

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: P331247-840

Luminaire Tested: **S122DIP-S290D330U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331247-840  
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-S290D330U840-4F0-1E-UDD-F1  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

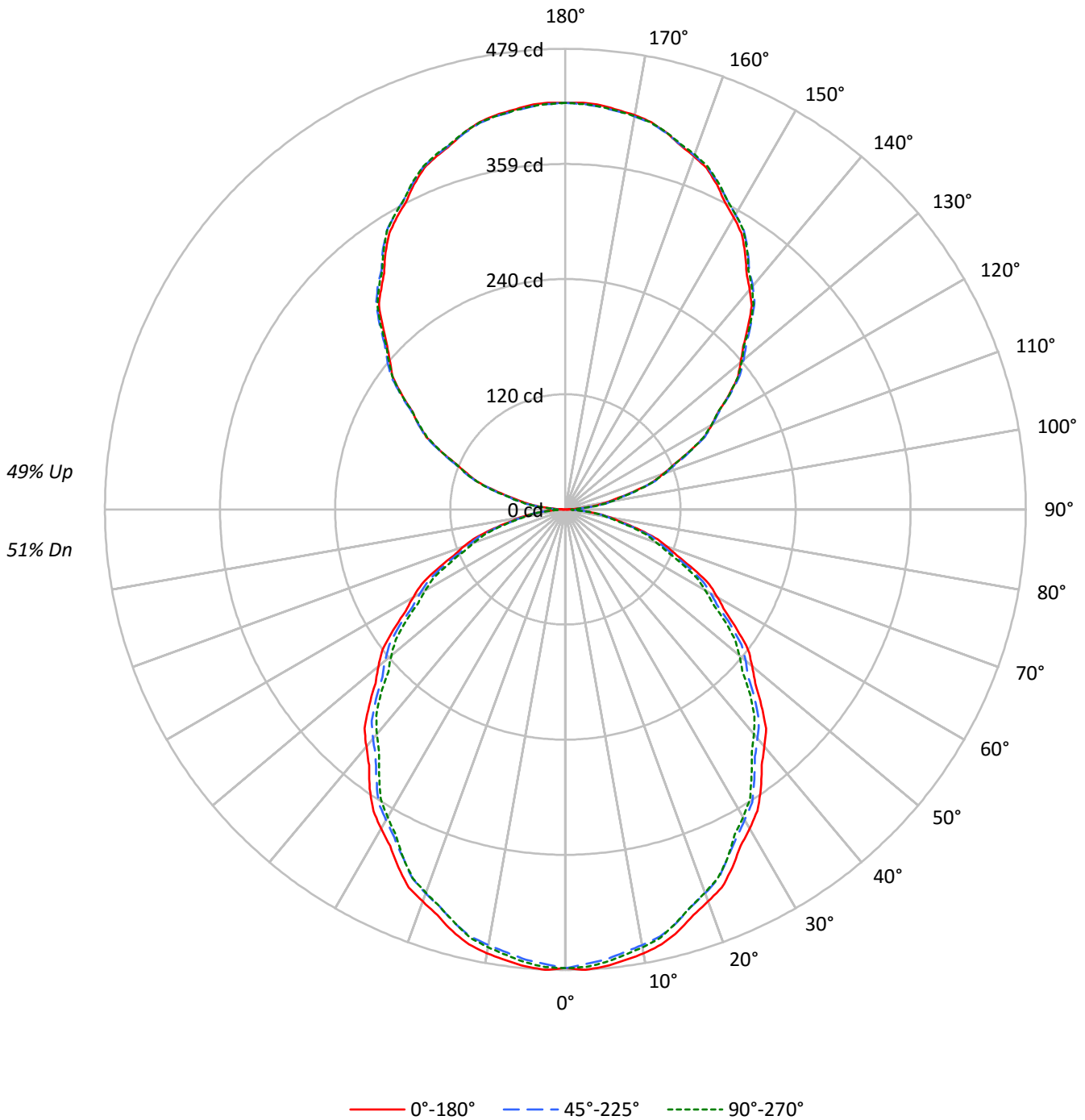
Lumens per Lamp: N/A  
Luminaire Lumens: 2397.7 lumens  
Efficiency: N/A  
Efficacy: 118.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

