

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: P332092-940

Luminaire Tested: **S123DIW-S340D460U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332092-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S340D460U940-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2927.7 lumens
Efficiency: N/A
Efficacy: 127.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: General Diffuse

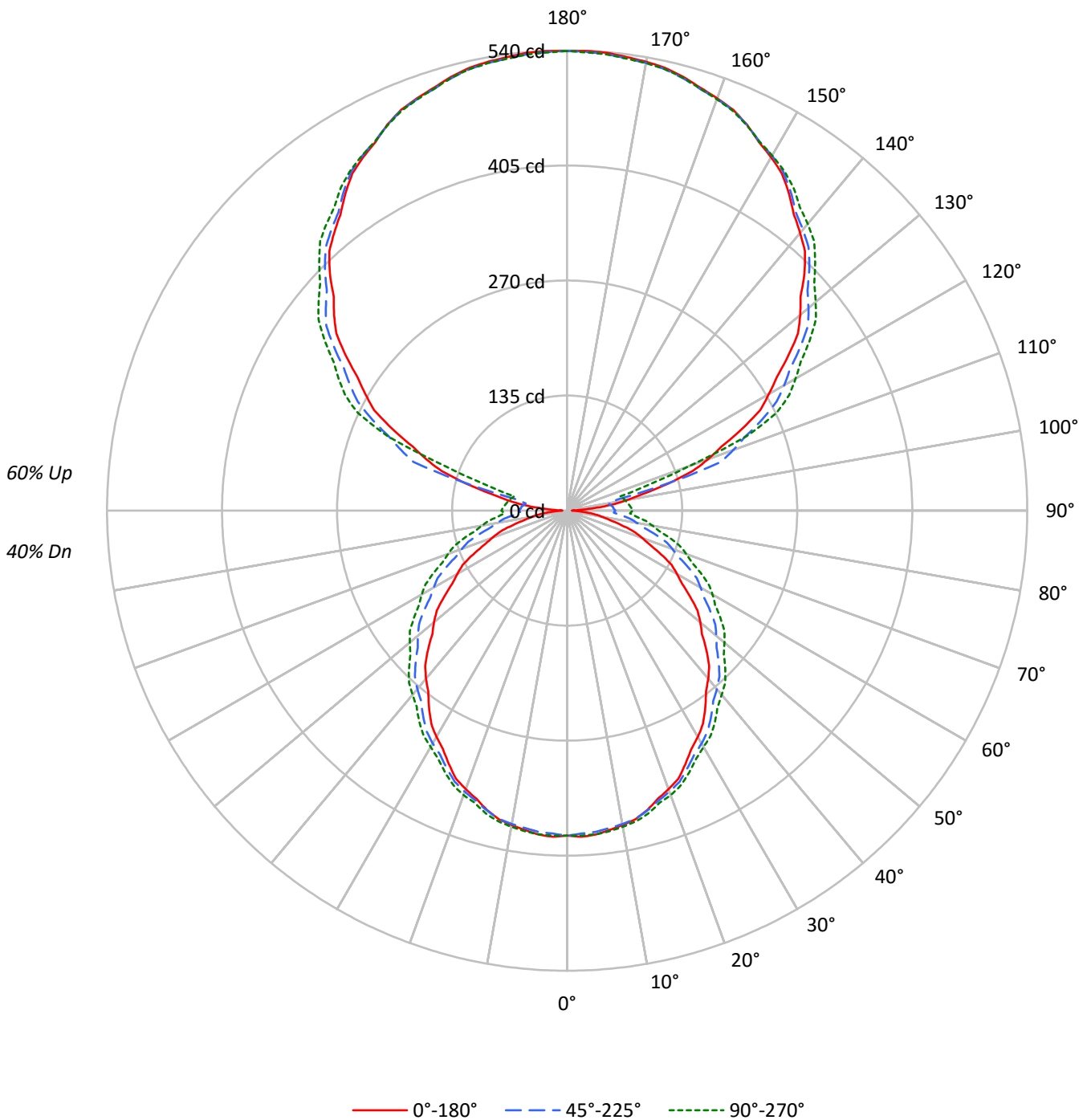
Input Watts (W): 23
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47
1	95	90	86	82	86	82	78	75	67	64	62	53	51	50	40	39	38
2	86	78	72	66	78	71	66	61	58	54	51	46	43	41	35	33	31
3	78	68	61	55	71	62	56	51	51	46	42	40	37	34	31	28	26
4	71	60	52	46	64	55	48	43	45	40	36	36	32	29	27	25	22
5	65	54	45	39	59	49	42	36	40	35	31	32	28	25	24	22	19
6	60	48	40	34	54	44	37	31	36	31	26	29	25	22	22	19	17
7	55	43	35	29	50	39	32	27	33	27	23	26	22	19	20	17	15
8	51	39	31	26	47	36	29	24	30	24	20	24	20	17	18	16	13
9	48	36	28	23	43	33	26	21	27	22	18	22	18	15	17	14	12
10	45	32	25	20	40	30	23	19	25	20	16	20	16	14	16	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4105	4105	4105
5°	4118	4002	4004
10°	4082	3910	3890
15°	4029	3805	3766
20°	3954	3686	3630
25°	3860	3549	3485
30°	3767	3425	3339
35°	3659	3294	3223
40°	3557	3175	3098
45°	3445	3060	2998
50°	3333	2947	2888
55°	3211	2831	2789
60°	3090	2713	2689
65°	2967	2588	2567
70°	2783	2448	2443
75°	2551	2287	2318
80°	2278	2128	2175
85°	2025	2018	2090



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.2	1.2
10°-20°	103.1	3.5
20°-30°	154.2	5.3
30°-40°	184.1	6.3
40°-50°	192.6	6.6
50°-60°	180.7	6.2
60°-70°	151.0	5.2
70°-80°	108.0	3.7
80°-90°	65.9	2.3
90°-100°	60.0	2.1
100°-110°	123.1	4.2
110°-120°	244.3	8.3
120°-130°	297.1	10.1
130°-140°	310.5	10.6
140°-150°	286.6	9.8
150°-160°	230.3	7.9
160°-170°	148.7	5.1
170°-180°	51.2	1.7
0°-30°	293.4	10.0
0°-40°	477.5	16.3
0°-60°	850.9	29.1
0°-90°	1175.8	40.2
90°-120°	427.4	14.6
90°-150°	1321.7	45.1
90°-180°	1752.0	59.8
0°-180°	2927.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	381	381	381	381	381	
5°	382	381	378	382	381	36
15°	364	365	364	368	368	102
25°	328	332	334	339	339	151
35°	282	289	295	301	302	177
45°	231	241	251	259	263	178
55°	176	190	205	216	219	158
65°	122	138	156	168	173	120
75°	66	86	106	120	125	71
85°	20	41	63	77	81	21
90°	6	30	56	72	77	5
