

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: P331891-930

Luminaire Tested: **S123DIP-S340D805U930-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331891-930  
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-S340D805U930-4F0-1E-UDD-F4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 805 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3521.1 lumens  
Efficiency: N/A  
Efficacy: 112.9 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

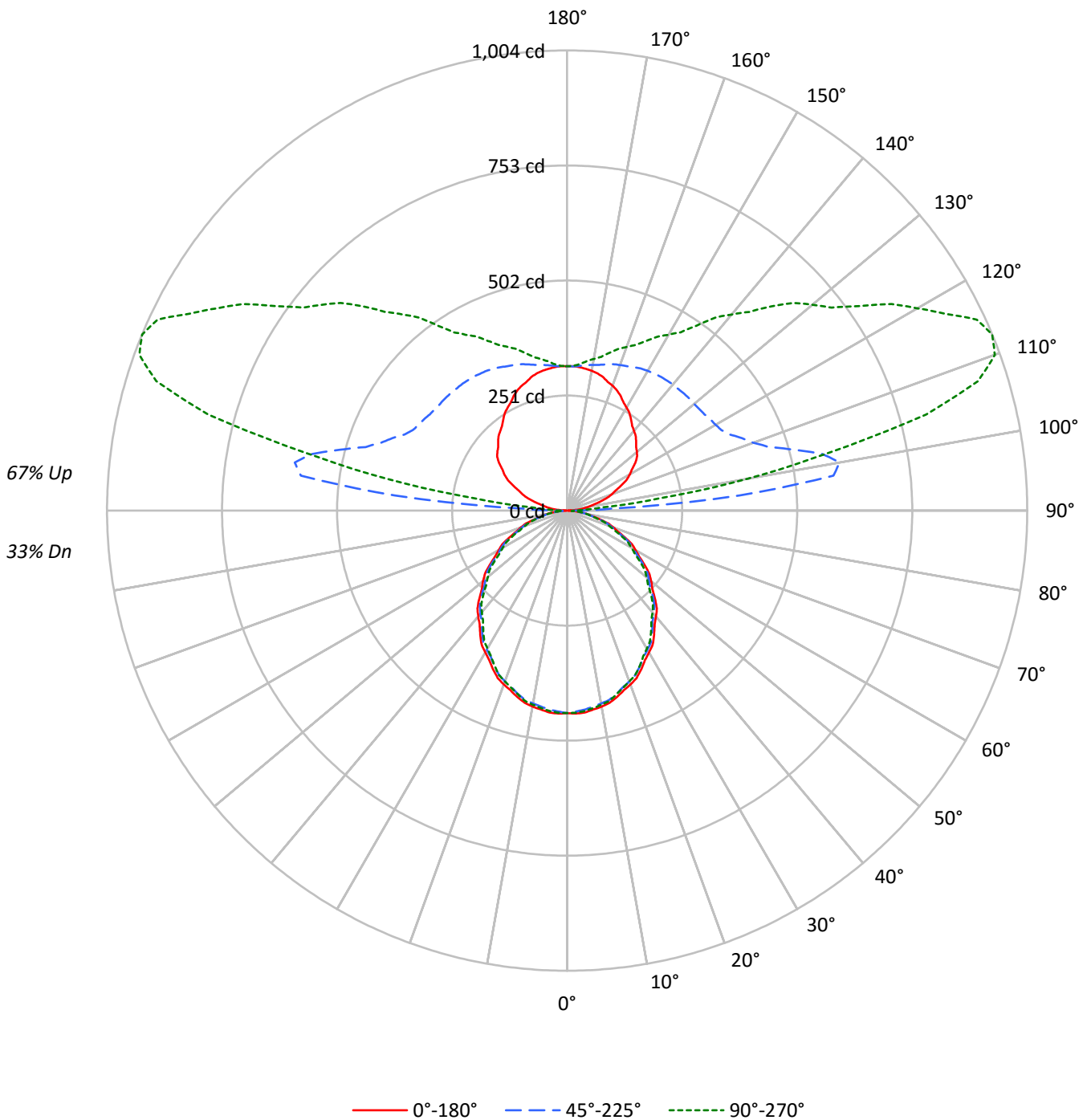
Input Watts (W): 31.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	93	93	93	93	74	74	74	56	56	56	40	40	40	33
1	94	90	86	82	84	81	78	75	64	62	60	49	48	47	35	35	34	27
2	85	78	72	67	77	71	66	61	56	53	50	43	41	39	31	30	28	23
3	78	69	62	56	70	62	56	51	50	45	42	38	35	33	28	26	24	19
4	71	61	53	47	64	55	48	43	44	39	36	34	31	28	25	23	21	17
5	65	54	46	40	58	49	42	37	39	34	30	30	27	24	22	20	18	14
6	60	48	40	35	54	44	37	32	35	30	26	27	24	21	20	18	16	13
7	55	43	36	30	50	39	33	28	32	27	23	25	21	19	18	16	14	11
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	14	13	10
9	48	36	28	24	43	33	26	22	27	22	18	21	17	15	15	13	11	9
10	44	33	26	21	40	30	24	19	24	20	16	19	16	13	14	12	10	8

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

	0°	45°	90°
0°	4755	4755	4755
5°	4778	4712	4744
10°	4746	4671	4701
15°	4690	4619	4627
20°	4625	4543	4548
25°	4538	4454	4444
30°	4443	4354	4320
35°	4343	4248	4193
40°	4239	4131	4068
45°	4122	4025	3927
50°	4007	3893	3785
55°	3856	3757	3643
60°	3705	3597	3483
65°	3568	3423	3319
70°	3371	3229	3084
75°	3082	2969	2845
80°	2777	2665	2641
85°	2433	2347	2260



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	41.6	1.2
10°-20°	117.5	3.3
20°-30°	173.6	4.9
30°-40°	202.8	5.8
40°-50°	203.9	5.8
50°-60°	179.1	5.1
60°-70°	133.4	3.8
70°-80°	76.0	2.2
80°-90°	24.3	0.7
90°-100°	175.2	5.0
100°-110°	496.2	14.1
110°-120°	488.1	13.9
120°-130°	389.3	11.1
130°-140°	307.0	8.7
140°-150°	229.1	6.5
150°-160°	159.7	4.5
160°-170°	93.8	2.7
170°-180°	30.5	0.9
0°-30°	332.7	9.4
0°-40°	535.5	15.2
0°-60°	918.4	26.1
0°-90°	1152.1	32.7
90°-120°	1159.6	32.9
90°-150°	2085.0	59.2
90°-180°	2369.0	67.3
0°-180°	3521.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	442	442	442	442	442	
5°	442	440	436	440	439	42
15°	421	419	414	417	415	119
25°	382	380	375	375	374	176
35°	330	328	323	321	319	207
45°	271	269	264	260	258	209
