

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: P331871-830

Luminaire Tested: **S123DIP-S340D365U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331871-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIP-S340D365U830-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2697.4 lumens
Efficiency: N/A
Efficacy: 132.9 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: General Diffuse

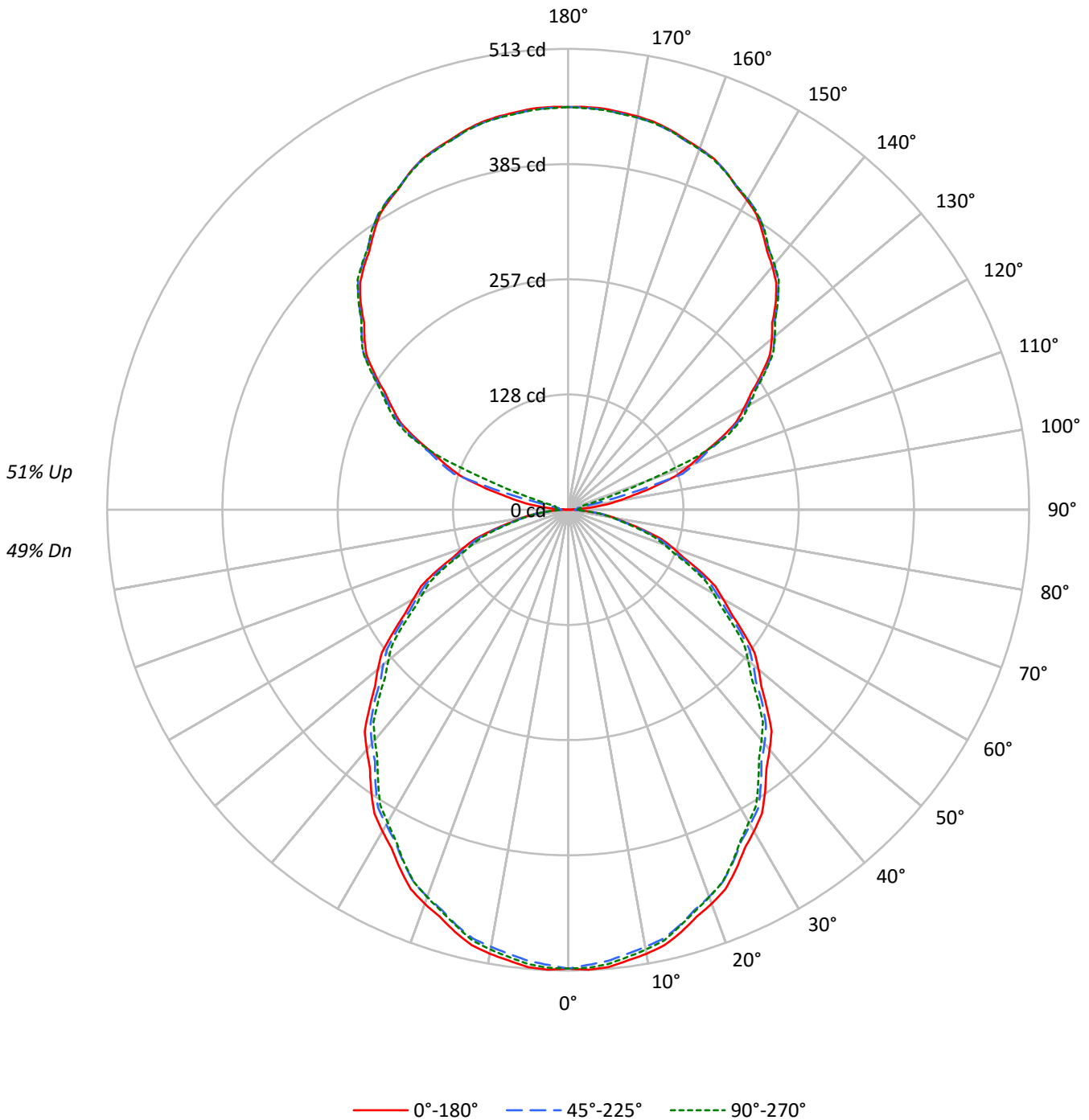
Input Watts (W): 20.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	55	55	55	49
1	98	93	89	86	90	86	83	80	73	70	68	60	59	57	49	48	47	41
2	89	81	75	70	82	75	70	65	64	60	56	53	50	48	43	41	39	35
3	81	71	64	58	74	66	60	55	56	51	47	47	43	40	38	36	33	29
4	74	63	55	49	68	59	52	46	50	44	40	42	38	34	34	31	29	25
5	68	56	48	42	62	52	45	40	45	39	35	37	33	30	31	28	25	22
6	63	51	42	37	57	47	40	34	40	34	30	34	29	26	28	25	22	19
7	58	46	38	32	53	42	35	30	36	31	27	31	26	23	25	22	20	17
8	54	41	34	28	49	39	32	27	33	28	24	28	24	21	23	20	18	15
9	50	38	30	25	46	35	28	24	30	25	21	26	22	18	22	18	16	14
10	47	35	27	23	43	32	26	21	28	23	19	24	20	17	20	17	14	12

