

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: P332513-935

Luminaire Tested: **S124DIP-S350D810U935-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332513-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S350D810U935-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3734.7 lumens  
Efficiency: N/A  
Efficacy: 119.7 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

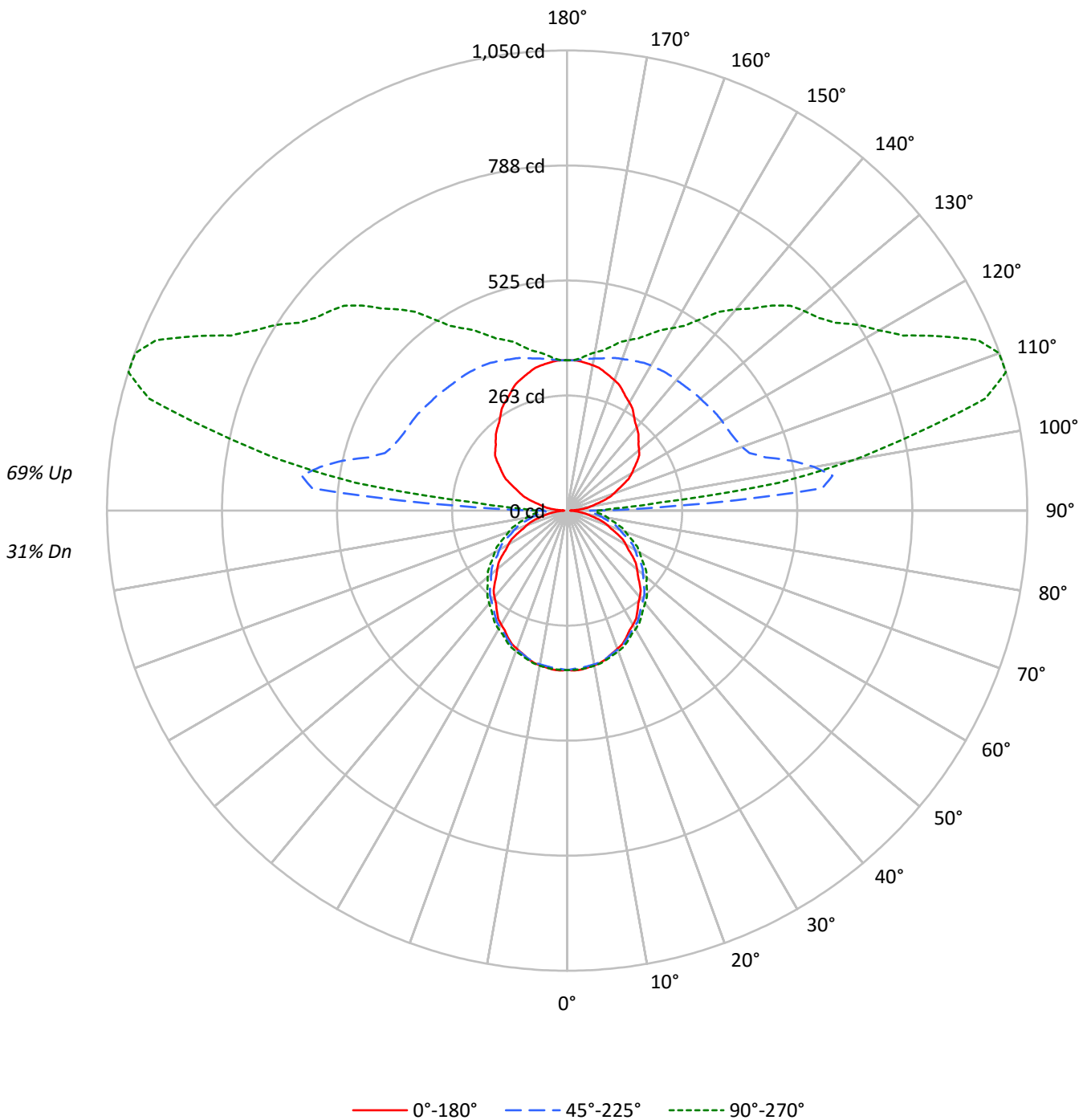
Input Watts (W): 31.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	38	38	38	31
1	93	88	84	81	83	79	76	73	63	60	58	47	46	44	33	32	31	25
2	84	77	71	65	75	69	64	59	54	51	48	41	39	36	29	27	26	20
3	77	67	60	54	68	60	54	49	48	43	40	36	33	30	25	23	22	17
4	70	59	51	45	62	53	47	41	42	37	33	32	29	26	22	20	18	14
5	64	53	44	39	57	47	40	35	38	32	29	28	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	48	38	31	26	30	25	22	23	20	17	16	14	12	9
8	50	38	30	25	45	34	28	23	28	23	19	21	18	15	15	13	11	8
9	47	35	27	22	42	31	25	20	25	20	17	19	16	13	14	11	10	7
10	43	32	25	20	39	29	22	18	23	18	15	18	14	12	13	10	9	7

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

	0°	45°	90°
0°	2938	2938	2938
5°	2948	2871	2880
10°	2929	2825	2823
15°	2902	2770	2755
20°	2863	2710	2690
25°	2819	2643	2617
30°	2770	2576	2543
35°	2716	2507	2478
40°	2672	2442	2410
45°	2607	2382	2352
50°	2553	2313	2291
55°	2496	2248	2220
60°	2408	2164	2153
65°	2309	2076	2073
70°	2192	1973	1979
75°	2029	1861	1894
80°	1846	1754	1809
85°	1616	1659	1762



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	34.5	0.9
10°-20°	98.7	2.6
20°-30°	149.3	4.0
30°-40°	180.7	4.8
40°-50°	191.0	5.1
50°-60°	179.7	4.8
60°-70°	149.1	4.0
70°-80°	104.7	2.8
80°-90°	61.1	1.6
90°-100°	282.7	7.6
100°-110°	541.2	14.5
110°-120°	478.9	12.8
120°-130°	398.0	10.7
130°-140°	327.9	8.8
140°-150°	248.1	6.6
150°-160°	173.8	4.7
160°-170°	102.2	2.7
170°-180°	33.3	0.9
0°-30°	282.5	7.6
0°-40°	463.2	12.4
0°-60°	833.9	22.3
0°-90°	1148.9	30.8
90°-120°	1302.7	34.9
90°-150°	2276.6	61.0
90°-180°	2586.0	69.2
0°-180°	3734.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	364	364	364	364	364	
5°	364	363	360	363	363	35
15°	349	350	348	352	352	98
25°	320	322	323	327	328	147
35°	280	284	288	294	296	175
45°	233	241	249	255	258	180
55°	183	191	203	211	214	163
65°	126	139	153	163	167	125
75°	70	85	102	113	117	75
85°	22	39	57	69	73	23
90°	7	28	52	65	70	6
