

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: P332514-940

Luminaire Tested: **S124DIP-S350D810U940-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332514-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S350D810U940-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 810 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4238.0 lumens
Efficiency: N/A
Efficacy: 135.8 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

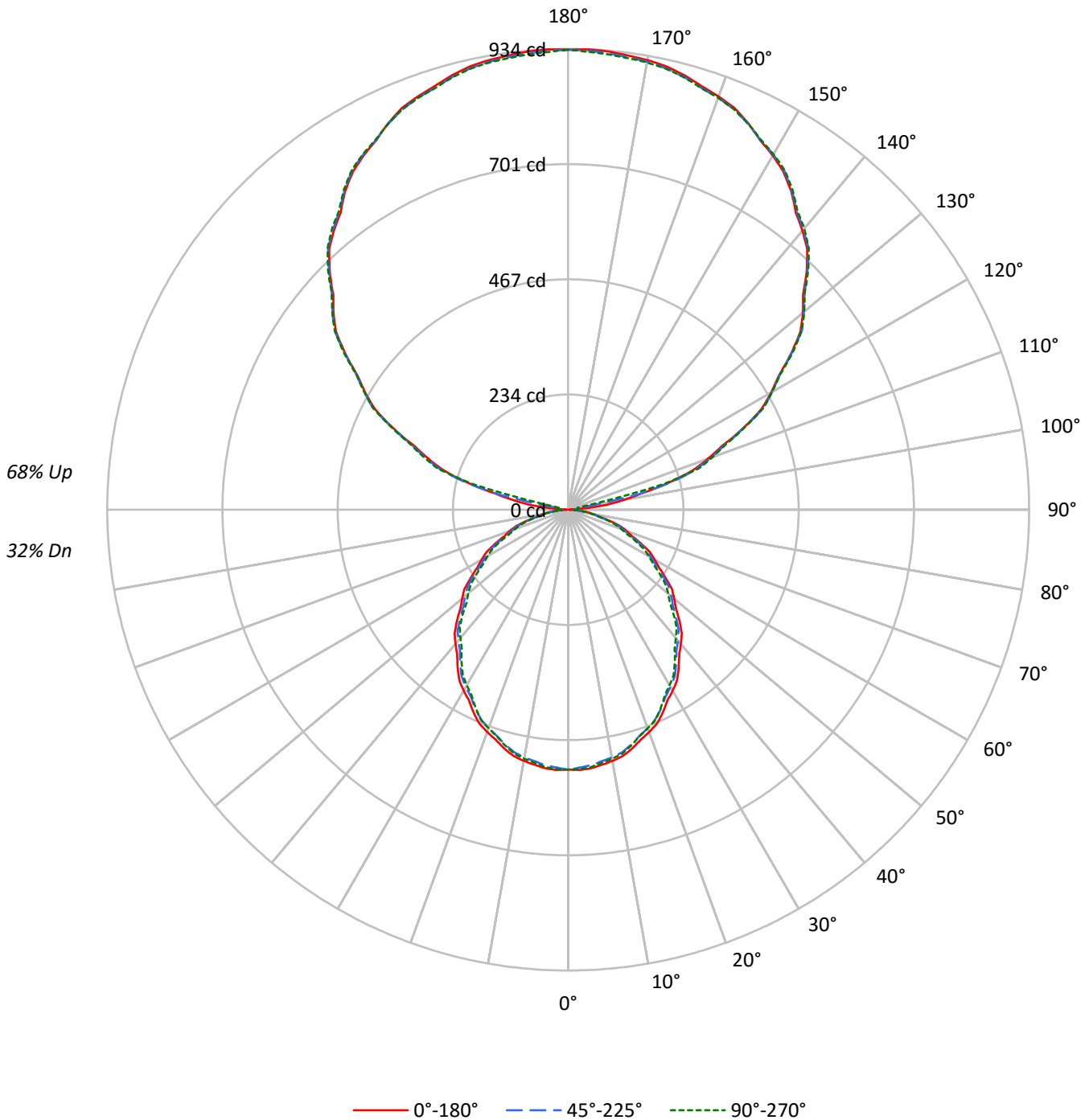
Input Watts (W): 31.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0		
RCR																										
0	103	103	103	103	93	93	93	93	73	73	73	56	56	56	40	40	40	32					32			
1	94	89	86	82	84	81	77	75	64	62	60	49	47	46	35	34	33	27					27			
2	85	78	72	67	76	70	65	61	56	53	50	43	41	39	31	29	28	22					22			
3	78	69	61	56	70	62	56	51	49	45	42	38	35	33	27	25	24	19					19			
4	71	61	53	47	64	55	48	43	44	39	35	34	30	28	24	22	20	16					16			
5	65	54	46	40	58	49	42	37	39	34	30	30	27	24	22	20	18	14					14			
6	60	48	40	35	54	44	37	32	35	30	26	27	24	21	20	17	16	12					12			
7	55	43	36	30	50	39	33	28	32	27	23	25	21	18	18	16	14	11					11			
8	51	39	32	27	46	36	29	25	29	24	20	23	19	16	17	14	12	10					10			
9	48	36	28	24	43	33	26	22	26	22	18	21	17	15	15	13	11	9					9			
10	44	33	26	21	40	30	24	19	24	20	16	19	16	13	14	12	10	8					8			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4252	4252	4252
5°	4265	4214	4245
10°	4238	4180	4200
15°	4187	4120	4131
20°	4119	4046	4050
25°	4041	3963	3951
30°	3947	3864	3828
35°	3847	3761	3710
40°	3744	3643	3577
45°	3639	3528	3460
50°	3520	3425	3318
55°	3392	3291	3184
60°	3265	3142	3047
65°	3121	2999	2879
70°	2960	2809	2700
75°	2711	2583	2514
80°	2413	2315	2255
85°	2112	2029	1991



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.6	1.2
10°-20°	139.8	3.3
20°-30°	205.7	4.9
30°-40°	239.2	5.6
40°-50°	239.2	5.6
50°-60°	209.2	4.9
60°-70°	155.4	3.7
70°-80°	88.3	2.1
80°-90°	28.2	0.7
90°-100°	31.9	0.8
100°-110°	203.3	4.8
110°-120°	388.9	9.2
120°-130°	493.7	11.6
130°-140°	528.2	12.5
140°-150°	493.9	11.7
150°-160°	398.3	9.4
160°-170°	256.9	6.1
170°-180°	88.5	2.1
0°-30°	395.1	9.3
0°-40°	634.2	15.0
0°-60°	1082.6	25.5
0°-90°	1354.4	32.0
90°-120°	624.1	14.7
90°-150°	2139.8	50.5
90°-180°	2884.0	68.1
0°-180°	4238.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	527	527	527	527	527	
5°	526	524	520	524	524	50
15°	501	499	493	495	494	141
