

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: P331247-930

Luminaire Tested: **SA2XXDIP-C290D330U930-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331247-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C290D330U930-4F0-1E-UDD-F1  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

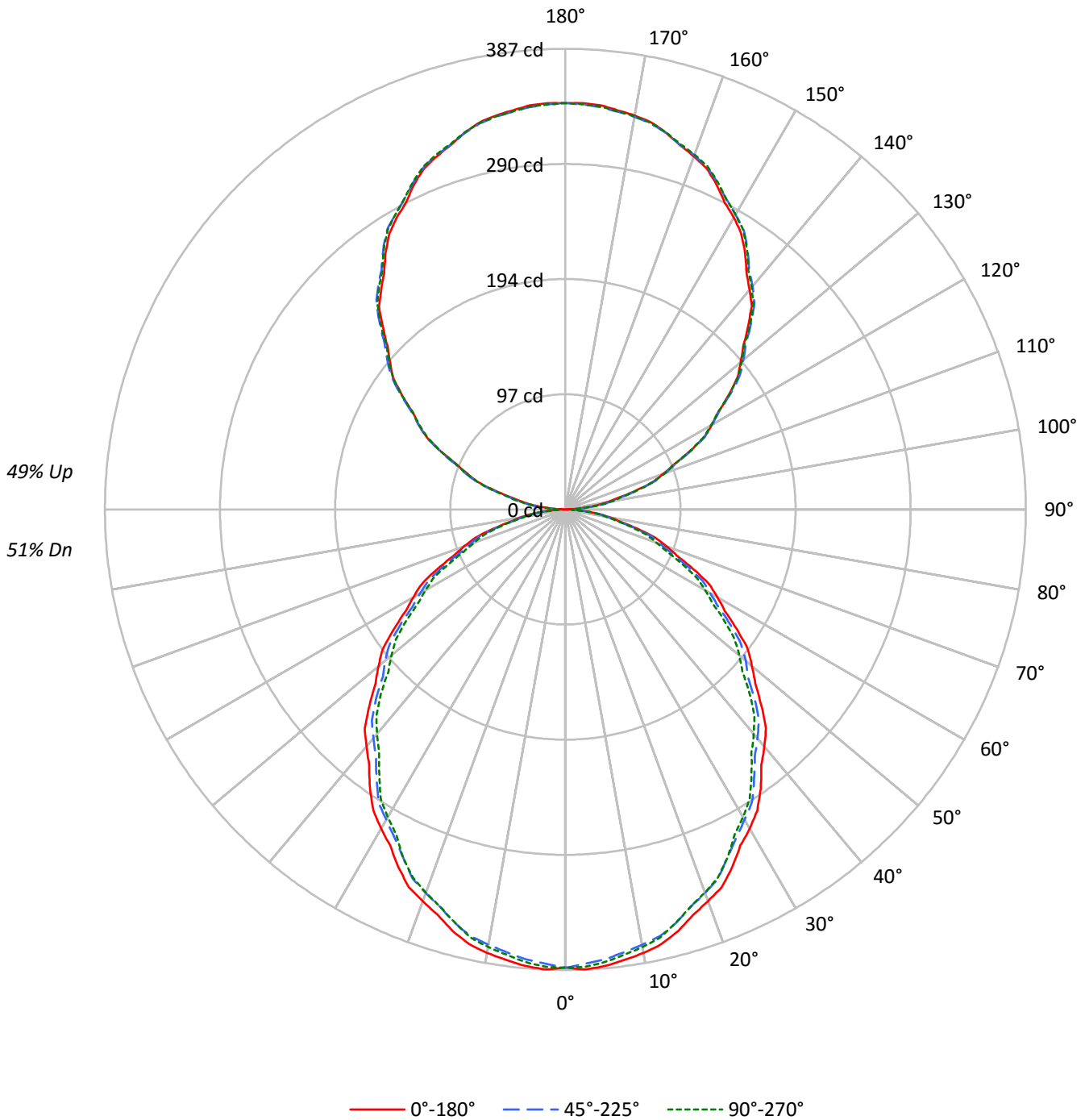
Lumens per Lamp: N/A  
Luminaire Lumens: 1935.7 lumens  
Efficiency: N/A  
Efficacy: 95.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

