

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: P331882-830

Luminaire Tested: **S123DIP-S340D585U830-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331882-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S340D585U830-4F0-1E-UDD-F4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 585 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3329.2 lumens  
Efficiency: N/A  
Efficacy: 130.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

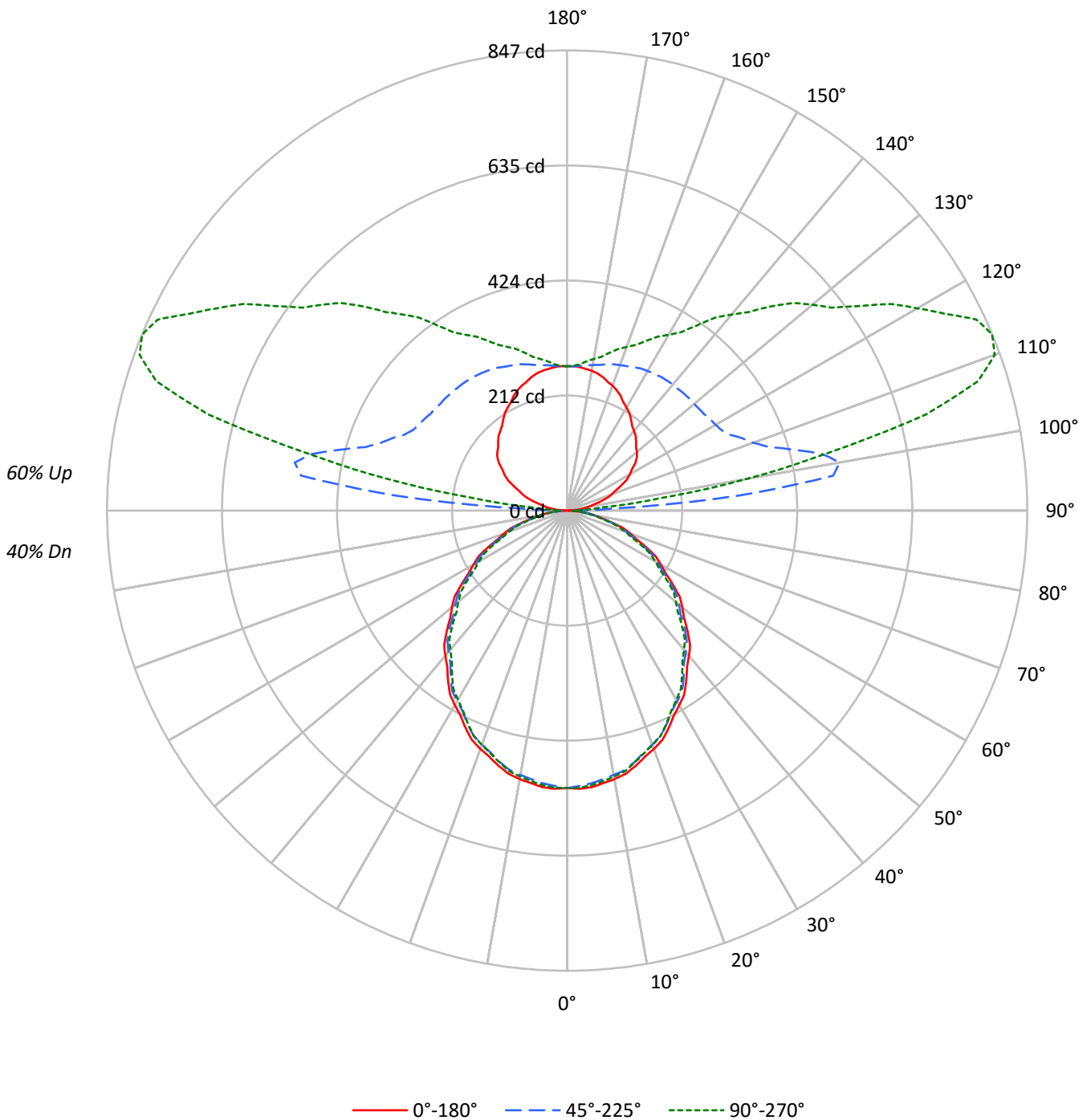
Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	40
1	95	91	87	84	87	83	80	77	68	66	64	54	53	51	41	40	39	34
2	87	80	74	68	79	73	67	63	60	56	53	47	45	43	36	35	33	28
3	79	70	63	57	72	64	58	53	52	48	44	42	39	36	32	30	28	24
4	72	62	54	48	66	57	50	45	47	42	38	37	34	31	29	26	24	20
5	66	55	47	41	60	50	43	38	42	36	32	33	30	27	26	23	21	18
6	61	49	41	36	55	45	38	33	37	32	28	30	26	23	23	21	19	15
7	56	44	37	31	51	41	34	29	34	29	25	27	24	21	21	19	16	14
8	52	40	33	27	48	37	30	26	31	26	22	25	21	18	20	17	15	12
9	49	37	29	24	44	34	27	23	28	23	20	23	19	16	18	15	13	11
10	45	34	26	22	41	31	25	20	26	21	18	21	17	15	17	14	12	10

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

	0°	45°	90°
0°	5498	5498	5498
5°	5524	5448	5486
10°	5487	5400	5434
15°	5422	5340	5349
20°	5347	5252	5257
25°	5247	5149	5138
30°	5137	5033	4994
35°	5021	4911	4847
40°	4900	4776	4703
45°	4766	4654	4539
50°	4632	4501	4376
55°	4459	4344	4211
60°	4284	4159	4028
65°	4126	3958	3836
70°	3899	3733	3566
75°	3564	3435	3290
80°	3211	3081	3050
85°	2816	2717	2606



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	48.1	1.4
10°-20°	135.9	4.1
20°-30°	200.7	6.0
30°-40°	234.4	7.0
40°-50°	235.7	7.1
50°-60°	207.0	6.2
60°-70°	154.2	4.6
70°-80°	87.9	2.6
80°-90°	27.3	0.8
90°-100°	147.8	4.4
100°-110°	418.5	12.6
110°-120°	411.7	12.4
120°-130°	328.4	9.9
130°-140°	258.9	7.8
140°-150°	193.2	5.8
150°-160°	134.7	4.0
160°-170°	79.1	2.4
170°-180°	25.7	0.8
0°-30°	384.6	11.6
0°-40°	619.1	18.6
0°-60°	1061.7	31.9
0°-90°	1331.1	40.0
90°-120°	978.0	29.4
90°-150°	1758.5	52.8
90°-180°	1998.0	60.0
0°-180°	3329.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	511	511	511	511	511	
5°	511	509	504	508	508	48
15°	487	485	479	482	480	137
25°	442	439	434	434	433	203
35°	382	379	374	371	369	239
45°	313	311	306	301	298	242
55°	238	237	232	227	224	213
65°	162	160	155	152	151	160
