

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: P332719-830

Luminaire Tested: **S124DIW-S350D470U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332719-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S350D470U830-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 470 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3197.1 lumens
Efficiency: N/A
Efficacy: 139.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

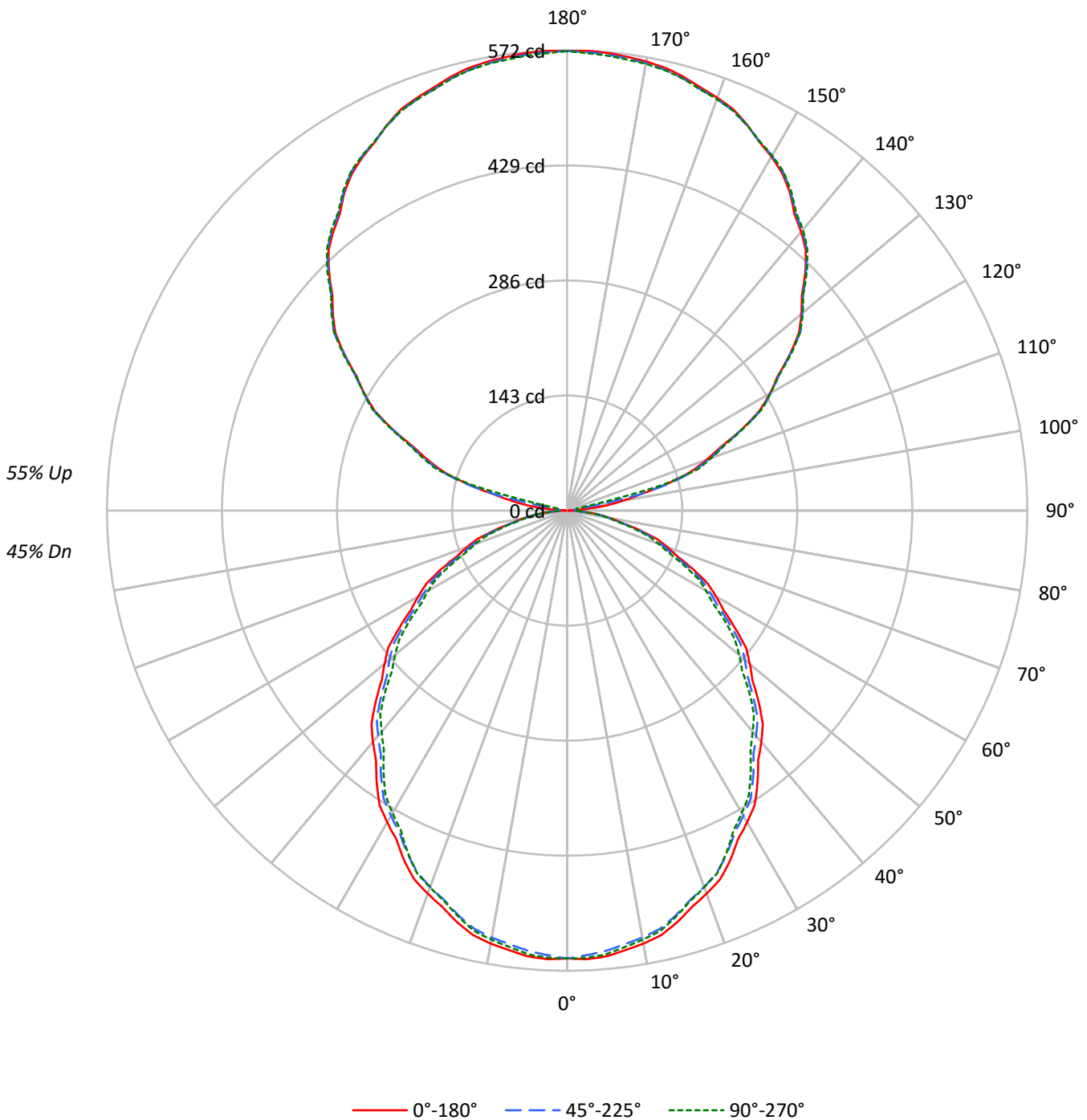
Input Watts (W): 23
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	45
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43	38
2	88	81	74	69	80	74	69	64	62	58	55	50	48	45	40	38	36	31
3	80	71	63	58	73	65	59	54	54	50	46	44	41	38	35	33	31	27
4	73	63	55	49	67	58	51	45	48	43	39	40	36	33	32	29	27	23
5	67	56	48	42	61	51	44	39	43	38	34	36	32	28	28	26	23	20
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	20	17
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	24	20	18	15
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16	14
9	49	37	30	25	45	35	28	23	29	24	20	25	20	18	20	17	15	12
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4495	4495	4495
5°	4508	4454	4486
10°	4480	4418	4440
15°	4425	4355	4367
20°	4354	4277	4281
25°	4272	4188	4177
30°	4172	4084	4047
35°	4066	3975	3921
40°	3958	3851	3780
45°	3846	3729	3658
50°	3720	3620	3508
55°	3586	3478	3365
60°	3450	3321	3219
65°	3299	3171	3043
70°	3127	2969	2854
75°	2866	2729	2658
80°	2552	2450	2385
85°	2232	2149	2103



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.4	1.6
10°-20°	147.7	4.6
20°-30°	217.4	6.8
30°-40°	252.8	7.9
40°-50°	252.8	7.9
50°-60°	221.1	6.9
60°-70°	164.2	5.1
70°-80°	93.3	2.9
80°-90°	28.6	0.9
90°-100°	19.5	0.6
100°-110°	124.6	3.9
110°-120°	238.3	7.5
120°-130°	302.4	9.5
130°-140°	323.6	10.1
140°-150°	302.6	9.5
150°-160°	244.0	7.6
160°-170°	157.4	4.9
170°-180°	54.2	1.7
0°-30°	417.6	13.1
0°-40°	670.4	21.0
0°-60°	1144.3	35.8
0°-90°	1430.4	44.7
90°-120°	382.4	12.0
90°-150°	1311.0	41.0
90°-180°	1767.0	55.3
0°-180°	3197.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	557	557	557	557	557	
5°	556	554	550	554	554	53
15°	530	528	521	524	522	149
25°	480	476	470	471	469	221
35°	413	409	403	400	398	258
45°	337	333	327	322	320	260
55°	255	253	247	242	239	228
65°	173	170	166	162	159	171
75°	92	90	88	86	85	98