55°	206	205	200	196	194	184
65°	140	138	134	132	130	138
75°	74	73	71	70	68	79
85°	20	19	19	18	18	22
90°	1	8	16	18	18	3
95°	22	70	378	110	74	23
105°	74	109	512	896	811	79
115°	131	163	392	860	986	129
125°	182	214	366	663	778	161
135°	213	254	361	546	630	164
145°	243	278	356	448	493	152
155°	276	298	345	392	408	127
165°	302	310	330	350	356	85
175°	314	315	317	321	321	30
180°	315	315	315	315	315	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8
2.5°	443.4	443.0	442.8	442.5	442.2	441.7	441.0	440.3	439.5	438.8	439.4
5°	442.2	441.7	441.3	440.9	440.5	439.9	438.9	438.0	437.0	436.1	436.9
7.5°	437.9	437.4	437.0	436.6	436.2	435.5	434.6	433.6	432.6	431.6	432.4
10°	434.2	433.8	433.3	432.9	432.5	431.8	430.6	429.6	428.4	427.4	428.1
12.5°	429.3	429.0	428.6	428.3	428.0	427.2	426.2	425.2	424.1	423.1	423.7
15°	420.9	420.6	420.2	419.9	419.6	418.8	417.8	416.6	415.6	414.5	415.2
17.5°	411.1	410.7	410.3	409.8	409.4	408.6	407.5	406.4	405.3	404.2	404.6
20°	403.8	403.3	402.8	402.3	401.8	401.0	399.9	398.8	397.7	396.6	397.0
22.5°	395.6	395.1	394.6	394.1	393.6	392.8	391.7	390.6	389.5	388.4	388.7
25°	382.1	381.6	381.2	380.7	380.2	379.4	378.2	377.2	376.0	375.0	375.0
27.5°	367.8	367.3	366.8	366.3	365.8	365.0	363.9	362.6	361.5	360.3	360.4
30°	357.5	357.0	356.6	356.2	355.8	355.0	353.8	352.6	351.5	350.3	350.3
32.5°	347.2	346.6	346.0	345.4	345.0	344.1	343.2	342.3	341.4	340.6	340.1
35°	330.5	330.0	329.5	329.0	328.5	327.7	326.6	325.5	324.4	323.3	322.8
37.5°	313.5	312.8	312.2	311.5	311.0	310.1	308.9	307.8	306.7	305.6	305.0
40°	301.7	301.1	300.6	300.1	299.6	298.7	297.6	296.4	295.2	294.0	293.3
42.5°	289.8	289.2	288.6	288.0	287.5	286.6	285.4	284.2	283.1	281.8	281.2
45°	270.8	270.5	270.2	269.9	269.5	268.8	267.7	266.6	265.5	264.4	263.4
47.5°	252.1	251.6	251.1	250.6	250.1	249.4	248.3	247.3	246.3	245.2	244.3
50°	239.3	238.9	238.5	238.1	237.7	236.8	235.8	234.7	233.6	232.5	231.5
52.5°	225.9	225.7	225.3	225.1	224.8	224.0	222.9	221.8	220.6	219.4	218.7
55°	205.5	205.5	205.4	205.3	205.2	204.6	203.5	202.4	201.3	200.2	199.3
57.5°	186.1	185.8	185.5	185.2	184.9	184.3	183.4	182.5	181.7	180.8	180.0
60°	172.1	172.0	171.9	171.9	171.8	171.2	170.2	169.2	168.2	167.1	166.4
62.5°	159.6	159.4	159.2	159.0	158.7	158.2	157.1	156.1	155.1	154.1	153.4
65°	140.1	139.7	139.3	138.9	138.5	137.9	137.1	136.2	135.3	134.4	133.8
67.5°	119.6	119.2	118.9	118.5	118.1	117.6	117.0	116.3	115.7	115.0	114.5
