

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: P331619-830

Luminaire Tested: **SA2XXRDIP-C290D330U830-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331619-830
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: SA2XXRDIP-C290D330U830-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 330 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

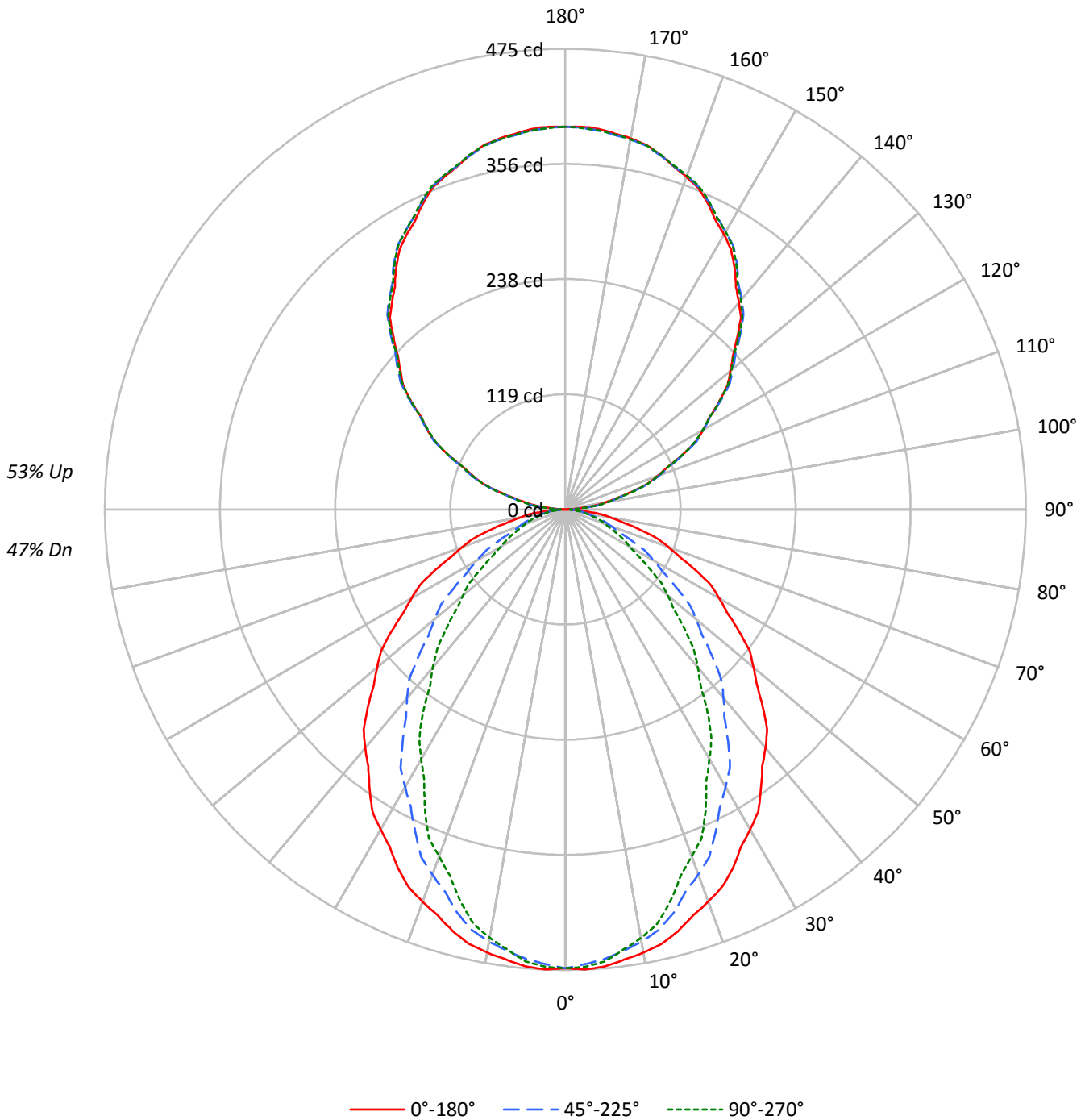
Lumens per Lamp: N/A
Luminaire Lumens: 2078.0 lumens
Efficiency: N/A
Efficacy: 102.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

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	0
RCR																		
0	106	106	106	106	98	98	98	98	82	82	82	67	67	67	53	53	53	47
1	98	93	90	86	89	86	83	80	72	70	68	59	58	56	48	47	46	40
2	89	82	76	71	82	76	71	66	64	60	57	53	50	48	43	41	39	35
3	82	73	65	60	75	67	61	56	57	52	48	47	44	41	38	36	34	30
4	75	64	57	51	69	60	53	48	51	46	42	42	39	36	34	32	30	26
5	69	58	50	44	63	53	47	41	45	40	36	38	34	31	31	28	26	23
6	64	52	44	38	58	48	41	36	41	36	32	35	31	27	28	25	23	20
7	59	47	39	34	54	44	37	32	37	32	28	32	27	24	26	23	21	18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19	16
9	51	39	32	27	47	36	30	25	31	26	23	27	23	20	22	19	17	15
10	48	36	29	24	44	34	27	23	29	24	20	25	21	18	21	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7640	7640	7640
5°	7669	7543	7585
10°	7609	7420	7356
15°	7522	7199	6992
20°	7400	6887	6541
25°	7277	6531	6102
30°	7105	6162	5541
35°	6936	5765	5048
40°	6768	5351	4477
45°	6572	4889	3959
50°	6365	4421	3451
55°	6159	3916	2967
60°	5916	3387	2464
65°	5643	2846	2239
70°	5316	2346	2058
75°	4916	2133	1921
80°	4342	1906	1757
85°	3409	1501	1501



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.3	2.1
10°-20°	121.6	5.9
20°-30°	170.8	8.2
30°-40°	186.2	9.0
40°-50°	171.2	8.2
50°-60°	134.5	6.5
60°-70°	87.7	4.2
70°-80°	45.2	2.2
80°-90°	13.3	0.6
90°-100°	25.0	1.2
100°-110°	77.7	3.7
110°-120°	132.8	6.4
120°-130°	174.6	8.4
130°-140°	195.9	9.4
140°-150°	192.1	9.2
150°-160°	161.1	7.8
160°-170°	106.9	5.1
170°-180°	37.4	1.8
0°-30°	336.6	16.2
0°-40°	522.8	25.2
0°-60°	828.5	39.9
0°-90°	974.7	46.9
90°-120°	235.4	11.3
90°-150°	798.0	38.4
90°-180°	1103.0	53.1
0°-180°	2078.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	473	473	473	473	473	
5°	473	471	465	469	468	45
15°	450	445	431	423	418	127
25°	408	394	367	350	342	188
