

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: P332503-840

Luminaire Tested: **S124DIP-S350D590U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332503-840
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-S350D590U840-4F0-1E-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: 3523.5 lumens
Efficiency: N/A
Efficacy: 137.6 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

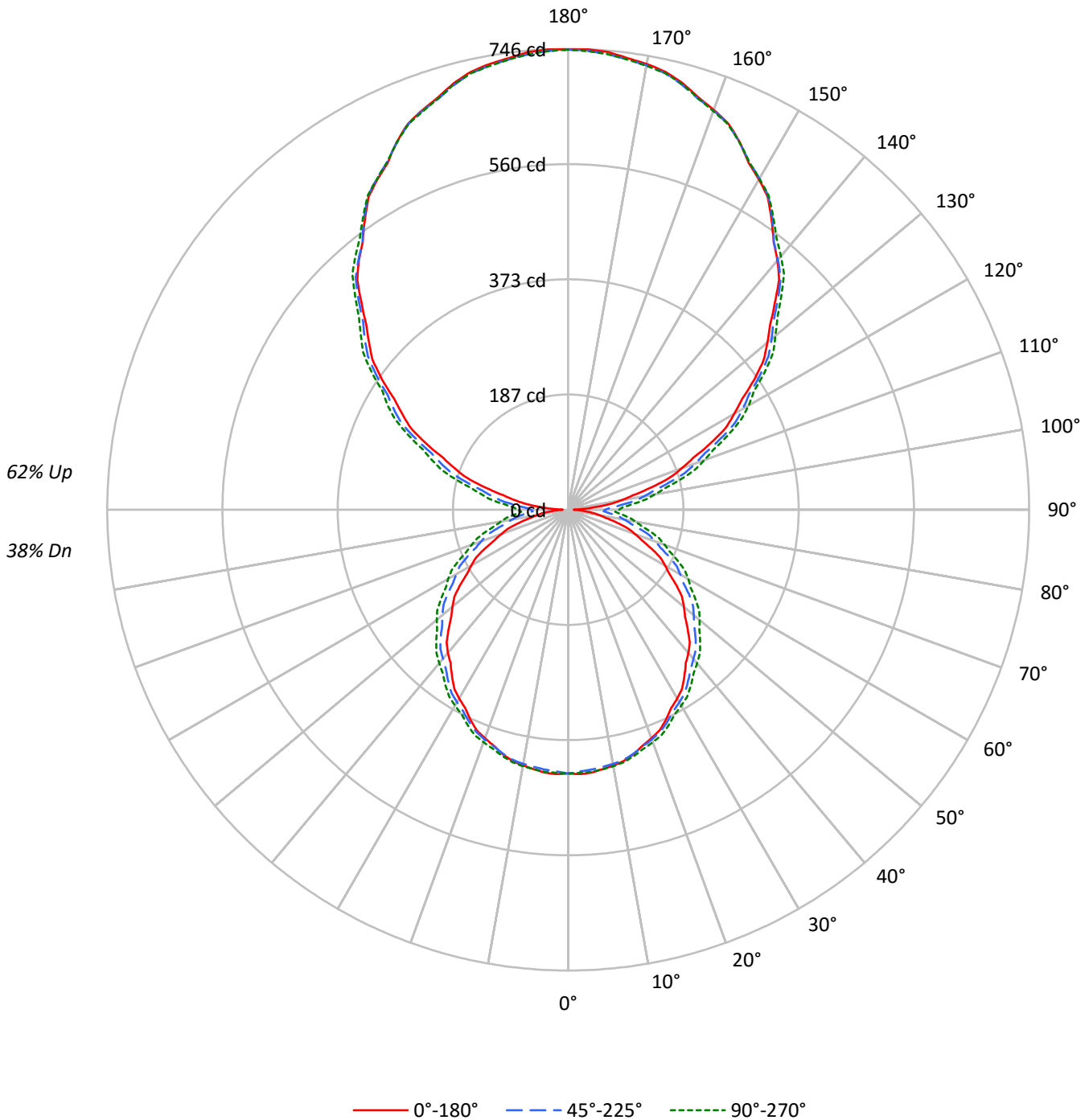
Input Watts (W): 25.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	3446	3446	3446
5°	3457	3367	3378
10°	3435	3313	3310
15°	3404	3249	3231
20°	3358	3179	3155
25°	3306	3100	3070
30°	3249	3021	2983
35°	3185	2941	2907
40°	3134	2865	2828
45°	3058	2793	2759
50°	2994	2713	2687
55°	2928	2636	2603
60°	2824	2538	2526
65°	2708	2435	2431
70°	2572	2315	2320
75°	2379	2183	2220
80°	2166	2057	2123
85°	1893	1946	2065



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.4	1.1
10°-20°	115.8	3.3
20°-30°	175.1	5.0
30°-40°	211.9	6.0
40°-50°	224.0	6.4
50°-60°	210.8	6.0
60°-70°	174.9	5.0
70°-80°	122.9	3.5
80°-90°	71.7	2.0
90°-100°	90.4	2.6
100°-110°	176.0	5.0
110°-120°	267.5	7.6
120°-130°	337.2	9.6
130°-140°	370.7	10.5
140°-150°	360.4	10.2
150°-160°	302.3	8.6
160°-170°	201.1	5.7
170°-180°	70.4	2.0
0°-30°	331.4	9.4
0°-40°	543.2	15.4
0°-60°	978.1	27.8
0°-90°	1347.5	38.2
90°-120°	533.9	15.2
90°-150°	1602.2	45.5
90°-180°	2176.0	61.8
0°-180°	3523.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	427	427	427	427	427	
5°	427	426	422	426	426	41
15°	410	410	409	413	412	115
25°	375	378	379	384	385	173
35°	328	334	338	345	347	205
45°	273	282	292	299	302	211
55°	214	224	238	248	251	191
65°	148	164	180	191	196	147
75°	82	100	120	133	138	87
85°	25	46	67	81	86	27
90°	9	35	60	77	82	7
95°	41	62	85	99	104	43
105°	139	149	169	182	188	147
115°	254	259	272	282	285	251
125°	368	368	379	386	388	328
135°	473	476	480	486	487	366
145°	574	575	576	578	578	359
155°	657	657	656	658	656	302
165°	715	713	712	715	713	201
175°	744	741	740	744	740	71
180°	745	745	745	745	745	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	428.4	428.1	427.9	427.6	427.4	426.9	426.3	425.6	424.9	424.1	424.7
5°	427.4	427.0	426.7	426.4	426.1	425.6	424.7	424.0	423.3	422.5	423.4
