

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: P331244-935

Luminaire Tested: **S122DIP-S290D330U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331244-935  
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: S122DIP-S290D330U935-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP 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: 2039.0 lumens  
Efficiency: N/A  
Efficacy: 100.4 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

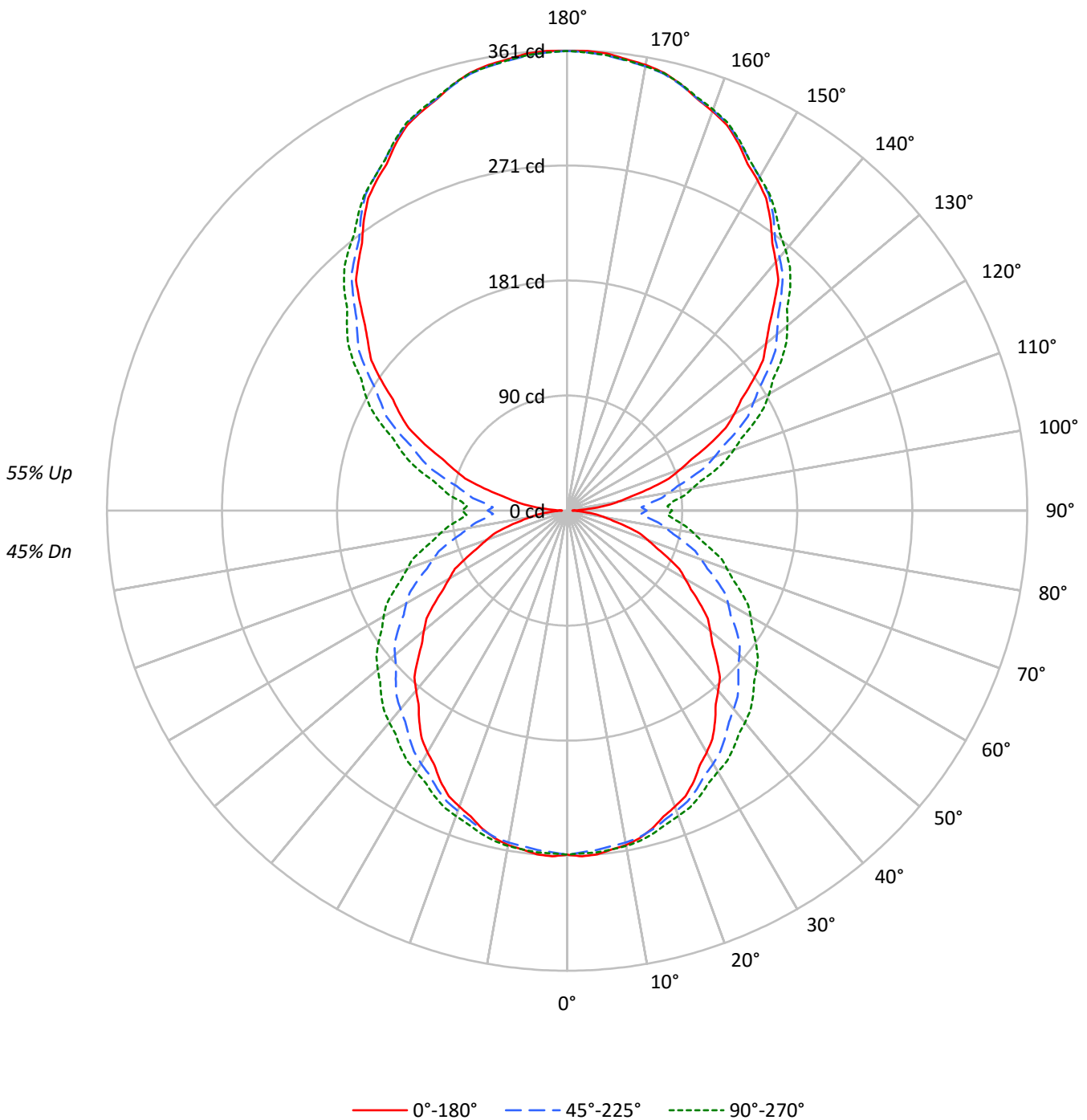
Input Watts (W): 20.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20			20			20			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	97	97	97	97	81	81	81	65	65	65	51	51	51	45
1	95	90	86	82	87	83	79	76	69	66	63	55	53	52	43	42	41	35
2	86	78	72	66	78	72	66	61	59	55	51	48	45	42	37	35	33	28
3	78	68	60	54	71	63	56	50	52	47	42	42	38	35	33	30	28	23
4	71	60	52	45	65	55	48	42	46	40	36	37	33	30	29	26	24	20
5	65	53	45	39	59	49	41	36	41	35	31	33	29	25	26	23	20	17
6	60	48	39	33	55	44	36	31	37	31	26	30	25	22	23	20	18	15
7	55	43	35	29	50	39	32	27	33	27	23	27	23	19	21	18	16	13
8	51	39	31	25	47	36	29	24	30	24	20	25	20	17	19	16	14	11
9	48	35	28	23	44	33	26	21	27	22	18	23	18	15	18	15	12	10
10	45	32	25	20	41	30	23	19	25	20	16	21	17	14	17	13	11	9

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

	0°	45°	90°
0°	4358	4358	4358
5°	4379	4195	4179
10°	4352	4070	4026
15°	4290	3939	3863
20°	4215	3798	3707
25°	4141	3663	3565
30°	4034	3524	3423
35°	3928	3389	3323
40°	3818	3275	3223
45°	3709	3172	3137
50°	3596	3079	3053
55°	3474	2979	2968
60°	3329	2876	2878
65°	3174	2756	2769
70°	3001	2623	2653
75°	2784	2499	2544
80°	2445	2366	2436
85°	2110	2255	2350



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	25.6	1.3
10°-20°	73.3	3.6
20°-30°	111.1	5.4
30°-40°	135.3	6.6
40°-50°	145.6	7.1
50°-60°	141.4	6.9
60°-70°	123.5	6.1
70°-80°	95.1	4.7
80°-90°	65.2	3.2
90°-100°	66.8	3.3
100°-110°	103.0	5.1
110°-120°	142.5	7.0
120°-130°	171.3	8.4
130°-140°	183.9	9.0
140°-150°	176.4	8.6
150°-160°	147.2	7.2
160°-170°	97.6	4.8
170°-180°	34.1	1.7
0°-30°	210.0	10.3
0°-40°	345.4	16.9
0°-60°	632.4	31.0
0°-90°	916.2	44.9
90°-120°	312.3	15.3
90°-150°	843.9	41.4
90°-180°	1123.0	55.1
0°-180°	2039.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	270	270	270	270	270	
5°	271	269	267	269	269	26
15°	258	259	259	262	262	73
25°	235	237	241	245	247	108