95°	28	89	584	318	214	29
105°	82	126	469	988	988	88
115°	141	181	413	784	941	140
125°	195	231	403	663	747	174
135°	230	274	392	582	662	178
145°	265	303	386	484	534	166
155°	301	325	376	426	444	139
165°	328	338	360	381	387	93
175°	342	343	345	350	349	32
180°	343	343	343	343	343	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9
2.5°	365.2	365.0	364.8	364.5	364.4	363.9	363.4	362.8	362.2	361.6	362.1
5°	364.4	364.0	363.8	363.5	363.3	362.8	362.1	361.5	360.9	360.2	361.0
7.5°	361.3	361.1	360.9	360.8	360.6	360.2	359.7	359.2	358.7	358.2	359.0
10°	358.6	358.5	358.4	358.3	358.3	358.0	357.6	357.1	356.6	356.2	357.0
12.5°	355.1	355.0	355.0	355.0	355.0	354.8	354.5	354.2	353.9	353.6	354.3
15°	349.2	349.4	349.5	349.6	349.7	349.6	349.2	349.0	348.7	348.4	349.2
17.5°	341.4	341.6	341.9	342.2	342.4	342.6	342.5	342.4	342.4	342.3	343.2
20°	335.8	336.0	336.4	336.7	336.9	337.1	337.2	337.3	337.3	337.4	338.4
22.5°	329.6	329.9	330.3	330.6	331.0	331.2	331.4	331.6	331.7	331.9	332.8
25°	319.5	320.0	320.6	321.2	321.7	322.1	322.4	322.6	322.9	323.2	324.2
27.5°	308.2	309.1	309.9	310.6	311.4	312.0	312.5	312.9	313.3	313.7	314.6
30°	300.7	301.5	302.2	302.9	303.7	304.4	305.0	305.6	306.3	306.9	307.9
32.5°	292.7	293.5	294.4	295.2	296.1	296.9	297.6	298.3	299.0	299.7	300.8
35°	279.6	280.7	281.7	282.8	284.0	284.9	285.9	286.7	287.7	288.5	289.8
37.5°	266.5	267.7	269.0	270.2	271.5	272.6	273.8	274.9	276.0	277.2	278.4
40°	258.0	259.2	260.4	261.5	262.7	263.9	265.2	266.5	267.7	269.0	270.4
42.5°	248.2	249.5	250.8	252.2	253.5	254.9	256.4	257.9	259.3	260.8	262.3
45°	233.1	234.8	236.5	238.2	240.0	241.7	243.4	245.1	246.8	248.6	250.1
47.5°	218.7	220.5	222.2	224.0	225.8	227.6	229.6	231.7	233.7	235.7	237.2
50°	208.3	210.3	212.2	214.2	216.2	218.2	220.2	222.2	224.2	226.2	228.0
52.5°	197.9	199.8	201.8	203.8	205.8	207.9	210.2	212.5	214.7	217.1	218.9
55°	182.6	184.5	186.4	188.3	190.2	192.5	195.2	197.9	200.6	203.4	205.2
57.5°	165.6	167.9	170.2	172.6	175.0	177.5	180.2	182.9	185.5	188.3	190.5
60°	154.5	156.8	159.2	161.5	163.8	166.5	169.5	172.5	175.5	178.5	180.6
62.5°	143.7	146.3	148.9	151.4	153.9	156.8	159.7	162.7	165.7	168.8	170.8
65°	126.3	129.2	132.2	135.0	137.9	140.9	144.0	147.1	150.2	153.3	155.5
67.5°	109.6	112.7	115.8	118.9	121.9	125.1	128.5	131.7	135.0	138.3	140.6
70°	98.2	101.3	104.4	107.5	110.6	113.8	117.3	120.7	124.2	127.6	130.0