7.5°	423.7	423.5	423.3	423.1	422.9	422.5	421.9	421.3	420.7	420.1	421.0
10°	420.6	420.5	420.4	420.3	420.2	419.9	419.4	418.8	418.3	417.8	418.7
12.5°	416.5	416.4	416.4	416.4	416.4	416.2	415.8	415.5	415.1	414.8	415.6
15°	409.6	409.8	409.9	410.0	410.1	410.0	409.6	409.3	409.0	408.7	409.6
17.5°	400.4	400.7	401.0	401.3	401.6	401.8	401.7	401.6	401.6	401.5	402.5
20°	393.8	394.2	394.6	394.9	395.2	395.4	395.5	395.6	395.7	395.8	396.9
22.5°	386.6	387.0	387.4	387.8	388.2	388.5	388.7	388.9	389.1	389.3	390.3
25°	374.8	375.4	376.1	376.7	377.3	377.8	378.1	378.4	378.7	379.1	380.2
27.5°	361.5	362.5	363.5	364.4	365.3	366.0	366.5	367.0	367.5	368.0	369.0
30°	352.7	353.7	354.5	355.3	356.2	357.0	357.7	358.4	359.2	359.9	361.1
32.5°	343.3	344.3	345.3	346.3	347.3	348.2	349.0	349.8	350.7	351.5	352.8
35°	327.9	329.2	330.4	331.7	333.1	334.2	335.3	336.3	337.4	338.4	339.9
37.5°	312.6	314.0	315.5	316.9	318.4	319.7	321.1	322.4	323.8	325.1	326.6
40°	302.6	304.0	305.4	306.7	308.1	309.5	311.0	312.6	314.0	315.5	317.1
42.5°	291.1	292.7	294.2	295.8	297.3	298.9	300.7	302.5	304.2	305.9	307.7
45°	273.4	275.4	277.4	279.4	281.4	283.5	285.5	287.5	289.5	291.5	293.4
47.5°	256.5	258.6	260.6	262.8	264.8	267.0	269.3	271.8	274.1	276.4	278.2
50°	244.3	246.6	248.9	251.3	253.6	255.9	258.3	260.6	263.0	265.3	267.4
52.5°	232.1	234.4	236.7	239.0	241.4	243.9	246.5	249.2	251.9	254.6	256.7
55°	214.2	216.4	218.6	220.9	223.1	225.8	228.9	232.2	235.3	238.5	240.7
57.5°	194.2	196.9	199.7	202.5	205.2	208.1	211.4	214.5	217.6	220.9	223.4
60°	181.2	183.9	186.7	189.5	192.2	195.3	198.8	202.4	205.8	209.3	211.8
62.5°	168.5	171.6	174.6	177.6	180.6	183.9	187.3	190.9	194.4	197.9	200.4
65°	148.1	151.6	155.0	158.3	161.8	165.3	168.8	172.5	176.1	179.8	182.4
67.5°	128.6	132.2	135.8	139.5	143.0	146.7	150.7	154.5	158.3	162.2	164.9
70°	115.2	118.8	122.4	126.0	129.7	133.5	137.5	141.6	145.6	149.7	152.5
72.5°	102.2	105.9	109.6	113.3	116.9	121.0	125.2	129.6	133.8	138.1	140.9
75°	82.2	86.1	90.1	94.0	98.0	102.1	106.6	111.1	115.5	120.0	123.0
77.5°	63.6	67.8	71.9	76.0	80.2	84.6	89.3	94.0	98.7	103.3	106.3
80°	52.1	56.4	60.6	64.8	69.1	73.5	78.3	82.9	87.6	92.3	95.4
82.5°	40.6	45.0	49.5	53.9	58.3	62.8	67.6	72.2	76.9	81.6	84.8
85°	25.3	29.8	34.2	38.7	43.2	47.8	52.6	57.4	62.1	67.0	70.1