25°	454	451	445	445	444	209
35°	390	387	382	379	376	244
45°	319	316	309	305	303	246
55°	241	240	234	229	226	216
65°	163	161	157	153	151	162
75°	87	85	83	81	81	92
85°	23	23	22	22	22	25
90°	2	10	15	19	21	3
95°	38	16	15	19	20	49
105°	210	214	218	222	199	220
115°	392	394	393	395	395	385
125°	551	553	552	554	555	492
135°	683	683	685	687	688	526
145°	788	790	790	791	792	492
155°	864	864	862	865	863	398
165°	911	908	908	913	907	257
175°	932	928	929	934	927	89
180°	932	932	932	932	932	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7
2.5°	528.1	527.9	527.6	527.4	527.2	526.6	525.8	525.0	524.2	523.3	524.1
5°	526.3	525.9	525.6	525.2	524.9	524.1	523.1	522.1	521.0	520.0	521.0
7.5°	521.5	521.0	520.7	520.3	520.0	519.2	518.0	516.9	515.8	514.6	515.4
10°	517.0	516.7	516.3	515.9	515.6	514.8	513.5	512.3	511.1	509.9	510.6
12.5°	511.3	511.0	510.6	510.1	509.8	509.0	507.7	506.4	505.1	503.8	504.6
15°	501.0	500.6	500.2	499.9	499.5	498.6	497.2	495.8	494.4	493.0	493.6
17.5°	488.6	488.1	487.7	487.2	486.7	485.8	484.5	483.1	481.8	480.5	480.8
20°	479.5	479.0	478.6	478.0	477.6	476.7	475.3	473.9	472.4	471.0	471.4
22.5°	469.7	469.0	468.4	467.8	467.2	466.2	464.8	463.4	462.0	460.6	461.1
25°	453.7	453.1	452.5	451.7	451.1	450.1	448.8	447.5	446.2	444.9	445.0
27.5°	435.5	434.8	434.2	433.5	432.8	431.9	430.6	429.4	428.2	427.0	426.8
30°	423.4	422.6	421.9	421.1	420.4	419.4	418.1	416.9	415.7	414.5	414.1
32.5°	410.5	409.8	409.1	408.5	407.8	406.8	405.6	404.2	403.0	401.6	401.2
35°	390.4	389.8	389.1	388.4	387.8	386.8	385.5	384.1	382.9	381.6	380.9
37.5°	369.3	368.6	368.0	367.5	366.8	365.9	364.4	363.0	361.6	360.2	359.4
40°	355.3	354.6	353.9	353.1	352.4	351.3	349.9	348.5	347.1	345.7	344.7
42.5°	340.5	340.1	339.7	339.2	338.8	337.7	336.2	334.6	333.1	331.5	330.4
45°	318.7	318.0	317.4	316.7	316.0	315.0	313.4	311.9	310.5	309.0	307.9
47.5°	295.8	295.3	294.9	294.4	294.0	293.1	291.7	290.3	288.9	287.5	286.3
50°	280.3	279.9	279.6	279.1	278.7	277.9	276.6	275.3	273.9	272.7	271.3
52.5°	265.1	264.6	264.1	263.7	263.2	262.3	260.9	259.6	258.2	256.8	255.7
55°	241.0	240.8	240.4	240.1	239.9	239.1	237.7	236.5	235.1	233.8	232.7
57.5°	218.0	217.8	217.4	217.1	216.8	216.0	214.6	213.4	212.0	210.8	209.7
60°	202.2	201.7	201.3	200.7	200.3	199.5	198.2	197.0	195.8	194.6	193.8
62.5°	186.6	186.3	185.8	185.5	185.0	184.2	182.9	181.6	180.3	179.1	178.3
65°	163.4	162.9	162.4	161.9	161.5	160.8	159.8	158.9	157.9	157.0	156.0
