

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: P332513-940

Luminaire Tested: **S124DIP-S350D810U940-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332513-940  
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-S350D810U940-4F0-1E-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: 3868.0 lumens  
Efficiency: N/A  
Efficacy: 124.0 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

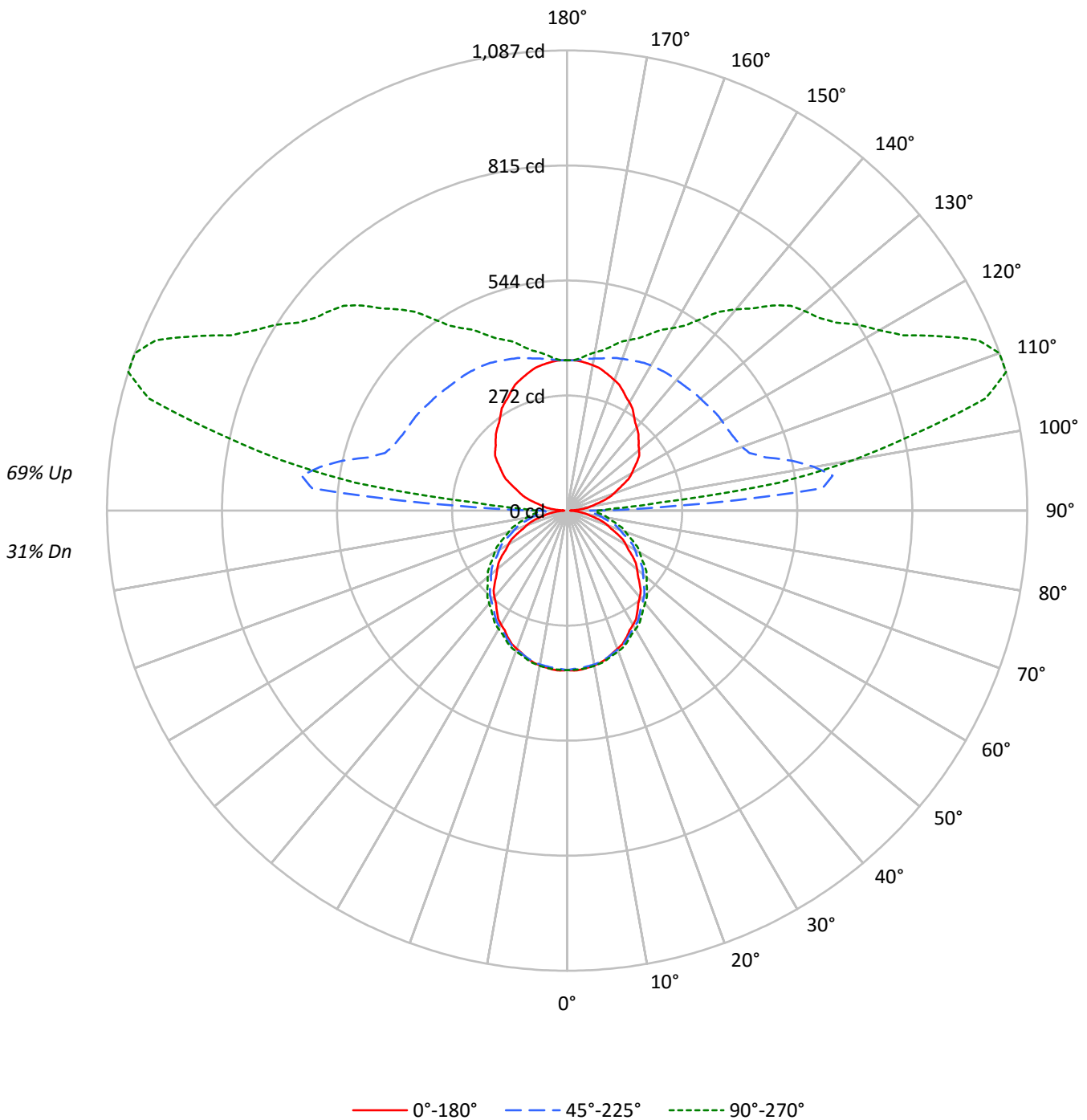
Input Watts (W): 31.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	3043	3043	3043
5°	3053	2974	2982
10°	3033	2925	2923
15°	3006	2869	2854
20°	2965	2807	2785
25°	2919	2737	2710
30°	2869	2668	2634
35°	2812	2597	2566
40°	2768	2530	2497
45°	2700	2466	2436
50°	2643	2396	2373
55°	2585	2328	2298
60°	2493	2242	2231
65°	2392	2149	2146
70°	2271	2045	2049
75°	2101	1926	1961
80°	1913	1816	1875
85°	1676	1717	1825



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	35.7	0.9
10°-20°	102.3	2.6
20°-30°	154.6	4.0
30°-40°	187.1	4.8
40°-50°	197.8	5.1
50°-60°	186.2	4.8
60°-70°	154.4	4.0
70°-80°	108.5	2.8
80°-90°	63.3	1.6
90°-100°	292.7	7.6
100°-110°	560.5	14.5
110°-120°	495.9	12.8
120°-130°	412.2	10.7
130°-140°	339.6	8.8
140°-150°	256.9	6.6
150°-160°	180.0	4.7
160°-170°	105.9	2.7
170°-180°	34.4	0.9
0°-30°	292.6	7.6
0°-40°	479.7	12.4
0°-60°	863.6	22.3
0°-90°	1189.8	30.8
90°-120°	1349.2	34.9
90°-150°	2357.8	61.0
90°-180°	2678.0	69.2
0°-180°	3868.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	377	377	377	377	377	
5°	377	376	373	376	376	36
15°	362	362	361	364	364	102
25°	331	333	335	339	340	152
35°	290	295	299	304	306	181
45°	241	249	257	264	267	187
55°	189	198	211	219	222	168
65°	131	144	159	169	173	130
75°	73	88	106	117	122	77
85°	22	40	59	71	76	24
90°	8	29	54	67	72	6
95°	28	92	605	329	222	30
105°	85	131	485	1023	1023	91
115°	146	187	428	812	974	145
125°	202	240	418	686	774	180
135°	239	284	406	602	685	185
145°	274	314	400	502	553	172
155°	312	336	389	441	460	144
165°	340	350	373	395	401	96
175°	354	355	358	363	361	34
180°	355	355	355	355	355	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9
2.5°	378.3	378.0	377.8	377.6	377.4	376.9	376.4	375.8	375.1	374.5	375.1
5°	377.4	377.0	376.7	376.5	376.2	375.8	375.1	374.4	373.8	373.1	373.9