87.5°	14.5	19.1	23.7	28.4	32.9	37.7	42.5	47.4	52.3	57.2	60.4
90°	9.4	15.0	20.7	26.4	32.0	37.7	43.2	48.8	54.4	60.0	63.8
92.5°	19.6	25.0	30.5	36.0	41.3	46.7	52.0	57.3	62.5	67.9	71.3
95°	40.8	45.4	50.1	54.7	59.4	64.3	69.6	74.8	80.1	85.3	88.6
97.5°	66.0	70.0	73.9	77.9	81.8	86.4	91.8	97.1	102.5	107.9	111.1
100°	85.9	89.2	92.4	95.7	99.0	103.3	108.6	113.9	119.2	124.4	127.5
102.5°	107.0	109.7	112.3	114.9	117.5	121.5	126.5	131.7	136.7	141.9	145.0
105°	138.6	140.8	143.0	145.2	147.5	150.9	155.3	159.8	164.2	168.6	171.7
107.5°	172.4	174.3	176.2	178.0	180.0	182.8	186.6	190.4	194.2	198.0	201.0
110°	195.0	196.8	198.5	200.3	202.0	204.7	208.2	211.9	215.5	219.0	221.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	218.6	219.9	221.4	222.8	224.1	226.4	229.7	233.1	236.4	239.7	242.1
115°	254.0	255.0	255.9	256.9	257.8	259.8	263.0	266.2	269.3	272.5	274.7
117.5°	287.8	288.4	289.1	289.8	290.4	292.3	295.3	298.3	301.2	304.3	306.0
120°	309.9	310.8	311.6	312.5	313.3	315.1	317.7	320.4	323.2	325.9	327.3
122.5°	333.5	333.8	334.0	334.3	334.6	336.1	338.8	341.5	344.3	347.0	348.6
125°	367.7	367.6	367.5	367.3	367.2	368.4	370.9	373.4	376.1	378.6	380.3
127.5°	399.0	399.3	399.6	399.8	400.1	401.2	403.0	404.9	406.7	408.5	410.2
130°	420.7	421.0	421.3	421.6	421.8	422.8	424.5	426.3	428.0	429.6	431.3
132.5°	443.3	443.5	443.6	443.8	444.0	444.7	446.0	447.3	448.5	449.8	451.3
135°	472.7	473.4	474.2	474.9	475.7	476.6	477.3	478.0	478.8	479.5	480.9
137.5°	505.1	505.4	505.6	505.9	506.1	506.5	507.2	507.8	508.3	508.9	510.1
140°	526.8	526.9	527.1	527.3	527.5	527.6	527.7	527.8	527.9	528.0	529.3
142.5°	546.2	546.4	546.7	546.9	547.1	547.2	547.0	546.9	546.7	546.5	547.8
145°	573.6	574.0	574.4	574.8	575.2	575.4	575.6	575.7	575.8	575.9	576.5
147.5°	600.8	601.3	601.8	602.3	602.8	603.0	602.9	602.8	602.7	602.6	602.6
150°	617.3	617.7	618.1	618.5	618.9	619.1	619.1	619.1	619.1	619.1	619.1
152.5°	632.7	632.9	633.2	633.5	633.8	634.0	634.1	634.2	634.3	634.4	634.7
155°	656.6	656.6	656.6	656.6	656.6	656.5	656.4	656.3	656.2	656.0	656.5
157.5°	676.9	676.6	676.4	676.2	676.0	675.8	675.8	675.8	675.8	675.7	676.1
160°	688.8	688.7	688.6	688.5	688.3	688.2	688.1	688.0	687.8	687.7	688.1
162.5°	699.9	699.6	699.2	698.9	698.6	698.3	698.2	698.1	698.0	697.8	698.5