Input Watts (W): 20.3  
Input Voltage (V): 120  
Input Current (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									
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	50	30	10	50	30	10	50	30	10	0																
RCR																																														
0	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51																												
1	98	94	90	86	90	87	83	80	73	71	69	61	60	58	50	49	48	43																												
2	89	82	76	70	82	76	70	66	64	60	57	54	51	48	44	42	40	36																												
3	81	72	64	59	75	67	60	55	57	52	48	48	44	41	39	37	34	30																												
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	30	26																												
5	68	57	49	43	63	53	45	40	45	39	35	38	34	30	32	28	26	23																												
6	63	51	43	37	58	47	40	35	41	35	31	34	30	27	29	25	23	20																												
7	58	46	38	32	54	43	36	31	37	31	27	31	27	24	26	23	20	18																												
8	54	42	34	29	50	39	32	27	34	28	24	29	24	21	24	21	18	16																												
9	50	38	31	25	46	36	29	24	31	25	22	26	22	19	22	19	16	14																												
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	21	17	15	13																												

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

	0°	45°	90°
0°	7703	7703	7703
5°	7733	7621	7666
10°	7688	7543	7581
15°	7590	7447	7438
20°	7455	7301	7290
25°	7322	7119	7119
30°	7150	6952	6893
35°	6991	6753	6654
40°	6787	6555	6431
45°	6588	6357	6202
50°	6373	6154	5935
55°	6145	5917	5695
60°	5896	5628	5422
65°	5624	5349	5100
70°	5282	4999	4763
75°	4810	4604	4492
80°	4258	4138	3924
85°	3483	3316	2983