7.5°	374.2	374.0	373.8	373.6	373.4	373.1	372.6	372.0	371.5	371.0	371.8
10°	371.4	371.3	371.2	371.1	371.0	370.8	370.3	369.8	369.3	368.9	369.7
12.5°	367.7	367.7	367.7	367.7	367.7	367.5	367.1	366.8	366.5	366.2	366.9
15°	361.7	361.9	361.9	362.0	362.1	362.0	361.7	361.4	361.1	360.9	361.7
17.5°	353.6	353.8	354.1	354.4	354.6	354.8	354.7	354.6	354.6	354.5	355.4
20°	347.8	348.0	348.4	348.7	348.9	349.1	349.2	349.3	349.4	349.5	350.4
22.5°	341.3	341.7	342.1	342.4	342.8	343.0	343.2	343.4	343.6	343.8	344.6
25°	330.9	331.4	332.1	332.6	333.1	333.6	333.9	334.1	334.4	334.7	335.7
27.5°	319.2	320.1	320.9	321.7	322.5	323.2	323.6	324.0	324.5	324.9	325.8
30°	311.5	312.3	313.0	313.7	314.5	315.2	315.8	316.5	317.2	317.8	318.9
32.5°	303.1	304.0	304.9	305.8	306.7	307.5	308.2	308.9	309.7	310.4	311.6
35°	289.5	290.7	291.8	292.9	294.1	295.1	296.0	296.9	297.9	298.8	300.1
37.5°	276.0	277.2	278.6	279.8	281.2	282.3	283.6	284.7	285.9	287.0	288.4
40°	267.2	268.4	269.7	270.8	272.1	273.3	274.6	276.0	277.2	278.6	280.0
42.5°	257.1	258.4	259.8	261.2	262.5	263.9	265.6	267.1	268.6	270.1	271.7
45°	241.4	243.2	245.0	246.7	248.5	250.3	252.1	253.9	255.7	257.4	259.0
47.5°	226.5	228.4	230.2	232.0	233.8	235.8	237.8	240.0	242.0	244.1	245.7
50°	215.7	217.8	219.8	221.9	223.9	226.0	228.1	230.2	232.2	234.3	236.1
52.5°	204.9	207.0	209.0	211.1	213.1	215.3	217.7	220.1	222.4	224.8	226.7
55°	189.1	191.1	193.1	195.0	197.0	199.4	202.2	205.0	207.8	210.6	212.5
57.5°	171.5	173.9	176.3	178.8	181.2	183.8	186.6	189.4	192.2	195.0	197.2
60°	160.0	162.4	164.9	167.3	169.7	172.5	175.6	178.7	181.7	184.9	187.0
62.5°	148.8	151.5	154.2	156.9	159.4	162.4	165.4	168.5	171.7	174.8	176.9
65°	130.8	133.8	136.9	139.8	142.9	146.0	149.1	152.3	155.5	158.7	161.0
67.5°	113.5	116.7	119.9	123.1	126.3	129.6	133.0	136.4	139.8	143.2	145.6
70°	101.7	104.9	108.1	111.3	114.5	117.9	121.5	125.0	128.6	132.2	134.6
72.5°	90.2	93.5	96.8	100.0	103.3	106.8	110.6	114.4	118.2	122.0	124.4
75°	72.6	76.1	79.5	83.0	86.5	90.2	94.2	98.1	102.0	105.9	108.6
77.5°	56.2	59.8	63.5	67.1	70.8	74.7	78.8	83.0	87.1	91.2	93.9
80°	46.0	49.8	53.5	57.2	61.0	64.9	69.1	73.2	77.3	81.5	84.3
82.5°	35.8	39.8	43.7	47.6	51.5	55.5	59.7	63.8	67.9	72.1	74.9
85°	22.4	26.3	30.2	34.2	38.2	42.2	46.5	50.6	54.8	59.1	61.9