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	50	30	10	0	
RCR																						
0	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51				
1	98	94	90	86	90	87	83	80	73	71	69	61	60	58	50	49	48	43				
2	89	82	76	70	82	76	70	66	64	60	57	54	51	48	44	42	40	36				
3	81	72	64	59	75	67	60	55	57	52	48	48	44	41	39	37	34	30				
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	30	26				
5	68	57	49	43	63	53	45	40	45	39	35	38	34	30	32	28	26	23				
6	63	51	43	37	58	47	40	35	41	35	31	34	30	27	29	25	23	20				
7	58	46	38	32	54	43	36	31	37	31	27	31	27	24	26	23	20	18				
8	54	42	34	29	50	39	32	27	34	28	24	29	24	21	24	21	18	16				
9	50	38	31	25	46	36	29	24	31	25	22	26	22	19	22	19	16	14				
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	21	17	15	13				

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

	0°	45°	90°
0°	6218	6218	6218
5°	6242	6152	6190
10°	6205	6091	6120
15°	6128	6011	6006
20°	6019	5893	5887
25°	5911	5747	5747
30°	5774	5614	5565
35°	5643	5452	5373
40°	5480	5292	5191
45°	5318	5133	5005
50°	5144	4968	4793
55°	4963	4777	4597
60°	4760	4543	4379
65°	4542	4317	4118
70°	4263	4036	3843
75°	3880	3718	3624
80°	3440	3347	3171
85°	2816	2668	2408



