

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: P332503-927

Luminaire Tested: **S124DIP-S350D590U927-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332503-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DIP-S350D590U927-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2764.0 lumens  
Efficiency: N/A  
Efficacy: 108.0 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

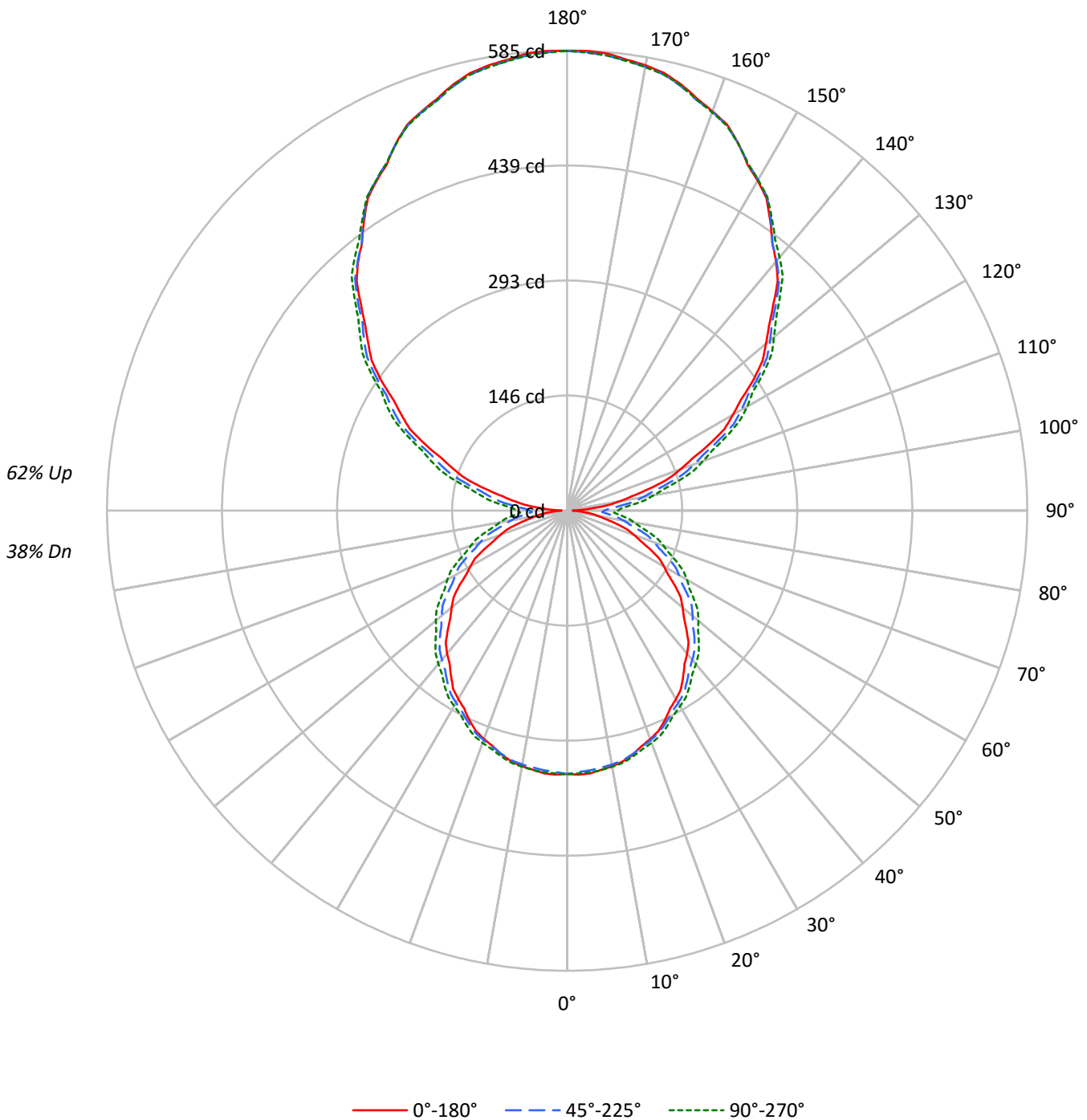
Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38
1	94	90	86	82	85	82	78	75	66	64	61	52	50	49	39	38	37	31
2	86	78	72	66	77	71	65	61	57	53	50	45	42	40	34	32	30	25
3	78	68	61	55	70	62	56	50	50	46	42	40	36	33	30	27	25	21
4	71	60	52	46	64	55	48	42	44	39	35	35	31	28	26	24	22	18
5	65	53	45	39	59	49	41	36	40	34	30	31	27	24	24	21	19	15
6	60	48	40	34	54	43	36	31	36	30	26	28	24	21	21	18	16	13
7	55	43	35	29	50	39	32	27	32	27	23	26	22	19	19	17	14	12
8	51	39	31	26	46	35	29	24	29	24	20	23	19	16	18	15	13	10
9	47	35	28	23	43	32	26	21	27	22	18	21	17	15	16	14	12	9
10	44	32	25	20	40	30	23	19	24	19	16	20	16	13	15	12	10	8

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

	0°	45°	90°
0°	2704	2704	2704
5°	2712	2641	2650
10°	2694	2599	2596
15°	2670	2549	2535
20°	2635	2494	2475
25°	2594	2432	2408
30°	2549	2370	2340
35°	2498	2307	2280
40°	2458	2247	2218
45°	2398	2191	2164
50°	2348	2128	2108
55°	2296	2068	2042
60°	2214	1991	1982
65°	2125	1909	1908
70°	2018	1816	1820
75°	1867	1712	1743
80°	1701	1613	1665
85°	1489	1525	1621



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	31.7	1.1
10°-20°	90.8	3.3
20°-30°	137.4	5.0
30°-40°	166.2	6.0
40°-50°	175.7	6.4
50°-60°	165.4	6.0
60°-70°	137.2	5.0
70°-80°	96.4	3.5
80°-90°	56.2	2.0
90°-100°	70.9	2.6
100°-110°	138.1	5.0
110°-120°	209.8	7.6
120°-130°	264.5	9.6
130°-140°	290.8	10.5
140°-150°	282.7	10.2
150°-160°	237.1	8.6
160°-170°	157.8	5.7
170°-180°	55.2	2.0
0°-30°	259.9	9.4
0°-40°	426.1	15.4
0°-60°	767.2	27.8
0°-90°	1057.0	38.2
90°-120°	418.8	15.2
90°-150°	1256.8	45.5
90°-180°	1707.0	61.8
0°-180°	2764.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	335	335	335	335	335	
5°	335	334	331	334	334	32
15°	321	322	321	324	324	90
25°	294	296	297	301	302	135
35°	257	262	266	270	272	161
45°	214	222	229	235	237	166
55°	168	176	187	194	197	150
65°	116	128	141	150	153	115
75°	64	78	94	104	108	69
85°	20	36	52	63	68	21
90°	7	27	47	60	65	6
