

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: P331872-830

Luminaire Tested: **S123DIP-S340D365U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331872-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
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-F1  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 365 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

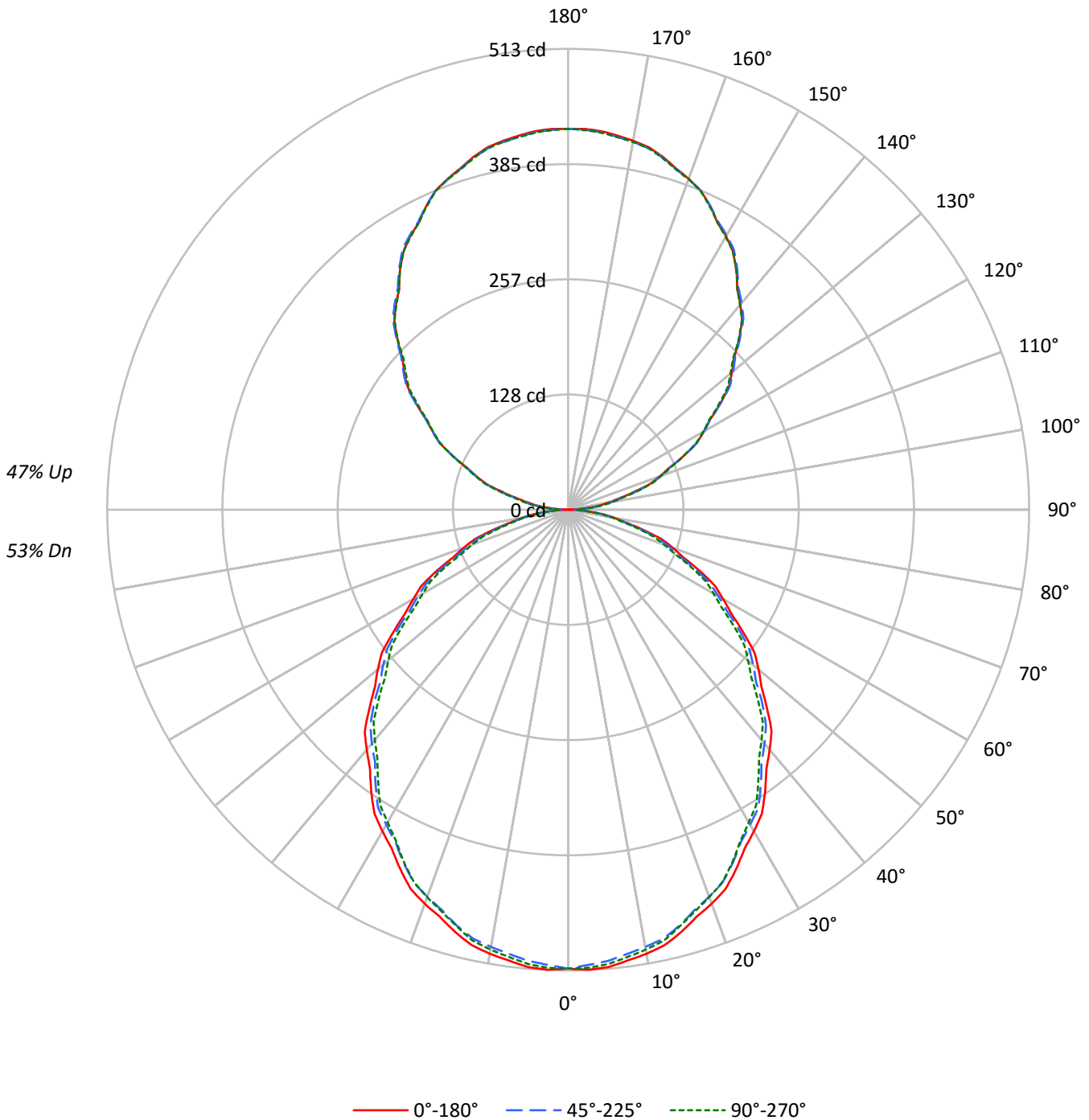
Lumens per Lamp: N/A  
Luminaire Lumens: 2505.1 lumens  
Efficiency: N/A  
Efficacy: 123.4 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse  
  
Input Watts (W): 20.3  
Input Voltage (V): 120  
Input Current (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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	53
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50	45
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42	37
3	82	72	65	59	75	67	61	55	58	53	48	49	45	42	40	38	36	32
4	75	64	56	50	69	59	52	47	51	46	41	43	39	36	36	33	31	27
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27	23
6	63	51	43	37	58	48	40	35	41	35	31	35	31	27	30	26	23	21
7	58	46	38	32	54	43	36	31	37	32	27	32	27	24	27	24	21	18
8	54	42	34	29	50	39	32	27	34	28	24	29	25	21	25	21	19	16
9	51	38	31	26	47	36	29	24	31	26	22	27	22	19	23	19	17	15
10	47	35	28	23	44	33	26	22	29	23	20	25	21	17	21	18	15	13