35°	352	329	292	266	256	220
45°	288	258	214	185	173	222
55°	219	185	139	114	105	195
65°	148	113	74	61	59	146
75°	79	50	34	31	31	83
85°	18	10	8	8	8	22
90°	0	5	12	11	11	2
95°	17	20	21	21	21	20
105°	72	73	73	74	74	76
115°	133	135	134	134	133	132
125°	194	197	196	195	194	173
135°	251	254	255	255	254	194
145°	304	307	309	309	308	190
155°	348	349	350	352	351	160
165°	379	378	378	380	379	107
175°	394	393	392	394	393	37
180°	395	395	395	395	395	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2
2.5°	474.9	474.5	474.1	473.7	473.3	472.7	471.8	471.1	470.2	469.4	470.1
5°	473.2	472.7	472.2	471.7	471.3	470.3	469.1	467.9	466.7	465.4	466.3
7.5°	468.3	467.7	467.0	466.5	465.9	464.9	463.4	461.9	460.5	459.1	459.3
10°	464.1	463.4	462.8	462.1	461.5	460.1	458.3	456.4	454.5	452.6	452.3
12.5°	459.0	458.2	457.3	456.6	455.7	454.1	451.7	449.2	446.8	444.3	443.8
15°	450.0	448.9	447.9	446.9	445.8	443.7	440.5	437.2	433.9	430.7	429.0
17.5°	438.9	437.3	435.7	434.1	432.5	429.7	425.6	421.4	417.3	413.1	410.9
20°	430.7	428.9	427.0	425.0	423.1	419.8	415.0	410.3	405.6	400.8	398.4
22.5°	421.9	419.7	417.5	415.5	413.3	409.5	404.2	398.8	393.5	388.1	385.0
25°	408.5	405.4	402.4	399.4	396.3	391.6	385.3	379.1	372.8	366.6	362.6
27.5°	392.4	389.1	385.8	382.5	379.1	373.9	366.8	359.8	352.7	345.6	341.1
30°	381.1	377.5	373.8	370.2	366.6	361.0	353.4	345.8	338.2	330.5	325.7
32.5°	370.1	365.9	361.7	357.4	353.2	347.2	339.5	331.7	324.0	316.1	310.7
35°	351.9	347.1	342.2	337.4	332.5	325.9	317.5	309.2	300.9	292.5	286.4
37.5°	333.8	328.5	323.1	317.8	312.5	305.4	296.4	287.5	278.6	269.7	263.1
40°	321.1	315.5	309.7	304.0	298.3	290.9	281.6	272.4	263.2	253.9	247.1
42.5°	308.1	302.1	296.1	290.1	284.1	276.3	266.7	257.2	247.7	238.2	231.2
45°	287.8	281.3	274.9	268.6	262.2	254.0	244.0	234.0	224.0	214.1	207.4
47.5°	267.9	261.1	254.4	247.6	240.8	232.3	222.0	211.7	201.3	191.1	184.4
50°	253.4	246.8	240.0	233.2	226.5	217.8	207.4	196.9	186.4	176.0	169.4
52.5°	239.4	232.3	225.4	218.3	211.2	202.6	192.3	182.1	171.8	161.6	155.2
55°	218.8	211.4	204.0	196.5	189.1	180.3	169.9	159.7	149.4	139.1	133.5
57.5°	197.7	190.0	182.4	174.8	167.2	158.4	148.5	138.7	128.8	118.9	113.7
60°	183.2	175.7	168.1	160.4	152.8	144.1	134.3	124.5	114.7	104.9	100.0
62.5°	169.2	161.6	154.0	146.4	138.7	130.3	120.9	111.6	102.3	92.9	88.3
65°	147.7	140.0	132.3	124.6	116.9	108.8	100.2	91.6	83.0	74.5	71.3
