3	151.1	151.9	152.6
70°	132.5	135.3	138.2	140.1	140.9	141.8	142.8	143.6
72.5°	123.0	125.9	128.8	130.8	131.6	132.5	133.5	134.3
75°	108.6	111.5	114.5	116.5	117.5	118.6	119.7	120.8
77.5°	95.1	98.2	101.3	103.2	104.1	105.0	105.7	106.6
80°	86.3	89.4	92.4	94.3	95.2	96.1	97.0	97.9
82.5°	78.3	81.3	84.4	86.3	87.2	88.1	88.9	89.9
85°	67.1	70.1	73.1	75.1	75.9	76.9	77.7	78.6
87.5°	61.6	64.8	68.0	70.1	71.1	72.1	73.0	74.0
90°	73.9	77.7	81.5	84.0	85.3	86.6	87.9	89.1
92.5°	83.4	87.0	90.6	92.6	93.2	93.8	94.5	95.1
95°	111.3	114.9	118.4	120.6	121.5	122.4	123.3	124.2
97.5°	144.9	148.5	152.1	154.2	155.1	155.8	156.6	157.5
100°	169.4	172.6	175.8	178.1	179.3	180.6	181.8	183.1
102.5°	198.1	201.2	204.3	206.2	207.1	207.8	208.7	209.5
105°	240.9	243.4	245.9	247.8	249.0	250.1	251.3	252.5
107.5°	287.5	290.5	293.5	295.3	295.8	296.4	297.0	297.5
110°	318.8	321.9	325.0	326.7	327.1	327.4	327.7	328.0





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	349.9	353.1	356.3	358.2	358.9	359.6	360.3	361.0
115°	397.5	399.8	402.2	403.6	404.2	404.7	405.2	405.7
117.5°	445.5	447.5	449.7	450.8	450.9	451.1	451.3	451.4
120°	477.7	479.5	481.4	482.4	482.7	482.8	483.1	483.4
122.5°	510.1	511.6	513.2	513.9	514.0	514.0	514.1	514.2
125°	558.4	559.6	560.7	561.1	560.9	560.9	560.7	560.5
127.5°	606.1	606.8	607.5	607.7	607.4	607.2	606.8	606.6
130°	637.8	638.8	639.6	639.7	638.9	638.1	637.2	636.5
132.5°	668.6	669.3	669.9	670.1	669.7	669.2	668.7	668.3
135°	714.8	715.6	716.4	716.9	717.0	717.0	717.0	717.1
137.5°	760.0	760.6	761.2	761.4	761.0	760.8	760.4	760.2
140°	789.8	791.0	792.1	792.2	791.3	790.4	789.5	788.6
142.5°	817.6	818.6	819.6	819.8	819.2	818.6	817.9	817.3
145°	859.4	859.9	860.4	860.5	860.1	859.6	859.2	858.8
147.5°	899.1	899.3	899.5	899.1	898.4	897.5	896.6	895.8
150°	923.8	923.8	923.8	923.3	922.3	921.3	920.3	919.3
152.5°	946.7	947.0	947.4	947.0	946.1	945.0	944.1	943.1
155°	980.2	981.0	981.8	981.5	980.2	978.8	977.5	976.1
157.5°	1009.1	1010.0	1010.7	1010.6	1009.5	1008.5	1007.4	1006.3
160°	1026.9	1027.9	1028.8	1028.9	1028.1	1027.3	1026.6	1025.8
162.5°	1043.6	1044.6	1045.6	1045.4	1044.2	1042.9	1041.7	1040.4
165°	1064.8	1065.9	1067.1	1067.0	1065.7	1064.3	1062.9	1061.6
167.5°	1081.9	1083.1	1084.3	1084.3	1083.1	1081.9	1080.7	1079.5
170°	1091.3	1092.7	1094.1	1094.1	1092.7	1091.3	1089.9	1088.6
172.5°	1098.7	1099.9	1101.1	1101.0	1099.7	1098.3	1096.9	1095.6
175°	1106.6	1107.8	1109.0	1108.9	1107.5	1106.1	1104.8	1103.5
177.5°	1110.2	1111.1	1112.1	1112.0	1110.9	1109.8	1108.7	1107.7
180°	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4

(END OF REPORT)