35°	202	209	216	225	228	126
45°	166	177	190	202	206	128
55°	127	142	162	175	181	114
65°	87	106	129	145	150	86
75°	48	70	95	111	117	51
85°	14	38	63	79	85	15
90°	4	31	62	77	82	3
95°	19	40	64	79	83	21
105°	67	80	101	114	119	71
115°	123	130	146	157	161	122
125°	178	181	192	201	205	159
135°	230	233	237	245	248	177
145°	278	280	282	284	285	174
155°	318	319	320	321	320	146
165°	346	346	346	347	346	98
175°	360	359	358	360	359	34
180°	360	360	360	360	360	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	271.5	271.2	271.0	270.8	270.6	270.3	269.8	269.3	268.8	268.3	268.6
5°	270.7	270.4	270.2	269.9	269.6	269.2	268.7	268.2	267.7	267.2	267.7
7.5°	268.2	268.0	267.9	267.7	267.5	267.3	266.8	266.5	266.0	265.6	266.3
10°	266.4	266.2	266.0	265.9	265.7	265.4	265.2	264.9	264.7	264.4	265.1
12.5°	263.2	263.3	263.3	263.4	263.4	263.3	263.1	262.9	262.7	262.5	263.2
15°	258.1	258.3	258.5	258.6	258.8	258.9	258.9	258.9	258.9	258.9	259.7
17.5°	251.6	251.9	252.3	252.7	253.0	253.4	253.7	253.9	254.2	254.5	255.3
20°	247.2	247.6	248.1	248.5	248.9	249.3	249.7	250.0	250.4	250.7	251.7
22.5°	242.5	243.0	243.5	244.0	244.5	245.0	245.5	246.0	246.5	246.9	247.9
25°	234.7	235.3	235.9	236.5	237.1	237.8	238.6	239.4	240.1	240.9	241.9
27.5°	225.3	226.3	227.3	228.3	229.3	230.2	231.1	232.0	233.0	233.9	235.2
30°	219.0	220.2	221.3	222.4	223.5	224.7	225.8	227.0	228.1	229.2	230.6
32.5°	212.2	213.4	214.6	215.9	217.2	218.5	219.9	221.2	222.6	223.9	225.5
35°	202.2	203.7	205.2	206.6	208.1	209.7	211.4	213.0	214.6	216.3	218.2
37.5°	191.4	193.1	194.8	196.6	198.2	200.2	202.3	204.4	206.6	208.7	210.9
40°	184.3	186.1	188.0	189.9	191.8	194.0	196.3	198.7	201.0	203.4	205.6
42.5°	177.4	179.3	181.2	183.0	185.0	187.3	190.0	192.7	195.4	198.0	200.5
45°	165.8	168.2	170.6	172.9	175.2	177.9	181.0	184.0	187.0	190.1	192.8
47.5°	154.5	157.0	159.6	162.1	164.7	167.8	171.3	174.9	178.5	182.0	184.9
50°	146.7	149.4	152.1	154.7	157.5	160.7	164.7	168.6	172.5	176.4	179.3
52.5°	139.1	142.0	144.8	147.7	150.5	153.9	158.1	162.2	166.3	170.5	173.5
55°	127.1	130.3	133.4	136.5	139.7	143.4	148.0	152.5	157.0	161.5	164.7
57.5°	115.2	118.7	122.3	125.8	129.3	133.4	138.0	142.6	147.2	151.9	155.2
60°	106.8	110.6	114.3	118.0	121.7	126.1	131.0	136.0	140.9	145.9	149.2
62.5°	99.3	103.1	107.0	110.9	114.8	119.2	124.2	129.1	134.1	139.1	142.5
65°	86.8	91.1	95.3	99.6	103.8	108.6	113.7	118.8	124.0	129.1	132.7
