

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: P331470-930

Luminaire Tested: **S122DIW-S290D435U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331470-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DIW-S290D435U930-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 435 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2205.6 lumens
Efficiency: N/A
Efficacy: 95.9 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

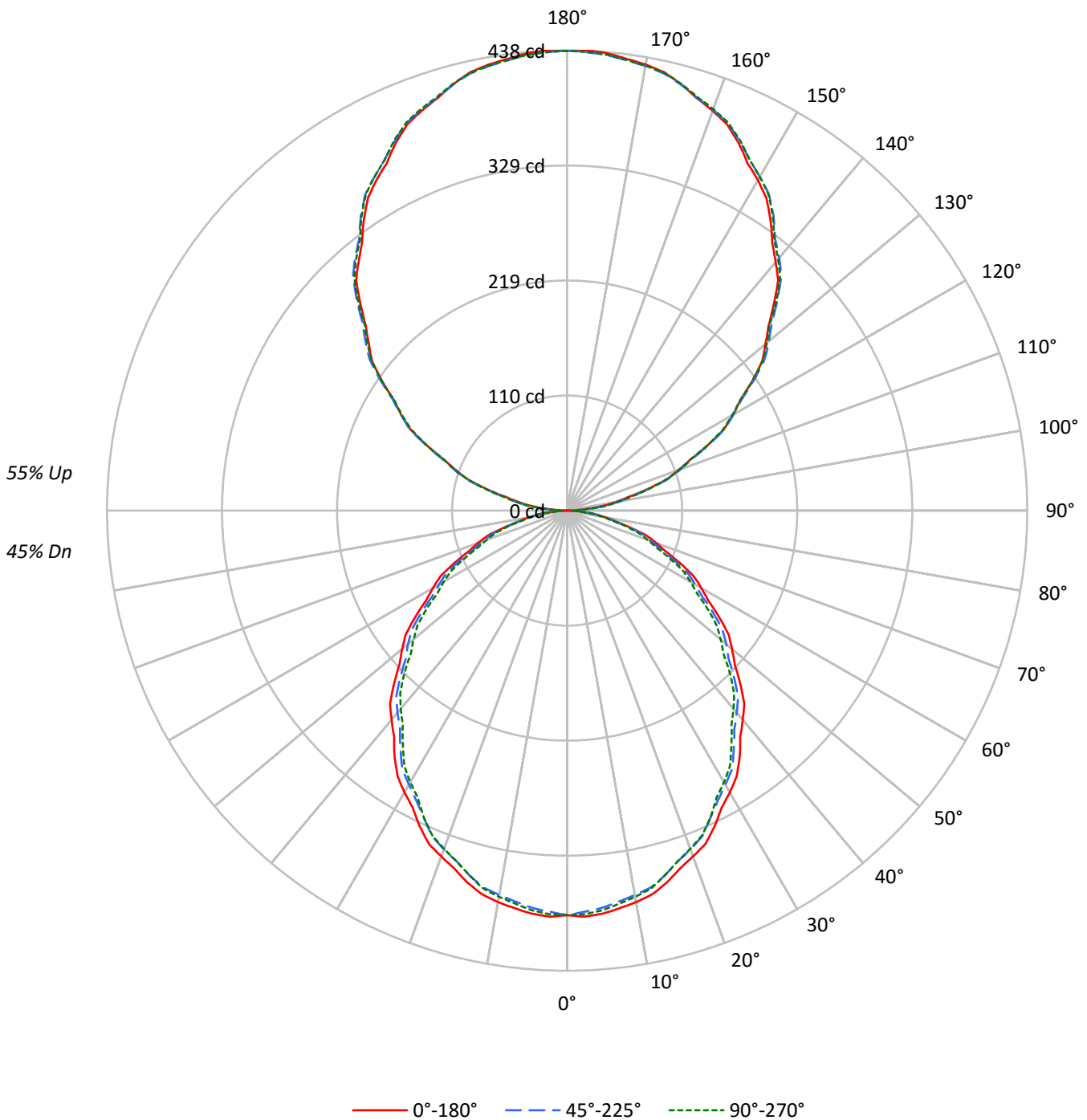
Input Watts (W): 23
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	45				
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43	37				
2	88	81	74	69	80	74	69	64	62	58	54	50	48	45	40	38	36	31				
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	33	31	27				
4	73	63	55	49	67	58	51	45	48	43	39	40	36	33	31	29	27	23				
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	28	25	23	20				
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	20	17				
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18	15				
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16	14				
9	49	37	30	25	45	35	28	23	29	24	20	24	20	18	20	17	15	12				
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13	11				