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.9	1.9
10°-20°	126.2	5.3
20°-30°	185.5	7.7
30°-40°	215.5	9.0
40°-50°	215.3	9.0
50°-60°	187.7	7.8
60°-70°	138.8	5.8
70°-80°	78.6	3.3
80°-90°	22.8	1.0
90°-100°	26.8	1.1
100°-110°	83.2	3.5
110°-120°	142.2	5.9
120°-130°	187.0	7.8
130°-140°	209.9	8.8
140°-150°	205.8	8.6
150°-160°	172.7	7.2
160°-170°	114.5	4.8
170°-180°	40.0	1.7
0°-30°	356.6	14.9
0°-40°	572.2	23.9
0°-60°	975.2	40.7
0°-90°	1215.5	50.7
90°-120°	252.2	10.5
90°-150°	855.0	35.7
90°-180°	1182.0	49.3
0°-180°	2397.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	477	477	477	477	477	
5°	477	475	470	474	473	45
15°	454	451	446	447	445	128
25°	411	407	400	400	400	189
35°	355	350	343	340	338	221
45°	288	285	278	274	272	223
55°	218	215	210	205	202	195
65°	147	144	140	136	134	146
75°	77	76	74	71	72	82
85°	19	18	18	17	16	22
90°	0	5	12	12	12	2
95°	19	22	23	23	22	21
105°	77	78	78	79	79	81
115°	143	145	144	144	143	141
125°	208	211	210	209	208	185
135°	269	272	273	273	272	207
145°	326	329	331	331	330	204
155°	373	374	375	377	376	172
165°	406	405	405	408	406	114
175°	422	421	420	422	421	40
180°	423	423	423	423	423	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1
2.5°	479.3	478.9	478.5	478.1	477.7	477.1	476.2	475.2	474.3	473.4	474.2
5°	477.1	476.7	476.3	475.8	475.4	474.7	473.6	472.5	471.3	470.2	471.0
7.5°	472.9	472.2	471.6	471.0	470.4	469.5	468.4	467.2	466.1	464.9	465.7
10°	468.9	468.2	467.5	466.8	466.0	465.0	463.8	462.6	461.4	460.1	460.9
12.5°	463.3	462.7	462.1	461.4	460.8	459.9	458.7	457.5	456.3	455.0	455.6
15°	454.1	453.5	452.9	452.3	451.7	450.8	449.4	448.1	446.8	445.5	445.9
17.5°	442.4	441.8	441.2	440.6	440.0	439.0	437.7	436.3	434.9	433.6	434.0
20°	433.9	433.3	432.7	432.1	431.5	430.5	429.1	427.7	426.3	424.9	425.2
22.5°	425.6	424.6	423.8	422.9	422.1	421.0	419.7	418.3	417.0	415.7	415.7
25°	411.0	410.2	409.4	408.6	407.8	406.5	404.8	403.0	401.3	399.6	399.8
27.5°	394.6	393.8	393.0	392.3	391.6	390.5	389.2	387.8	386.5	385.1	384.8
30°	383.5	382.7	381.9	381.1	380.2	379.1	377.6	376.1	374.5	372.9	372.6
32.5°	371.7	371.1	370.5	369.8	369.2	368.0	366.4	364.9	363.2	361.6	361.0
35°	354.7	353.6	352.5	351.5	350.5	349.2	347.6	346.0	344.4	342.6	342.0
37.5°	335.3	334.4	333.5	332.5	331.6	330.4	328.8	327.2	325.5	323.9	323.2
40°	322.0	321.2	320.4	319.6	318.8	317.6	315.9	314.3	312.7	311.0	310.1
42.5°	309.2	308.4	307.6	306.8	306.0	304.7	303.1	301.4	299.8	298.2	297.2
45°	288.5	287.8	287.1	286.4	285.7	284.6	283.1	281.6	280.0	278.4	277.3
47.5°	268.0	267.3	266.7	266.0	265.3	264.2	262.6	261.1	259.4	257.8	256.6
50°	253.7	253.2	252.7	252.2	251.7	250.6	249.2	247.8	246.4	245.0	243.6
52.5°	239.7	239.0	238.4	237.7	237.0	236.0	234.7	233.4	232.0	230.7	229.4
55°	218.3	217.7	217.1	216.5	215.9	215.0	213.8	212.6	211.4	210.2	208.8
57.5°	196.9	196.4	195.9	195.4	194.9	194.0	192.7	191.4	190.0	188.6	187.4
60°	182.6	182.2	181.8	181.4	181.0	180.1	178.6	177.2	175.7	174.3	173.2
62.5°	168.6	167.9	167.3	166.7	166.0	165.1	164.0	163.0	161.9	160.8	159.7
65°	147.2	146.6	146.0	145.4	144.8	144.0	143.0	142.0	141.0	140.0	139.0
67.5°	125.5	125.0	124.5	124.0	123.6	122.9	121.9	121.0	120.1	119.2	118.5
70°	111.9	111.5	111.1	110.7	110.3	109.7	108.8	107.9	106.8	105.9	105.2
72.5°	98.0	97.6	97.1	96.7	96.3	95.8	95.2	94.7	94.1	93.5	92.8
75°	77.1	76.9	76.6	76.4	76.2	75.9	75.4	74.8	74.3	73.8	73.2
77.5°	58.4	58.0	57.7	57.4	57.0	56.7	56.5	56.2	56.0	55.8	55.5
80°	45.8	45.7	45.6	45.5	45.4	45.3	45.1	44.9	44.7	44.5	44.2
82.5°	34.1	34.1	34.1	34.0	34.0	33.9	33.8	33.7	33.6	33.5	33.1
85°	18.8	18.7	18.6	18.5	18.4	18.3	18.2	18.1	18.0	17.9	17.6
87.5°	6.7	6.7	6.8	6.8	6.8	6.9	7.1	7.3	7.5	7.7	7.4
90°	0.4	1.3	2.2	3.2	4.1	5.6	7.3	9.0	10.7	12.5	12.3
92.5°	6.4	7.1	7.8	8.5	9.2	9.7	10.1	10.5	10.9	11.3	11.4
95°	18.6	19.4	20.1	20.9	21.7	22.2	22.3	22.5	22.7	22.8	22.8
97.5°	33.9	34.6	35.2	36.0	36.7	37.2	37.5	37.8	38.1	38.4	38.4
100°	45.3	45.9	46.6	47.3	47.9	48.3	48.5	48.8	49.0	49.3	49.3
102.5°	57.3	57.8	58.3	58.8	59.3	59.8	60.0	60.3	60.6	60.9	61.0
105°	76.7	77.0	77.2	77.5	77.7	77.9	78.1	78.2	78.4	78.5	78.7
107.5°	96.2	96.6	96.9	97.4	97.7	97.9	97.9	97.9	97.9	97.9	97.9
110°	108.9	109.3	109.8	110.3	110.7	111.0	111.0	111.0	111.0	111.0	111.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	122.5	123.0	123.5	123.9	124.4	124.6	124.5	124.5	124.4	124.4	124.2