72.5°	87.1	90.3	93.4	96.6	99.7	103.1	106.8	110.5	114.1	117.8	120.1
75°	70.1	73.4	76.8	80.2	83.5	87.0	90.9	94.7	98.5	102.3	104.9
77.5°	54.2	57.8	61.3	64.8	68.4	72.2	76.1	80.2	84.1	88.1	90.7
80°	44.4	48.0	51.7	55.3	58.9	62.7	66.7	70.7	74.6	78.7	81.4
82.5°	34.6	38.4	42.2	46.0	49.7	53.6	57.6	61.6	65.5	69.6	72.3
85°	21.6	25.4	29.2	33.0	36.9	40.7	44.9	48.9	53.0	57.1	59.8
87.5°	12.2	16.2	20.2	24.1	27.9	31.8	36.5	40.5	44.7	49.0	51.5
90°	7.2	12.1	17.8	22.1	26.4	30.1	38.1	42.0	47.2	52.4	54.4
92.5°	13.9	20.7	30.2	41.7	54.8	72.3	110.5	166.6	221.4	251.9	218.8
95°	27.6	32.5	42.3	54.0	73.1	104.8	167.0	281.2	445.7	584.1	602.1
97.5°	44.7	47.3	55.6	66.2	82.7	109.5	158.3	253.1	416.7	610.8	744.1
100°	55.6	58.0	65.1	75.5	90.7	115.1	158.4	238.0	378.8	572.2	747.1
102.5°	66.4	69.6	75.8	85.4	99.7	123.0	162.4	232.7	353.1	524.9	705.0
105°	82.4	86.3	91.4	101.3	115.3	137.3	173.1	232.3	329.8	468.6	629.0
107.5°	100.9	103.8	108.7	118.7	131.8	153.3	186.1	240.2	323.9	436.0	567.4
110°	113.0	115.6	120.3	129.6	143.0	163.4	196.1	246.5	323.6	424.5	536.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	124.5	127.0	132.0	140.7	153.9	174.2	205.8	253.2	325.5	418.0	517.9
115°	141.1	144.0	149.5	157.0	170.7	190.7	220.5	263.8	329.3	413.0	499.8
117.5°	158.9	161.2	165.8	173.7	186.2	206.6	235.0	274.8	333.6	409.8	490.3
120°	170.3	171.9	176.9	184.6	196.3	216.6	244.9	282.5	336.9	408.3	484.8
122.5°	181.2	182.5	187.3	194.2	206.8	226.4	254.4	289.7	340.4	406.0	478.9
125°	194.8	197.4	201.4	208.7	221.4	241.3	267.9	301.1	345.8	403.2	469.6
127.5°	207.3	209.4	214.1	222.5	235.7	255.5	280.7	310.9	349.7	399.3	457.4
130°	214.0	216.5	221.9	231.9	244.6	264.8	289.1	316.8	352.6	397.2	450.0
132.5°	220.9	223.0	230.0	239.4	253.2	272.2	296.2	323.1	355.3	395.3	443.2
135°	230.4	233.1	239.8	251.2	265.4	283.2	306.1	331.0	359.2	392.1	432.7
137.5°	240.2	242.7	250.0	260.8	275.4	292.2	313.2	336.2	361.0	390.1	423.6
140°	247.2	249.2	256.5	267.9	281.9	298.0	318.3	339.9	362.9	388.6	418.7
142.5°	254.4	256.4	263.3	274.1	287.7	303.3	323.0	342.9	364.5	388.0	414.7
145°	265.0	266.9	273.5	282.9	295.6	310.4	327.9	346.0	365.6	386.4	408.5
147.5°	277.0	277.6	283.4	293.0	303.5	316.8	333.3	349.1	366.3	384.0	403.0
150°	284.5	285.1	290.4	298.3	308.4	321.2	336.0	350.8	366.3	382.4	399.2
152.5°	291.2	291.3	296.7	304.2	313.2	324.9	338.1	351.8	365.2	379.7	394.9
155°	300.9	301.6	305.7	312.4	319.8	329.8	341.3	352.8	363.5	375.7	388.5