85°	24	24	23	23	23	27
90°	1	6	9	12	13	2
95°	24	10	9	12	12	30
105°	129	131	133	136	122	135
115°	240	241	241	242	242	236
125°	337	339	338	340	340	301
135°	419	418	420	421	422	322
145°	483	484	484	484	485	301
155°	529	530	528	530	529	244
165°	558	556	556	559	556	158
175°	571	569	569	572	568	54
180°	571	571	571	571	571	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8
2.5°	558.2	558.0	557.7	557.5	557.2	556.7	555.8	555.0	554.1	553.2	554.0
5°	556.3	555.9	555.5	555.2	554.8	554.0	552.9	551.9	550.7	549.6	550.7
7.5°	551.2	550.7	550.4	550.0	549.6	548.7	547.5	546.4	545.2	543.9	544.8
10°	546.5	546.1	545.7	545.4	545.0	544.1	542.8	541.5	540.3	538.9	539.7
12.5°	540.5	540.1	539.7	539.2	538.9	538.0	536.6	535.3	533.9	532.5	533.4
15°	529.5	529.1	528.8	528.4	528.0	527.1	525.6	524.1	522.5	521.1	521.7
17.5°	516.4	515.9	515.5	515.0	514.4	513.5	512.1	510.7	509.3	507.8	508.2
20°	506.8	506.3	505.9	505.3	504.8	503.9	502.4	500.9	499.4	497.9	498.2
22.5°	496.4	495.8	495.1	494.5	493.8	492.8	491.3	489.8	488.3	486.8	487.4
25°	479.6	478.9	478.2	477.5	476.8	475.8	474.4	473.0	471.6	470.2	470.3
27.5°	460.3	459.6	458.9	458.2	457.5	456.5	455.2	453.9	452.6	451.3	451.1
30°	447.5	446.7	445.9	445.1	444.3	443.3	442.0	440.6	439.4	438.1	437.7
32.5°	433.9	433.2	432.4	431.8	431.0	430.0	428.7	427.3	425.9	424.5	424.0
35°	412.6	412.0	411.3	410.6	409.9	408.9	407.5	406.0	404.7	403.3	402.7
37.5°	390.3	389.6	389.0	388.4	387.8	386.7	385.2	383.7	382.2	380.7	379.9
40°	375.6	374.8	374.1	373.2	372.5	371.4	369.9	368.3	366.8	365.4	364.4
42.5°	360.0	359.5	359.0	358.5	358.1	356.9	355.3	353.6	352.0	350.4	349.2
45°	336.9	336.1	335.5	334.8	334.0	332.9	331.3	329.7	328.2	326.6	325.5
47.5°	312.6	312.2	311.7	311.2	310.8	309.8	308.3	306.8	305.4	303.9	302.7
50°	296.2	295.9	295.5	295.0	294.6	293.8	292.4	291.0	289.5	288.2	286.8
52.5°	280.2	279.7	279.2	278.7	278.2	277.3	275.8	274.4	272.9	271.5	270.2
55°	254.8	254.5	254.1	253.8	253.5	252.7	251.3	250.0	248.5	247.1	246.0
57.5°	230.5	230.2	229.8	229.5	229.1	228.3	226.9	225.6	224.1	222.8	221.7
60°	213.7	213.2	212.7	212.2	211.7	210.8	209.5	208.2	207.0	205.7	204.8
62.5°	197.3	196.9	196.4	196.0	195.6	194.7	193.3	192.0	190.6	189.3	188.4
65°	172.7	172.2	171.6	171.2	170.7	169.9	168.9	168.0	166.9	166.0	164.9
67.5°	147.9	147.4	146.9	146.5	146.0	145.3	144.4	143.5	142.5	141.5	140.5