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	1.8
10°-20°	135.9	5.0
20°-30°	200.7	7.4
30°-40°	234.4	8.7
40°-50°	235.7	8.7
50°-60°	207.0	7.7
60°-70°	154.2	5.7
70°-80°	87.9	3.3
80°-90°	26.5	1.0
90°-100°	16.3	0.6
100°-110°	77.7	2.9
110°-120°	186.6	6.9
120°-130°	237.6	8.8
130°-140°	253.9	9.4
140°-150°	237.4	8.8
150°-160°	191.5	7.1
160°-170°	123.6	4.6
170°-180°	42.6	1.6
0°-30°	384.6	14.3
0°-40°	619.1	22.9
0°-60°	1061.7	39.4
0°-90°	1330.3	49.3
90°-120°	280.6	10.4
90°-150°	1009.4	37.4
90°-180°	1367.0	50.7
0°-180°	2697.4	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°	0	4	8	9	10	2
95°	20	8	10	12	13	25
105°	99	101	73	17	15	105
115°	186	188	191	194	196	184
125°	262	265	266	267	268	234
135°	327	329	330	331	330	251
145°	377	379	380	381	381	236
155°	415	415	415	416	415	191
165°	438	437	437	439	437	124
175°	448	447	447	449	447	43
180°	448	448	448	448	448	



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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°	9.2	9.1	9.0	9.0	8.9	8.9	9.0	9.1	9.2	9.3	9.3
90°	0.4	1.0	1.8	2.5	3.3	4.1	5.1	6.0	7.1	8.0	8.3
92.5°	6.2	6.0	5.7	5.6	5.4	5.7	6.3	7.1	7.8	8.5	9.0
95°	20.4	17.2	14.2	11.2	8.2	7.1	7.9	8.7	9.5	10.4	10.8
97.5°	40.8	39.5	38.1	36.8	35.3	32.0	26.7	21.4	16.0	10.7	11.3
100°	56.3	57.8	59.3	60.7	62.2	57.2	45.6	34.1	22.5	11.0	11.6
102.5°	73.9	74.9	76.0	77.1	78.1	72.4	59.8	47.1	34.5	22.0	20.1
105°	99.2	100.1	100.9	101.7	102.5	99.6	92.9	86.2	79.6	73.0	59.9
107.5°	126.0	126.7	127.3	128.0	128.7	129.5	130.5	131.6	132.6	133.7	124.0
110°	143.9	144.5	145.1	145.6	146.3	146.9	147.8	148.5	149.4	150.2	147.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	160.9	161.5	162.0	162.5	163.1	163.7	164.6	165.4	166.2	167.0	167.0
115°	186.2	186.6	187.1	187.5	187.9	188.5	189.2	189.8	190.5	191.1	191.9
117.5°	210.7	211.2	211.7	212.3	212.8	213.3	213.6	214.0	214.3	214.6	215.2
120°	225.8	226.5	227.2	227.8	228.5	228.9	229.1	229.4	229.6	229.8	230.5
122.5°	241.3	241.9	242.3	242.9	243.5	243.8	244.1	244.4	244.7	245.0	245.4
125°	262.5	263.1	263.6	264.2	264.9	265.2	265.6	265.9	266.2	266.5	266.6
127.5°	283.0	283.6	284.2	284.7	285.3	285.8	286.2	286.5	286.9	287.2	287.5
130°	295.8	296.3	296.9	297.6	298.1	298.6	298.9	299.2	299.4	299.7	300.0
132.5°	308.0	308.6	309.2	309.8	310.4	310.8	311.0	311.3	311.5	311.8	312.1
135°	326.8	327.2	327.6	328.1	328.5	328.9	329.1	329.5	329.8	330.1	330.3
137.5°	342.7	343.3	343.8	344.4	345.0	345.3	345.5	345.6	345.8	346.0	346.4
140°	353.4	353.8	354.3	354.7	355.2	355.5	355.7	355.9	356.2	356.4	356.7
142.5°	363.3	363.7	364.1	364.6	365.0	365.3	365.6	365.8	366.0	366.3	366.5
145°	377.0	377.6	378.1	378.6	379.1	379.5	379.6	379.8	379.8	380.0	380.2
147.5°	390.0	390.4	390.7	391.1	391.3	391.6	391.8	391.9	392.1	392.2	392.4
150°	398.0	398.2	398.4	398.7	398.9	399.1	399.3	399.4	399.5	399.6	399.8
152.5°	405.2	405.3	405.4	405.5	405.6	405.8	405.8	405.9	406.0	406.0	406.3
155°	415.4	415.2	415.0	414.9	414.7	414.7	414.8	414.8	414.9	415.0	415.4
157.5°	423.2	423.2	423.2	423.1	423.1	423.1	423.0	422.9	422.8	422.8	423.2
160°	428.0	427.9	427.8	427.7	427.7	427.6	427.5	427.4	427.4	427.3	427.7
162.5°	432.5	432.3	432.2	432.0	431.8	431.6	431.5	431.5	431.4	431.3	431.8
165°	438.0	437.7	437.5	437.3	437.1	437.0	436.9	436.8	436.7	436.7	437.2
167.5°	442.2	442.0	441.7	441.4	441.0	440.9	440.9	440.9	440.9	440.9	441.5
170°	444.6	444.3	444.0	443.7	443.5	443.3	443.3	443.3	443.3	443.3	443.9
172.5°	446.2	445.9	445.5	445.2	444.8	444.7	444.7	444.8	444.9	444.9	445.5
175°	448.3	447.9	447.5	447.2	446.9	446.7	446.8	446.9	446.9	447.0	447.5
177.5°	448.8	448.6	448.3	448.0	447.6	447.5	447.6	447.6	447.7	447.8	448.3
180°	448.3	448.3	448.3	448.3	448.3	448.3	448.3	448.3	448.3	448.3	448.3



