

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: P332512-830

Luminaire Tested: **S124DIP-S350D810U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332512-830  
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: S124DIP-S350D810U830-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4004.3 lumens  
Efficiency: N/A  
Efficacy: 128.3 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

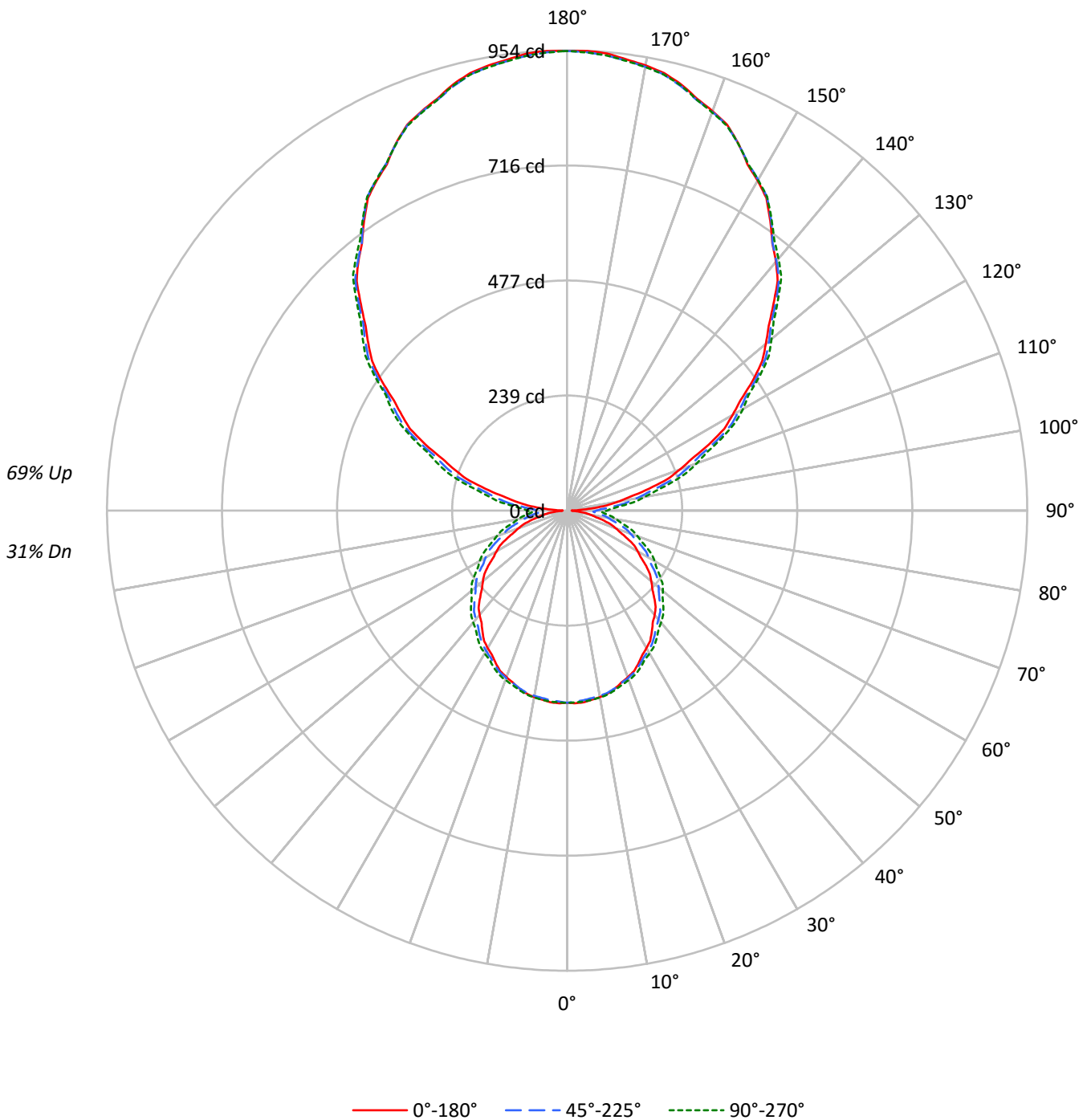
Input Watts (W): 31.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39	31
1	93	88	84	81	83	80	76	73	63	61	58	48	46	45	33	33	32	25
2	84	77	71	65	75	69	64	59	55	51	48	41	39	37	29	27	26	21
3	77	67	60	54	69	61	54	49	48	43	40	36	33	31	25	24	22	17
4	70	59	51	45	63	53	47	41	42	38	34	32	29	26	23	20	19	14
5	64	53	45	39	57	47	40	35	38	33	29	29	25	22	20	18	16	12
6	59	47	39	33	53	42	35	30	34	29	25	26	22	19	18	16	14	11
7	54	42	34	29	49	38	31	26	31	25	22	23	20	17	17	14	12	10
8	50	38	31	25	45	35	28	23	28	23	19	21	18	15	15	13	11	8
9	47	35	27	22	42	31	25	21	25	20	17	20	16	13	14	12	10	8
10	44	32	25	20	39	29	23	18	23	18	15	18	14	12	13	11	9	7

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

	0°	45°	90°
0°	3216	3216	3216
5°	3227	3143	3152
10°	3207	3092	3090
15°	3177	3032	3016
20°	3134	2967	2944
25°	3086	2893	2865
30°	3032	2819	2784
35°	2972	2744	2713
40°	2925	2674	2639
45°	2853	2607	2575
50°	2794	2532	2508
55°	2732	2460	2429
60°	2635	2369	2357
65°	2529	2272	2269
70°	2400	2161	2166
75°	2220	2037	2074
80°	2021	1919	1981
85°	1773	1815	1928



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.7	0.9
10°-20°	108.1	2.7
20°-30°	163.4	4.1
30°-40°	197.8	4.9
40°-50°	209.1	5.2
50°-60°	196.8	4.9
60°-70°	163.2	4.1
70°-80°	114.7	2.9
80°-90°	67.7	1.7
90°-100°	101.3	2.5
100°-110°	214.7	5.4
110°-120°	335.1	8.4
120°-130°	427.4	10.7
130°-140°	472.6	11.8
140°-150°	460.7	11.5
150°-160°	386.7	9.7
160°-170°	257.3	6.4
170°-180°	90.1	2.2
0°-30°	309.3	7.7
0°-40°	507.0	12.7
0°-60°	912.9	22.8
0°-90°	1258.4	31.4
90°-120°	651.1	16.3
90°-150°	2011.8	50.2
90°-180°	2746.0	68.6
0°-180°	4004.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	398	398	398	398	398	
5°	399	397	394	398	398	38
15°	382	383	381	385	385	108
25°	350	352	354	358	359	161
35°	306	311	316	322	324	192
45°	255	264	272	279	282	197
55°	200	210	223	231	234	178
65°	138	153	168	178	182	137
75°	77	93	112	124	128	82
85°	24	42	62	75	80	25