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	1.6
10°-20°	101.9	4.6
20°-30°	149.8	6.8
30°-40°	174.0	7.9
40°-50°	173.8	7.9
50°-60°	151.6	6.9
60°-70°	112.1	5.1
70°-80°	63.5	2.9
80°-90°	18.8	0.9
90°-100°	27.7	1.3
100°-110°	86.1	3.9
110°-120°	147.2	6.7
120°-130°	193.6	8.8
130°-140°	217.3	9.9
140°-150°	213.1	9.7
150°-160°	178.7	8.1
160°-170°	118.6	5.4
170°-180°	41.4	1.9
0°-30°	287.9	13.1
0°-40°	461.9	20.9
0°-60°	787.3	35.7
0°-90°	981.7	44.5
90°-120°	261.1	11.8
90°-150°	885.2	40.1
90°-180°	1224.0	55.5
0°-180°	2205.6	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	5	13	12	13	2
95°	19	23	24	24	23	22
105°	79	80	81	82	82	84
115°	148	150	149	149	148	146
125°	215	218	217	216	216	192
135°	278	282	283	282	281	215
145°	338	340	342	343	341	211
155°	386	387	388	390	389	178
165°	420	420	420	422	420	118
175°	437	436	435	437	436	41
180°	438	438	438	438	438	



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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	5.5	5.5	5.6	5.7	5.8	6.0	6.3	6.5	6.8	6.5
90°	0.4	1.4	2.4	3.3	4.3	5.7	7.5	9.3	11.1	13.0	12.8
92.5°	6.6	7.3	8.0	8.7	9.5	10.0	10.4	10.9	11.3	11.7	11.7
95°	19.2	20.1	20.9	21.7	22.5	23.0	23.2	23.3	23.5	23.6	23.6
97.5°	35.1	35.8	36.5	37.3	38.0	38.5	38.8	39.1	39.5	39.7	39.7
100°	46.9	47.5	48.2	48.9	49.6	50.0	50.2	50.5	50.7	51.0	51.0
102.5°	59.4	59.8	60.3	60.9	61.4	61.9	62.1	62.5	62.8	63.1	63.2
105°	79.4	79.7	79.9	80.1	80.4	80.6	80.8	81.0	81.1	81.3	81.4
107.5°	99.6	100.0	100.4	100.8	101.1	101.3	101.3	101.3	101.3	101.3	101.3
110°	112.7	113.2	113.7	114.1	114.6	114.9	114.9	114.9	114.9	114.9	114.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	126.9	127.3	127.8	128.3	128.8	129.1	129.0	128.9	128.8	128.7	128.6
115°	147.7	148.2	148.7	149.2	149.7	149.9	149.7	149.5	149.4	149.2	149.1
117.5°	168.6	169.3	169.9	170.6	171.2	171.3	170.9	170.4	169.9	169.5	169.3
120°	182.5	183.1	183.8	184.4	185.1	185.1	184.4	183.8	183.1	182.5	182.5
122.5°	195.2	196.0	196.7	197.5	198.4	198.5	198.0	197.5	197.1	196.7	196.5
125°	215.0	215.7	216.5	217.2	217.9	218.2	217.9	217.7	217.4	217.2	217.0
127.5°	234.2	235.2	236.1	237.1	238.0	238.3	238.1	237.7	237.4	237.2	236.8
130°	246.4	247.4	248.5	249.6	250.6	251.1	250.9	250.8	250.6	250.5	250.3
132.5°	260.0	260.8	261.7	262.6	263.4	263.9	263.9	264.0	264.0	264.0	263.7
135°	278.2	279.1	280.0	280.9	281.8	282.3	282.4	282.6	282.7	282.9	282.8
137.5°	297.3	298.0	298.7	299.5	300.2	300.7	300.9	301.2	301.3	301.6	301.5
140°	308.8	309.6	310.3	311.0	311.8	312.3	312.7	313.2	313.6	314.0	314.0
142.5°	320.7	321.4	322.1	322.9	323.6	324.1	324.3	324.7	324.9	325.2	325.3
145°	337.6	338.2	338.8	339.3	339.9	340.5	341.0	341.4	341.9	342.4	342.5
147.5°	352.8	353.4	354.2	354.8	355.6	356.0	356.4	356.7	357.0	357.3	357.5
150°	363.1	363.6	364.1	364.6	365.1	365.5	365.8	366.2	366.5	366.8	367.0
152.5°	372.3	372.8	373.2	373.7	374.2	374.7	375.0	375.4	375.9	376.3	376.6
155°	386.0	386.2	386.5	386.8	387.0	387.3	387.5	387.8	388.0	388.2	388.7
157.5°	397.8	397.9	398.1	398.3	398.4	398.5	398.7	398.8	399.0	399.2	399.7
160°	404.9	405.0	405.2	405.4	405.5	405.6	405.7	405.8	405.9	405.9	406.4
162.5°	411.3	411.4	411.4	411.4	411.5	411.6	411.6	411.7	411.8	411.9	412.4
165°	420.0	419.9	419.8	419.7	419.6	419.6	419.6	419.6	419.6	419.6	420.2
167.5°	427.2	427.0	426.7	426.5	426.2	426.1	426.1	426.1	426.1	426.1	426.6
170°	431.0	430.8	430.6	430.3	430.1	429.9	429.8	429.7	429.7	429.6	430.2
172.5°	433.7	433.5	433.3	433.0	432.8	432.6	432.5	432.4	432.4	432.3	432.8
175°	437.0	436.8	436.5	436.3	436.0	435.8	435.6	435.5	435.3	435.1	435.7
177.5°	438.3	438.1	437.9	437.7	437.5	437.3	437.2	437.1	436.9	436.8	437.2
180°	437.7	437.7	437.7	437.7	437.7	437.7	437.7	437.7	437.7	437.7	437.7