67.5°	139.9	139.5	139.0	138.6	138.1	137.5	136.6	135.7	134.8	133.8	133.0
70°	125.4	124.7	124.0	123.4	122.7	122.0	121.3	120.6	119.8	119.0	118.2
72.5°	109.9	109.1	108.5	107.9	107.2	106.6	105.9	105.4	104.8	104.2	103.5
75°	86.9	86.5	86.1	85.5	85.1	84.6	84.2	83.6	83.2	82.8	82.4
77.5°	65.1	64.9	64.6	64.5	64.3	63.9	63.6	63.1	62.7	62.3	62.2
80°	51.9	51.6	51.4	51.1	50.8	50.6	50.4	50.2	50.0	49.8	49.6
82.5°	39.1	39.0	38.8	38.7	38.5	38.4	38.4	38.4	38.3	38.3	38.3
85°	22.8	22.8	22.8	22.8	22.8	22.7	22.5	22.3	22.1	21.9	21.9
87.5°	9.2	9.5	9.7	10.0	10.3	10.5	10.6	10.8	11.0	11.1	11.3
90°	2.1	3.8	5.5	7.2	8.9	10.3	11.6	12.8	14.1	15.3	16.2
92.5°	8.8	8.9	9.0	9.1	9.2	9.8	11.1	12.3	13.6	14.8	15.7
95°	38.3	33.1	27.8	22.6	17.3	14.7	14.9	15.1	15.2	15.3	16.2
97.5°	81.4	84.7	88.0	91.3	94.6	87.6	70.3	53.0	35.7	18.4	18.5
100°	114.3	117.2	119.9	122.7	125.5	116.2	94.8	73.5	52.1	30.7	28.0
102.5°	151.1	153.2	155.2	157.3	159.3	159.0	156.1	153.4	150.6	147.8	119.4
105°	209.8	210.8	211.7	212.7	213.6	214.5	215.2	216.0	216.8	217.5	218.9
107.5°	264.4	264.8	265.3	265.8	266.3	267.0	268.0	269.1	270.2	271.3	271.9
110°	301.2	301.7	302.1	302.6	303.1	303.7	304.7	305.6	306.6	307.5	307.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	336.9	337.7	338.6	339.4	340.3	340.9	341.3	341.7	342.1	342.6	342.6
115°	391.8	392.3	392.8	393.2	393.7	393.9	393.7	393.5	393.4	393.2	393.5
117.5°	441.3	441.9	442.6	443.2	443.8	444.3	444.6	445.0	445.3	445.7	445.6
120°	474.8	475.5	476.1	476.7	477.2	477.5	477.3	477.2	477.1	476.9	477.2
122.5°	506.0	506.4	506.8	507.1	507.6	507.8	508.0	508.3	508.5	508.7	508.9
125°	550.8	551.4	552.1	552.7	553.3	553.4	553.1	552.9	552.5	552.2	552.7
127.5°	593.2	593.3	593.5	593.7	593.8	594.2	594.9	595.7	596.4	597.1	597.0
130°	620.5	620.7	620.8	621.0	621.2	621.4	621.9	622.4	622.9	623.3	623.5
132.5°	645.6	645.9	646.2	646.5	646.8	647.2	647.7	648.4	648.9	649.5	649.7
135°	683.3	683.1	683.0	682.8	682.7	682.9	683.5	684.1	684.7	685.4	685.6
137.5°	716.6	716.7	716.8	716.8	716.8	717.2	717.9	718.6	719.3	720.0	720.3
140°	738.3	738.7	739.0	739.3	739.6	739.9	740.2	740.6	740.8	741.1	741.6
142.5°	757.9	758.4	759.0	759.6	760.1	760.5	760.6	760.9	761.1	761.3	761.6
145°	787.8	788.4	788.8	789.3	789.7	790.0	790.0	790.0	790.0	790.0	790.1
147.5°	811.7	812.6	813.4	814.3	815.2	815.6	815.4	815.2	815.0	814.9	815.0
150°	829.0	829.6	830.3	830.9	831.4	831.7	831.5	831.4	831.3	831.1	831.1