90°	9	35	60	77	83	8
95°	50	72	95	108	113	54
105°	176	186	205	218	224	187
115°	324	328	341	350	352	320
125°	470	470	480	486	488	419
135°	604	609	612	617	618	468
145°	734	736	737	739	738	459
155°	840	840	839	842	839	386
165°	914	912	911	915	912	258
175°	951	948	947	952	947	90
180°	953	953	953	953	953	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
2.5°	399.8	399.5	399.4	399.1	398.9	398.4	397.8	397.2	396.5	395.9	396.4
5°	398.9	398.5	398.2	397.9	397.7	397.2	396.4	395.8	395.1	394.4	395.2
7.5°	395.5	395.3	395.1	394.9	394.7	394.4	393.8	393.2	392.7	392.1	392.9
10°	392.6	392.5	392.4	392.3	392.2	391.9	391.4	390.9	390.4	389.9	390.8
12.5°	388.7	388.6	388.6	388.6	388.6	388.4	388.0	387.8	387.4	387.1	387.9
15°	382.3	382.5	382.6	382.7	382.8	382.7	382.3	382.0	381.7	381.4	382.3
17.5°	373.7	374.0	374.3	374.6	374.8	375.0	374.9	374.8	374.8	374.8	375.7
20°	367.6	367.9	368.3	368.5	368.8	369.0	369.1	369.2	369.3	369.4	370.4
22.5°	360.8	361.2	361.6	361.9	362.3	362.6	362.8	363.0	363.2	363.4	364.3
25°	349.8	350.3	351.0	351.6	352.1	352.6	352.9	353.2	353.5	353.8	354.9
27.5°	337.4	338.4	339.2	340.1	340.9	341.6	342.0	342.5	343.0	343.5	344.4
30°	329.2	330.1	330.8	331.6	332.4	333.2	333.8	334.5	335.3	335.9	337.1
32.5°	320.4	321.3	322.3	323.2	324.1	325.0	325.7	326.5	327.3	328.1	329.3
35°	306.0	307.3	308.4	309.6	310.9	311.9	312.9	313.9	314.9	315.8	317.3
37.5°	291.7	293.0	294.5	295.8	297.2	298.4	299.7	301.0	302.2	303.4	304.8
40°	282.4	283.7	285.0	286.3	287.6	288.9	290.3	291.7	293.0	294.5	296.0
42.5°	271.7	273.1	274.6	276.1	277.5	279.0	280.7	282.3	283.9	285.5	287.2
45°	255.1	257.0	258.9	260.8	262.7	264.6	266.5	268.3	270.2	272.1	273.8
47.5°	239.4	241.4	243.3	245.2	247.1	249.2	251.4	253.6	255.8	258.0	259.7
50°	228.0	230.2	232.3	234.5	236.7	238.8	241.1	243.3	245.4	247.6	249.6
52.5°	216.6	218.8	220.9	223.1	225.3	227.6	230.1	232.6	235.1	237.6	239.6
55°	199.9	202.0	204.1	206.1	208.2	210.8	213.7	216.7	219.6	222.6	224.6
57.5°	181.3	183.8	186.3	189.0	191.5	194.3	197.3	200.2	203.1	206.1	208.5
60°	169.1	171.6	174.3	176.8	179.4	182.3	185.6	188.9	192.1	195.4	197.7
62.5°	157.3	160.1	163.0	165.8	168.5	171.6	174.8	178.1	181.4	184.7	187.0
65°	138.3	141.5	144.7	147.8	151.0	154.3	157.6	161.0	164.4	167.8	170.2
67.5°	120.0	123.4	126.8	130.2	133.5	137.0	140.6	144.2	147.8	151.4	153.9
70°	107.5	110.8	114.2	117.6	121.0	124.6	128.4	132.1	135.9	139.7	142.3
