

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: P331618-935

Luminaire Tested: **SA2XXRDIP-C290D330U935-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331618-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C290D330U935-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 330 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

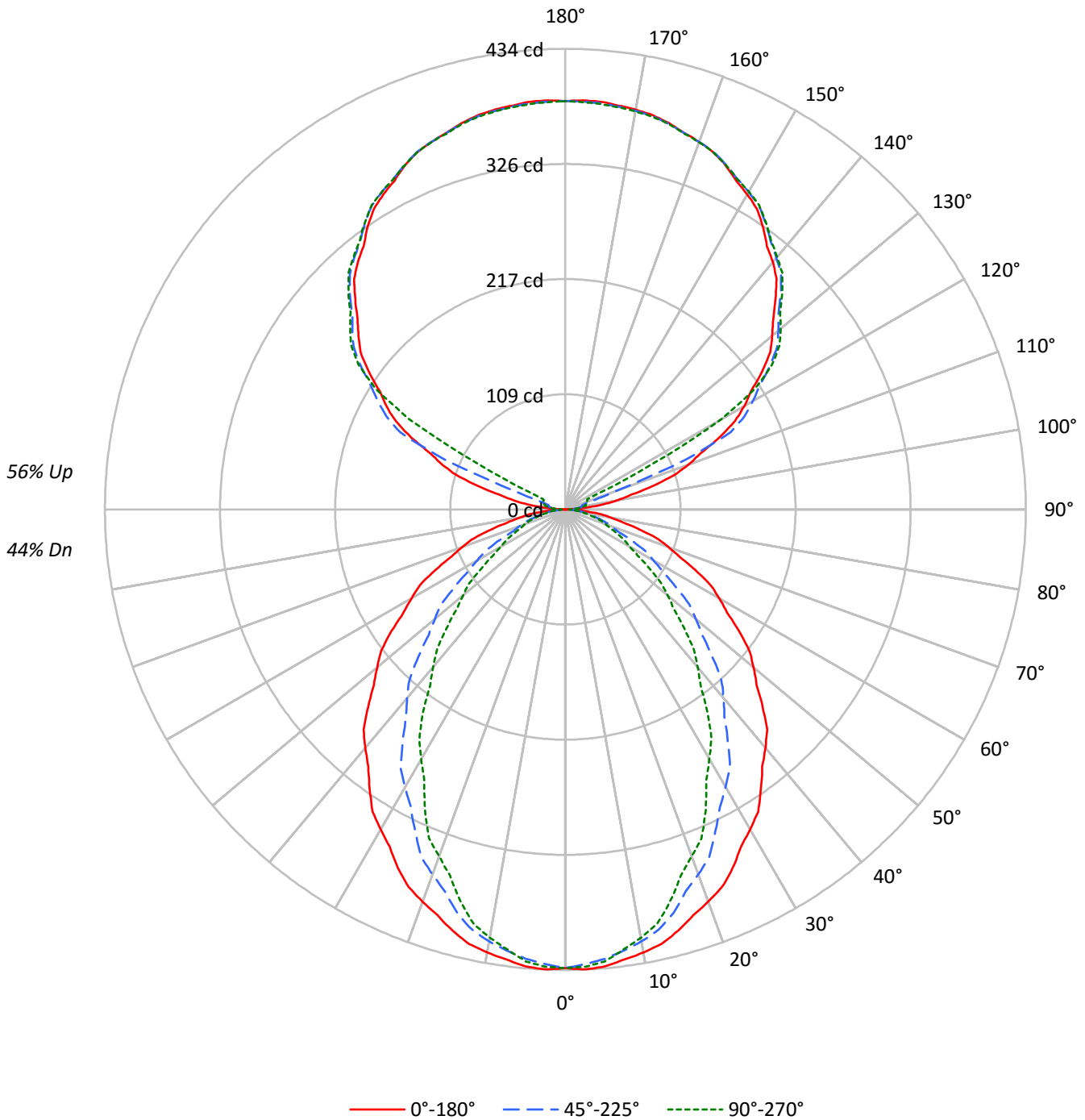
Lumens per Lamp: N/A
Luminaire Lumens: 2017.3 lumens
Efficiency: N/A
Efficacy: 99.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 20.3
Input Voltage (V): 120
Input Current (A_{in}): 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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44				
1	97	93	89	86	89	85	82	79	71	69	67	58	56	55	45	44	44	38				
2	89	81	76	71	81	75	70	66	62	59	56	51	49	46	41	39	37	32				
3	81	72	65	59	74	66	60	55	55	51	47	46	42	40	36	34	32	28				
4	74	64	56	51	68	59	52	47	50	45	41	41	37	34	33	30	28	24				
5	68	57	49	44	62	53	46	41	45	39	35	37	33	30	30	27	25	21				
6	63	51	44	38	58	48	41	36	40	35	31	33	29	26	27	24	22	19				
7	58	46	39	33	53	43	36	31	37	31	27	31	27	24	25	22	20	17				
8	54	42	35	30	50	39	33	28	33	28	24	28	24	21	23	20	18	15				
9	51	39	31	26	46	36	29	25	31	26	22	26	22	19	21	18	16	14				
10	47	35	28	24	43	33	27	22	28	23	20	24	20	17	20	17	15	13				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6978	6978	6978
5°	7005	6891	6929
10°	6951	6779	6720
15°	6870	6578	6387
20°	6761	6290	5976
25°	6649	5964	5574
30°	6490	5630	5062
35°	6337	5267	4610
40°	6182	4890	4089
45°	6003	4464	3617
50°	5815	4037	3152
55°	5624	3578	2711
60°	5406	3094	2251
65°	5154	2598	2048
70°	4858	2143	1884
75°	4492	1953	1759
80°	3961	1748	1599
85°	3112	1371	1371



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.5	2.0
10°-20°	111.1	5.5
20°-30°	156.0	7.7
30°-40°	170.1	8.4
40°-50°	156.4	7.8
50°-60°	122.8	6.1
60°-70°	80.1	4.0
70°-80°	41.3	2.0
80°-90°	11.7	0.6
90°-100°	12.8	0.6
100°-110°	47.1	2.3
110°-120°	125.8	6.2
120°-130°	207.7	10.3
130°-140°	220.8	10.9
140°-150°	205.3	10.2
150°-160°	165.0	8.2
160°-170°	106.3	5.3
170°-180°	36.6	1.8
0°-30°	307.5	15.2
0°-40°	477.6	23.7
0°-60°	756.8	37.5
0°-90°	889.9	44.1
90°-120°	185.7	9.2
90°-150°	819.5	40.6
90°-180°	1127.0	55.9
0°-180°	2017.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	432	432	432	432	432	
5°	432	430	425	428	428	41