67.5°	127.0	119.3	111.7	104.1	96.4	88.7	81.0	73.3	65.6	57.9	56.4
70°	112.6	105.2	97.7	90.4	82.9	76.0	69.4	62.8	56.3	49.7	48.7
72.5°	98.9	91.8	84.6	77.6	70.4	64.3	59.0	53.7	48.4	43.2	42.3
75°	78.8	72.1	65.5	58.8	52.1	47.2	43.9	40.7	37.5	34.2	33.6
77.5°	59.0	53.2	47.3	41.5	35.6	32.0	30.3	28.8	27.2	25.7	25.4
80°	46.7	41.8	36.9	32.1	27.2	24.3	23.4	22.4	21.5	20.5	20.2
82.5°	35.3	31.6	27.8	24.0	20.3	18.0	17.3	16.7	16.0	15.5	15.2
85°	18.4	16.4	14.4	12.4	10.5	9.2	9.0	8.7	8.4	8.1	8.1
87.5°	5.6	5.1	4.7	4.2	3.9	3.8	4.1	4.4	4.7	5.1	5.0
90°	0.4	1.2	2.1	3.0	3.9	5.2	6.8	8.4	10.0	11.7	11.5
92.5°	5.9	6.6	7.3	7.9	8.6	9.0	9.4	9.8	10.2	10.6	10.7
95°	17.3	18.1	18.8	19.5	20.3	20.7	20.8	21.0	21.2	21.3	21.3
97.5°	31.7	32.3	32.9	33.6	34.2	34.7	35.0	35.3	35.5	35.8	35.8
100°	42.3	42.9	43.5	44.1	44.7	45.1	45.2	45.5	45.7	46.0	46.0
102.5°	53.4	53.9	54.4	54.9	55.3	55.8	56.0	56.3	56.6	56.8	56.9
105°	71.6	71.8	72.0	72.3	72.5	72.7	72.9	73.0	73.1	73.2	73.4
107.5°	89.8	90.2	90.5	90.9	91.1	91.3	91.3	91.3	91.3	91.3	91.3
110°	101.6	102.0	102.5	102.9	103.3	103.6	103.6	103.6	103.6	103.6	103.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	114.3	114.8	115.3	115.6	116.1	116.3	116.2	116.2	116.1	116.1	115.9
115°	133.2	133.7	134.1	134.5	135.0	135.2	135.0	134.8	134.7	134.5	134.5
117.5°	151.9	152.6	153.2	153.7	154.4	154.5	154.0	153.6	153.2	152.8	152.6
120°	164.5	165.1	165.7	166.3	166.8	166.8	166.3	165.7	165.1	164.5	164.5
122.5°	176.0	176.6	177.4	178.0	178.8	179.0	178.5	178.1	177.7	177.3	177.1
125°	193.8	194.4	195.1	195.8	196.4	196.7	196.4	196.2	196.0	195.8	195.6
127.5°	211.2	212.1	212.9	213.7	214.5	214.8	214.6	214.3	214.1	213.8	213.5
130°	222.2	223.1	224.0	225.0	225.9	226.4	226.2	226.1	225.9	225.7	225.6
132.5°	234.4	235.2	235.9	236.7	237.5	237.9	237.9	238.0	238.0	238.0	237.7
135°	250.7	251.6	252.4	253.2	254.0	254.5	254.7	254.8	255.0	255.1	255.0
137.5°	268.0	268.6	269.3	270.0	270.7	271.1	271.3	271.5	271.6	271.8	271.8
140°	278.4	279.1	279.7	280.4	281.1	281.5	281.9	282.3	282.7	283.0	283.0
142.5°	289.1	289.7	290.4	291.1	291.7	292.2	292.4	292.7	292.9	293.1	293.2
145°	304.3	304.9	305.4	305.9	306.4	306.9	307.4	307.8	308.2	308.7	308.8
147.5°	318.0	318.7	319.2	319.9	320.5	320.9	321.2	321.6	321.9	322.2	322.3
150°	327.3	327.8	328.2	328.7	329.1	329.5	329.8	330.1	330.4	330.6	330.9
152.5°	335.6	336.0	336.5	337.0	337.3	337.8	338.1	338.5	338.8	339.2	339.5