**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	1.9
10°-20°	135.9	5.4
20°-30°	200.7	8.0
30°-40°	234.4	9.4
40°-50°	235.7	9.4
50°-60°	207.0	8.3
60°-70°	154.2	6.2
70°-80°	87.9	3.5
80°-90°	26.5	1.1
90°-100°	27.6	1.1
100°-110°	82.7	3.3
110°-120°	140.6	5.6
120°-130°	185.0	7.4
130°-140°	207.9	8.3
140°-150°	204.4	8.2
150°-160°	172.0	6.9
160°-170°	114.5	4.6
170°-180°	40.1	1.6
0°-30°	384.6	15.4
0°-40°	619.1	24.7
0°-60°	1061.7	42.4
0°-90°	1330.3	53.1
90°-120°	250.9	10.0
90°-150°	848.1	33.9
90°-180°	1175.0	46.9
0°-180°	2505.1	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	22	25	26	26	22
105°	75	76	79	79	79	80
115°	142	142	142	142	142	140
125°	207	208	208	206	205	185
135°	269	271	270	269	268	207
145°	326	327	328	327	326	204
155°	373	373	374	375	373	172
165°	407	406	406	408	405	115
175°	423	422	422	423	421	40
180°	424	424	424	424	424	



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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°	8.1	8.6	9.0	9.6	10.1	10.6	11.1	11.7	12.3	12.8	13.0
95°	19.7	20.2	20.6	21.2	21.7	22.2	22.9	23.5	24.0	24.7	25.0
97.5°	34.9	35.3	35.7	36.1	36.5	36.9	37.3	37.7	38.2	38.5	38.9
100°	45.3	45.7	46.2	46.7	47.0	47.5	47.9	48.3	48.6	48.9	49.2
102.5°	57.3	57.6	57.8	58.1	58.3	58.7	59.2	59.8	60.2	60.7	60.9
105°	74.9	75.1	75.2	75.4	75.5	76.0	76.6	77.3	77.9	78.6	78.6
107.5°	95.5	95.6	95.7	95.8	95.9	96.0	96.2	96.5	96.8	97.1	97.3
110°	108.3	108.4	108.6	108.7	108.9	109.0	109.1	109.3	109.4	109.6	109.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	121.6	121.7	121.8	121.9	122.0	122.0	122.1	122.1	122.1	122.2	122.4
115°	141.6	141.8	142.0	142.2	142.4	142.5	142.3	142.2	142.0	141.9	141.9
117.5°	161.6	161.8	162.0	162.1	162.3	162.2	162.0	161.8	161.6	161.5	161.5
120°	174.2	174.7	175.1	175.5	176.0	176.0	175.7	175.3	174.9	174.6	174.5
122.5°	187.3	187.6	187.9	188.2	188.6	188.6	188.4	188.2	188.0	187.8	187.7
125°	207.2	207.4	207.6	207.8	208.1	208.1	207.9	207.8	207.6	207.5	207.2
127.5°	225.6	226.0	226.5	227.0	227.4	227.6	227.4	227.2	227.2	227.0	226.6
130°	237.8	238.4	239.0	239.6	240.2	240.3	240.2	240.0	239.7	239.5	239.2
132.5°	250.1	250.7	251.3	251.8	252.4	252.7	252.5	252.3	252.1	252.0	251.7
135°	268.8	269.3	269.7	270.1	270.6	270.8	270.7	270.6	270.5	270.5	270.1
137.5°	286.2	286.5	286.8	287.2	287.6	287.9	288.0	288.2	288.4	288.6	288.3
140°	298.1	298.5	298.9	299.3	299.6	299.8	299.9	299.9	300.0	300.1	300.0
142.5°	309.1	309.4	309.8	310.2	310.5	310.8	310.9	311.0	311.1	311.3	311.2
145°	326.1	326.2	326.4	326.5	326.7	326.9	327.1	327.3	327.5	327.7	327.7
147.5°	341.0	341.3	341.6	341.9	342.0	342.3	342.5	342.7	342.9	343.2	343.2
150°	351.4	351.6	351.7	351.9	352.0	352.1	352.3	352.4	352.6	352.7	352.7
152.5°	360.0	360.1	360.3	360.5	360.8	360.9	361.0	361.1	361.2	361.3	361.4
155°	373.4	373.4	373.4	373.4	373.4	373.4	373.5	373.5	373.6	373.7	374.0
157.5°	384.8	384.7	384.7	384.6	384.5	384.5	384.6	384.6	384.7	384.7	385.0
160°	392.0	391.9	391.7	391.6	391.4	391.3	391.3	391.3	391.3	391.3	391.7
162.5°	398.4	398.2	398.0	397.8	397.6	397.6	397.6	397.7	397.8	397.8	398.1
165°	406.7	406.5	406.2	406.0	405.8	405.7	405.7	405.7	405.7	405.7	406.1
167.5°	413.3	413.0	412.7	412.4	412.1	412.0	412.1	412.1	412.2	412.3	412.6
170°	417.0	416.7	416.4	416.1	415.8	415.7	415.7	415.7	415.7	415.7	416.2
172.5°	420.0	419.6	419.3	419.1	418.8	418.6	418.6	418.6	418.6	418.6	419.1
175°	423.0	422.7	422.4	422.2	421.9	421.7	421.7	421.7	421.7	421.7	422.2
177.5°	424.2	424.0	423.8	423.6	423.3	423.2	423.2	423.2	423.2	423.2	423.6
180°	424.0	424.0	424.0	424.0	424.0	424.0	424.0	424.0	424.0	424.0	424.0