157.5°	310.5	310.5	314.3	319.5	326.0	333.9	343.6	352.8	361.8	371.5	381.9
160°	316.4	316.4	319.1	323.8	329.2	336.7	344.7	352.8	360.2	368.2	377.0
162.5°	321.8	321.2	323.4	327.6	332.4	338.2	345.8	352.8	358.6	365.1	372.7
165°	327.9	327.9	329.2	332.6	336.0	340.0	346.0	351.5	355.5	360.2	365.6
167.5°	333.9	333.3	333.9	336.5	338.4	341.5	345.9	349.8	352.2	355.3	359.1
170°	336.7	336.0	336.7	338.6	340.0	342.0	345.3	348.7	350.1	352.1	354.8
172.5°	339.3	338.6	338.8	340.3	341.0	342.5	344.8	347.7	347.9	348.9	351.0
175°	342.0	341.3	341.3	342.0	342.7	342.7	344.1	346.0	345.3	345.3	346.7
177.5°	343.2	342.7	342.2	342.7	342.7	342.7	343.2	344.3	343.2	343.2	343.7
180°	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9
2.5°	362.7	363.2	363.7	363.9	363.9	363.8	363.7	363.6
5°	361.7	362.4	363.2	363.5	363.4	363.3	363.2	363.1
7.5°	359.8	360.6	361.4	361.8	361.7	361.6	361.5	361.4
10°	357.8	358.6	359.5	359.8	359.7	359.6	359.6	359.5
12.5°	355.1	355.9	356.5	356.9	356.9	356.9	356.9	356.8
15°	350.1	350.9	351.7	352.1	352.0	351.9	351.8	351.7
17.5°	344.0	344.8	345.7	346.0	345.9	345.9	345.9	345.8
20°	339.2	340.2	341.0	341.6	341.6	341.6	341.6	341.6
22.5°	333.7	334.6	335.5	336.0	336.2	336.3	336.5	336.7
25°	325.2	326.1	327.2	327.7	327.8	327.9	328.0	328.0
27.5°	315.6	316.5	317.5	318.0	318.1	318.1	318.2	318.4
30°	308.8	309.9	310.8	311.4	311.6	311.9	312.0	312.2
32.5°	302.0	303.2	304.3	305.0	305.1	305.3	305.5	305.7
35°	291.1	292.3	293.6	294.4	294.6	294.9	295.2	295.5
37.5°	279.7	280.9	282.2	283.1	283.4	283.6	284.0	284.2
40°	271.7	273.0	274.4	275.3	275.6	276.0	276.4	276.7
42.5°	263.8	265.4	266.8	267.8	268.0	268.3	268.6	268.9
45°	251.7	253.2	254.8	255.7	256.2	256.7	257.1	257.5
47.5°	238.8	240.4	242.0	243.1	243.7	244.2	244.7	245.3
50°	229.8	231.6	233.4	234.6	235.1	235.7	236.3	236.8
52.5°	220.7	222.5	224.3	225.5	226.0	226.5	227.1	227.6
55°	207.0	208.8	210.6	211.8	212.3	212.8	213.4	214.0
57.5°	192.6	194.8	196.9	198.2	198.7	199.2	199.8	200.3
60°	182.7	184.8	186.8	188.2	189.0	189.7	190.5	191.1
62.5°	172.9	175.0	177.0	178.5	179.2	179.9	180.6	181.3
65°	157.7	160.1	162.3	163.8	164.5	165.2	166.0	166.7
67.5°	142.9	145.3	147.5	149.0	149.7	150.4	151.1	151.9
70°	132.4	134.9	137.3	138.9	139.5	140.2	140.8	141.4
72.5°	122.5	124.9	127.3	128.8	129.5	130.2	131.0	131.6
75°	107.4	109.9	112.4	114.1	114.9	115.7	116.6	117.4