155°	348.0	348.2	348.5	348.6	348.8	349.1	349.3	349.5	349.8	350.0	350.3
157.5°	358.5	358.7	358.8	359.0	359.2	359.3	359.5	359.6	359.7	359.9	360.3
160°	365.0	365.1	365.2	365.4	365.5	365.7	365.7	365.8	365.9	366.0	366.4
162.5°	370.8	370.9	370.9	370.9	371.0	371.0	371.1	371.2	371.3	371.3	371.8
165°	378.6	378.5	378.4	378.4	378.3	378.2	378.2	378.2	378.2	378.2	378.8
167.5°	385.1	384.9	384.7	384.5	384.3	384.2	384.1	384.1	384.1	384.1	384.6
170°	388.6	388.4	388.1	388.0	387.8	387.6	387.5	387.4	387.4	387.3	387.8
172.5°	391.0	390.8	390.6	390.3	390.1	389.9	389.9	389.8	389.7	389.6	390.2
175°	394.0	393.7	393.5	393.2	393.0	392.9	392.8	392.6	392.4	392.3	392.8
177.5°	395.1	394.9	394.7	394.6	394.5	394.3	394.2	394.1	393.9	393.8	394.2
180°	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	473.2	473.2	473.2	473.2	473.2	473.2	473.2	473.2
2.5°	470.9	471.6	472.4	472.7	472.6	472.4	472.2	472.1
5°	467.1	468.0	468.8	469.1	468.8	468.5	468.3	468.0
7.5°	459.6	459.9	460.1	460.0	459.5	458.9	458.5	458.0
10°	452.0	451.8	451.5	451.0	450.4	449.9	449.3	448.7
12.5°	443.4	442.8	442.3	441.6	440.6	439.7	438.8	437.8
15°	427.2	425.3	423.5	422.2	421.2	420.2	419.2	418.3
17.5°	408.8	406.6	404.5	402.7	401.0	399.4	397.7	396.1
20°	396.1	393.6	391.2	389.0	386.9	384.8	382.8	380.7
22.5°	382.0	378.9	375.9	373.5	371.9	370.4	368.8	367.3
25°	358.7	354.8	350.9	348.3	346.9	345.3	343.9	342.5
27.5°	336.5	332.0	327.4	324.0	321.8	319.5	317.3	315.0
30°	320.8	316.0	311.1	307.5	304.8	302.3	299.7	297.2
32.5°	305.1	299.5	294.0	290.0	287.7	285.2	282.8	280.4
35°	280.5	274.5	268.4	264.4	262.3	260.2	258.2	256.1
37.5°	256.5	249.9	243.3	238.7	236.4	233.9	231.6	229.1
40°	240.4	233.7	226.9	222.3	219.8	217.4	214.8	212.4
42.5°	224.1	217.2	210.2	205.6	203.1	200.8	198.3	196.0
45°	200.6	193.8	187.1	182.6	180.3	178.0	175.7	173.4
47.5°	177.6	170.9	164.2	159.8	157.7	155.6	153.5	151.5
50°	162.9	156.3	149.7	145.4	143.5	141.5	139.4	137.4
52.5°	148.9	142.6	136.3	132.1	130.4	128.5	126.6	124.8
55°	127.7	122.1	116.3	112.5	110.7	109.0	107.2	105.4
57.5°	108.5	103.2	98.0	94.6	93.1	91.6	90.1	88.5
60°	95.2	90.4	85.5	82.3	80.8	79.3	77.8	76.3
62.5°	83.7	79.1	74.5	71.6	70.7	69.8	68.9	68.0
65°	68.1	64.8	61.5	59.8	59.5	59.2	58.9	58.6
67.5°	55.0	53.4	51.9	51.1	50.7	50.4	50.1	49.9
70°	47.8	46.8	45.9	45.2	44.8	44.4	44.0	43.6
72.5°	41.6	40.7	40.0	39.5	39.2	39.0	38.7	38.5