95°	32	49	67	78	82	34
105°	109	117	132	143	147	116
115°	199	203	214	221	224	197
125°	288	288	297	303	304	257
135°	371	374	376	381	382	287
145°	450	451	452	454	454	282
155°	515	515	515	516	515	237
165°	561	559	558	561	559	158
175°	583	581	581	583	581	55
180°	584	584	584	584	584	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9
2.5°	336.0	335.8	335.6	335.4	335.3	334.9	334.4	333.8	333.3	332.7	333.2
5°	335.3	334.9	334.7	334.5	334.2	333.8	333.2	332.6	332.1	331.4	332.2
7.5°	332.4	332.2	332.1	331.9	331.8	331.4	331.0	330.5	330.0	329.5	330.3
10°	329.9	329.9	329.8	329.7	329.6	329.4	329.0	328.5	328.1	327.7	328.4
12.5°	326.7	326.6	326.6	326.6	326.6	326.5	326.1	325.9	325.6	325.3	326.0
15°	321.3	321.5	321.5	321.6	321.7	321.6	321.3	321.1	320.8	320.6	321.3
17.5°	314.1	314.3	314.6	314.8	315.1	315.2	315.1	315.1	315.1	315.0	315.8
20°	309.0	309.2	309.5	309.7	310.0	310.1	310.2	310.3	310.4	310.5	311.3
22.5°	303.2	303.6	303.9	304.2	304.5	304.8	304.9	305.1	305.2	305.4	306.2
25°	294.0	294.5	295.0	295.5	296.0	296.4	296.6	296.8	297.1	297.4	298.3
27.5°	283.6	284.4	285.1	285.8	286.5	287.1	287.5	287.9	288.3	288.7	289.5
30°	276.7	277.4	278.1	278.7	279.4	280.0	280.6	281.1	281.8	282.3	283.3
32.5°	269.3	270.1	270.8	271.6	272.4	273.1	273.8	274.4	275.1	275.8	276.8
35°	257.2	258.3	259.2	260.2	261.3	262.1	263.0	263.8	264.7	265.5	266.6
37.5°	245.2	246.3	247.5	248.6	249.8	250.8	251.9	252.9	254.0	255.0	256.2
40°	237.3	238.4	239.6	240.6	241.7	242.8	244.0	245.2	246.3	247.5	248.7
42.5°	228.4	229.6	230.8	232.0	233.2	234.5	235.9	237.3	238.6	240.0	241.4
45°	214.4	216.0	217.6	219.2	220.8	222.4	223.9	225.5	227.1	228.7	230.1
47.5°	201.2	202.9	204.5	206.1	207.7	209.5	211.3	213.2	215.0	216.8	218.2
50°	191.6	193.5	195.3	197.1	198.9	200.7	202.6	204.5	206.3	208.1	209.8
52.5°	182.0	183.9	185.7	187.5	189.3	191.3	193.4	195.5	197.6	199.7	201.4
55°	168.0	169.8	171.5	173.3	175.0	177.1	179.6	182.1	184.6	187.1	188.8
57.5°	152.3	154.5	156.6	158.8	161.0	163.3	165.8	168.3	170.7	173.3	175.2
60°	142.1	144.3	146.5	148.6	150.8	153.2	156.0	158.8	161.4	164.2	166.1
62.5°	132.2	134.6	137.0	139.3	141.6	144.3	146.9	149.7	152.5	155.3	157.2
65°	116.2	118.9	121.6	124.2	126.9	129.7	132.5	135.3	138.2	141.0	143.1
67.5°	100.8	103.7	106.5	109.4	112.2	115.1	118.2	121.2	124.2	127.2	129.4
70°	90.4	93.2	96.0	98.9	101.7	104.7	107.9	111.1	114.2	117.4	119.6