77.5°	93.2	95.8	98.4	100.1	101.0	101.9	102.7	103.6
80°	84.1	86.8	89.5	91.3	92.0	92.7	93.4	94.1
82.5°	75.1	77.9	80.7	82.5	83.3	84.0	84.9	85.7
85°	62.5	65.2	67.9	69.7	70.6	71.5	72.4	73.4
87.5°	54.2	57.0	59.8	61.5	62.4	63.3	64.0	64.7
90°	57.7	61.0	64.3	66.0	67.4	68.8	68.9	69.6
92.5°	175.7	145.6	127.8	116.0	108.7	105.8	104.3	105.0
95°	539.2	437.3	349.6	285.9	253.7	233.7	222.3	214.4
97.5°	774.7	738.3	674.9	606.1	558.6	518.8	499.4	486.2
100°	847.8	863.7	833.2	784.9	726.9	686.5	666.9	662.2
102.5°	842.2	911.4	923.3	904.1	868.9	839.8	819.2	815.7
105°	785.5	904.2	973.1	1002.2	1004.3	999.6	990.9	987.6
107.5°	706.1	832.3	928.4	990.0	1023.8	1039.8	1047.2	1049.6
110°	658.2	776.8	876.5	951.9	1000.5	1029.5	1042.3	1049.0





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	622.5	727.5	821.7	897.2	952.2	987.1	1004.8	1015.4
115°	586.0	670.8	751.6	817.4	871.2	912.3	934.5	940.6
117.5°	566.6	637.1	700.9	757.0	803.1	837.7	860.2	865.1
120°	557.3	621.7	677.3	726.4	765.5	795.9	814.2	822.3
122.5°	549.2	611.5	662.3	705.4	738.5	764.5	779.9	788.0
125°	536.0	595.6	643.8	681.9	709.4	729.4	742.8	747.3
127.5°	519.9	576.8	624.7	661.0	688.7	706.7	718.1	722.7
130°	507.5	562.2	609.7	646.4	674.6	692.0	703.3	707.8
132.5°	494.6	546.2	592.5	629.2	656.8	676.3	687.1	691.6
135°	476.5	521.7	564.2	598.8	626.4	645.8	657.0	661.6
137.5°	460.2	498.6	534.5	565.8	591.4	610.4	619.8	625.1
140°	450.9	483.7	515.1	544.2	568.3	583.5	593.4	599.3
142.5°	442.4	471.3	498.3	523.5	544.8	558.9	567.7	571.8
145°	430.6	454.0	474.8	494.1	511.3	523.1	530.2	533.9
147.5°	420.9	439.2	455.4	470.4	483.1	493.2	498.6	500.1
150°	415.3	430.8	444.4	456.4	467.3	476.0	480.0	480.7
152.5°	409.5	422.8	435.1	445.1	454.3	461.4	463.8	464.5
155°	400.5	411.4	421.5	429.6	436.3	441.6	443.7	443.7
157.5°	391.0	400.0	408.5	415.0	420.1	424.1	425.3	425.3
160°	385.1	392.5	399.9	405.3	409.3	413.4	414.1	414.1
162.5°	379.2	385.5	391.3	396.1	399.1	403.1	403.8	403.3
165°	370.9	375.0	379.7	383.1	385.7	388.5	387.8	387.1
167.5°	363.0	366.1	369.9	371.9	373.2	375.0	374.9	374.3
170°	358.2	360.2	362.9	364.9	366.3	366.9	366.3	366.3
172.5°	353.9	355.3	357.0	358.4	359.2	359.9	359.2	358.2
175°	348.1	348.7	350.1	350.1	350.1	351.5	350.1	348.7
177.5°	344.3	344.8	344.8	345.3	344.8	345.3	344.3	343.2
180°	342.7	342.7	342.7	342.7	342.7	342.7	342.7	342.7

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