72.5°	95.4	98.9	102.3	105.8	109.1	112.9	116.9	120.9	124.9	128.9	131.5
75°	76.7	80.4	84.1	87.8	91.4	95.3	99.5	103.7	107.8	112.0	114.8
77.5°	59.4	63.2	67.1	71.0	74.8	79.0	83.3	87.8	92.1	96.4	99.2
80°	48.6	52.6	56.6	60.5	64.5	68.6	73.0	77.4	81.7	86.1	89.1
82.5°	37.9	42.0	46.2	50.3	54.4	58.6	63.1	67.4	71.7	76.2	79.2
85°	23.7	27.8	32.0	36.1	40.3	44.6	49.1	53.5	58.0	62.5	65.4
87.5°	13.7	18.1	22.4	26.9	31.3	35.8	40.3	45.0	49.6	54.2	57.3
90°	9.3	15.1	20.9	26.7	32.4	38.1	43.6	49.2	54.8	60.4	64.3
92.5°	22.5	28.2	33.8	39.5	45.1	50.5	55.7	60.9	66.1	71.2	74.6
95°	50.0	54.8	59.5	64.3	69.0	74.0	79.2	84.4	89.6	94.8	98.0
97.5°	82.5	86.5	90.5	94.4	98.5	103.1	108.5	113.9	119.2	124.6	127.8
100°	108.1	111.3	114.5	117.7	121.0	125.3	130.6	136.0	141.3	146.7	149.7
102.5°	135.2	137.7	140.3	142.8	145.2	149.1	154.2	159.4	164.5	169.7	172.7
105°	175.7	177.9	180.0	182.1	184.3	187.6	191.8	196.1	200.5	204.8	207.8
107.5°	219.0	220.9	222.7	224.5	226.4	229.0	232.6	236.2	239.8	243.4	246.3
110°	248.2	250.0	251.7	253.4	255.1	257.6	260.9	264.2	267.5	270.8	272.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	278.5	279.8	281.1	282.4	283.7	285.9	288.9	291.9	294.9	297.9	300.0
115°	324.0	324.8	325.7	326.6	327.5	329.4	332.2	335.1	337.9	340.7	342.8
117.5°	367.2	367.9	368.5	369.2	369.9	371.6	374.3	377.0	379.8	382.5	384.0
120°	395.7	396.7	397.7	398.6	399.5	401.2	403.6	406.0	408.3	410.8	411.9
122.5°	425.7	426.1	426.4	426.8	427.1	428.5	430.9	433.5	435.9	438.4	439.9
125°	469.7	469.6	469.5	469.4	469.3	470.4	472.7	475.0	477.4	479.7	481.3
127.5°	509.8	510.2	510.7	511.0	511.4	512.5	514.1	515.7	517.4	519.0	520.5
130°	537.8	538.2	538.6	538.9	539.3	540.4	542.0	543.5	545.1	546.7	548.2
132.5°	566.7	566.9	567.2	567.4	567.7	568.4	569.6	570.7	571.8	573.0	574.3
135°	604.4	605.4	606.3	607.4	608.3	609.2	609.8	610.6	611.2	611.9	613.2
137.5°	645.9	646.3	646.7	647.1	647.3	647.9	648.5	649.0	649.7	650.3	651.3
140°	673.6	673.9	674.1	674.3	674.6	674.8	674.9	675.0	675.0	675.1	676.3
142.5°	698.6	699.0	699.3	699.6	699.8	699.9	699.7	699.6	699.4	699.2	700.3
145°	733.7	734.1	734.7	735.3	735.8	736.2	736.4	736.5	736.7	736.9	737.3
147.5°	768.5	769.1	769.8	770.4	771.2	771.5	771.3	771.2	771.0	770.9	770.9
150°	789.7	790.2	790.7	791.3	791.8	792.1	792.1	792.1	792.1	792.1	792.1
152.5°	809.4	809.6	810.0	810.4	810.8	811.1	811.2	811.3	811.4	811.6	812.0
155°	840.0	840.0	840.0	840.0	840.0	839.9	839.8	839.6	839.4	839.3	839.9