15°	411	406	394	386	382	116
25°	373	360	335	319	313	172
35°	322	301	267	243	234	201
45°	263	236	196	169	158	203
55°	200	169	127	104	96	179
65°	135	103	68	55	54	134
75°	72	45	31	29	28	76
85°	17	9	7	7	7	20
90°	0	3	6	7	8	2
95°	18	10	11	12	12	22
105°	85	88	17	20	21	90
115°	160	165	172	49	23	158
125°	226	230	235	237	238	202
135°	280	284	287	290	289	216
145°	325	325	329	331	330	203
155°	358	356	358	360	358	165
165°	377	375	376	378	376	106
175°	386	384	384	386	383	37
180°	385	385	385	385	385	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2
2.5°	433.8	433.4	433.1	432.7	432.4	431.8	431.0	430.3	429.6	428.8	429.5
5°	432.2	431.8	431.4	430.9	430.5	429.6	428.5	427.4	426.3	425.2	425.9
7.5°	427.7	427.2	426.6	426.1	425.6	424.6	423.4	422.0	420.7	419.4	419.6
10°	424.0	423.4	422.8	422.1	421.5	420.3	418.6	416.9	415.2	413.5	413.2
12.5°	419.3	418.5	417.8	417.1	416.3	414.8	412.6	410.4	408.1	405.9	405.4
15°	411.0	410.1	409.1	408.2	407.3	405.3	402.3	399.4	396.4	393.5	391.8
17.5°	401.0	399.5	398.0	396.6	395.1	392.5	388.7	385.0	381.2	377.4	375.4
20°	393.5	391.8	390.0	388.2	386.5	383.5	379.1	374.8	370.5	366.1	363.9
22.5°	385.4	383.4	381.4	379.5	377.5	374.1	369.2	364.3	359.5	354.6	351.7
25°	373.2	370.3	367.6	364.8	362.1	357.7	352.0	346.3	340.5	334.8	331.2
27.5°	358.4	355.4	352.4	349.4	346.3	341.6	335.1	328.6	322.2	315.7	311.6
30°	348.1	344.8	341.5	338.2	334.9	329.8	322.8	315.9	308.9	302.0	297.6
32.5°	338.1	334.2	330.4	326.5	322.6	317.2	310.1	303.0	295.9	288.8	283.8
35°	321.5	317.1	312.6	308.2	303.8	297.7	290.1	282.4	274.8	267.2	261.7
37.5°	305.0	300.1	295.2	290.3	285.4	279.0	270.8	262.6	254.5	246.3	240.3
40°	293.3	288.2	282.9	277.7	272.5	265.7	257.3	248.8	240.4	232.0	225.8
42.5°	281.5	276.0	270.4	265.0	259.5	252.4	243.7	235.0	226.3	217.6	211.2
45°	262.9	257.0	251.2	245.4	239.5	232.0	222.9	213.8	204.7	195.5	189.4
47.5°	244.7	238.5	232.4	226.2	220.0	212.2	202.8	193.4	183.9	174.5	168.4
50°	231.5	225.4	219.2	213.0	206.9	199.0	189.4	179.9	170.3	160.7	154.7
52.5°	218.7	212.2	205.9	199.4	193.0	185.0	175.6	166.3	157.0	147.6	141.8
55°	199.8	193.1	186.3	179.5	172.7	164.7	155.2	145.9	136.5	127.1	121.9
57.5°	180.6	173.6	166.6	159.7	152.7	144.7	135.7	126.7	117.7	108.7	103.8
60°	167.4	160.5	153.5	146.5	139.6	131.6	122.7	113.7	104.8	95.8	91.4
62.5°	154.5	147.7	140.7	133.7	126.7	119.0	110.5	101.9	93.4	84.9	80.7
