

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: P332732-935

Luminaire Tested: **S124DIW-S350D1050U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332732-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIW-S350D1050U935-4F0-1E-UDD-F1  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1050 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4437.5 lumens  
Efficiency: N/A  
Efficacy: 116.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

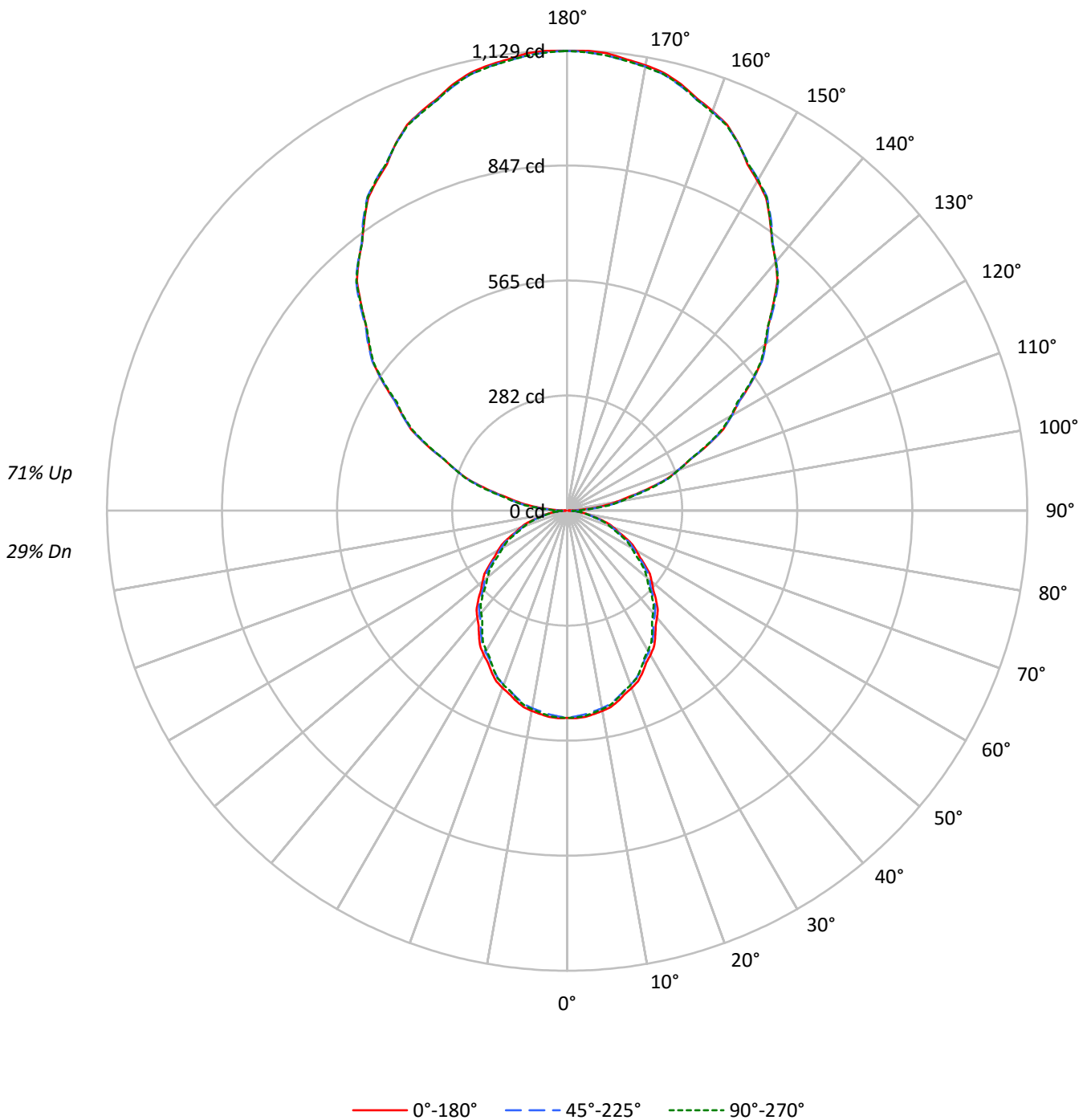
Input Watts (W): 38  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37	29				
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	31	25				
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	29	28	26	21				
3	77	68	61	55	69	61	55	50	48	44	41	37	34	31	26	24	22	18				
4	71	60	53	47	63	54	48	43	43	38	35	33	29	27	23	21	19	15				
5	65	53	46	40	58	48	42	36	38	33	30	29	26	23	21	18	17	13				
6	59	48	40	34	53	43	36	32	34	30	26	26	23	20	19	16	15	11				
7	55	43	35	30	49	39	32	28	31	26	23	24	20	18	17	15	13	10				
8	51	39	31	26	45	35	29	24	28	23	20	22	18	16	16	13	12	9				
9	47	35	28	23	42	32	26	21	26	21	18	20	17	14	14	12	11	8				
10	44	32	25	21	39	29	23	19	24	19	16	18	15	13	13	11	10	7				

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

	0°	45°	90°
0°	4106	4106	4106
5°	4118	4068	4099
10°	4092	4036	4055
15°	4043	3978	3989
20°	3978	3907	3911
25°	3902	3827	3815
30°	3811	3731	3697
35°	3714	3631	3582
40°	3616	3518	3453
45°	3513	3406	3342
50°	3399	3307	3204
55°	3275	3178	3074
60°	3152	3034	2942
65°	3012	2896	2779
70°	2858	2712	2608
75°	2617	2492	2427
80°	2329	2236	2176
85°	2038	1964	1927



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	47.9	1.1
10°-20°	135.0	3.0
20°-30°	198.6	4.5
30°-40°	230.9	5.2
40°-50°	230.9	5.2
50°-60°	202.0	4.6
60°-70°	150.0	3.4
70°-80°	85.2	1.9
80°-90°	28.0	0.6
90°-100°	74.4	1.7
100°-110°	220.4	5.0
110°-120°	374.0	8.4
120°-130°	493.2	11.1
130°-140°	553.9	12.5
140°-150°	544.3	12.3
150°-160°	457.8	10.3
160°-170°	304.6	6.9
170°-180°	106.6	2.4
0°-30°	381.5	8.6
0°-40°	612.4	13.8
0°-60°	1045.3	23.6
0°-90°	1308.5	29.5
90°-120°	668.7	15.1
90°-150°	2260.0	50.9
90°-180°	3129.0	70.5
0°-180°	4437.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	509	509	509	509	509	
5°	508	506	502	506	506	48
15°	484	482	476	478	477	136
25°	438	435	430	430	428	201
35°	377	374	368	366	364	236
45°	308	305	298	294	293	237
55°	233	231	226	221	218	208