152.5°	843.5	844.0	844.5	845.0	845.5	845.6	845.3	845.1	844.7	844.5	844.7
155°	863.9	864.0	864.2	864.3	864.5	864.3	863.9	863.4	862.9	862.5	863.1
157.5°	881.0	880.9	880.8	880.7	880.7	880.3	879.8	879.3	878.8	878.2	879.0
160°	891.1	890.6	890.1	889.7	889.2	888.9	888.8	888.6	888.4	888.2	889.2
162.5°	900.0	899.4	898.8	898.2	897.6	897.2	897.1	897.0	896.8	896.6	897.6
165°	911.2	910.5	909.7	908.9	908.2	907.8	907.8	907.8	907.8	907.8	909.0
167.5°	920.2	919.4	918.6	917.7	916.9	916.5	916.4	916.3	916.2	916.1	917.5
170°	925.2	924.3	923.4	922.4	921.5	921.1	921.2	921.4	921.6	921.8	922.9
172.5°	928.5	927.6	926.7	925.8	924.9	924.4	924.6	924.8	924.9	925.1	926.3
175°	932.2	931.2	930.3	929.4	928.4	928.1	928.3	928.4	928.5	928.7	930.1
177.5°	933.9	933.0	932.1	931.2	930.4	930.1	930.3	930.6	930.9	931.0	932.0
180°	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7
2.5°	524.9	525.7	526.4	526.7	526.6	526.6	526.5	526.4
5°	522.1	523.1	524.1	524.5	524.3	524.1	524.0	523.8
7.5°	516.2	517.1	517.9	518.3	518.2	518.0	517.9	517.8
10°	511.4	512.1	512.9	513.2	513.0	512.7	512.6	512.4
12.5°	505.4	506.2	507.1	507.4	507.1	506.8	506.6	506.3
15°	494.1	494.6	495.3	495.3	495.1	494.8	494.5	494.3
17.5°	481.2	481.5	481.9	482.0	481.8	481.6	481.4	481.3
20°	471.6	471.9	472.2	472.3	472.0	471.8	471.6	471.4
22.5°	461.5	462.1	462.6	462.7	462.4	462.0	461.6	461.4
25°	445.1	445.1	445.2	445.1	444.7	444.3	444.0	443.6
27.5°	426.5	426.3	426.1	425.7	425.3	424.8	424.3	423.8
30°	413.8	413.4	413.0	412.6	412.1	411.6	411.2	410.7
32.5°	400.7	400.3	399.8	399.4	399.0	398.4	398.0	397.5
35°	380.2	379.6	378.9	378.4	377.9	377.5	376.9	376.5
37.5°	358.7	358.0	357.3	356.7	356.1	355.4	354.8	354.2
40°	343.8	342.9	342.0	341.3	340.7	340.3	339.8	339.4
42.5°	329.3	328.2	327.2	326.5	326.1	325.8	325.5	325.2
45°	306.9	305.9	304.9	304.2	303.9	303.6	303.4	303.1
47.5°	285.2	284.0	282.9	282.0	281.2	280.5	279.8	279.1
50°	270.0	268.8	267.4	266.4	265.9	265.4	264.7	264.2
52.5°	254.5	253.3	252.2	251.2	250.5	249.8	249.1	248.3
55°	231.6	230.4	229.3	228.5	227.9	227.4	226.8	226.2
57.5°	208.7	207.6	206.5	205.7	205.2	204.6	204.1	203.5
60°	192.9	192.1	191.2	190.6	190.1	189.6	189.1	188.7
62.5°	177.5	176.7	175.9	175.3	174.9	174.4	174.0	173.4
65°	155.2	154.2	153.3	152.6	152.1	151.6	151.1	150.7
67.5°	132.1	131.2	130.3	129.7	129.7	129.5	129.4	129.2
70°	117.5	116.8	116.0	115.5	115.2	114.9	114.7	114.4