157.5°	866.0	865.6	865.3	865.1	864.8	864.6	864.6	864.6	864.5	864.5	865.0
160°	881.3	881.1	881.0	880.8	880.6	880.4	880.3	880.1	880.0	879.9	880.3
162.5°	895.4	895.0	894.6	894.2	893.7	893.4	893.2	893.2	893.0	892.8	893.7
165°	914.5	914.0	913.5	912.9	912.5	912.1	911.7	911.4	911.1	910.8	911.7
167.5°	929.1	928.3	927.7	927.0	926.3	926.0	926.0	926.0	926.0	926.0	927.1
170°	937.3	936.5	935.7	934.8	934.1	933.7	933.9	934.1	934.2	934.3	935.3
172.5°	943.2	942.5	941.8	941.1	940.5	940.1	940.2	940.2	940.2	940.3	941.3
175°	951.3	950.5	949.6	948.9	948.0	947.5	947.3	947.2	947.1	946.9	948.0
177.5°	953.9	953.3	952.6	952.0	951.3	951.0	951.0	951.0	951.0	951.0	951.9
180°	952.7	952.7	952.7	952.7	952.7	952.7	952.7	952.7	952.7	952.7	952.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
2.5°	397.0	397.6	398.1	398.3	398.3	398.2	398.1	398.0
5°	396.0	396.7	397.6	397.9	397.8	397.7	397.6	397.5
7.5°	393.9	394.7	395.7	396.1	396.0	395.9	395.8	395.7
10°	391.7	392.6	393.5	393.9	393.8	393.7	393.6	393.5
12.5°	388.7	389.6	390.3	390.7	390.7	390.7	390.7	390.6
15°	383.2	384.1	385.0	385.4	385.3	385.2	385.1	385.0
17.5°	376.5	377.5	378.4	378.8	378.7	378.6	378.6	378.5
20°	371.4	372.4	373.3	373.9	373.9	373.9	373.9	373.9
22.5°	365.3	366.3	367.3	367.9	368.1	368.2	368.3	368.5
25°	356.0	357.0	358.2	358.7	358.8	358.9	359.0	359.1
27.5°	345.4	346.5	347.5	348.1	348.2	348.3	348.4	348.6
30°	338.1	339.2	340.3	340.9	341.1	341.4	341.6	341.8
32.5°	330.5	331.9	333.1	333.8	334.0	334.2	334.4	334.6
35°	318.7	320.0	321.4	322.3	322.5	322.8	323.2	323.5
37.5°	306.2	307.6	309.0	309.9	310.2	310.5	310.9	311.1
40°	297.5	298.9	300.4	301.3	301.7	302.2	302.6	302.9
42.5°	288.8	290.5	292.1	293.1	293.4	293.7	294.1	294.4
45°	275.5	277.2	278.9	279.9	280.5	281.0	281.4	281.9
47.5°	261.5	263.2	264.9	266.1	266.7	267.3	267.9	268.5
50°	251.6	253.5	255.5	256.8	257.4	258.0	258.6	259.2
52.5°	241.6	243.6	245.5	246.9	247.4	248.0	248.6	249.2
55°	226.6	228.6	230.5	231.9	232.4	233.0	233.7	234.2
57.5°	210.8	213.2	215.6	217.0	217.5	218.1	218.7	219.2
60°	200.0	202.3	204.5	206.0	206.9	207.6	208.5	209.2
62.5°	189.3	191.5	193.8	195.4	196.1	196.9	197.7	198.5
65°	172.7	175.2	177.7	179.3	180.1	180.9	181.7	182.5
67.5°	156.5	159.0	161.5	163.2	163.9	164.7	165.4	166.3
70°	145.0	147.7	150.3	152.0	152.7	153.4	154.1	154.8
72.5°	134.1	136.8	139.3	141.0	141.8	142.5	143.4	144.1