65°	158	156	152	148	146	156
75°	84	82	80	78	78	89
85°	22	22	21	21	21	24
90°	3	12	19	24	26	5
95°	52	60	66	69	69	58
105°	203	204	208	210	213	216
115°	380	380	379	378	377	375
125°	554	554	553	551	550	493
135°	714	719	720	718	715	552
145°	868	871	872	871	869	543
155°	994	994	994	997	994	457
165°	1082	1080	1078	1083	1080	305
175°	1126	1122	1121	1126	1121	107
180°	1128	1128	1128	1128	1128	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6
2.5°	509.9	509.7	509.5	509.3	509.0	508.5	507.7	507.0	506.2	505.3	506.1
5°	508.2	507.8	507.5	507.1	506.8	506.1	505.1	504.1	503.1	502.0	503.1
7.5°	503.5	503.1	502.7	502.4	502.0	501.3	500.2	499.1	498.0	496.9	497.7
10°	499.2	498.9	498.5	498.2	497.8	497.1	495.8	494.6	493.5	492.3	493.0
12.5°	493.7	493.4	493.0	492.6	492.2	491.5	490.2	489.0	487.7	486.5	487.2
15°	483.7	483.4	483.0	482.7	482.3	481.5	480.1	478.7	477.3	476.0	476.6
17.5°	471.7	471.3	470.9	470.5	469.9	469.1	467.8	466.5	465.2	463.9	464.3
20°	463.0	462.5	462.1	461.6	461.2	460.3	458.9	457.5	456.2	454.8	455.1
22.5°	453.5	452.9	452.3	451.7	451.1	450.1	448.8	447.5	446.1	444.7	445.2
25°	438.1	437.5	436.9	436.2	435.6	434.6	433.3	432.0	430.8	429.6	429.6
27.5°	420.5	419.8	419.2	418.5	417.9	417.0	415.8	414.7	413.5	412.2	412.1
30°	408.8	408.0	407.3	406.6	405.9	404.9	403.7	402.5	401.4	400.2	399.8
32.5°	396.4	395.7	395.0	394.4	393.7	392.8	391.6	390.3	389.1	387.8	387.4
35°	376.9	376.3	375.7	375.1	374.4	373.5	372.2	370.9	369.7	368.4	367.8
37.5°	356.5	355.9	355.3	354.8	354.2	353.3	351.9	350.5	349.1	347.8	347.1
40°	343.1	342.4	341.7	341.0	340.3	339.2	337.9	336.5	335.1	333.8	332.9
42.5°	328.8	328.4	328.0	327.5	327.1	326.1	324.6	323.0	321.6	320.1	319.0
45°	307.7	307.0	306.4	305.8	305.1	304.1	302.6	301.2	299.8	298.3	297.3
47.5°	285.6	285.2	284.7	284.3	283.9	283.0	281.6	280.3	279.0	277.6	276.5
50°	270.6	270.3	269.9	269.5	269.1	268.4	267.1	265.8	264.5	263.3	262.0
52.5°	256.0	255.5	255.0	254.6	254.2	253.3	251.9	250.6	249.3	248.0	246.8
55°	232.7	232.5	232.1	231.9	231.6	230.8	229.5	228.3	227.0	225.8	224.7
57.5°	210.5	210.3	209.9	209.7	209.3	208.5	207.2	206.0	204.7	203.5	202.5
60°	195.2	194.8	194.3	193.8	193.4	192.6	191.4	190.2	189.1	187.9	187.1
62.5°	180.2	179.9	179.4	179.1	178.7	177.9	176.6	175.4	174.1	172.9	172.1
65°	157.7	157.3	156.8	156.4	155.9	155.2	154.3	153.4	152.5	151.6	150.7
67.5°	135.1	134.7	134.2	133.8	133.4	132.8	131.9	131.0	130.2	129.2	128.4
