

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: P332516-935

Luminaire Tested: **S124DIP-S350D810U935-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332516-935  
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-F4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3799.3 lumens  
Efficiency: N/A  
Efficacy: 121.8 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

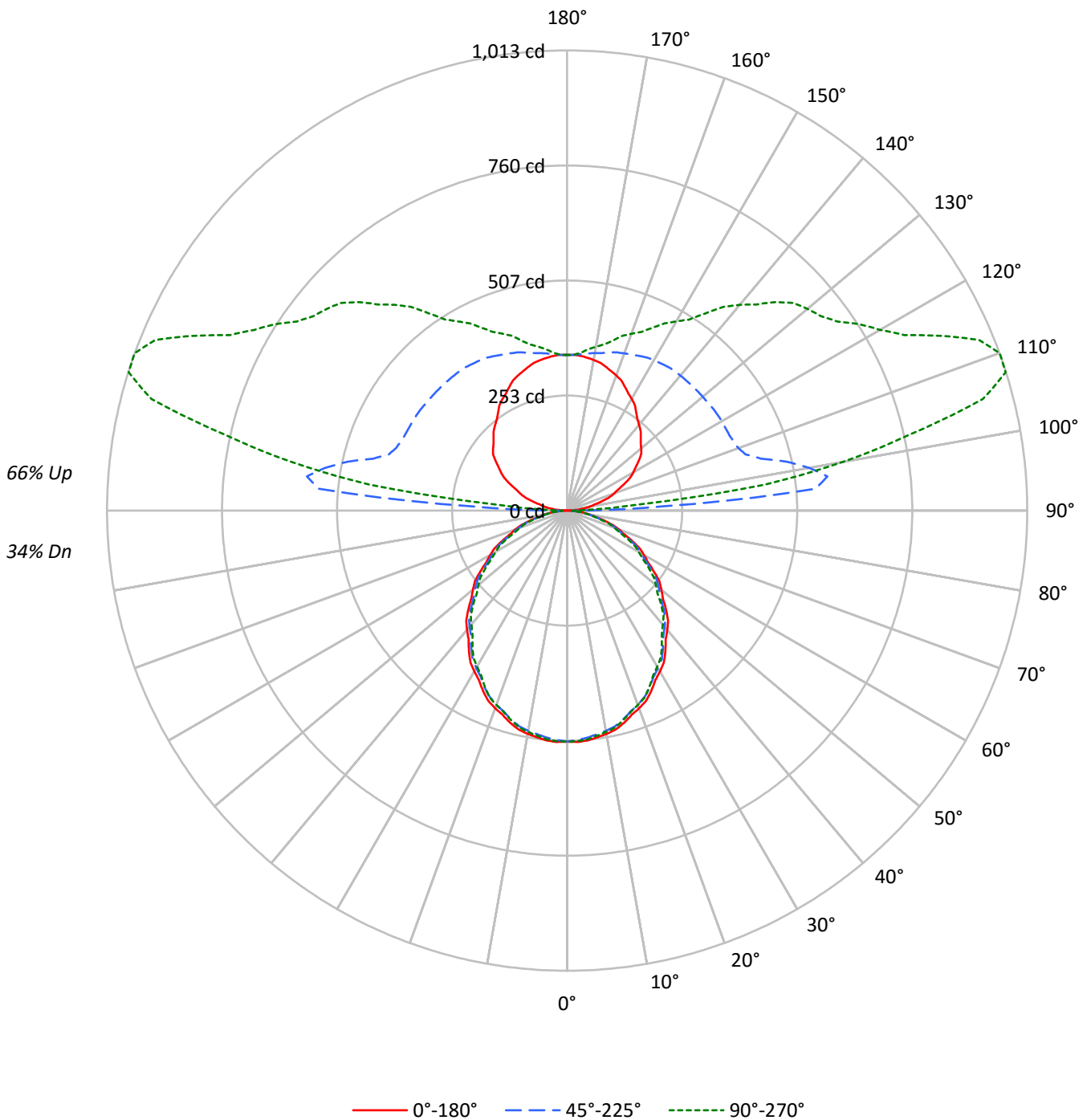
Input Watts (W): 31.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	93	93	93	93	75	75	75	58	58	58	42	42	42	34
1	94	90	86	83	85	81	78	75	65	63	61	50	49	48	37	36	35	29
2	86	79	73	68	77	71	66	62	57	54	51	44	42	40	32	31	30	24
3	78	69	62	56	70	63	56	52	50	46	42	39	36	34	29	27	25	20
4	71	61	53	47	64	55	49	44	45	40	36	35	31	29	26	23	22	18
5	66	54	46	40	59	49	42	37	40	35	31	31	28	25	23	21	19	15
6	60	49	41	35	54	44	37	32	36	31	27	28	25	22	21	18	17	13
7	56	44	36	31	50	40	33	28	32	27	24	26	22	19	19	17	15	12
8	52	40	32	27	46	36	29	25	30	24	21	23	20	17	18	15	13	11
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	14	12	10
10	45	33	26	21	40	30	24	20	25	20	17	20	16	14	15	13	11	9