72.5°	80.2	83.1	86.0	88.9	91.7	94.9	98.2	101.6	105.0	108.4	110.5
75°	64.5	67.6	70.7	73.8	76.8	80.1	83.7	87.1	90.6	94.1	96.5
77.5°	49.9	53.2	56.4	59.7	62.9	66.4	70.0	73.8	77.4	81.0	83.4
80°	40.9	44.2	47.5	50.9	54.2	57.7	61.4	65.0	68.7	72.4	74.9
82.5°	31.8	35.3	38.8	42.3	45.7	49.3	53.0	56.6	60.3	64.0	66.5
85°	19.9	23.4	26.9	30.3	33.9	37.5	41.3	45.0	48.7	52.5	55.0
87.5°	11.4	15.0	18.6	22.3	25.8	29.5	33.4	37.2	41.0	44.8	47.4
90°	7.4	11.8	16.2	20.7	25.1	29.5	33.9	38.3	42.7	47.1	50.1
92.5°	15.4	19.6	23.9	28.2	32.4	36.6	40.8	44.9	49.0	53.2	55.9
95°	32.0	35.6	39.3	42.9	46.6	50.5	54.6	58.7	62.8	66.9	69.5
97.5°	51.8	54.9	58.0	61.1	64.2	67.8	72.0	76.2	80.4	84.6	87.1
100°	67.4	69.9	72.5	75.1	77.6	81.0	85.2	89.4	93.5	97.6	100.1
102.5°	84.0	86.0	88.1	90.2	92.2	95.3	99.3	103.3	107.3	111.3	113.8
105°	108.7	110.4	112.2	113.9	115.7	118.4	121.8	125.3	128.8	132.3	134.7
107.5°	135.2	136.7	138.2	139.7	141.2	143.4	146.4	149.3	152.3	155.3	157.6
110°	153.0	154.4	155.7	157.1	158.4	160.6	163.3	166.2	169.1	171.8	173.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	171.5	172.5	173.6	174.8	175.8	177.6	180.2	182.8	185.4	188.1	189.9
115°	199.2	200.0	200.7	201.5	202.2	203.8	206.3	208.8	211.3	213.7	215.5
117.5°	225.8	226.2	226.8	227.4	227.8	229.3	231.6	234.0	236.3	238.7	240.0
120°	243.1	243.8	244.5	245.1	245.7	247.2	249.2	251.4	253.5	255.6	256.7
122.5°	261.6	261.8	262.0	262.2	262.4	263.6	265.8	267.9	270.1	272.2	273.5
125°	288.4	288.4	288.3	288.1	288.0	289.0	291.0	292.9	295.0	297.0	298.3
127.5°	313.0	313.2	313.5	313.6	313.9	314.7	316.2	317.6	319.0	320.4	321.8
130°	330.0	330.3	330.5	330.7	330.9	331.7	333.0	334.4	335.7	337.0	338.3
132.5°	347.8	347.9	348.0	348.2	348.3	348.9	349.8	350.9	351.8	352.8	354.0
135°	370.8	371.4	372.0	372.6	373.2	373.8	374.4	374.9	375.6	376.1	377.2
137.5°	396.2	396.5	396.6	396.9	397.0	397.4	397.8	398.3	398.7	399.2	400.1
140°	413.3	413.4	413.5	413.6	413.8	413.8	413.9	414.0	414.1	414.2	415.2
142.5°	428.5	428.6	428.9	429.0	429.2	429.3	429.1	429.0	428.9	428.7	429.7
145°	450.0	450.3	450.6	450.9	451.2	451.4	451.5	451.6	451.7	451.8	452.3
147.5°	471.3	471.7	472.1	472.5	472.9	473.0	472.9	472.9	472.8	472.7	472.7
150°	484.3	484.6	484.9	485.2	485.5	485.7	485.7	485.7	485.7	485.7	485.7
152.5°	496.3	496.5	496.7	496.9	497.2	497.3	497.4	497.5	497.6	497.6	497.9
155°	515.1	515.1	515.1	515.1	515.1	515.0	514.9	514.8	514.8	514.6	515.0