165°	714.8	714.4	714.0	713.7	713.3	713.0	712.7	712.5	712.2	712.0	712.7
167.5°	726.2	725.7	725.1	724.6	724.1	723.8	723.8	723.9	723.9	723.9	724.7
170°	732.7	732.1	731.3	730.7	730.0	729.8	729.9	730.0	730.2	730.3	731.1
172.5°	737.2	736.7	736.2	735.7	735.1	734.9	734.9	734.9	734.9	735.0	735.8
175°	743.6	743.0	742.4	741.6	741.0	740.6	740.5	740.4	740.2	740.1	741.0
177.5°	745.7	745.2	744.7	744.2	743.6	743.4	743.4	743.4	743.4	743.4	744.1
180°	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	425.4	426.0	426.6	426.8	426.8	426.7	426.6	426.5
5°	424.2	425.1	426.0	426.4	426.3	426.1	426.0	425.9
7.5°	422.0	422.9	423.9	424.3	424.2	424.1	424.0	423.9
10°	419.7	420.6	421.6	422.0	421.9	421.8	421.7	421.6
12.5°	416.5	417.4	418.2	418.6	418.6	418.6	418.6	418.5
15°	410.6	411.5	412.5	412.9	412.8	412.7	412.6	412.5
17.5°	403.4	404.5	405.5	405.9	405.8	405.7	405.7	405.6
20°	397.9	399.0	400.0	400.6	400.6	400.6	400.6	400.6
22.5°	391.4	392.4	393.5	394.2	394.4	394.5	394.7	394.9
25°	381.4	382.5	383.7	384.4	384.5	384.6	384.7	384.8
27.5°	370.1	371.2	372.3	372.9	373.0	373.1	373.2	373.4
30°	362.2	363.5	364.6	365.3	365.5	365.8	366.0	366.2
32.5°	354.2	355.6	356.9	357.7	357.9	358.1	358.3	358.5
35°	341.4	342.8	344.4	345.3	345.6	345.9	346.3	346.6
37.5°	328.1	329.5	331.0	332.0	332.3	332.6	333.1	333.4
40°	318.7	320.2	321.8	322.9	323.3	323.8	324.2	324.6
42.5°	309.4	311.2	313.0	314.1	314.4	314.7	315.1	315.4
45°	295.2	297.0	298.8	299.9	300.5	301.0	301.5	302.1
47.5°	280.1	282.0	283.9	285.1	285.8	286.4	287.0	287.7
50°	269.5	271.7	273.8	275.2	275.8	276.4	277.1	277.7
52.5°	258.8	260.9	263.1	264.5	265.1	265.7	266.4	267.0
55°	242.8	244.9	247.0	248.4	249.0	249.6	250.3	251.0
57.5°	225.9	228.4	231.0	232.5	233.1	233.7	234.3	234.9
60°	214.3	216.7	219.1	220.8	221.7	222.5	223.4	224.2
62.5°	202.8	205.2	207.6	209.3	210.2	211.0	211.9	212.7
65°	185.0	187.7	190.4	192.1	193.0	193.8	194.7	195.5
67.5°	167.6	170.4	173.0	174.8	175.6	176.4	177.2	178.1
70°	155.3	158.2	161.1	162.9	163.6	164.4	165.1	165.8
72.5°	143.7	146.5	149.3	151.1	151.9	152.7	153.6	154.4
75°	125.9	128.9	131.9	133.8	134.8	135.7	136.7	137.6
77.5°	109.4	112.4	115.4	117.4	118.5	119.5	120.5	121.5
80°	98.7	101.8	105.0	107.0	107.9	108.8	109.6	110.4