70°	107.1	106.6	106.2	105.6	105.1	104.6	104.1	103.5	103.1	102.6	102.0
72.5°	94.1	93.7	93.4	92.9	92.5	92.1	91.6	91.0	90.4	89.8	89.3
75°	74.1	73.7	73.4	73.1	72.7	72.4	72.2	71.9	71.7	71.4	71.0
77.5°	56.3	56.2	56.0	55.8	55.6	55.4	55.1	54.8	54.5	54.1	53.9
80°	44.8	44.6	44.4	44.1	43.8	43.6	43.5	43.3	43.1	43.0	42.8
82.5°	33.6	33.5	33.5	33.4	33.3	33.3	33.3	33.3	33.3	33.2	33.0
85°	19.7	19.6	19.4	19.2	19.1	19.0	19.0	19.0	19.0	19.0	18.8
87.5°	8.2	8.2	8.2	8.5	8.5	8.6	9.0	9.2	9.5	9.9	9.7
90°	1.3	2.5	3.8	5.7	7.0	8.3	10.2	12.1	14.0	15.9	15.3
92.5°	7.9	11.7	17.1	22.1	27.4	36.9	53.6	81.0	107.9	98.0	73.9
95°	21.7	23.6	30.6	41.4	58.0	82.8	137.1	232.0	336.6	378.0	306.6
97.5°	36.9	37.6	43.1	52.5	68.8	95.7	147.5	254.6	428.8	585.8	626.7
100°	47.2	47.8	52.3	61.2	76.5	101.3	145.9	240.3	408.0	603.6	729.2
102.5°	57.9	59.0	62.9	71.4	85.2	107.9	148.0	228.0	377.3	570.5	734.3
105°	73.9	75.8	79.7	87.3	99.5	119.2	153.6	219.2	339.7	512.5	695.5
107.5°	91.0	92.9	96.6	104.1	115.5	133.9	164.0	218.7	315.8	461.2	627.4
110°	103.3	105.2	108.4	115.4	126.2	144.1	172.8	221.2	306.6	432.2	584.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	114.5	116.4	119.6	126.6	137.5	154.7	181.4	226.2	301.5	412.8	547.3
115°	130.7	133.2	137.1	143.4	154.3	171.5	195.7	234.6	299.6	392.0	502.3
117.5°	146.8	149.8	153.0	158.8	171.0	186.9	210.8	245.6	300.8	379.8	475.2
120°	158.1	160.0	163.1	169.6	181.6	197.6	220.5	253.7	302.8	374.1	460.9
122.5°	167.8	169.7	172.8	179.8	191.4	208.3	230.7	261.3	306.3	370.6	449.1
125°	181.6	183.0	186.8	193.8	205.9	223.1	245.4	273.5	311.7	365.9	434.1
127.5°	192.2	194.1	198.9	206.0	219.4	236.6	258.1	283.4	317.8	363.6	420.9
130°	198.9	200.8	206.5	214.2	227.6	244.8	265.8	290.0	321.9	362.1	413.7
132.5°	204.0	206.4	212.6	221.8	235.2	251.9	272.4	296.1	325.0	361.5	407.1
135°	212.9	215.5	222.5	232.0	245.4	262.6	282.3	304.0	329.5	360.8	398.4
137.5°	221.3	224.0	230.9	241.1	254.3	270.3	289.3	309.9	332.6	359.4	390.9
140°	226.9	230.1	236.5	246.7	259.4	275.3	293.8	313.0	334.7	358.9	386.3
142.5°	233.0	235.7	242.6	251.8	264.6	279.4	297.4	316.0	336.1	357.8	382.2
145°	242.9	244.8	250.5	260.1	270.9	285.6	302.1	319.4	337.2	356.3	376.7
147.5°	252.8	254.0	259.6	267.8	278.3	290.8	306.0	321.4	337.2	353.9	371.4
150°	259.4	260.1	265.1	273.5	282.3	293.8	308.5	321.9	337.2	351.9	367.8
152.5°	266.0	266.2	271.3	278.6	286.4	297.4	310.1	322.9	335.7	349.3	363.7