72.5°	103.0	102.4	101.7	101.3	101.0	100.8	100.5	100.2
75°	81.9	81.6	81.2	81.0	80.9	80.8	80.7	80.6
77.5°	62.1	62.0	61.9	61.7	61.4	61.2	60.9	60.7
80°	49.4	49.2	49.0	49.0	48.8	48.7	48.6	48.5
82.5°	38.1	38.0	37.9	37.8	37.7	37.5	37.5	37.4
85°	21.9	21.9	21.9	21.9	21.8	21.8	21.6	21.5
87.5°	11.5	11.8	11.9	12.0	12.1	12.1	12.2	12.3
90°	17.2	18.1	19.1	19.7	20.0	20.3	20.6	21.0
92.5°	16.7	17.6	18.5	19.0	19.1	19.1	19.2	19.3
95°	17.2	18.1	19.1	19.6	19.8	19.9	20.1	20.2
97.5°	18.6	18.7	18.8	18.9	19.1	19.2	19.4	19.5
100°	25.4	22.7	20.2	18.9	19.1	19.2	19.4	19.5
102.5°	91.0	62.6	34.2	20.0	20.0	20.0	20.1	20.1
105°	220.3	221.7	223.1	221.1	215.4	209.8	204.3	198.7
107.5°	272.6	273.2	273.9	274.6	275.2	275.7	276.3	277.0
110°	308.1	308.4	308.7	309.1	309.6	310.0	310.5	310.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	342.5	342.4	342.3	342.6	343.2	343.8	344.4	345.0
115°	393.9	394.1	394.5	394.7	394.7	394.7	394.7	394.7
117.5°	445.5	445.5	445.4	445.3	445.3	445.2	445.1	445.1
120°	477.5	477.9	478.1	478.1	477.9	477.5	477.2	476.9
122.5°	509.1	509.3	509.4	509.3	509.1	508.7	508.5	508.1
125°	553.1	553.6	554.0	554.4	554.6	554.6	554.8	555.0
127.5°	596.9	596.8	596.7	596.6	596.5	596.4	596.3	596.1
130°	623.7	623.8	623.9	624.0	624.0	624.0	624.0	624.0
132.5°	649.9	650.0	650.1	650.1	650.1	649.9	649.8	649.7
135°	686.0	686.3	686.6	686.9	687.2	687.5	687.9	688.1
137.5°	720.6	720.9	721.3	721.4	721.3	721.2	721.1	721.0
140°	742.1	742.5	743.0	743.3	743.5	743.6	743.8	744.0
142.5°	761.9	762.2	762.6	762.8	762.8	762.9	762.9	762.9
145°	790.2	790.4	790.6	790.8	791.1	791.4	791.8	792.0
147.5°	815.2	815.3	815.4	815.6	815.7	815.8	816.0	816.2
150°	831.1	831.1	831.1	831.2	831.3	831.4	831.6	831.8
152.5°	845.0	845.3	845.4	845.5	845.4	845.3	845.3	845.2
155°	863.7	864.3	865.0	865.0	864.5	864.1	863.6	863.2
157.5°	879.9	880.7	881.5	881.5	880.7	879.9	879.0	878.2
160°	890.1	891.1	892.0	892.0	891.1	890.1	889.2	888.2
162.5°	898.5	899.4	900.4	900.3	899.2	898.1	897.2	896.1
165°	910.3	911.5	912.8	912.7	911.2	909.9	908.5	907.0
167.5°	918.9	920.2	921.6	921.5	920.0	918.4	916.9	915.3
170°	924.2	925.4	926.7	926.5	925.0	923.5	921.9	920.3
172.5°	927.6	928.8	930.1	929.8	928.2	926.5	924.8	923.1
175°	931.5	932.9	934.2	934.1	932.2	930.3	928.4	926.6
177.5°	933.1	934.1	935.0	934.8	933.3	931.8	930.3	928.8
180°	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2

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