82.5°	88.1	91.4	94.6	96.7	97.7	98.6	99.6	100.5
85°	73.3	76.4	79.7	81.8	82.8	83.9	84.9	86.0
87.5°	63.6	66.9	70.1	72.2	73.1	74.1	75.1	76.1
90°	67.7	71.5	75.4	77.9	79.0	80.1	81.2	82.3
92.5°	74.7	78.2	81.7	83.9	84.9	85.9	86.9	87.9
95°	91.9	95.1	98.4	100.5	101.4	102.4	103.3	104.3
97.5°	114.3	117.5	120.8	122.9	123.8	124.7	125.6	126.5
100°	130.7	133.8	136.9	138.9	139.7	140.4	141.1	141.9
102.5°	148.1	151.3	154.5	156.5	157.4	158.3	159.3	160.3
105°	174.7	177.7	180.8	182.9	184.2	185.4	186.6	187.8
107.5°	203.9	206.9	209.8	211.8	212.5	213.2	214.0	214.7
110°	223.4	225.6	227.8	229.5	230.8	232.0	233.2	234.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	244.3	246.6	248.9	250.5	251.5	252.4	253.4	254.3
115°	276.9	279.0	281.2	282.7	283.3	283.9	284.6	285.2
117.5°	307.8	309.5	311.3	312.6	313.2	313.7	314.3	314.9
120°	328.8	330.3	331.7	333.1	334.2	335.3	336.4	337.5
122.5°	350.3	352.0	353.8	354.7	355.1	355.4	355.7	356.0
125°	382.0	383.8	385.6	386.7	387.1	387.5	387.8	388.2
127.5°	411.8	413.4	415.2	416.3	416.8	417.3	417.8	418.3
130°	432.9	434.6	436.3	437.2	437.3	437.4	437.6	437.7
132.5°	452.9	454.4	456.1	457.1	457.5	457.9	458.4	458.8
135°	482.4	483.8	485.2	486.1	486.4	486.7	486.9	487.2
137.5°	511.3	512.5	513.7	514.6	515.2	515.8	516.4	517.1
140°	530.5	531.7	533.0	533.8	534.2	534.6	535.0	535.4
142.5°	549.0	550.1	551.3	552.1	552.5	552.9	553.4	553.8
145°	577.0	577.5	578.0	578.2	578.3	578.3	578.5	578.5
147.5°	602.6	602.5	602.5	602.6	602.8	603.0	603.3	603.5
150°	619.1	619.1	619.1	619.1	618.9	618.8	618.7	618.6
152.5°	635.0	635.3	635.6	635.6	635.3	634.9	634.6	634.3
155°	657.0	657.5	658.1	658.1	657.5	657.0	656.5	656.0
157.5°	676.5	676.9	677.3	677.2	676.8	676.4	675.9	675.5
160°	688.5	688.8	689.2	689.1	688.5	687.8	687.2	686.6
162.5°	699.2	699.9	700.6	700.6	700.0	699.3	698.7	698.1
165°	713.5	714.2	715.0	715.1	714.6	714.1	713.6	713.1
167.5°	725.4	726.2	727.0	726.9	726.2	725.4	724.6	723.8
170°	731.8	732.7	733.4	733.4	732.5	731.5	730.6	729.7
172.5°	736.7	737.6	738.4	738.4	737.5	736.6	735.7	734.9
175°	741.9	742.9	743.7	743.7	742.9	741.9	741.0	740.1
177.5°	744.8	745.5	746.2	746.2	745.4	744.6	743.7	742.9
180°	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8

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