95°	29	30	54	69	73	34
105°	123	135	119	63	64	130
115°	226	234	252	265	271	223
125°	317	321	334	343	347	283
135°	394	396	402	410	412	303
145°	454	456	457	461	463	284
155°	500	499	499	501	499	230
165°	527	526	525	528	526	149
175°	539	537	538	540	537	51
180°	539	539	539	539	539	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4
2.5°	383.1	382.9	382.6	382.5	382.2	381.8	381.2	380.6	380.0	379.4	380.0
5°	381.8	381.7	381.5	381.3	381.1	380.8	380.1	379.6	379.1	378.5	379.2
7.5°	378.1	378.2	378.2	378.2	378.3	378.0	377.5	376.9	376.4	375.9	376.7
10°	374.8	375.0	375.1	375.3	375.5	375.4	374.9	374.4	374.0	373.5	374.4
12.5°	370.8	371.0	371.3	371.6	371.8	371.8	371.5	371.1	370.9	370.5	371.4
15°	363.6	363.8	364.1	364.4	364.6	364.8	364.6	364.5	364.4	364.4	365.3
17.5°	354.5	355.0	355.5	356.1	356.6	356.9	356.9	356.8	356.8	356.8	357.6
20°	347.8	348.3	348.8	349.5	350.0	350.4	350.5	350.7	350.9	351.1	352.0
22.5°	340.8	341.3	341.9	342.4	343.0	343.4	343.7	343.9	344.2	344.5	345.5
25°	328.2	329.1	330.1	331.0	331.9	332.5	332.8	333.1	333.3	333.7	334.8
27.5°	315.6	316.6	317.7	318.8	319.9	320.7	321.2	321.8	322.4	323.0	324.0
30°	306.7	307.8	309.1	310.2	311.5	312.4	313.2	313.9	314.6	315.4	316.5
32.5°	296.7	298.0	299.3	300.7	302.0	303.2	304.2	305.1	306.1	307.0	308.3
35°	282.5	284.0	285.5	287.0	288.5	289.8	291.0	292.2	293.4	294.6	296.0
37.5°	267.6	269.2	270.9	272.6	274.2	275.8	277.2	278.7	280.3	281.7	283.3
40°	257.6	259.3	260.9	262.6	264.2	266.0	267.9	269.7	271.5	273.4	275.0
42.5°	246.6	248.7	250.7	252.7	254.8	256.7	258.7	260.6	262.5	264.4	266.2
45°	231.0	233.3	235.4	237.6	239.9	242.1	244.4	246.7	249.1	251.4	253.2
47.5°	214.6	217.1	219.6	222.2	224.7	227.3	229.9	232.6	235.1	237.8	239.8
50°	204.0	206.6	209.2	211.8	214.4	217.0	219.9	222.8	225.7	228.5	230.7
52.5°	192.7	195.5	198.1	200.9	203.7	206.6	209.7	212.9	216.1	219.2	221.4
55°	176.2	179.2	182.3	185.3	188.3	191.5	194.8	198.2	201.5	204.8	207.3
57.5°	160.1	163.2	166.4	169.6	172.7	176.2	179.8	183.4	187.1	190.7	193.2
60°	148.7	152.0	155.4	158.7	162.0	165.6	169.4	173.2	176.9	180.7	183.3
62.5°	138.1	141.5	144.9	148.3	151.7	155.4	159.4	163.5	167.5	171.5	174.0
65°	121.7	125.4	128.9	132.5	136.2	140.0	144.0	148.1	152.1	156.2	159.0
67.5°	105.1	109.0	112.8	116.5	120.4	124.4	128.5	132.7	136.8	141.0	143.9
70°	93.5	97.5	101.4	105.4	109.3	113.6	118.0	122.4	126.9	131.3	134.3