70°	132.5	131.8	131.1	130.4	129.7	128.9	128.2	127.4	126.6	125.8	125.0
72.5°	116.1	115.4	114.7	114.0	113.3	112.6	112.0	111.4	110.7	110.1	109.4
75°	91.9	91.4	91.0	90.4	89.9	89.4	89.0	88.4	87.9	87.5	87.1
77.5°	68.8	68.6	68.3	68.1	68.0	67.6	67.2	66.7	66.3	65.9	65.7
80°	54.9	54.6	54.3	54.0	53.7	53.4	53.3	53.1	52.9	52.7	52.4
82.5°	41.3	41.2	41.0	40.9	40.7	40.6	40.6	40.6	40.5	40.5	40.4
85°	24.1	24.1	24.1	24.1	24.1	24.0	23.8	23.6	23.4	23.2	23.2
87.5°	9.5	9.7	9.8	9.9	10.1	10.2	10.3	10.3	10.4	10.5	10.6
90°	1.3	2.4	3.4	4.4	5.5	6.3	7.2	7.9	8.7	9.4	10.0
92.5°	5.4	5.5	5.5	5.6	5.7	6.0	6.8	7.5	8.3	9.0	9.6
95°	23.5	20.3	17.1	13.9	10.6	9.0	9.1	9.2	9.3	9.4	10.0
97.5°	49.9	51.9	53.9	55.9	58.0	53.6	43.1	32.4	21.9	11.3	11.3
100°	70.0	71.7	73.5	75.2	76.9	71.2	58.1	45.0	31.9	18.8	17.2
102.5°	92.7	93.9	95.1	96.3	97.6	97.4	95.7	94.0	92.3	90.6	73.1
105°	128.6	129.1	129.7	130.3	130.8	131.4	131.9	132.3	132.8	133.3	134.1
107.5°	162.0	162.3	162.6	162.9	163.2	163.6	164.2	164.9	165.5	166.2	166.5
110°	184.5	184.8	185.1	185.4	185.7	186.1	186.6	187.3	187.8	188.4	188.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	206.4	206.9	207.5	207.9	208.5	208.9	209.2	209.3	209.6	209.9	209.9
115°	240.1	240.3	240.6	240.9	241.2	241.3	241.2	241.1	241.0	240.9	241.1
117.5°	270.4	270.8	271.2	271.5	271.9	272.2	272.4	272.6	272.9	273.1	273.0
120°	290.9	291.2	291.6	292.0	292.4	292.6	292.5	292.4	292.3	292.2	292.4
122.5°	310.0	310.3	310.5	310.8	310.9	311.1	311.2	311.4	311.5	311.7	311.8
125°	337.4	337.8	338.2	338.6	338.9	339.0	338.8	338.7	338.5	338.3	338.6
127.5°	363.4	363.5	363.6	363.7	363.8	364.1	364.5	365.0	365.4	365.8	365.8
130°	380.1	380.2	380.4	380.5	380.6	380.8	381.1	381.4	381.6	381.9	382.0
132.5°	395.6	395.7	395.9	396.1	396.2	396.5	396.9	397.2	397.6	397.9	398.0
135°	418.6	418.5	418.4	418.3	418.2	418.4	418.8	419.1	419.5	419.9	420.1
137.5°	439.0	439.0	439.1	439.1	439.2	439.4	439.8	440.3	440.6	441.1	441.3
140°	452.3	452.5	452.7	452.9	453.1	453.3	453.5	453.7	453.9	454.1	454.4
142.5°	464.3	464.7	465.1	465.3	465.7	465.9	466.0	466.2	466.3	466.4	466.6
145°	482.7	483.0	483.2	483.5	483.8	484.0	484.0	484.0	484.0	484.0	484.1
147.5°	497.3	497.9	498.3	498.9	499.5	499.6	499.5	499.5	499.4	499.3	499.4
150°	507.9	508.3	508.7	509.1	509.4	509.5	509.4	509.3	509.3	509.2	509.2
152.5°	516.8	517.1	517.4	517.6	518.0	518.0	517.9	517.7	517.6	517.4	517.6