70°	121.1	120.4	119.8	119.2	118.5	117.8	117.1	116.4	115.6	114.9	114.2
72.5°	106.1	105.4	104.8	104.2	103.5	102.9	102.3	101.8	101.2	100.6	100.0
75°	83.9	83.5	83.1	82.6	82.1	81.7	81.3	80.8	80.3	79.9	79.6
77.5°	62.9	62.7	62.4	62.3	62.1	61.7	61.4	61.0	60.5	60.2	60.0
80°	50.1	49.9	49.6	49.3	49.1	48.8	48.6	48.5	48.3	48.1	47.9
82.5°	37.7	37.6	37.5	37.4	37.2	37.1	37.1	37.1	37.0	37.0	36.9
85°	22.0	22.0	22.0	22.0	22.0	22.0	21.7	21.5	21.4	21.2	21.2
87.5°	9.0	9.4	9.7	10.1	10.4	10.7	10.9	11.2	11.5	11.6	11.9
90°	2.6	4.7	6.9	9.0	11.1	13.0	14.6	16.1	17.7	19.2	20.3
92.5°	18.7	21.1	23.6	26.0	28.4	30.2	31.3	32.4	33.5	34.5	35.2
95°	52.3	54.1	55.8	57.6	59.3	60.9	62.3	63.5	64.9	66.3	66.9
97.5°	91.4	92.8	94.2	95.6	97.0	98.5	100.0	101.7	103.2	104.9	105.6
100°	122.1	122.9	123.6	124.4	125.2	126.5	128.2	129.9	131.7	133.5	133.8
102.5°	154.2	154.5	154.8	155.2	155.4	156.4	158.0	159.5	161.2	162.7	163.3
105°	203.2	203.5	203.6	203.8	204.0	204.5	205.3	206.0	206.8	207.6	208.2
107.5°	254.7	254.9	255.1	255.4	255.6	255.8	255.9	256.1	256.1	256.2	256.8
110°	289.6	290.0	290.3	290.8	291.1	291.2	291.0	290.8	290.7	290.4	290.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	325.9	326.0	326.1	326.1	326.1	326.1	325.7	325.4	325.0	324.7	324.6
115°	380.3	380.3	380.3	380.3	380.3	380.1	379.7	379.4	378.9	378.6	378.3
117.5°	431.6	431.7	431.9	432.0	432.2	432.1	431.9	431.6	431.4	431.0	430.4
120°	465.8	466.6	467.4	468.1	468.9	469.0	468.4	467.8	467.3	466.7	465.7
122.5°	501.4	501.7	502.0	502.3	502.6	502.7	502.3	502.0	501.8	501.5	500.8
125°	553.9	553.9	553.9	553.9	553.9	553.8	553.5	553.4	553.2	553.0	552.6
127.5°	601.5	602.1	602.6	603.2	603.8	604.0	603.6	603.3	603.0	602.7	602.4
130°	635.0	635.6	636.1	636.7	637.3	637.6	637.6	637.6	637.6	637.6	637.2
132.5°	669.2	669.6	670.0	670.5	670.9	671.0	670.9	670.7	670.5	670.4	670.0
135°	714.4	715.5	716.7	717.8	719.0	719.6	719.6	719.6	719.6	719.6	719.2
137.5°	763.5	764.1	764.7	765.2	765.7	766.1	766.5	766.8	767.1	767.4	766.9
140°	796.3	796.8	797.1	797.5	797.9	798.1	798.1	798.1	798.1	798.1	797.9
142.5°	826.4	826.7	827.2	827.5	827.9	828.0	827.9	827.7	827.6	827.4	827.3
145°	867.9	868.7	869.4	870.2	871.0	871.4	871.7	871.8	872.0	872.2	872.0
147.5°	909.0	910.0	910.9	911.8	912.7	913.2	913.0	912.8	912.7	912.5	912.4
150°	934.2	935.0	935.7	936.5	937.3	937.6	937.6	937.6	937.6	937.6	937.6
152.5°	957.9	958.4	958.8	959.2	959.8	960.0	960.2	960.4	960.5	960.7	961.1