157.5°	531.0	530.8	530.6	530.4	530.3	530.1	530.1	530.1	530.1	530.0	530.4
160°	540.3	540.3	540.2	540.1	540.0	539.9	539.8	539.7	539.6	539.5	539.8
162.5°	549.1	548.8	548.5	548.3	548.0	547.8	547.7	547.6	547.6	547.4	548.0
165°	560.7	560.4	560.1	559.8	559.5	559.3	559.0	558.9	558.6	558.5	559.0
167.5°	569.7	569.3	568.8	568.4	568.0	567.8	567.8	567.8	567.8	567.8	568.5
170°	574.7	574.3	573.7	573.2	572.7	572.5	572.6	572.7	572.8	572.9	573.5
172.5°	578.3	577.9	577.5	577.1	576.6	576.5	576.5	576.5	576.5	576.6	577.2
175°	583.3	582.8	582.3	581.8	581.3	581.0	580.9	580.8	580.7	580.6	581.3
177.5°	584.9	584.6	584.2	583.8	583.3	583.1	583.1	583.1	583.1	583.1	583.7
180°	584.2	584.2	584.2	584.2	584.2	584.2	584.2	584.2	584.2	584.2	584.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9
2.5°	333.7	334.1	334.6	334.8	334.8	334.7	334.6	334.5
5°	332.8	333.4	334.1	334.5	334.4	334.2	334.1	334.1
7.5°	331.1	331.8	332.6	332.9	332.8	332.7	332.6	332.6
10°	329.2	329.9	330.7	331.1	331.0	330.9	330.8	330.7
12.5°	326.7	327.4	328.0	328.4	328.4	328.4	328.4	328.3
15°	322.1	322.8	323.6	323.9	323.8	323.8	323.7	323.6
17.5°	316.5	317.3	318.1	318.4	318.3	318.2	318.2	318.1
20°	312.1	313.0	313.8	314.3	314.3	314.3	314.3	314.3
22.5°	307.0	307.8	308.7	309.2	309.3	309.4	309.6	309.7
25°	299.2	300.1	301.0	301.5	301.6	301.7	301.7	301.8
27.5°	290.3	291.2	292.1	292.6	292.6	292.7	292.8	292.9
30°	284.2	285.1	286.0	286.5	286.7	286.9	287.1	287.2
32.5°	277.8	278.9	280.0	280.6	280.7	280.9	281.1	281.2
35°	267.8	268.9	270.1	270.8	271.1	271.3	271.6	271.9
37.5°	257.4	258.5	259.7	260.5	260.7	260.9	261.3	261.5
40°	250.0	251.2	252.5	253.3	253.6	254.0	254.3	254.6
42.5°	242.7	244.2	245.5	246.4	246.6	246.8	247.2	247.4
45°	231.6	233.0	234.4	235.3	235.8	236.1	236.5	236.9
47.5°	219.8	221.2	222.7	223.6	224.2	224.7	225.1	225.7
50°	211.4	213.1	214.8	215.9	216.3	216.8	217.4	217.9
52.5°	203.0	204.7	206.4	207.5	207.9	208.4	209.0	209.5
55°	190.4	192.1	193.8	194.9	195.4	195.8	196.4	196.9
57.5°	177.2	179.2	181.2	182.4	182.8	183.3	183.8	184.3
60°	168.1	170.0	171.9	173.2	173.9	174.5	175.2	175.9
62.5°	159.1	161.0	162.9	164.2	164.9	165.5	166.2	166.8
65°	145.1	147.3	149.3	150.7	151.4	152.0	152.7	153.4
67.5°	131.5	133.6	135.7	137.1	137.8	138.4	139.0	139.7
70°	121.8	124.1	126.4	127.8	128.3	129.0	129.5	130.1
72.5°	112.7	114.9	117.1	118.5	119.1	119.8	120.5	121.1