75°	86	84	83	80	79	92
85°	23	22	22	21	21	25
90°	1	6	14	15	16	2
95°	18	59	319	93	62	20
105°	62	92	432	756	684	66
115°	110	137	331	725	832	109
125°	153	181	309	559	656	136
135°	180	214	304	460	532	139
145°	205	235	300	378	416	128
155°	233	251	291	331	345	107
165°	254	262	278	295	300	72
175°	265	265	267	271	270	25
180°	266	266	266	266	266	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8
2.5°	512.6	512.2	511.9	511.6	511.2	510.7	509.8	509.0	508.1	507.3	508.0
5°	511.2	510.7	510.2	509.7	509.3	508.5	507.4	506.3	505.2	504.2	505.1
7.5°	506.2	505.7	505.2	504.7	504.3	503.4	502.4	501.2	500.1	499.0	499.8
10°	502.0	501.5	501.0	500.5	500.0	499.2	497.9	496.6	495.3	494.1	494.9
12.5°	496.3	496.0	495.5	495.1	494.7	493.9	492.8	491.5	490.3	489.2	489.8
15°	486.6	486.3	485.8	485.4	485.0	484.2	483.0	481.6	480.4	479.2	479.9
17.5°	475.2	474.8	474.3	473.7	473.3	472.4	471.1	469.9	468.5	467.3	467.8
20°	466.8	466.3	465.7	465.1	464.5	463.5	462.3	461.0	459.8	458.5	458.9
22.5°	457.3	456.8	456.2	455.6	455.1	454.1	452.8	451.6	450.3	449.0	449.3
25°	441.8	441.2	440.6	440.1	439.5	438.6	437.2	436.0	434.7	433.5	433.6
27.5°	425.2	424.6	424.0	423.5	422.9	422.0	420.7	419.2	417.9	416.5	416.6
30°	413.3	412.7	412.3	411.8	411.3	410.4	409.1	407.6	406.3	404.9	404.9
32.5°	401.3	400.7	400.0	399.4	398.8	397.8	396.8	395.8	394.7	393.7	393.1
35°	382.1	381.5	380.9	380.3	379.8	378.8	377.6	376.3	375.0	373.7	373.2
37.5°	362.4	361.7	360.9	360.1	359.5	358.4	357.1	355.8	354.6	353.3	352.6
40°	348.7	348.1	347.5	346.9	346.4	345.3	344.0	342.6	341.3	339.9	339.1
42.5°	335.0	334.3	333.7	333.0	332.3	331.3	330.0	328.6	327.3	325.8	325.1
45°	313.1	312.7	312.4	312.0	311.6	310.8	309.4	308.2	306.9	305.7	304.5
47.5°	291.4	290.9	290.3	289.7	289.2	288.3	287.1	285.9	284.7	283.5	282.4
50°	276.6	276.2	275.7	275.2	274.8	273.8	272.6	271.4	270.0	268.8	267.7
52.5°	261.2	260.9	260.5	260.2	259.9	259.0	257.7	256.4	255.1	253.6	252.8
55°	237.6	237.5	237.4	237.3	237.2	236.5	235.3	233.9	232.7	231.5	230.4
57.5°	215.1	214.8	214.4	214.1	213.8	213.1	212.1	211.0	210.1	209.1	208.1
60°	199.0	198.9	198.8	198.7	198.6	197.9	196.7	195.6	194.4	193.2	192.4
62.5°	184.5	184.3	184.1	183.8	183.5	182.9	181.6	180.5	179.3	178.1	177.3
65°	162.0	161.6	161.1	160.6	160.1	159.4	158.4	157.4	156.5	155.4	154.7
67.5°	138.3	137.8	137.4	137.0	136.6	135.9	135.3	134.5	133.7	133.0	132.3
70°	123.9	123.3	122.7	122.1	121.5	120.9	120.4	119.7	119.1	118.6	117.9