155°	994.4	994.4	994.4	994.4	994.4	994.3	994.0	993.9	993.7	993.5	994.3
157.5°	1025.0	1024.7	1024.3	1024.0	1023.6	1023.5	1023.4	1023.4	1023.3	1023.3	1023.9
160°	1043.2	1043.0	1042.8	1042.6	1042.4	1042.2	1042.0	1041.8	1041.6	1041.5	1042.0
162.5°	1059.9	1059.5	1058.9	1058.4	1057.9	1057.6	1057.4	1057.2	1057.0	1056.8	1057.8
165°	1082.4	1081.8	1081.2	1080.7	1080.1	1079.6	1079.3	1078.8	1078.5	1078.1	1079.3
167.5°	1099.7	1098.9	1098.1	1097.3	1096.5	1096.1	1096.1	1096.1	1096.1	1096.2	1097.3
170°	1109.5	1108.5	1107.5	1106.6	1105.6	1105.2	1105.4	1105.6	1105.8	1106.0	1107.2
172.5°	1116.5	1115.6	1114.8	1114.0	1113.2	1112.8	1112.8	1112.9	1112.9	1112.9	1114.3
175°	1126.0	1125.1	1124.1	1123.2	1122.1	1121.6	1121.4	1121.2	1121.0	1120.8	1122.1
177.5°	1129.2	1128.4	1127.7	1126.9	1126.1	1125.7	1125.7	1125.7	1125.7	1125.7	1126.8
180°	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6
2.5°	506.8	507.6	508.2	508.6	508.5	508.4	508.3	508.2
5°	504.1	505.1	506.1	506.4	506.3	506.1	505.9	505.8
7.5°	498.4	499.3	500.1	500.4	500.3	500.2	500.1	500.0
10°	493.8	494.5	495.2	495.5	495.3	495.1	494.9	494.7
12.5°	488.0	488.8	489.7	489.9	489.7	489.4	489.1	488.9
15°	477.1	477.6	478.2	478.3	478.0	477.8	477.5	477.3
17.5°	464.6	464.9	465.3	465.4	465.2	465.0	464.9	464.7
20°	455.4	455.6	455.9	456.0	455.7	455.6	455.4	455.2
22.5°	445.7	446.2	446.7	446.8	446.4	446.1	445.7	445.5
25°	429.7	429.8	429.9	429.8	429.4	429.0	428.7	428.3
27.5°	411.8	411.6	411.4	411.0	410.6	410.2	409.7	409.2
30°	399.5	399.2	398.7	398.4	397.9	397.4	397.0	396.6
32.5°	386.9	386.5	386.1	385.6	385.2	384.7	384.3	383.8
35°	367.1	366.5	365.8	365.3	364.9	364.5	363.9	363.5
37.5°	346.4	345.7	345.0	344.4	343.8	343.2	342.6	342.0
40°	332.0	331.1	330.2	329.5	329.0	328.6	328.1	327.7
42.5°	318.0	316.9	315.9	315.2	314.9	314.6	314.3	314.0
45°	296.4	295.3	294.4	293.7	293.4	293.2	292.9	292.7
47.5°	275.3	274.2	273.1	272.2	271.6	270.9	270.2	269.5
50°	260.7	259.5	258.2	257.3	256.8	256.2	255.6	255.1
52.5°	245.7	244.6	243.5	242.5	241.9	241.2	240.5	239.8
55°	223.6	222.5	221.4	220.6	220.1	219.6	219.0	218.4
57.5°	201.5	200.4	199.4	198.6	198.1	197.6	197.1	196.5
60°	186.2	185.5	184.6	184.0	183.6	183.0	182.6	182.2
62.5°	171.4	170.7	169.9	169.3	168.8	168.4	168.0	167.5
65°	149.8	148.9	148.0	147.3	146.9	146.4	145.9	145.5
67.5°	127.5	126.7	125.8	125.3	125.2	125.0	124.9	124.8
70°	113.5	112.8	112.0	111.5	111.2	111.0	110.7	110.5
72.5°	99.4	98.8	98.2	97.8	97.6	97.3	97.0	96.8