87.5°	12.7	16.8	21.0	25.0	28.9	32.9	37.8	41.9	46.3	50.7	53.3
90°	7.5	12.6	18.5	22.9	27.4	31.2	39.4	43.5	48.9	54.3	56.4
92.5°	14.4	21.4	31.3	43.2	56.7	74.9	114.4	172.5	229.3	260.9	226.6
95°	28.5	33.7	43.8	55.9	75.7	108.5	173.0	291.2	461.6	604.9	623.6
97.5°	46.3	49.0	57.6	68.6	85.6	113.4	164.0	262.2	431.6	632.6	770.6
100°	57.6	60.1	67.4	78.2	93.9	119.2	164.1	246.5	392.4	592.6	773.7
102.5°	68.8	72.1	78.5	88.5	103.3	127.3	168.2	241.0	365.7	543.6	730.1
105°	85.3	89.3	94.7	105.0	119.4	142.2	179.2	240.6	341.6	485.3	651.5
107.5°	104.5	107.5	112.5	123.0	136.5	158.8	192.8	248.8	335.5	451.6	587.6
110°	117.0	119.8	124.6	134.2	148.1	169.2	203.1	255.3	335.2	439.6	555.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	128.9	131.5	136.7	145.7	159.4	180.4	213.1	262.3	337.1	432.9	536.4
115°	146.2	149.1	154.8	162.6	176.7	197.5	228.4	273.2	341.1	427.8	517.6
117.5°	164.5	166.9	171.7	179.9	192.9	214.0	243.3	284.6	345.5	424.5	507.7
120°	176.4	178.1	183.2	191.2	203.3	224.4	253.6	292.6	348.9	422.8	502.1
122.5°	187.6	189.0	193.9	201.2	214.2	234.4	263.5	300.1	352.5	420.5	496.0
125°	201.8	204.5	208.6	216.2	229.3	249.9	277.4	311.8	358.1	417.6	486.3
127.5°	214.7	216.9	221.8	230.4	244.2	264.7	290.7	322.0	362.1	413.6	473.8
130°	221.6	224.3	229.8	240.1	253.3	274.2	299.4	328.1	365.2	411.3	466.0
132.5°	228.8	231.0	238.2	248.0	262.3	281.9	306.7	334.7	368.0	409.4	459.0
135°	238.6	241.4	248.3	260.2	274.8	293.3	317.0	342.8	372.0	406.1	448.1
137.5°	248.8	251.4	259.0	270.1	285.3	302.6	324.4	348.2	373.9	404.0	438.7
140°	256.0	258.1	265.6	277.4	291.9	308.6	329.7	352.0	375.9	402.4	433.6
142.5°	263.5	265.6	272.7	283.9	298.0	314.1	334.5	355.1	377.6	401.8	429.4
145°	274.5	276.4	283.3	293.0	306.1	321.5	339.6	358.4	378.6	400.2	423.1
147.5°	286.9	287.5	293.5	303.4	314.3	328.1	345.2	361.6	379.3	397.7	417.4
150°	294.6	295.2	300.8	309.0	319.4	332.6	347.9	363.3	379.3	396.0	413.5
152.5°	301.6	301.7	307.3	315.0	324.4	336.5	350.2	364.4	378.2	393.2	409.0
155°	311.7	312.4	316.6	323.5	331.2	341.6	353.5	365.3	376.5	389.1	402.3
157.5°	321.6	321.6	325.5	330.9	337.6	345.8	355.9	365.3	374.7	384.8	395.5
160°	327.7	327.7	330.5	335.4	341.0	348.7	357.0	365.3	373.0	381.4	390.5
162.5°	333.3	332.7	334.9	339.3	344.3	350.3	358.1	365.3	371.4	378.1	386.0