75°	32.9	32.2	31.6	31.2	31.1	31.0	30.9	30.8
77.5°	24.9	24.5	24.1	23.9	23.8	23.6	23.5	23.3
80°	19.8	19.4	19.0	18.9	18.9	18.9	18.9	18.9
82.5°	15.0	14.7	14.5	14.4	14.4	14.4	14.4	14.4
85°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
87.5°	4.9	4.7	4.6	4.6	4.6	4.6	4.6	4.6
90°	11.4	11.2	11.0	11.0	11.1	11.2	11.2	11.3
92.5°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
95°	21.3	21.3	21.3	21.2	21.1	20.9	20.8	20.6
97.5°	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.7
100°	46.0	46.0	46.0	45.9	45.8	45.8	45.7	45.6
102.5°	57.0	57.0	57.1	57.1	57.0	56.9	56.9	56.8
105°	73.5	73.7	73.9	73.9	73.9	73.9	73.9	73.9
107.5°	91.4	91.5	91.5	91.4	91.0	90.8	90.4	90.0
110°	103.6	103.6	103.6	103.5	103.2	103.0	102.8	102.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	115.7	115.6	115.4	115.2	115.1	114.9	114.7	114.5
115°	134.4	134.3	134.2	134.1	133.8	133.7	133.5	133.2
117.5°	152.4	152.2	152.0	151.8	151.7	151.5	151.2	151.0
120°	164.5	164.5	164.5	164.4	164.2	163.9	163.7	163.5
122.5°	176.9	176.7	176.5	176.4	176.3	176.1	175.9	175.8
125°	195.4	195.1	194.9	194.7	194.7	194.6	194.5	194.4
127.5°	213.3	213.0	212.7	212.4	212.3	212.0	211.8	211.5
130°	225.5	225.4	225.2	225.0	224.7	224.3	224.0	223.8
132.5°	237.3	237.0	236.8	236.5	236.2	236.0	235.7	235.5
135°	255.0	254.9	254.8	254.7	254.4	254.2	254.0	253.7
137.5°	271.7	271.6	271.6	271.5	271.2	270.9	270.6	270.2
140°	283.0	283.0	283.0	282.9	282.6	282.3	282.0	281.7
142.5°	293.3	293.3	293.4	293.3	293.0	292.7	292.4	292.1
145°	308.9	308.9	309.0	308.9	308.6	308.3	308.0	307.6
147.5°	322.4	322.6	322.8	322.7	322.4	322.2	321.9	321.6
150°	331.1	331.3	331.6	331.6	331.3	331.1	330.9	330.6
152.5°	339.8	340.1	340.4	340.4	340.1	339.8	339.5	339.2
155°	350.7	351.1	351.5	351.6	351.3	351.1	350.9	350.6
157.5°	360.8	361.4	361.8	361.9	361.6	361.2	360.9	360.5
160°	366.8	367.3	367.8	367.8	367.5	367.2	366.9	366.6
162.5°	372.3	372.8	373.3	373.3	373.1	372.7	372.3	371.9
165°	379.3	379.8	380.3	380.4	380.0	379.7	379.3	379.0
167.5°	385.1	385.6	386.2	386.3	385.9	385.4	385.0	384.7
170°	388.3	388.8	389.4	389.4	389.0	388.5	388.0	387.6
172.5°	390.7	391.2	391.7	391.8	391.3	390.9	390.5	390.0
175°	393.3	393.8	394.4	394.4	394.0	393.5	393.0	392.6
177.5°	394.5	394.8	395.2	395.2	394.8	394.5	394.2	393.8
180°	394.6	394.6	394.6	394.6	394.6	394.6	394.6	394.6

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