75°	79.1	78.8	78.4	78.2	78.1	78.0	77.9	77.8
77.5°	59.9	59.8	59.8	59.6	59.3	59.1	58.8	58.6
80°	47.7	47.5	47.4	47.3	47.1	47.0	46.9	46.8
82.5°	36.8	36.7	36.6	36.5	36.4	36.2	36.2	36.1
85°	21.2	21.2	21.2	21.2	21.1	21.0	20.8	20.8
87.5°	12.1	12.4	12.6	12.7	12.8	12.9	13.0	13.1
90°	21.5	22.6	23.8	24.6	25.0	25.4	25.7	26.2
92.5°	35.9	36.6	37.4	37.8	38.1	38.2	38.5	38.7
95°	67.4	68.0	68.6	68.9	68.9	68.9	68.9	68.9
97.5°	106.2	106.9	107.6	108.0	108.0	108.0	108.0	108.0
100°	134.2	134.6	135.0	135.2	135.2	135.2	135.2	135.2
102.5°	163.8	164.4	165.0	165.3	165.4	165.6	165.7	165.9
105°	208.8	209.3	209.9	210.5	211.1	211.6	212.2	212.8
107.5°	257.4	257.9	258.5	258.6	258.6	258.6	258.6	258.6
110°	289.6	289.3	288.9	289.0	289.6	290.2	290.8	291.4





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	324.5	324.4	324.3	324.3	324.5	324.6	324.7	324.9
115°	378.2	378.0	377.8	377.5	377.4	377.2	377.0	376.8
117.5°	429.7	429.0	428.4	427.9	427.5	427.1	426.7	426.4
120°	464.7	463.7	462.8	462.4	462.9	463.2	463.6	464.0
122.5°	500.2	499.6	498.9	498.2	497.5	496.8	496.1	495.4
125°	552.2	551.8	551.5	551.0	550.7	550.3	549.9	549.5
127.5°	601.9	601.6	601.2	600.8	600.5	600.2	599.9	599.6
130°	636.8	636.5	636.0	635.5	634.7	634.0	633.2	632.4
132.5°	669.6	669.3	668.8	668.5	668.2	667.9	667.5	667.3
135°	718.8	718.4	718.1	717.6	717.0	716.4	715.8	715.2
137.5°	766.4	765.9	765.3	765.2	765.3	765.4	765.5	765.6
140°	797.7	797.5	797.3	797.1	796.9	796.8	796.5	796.3
142.5°	827.3	827.2	827.2	827.2	827.2	827.2	827.1	827.1
145°	871.8	871.7	871.4	871.1	870.5	869.9	869.4	868.7
147.5°	912.2	912.1	911.9	911.7	911.5	911.4	911.1	910.9
150°	937.6	937.6	937.6	937.5	937.4	937.2	936.9	936.8
152.5°	961.6	962.1	962.5	962.5	962.0	961.5	961.0	960.5
155°	995.1	995.8	996.6	996.6	995.8	995.1	994.3	993.5
157.5°	1024.5	1025.0	1025.6	1025.6	1024.9	1024.2	1023.6	1023.0
160°	1042.6	1043.2	1043.8	1043.5	1042.6	1041.6	1040.7	1039.7
162.5°	1058.9	1059.9	1061.0	1061.0	1060.1	1059.1	1058.1	1057.1
165°	1080.4	1081.6	1082.7	1082.9	1082.1	1081.3	1080.6	1079.8
167.5°	1098.5	1099.7	1100.9	1100.9	1099.7	1098.5	1097.3	1096.1
170°	1108.3	1109.5	1110.6	1110.5	1109.2	1107.8	1106.5	1105.1
172.5°	1115.6	1116.9	1118.3	1118.2	1116.9	1115.5	1114.1	1112.8
175°	1123.5	1124.9	1126.3	1126.3	1124.9	1123.5	1122.1	1120.8
177.5°	1127.9	1128.9	1130.1	1130.0	1128.7	1127.5	1126.3	1125.0
180°	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8

(END OF REPORT)