165°	339.6	339.6	341.0	344.5	347.9	352.1	358.4	364.0	368.2	373.0	378.6
167.5°	345.8	345.2	345.8	348.5	350.4	353.7	358.3	362.3	364.8	368.0	371.9
170°	348.7	347.9	348.7	350.7	352.1	354.2	357.7	361.1	362.6	364.6	367.5
172.5°	351.4	350.7	350.9	352.4	353.2	354.7	357.1	360.1	360.3	361.3	363.6
175°	354.2	353.5	353.5	354.2	354.9	354.9	356.3	358.4	357.7	357.7	359.1
177.5°	355.4	354.9	354.4	354.9	354.9	354.9	355.4	356.6	355.4	355.4	356.0
180°	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9
2.5°	375.6	376.1	376.7	376.8	376.8	376.7	376.7	376.6
5°	374.6	375.3	376.1	376.5	376.4	376.2	376.1	376.0
7.5°	372.6	373.4	374.3	374.7	374.6	374.5	374.4	374.3
10°	370.6	371.4	372.3	372.6	372.6	372.5	372.4	372.3
12.5°	367.7	368.5	369.3	369.6	369.6	369.6	369.6	369.5
15°	362.6	363.4	364.3	364.6	364.5	364.4	364.4	364.3
17.5°	356.2	357.1	358.0	358.4	358.3	358.2	358.2	358.1
20°	351.3	352.3	353.2	353.7	353.7	353.7	353.7	353.7
22.5°	345.6	346.5	347.5	348.0	348.2	348.3	348.5	348.7
25°	336.8	337.8	338.9	339.4	339.5	339.6	339.7	339.7
27.5°	326.8	327.8	328.8	329.3	329.4	329.5	329.6	329.8
30°	319.9	320.9	321.9	322.5	322.7	323.0	323.2	323.3
32.5°	312.7	314.0	315.1	315.8	316.0	316.2	316.4	316.6
35°	301.5	302.7	304.1	304.9	305.1	305.4	305.8	306.0
37.5°	289.7	291.0	292.3	293.2	293.5	293.7	294.1	294.4
40°	281.4	282.8	284.2	285.1	285.4	285.9	286.2	286.6
42.5°	273.2	274.8	276.3	277.3	277.6	277.9	278.2	278.5
45°	260.6	262.3	263.9	264.8	265.4	265.8	266.3	266.7
47.5°	247.4	249.0	250.7	251.7	252.4	252.9	253.4	254.0
50°	238.0	239.9	241.7	243.0	243.5	244.1	244.7	245.2
52.5°	228.5	230.4	232.3	233.5	234.1	234.6	235.2	235.8
55°	214.4	216.2	218.1	219.4	219.9	220.4	221.1	221.6
57.5°	199.5	201.7	203.9	205.3	205.8	206.3	206.9	207.4
60°	189.2	191.4	193.5	194.9	195.7	196.4	197.2	198.0
62.5°	179.1	181.2	183.3	184.9	185.6	186.3	187.1	187.8
65°	163.4	165.8	168.1	169.6	170.4	171.1	171.9	172.6
67.5°	148.0	150.4	152.8	154.4	155.1	155.8	156.5	157.3
70°	137.1	139.7	142.2	143.8	144.5	145.2	145.8	146.4
72.5°	126.9	129.4	131.8	133.4	134.1	134.8	135.6	136.3
75°	111.2	113.8	116.5	118.2	119.0	119.8	120.7	121.5
77.5°	96.6	99.2	101.9	103.7	104.6	105.5	106.4	107.3
80°	87.1	89.9	92.7	94.5	95.2	96.0	96.8	97.5
82.5°	77.8	80.7	83.6	85.4	86.2	87.0	87.9	88.7