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	36.2	1.9
10°-20°	101.9	5.3
20°-30°	149.8	7.7
30°-40°	174.0	9.0
40°-50°	173.8	9.0
50°-60°	151.6	7.8
60°-70°	112.1	5.8
70°-80°	63.5	3.3
80°-90°	18.4	1.0
90°-100°	21.6	1.1
100°-110°	67.2	3.5
110°-120°	114.8	5.9
120°-130°	151.0	7.8
130°-140°	169.5	8.8
140°-150°	166.2	8.6
150°-160°	139.4	7.2
160°-170°	92.4	4.8
170°-180°	32.3	1.7
0°-30°	287.9	14.9
0°-40°	461.9	23.9
0°-60°	787.3	40.7
0°-90°	981.3	50.7
90°-120°	203.6	10.5
90°-150°	690.3	35.7
90°-180°	954.0	49.3
0°-180°	1935.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	385	385	385	385	385	
5°	385	384	380	382	382	37
15°	367	364	360	361	359	103
25°	332	329	323	323	323	153
35°	286	282	277	274	273	179
45°	233	230	225	221	219	180
55°	176	174	170	165	163	158
65°	119	117	113	110	108	118
75°	62	61	60	58	58	66
85°	15	15	14	13	13	17
90°	0	4	10	10	10	2
95°	15	18	18	18	18	17
105°	62	63	63	64	64	65
115°	115	117	116	116	115	114
125°	168	170	169	168	168	150
135°	217	220	221	220	220	168
145°	263	265	267	267	266	164
155°	301	302	303	304	303	138
165°	328	327	327	329	328	92
175°	341	340	339	341	340	32
180°	341	341	341	341	341	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1
2.5°	386.9	386.6	386.3	386.0	385.6	385.1	384.4	383.7	382.9	382.2	382.9
5°	385.1	384.8	384.5	384.2	383.8	383.3	382.4	381.5	380.5	379.6	380.3
7.5°	381.8	381.2	380.7	380.3	379.8	379.0	378.1	377.2	376.3	375.4	376.0
10°	378.5	378.0	377.4	376.8	376.2	375.4	374.5	373.5	372.5	371.5	372.1
12.5°	374.1	373.6	373.1	372.5	372.0	371.3	370.3	369.3	368.4	367.4	367.8
15°	366.6	366.2	365.7	365.2	364.7	363.9	362.8	361.7	360.7	359.6	360.0
17.5°	357.2	356.7	356.2	355.7	355.2	354.4	353.4	352.2	351.1	350.1	350.4
20°	350.3	349.8	349.4	348.9	348.4	347.6	346.4	345.3	344.1	343.0	343.2
22.5°	343.6	342.8	342.2	341.4	340.8	339.9	338.8	337.7	336.6	335.6	335.6
25°	331.8	331.2	330.5	329.9	329.2	328.2	326.8	325.4	324.0	322.6	322.8
27.5°	318.5	318.0	317.3	316.7	316.2	315.3	314.2	313.1	312.0	310.9	310.6
30°	309.7	309.0	308.3	307.7	307.0	306.1	304.8	303.6	302.3	301.1	300.8
32.5°	300.1	299.6	299.1	298.6	298.1	297.1	295.8	294.6	293.3	292.0	291.5
35°	286.3	285.4	284.6	283.8	283.0	281.9	280.6	279.3	278.0	276.6	276.1
37.5°	270.7	269.9	269.2	268.5	267.7	266.8	265.5	264.2	262.8	261.5	260.9
40°	260.0	259.3	258.7	258.0	257.4	256.4	255.0	253.7	252.4	251.1	250.4
42.5°	249.6	249.0	248.3	247.7	247.0	246.0	244.7	243.4	242.1	240.8	239.9
45°	232.9	232.4	231.8	231.2	230.6	229.8	228.5	227.3	226.1	224.8	223.9
47.5°	216.4	215.8	215.3	214.7	214.2	213.3	212.0	210.8	209.5	208.1	207.2
50°	204.8	204.4	204.0	203.6	203.2	202.4	201.2	200.1	198.9	197.8	196.7
52.5°	193.6	193.0	192.5	191.9	191.4	190.5	189.5	188.4	187.3	186.2	185.2
55°	176.3	175.8	175.3	174.8	174.3	173.6	172.6	171.6	170.6	169.7	168.6
57.5°	159.0	158.6	158.2	157.8	157.4	156.6	155.6	154.5	153.4	152.3	151.3
60°	147.4	147.1	146.8	146.4	146.1	145.4	144.2	143.1	141.9	140.7	139.8
62.5°	136.2	135.6	135.1	134.6	134.0	133.3	132.4	131.6	130.7	129.8	128.9
65°	118.9	118.4	117.9	117.4	116.9	116.3	115.4	114.6	113.8	113.0	112.2
67.5°	101.3	100.9	100.5	100.1	99.8	99.2	98.4	97.7	96.9	96.2	95.6
70°	90.3	90.0	89.7	89.4	89.0	88.5	87.8	87.1	86.3	85.5	85.0
72.5°	79.1	78.8	78.4	78.1	77.8	77.4	76.9	76.5	76.0	75.5	74.9
75°	62.2	62.0	61.9	61.7	61.6	61.3	60.9	60.4	60.0	59.6	59.1
77.5°	47.1	46.8	46.6	46.3	46.0	45.7	45.6	45.4	45.2	45.1	44.8
80°	37.0	36.9	36.9	36.8	36.7	36.6	36.4	36.3	36.1	36.0	35.7
82.5°	27.6	27.6	27.6	27.5	27.5	27.4	27.3	27.2	27.1	27.1	26.7
85°	15.2	15.1	15.0	14.9	14.8	14.8	14.7	14.6	14.5	14.4	14.2
87.5°	5.4	5.4	5.5	5.5	5.5	5.5	5.7	5.9	6.0	6.2	6.0
90°	0.3	1.1	1.8	2.6	3.3	4.5	5.9	7.3	8.6	10.1	9.9
92.5°	5.1	5.7	6.3	6.8	7.4	7.8	8.2	8.5	8.8	9.1	9.2
95°	15.0	15.7	16.2	16.9	17.5	17.9	18.0	18.2	18.3	18.4	18.4
97.5°	27.4	28.0	28.5	29.0	29.6	30.0	30.2	30.5	30.7	31.0	31.0
100°	36.6	37.1	37.6	38.2	38.6	39.0	39.1	39.4	39.5	39.8	39.8
102.5°	46.2	46.6	47.0	47.5	47.9	48.3	48.4	48.7	48.9	49.2	49.2
105°	62.0	62.1	62.3	62.5	62.7	62.9	63.0	63.1	63.3	63.3	63.5
107.5°	77.7	78.0	78.3	78.6	78.8	79.0	79.0	79.0	79.0	79.0	79.0
110°	87.9	88.2	88.6	89.0	89.4	89.6	89.6	89.6	89.6	89.6	89.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	98.9	99.3	99.7	100.0	100.4	100.6	100.5	100.5	100.4	100.4	100.3