155°	276.0	276.0	279.8	286.2	293.2	302.1	313.0	323.2	334.0	344.9	357.6
157.5°	283.9	284.4	287.5	293.1	299.1	306.0	314.6	323.8	331.8	340.9	350.7
160°	290.0	290.0	292.6	297.7	302.1	308.5	316.2	323.8	330.8	337.9	346.1
162.5°	294.6	294.6	296.7	300.8	304.7	310.1	316.7	323.3	328.8	334.8	341.5
165°	301.5	300.8	302.1	305.3	307.9	312.3	317.4	321.9	325.7	330.2	335.3
167.5°	306.7	306.0	306.6	309.0	310.8	313.6	317.3	320.9	322.7	325.6	329.3
170°	309.8	308.5	309.2	311.0	312.3	313.6	316.8	319.4	320.7	322.5	325.7
172.5°	311.9	311.0	311.2	312.6	313.3	314.1	316.8	318.9	319.1	320.0	322.1
175°	314.2	313.6	313.0	314.2	314.2	314.9	316.2	317.4	316.8	316.8	318.0
177.5°	315.4	314.9	314.4	314.9	314.9	314.9	315.4	316.4	315.4	314.9	315.4
180°	314.9	314.9	314.9	314.9	314.9	314.9	314.9	314.9	314.9	314.9	314.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8
2.5°	440.1	440.8	441.5	441.8	441.7	441.6	441.6	441.5
5°	437.8	438.6	439.5	439.9	439.7	439.5	439.3	439.1
7.5°	433.2	433.9	434.6	435.0	434.9	434.8	434.7	434.6
10°	428.9	429.7	430.4	430.7	430.6	430.4	430.2	430.1
12.5°	424.2	424.8	425.3	425.6	425.5	425.3	425.3	425.2
15°	415.8	416.5	417.2	417.3	416.7	416.2	415.7	415.2
17.5°	405.1	405.6	406.1	406.3	406.0	405.9	405.7	405.5
20°	397.3	397.6	397.9	398.0	397.7	397.5	397.2	397.0
22.5°	388.9	389.2	389.5	389.5	389.1	388.8	388.5	388.2
25°	375.1	375.2	375.3	375.2	375.0	374.7	374.5	374.2
27.5°	360.4	360.5	360.5	360.4	360.1	359.8	359.5	359.1
30°	350.3	350.3	350.3	349.9	349.4	348.8	348.2	347.6
32.5°	339.6	339.1	338.7	338.3	337.9	337.6	337.3	337.0
35°	322.3	321.8	321.2	320.8	320.4	319.9	319.5	319.1
37.5°	304.4	303.8	303.1	302.7	302.5	302.1	301.9	301.7
40°	292.7	292.0	291.3	290.8	290.5	290.2	289.8	289.5
42.5°	280.5	279.8	279.2	278.7	278.3	278.0	277.7	277.3
45°	262.4	261.4	260.3	259.7	259.2	258.8	258.4	258.0
47.5°	243.3	242.3	241.2	240.6	240.2	239.9	239.5	239.1
50°	230.6	229.7	228.8	228.0	227.6	227.1	226.6	226.0
52.5°	217.8	217.0	216.2	215.6	215.1	214.6	214.1	213.6
55°	198.4	197.4	196.5	195.8	195.4	194.9	194.5	194.1
57.5°	179.2	178.3	177.5	176.8	176.3	175.9	175.4	174.9
60°	165.7	164.9	164.1	163.5	163.1	162.7	162.2	161.8
62.5°	152.5	151.8	151.1	150.5	150.3	149.9	149.7	149.4
65°	133.1	132.5	131.8	131.3	131.1	130.8	130.5	130.3
67.5°	113.8	113.2	112.7	112.2	111.9	111.5	111.1	110.8
70°	101.4	100.8	100.2	99.7	99.3	98.9	98.4	98.0
72.5°	88.8	88.2	87.7	87.3	87.2	86.9	86.7	86.4