155°	529.2	529.3	529.4	529.5	529.6	529.5	529.2	529.0	528.7	528.4	528.8
157.5°	539.8	539.7	539.6	539.6	539.5	539.3	539.0	538.7	538.4	538.1	538.6
160°	545.9	545.6	545.4	545.1	544.8	544.6	544.5	544.4	544.3	544.2	544.8
162.5°	551.4	551.0	550.6	550.3	550.0	549.7	549.6	549.5	549.4	549.3	549.9
165°	558.3	557.8	557.3	556.9	556.4	556.2	556.2	556.2	556.2	556.2	556.9
167.5°	563.7	563.3	562.8	562.3	561.8	561.5	561.5	561.4	561.4	561.3	562.1
170°	566.8	566.3	565.7	565.1	564.6	564.3	564.4	564.5	564.6	564.7	565.4
172.5°	568.9	568.4	567.8	567.2	566.7	566.4	566.5	566.6	566.7	566.8	567.5
175°	571.1	570.5	570.0	569.4	568.8	568.6	568.7	568.8	568.9	569.0	569.9
177.5°	572.1	571.7	571.1	570.5	570.0	569.9	570.0	570.1	570.2	570.4	571.0
180°	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8
2.5°	554.8	555.6	556.4	556.8	556.7	556.6	556.5	556.4
5°	551.9	552.9	554.0	554.4	554.2	554.0	553.8	553.6
7.5°	545.6	546.6	547.4	547.8	547.7	547.5	547.4	547.3
10°	540.5	541.3	542.2	542.4	542.2	542.0	541.8	541.6
12.5°	534.2	535.1	536.0	536.3	536.0	535.7	535.5	535.2
15°	522.3	522.8	523.5	523.6	523.3	523.0	522.7	522.5
17.5°	508.6	509.0	509.3	509.4	509.3	509.1	508.9	508.7
20°	498.5	498.8	499.1	499.2	498.9	498.7	498.5	498.3
22.5°	487.9	488.4	489.0	489.1	488.7	488.3	488.0	487.7
25°	470.4	470.5	470.6	470.5	470.0	469.7	469.3	468.9
27.5°	450.8	450.6	450.3	450.0	449.5	449.0	448.5	448.0
30°	437.3	437.0	436.5	436.1	435.5	435.1	434.6	434.1
32.5°	423.6	423.1	422.6	422.2	421.7	421.1	420.7	420.2
35°	401.9	401.2	400.5	399.9	399.4	399.0	398.4	397.9
37.5°	379.2	378.4	377.7	377.0	376.4	375.7	375.0	374.4
40°	363.4	362.4	361.5	360.7	360.1	359.7	359.2	358.7
42.5°	348.1	346.9	345.8	345.1	344.7	344.4	344.0	343.7
45°	324.4	323.3	322.3	321.5	321.2	320.9	320.7	320.4
47.5°	301.4	300.2	299.0	298.0	297.3	296.5	295.8	295.0
50°	285.4	284.1	282.7	281.6	281.1	280.5	279.8	279.3
52.5°	269.0	267.8	266.6	265.5	264.8	264.0	263.3	262.5
55°	244.8	243.6	242.4	241.5	240.9	240.3	239.7	239.1
57.5°	220.6	219.4	218.3	217.4	216.9	216.3	215.7	215.1
60°	203.9	203.0	202.1	201.4	201.0	200.4	199.9	199.4
62.5°	187.7	186.8	186.0	185.3	184.8	184.4	183.9	183.3
65°	164.0	163.0	162.0	161.3	160.8	160.2	159.8	159.3
67.5°	139.6	138.6	137.7	137.1	137.0	136.9	136.8	136.6
70°	124.2	123.5	122.6	122.1	121.8	121.5	121.2	120.9
72.5°	108.9	108.2	107.5	107.1	106.8	106.5	106.2	105.9