115°	115.2	115.6	116.0	116.3	116.8	116.9	116.8	116.6	116.5	116.3	116.3
117.5°	131.4	132.0	132.5	133.0	133.5	133.6	133.2	132.9	132.5	132.2	132.0
120°	142.3	142.8	143.3	143.8	144.3	144.3	143.8	143.3	142.8	142.3	142.3
122.5°	152.2	152.8	153.4	154.0	154.7	154.8	154.4	154.1	153.7	153.4	153.2
125°	167.6	168.2	168.8	169.3	169.9	170.2	169.9	169.7	169.6	169.3	169.2
127.5°	182.7	183.4	184.2	184.8	185.6	185.8	185.6	185.4	185.2	184.9	184.7
130°	192.2	193.0	193.8	194.6	195.4	195.8	195.7	195.6	195.4	195.3	195.2
132.5°	202.8	203.4	204.1	204.7	205.5	205.8	205.8	205.9	205.9	205.9	205.6
135°	216.9	217.6	218.3	219.0	219.7	220.1	220.3	220.4	220.5	220.6	220.5
137.5°	231.8	232.4	232.9	233.6	234.2	234.5	234.6	234.8	235.0	235.1	235.1
140°	240.8	241.4	242.0	242.6	243.1	243.5	243.9	244.2	244.5	244.8	244.8
142.5°	250.1	250.6	251.2	251.8	252.3	252.7	252.9	253.2	253.4	253.6	253.6
145°	263.3	263.7	264.2	264.6	265.1	265.5	265.9	266.3	266.6	267.0	267.1
147.5°	275.1	275.7	276.1	276.7	277.2	277.6	277.9	278.2	278.4	278.7	278.8
150°	283.2	283.6	283.9	284.3	284.7	285.0	285.3	285.5	285.8	286.0	286.3
152.5°	290.3	290.7	291.1	291.5	291.8	292.2	292.4	292.8	293.1	293.4	293.7
155°	301.0	301.2	301.4	301.6	301.7	302.0	302.1	302.3	302.6	302.7	303.0
157.5°	310.1	310.3	310.4	310.5	310.7	310.8	311.0	311.0	311.1	311.3	311.7
160°	315.7	315.8	315.9	316.1	316.2	316.3	316.3	316.4	316.5	316.6	316.9
162.5°	320.7	320.8	320.8	320.8	320.9	320.9	321.0	321.1	321.1	321.1	321.6
165°	327.5	327.4	327.3	327.3	327.3	327.2	327.2	327.2	327.2	327.2	327.7
167.5°	333.1	333.0	332.8	332.6	332.4	332.3	332.2	332.2	332.2	332.2	332.6
170°	336.1	336.0	335.7	335.6	335.4	335.3	335.2	335.1	335.1	335.0	335.4
172.5°	338.2	338.0	337.9	337.6	337.5	337.3	337.3	337.2	337.1	337.0	337.5
175°	340.8	340.6	340.4	340.1	340.0	339.8	339.7	339.6	339.4	339.3	339.7
177.5°	341.8	341.6	341.4	341.4	341.2	341.0	341.0	340.9	340.7	340.6	341.0
180°	341.4	341.4	341.4	341.4	341.4	341.4	341.4	341.4	341.4	341.4	341.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1
2.5°	383.5	384.2	384.8	385.1	385.0	384.8	384.7	384.6
5°	381.0	381.6	382.3	382.5	382.4	382.2	382.0	381.9
7.5°	376.7	377.3	378.0	378.2	378.1	377.8	377.6	377.5
10°	372.8	373.5	374.1	374.3	374.1	373.8	373.6	373.3
12.5°	368.3	368.7	369.2	369.3	369.2	368.9	368.8	368.6
15°	360.3	360.6	360.9	360.9	360.5	360.1	359.7	359.3
17.5°	350.8	351.2	351.6	351.6	351.1	350.8	350.4	350.0
20°	343.5	343.7	344.0	343.9	343.6	343.2	342.9	342.6
22.5°	335.7	335.7	335.7	335.7	335.5	335.3	335.1	334.9
25°	322.9	323.1	323.3	323.3	323.1	322.9	322.8	322.6
27.5°	310.4	310.1	309.9	309.6	309.2	308.8	308.4	308.0
30°	300.6	300.4	300.1	299.9	299.5	299.2	298.9	298.5
32.5°	291.1	290.6	290.2	289.8	289.4	289.1	288.8	288.5
35°	275.7	275.2	274.7	274.3	273.9	273.5	273.0	272.6
37.5°	260.2	259.7	259.0	258.5	258.1	257.7	257.4	257.0
40°	249.6	248.9	248.2	247.6	247.3	247.0	246.6	246.3
42.5°	239.1	238.3	237.5	236.8	236.4	235.9	235.5	235.1
45°	223.0	222.1	221.2	220.5	220.2	219.9	219.6	219.2
47.5°	206.3	205.3	204.3	203.6	203.2	202.7	202.2	201.7
50°	195.5	194.3	193.1	192.4	192.0	191.6	191.2	190.8
52.5°	184.3	183.4	182.4	181.6	181.1	180.6	180.0	179.4
55°	167.6	166.6	165.7	165.0	164.6	164.1	163.7	163.3
57.5°	150.3	149.4	148.4	147.7	147.5	147.2	146.8	146.5
60°	138.9	138.0	137.1	136.6	136.3	136.1	135.8	135.6
62.5°	128.1	127.3	126.5	125.9	125.6	125.2	124.9	124.6
65°	111.5	110.7	110.0	109.4	109.0	108.6	108.2	107.8
67.5°	95.1	94.5	93.9	93.4	93.1	92.8	92.5	92.1
70°	84.4	83.8	83.2	82.8	82.5	82.1	81.8	81.4
72.5°	74.4	73.8	73.2	72.7	72.5	72.2	72.0	71.7
75°	58.6	58.1	57.6	57.5	57.6	57.8	58.0	58.1
77.5°	44.6	44.4	44.1	43.9	43.6	43.5	43.2	43.0
80°	35.5	35.2	35.0	34.7	34.6	34.4	34.2	34.1
82.5°	26.4	26.1	25.8	25.6	25.6	25.5	25.5	25.5
85°	13.9	13.7	13.5	13.3	13.2	13.1	13.0	13.0
87.5°	5.7	5.5	5.3	5.1	5.1	5.1	5.0	4.9
90°	9.9	9.7	9.5	9.5	9.6	9.7	9.7	9.8
92.5°	9.2	9.2	9.3	9.3	9.3	9.3	9.3	9.3
95°	18.4	18.4	18.4	18.3	18.3	18.1	18.0	17.9
97.5°	31.0	31.0	31.0	31.0	31.0	31.0	31.0	30.9
100°	39.8	39.8	39.8	39.7	39.6	39.6	39.5	39.5
102.5°	49.3	49.3	49.4	49.4	49.3	49.2	49.2	49.2
105°	63.6	63.8	63.9	63.9	63.9	63.9	63.9	63.9
107.5°	79.1	79.2	79.2	79.1	78.8	78.5	78.2	77.9
110°	89.6	89.6	89.6	89.5	89.3	89.1	88.9	88.7