115°	142.7	143.2	143.7	144.1	144.6	144.8	144.6	144.4	144.3	144.1	144.1
117.5°	162.8	163.5	164.1	164.7	165.4	165.5	165.0	164.6	164.1	163.7	163.5
120°	176.2	176.9	177.5	178.1	178.7	178.7	178.1	177.5	176.9	176.2	176.2
122.5°	188.5	189.2	190.1	190.8	191.6	191.8	191.3	190.9	190.4	190.0	189.8
125°	207.6	208.3	209.0	209.7	210.5	210.8	210.5	210.3	210.1	209.7	209.5
127.5°	226.3	227.2	228.1	228.9	229.8	230.1	229.9	229.6	229.3	229.0	228.7
130°	238.0	239.0	240.0	241.1	242.1	242.6	242.4	242.3	242.1	241.9	241.8
132.5°	251.2	252.0	252.8	253.6	254.5	254.9	254.9	255.0	255.0	255.0	254.7
135°	268.6	269.5	270.4	271.2	272.2	272.7	272.9	273.0	273.2	273.3	273.2
137.5°	287.1	287.8	288.5	289.3	290.0	290.4	290.6	290.8	291.0	291.2	291.2
140°	298.3	299.0	299.7	300.4	301.1	301.6	302.1	302.5	302.9	303.3	303.3
142.5°	309.7	310.4	311.1	311.8	312.6	313.1	313.3	313.6	313.9	314.1	314.2
145°	326.1	326.7	327.2	327.8	328.3	328.8	329.3	329.8	330.2	330.7	330.8
147.5°	340.7	341.4	342.0	342.7	343.4	343.9	344.2	344.6	344.9	345.2	345.4
150°	350.7	351.2	351.6	352.1	352.6	353.0	353.4	353.7	354.0	354.3	354.6
152.5°	359.6	360.0	360.5	361.0	361.4	361.9	362.2	362.6	363.0	363.5	363.8
155°	372.8	373.0	373.3	373.5	373.8	374.1	374.3	374.5	374.8	375.0	375.4
157.5°	384.2	384.4	384.5	384.7	384.9	385.0	385.2	385.3	385.4	385.6	386.1
160°	391.0	391.2	391.3	391.5	391.6	391.8	391.8	391.9	392.0	392.1	392.5
162.5°	397.3	397.4	397.4	397.4	397.5	397.5	397.6	397.7	397.8	397.8	398.4
165°	405.7	405.6	405.5	405.5	405.4	405.3	405.3	405.3	405.3	405.3	405.9
167.5°	412.6	412.4	412.2	411.9	411.7	411.6	411.5	411.5	411.5	411.5	412.0
170°	416.4	416.2	415.9	415.7	415.5	415.3	415.2	415.1	415.1	415.0	415.5
172.5°	418.9	418.7	418.5	418.2	418.0	417.8	417.8	417.7	417.6	417.5	418.1
175°	422.1	421.8	421.6	421.3	421.1	420.9	420.8	420.6	420.4	420.3	420.8
177.5°	423.3	423.1	422.9	422.8	422.6	422.4	422.3	422.2	422.0	421.9	422.3
180°	422.8	422.8	422.8	422.8	422.8	422.8	422.8	422.8	422.8	422.8	422.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1
2.5°	475.0	475.8	476.7	477.1	476.9	476.7	476.6	476.4
5°	471.9	472.7	473.5	473.8	473.6	473.4	473.2	473.0
7.5°	466.6	467.4	468.2	468.5	468.3	468.0	467.8	467.6
10°	461.8	462.6	463.4	463.6	463.3	463.0	462.7	462.4
12.5°	456.2	456.7	457.3	457.5	457.3	457.0	456.8	456.6
15°	446.3	446.7	447.1	447.1	446.6	446.1	445.6	445.0
17.5°	434.5	435.0	435.5	435.5	434.9	434.5	434.0	433.5
20°	425.5	425.8	426.1	426.0	425.6	425.2	424.7	424.3
22.5°	415.8	415.9	415.9	415.8	415.6	415.3	415.1	414.9
25°	400.0	400.2	400.4	400.4	400.2	400.0	399.8	399.6
27.5°	384.5	384.2	383.8	383.4	382.9	382.4	382.0	381.5
30°	372.3	372.0	371.7	371.4	371.0	370.6	370.2	369.7
32.5°	360.5	359.9	359.4	358.9	358.5	358.1	357.7	357.3
35°	341.4	340.8	340.2	339.7	339.2	338.7	338.2	337.6
37.5°	322.3	321.6	320.8	320.2	319.7	319.2	318.8	318.3
40°	309.2	308.3	307.4	306.7	306.3	305.9	305.5	305.1
42.5°	296.2	295.2	294.2	293.4	292.9	292.3	291.8	291.1
45°	276.2	275.1	274.0	273.2	272.8	272.4	272.0	271.6
47.5°	255.5	254.3	253.1	252.2	251.7	251.1	250.4	249.8
50°	242.2	240.7	239.2	238.3	237.8	237.3	236.8	236.3
52.5°	228.3	227.1	225.9	225.0	224.3	223.7	223.0	222.3
55°	207.6	206.4	205.2	204.4	203.9	203.3	202.8	202.3
57.5°	186.2	185.0	183.8	183.0	182.7	182.3	181.9	181.5
60°	172.1	171.0	169.9	169.2	168.8	168.5	168.2	167.9
62.5°	158.6	157.6	156.6	155.9	155.5	155.1	154.7	154.3
65°	138.0	137.1	136.2	135.5	135.0	134.5	134.0	133.5
67.5°	117.8	117.0	116.3	115.7	115.3	114.9	114.5	114.1
70°	104.5	103.8	103.1	102.6	102.2	101.7	101.3	100.9
72.5°	92.1	91.4	90.7	90.1	89.8	89.5	89.2	88.8
75°	72.6	72.0	71.4	71.2	71.4	71.6	71.8	72.0
77.5°	55.2	54.9	54.6	54.3	54.0	53.8	53.5	53.2
80°	43.9	43.6	43.3	43.0	42.8	42.6	42.4	42.2
82.5°	32.7	32.3	31.9	31.7	31.7	31.6	31.6	31.6
85°	17.3	17.0	16.7	16.5	16.4	16.3	16.2	16.1
87.5°	7.1	6.8	6.6	6.4	6.3	6.3	6.2	6.1
90°	12.2	12.0	11.8	11.8	11.9	12.0	12.0	12.1
92.5°	11.4	11.4	11.5	11.5	11.5	11.5	11.5	11.5
95°	22.8	22.8	22.8	22.7	22.6	22.4	22.3	22.1
97.5°	38.4	38.4	38.4	38.4	38.4	38.4	38.4	38.3
100°	49.3	49.3	49.3	49.2	49.1	49.1	49.0	48.9
102.5°	61.1	61.1	61.2	61.2	61.1	61.0	61.0	60.9
105°	78.8	79.0	79.2	79.2	79.2	79.2	79.2	79.2
107.5°	98.0	98.1	98.1	98.0	97.6	97.3	96.8	96.4
110°	111.0	111.0	111.0	110.9	110.6	110.4	110.2	109.9





