

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: P331246-927

Luminaire Tested: **S122DIP-S290D330U927-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331246-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIP-S290D330U927-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1990.4 lumens  
Efficiency: N/A  
Efficacy: 98.0 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

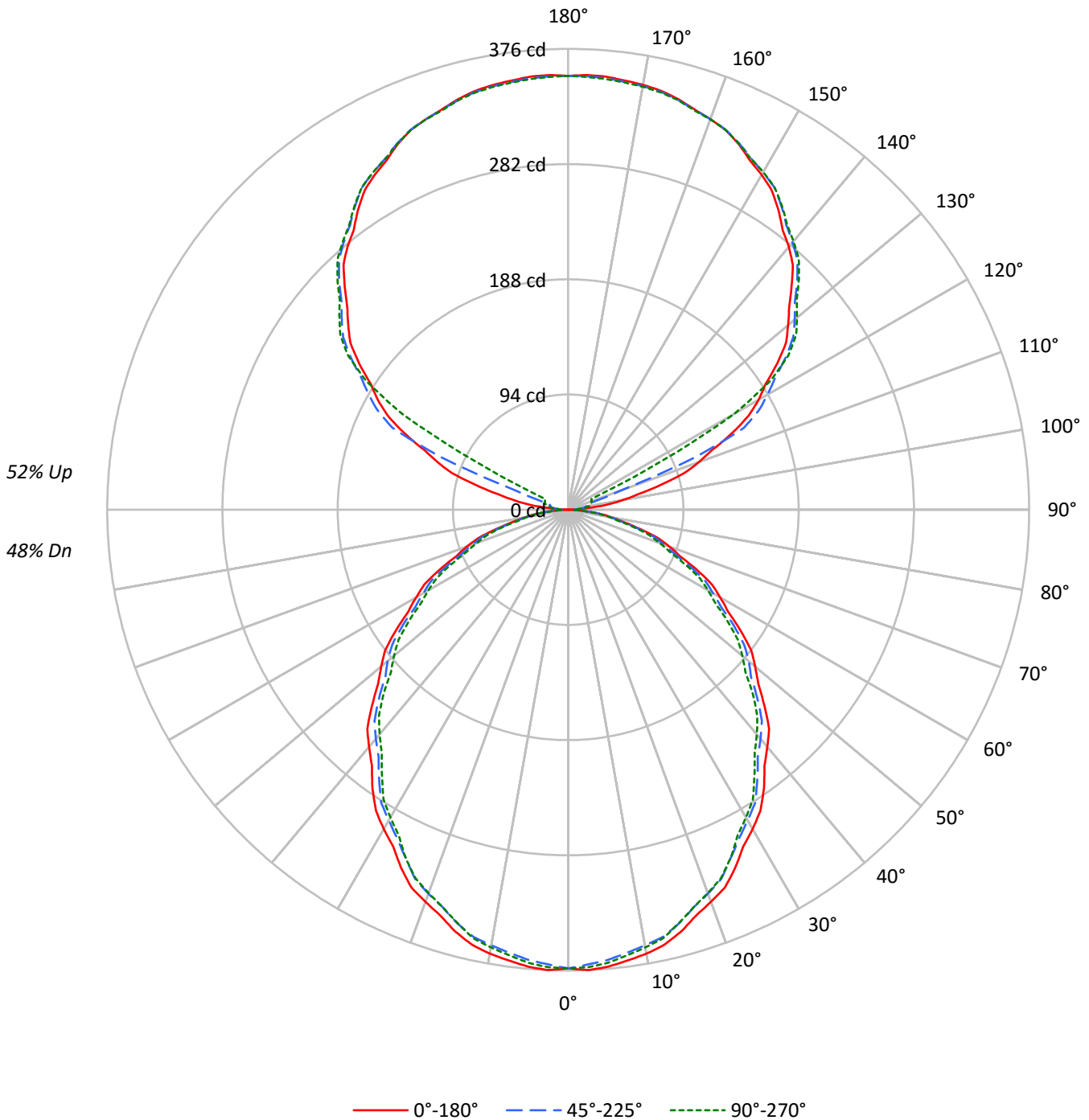
Input Watts (W): 20.3  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	54	54	54	48
1	97	93	89	86	89	86	82	79	72	70	67	59	58	56	48	47	46	40
2	89	81	75	70	81	75	70	65	63	59	56	52	49	47	42	40	39	34
3	81	71	64	58	74	66	60	54	56	51	47	46	43	40	37	35	33	29
4	74	63	55	49	68	58	51	46	49	44	40	41	37	34	33	31	28	25
5	68	56	48	42	62	52	45	40	44	39	34	37	33	29	30	27	25	21
6	62	50	42	37	57	47	40	34	40	34	30	33	29	26	27	24	22	19
7	58	46	38	32	53	42	35	30	36	31	26	30	26	23	25	22	19	17
8	54	41	34	28	49	38	32	27	33	27	24	28	23	20	23	20	17	15
9	50	38	30	25	46	35	28	24	30	25	21	26	21	18	21	18	16	13
10	47	35	27	23	43	32	26	21	28	23	19	24	19	17	20	16	14	12

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

	0°	45°	90°
0°	6042	6042	6042
5°	6065	5977	6015
10°	6030	5917	5946
15°	5954	5840	5835
20°	5849	5727	5720
25°	5744	5585	5585
30°	5610	5455	5407
35°	5483	5298	5219
40°	5324	5143	5044
45°	5167	4987	4864
50°	4999	4828	4657
55°	4822	4642	4467
60°	4624	4414	4253
65°	4413	4195	4000
70°	4145	3923	3734
75°	3768	3612	3525
80°	3347	3245	3078
85°	2723	2594	2334



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	35.2	1.8
10°-20°	99.0	5.0
20°-30°	145.6	7.3
30°-40°	169.1	8.5
40°-50°	168.9	8.5
50°-60°	147.3	7.4
60°-70°	108.9	5.5
70°-80°	61.7	3.1
80°-90°	17.5	0.9
90°-100°	11.8	0.6
100°-110°	43.3	2.2
110°-120°	115.7	5.8
120°-130°	191.1	9.6
130°-140°	203.2	10.2
140°-150°	188.9	9.5
150°-160°	151.8	7.6
160°-170°	97.8	4.9
170°-180°	33.7	1.7
0°-30°	279.8	14.1
0°-40°	448.8	22.6
0°-60°	765.0	38.4
0°-90°	953.0	47.9
90°-120°	170.8	8.6
90°-150°	754.0	37.9
90°-180°	1037.0	52.1
0°-180°	1990.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	374	374	374	374	374	
5°	374	373	369	372	371	35
15°	356	354	349	351	349	100
25°	322	319	314	314	314	148
35°	278	274	269	267	265	174
45°	226	224	218	215	213	175
55°	171	169	165	161	159	153
65°	116	113	110	107	105	114