75°	117.5	120.3	123.1	124.9	125.8	126.7	127.6	128.5
77.5°	102.1	104.9	107.7	109.6	110.6	111.5	112.4	113.4
80°	92.1	95.0	98.0	99.9	100.7	101.5	102.3	103.0
82.5°	82.2	85.3	88.3	90.3	91.1	92.0	92.9	93.8
85°	68.4	71.4	74.4	76.3	77.3	78.3	79.3	80.3
87.5°	60.3	63.4	66.4	68.5	69.5	70.3	71.3	72.2
90°	68.1	71.9	75.8	78.3	79.5	80.5	81.6	82.8
92.5°	77.9	81.3	84.7	86.9	87.9	88.9	89.9	90.9
95°	101.1	104.3	107.4	109.5	110.4	111.3	112.2	113.1
97.5°	131.0	134.2	137.3	139.4	140.3	141.1	141.9	142.8
100°	152.7	155.6	158.6	160.5	161.2	161.9	162.6	163.2
102.5°	175.7	178.8	181.8	183.8	184.7	185.7	186.5	187.5
105°	210.8	213.8	216.7	218.9	220.1	221.4	222.7	223.9
107.5°	249.1	252.0	255.0	256.7	257.4	258.1	258.7	259.5
110°	274.8	276.6	278.6	280.2	281.5	282.8	284.1	285.4





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	302.2	304.3	306.4	307.9	308.9	309.7	310.7	311.5
115°	344.8	346.9	348.8	350.2	350.6	351.2	351.7	352.2
117.5°	385.5	387.0	388.5	389.5	389.9	390.4	390.9	391.3
120°	413.0	414.2	415.4	416.5	417.6	418.8	419.9	421.0
122.5°	441.3	442.7	444.1	444.9	445.1	445.2	445.3	445.4
125°	482.8	484.4	485.9	486.8	487.1	487.3	487.6	487.9
127.5°	521.9	523.4	524.8	525.8	526.1	526.6	527.0	527.4
130°	549.6	551.0	552.5	553.2	553.2	553.1	553.0	553.0
132.5°	575.7	577.1	578.4	579.3	579.7	579.9	580.3	580.7
135°	614.4	615.7	617.0	617.6	617.7	617.8	617.9	618.0
137.5°	652.3	653.4	654.3	655.2	655.7	656.4	657.0	657.5
140°	677.4	678.5	679.7	680.3	680.7	681.0	681.4	681.6
142.5°	701.3	702.5	703.5	704.3	704.6	705.0	705.5	705.9
145°	737.7	738.2	738.6	738.8	738.7	738.6	738.5	738.4
147.5°	770.8	770.7	770.7	770.7	770.9	771.1	771.2	771.4
150°	792.1	792.1	792.1	792.0	791.9	791.7	791.5	791.4
152.5°	812.4	812.8	813.1	813.1	812.8	812.3	811.9	811.4
155°	840.6	841.2	841.9	841.9	841.2	840.6	839.9	839.3
157.5°	865.4	866.0	866.5	866.4	865.9	865.3	864.8	864.2
160°	880.8	881.3	881.7	881.7	880.8	880.0	879.2	878.4
162.5°	894.6	895.4	896.4	896.4	895.5	894.8	893.9	893.1
165°	912.8	913.7	914.7	914.8	914.2	913.5	912.9	912.3
167.5°	928.0	929.1	930.0	930.0	929.0	927.9	927.0	926.0
170°	936.3	937.3	938.3	938.2	937.1	935.9	934.7	933.6
172.5°	942.4	943.6	944.7	944.7	943.6	942.4	941.2	940.1
175°	949.1	950.3	951.5	951.5	950.3	949.1	948.0	946.9
177.5°	952.8	953.8	954.7	954.6	953.6	952.5	951.5	950.4
180°	952.7	952.7	952.7	952.7	952.7	952.7	952.7	952.7

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