72.5°	108.8	108.3	107.9	107.4	107.0	106.5	105.8	105.2	104.5	103.9	103.2
75°	85.7	85.2	84.8	84.5	84.1	83.7	83.4	83.1	82.8	82.6	82.1
77.5°	65.1	64.9	64.8	64.6	64.3	64.0	63.7	63.3	63.0	62.6	62.3
80°	51.8	51.6	51.3	51.0	50.6	50.4	50.2	50.0	49.9	49.7	49.5
82.5°	38.8	38.7	38.7	38.6	38.5	38.5	38.5	38.5	38.5	38.4	38.2
85°	22.8	22.6	22.4	22.2	22.1	22.0	22.0	22.0	22.0	22.0	21.8
87.5°	9.3	9.3	9.3	9.4	9.4	9.4	9.7	9.9	10.2	10.5	10.3
90°	1.0	2.2	3.2	4.8	5.9	7.0	8.6	10.2	11.8	13.5	12.9
92.5°	6.7	9.9	14.4	18.6	23.1	31.1	45.1	68.2	91.0	82.7	62.4
95°	18.3	19.9	25.8	35.0	48.9	69.8	115.6	195.7	283.9	318.8	258.5
97.5°	31.2	31.8	36.4	44.3	58.1	80.8	124.4	214.7	361.7	494.1	528.6
100°	39.8	40.3	44.1	51.7	64.5	85.5	123.1	202.6	344.0	509.1	615.0
102.5°	48.8	49.8	53.2	60.2	71.8	91.0	124.8	192.4	318.3	481.2	619.3
105°	62.4	64.0	67.2	73.6	83.9	100.6	129.6	184.9	286.5	432.3	586.5
107.5°	76.7	78.4	81.5	87.8	97.5	112.9	138.4	184.4	266.4	389.0	529.1
110°	87.1	88.7	91.4	97.3	106.4	121.5	145.7	186.5	258.5	364.5	492.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	96.5	98.2	100.9	106.8	115.9	130.5	153.0	190.9	254.3	348.2	461.6
115°	110.2	112.4	115.6	120.9	130.1	144.6	165.0	197.8	252.7	330.6	423.7
117.5°	123.9	126.3	129.0	133.9	144.2	157.6	177.9	207.1	253.6	320.3	400.8
120°	133.4	135.0	137.6	143.0	153.3	166.6	186.0	214.0	255.3	315.6	388.7
122.5°	141.5	143.1	145.8	151.6	161.4	175.7	194.6	220.5	258.4	312.5	378.8
125°	153.3	154.3	157.5	163.4	173.6	188.1	207.0	230.6	262.9	308.6	366.1
127.5°	162.1	163.7	167.8	173.7	185.0	199.5	217.7	239.0	268.1	306.6	355.0
130°	167.8	169.4	174.2	180.6	191.9	206.4	224.1	244.6	271.5	305.4	348.9
132.5°	172.0	174.1	179.4	187.1	198.4	212.4	229.8	249.8	274.1	304.9	343.3
135°	179.6	181.7	187.7	195.7	207.0	221.5	238.2	256.5	278.0	304.3	336.0
137.5°	186.6	188.9	194.7	203.3	214.5	227.9	243.9	261.4	280.5	303.1	329.7
140°	191.4	194.1	199.4	208.0	218.8	232.2	247.8	264.0	282.2	302.7	325.7
142.5°	196.5	198.8	204.6	212.4	223.1	235.7	250.8	266.6	283.5	301.8	322.3
145°	204.8	206.4	211.3	219.3	228.5	240.8	254.9	269.4	284.4	300.5	317.7
147.5°	213.2	214.1	219.0	225.9	234.7	245.2	258.1	271.1	284.4	298.5	313.2
150°	218.8	219.3	223.7	230.6	238.2	247.8	260.2	271.5	284.4	296.7	310.2
152.5°	224.4	224.5	228.8	235.0	241.6	250.8	261.5	272.4	283.1	294.6	306.8
155°	232.8	232.8	236.0	241.4	247.3	254.9	264.0	272.6	281.7	290.9	301.6