72.5°	82.8	86.9	90.8	94.8	98.7	103.0	107.5	112.2	116.7	121.4	124.4
75°	66.1	70.4	74.7	79.1	83.5	87.9	92.6	97.1	101.7	106.4	109.4
77.5°	51.5	55.8	60.2	64.6	68.9	73.5	78.1	82.8	87.4	92.1	95.3
80°	41.1	45.7	50.2	54.8	59.2	63.9	68.7	73.5	78.3	83.1	86.2
82.5°	32.2	36.7	41.4	45.9	50.6	55.3	60.2	65.0	69.9	74.8	77.9
85°	20.3	25.0	29.6	34.2	38.8	43.6	48.5	53.3	58.2	63.1	66.3
87.5°	11.1	15.9	20.7	25.5	30.2	35.1	40.0	44.9	49.9	54.8	58.1
90°	5.8	11.2	16.7	22.0	27.5	33.1	39.0	44.9	50.7	56.5	60.1
92.5°	12.5	16.3	20.2	24.0	27.8	32.5	38.0	43.5	49.0	54.6	58.1
95°	29.0	29.0	28.9	28.9	28.8	31.6	37.0	42.5	48.1	53.6	57.1
97.5°	53.1	54.8	56.4	58.1	59.7	59.4	57.3	55.2	53.1	51.0	54.5
100°	71.4	76.2	80.9	85.7	90.4	87.9	78.3	68.7	59.0	49.4	52.8
102.5°	92.3	96.2	100.1	104.1	108.0	104.5	93.5	82.5	71.5	60.5	60.9
105°	122.7	125.9	129.1	132.3	135.5	135.1	131.0	127.0	123.0	118.9	105.8
107.5°	154.4	157.1	159.8	162.4	165.1	169.0	174.0	179.0	184.0	189.0	179.9
110°	175.6	177.9	180.3	182.7	185.0	188.6	193.2	198.0	202.6	207.2	206.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	196.1	198.0	200.1	202.1	204.1	207.4	211.9	216.4	221.0	225.5	227.8
115°	226.0	227.7	229.3	231.0	232.6	235.5	239.6	243.7	247.9	252.0	255.1
117.5°	255.4	256.7	258.1	259.4	260.7	263.1	266.7	270.2	273.8	277.2	280.2
120°	273.3	274.6	275.8	277.1	278.3	280.6	283.9	287.2	290.6	293.9	296.8
122.5°	291.9	292.7	293.6	294.5	295.5	297.6	300.8	304.0	307.3	310.5	313.1
125°	316.9	317.6	318.3	319.1	319.8	321.6	324.7	327.7	330.7	333.8	335.9
127.5°	341.6	342.2	342.9	343.5	344.1	345.7	348.4	351.0	353.7	356.3	358.4
130°	357.0	357.7	358.2	358.8	359.4	360.9	363.1	365.3	367.5	369.7	371.8
132.5°	371.4	372.1	372.8	373.5	374.2	375.4	377.2	379.0	380.7	382.5	384.5
135°	393.9	394.3	394.8	395.2	395.7	396.5	397.9	399.2	400.6	402.0	403.9
137.5°	413.0	413.6	414.2	414.8	415.4	416.1	416.9	417.6	418.4	419.2	421.1
140°	425.4	426.0	426.5	427.0	427.6	428.2	428.7	429.3	429.8	430.3	432.0
142.5°	437.3	437.8	438.3	438.7	439.2	439.6	439.9	440.2	440.5	440.9	442.4
145°	453.9	454.4	455.0	455.5	456.0	456.4	456.6	456.7	456.9	457.1	458.1
147.5°	469.1	469.6	469.9	470.4	470.7	471.1	471.3	471.4	471.6	471.8	472.2
150°	478.8	479.0	479.3	479.6	479.8	480.0	480.2	480.4	480.5	480.7	480.9
152.5°	487.4	487.5	487.7	487.8	487.9	488.0	488.1	488.2	488.3	488.5	488.7