65°	134.9	127.9	120.9	113.8	106.8	99.4	91.5	83.7	75.9	68.0	65.1
67.5°	116.0	109.0	102.0	95.1	88.1	81.0	74.0	67.0	59.9	52.9	51.5
70°	102.9	96.1	89.3	82.6	75.8	69.4	63.4	57.3	51.4	45.4	44.5
72.5°	90.3	83.9	77.3	70.9	64.3	58.7	53.9	49.1	44.3	39.4	38.7
75°	72.0	65.9	59.8	53.7	47.6	43.1	40.1	37.2	34.3	31.3	30.7
77.5°	53.9	48.6	43.2	37.9	32.5	29.2	27.7	26.3	24.9	23.5	23.2
80°	42.6	38.2	33.8	29.4	24.9	22.2	21.4	20.5	19.6	18.8	18.4
82.5°	32.3	28.8	25.4	22.0	18.5	16.4	15.8	15.2	14.6	14.1	13.9
85°	16.8	15.0	13.2	11.4	9.6	8.4	8.2	7.9	7.7	7.4	7.4
87.5°	5.1	4.6	4.2	3.8	3.4	3.2	3.4	3.4	3.5	3.6	3.6
90°	0.3	0.9	1.6	2.3	3.0	3.6	4.0	4.6	5.1	5.6	5.9
92.5°	5.6	5.6	5.5	5.4	5.3	5.5	5.7	5.9	6.2	6.5	6.6
95°	18.1	16.0	14.0	12.0	9.9	9.1	9.6	10.0	10.4	10.8	11.2
97.5°	35.9	30.1	24.4	18.7	12.9	10.5	11.5	12.5	13.5	14.6	14.8
100°	49.2	40.8	32.3	23.8	15.4	11.6	12.7	13.8	14.8	15.8	16.4
102.5°	64.0	62.2	60.4	58.6	56.8	51.5	42.7	33.9	25.1	16.3	17.0
105°	84.6	86.4	88.3	90.2	92.0	84.6	67.7	50.8	33.8	17.0	17.7
107.5°	108.1	109.7	111.2	112.7	114.2	104.8	84.6	64.3	44.0	23.8	23.1
110°	123.3	124.6	126.0	127.3	128.5	120.2	102.4	84.5	66.6	48.7	42.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	137.6	138.7	139.9	141.0	142.2	140.5	136.1	131.7	127.3	122.9	100.3
115°	160.1	161.1	162.2	163.2	164.3	165.6	167.1	168.7	170.2	171.8	143.1
117.5°	180.2	181.3	182.5	183.7	184.9	186.0	187.1	188.1	189.2	190.3	183.3
120°	194.8	195.8	196.7	197.7	198.5	199.6	200.7	201.8	202.9	204.1	204.8
122.5°	207.3	208.4	209.3	210.3	211.3	212.3	213.5	214.7	216.0	217.2	217.7
125°	226.4	227.1	227.9	228.8	229.5	230.6	231.7	232.9	234.0	235.2	235.7
127.5°	243.5	244.4	245.3	246.2	247.1	248.0	248.8	249.8	250.6	251.5	252.1
130°	254.4	255.5	256.4	257.4	258.4	259.2	259.9	260.6	261.3	262.0	262.6
132.5°	265.6	266.4	267.3	268.1	269.0	269.7	270.4	271.0	271.7	272.4	273.0
135°	280.1	281.0	282.1	283.0	284.0	284.8	285.3	285.9	286.5	287.1	287.7
137.5°	294.7	295.4	296.1	296.8	297.5	298.2	298.8	299.4	300.1	300.7	301.3
140°	304.3	304.8	305.2	305.7	306.3	306.9	307.5	308.2	308.9	309.5	310.1
142.5°	312.3	312.7	313.1	313.7	314.1	314.7	315.5	316.2	317.0	317.8	318.3
145°	324.9	324.9	324.8	324.7	324.6	325.1	326.1	327.3	328.3	329.3	329.8
147.5°	335.9	335.6	335.4	335.1	334.9	335.3	336.3	337.4	338.5	339.5	339.8
150°	342.9	342.5	342.1	341.6	341.2	341.6	342.5	343.5	344.5	345.5	345.9