67.5°	75.4	79.9	84.3	88.8	93.2	98.1	103.3	108.6	113.8	119.1	122.7
70°	67.2	71.8	76.3	80.8	85.3	90.3	95.7	101.1	106.5	111.8	115.6
72.5°	59.8	64.4	69.1	73.7	78.4	83.4	88.9	94.4	99.9	105.3	109.0
75°	48.1	53.0	57.9	62.7	67.6	72.8	78.4	83.9	89.5	95.1	98.8
77.5°	36.9	41.9	47.0	52.1	57.3	62.6	68.3	73.9	79.6	85.2	88.9
80°	29.4	34.6	40.0	45.2	50.5	56.1	61.6	67.3	72.9	78.6	82.2
82.5°	23.1	28.3	33.6	38.7	44.0	49.5	55.2	61.0	66.6	72.3	76.0
85°	14.1	19.5	24.9	30.2	35.6	41.1	46.7	52.3	57.8	63.4	67.0
87.5°	7.7	13.1	18.4	23.8	29.1	34.7	40.6	46.4	52.3	58.1	61.6
90°	4.2	10.1	15.9	21.8	27.6	34.1	41.2	48.2	55.2	62.3	65.6
92.5°	9.0	14.3	19.6	24.9	30.1	35.6	41.3	47.1	52.8	58.5	61.9
95°	18.9	23.7	28.5	33.2	38.0	43.0	48.4	53.7	59.1	64.5	67.8
97.5°	31.6	35.9	40.1	44.3	48.6	53.3	58.5	63.8	69.1	74.4	77.6
100°	41.3	45.1	48.9	52.6	56.4	60.8	65.9	70.9	76.0	81.1	84.3
102.5°	51.3	54.7	58.0	61.4	64.7	69.0	74.0	78.9	83.9	88.9	92.0
105°	67.3	70.1	72.8	75.5	78.3	82.0	86.6	91.3	95.9	100.6	103.8
107.5°	83.9	86.3	88.6	90.9	93.2	96.5	100.8	105.2	109.5	113.8	116.8
110°	94.4	96.5	98.7	100.7	102.9	106.2	110.4	114.6	118.9	123.1	126.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	106.0	107.9	109.8	111.6	113.5	116.4	120.5	124.4	128.4	132.4	135.0
115°	123.2	124.6	126.0	127.3	128.7	131.2	135.0	138.8	142.6	146.4	148.9
117.5°	140.0	141.2	142.3	143.5	144.6	146.9	150.1	153.3	156.6	159.8	162.2
120°	151.4	152.3	153.3	154.1	155.0	156.9	159.9	162.8	165.7	168.7	171.1
122.5°	161.9	162.7	163.5	164.3	165.1	166.9	169.8	172.7	175.6	178.5	180.6
125°	177.8	178.4	179.0	179.6	180.3	181.8	184.4	187.0	189.6	192.2	194.3
127.5°	193.7	194.4	195.1	195.8	196.4	197.8	199.8	201.7	203.8	205.8	207.7
130°	203.7	204.5	205.3	206.0	206.8	208.1	209.7	211.5	213.2	214.8	216.8
132.5°	214.9	215.5	216.1	216.8	217.4	218.4	219.9	221.3	222.7	224.2	225.8
135°	229.5	230.2	230.9	231.7	232.4	233.3	234.3	235.3	236.3	237.3	239.1
137.5°	245.2	245.8	246.4	246.9	247.5	248.1	248.7	249.3	249.8	250.4	251.9
140°	254.7	255.2	255.7	256.2	256.8	257.3	257.8	258.3	258.8	259.3	260.7
142.5°	264.4	264.9	265.4	266.0	266.5	266.9	267.2	267.4	267.7	267.9	269.1
145°	278.0	278.5	279.0	279.5	279.9	280.3	280.8	281.2	281.5	282.0	282.6
147.5°	290.5	291.1	291.6	292.2	292.7	293.2	293.4	293.8	294.0	294.3	294.5
150°	299.0	299.5	299.8	300.2	300.7	301.0	301.3	301.5	301.8	302.0	302.3