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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°	6.3	6.0	5.8	5.7	5.6	5.5	5.5	5.5
90°	12.6	12.5	12.3	12.2	12.3	12.4	12.5	12.6
92.5°	11.8	11.8	11.9	11.9	11.9	11.9	12.0	12.0
95°	23.6	23.6	23.6	23.6	23.4	23.2	23.1	22.9
97.5°	39.7	39.7	39.7	39.7	39.7	39.7	39.7	39.7
100°	51.0	51.0	51.0	51.0	50.9	50.8	50.7	50.6
102.5°	63.2	63.3	63.3	63.3	63.3	63.2	63.1	63.0
105°	81.6	81.8	81.9	82.0	82.0	82.0	82.0	82.0
107.5°	101.4	101.5	101.6	101.4	101.0	100.6	100.3	99.9
110°	114.9	114.9	114.9	114.7	114.5	114.2	114.0	113.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	128.4	128.2	128.0	127.8	127.6	127.4	127.3	127.1
115°	149.0	149.0	148.9	148.7	148.5	148.2	148.0	147.7
117.5°	169.1	168.8	168.7	168.4	168.2	168.0	167.7	167.5
120°	182.5	182.5	182.5	182.4	182.1	181.9	181.6	181.4
122.5°	196.2	196.1	195.8	195.7	195.5	195.3	195.1	194.9
125°	216.7	216.5	216.2	216.1	216.0	215.9	215.8	215.7
127.5°	236.5	236.3	235.9	235.7	235.4	235.1	234.9	234.6
130°	250.1	250.0	249.8	249.6	249.2	248.9	248.6	248.3
132.5°	263.3	262.9	262.6	262.3	262.0	261.7	261.5	261.2
135°	282.7	282.7	282.6	282.4	282.2	281.9	281.7	281.4
137.5°	301.4	301.3	301.3	301.1	300.8	300.4	300.1	299.8
140°	314.0	314.0	314.0	313.8	313.5	313.2	312.8	312.5
142.5°	325.3	325.4	325.5	325.3	325.0	324.7	324.3	324.0
145°	342.6	342.7	342.8	342.6	342.3	341.9	341.6	341.3
147.5°	357.7	357.9	358.1	358.0	357.7	357.3	357.0	356.8
150°	367.3	367.5	367.8	367.8	367.5	367.3	367.0	366.8
152.5°	376.8	377.2	377.5	377.5	377.2	376.8	376.6	376.3
155°	389.1	389.5	389.9	390.0	389.7	389.5	389.2	389.0
157.5°	400.2	400.8	401.4	401.5	401.0	400.6	400.3	399.9
160°	406.9	407.4	407.9	408.0	407.6	407.3	407.0	406.7
162.5°	412.9	413.5	414.1	414.2	413.8	413.4	412.9	412.6
165°	420.8	421.3	421.9	422.0	421.6	421.2	420.8	420.4
167.5°	427.2	427.8	428.4	428.4	428.0	427.5	427.1	426.7
170°	430.7	431.3	431.9	431.9	431.5	431.0	430.5	430.0
172.5°	433.4	434.0	434.6	434.6	434.1	433.6	433.1	432.6
175°	436.3	436.8	437.4	437.5	437.0	436.5	436.0	435.5
177.5°	437.7	438.0	438.4	438.4	438.0	437.7	437.2	436.8
180°	437.7	437.7	437.7	437.7	437.7	437.7	437.7	437.7

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