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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°	9.3	9.2	9.2	9.2	9.3	9.3	9.3	9.3
90°	8.6	8.9	9.1	9.4	9.5	9.7	9.8	10.0
92.5°	9.5	10.0	10.5	10.7	10.7	10.8	10.9	11.0
95°	11.4	11.9	12.4	12.6	12.6	12.6	12.6	12.6
97.5°	11.9	12.5	13.1	13.4	13.5	13.6	13.7	13.8
100°	12.2	12.7	13.4	13.7	13.8	13.9	13.9	13.9
102.5°	18.3	16.4	14.6	13.8	13.9	13.9	14.1	14.2
105°	46.8	33.6	20.5	14.0	14.2	14.3	14.5	14.6
107.5°	114.5	104.9	95.3	85.5	75.7	65.8	55.9	46.0
110°	145.3	142.9	140.4	133.9	123.4	112.7	102.2	91.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	167.1	167.1	167.2	166.1	163.8	161.6	159.4	157.1
115°	192.7	193.4	194.2	194.6	194.9	195.3	195.6	195.9
117.5°	215.8	216.4	217.0	217.4	217.4	217.4	217.5	217.5
120°	231.0	231.6	232.1	232.5	232.5	232.5	232.5	232.5
122.5°	245.8	246.3	246.7	246.9	246.9	247.0	247.0	247.1
125°	266.7	266.9	267.0	267.2	267.3	267.5	267.7	267.8
127.5°	287.7	287.9	288.2	288.2	288.0	287.9	287.8	287.7
130°	300.4	300.7	301.0	301.0	300.9	300.8	300.6	300.4
132.5°	312.4	312.6	312.9	313.0	312.7	312.5	312.4	312.2
135°	330.5	330.7	330.9	330.9	330.7	330.5	330.3	330.1
137.5°	346.7	347.0	347.4	347.5	347.3	347.2	347.0	346.9
140°	356.9	357.2	357.6	357.6	357.5	357.3	357.2	357.0
142.5°	366.7	366.9	367.2	367.2	367.0	366.7	366.6	366.4
145°	380.3	380.5	380.6	380.7	380.7	380.7	380.7	380.7
147.5°	392.5	392.7	392.9	392.8	392.4	392.0	391.7	391.3
150°	400.0	400.1	400.3	400.2	400.0	399.8	399.5	399.4
152.5°	406.6	406.9	407.2	407.1	406.8	406.4	406.0	405.8
155°	415.8	416.1	416.5	416.4	416.0	415.6	415.1	414.6
157.5°	423.7	424.1	424.6	424.5	424.0	423.4	422.7	422.2
160°	428.2	428.7	429.1	429.0	428.6	428.0	427.5	427.0
162.5°	432.3	432.8	433.3	433.4	432.9	432.4	432.0	431.5
165°	437.8	438.5	439.0	439.0	438.6	438.0	437.5	437.0
167.5°	442.1	442.7	443.3	443.3	442.7	442.1	441.5	440.9
170°	444.5	445.1	445.6	445.6	445.1	444.5	443.9	443.3
172.5°	446.1	446.7	447.2	447.2	446.6	445.9	445.3	444.6
175°	448.0	448.6	449.0	449.0	448.5	447.8	447.2	446.7
177.5°	448.7	449.2	449.7	449.6	449.0	448.5	447.8	447.2
180°	448.3	448.3	448.3	448.3	448.3	448.3	448.3	448.3

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