75°	86.6	86.2	85.9	85.6	85.5	85.4	85.3	85.2
77.5°	65.6	65.5	65.4	65.2	64.9	64.7	64.4	64.2
80°	52.2	52.0	51.8	51.7	51.6	51.5	51.4	51.3
82.5°	40.2	40.2	40.1	40.0	39.9	39.7	39.6	39.5
85°	23.2	23.2	23.2	23.2	23.1	23.0	22.8	22.7
87.5°	10.7	10.7	10.9	10.9	11.0	11.0	11.1	11.1
90°	10.6	11.1	11.7	12.1	12.3	12.4	12.6	12.8
92.5°	10.2	10.7	11.3	11.6	11.7	11.7	11.8	11.8
95°	10.6	11.1	11.7	12.0	12.1	12.2	12.3	12.3
97.5°	11.4	11.4	11.5	11.6	11.7	11.8	11.9	12.0
100°	15.6	13.9	12.3	11.6	11.7	11.8	11.9	12.0
102.5°	55.7	38.4	20.9	12.3	12.3	12.3	12.3	12.3
105°	135.0	135.8	136.7	135.4	132.0	128.6	125.2	121.8
107.5°	167.0	167.4	167.9	168.2	168.6	168.9	169.3	169.7
110°	188.8	189.0	189.2	189.4	189.6	189.9	190.2	190.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	209.8	209.8	209.7	209.9	210.3	210.7	211.0	211.3
115°	241.3	241.5	241.7	241.8	241.8	241.8	241.8	241.8
117.5°	273.0	273.0	272.9	272.9	272.8	272.8	272.8	272.7
120°	292.6	292.8	292.9	292.9	292.8	292.6	292.4	292.2
122.5°	311.9	312.0	312.1	312.1	311.9	311.7	311.5	311.3
125°	338.8	339.1	339.4	339.6	339.7	339.8	339.9	340.0
127.5°	365.7	365.6	365.6	365.5	365.4	365.3	365.3	365.2
130°	382.1	382.2	382.3	382.3	382.3	382.3	382.3	382.3
132.5°	398.1	398.2	398.3	398.3	398.2	398.2	398.1	398.0
135°	420.3	420.5	420.7	420.8	421.0	421.2	421.4	421.6
137.5°	441.5	441.7	442.0	442.0	442.0	441.9	441.9	441.8
140°	454.7	455.0	455.2	455.4	455.5	455.6	455.7	455.8
142.5°	466.7	467.0	467.2	467.3	467.3	467.4	467.4	467.4
145°	484.2	484.3	484.4	484.5	484.7	484.8	485.0	485.2
147.5°	499.5	499.5	499.5	499.6	499.7	499.8	499.9	500.0
150°	509.2	509.2	509.2	509.3	509.3	509.4	509.5	509.6
152.5°	517.6	517.8	518.0	518.0	518.0	517.9	517.8	517.8
155°	529.1	529.5	529.9	530.0	529.7	529.4	529.1	528.9
157.5°	539.0	539.5	540.0	540.0	539.5	539.0	538.6	538.1
160°	545.4	545.9	546.5	546.5	545.9	545.4	544.8	544.2
162.5°	550.4	551.0	551.6	551.6	550.9	550.3	549.6	549.0
165°	557.7	558.5	559.2	559.1	558.3	557.4	556.6	555.7
167.5°	563.0	563.8	564.7	564.6	563.6	562.7	561.8	560.8
170°	566.2	566.9	567.8	567.7	566.7	565.7	564.8	563.8
172.5°	568.3	569.0	569.8	569.7	568.6	567.6	566.6	565.5
175°	570.7	571.6	572.4	572.2	571.1	570.0	568.8	567.7
177.5°	571.7	572.2	572.9	572.7	571.8	570.9	570.0	569.1
180°	571.1	571.1	571.1	571.1	571.1	571.1	571.1	571.1

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