75°	60	60	58	56	56	65
85°	15	14	14	13	13	17
90°	0	3	5	6	7	1
95°	17	9	10	11	11	20
105°	78	81	16	18	20	83
115°	147	152	158	45	21	145
125°	208	212	216	218	219	186
135°	258	262	264	266	266	199
145°	299	299	303	305	304	187
155°	329	327	330	331	329	152
165°	347	345	346	348	346	98
175°	355	353	354	355	353	34
180°	354	354	354	354	354	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2
2.5°	376.0	375.7	375.3	375.0	374.7	374.2	373.5	372.8	372.1	371.4	372.0
5°	374.2	373.9	373.6	373.3	373.0	372.4	371.5	370.7	369.7	368.8	369.5
7.5°	371.0	370.4	369.9	369.5	369.0	368.3	367.4	366.5	365.6	364.7	365.4
10°	367.8	367.3	366.7	366.1	365.5	364.8	363.8	362.9	361.9	360.9	361.6
12.5°	363.5	363.0	362.5	361.9	361.5	360.8	359.8	358.9	357.9	357.0	357.4
15°	356.2	355.8	355.3	354.8	354.3	353.6	352.5	351.5	350.5	349.4	349.7
17.5°	347.1	346.6	346.1	345.6	345.2	344.4	343.3	342.2	341.2	340.2	340.5
20°	340.4	339.9	339.5	339.0	338.5	337.7	336.6	335.5	334.4	333.3	333.5
22.5°	333.8	333.1	332.5	331.8	331.1	330.3	329.2	328.1	327.1	326.1	326.1
25°	322.4	321.8	321.2	320.5	319.9	318.9	317.5	316.2	314.8	313.5	313.6
27.5°	309.5	309.0	308.3	307.8	307.2	306.3	305.3	304.2	303.2	302.1	301.8
30°	300.9	300.2	299.6	299.0	298.3	297.4	296.2	295.0	293.7	292.6	292.3
32.5°	291.6	291.1	290.7	290.1	289.6	288.7	287.4	286.2	284.9	283.7	283.2
35°	278.2	277.3	276.6	275.8	275.0	273.9	272.7	271.4	270.1	268.8	268.3
37.5°	263.0	262.3	261.6	260.9	260.2	259.2	257.9	256.7	255.3	254.1	253.5
40°	252.6	252.0	251.4	250.7	250.1	249.1	247.8	246.5	245.3	244.0	243.3
42.5°	242.6	241.9	241.3	240.7	240.0	239.0	237.7	236.5	235.2	233.9	233.1
45°	226.3	225.8	225.2	224.7	224.1	223.2	222.0	220.9	219.7	218.4	217.5
47.5°	210.2	209.7	209.2	208.7	208.1	207.2	206.0	204.8	203.5	202.2	201.3
50°	199.0	198.6	198.2	197.8	197.4	196.6	195.5	194.4	193.3	192.2	191.1
52.5°	188.1	187.5	187.0	186.5	185.9	185.1	184.1	183.1	182.0	180.9	180.0
55°	171.3	170.8	170.3	169.8	169.4	168.7	167.7	166.8	165.8	164.9	163.8
57.5°	154.5	154.1	153.7	153.3	152.9	152.2	151.1	150.1	149.0	148.0	147.0
60°	143.2	142.9	142.6	142.3	142.0	141.2	140.1	139.0	137.8	136.7	135.9
62.5°	132.3	131.7	131.3	130.8	130.2	129.5	128.7	127.9	127.0	126.1	125.2
65°	115.5	115.0	114.5	114.1	113.6	113.0	112.2	111.4	110.6	109.8	109.0
67.5°	98.5	98.1	97.7	97.3	97.0	96.4	95.6	94.9	94.2	93.5	92.9