157.5°	239.4	239.9	242.4	247.2	252.2	258.1	265.3	273.1	279.8	287.5	295.8
160°	244.6	244.6	246.8	251.1	254.9	260.2	266.6	273.1	279.0	284.9	291.9
162.5°	248.5	248.5	250.2	253.6	256.9	261.5	267.1	272.7	277.3	282.4	288.0
165°	254.3	253.7	254.9	257.5	259.7	263.4	267.7	271.5	274.8	278.5	282.8
167.5°	258.7	258.1	258.5	260.6	262.1	264.5	267.6	270.6	272.1	274.6	277.8
170°	261.3	260.2	260.7	262.3	263.4	264.5	267.2	269.4	270.4	272.0	274.8
172.5°	263.0	262.3	262.5	263.6	264.3	264.9	267.2	268.9	269.1	269.8	271.7
175°	265.0	264.5	264.0	265.0	265.0	265.6	266.6	267.7	267.2	267.2	268.2
177.5°	266.0	265.6	265.1	265.6	265.6	265.6	266.0	266.8	266.0	265.6	266.0
180°	265.6	265.6	265.6	265.6	265.6	265.6	265.6	265.6	265.6	265.6	265.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8
2.5°	508.8	509.6	510.4	510.8	510.7	510.6	510.5	510.4
5°	506.1	507.1	508.1	508.5	508.3	508.1	507.8	507.7
7.5°	500.8	501.6	502.5	502.8	502.8	502.7	502.6	502.4
10°	495.9	496.7	497.6	497.9	497.8	497.6	497.4	497.2
12.5°	490.4	491.1	491.7	492.0	491.9	491.7	491.6	491.5
15°	480.7	481.5	482.3	482.4	481.7	481.2	480.6	480.0
17.5°	468.3	468.9	469.5	469.7	469.4	469.2	469.0	468.8
20°	459.3	459.7	460.1	460.1	459.8	459.5	459.2	458.9
22.5°	449.6	450.0	450.3	450.3	449.9	449.5	449.1	448.7
25°	433.7	433.8	433.9	433.8	433.5	433.2	432.9	432.6
27.5°	416.7	416.8	416.8	416.7	416.3	415.9	415.6	415.2
30°	404.9	404.9	404.9	404.5	403.9	403.2	402.6	401.8
32.5°	392.6	392.0	391.5	391.1	390.7	390.3	389.9	389.6
35°	372.6	372.0	371.4	370.9	370.4	369.9	369.4	368.9
37.5°	351.9	351.2	350.4	350.0	349.7	349.3	349.0	348.7
40°	338.4	337.6	336.8	336.2	335.8	335.5	335.1	334.7
42.5°	324.3	323.5	322.7	322.2	321.8	321.4	321.0	320.6
45°	303.3	302.2	301.0	300.2	299.6	299.2	298.7	298.2
47.5°	281.3	280.1	278.9	278.1	277.7	277.3	276.8	276.4
50°	266.6	265.5	264.5	263.6	263.1	262.5	261.9	261.3
52.5°	251.8	250.9	250.0	249.2	248.6	248.1	247.5	246.9
55°	229.3	228.2	227.2	226.4	225.9	225.4	224.9	224.4
57.5°	207.2	206.1	205.2	204.4	203.9	203.3	202.7	202.2
60°	191.5	190.6	189.7	189.1	188.5	188.0	187.6	187.1
62.5°	176.3	175.5	174.7	174.0	173.7	173.3	173.1	172.7
65°	153.9	153.2	152.3	151.8	151.6	151.2	150.9	150.6
67.5°	131.6	130.9	130.3	129.7	129.3	128.8	128.5	128.1
70°	117.3	116.5	115.8	115.3	114.8	114.3	113.8	113.3
72.5°	102.6	102.0	101.4	100.9	100.8	100.5	100.2	99.9