75°	70.6	70.1	69.7	69.4	69.1	68.9	68.6	68.4
77.5°	53.6	53.3	53.0	52.9	52.9	52.9	52.9	52.9
80°	42.7	42.6	42.6	42.6	42.6	42.6	42.6	42.6
82.5°	32.9	32.8	32.6	32.4	32.4	32.4	32.3	32.2
85°	18.7	18.5	18.3	18.3	18.3	18.3	18.3	18.3
87.5°	9.7	9.8	9.9	10.1	9.9	10.1	10.2	10.1
90°	15.9	16.6	17.2	18.5	17.9	18.5	19.2	18.5
92.5°	53.6	42.6	37.6	34.3	33.2	31.2	31.9	30.7
95°	229.5	155.6	121.7	98.8	86.7	81.0	76.5	73.9
97.5°	572.0	458.2	375.9	299.7	252.7	224.0	206.8	201.3
100°	751.5	699.9	625.3	534.8	470.4	423.9	399.0	399.7
102.5°	811.1	809.5	766.1	708.7	658.6	621.7	601.0	586.3
105°	828.7	892.3	904.5	887.9	858.6	834.4	814.0	810.8
107.5°	778.4	881.9	937.8	960.4	961.0	952.8	945.9	940.0
110°	730.5	847.7	928.1	972.7	990.5	995.6	994.3	993.1





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	683.1	802.9	892.9	950.2	982.9	998.7	1003.6	1003.8
115°	620.2	731.1	824.8	894.3	942.1	970.1	982.9	986.1
117.5°	574.7	670.4	754.6	825.1	874.9	907.0	925.4	929.8
120°	550.7	636.7	713.3	777.6	828.0	863.7	879.0	882.8
122.5°	531.9	609.8	680.6	740.5	785.1	817.3	834.1	838.9
125°	506.7	576.3	637.4	688.4	729.2	757.2	773.1	777.6
127.5°	484.9	546.7	602.0	648.4	684.7	708.7	723.1	727.2
130°	471.1	528.4	580.1	623.4	657.2	680.1	693.5	698.6
132.5°	458.3	511.1	559.1	600.5	632.2	655.2	667.0	670.6
135°	441.1	486.3	527.7	564.1	595.3	614.5	625.9	630.4
137.5°	425.4	462.5	498.2	529.7	556.0	575.4	585.1	588.0
140°	416.2	448.7	479.3	506.7	531.0	548.8	559.1	558.4
142.5°	407.6	435.5	462.0	485.8	506.5	522.3	531.5	530.8
145°	397.1	418.2	438.5	457.1	473.0	486.3	491.5	492.7
147.5°	388.6	405.3	421.8	434.9	446.9	456.0	460.9	461.4
150°	382.5	397.1	410.5	422.6	432.2	439.2	443.0	443.0
152.5°	376.8	389.5	401.3	411.4	418.9	425.4	427.7	427.7
155°	368.4	378.6	388.2	395.8	401.5	406.7	408.0	408.5
157.5°	359.5	368.0	375.4	381.4	386.4	390.2	391.3	391.1
160°	354.4	361.4	367.8	372.3	376.7	380.5	380.5	379.9
162.5°	348.3	354.2	360.1	364.1	367.0	370.3	370.3	369.7
165°	340.4	344.2	348.7	351.9	354.4	356.9	356.3	356.3
167.5°	333.5	336.4	339.0	341.3	342.4	344.2	343.6	343.6
170°	328.9	330.8	333.4	334.7	335.3	336.6	335.9	335.9
172.5°	324.8	326.2	328.2	329.1	329.1	330.4	329.3	328.8
175°	319.4	320.0	321.2	321.2	321.2	321.9	321.2	320.7
177.5°	315.9	316.4	316.9	316.9	316.4	316.9	315.9	315.9
180°	314.9	314.9	314.9	314.9	314.9	314.9	314.9	314.9

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