70°	87.8	87.5	87.1	86.8	86.5	86.0	85.3	84.6	83.8	83.1	82.5
72.5°	76.8	76.5	76.2	75.9	75.6	75.2	74.7	74.3	73.8	73.4	72.8
75°	60.4	60.3	60.1	60.0	59.8	59.6	59.2	58.7	58.3	57.9	57.4
77.5°	45.8	45.5	45.2	45.0	44.7	44.4	44.3	44.1	44.0	43.8	43.6
80°	36.0	35.9	35.8	35.7	35.6	35.6	35.4	35.3	35.1	34.9	34.7
82.5°	26.8	26.8	26.8	26.7	26.7	26.6	26.5	26.5	26.4	26.3	26.0
85°	14.7	14.7	14.6	14.5	14.4	14.3	14.3	14.2	14.1	14.0	13.8
87.5°	5.2	5.2	5.2	5.2	5.2	5.2	5.1	5.1	5.1	5.1	4.9
90°	0.2	0.9	1.5	2.1	2.8	3.3	3.7	4.2	4.7	5.1	5.4
92.5°	5.1	5.1	5.1	5.0	4.9	5.1	5.2	5.5	5.7	5.9	6.1
95°	16.6	14.7	12.9	11.0	9.1	8.4	8.8	9.2	9.6	10.0	10.3
97.5°	33.0	27.7	22.4	17.2	11.9	9.7	10.6	11.5	12.4	13.4	13.6
100°	45.3	37.5	29.7	21.9	14.2	10.7	11.7	12.7	13.6	14.6	15.1
102.5°	58.9	57.2	55.5	53.9	52.3	47.4	39.3	31.2	23.1	15.0	15.6
105°	77.9	79.5	81.3	83.0	84.7	77.8	62.3	46.7	31.1	15.6	16.2
107.5°	99.5	100.9	102.3	103.7	105.0	96.4	77.8	59.2	40.5	21.9	21.2
110°	113.4	114.6	115.9	117.1	118.3	110.6	94.2	77.7	61.2	44.8	39.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	126.6	127.6	128.7	129.8	130.8	129.3	125.2	121.2	117.1	113.0	92.3
115°	147.3	148.2	149.2	150.2	151.1	152.3	153.8	155.2	156.6	158.0	131.7
117.5°	165.8	166.8	167.9	169.1	170.1	171.1	172.1	173.1	174.0	175.1	168.7
120°	179.3	180.1	181.0	181.9	182.7	183.6	184.7	185.7	186.7	187.7	188.5
122.5°	190.8	191.7	192.6	193.5	194.4	195.4	196.5	197.6	198.8	199.9	200.3
125°	208.3	209.0	209.7	210.5	211.2	212.1	213.2	214.3	215.3	216.4	216.8
127.5°	224.0	224.9	225.7	226.6	227.4	228.1	228.9	229.8	230.6	231.4	232.0
130°	234.1	235.0	235.9	236.9	237.7	238.5	239.2	239.8	240.4	241.1	241.6
132.5°	244.4	245.1	245.9	246.7	247.5	248.1	248.7	249.4	250.0	250.6	251.2
135°	257.7	258.6	259.5	260.4	261.3	262.1	262.5	263.1	263.6	264.1	264.7
137.5°	271.2	271.8	272.4	273.1	273.7	274.3	274.9	275.4	276.1	276.6	277.2
140°	280.0	280.4	280.8	281.3	281.8	282.3	283.0	283.6	284.2	284.8	285.3
142.5°	287.3	287.7	288.1	288.6	289.0	289.5	290.3	291.0	291.7	292.4	292.9
145°	298.9	298.9	298.8	298.7	298.7	299.1	300.1	301.1	302.1	303.0	303.4
147.5°	309.0	308.8	308.6	308.3	308.2	308.5	309.4	310.5	311.4	312.4	312.6
150°	315.5	315.1	314.7	314.3	313.9	314.3	315.1	316.1	317.0	317.9	318.2
152.5°	321.1	320.7	320.2	319.7	319.3	319.5	320.4	321.2	322.1	323.0	323.3