75°	81.6	81.1	80.6	80.2	79.9	79.6	79.4	79.1
77.5°	61.9	61.6	61.3	61.2	61.2	61.2	61.2	61.2
80°	49.4	49.3	49.2	49.2	49.2	49.2	49.2	49.2
82.5°	38.1	37.9	37.7	37.5	37.5	37.4	37.3	37.2
85°	21.6	21.4	21.2	21.1	21.1	21.1	21.1	21.1
87.5°	10.3	10.3	10.3	10.5	10.4	10.5	10.7	10.5
90°	13.5	13.9	14.5	15.6	15.1	15.6	16.1	15.6
92.5°	45.2	35.9	31.8	28.9	28.0	26.3	26.9	25.9
95°	193.5	131.2	102.6	83.3	73.1	68.2	64.5	62.4
97.5°	482.5	386.4	317.1	252.8	213.1	188.9	174.4	169.8
100°	633.9	590.3	527.4	451.0	396.7	357.5	336.6	337.1
102.5°	684.2	682.8	646.1	597.7	555.4	524.3	506.8	494.5
105°	698.9	752.6	762.9	748.9	724.2	703.7	686.5	683.8
107.5°	656.5	743.9	790.9	810.0	810.5	803.6	797.8	792.9
110°	616.0	715.0	782.8	820.4	835.5	839.7	838.7	837.5





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	576.1	677.1	753.1	801.4	829.0	842.4	846.4	846.6
115°	523.1	616.6	695.7	754.2	794.6	818.2	829.0	831.7
117.5°	484.7	565.4	636.4	695.9	737.9	765.0	780.5	784.1
120°	464.5	537.1	601.5	655.9	698.3	728.5	741.3	744.6
122.5°	448.6	514.3	574.0	624.4	662.2	689.3	703.5	707.6
125°	427.3	486.0	537.6	580.6	615.0	638.7	652.1	655.9
127.5°	408.9	461.2	507.7	546.9	577.5	597.7	609.8	613.3
130°	397.3	445.6	489.2	525.8	554.3	573.6	584.9	589.2
132.5°	386.5	431.0	471.6	506.4	533.2	552.5	562.5	565.5
135°	372.0	410.2	445.2	475.8	502.1	518.2	527.9	531.7
137.5°	358.8	390.1	420.2	446.8	468.9	485.2	493.4	495.9
140°	351.1	378.4	404.3	427.3	447.8	462.9	471.5	470.9
142.5°	343.7	367.3	389.6	409.7	427.2	440.5	448.3	447.7
145°	334.9	352.7	369.9	385.5	398.9	410.2	414.5	415.6
147.5°	327.7	341.8	355.7	366.7	376.9	384.6	388.7	389.1
150°	322.5	334.9	346.2	356.5	364.5	370.4	373.6	373.6
152.5°	317.8	328.5	338.5	346.9	353.3	358.8	360.7	360.7
155°	310.8	319.3	327.4	333.8	338.7	343.0	344.0	344.6
157.5°	303.2	310.4	316.7	321.7	325.9	329.1	330.0	329.9
160°	298.9	304.8	310.2	314.0	317.7	320.9	320.9	320.4
162.5°	293.8	298.8	303.8	307.1	309.5	312.4	312.4	311.8
165°	287.1	290.3	294.1	296.7	298.9	301.0	300.5	300.5
167.5°	281.3	283.7	285.9	287.9	288.8	290.3	289.7	289.7
170°	277.4	279.0	281.2	282.2	282.8	283.9	283.3	283.3
172.5°	274.0	275.1	276.8	277.5	277.6	278.7	277.8	277.3
175°	269.4	269.8	271.0	271.0	271.0	271.5	271.0	270.4
177.5°	266.5	266.8	267.3	267.3	266.8	267.3	266.5	266.5
180°	265.6	265.6	265.6	265.6	265.6	265.6	265.6	265.6

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