75°	98.8	101.1	103.5	105.0	105.8	106.5	107.3	108.0
77.5°	85.8	88.2	90.5	92.1	92.9	93.7	94.5	95.3
80°	77.4	79.9	82.4	84.0	84.6	85.3	86.0	86.6
82.5°	69.1	71.7	74.2	75.9	76.6	77.3	78.1	78.8
85°	57.5	60.0	62.5	64.2	65.0	65.8	66.6	67.5
87.5°	49.9	52.4	55.0	56.6	57.4	58.1	58.9	59.7
90°	53.1	56.1	59.2	61.1	61.9	62.8	63.7	64.6
92.5°	58.6	61.3	64.1	65.8	66.6	67.4	68.2	68.9
95°	72.1	74.6	77.2	78.8	79.5	80.3	81.0	81.8
97.5°	89.7	92.2	94.7	96.4	97.1	97.8	98.5	99.3
100°	102.5	105.0	107.4	108.9	109.6	110.1	110.7	111.3
102.5°	116.2	118.7	121.2	122.8	123.5	124.2	124.9	125.7
105°	137.0	139.4	141.8	143.5	144.5	145.4	146.4	147.3
107.5°	159.9	162.3	164.6	166.1	166.7	167.2	167.9	168.4
110°	175.2	177.0	178.7	180.1	181.0	182.0	182.9	183.9





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	191.6	193.5	195.3	196.5	197.3	198.0	198.8	199.5
115°	217.2	218.9	220.6	221.7	222.2	222.7	223.2	223.7
117.5°	241.5	242.8	244.2	245.2	245.7	246.1	246.5	247.0
120°	257.9	259.1	260.2	261.3	262.1	263.0	263.9	264.7
122.5°	274.8	276.2	277.5	278.2	278.5	278.8	279.0	279.2
125°	299.7	301.1	302.5	303.3	303.6	304.0	304.2	304.5
127.5°	323.1	324.3	325.7	326.5	326.9	327.3	327.7	328.1
130°	339.6	341.0	342.2	342.9	343.0	343.1	343.3	343.3
132.5°	355.3	356.5	357.7	358.5	358.9	359.2	359.6	359.9
135°	378.4	379.5	380.6	381.4	381.5	381.8	381.9	382.1
137.5°	401.1	402.0	403.0	403.7	404.2	404.6	405.1	405.6
140°	416.1	417.1	418.1	418.7	419.1	419.4	419.7	420.0
142.5°	430.6	431.5	432.5	433.1	433.4	433.7	434.1	434.4
145°	452.7	453.0	453.4	453.6	453.7	453.7	453.8	453.8
147.5°	472.7	472.6	472.6	472.7	472.9	473.0	473.2	473.4
150°	485.7	485.7	485.7	485.7	485.5	485.4	485.4	485.3
152.5°	498.1	498.4	498.6	498.6	498.4	498.0	497.8	497.6
155°	515.4	515.8	516.3	516.3	515.8	515.4	515.0	514.6
157.5°	530.7	531.0	531.3	531.2	530.9	530.6	530.2	529.9
160°	540.1	540.3	540.7	540.6	540.1	539.6	539.1	538.6
162.5°	548.5	549.1	549.6	549.6	549.1	548.6	548.1	547.6
165°	559.7	560.2	560.9	560.9	560.5	560.2	559.8	559.4
167.5°	569.0	569.7	570.3	570.2	569.7	569.0	568.4	567.8
170°	574.1	574.7	575.3	575.3	574.6	573.9	573.1	572.4
172.5°	577.9	578.6	579.2	579.2	578.5	577.8	577.1	576.5
175°	582.0	582.7	583.4	583.4	582.7	582.0	581.3	580.6
177.5°	584.2	584.8	585.3	585.3	584.7	584.1	583.4	582.7
180°	584.2	584.2	584.2	584.2	584.2	584.2	584.2	584.2

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