155°	329.2	328.6	328.1	327.6	327.1	327.2	327.9	328.5	329.2	329.9	330.3
157.5°	335.4	335.0	334.5	334.1	333.7	333.7	334.2	334.7	335.2	335.6	336.0
160°	339.1	338.8	338.4	338.1	337.8	337.8	338.1	338.4	338.8	339.1	339.5
162.5°	342.4	342.1	341.7	341.4	341.0	341.0	341.3	341.6	341.9	342.2	342.6
165°	346.8	346.5	346.1	345.8	345.5	345.4	345.5	345.7	345.9	346.0	346.4
167.5°	350.1	349.7	349.4	349.0	348.7	348.6	348.8	349.0	349.1	349.3	349.7
170°	352.0	351.6	351.3	350.9	350.5	350.5	350.5	350.7	350.8	350.9	351.3
172.5°	353.2	352.8	352.4	352.1	351.8	351.6	351.8	351.9	352.0	352.1	352.5
175°	354.7	354.3	353.9	353.6	353.2	353.0	353.2	353.2	353.4	353.5	353.9
177.5°	355.0	354.7	354.3	354.0	353.7	353.6	353.6	353.7	353.7	353.8	354.1
180°	353.9	353.9	353.9	353.9	353.9	353.9	353.9	353.9	353.9	353.9	353.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2
2.5°	372.6	373.3	373.9	374.2	374.1	373.9	373.8	373.7
5°	370.2	370.8	371.5	371.7	371.5	371.4	371.2	371.1
7.5°	366.0	366.6	367.3	367.5	367.3	367.1	366.9	366.8
10°	362.3	362.9	363.5	363.7	363.5	363.2	363.0	362.7
12.5°	357.8	358.2	358.7	358.9	358.7	358.5	358.3	358.1
15°	350.1	350.4	350.7	350.7	350.3	349.9	349.5	349.1
17.5°	340.9	341.3	341.6	341.6	341.2	340.9	340.5	340.1
20°	333.7	334.0	334.2	334.1	333.8	333.5	333.2	332.9
22.5°	326.1	326.2	326.2	326.1	326.0	325.7	325.6	325.4
25°	313.8	313.9	314.1	314.1	313.9	313.8	313.6	313.5
27.5°	301.6	301.3	301.1	300.8	300.4	300.0	299.7	299.3
30°	292.1	291.8	291.6	291.4	291.0	290.7	290.4	290.0
32.5°	282.8	282.3	281.9	281.5	281.2	280.9	280.6	280.3
35°	267.8	267.4	266.9	266.5	266.1	265.7	265.3	264.8
37.5°	252.9	252.3	251.7	251.2	250.8	250.4	250.1	249.7
40°	242.6	241.9	241.1	240.6	240.3	240.0	239.6	239.3
42.5°	232.3	231.6	230.8	230.1	229.7	229.3	228.9	228.4
45°	216.7	215.8	214.9	214.3	214.0	213.7	213.3	213.0
47.5°	200.4	199.5	198.5	197.8	197.4	196.9	196.5	196.0
50°	190.0	188.8	187.7	187.0	186.6	186.2	185.8	185.4
52.5°	179.1	178.2	177.2	176.5	175.9	175.5	174.9	174.4
55°	162.9	161.9	161.0	160.3	159.9	159.5	159.1	158.7
57.5°	146.1	145.1	144.2	143.5	143.3	143.0	142.7	142.4
60°	135.0	134.1	133.2	132.7	132.5	132.2	132.0	131.7
62.5°	124.5	123.7	122.9	122.3	122.0	121.7	121.4	121.0
65°	108.3	107.6	106.9	106.3	105.9	105.5	105.1	104.7
67.5°	92.4	91.8	91.3	90.8	90.5	90.2	89.8	89.5
70°	82.0	81.4	80.9	80.5	80.2	79.8	79.5	79.1