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	100.1	100.0	99.8	99.6	99.5	99.4	99.2	99.1
115°	116.3	116.2	116.1	116.0	115.8	115.6	115.4	115.2
117.5°	131.8	131.7	131.5	131.3	131.2	131.0	130.8	130.6
120°	142.3	142.3	142.3	142.2	142.0	141.8	141.6	141.5
122.5°	153.0	152.9	152.7	152.6	152.5	152.3	152.1	152.1
125°	169.0	168.8	168.6	168.4	168.4	168.4	168.3	168.2
127.5°	184.5	184.3	184.0	183.8	183.6	183.4	183.2	183.0
130°	195.0	194.9	194.8	194.6	194.4	194.0	193.8	193.6
132.5°	205.3	205.0	204.8	204.6	204.3	204.2	203.9	203.7
135°	220.5	220.5	220.4	220.3	220.0	219.9	219.7	219.5
137.5°	235.1	235.0	235.0	234.8	234.6	234.3	234.1	233.7
140°	244.8	244.8	244.8	244.7	244.4	244.2	243.9	243.7
142.5°	253.7	253.7	253.8	253.7	253.5	253.2	252.9	252.7
145°	267.2	267.2	267.3	267.2	266.9	266.7	266.4	266.1
147.5°	278.9	279.1	279.2	279.2	278.9	278.7	278.4	278.2
150°	286.4	286.6	286.8	286.8	286.6	286.4	286.3	286.0
152.5°	293.9	294.2	294.4	294.4	294.2	293.9	293.7	293.4
155°	303.4	303.7	304.0	304.1	303.9	303.7	303.5	303.3
157.5°	312.1	312.6	313.0	313.1	312.7	312.4	312.2	311.9
160°	317.3	317.7	318.1	318.1	317.9	317.6	317.4	317.2
162.5°	322.0	322.5	322.9	322.9	322.7	322.4	322.0	321.7
165°	328.1	328.6	329.0	329.1	328.7	328.4	328.1	327.8
167.5°	333.1	333.5	334.0	334.1	333.8	333.4	333.0	332.7
170°	335.9	336.3	336.8	336.8	336.5	336.1	335.7	335.3
172.5°	337.9	338.4	338.8	338.9	338.5	338.1	337.8	337.4
175°	340.2	340.6	341.1	341.1	340.8	340.4	340.0	339.6
177.5°	341.3	341.5	341.9	341.9	341.5	341.3	341.0	340.6
180°	341.4	341.4	341.4	341.4	341.4	341.4	341.4	341.4

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