155°	499.5	499.4	499.2	499.1	498.9	498.8	498.9	499.0	499.1	499.2	499.6
157.5°	509.1	509.0	509.0	509.0	509.0	508.9	508.8	508.7	508.6	508.5	509.1
160°	514.8	514.7	514.6	514.5	514.4	514.3	514.2	514.2	514.1	514.0	514.5
162.5°	520.2	520.0	519.8	519.6	519.3	519.2	519.1	519.0	518.9	518.8	519.4
165°	526.8	526.6	526.3	526.0	525.8	525.6	525.5	525.4	525.3	525.2	525.9
167.5°	532.0	531.6	531.3	530.9	530.6	530.4	530.4	530.4	530.4	530.4	531.1
170°	534.8	534.5	534.1	533.8	533.4	533.2	533.2	533.2	533.2	533.2	534.0
172.5°	536.7	536.4	535.9	535.5	535.0	534.8	534.9	535.0	535.1	535.1	535.8
175°	539.2	538.8	538.3	537.9	537.4	537.3	537.3	537.4	537.5	537.6	538.2
177.5°	539.8	539.5	539.1	538.8	538.4	538.3	538.4	538.4	538.5	538.6	539.1
180°	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4
2.5°	380.6	381.2	381.8	382.0	382.0	381.9	381.8	381.7
5°	380.0	380.8	381.5	381.8	381.7	381.6	381.5	381.4
7.5°	377.7	378.6	379.5	380.0	379.9	379.7	379.6	379.5
10°	375.4	376.3	377.2	377.6	377.4	377.2	377.0	376.8
12.5°	372.2	373.1	373.9	374.3	374.1	373.9	373.7	373.5
15°	366.2	367.1	368.1	368.5	368.4	368.3	368.2	368.1
17.5°	358.4	359.3	360.1	360.4	360.3	360.2	360.1	359.9
20°	352.8	353.6	354.5	354.9	355.0	355.1	355.2	355.3
22.5°	346.5	347.6	348.7	349.2	349.1	349.0	349.0	348.9
25°	336.0	337.2	338.4	339.0	339.0	339.0	339.0	339.0
27.5°	325.0	326.1	327.2	327.7	327.8	327.9	327.9	328.0
30°	317.5	318.7	319.8	320.3	320.3	320.3	320.3	320.3
32.5°	309.4	310.6	311.7	312.5	312.7	312.9	313.2	313.3
35°	297.4	298.7	300.1	301.0	301.4	301.8	302.1	302.5
37.5°	284.8	286.4	288.0	288.9	289.2	289.5	289.8	290.1
40°	276.5	278.1	279.6	280.6	281.0	281.4	281.8	282.1
42.5°	267.9	269.6	271.3	272.4	273.0	273.4	273.9	274.5
45°	254.9	256.6	258.4	259.7	260.4	261.1	261.9	262.6
47.5°	241.7	243.8	245.8	247.0	247.5	248.2	248.7	249.3
50°	232.7	234.9	237.0	238.4	239.1	239.7	240.3	241.0
52.5°	223.6	225.8	228.0	229.5	230.3	231.1	231.8	232.6
55°	209.8	212.3	214.8	216.4	217.1	217.9	218.6	219.4
57.5°	195.7	198.2	200.7	202.4	203.3	204.2	205.1	205.9
60°	185.9	188.5	191.1	192.9	193.9	194.9	195.9	197.0
62.5°	176.6	179.1	181.7	183.5	184.5	185.4	186.4	187.3
65°	161.8	164.5	167.3	169.2	170.0	171.0	171.9	172.8
67.5°	147.0	150.0	153.0	155.0	155.7	156.5	157.3	158.0
70°	137.2	140.2	143.1	145.1	146.0	146.9	147.8	148.7
72.5°	127.3	130.4	133.4	135.5	136.3	137.2	138.2	139.1