72.5°	72.2	71.7	71.1	70.7	70.4	70.2	69.9	69.6
75°	57.0	56.5	56.0	55.8	56.0	56.2	56.3	56.5
77.5°	43.3	43.1	42.9	42.6	42.4	42.2	42.0	41.7
80°	34.5	34.2	34.0	33.7	33.6	33.4	33.3	33.1
82.5°	25.7	25.3	25.0	24.9	24.9	24.8	24.8	24.8
85°	13.5	13.3	13.1	12.9	12.8	12.8	12.7	12.6
87.5°	4.8	4.7	4.5	4.4	4.4	4.4	4.3	4.3
90°	5.7	5.9	6.3	6.5	6.6	6.7	6.8	6.9
92.5°	6.3	6.4	6.5	6.7	6.7	6.8	6.8	6.9
95°	10.5	10.9	11.1	11.2	11.2	11.1	11.1	11.0
97.5°	13.9	14.0	14.3	14.4	14.5	14.6	14.7	14.7
100°	15.5	16.0	16.4	16.7	16.8	17.0	17.0	17.2
102.5°	16.2	16.8	17.3	17.7	17.9	18.1	18.2	18.4
105°	16.9	17.5	18.1	18.5	18.8	19.0	19.3	19.5
107.5°	20.6	20.0	19.3	19.1	19.3	19.6	19.8	20.0
110°	33.4	27.7	22.0	19.3	19.6	19.8	20.0	20.2





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	71.5	50.8	30.0	19.7	19.9	20.0	20.3	20.4
115°	105.4	79.0	52.6	37.4	33.3	29.2	25.1	21.0
117.5°	162.3	155.9	149.6	139.7	126.2	112.7	99.3	85.8
120°	189.1	189.8	190.4	187.0	179.3	171.6	163.9	156.2
122.5°	200.7	201.1	201.5	200.9	199.5	198.0	196.5	195.0
125°	217.2	217.6	218.0	218.3	218.5	218.6	218.8	219.0
127.5°	232.6	233.1	233.7	234.0	234.1	234.1	234.1	234.2
130°	242.2	242.9	243.5	243.8	243.8	243.7	243.7	243.6
132.5°	251.8	252.2	252.8	253.0	252.9	252.9	252.9	252.8
135°	265.2	265.8	266.3	266.6	266.5	266.3	266.3	266.1
137.5°	277.7	278.3	278.8	279.0	278.8	278.7	278.5	278.3
140°	285.8	286.4	286.8	287.0	286.7	286.5	286.1	285.8
142.5°	293.3	293.8	294.3	294.4	294.1	293.8	293.5	293.2
145°	303.8	304.2	304.6	304.7	304.4	304.1	303.8	303.5
147.5°	312.9	313.2	313.5	313.5	313.3	313.1	312.8	312.6
150°	318.5	318.9	319.2	319.2	319.0	318.7	318.4	318.1
152.5°	323.7	324.0	324.3	324.3	323.9	323.6	323.2	322.8
155°	330.6	330.9	331.3	331.2	330.7	330.3	329.9	329.4
157.5°	336.4	336.8	337.2	337.2	336.7	336.3	335.8	335.4
160°	339.8	340.2	340.5	340.5	340.1	339.7	339.3	338.9
162.5°	342.9	343.3	343.7	343.7	343.2	342.7	342.2	341.7
165°	346.8	347.2	347.6	347.6	347.2	346.8	346.4	346.0
167.5°	350.1	350.5	350.9	350.8	350.3	349.7	349.3	348.7
170°	351.7	352.1	352.5	352.4	352.0	351.4	350.9	350.4
172.5°	352.9	353.3	353.7	353.7	353.2	352.7	352.1	351.6
175°	354.3	354.7	355.1	355.0	354.4	353.9	353.2	352.7
177.5°	354.4	354.7	355.1	355.0	354.6	354.2	353.8	353.4
180°	353.9	353.9	353.9	353.9	353.9	353.9	353.9	353.9

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