85°	64.7	67.5	70.4	72.2	73.1	74.1	75.0	76.0
87.5°	56.2	59.0	61.9	63.7	64.6	65.5	66.3	67.1
90°	59.7	63.2	66.6	68.3	69.8	71.2	71.3	72.1
92.5°	182.0	150.8	132.3	120.1	112.6	109.6	108.0	108.7
95°	558.5	452.9	362.0	296.0	262.7	242.0	230.2	222.0
97.5°	802.4	764.6	698.9	627.8	578.5	537.3	517.2	503.5
100°	878.1	894.5	862.9	812.9	752.9	711.0	690.7	685.8
102.5°	872.3	943.9	956.3	936.4	899.9	869.8	848.5	844.8
105°	813.5	936.5	1007.8	1038.0	1040.1	1035.3	1026.3	1022.8
107.5°	731.3	862.0	961.5	1025.3	1060.3	1076.9	1084.6	1087.1
110°	681.7	804.5	907.8	985.9	1036.2	1066.2	1079.5	1086.5





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	644.7	753.5	851.0	929.2	986.1	1022.3	1040.6	1051.6
115°	606.9	694.7	778.4	846.6	902.3	944.9	967.9	974.1
117.5°	586.8	659.8	725.9	784.0	831.7	867.5	890.9	896.0
120°	577.2	643.9	701.5	752.3	792.8	824.3	843.2	851.6
122.5°	568.8	633.3	685.9	730.6	764.8	791.8	807.7	816.1
125°	555.1	616.8	666.7	706.2	734.7	755.5	769.3	774.0
127.5°	538.4	597.4	647.0	684.6	713.3	731.9	743.7	748.5
130°	525.6	582.3	631.4	669.5	698.7	716.7	728.3	733.1
132.5°	512.3	565.7	613.6	651.7	680.2	700.4	711.6	716.3
135°	493.5	540.3	584.3	620.2	648.7	668.8	680.5	685.2
137.5°	476.6	516.4	553.6	586.0	612.5	632.2	641.9	647.4
140°	467.0	501.0	533.5	563.7	588.5	604.3	614.6	620.6
142.5°	458.2	488.1	516.1	542.2	564.2	578.8	587.9	592.2
145°	445.9	470.2	491.7	511.8	529.5	541.7	549.1	552.9
147.5°	436.0	454.9	471.6	487.1	500.3	510.8	516.4	517.9
150°	430.2	446.2	460.2	472.7	483.9	492.9	497.1	497.8
152.5°	424.1	437.8	450.7	461.0	470.5	477.9	480.4	481.1
155°	414.8	426.1	436.5	444.9	451.8	457.4	459.5	459.5
157.5°	404.9	414.3	423.1	429.8	435.1	439.3	440.5	440.5
160°	398.9	406.5	414.2	419.7	423.9	428.1	428.8	428.8
162.5°	392.7	399.2	405.3	410.3	413.3	417.5	418.2	417.7
165°	384.1	388.3	393.2	396.7	399.5	402.3	401.6	400.9
167.5°	375.9	379.2	383.1	385.1	386.6	388.3	388.3	387.6
170°	371.0	373.0	375.9	377.9	379.3	380.0	379.3	379.3
172.5°	366.5	368.0	369.7	371.2	372.0	372.7	372.0	371.0
175°	360.5	361.1	362.6	362.6	362.6	364.0	362.6	361.1
177.5°	356.6	357.1	357.1	357.7	357.1	357.7	356.6	355.4
180°	354.9	354.9	354.9	354.9	354.9	354.9	354.9	354.9

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