75°	112.4	115.5	118.6	120.6	121.7	122.9	123.9	125.1
77.5°	98.5	101.7	105.0	106.9	107.8	108.7	109.5	110.4
80°	89.3	92.6	95.7	97.6	98.6	99.5	100.5	101.4
82.5°	81.1	84.2	87.4	89.3	90.3	91.2	92.1	93.1
85°	69.5	72.6	75.7	77.8	78.6	79.6	80.5	81.4
87.5°	61.3	64.5	67.7	69.8	70.7	71.7	72.7	73.7
90°	63.6	67.1	70.5	72.9	73.9	75.1	76.2	77.2
92.5°	61.8	65.5	69.1	71.4	72.3	73.3	74.3	75.2
95°	60.5	64.0	67.5	69.7	70.6	71.5	72.5	73.4
97.5°	58.0	61.4	64.9	67.1	68.1	69.2	70.2	71.2
100°	56.2	59.6	63.0	65.1	66.2	67.1	68.1	69.2
102.5°	61.3	61.7	62.1	62.9	63.9	65.0	66.1	67.1
105°	92.6	79.4	66.2	60.1	61.2	62.2	63.1	64.2
107.5°	170.9	161.8	152.8	142.7	131.6	120.6	109.5	98.4
110°	206.2	205.6	205.1	198.9	186.9	174.9	162.9	150.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	230.2	232.6	235.0	235.2	233.4	231.5	229.6	227.7
115°	258.2	261.3	264.4	266.5	267.6	268.7	269.8	270.9
117.5°	283.1	286.0	288.9	290.8	291.6	292.4	293.1	293.9
120°	299.5	302.4	305.2	306.9	307.6	308.3	308.9	309.5
122.5°	315.6	318.2	320.7	322.4	323.1	323.8	324.5	325.2
125°	338.0	340.2	342.2	343.8	344.6	345.4	346.3	347.1
127.5°	360.5	362.7	364.8	366.0	366.5	366.9	367.4	367.8
130°	373.9	376.0	378.2	379.4	379.8	380.1	380.5	380.8
132.5°	386.6	388.6	390.6	391.8	392.2	392.5	393.0	393.3
135°	405.9	407.8	409.7	410.8	411.0	411.2	411.3	411.5
137.5°	422.9	424.8	426.7	427.8	428.1	428.4	428.6	428.9
140°	433.8	435.5	437.3	438.3	438.6	438.9	439.2	439.4
142.5°	443.9	445.4	446.9	447.8	448.0	448.3	448.4	448.7
145°	459.0	459.9	460.7	461.5	461.8	462.2	462.5	462.9
147.5°	472.6	473.0	473.4	473.5	473.5	473.4	473.3	473.2
150°	481.1	481.3	481.4	481.5	481.4	481.3	481.3	481.2
152.5°	489.1	489.4	489.7	489.7	489.4	488.9	488.6	488.2
155°	500.1	500.5	501.0	500.9	500.3	499.8	499.3	498.8
157.5°	509.6	510.1	510.7	510.6	509.9	509.3	508.5	507.8
160°	515.1	515.6	516.1	516.1	515.5	514.9	514.2	513.6
162.5°	520.0	520.7	521.2	521.3	520.7	520.1	519.6	519.1
165°	526.6	527.4	528.1	528.1	527.4	526.9	526.3	525.7
167.5°	531.8	532.4	533.2	533.2	532.4	531.8	531.1	530.4
170°	534.7	535.4	536.1	536.1	535.4	534.7	534.0	533.2
172.5°	536.5	537.3	538.0	538.0	537.2	536.4	535.7	534.8
175°	538.9	539.5	540.1	540.1	539.4	538.7	538.0	537.3
177.5°	539.8	540.3	540.9	540.8	540.1	539.4	538.7	538.0
180°	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2

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