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	124.0	123.8	123.6	123.4	123.3	123.1	122.9	122.7
115°	144.0	143.9	143.8	143.7	143.4	143.2	143.0	142.7
117.5°	163.3	163.1	162.9	162.7	162.5	162.3	162.0	161.8
120°	176.2	176.2	176.2	176.1	175.9	175.6	175.4	175.2
122.5°	189.6	189.3	189.1	189.0	188.8	188.6	188.4	188.3
125°	209.3	209.0	208.8	208.6	208.6	208.5	208.4	208.3
127.5°	228.5	228.2	227.9	227.6	227.4	227.1	226.9	226.6
130°	241.6	241.5	241.3	241.1	240.8	240.3	240.0	239.7
132.5°	254.3	254.0	253.7	253.4	253.1	252.9	252.6	252.4
135°	273.2	273.1	273.0	272.9	272.6	272.4	272.2	271.9
137.5°	291.1	291.0	291.0	290.8	290.5	290.2	289.9	289.5
140°	303.3	303.3	303.3	303.1	302.8	302.5	302.2	301.8
142.5°	314.3	314.3	314.4	314.3	314.0	313.6	313.3	313.0
145°	330.9	330.9	331.0	330.9	330.6	330.3	330.0	329.6
147.5°	345.5	345.7	345.9	345.8	345.5	345.2	344.9	344.6
150°	354.8	355.0	355.3	355.3	355.0	354.8	354.6	354.3
152.5°	364.1	364.4	364.7	364.7	364.4	364.1	363.8	363.5
155°	375.8	376.2	376.6	376.7	376.4	376.2	376.0	375.7
157.5°	386.6	387.2	387.7	387.8	387.4	387.0	386.7	386.3
160°	393.0	393.5	394.0	394.0	393.7	393.4	393.1	392.8
162.5°	398.9	399.4	400.0	400.0	399.7	399.3	398.9	398.5
165°	406.4	407.0	407.5	407.6	407.2	406.8	406.4	406.1
167.5°	412.6	413.1	413.7	413.8	413.4	412.9	412.5	412.1
170°	416.1	416.6	417.2	417.2	416.8	416.3	415.8	415.3
172.5°	418.6	419.2	419.7	419.8	419.3	418.8	418.4	417.9
175°	421.4	421.9	422.5	422.5	422.1	421.6	421.1	420.6
177.5°	422.7	423.0	423.4	423.4	423.0	422.7	422.3	421.9
180°	422.8	422.8	422.8	422.8	422.8	422.8	422.8	422.8

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