152.5°	306.6	306.9	307.4	307.8	308.2	308.6	308.8	309.2	309.5	309.9	310.1
155°	317.9	318.1	318.3	318.5	318.7	318.9	319.1	319.3	319.5	319.7	320.0
157.5°	327.5	327.7	327.8	328.0	328.1	328.2	328.4	328.5	328.6	328.7	329.2
160°	333.4	333.6	333.6	333.8	333.9	334.1	334.1	334.2	334.2	334.3	334.7
162.5°	338.7	338.8	338.8	338.8	338.9	338.9	339.0	339.1	339.1	339.1	339.7
165°	345.9	345.8	345.7	345.7	345.6	345.5	345.5	345.5	345.5	345.5	346.0
167.5°	351.8	351.6	351.5	351.2	351.0	350.9	350.9	350.9	350.9	350.9	351.3
170°	355.0	354.8	354.6	354.4	354.2	354.0	354.0	353.9	353.9	353.8	354.2
172.5°	357.1	357.0	356.8	356.5	356.4	356.2	356.2	356.1	356.0	355.9	356.5
175°	359.9	359.6	359.5	359.2	359.0	358.9	358.8	358.6	358.4	358.3	358.8
177.5°	360.9	360.8	360.6	360.5	360.3	360.2	360.1	360.0	359.8	359.7	360.1
180°	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	269.0	269.3	269.7	269.8	269.7	269.5	269.4	269.2
5°	268.2	268.7	269.2	269.4	269.3	269.2	269.1	269.1
7.5°	266.9	267.5	268.2	268.5	268.4	268.3	268.2	268.1
10°	265.8	266.5	267.2	267.5	267.4	267.3	267.3	267.2
12.5°	263.9	264.6	265.3	265.6	265.5	265.4	265.4	265.3
15°	260.5	261.3	262.1	262.4	262.3	262.3	262.2	262.1
17.5°	256.1	256.9	257.7	258.1	258.1	258.1	258.1	258.1
20°	252.6	253.6	254.5	255.0	255.0	255.0	255.0	255.0
22.5°	248.9	249.9	250.8	251.3	251.5	251.6	251.8	251.9
25°	243.1	244.1	245.1	245.7	246.0	246.2	246.5	246.8
27.5°	236.5	237.9	239.2	240.0	240.1	240.3	240.5	240.7
30°	232.0	233.4	234.8	235.6	235.8	236.1	236.3	236.6
32.5°	227.0	228.7	230.3	231.4	231.8	232.3	232.7	233.2
35°	220.2	222.1	223.9	225.2	225.8	226.4	227.0	227.6
37.5°	212.9	215.1	217.2	218.6	219.2	219.9	220.5	221.1
40°	207.9	210.2	212.4	214.0	214.7	215.5	216.3	217.1
42.5°	203.0	205.4	207.9	209.6	210.3	211.1	211.9	212.7
45°	195.4	198.2	200.9	202.7	203.5	204.4	205.3	206.1
47.5°	187.7	190.5	193.3	195.2	196.1	197.1	198.0	199.0
50°	182.3	185.3	188.2	190.2	191.1	192.1	193.0	194.0
52.5°	176.5	179.5	182.5	184.6	185.6	186.7	187.7	188.6
55°	167.8	170.9	174.1	176.2	177.3	178.5	179.6	180.7
57.5°	158.6	162.0	165.3	167.6	168.8	169.9	171.0	172.2
60°	152.5	155.8	159.1	161.4	162.6	163.8	165.1	166.3
62.5°	146.0	149.6	153.1	155.4	156.5	157.6	158.9	160.0
65°	136.2	139.7	143.4	145.7	146.8	147.9	149.0	150.2
67.5°	126.2	129.8	133.5	135.9	137.0	138.2	139.4	140.6
70°	119.3	123.0	126.8	129.2	130.3	131.3	132.3	133.4
72.5°	112.6	116.3	119.9	122.4	123.6	124.9	126.2	127.4