**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	1.3
10°-20°	135.0	3.6
20°-30°	198.6	5.2
30°-40°	230.9	6.1
40°-50°	230.9	6.1
50°-60°	202.0	5.3
60°-70°	150.0	3.9
70°-80°	85.2	2.2
80°-90°	26.5	0.7
90°-100°	247.5	6.5
100°-110°	515.1	13.6
110°-120°	461.4	12.1
120°-130°	388.1	10.2
130°-140°	323.6	8.5
140°-150°	247.2	6.5
150°-160°	173.8	4.6
160°-170°	102.2	2.7
170°-180°	33.3	0.9
0°-30°	381.5	10.0
0°-40°	612.4	16.1
0°-60°	1045.3	27.5
0°-90°	1307.1	34.4
90°-120°	1224.0	32.2
90°-150°	2183.0	57.5
90°-180°	2492.0	65.6
0°-180°	3799.3	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°	1	5	12	13	14	2
95°	22	70	549	272	164	25
105°	79	114	442	951	947	84
115°	139	174	394	757	910	138
125°	193	230	392	644	726	172
135°	230	273	388	572	649	177
145°	265	303	386	482	530	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°	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°	8.6	8.8	9.1	9.2	9.3	9.2	9.9	9.8	10.1	10.2	10.1
90°	0.7	2.0	4.0	4.7	5.4	5.4	9.4	9.4	10.8	12.1	11.5
92.5°	7.7	11.2	17.5	25.7	35.6	49.5	83.8	136.0	186.9	213.5	177.9
95°	22.2	24.2	31.0	39.7	55.9	84.1	142.8	253.1	414.1	548.7	564.2
97.5°	39.9	39.9	45.6	53.7	67.6	91.3	136.4	227.6	387.5	577.9	708.8
100°	51.1	51.1	55.9	64.0	76.7	98.3	138.0	214.1	351.5	541.3	713.6
102.5°	61.9	63.0	67.2	74.7	87.0	107.5	143.4	210.3	327.2	495.5	673.2
105°	78.8	80.8	84.1	92.2	104.4	123.9	156.2	212.1	306.3	441.6	599.9
107.5°	97.4	98.7	102.0	110.6	122.3	141.5	171.2	222.1	302.6	411.5	540.6
110°	109.8	111.1	114.4	122.5	134.7	152.8	182.4	229.5	303.6	401.2	511.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	121.6	123.0	126.8	134.4	146.5	164.7	193.2	237.6	306.9	396.4	494.3
115°	138.7	140.7	145.4	152.1	165.0	183.1	210.1	250.5	313.1	393.8	478.6
117.5°	156.4	158.3	162.6	170.0	181.9	200.8	226.4	263.5	319.7	393.1	471.7
120°	168.3	169.6	174.4	181.8	193.2	212.1	237.6	272.7	324.5	393.1	467.9
122.5°	179.1	180.5	185.1	192.0	204.5	222.8	248.4	281.3	329.3	392.6	463.6
125°	193.2	195.9	199.9	207.3	220.2	239.0	263.2	294.2	336.7	391.8	456.4
127.5°	205.8	207.9	212.8	221.2	234.5	253.6	277.0	305.4	342.4	390.4	446.9
130°	212.8	215.4	220.8	230.9	243.7	263.2	286.1	312.4	346.7	389.8	441.0
132.5°	219.7	221.9	228.9	238.5	252.4	270.8	293.7	319.3	350.5	389.3	435.6
135°	229.5	232.3	239.0	250.5	264.6	282.1	304.3	328.6	356.1	388.5	427.5
137.5°	239.4	241.9	249.3	260.3	274.9	291.6	312.4	335.0	359.5	388.3	420.5
140°	246.4	248.4	255.8	267.3	281.4	297.6	317.8	339.3	362.2	387.8	416.7
142.5°	253.9	256.0	262.9	273.7	287.3	303.0	322.6	342.5	364.4	387.8	413.5
145°	264.6	266.6	273.4	282.8	295.6	310.4	327.9	346.0	365.6	386.4	407.9
147.5°	276.6	277.2	283.2	292.8	303.5	316.8	333.3	349.1	366.3	384.0	403.0
150°	284.1	284.8	290.2	298.3	308.3	321.2	336.0	350.8	366.3	382.4	399.2
152.5°	291.1	291.3	296.6	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°	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°	10.2	10.4	10.5	10.5	10.7	10.8	10.7	10.7
90°	12.1	12.8	13.4	13.4	14.1	14.8	14.1	14.1
92.5°	132.2	99.5	79.2	65.7	57.8	54.2	51.8	51.8
95°	498.9	394.5	304.3	239.0	206.0	185.1	173.1	164.3
97.5°	737.0	698.3	632.4	562.1	513.8	473.3	453.1	439.1
100°	811.9	825.4	792.4	742.6	684.0	642.9	622.8	617.3
102.5°	808.1	874.9	884.5	863.8	827.9	798.1	776.8	772.5
105°	754.1	870.5	937.1	964.8	966.1	960.7	951.3	947.3
107.5°	677.2	801.2	895.0	955.0	988.3	1003.7	1010.4	1012.1
110°	630.9	747.3	844.9	918.9	966.7	995.1	1007.2	1013.2