152.5°	349.0	348.5	348.0	347.5	347.1	347.2	348.2	349.1	350.1	351.0	351.4
155°	357.7	357.1	356.6	356.0	355.5	355.6	356.4	357.1	357.8	358.5	359.0
157.5°	364.5	364.1	363.6	363.2	362.7	362.7	363.3	363.8	364.3	364.8	365.2
160°	368.6	368.2	367.8	367.5	367.1	367.1	367.5	367.8	368.2	368.6	368.9
162.5°	372.1	371.8	371.4	371.0	370.7	370.7	370.9	371.3	371.6	372.0	372.4
165°	376.9	376.6	376.2	375.8	375.5	375.4	375.6	375.7	375.9	376.1	376.5
167.5°	380.5	380.1	379.8	379.4	379.0	378.9	379.1	379.3	379.4	379.6	380.0
170°	382.5	382.1	381.8	381.4	381.0	380.9	381.0	381.2	381.3	381.4	381.9
172.5°	383.8	383.5	383.1	382.7	382.4	382.2	382.4	382.5	382.6	382.7	383.1
175°	385.6	385.1	384.7	384.3	383.8	383.7	383.8	383.9	384.1	384.2	384.6
177.5°	385.8	385.5	385.1	384.8	384.4	384.4	384.4	384.4	384.4	384.5	384.9
180°	384.7	384.7	384.7	384.7	384.7	384.7	384.7	384.7	384.7	384.7	384.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2
2.5°	430.2	430.8	431.5	431.8	431.7	431.5	431.4	431.3
5°	426.7	427.5	428.3	428.5	428.3	428.0	427.7	427.5
7.5°	419.8	420.1	420.3	420.2	419.7	419.2	418.8	418.4
10°	412.9	412.7	412.4	412.0	411.5	411.0	410.4	409.9
12.5°	405.0	404.5	404.1	403.4	402.5	401.7	400.8	399.9
15°	390.2	388.5	386.8	385.6	384.8	383.8	383.0	382.1
17.5°	373.4	371.4	369.5	367.8	366.3	364.8	363.3	361.8
20°	361.8	359.6	357.4	355.3	353.4	351.5	349.7	347.8
22.5°	349.0	346.1	343.4	341.2	339.8	338.4	336.9	335.5
25°	327.7	324.1	320.6	318.1	316.8	315.5	314.2	312.9
27.5°	307.4	303.2	299.1	296.0	293.9	291.9	289.8	287.7
30°	293.1	288.7	284.2	280.9	278.4	276.1	273.8	271.5
32.5°	278.7	273.6	268.5	264.9	262.8	260.5	258.3	256.1
35°	256.2	250.7	245.2	241.5	239.6	237.7	235.8	233.9
37.5°	234.3	228.3	222.2	218.1	215.9	213.7	211.5	209.3
40°	219.6	213.4	207.2	203.0	200.8	198.5	196.2	194.0
42.5°	204.7	198.4	192.0	187.8	185.5	183.4	181.2	179.0
45°	183.2	177.0	170.9	166.8	164.7	162.6	160.5	158.4
47.5°	162.2	156.1	150.0	145.9	144.0	142.2	140.3	138.4
50°	148.8	142.8	136.7	132.9	131.0	129.2	127.3	125.5
52.5°	136.0	130.3	124.5	120.7	119.1	117.4	115.6	114.0
55°	116.7	111.5	106.2	102.8	101.2	99.5	97.9	96.3
57.5°	99.1	94.3	89.5	86.4	85.1	83.7	82.3	80.8
60°	87.0	82.6	78.1	75.2	73.8	72.4	71.0	69.7
62.5°	76.5	72.2	68.0	65.4	64.6	63.8	62.9	62.1
65°	62.2	59.2	56.2	54.6	54.3	54.1	53.8	53.6
67.5°	50.2	48.8	47.4	46.7	46.3	46.1	45.8	45.5
70°	43.7	42.8	41.9	41.3	40.9	40.6	40.2	39.9