75°	102.5	106.2	110.0	112.4	113.6	114.7	115.8	116.9
77.5°	92.6	96.3	100.0	102.5	103.8	105.0	106.2	107.4
80°	85.9	89.5	93.2	95.7	96.9	98.1	99.3	100.5
82.5°	79.6	83.3	87.0	89.4	90.5	91.7	92.8	93.9
85°	70.7	74.3	78.0	80.4	81.6	82.8	84.0	85.2
87.5°	65.2	68.7	72.2	74.6	75.7	76.8	77.9	79.0
90°	69.0	72.3	75.7	77.8	79.0	80.1	81.2	82.3
92.5°	65.3	68.8	72.2	74.5	75.5	76.5	77.7	78.7
95°	71.0	74.4	77.7	79.7	80.7	81.6	82.5	83.4
97.5°	80.8	84.0	87.2	89.3	90.3	91.4	92.4	93.3
100°	87.6	90.7	93.9	96.0	96.9	97.8	98.7	99.5
102.5°	95.3	98.5	101.7	103.8	104.6	105.5	106.4	107.3
105°	106.9	110.1	113.3	115.4	116.3	117.3	118.2	119.2
107.5°	119.8	122.8	125.7	127.5	128.2	128.8	129.5	130.1
110°	128.7	131.5	134.3	136.0	136.8	137.6	138.3	139.1





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	137.7	140.3	142.8	144.6	145.4	146.2	147.0	147.8
115°	151.4	153.9	156.5	158.2	158.9	159.7	160.4	161.2
117.5°	164.6	167.0	169.4	171.0	171.7	172.4	173.1	173.7
120°	173.5	176.0	178.4	179.9	180.7	181.5	182.3	183.0
122.5°	182.9	185.0	187.3	188.7	189.3	190.0	190.7	191.4
125°	196.5	198.6	200.7	202.2	202.9	203.6	204.3	205.0
127.5°	209.6	211.5	213.4	214.6	215.2	215.8	216.3	216.9
130°	218.8	220.7	222.7	223.9	224.3	224.7	225.2	225.5
132.5°	227.6	229.3	231.0	232.1	232.6	233.1	233.6	234.0
135°	240.8	242.5	244.4	245.5	246.0	246.4	246.9	247.5
137.5°	253.5	255.0	256.6	257.5	257.8	258.1	258.5	258.7
140°	262.1	263.6	264.9	265.7	266.0	266.2	266.5	266.7
142.5°	270.3	271.5	272.6	273.3	273.5	273.7	273.9	274.1
145°	283.2	283.8	284.3	284.7	284.9	285.1	285.2	285.3
147.5°	294.7	294.9	295.2	295.2	295.2	295.2	295.1	295.1
150°	302.5	302.6	302.9	302.9	302.6	302.5	302.3	302.0
152.5°	310.4	310.6	310.9	310.9	310.6	310.4	310.1	309.9
155°	320.4	320.7	321.1	321.2	320.9	320.7	320.6	320.3
157.5°	329.6	330.1	330.5	330.6	330.3	329.9	329.7	329.3
160°	335.1	335.5	336.0	336.0	335.7	335.4	335.2	334.9
162.5°	340.1	340.5	341.0	341.0	340.8	340.4	340.1	339.8
165°	346.5	347.0	347.4	347.5	347.2	346.8	346.5	346.2
167.5°	351.8	352.2	352.8	352.8	352.5	352.1	351.7	351.4
170°	354.7	355.2	355.7	355.7	355.3	354.9	354.5	354.0
172.5°	356.9	357.4	357.8	357.9	357.5	357.1	356.7	356.3
175°	359.3	359.7	360.2	360.2	359.9	359.5	359.0	358.6
177.5°	360.4	360.7	361.0	361.0	360.7	360.4	360.1	359.7
180°	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5

(END OF REPORT)