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	596.9	699.9	792.1	866.2	920.4	954.7	971.6	981.5
115°	562.8	645.7	724.4	789.0	842.2	882.6	904.1	909.6
117.5°	546.1	614.7	676.6	731.4	776.8	810.7	832.5	836.7
120°	538.6	601.2	655.0	702.8	741.2	770.9	788.3	795.7
122.5°	532.1	592.5	641.6	683.5	715.9	741.2	756.0	763.4
125°	521.1	579.0	625.4	662.5	689.4	708.9	721.7	725.7
127.5°	507.6	562.9	609.2	644.5	671.5	688.9	699.6	703.7
130°	496.9	550.0	595.8	631.5	659.1	676.0	686.7	690.8
132.5°	485.5	535.5	580.2	615.9	642.9	661.9	672.2	676.2
135°	469.9	513.7	554.7	588.4	615.4	634.2	645.0	649.0
137.5°	455.8	492.8	527.4	557.8	583.0	601.6	610.4	615.4
140°	447.7	479.3	509.6	538.0	561.5	576.3	585.7	591.1
142.5°	440.1	468.0	494.0	518.5	539.4	553.1	561.5	565.2
145°	429.6	452.5	472.6	491.5	508.3	519.7	526.5	529.9
147.5°	420.8	438.9	455.1	469.9	482.3	492.1	497.2	498.4
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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