72.5°	38.0	37.2	36.5	36.1	35.8	35.6	35.4	35.2
75°	30.0	29.4	28.8	28.5	28.4	28.3	28.2	28.2
77.5°	22.7	22.4	22.0	21.9	21.7	21.5	21.4	21.3
80°	18.1	17.7	17.4	17.2	17.2	17.2	17.2	17.2
82.5°	13.7	13.4	13.3	13.2	13.2	13.2	13.2	13.2
85°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
87.5°	3.6	3.6	3.6	3.6	3.6	3.6	3.7	3.7
90°	6.2	6.5	6.8	7.1	7.1	7.2	7.4	7.5
92.5°	6.8	7.0	7.1	7.2	7.3	7.4	7.4	7.5
95°	11.5	11.8	12.1	12.2	12.1	12.1	12.1	12.0
97.5°	15.1	15.2	15.5	15.7	15.8	15.8	15.9	16.0
100°	16.9	17.4	17.8	18.2	18.3	18.4	18.5	18.7
102.5°	17.6	18.3	18.9	19.3	19.5	19.6	19.8	20.0
105°	18.3	19.0	19.7	20.1	20.4	20.7	20.9	21.2
107.5°	22.4	21.7	21.0	20.8	21.0	21.3	21.5	21.8
110°	36.3	30.1	23.9	21.0	21.3	21.5	21.8	22.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	77.7	55.2	32.6	21.4	21.6	21.8	22.0	22.2
115°	114.5	85.8	57.2	40.6	36.2	31.8	27.3	22.8
117.5°	176.4	169.4	162.6	151.8	137.2	122.5	107.9	93.2
120°	205.5	206.3	207.0	203.2	194.8	186.5	178.1	169.8
122.5°	218.1	218.5	219.0	218.3	216.8	215.2	213.5	211.9
125°	236.1	236.5	236.9	237.3	237.5	237.6	237.8	238.0
127.5°	252.8	253.4	254.0	254.3	254.4	254.4	254.4	254.5
130°	263.3	264.0	264.7	265.0	264.9	264.8	264.8	264.8
132.5°	273.6	274.1	274.7	275.0	274.9	274.9	274.8	274.7
135°	288.3	288.9	289.5	289.7	289.6	289.5	289.4	289.2
137.5°	301.9	302.5	303.1	303.2	303.1	302.9	302.6	302.5
140°	310.6	311.3	311.8	311.9	311.6	311.3	311.0	310.6
142.5°	318.8	319.3	319.9	319.9	319.6	319.3	319.0	318.7
145°	330.2	330.6	331.1	331.1	330.8	330.5	330.2	329.8
147.5°	340.1	340.4	340.8	340.8	340.5	340.3	340.0	339.8
150°	346.2	346.6	347.0	347.0	346.7	346.4	346.0	345.8
152.5°	351.8	352.1	352.5	352.5	352.1	351.7	351.3	350.9
155°	359.3	359.6	360.1	360.0	359.5	359.0	358.5	358.0
157.5°	365.7	366.1	366.4	366.4	365.9	365.5	365.0	364.5
160°	369.4	369.7	370.1	370.1	369.6	369.2	368.8	368.3
162.5°	372.7	373.2	373.6	373.6	373.0	372.5	372.0	371.4
165°	376.9	377.4	377.8	377.8	377.4	376.9	376.5	376.1
167.5°	380.5	380.9	381.3	381.3	380.7	380.1	379.6	379.0
170°	382.3	382.7	383.1	383.1	382.5	381.9	381.4	380.8
172.5°	383.6	384.0	384.4	384.4	383.8	383.3	382.7	382.2
175°	385.0	385.5	385.9	385.8	385.2	384.6	383.9	383.3
177.5°	385.2	385.6	385.9	385.8	385.4	385.0	384.5	384.1
180°	384.7	384.7	384.7	384.7	384.7	384.7	384.7	384.7

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