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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°	13.3	13.5	13.8	13.9	13.8	13.7	13.6	13.5
95°	25.3	25.5	25.8	26.0	26.0	26.0	26.0	26.0
97.5°	39.2	39.6	40.0	40.1	40.1	40.1	40.0	40.0
100°	49.4	49.7	49.9	50.0	50.1	50.3	50.5	50.6
102.5°	61.2	61.4	61.5	61.6	61.6	61.6	61.5	61.5
105°	78.6	78.6	78.6	78.7	78.8	79.0	79.2	79.3
107.5°	97.6	97.7	98.0	98.1	98.0	97.9	97.8	97.7
110°	110.2	110.5	110.7	110.8	110.7	110.6	110.4	110.3





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	122.8	123.2	123.6	123.7	123.7	123.7	123.6	123.6
115°	142.0	142.1	142.2	142.2	142.1	142.0	141.9	141.9
117.5°	161.5	161.5	161.5	161.3	161.1	160.9	160.7	160.5
120°	174.4	174.3	174.3	174.1	174.0	173.8	173.7	173.5
122.5°	187.5	187.3	187.1	186.9	186.7	186.4	186.2	186.1
125°	206.9	206.6	206.3	206.0	205.8	205.5	205.1	204.8
127.5°	226.1	225.7	225.3	224.9	224.6	224.2	223.9	223.6
130°	238.9	238.6	238.3	237.9	237.4	236.9	236.4	235.8
132.5°	251.3	250.9	250.6	250.2	249.8	249.4	249.0	248.6
135°	269.8	269.6	269.3	269.1	268.9	268.7	268.6	268.4
137.5°	288.0	287.8	287.4	287.1	286.8	286.5	286.3	286.0
140°	299.9	299.9	299.8	299.5	299.0	298.5	297.9	297.5
142.5°	311.1	311.0	311.0	310.8	310.4	310.0	309.5	309.2
145°	327.6	327.5	327.4	327.3	327.0	326.7	326.4	326.1
147.5°	343.2	343.2	343.2	342.9	342.5	342.0	341.6	341.1
150°	352.7	352.7	352.7	352.5	352.0	351.7	351.2	350.7
152.5°	361.5	361.7	361.7	361.6	361.2	360.8	360.4	360.1
155°	374.3	374.6	374.9	374.8	374.3	373.7	373.2	372.7
157.5°	385.3	385.7	386.0	385.9	385.5	385.1	384.7	384.3
160°	392.1	392.5	392.9	392.9	392.6	392.3	392.0	391.7
162.5°	398.5	398.9	399.3	399.2	398.7	398.2	397.8	397.3
165°	406.6	407.0	407.5	407.5	406.9	406.4	405.9	405.4
167.5°	413.1	413.6	414.1	414.1	413.6	413.1	412.6	412.3
170°	416.7	417.3	417.7	417.7	417.3	416.7	416.2	415.7
172.5°	419.5	420.0	420.5	420.5	419.9	419.4	418.9	418.4
175°	422.5	423.0	423.5	423.4	422.9	422.4	421.9	421.3
177.5°	424.0	424.2	424.6	424.6	424.2	423.8	423.4	422.9
180°	424.0	424.0	424.0	424.0	424.0	424.0	424.0	424.0

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