

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: P332124-927

Luminaire Tested: **S123DIW-S560D460U927-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332124-927  
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-S560D460U927-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 460 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3298.6 lumens  
Efficiency: N/A  
Efficacy: 109.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse

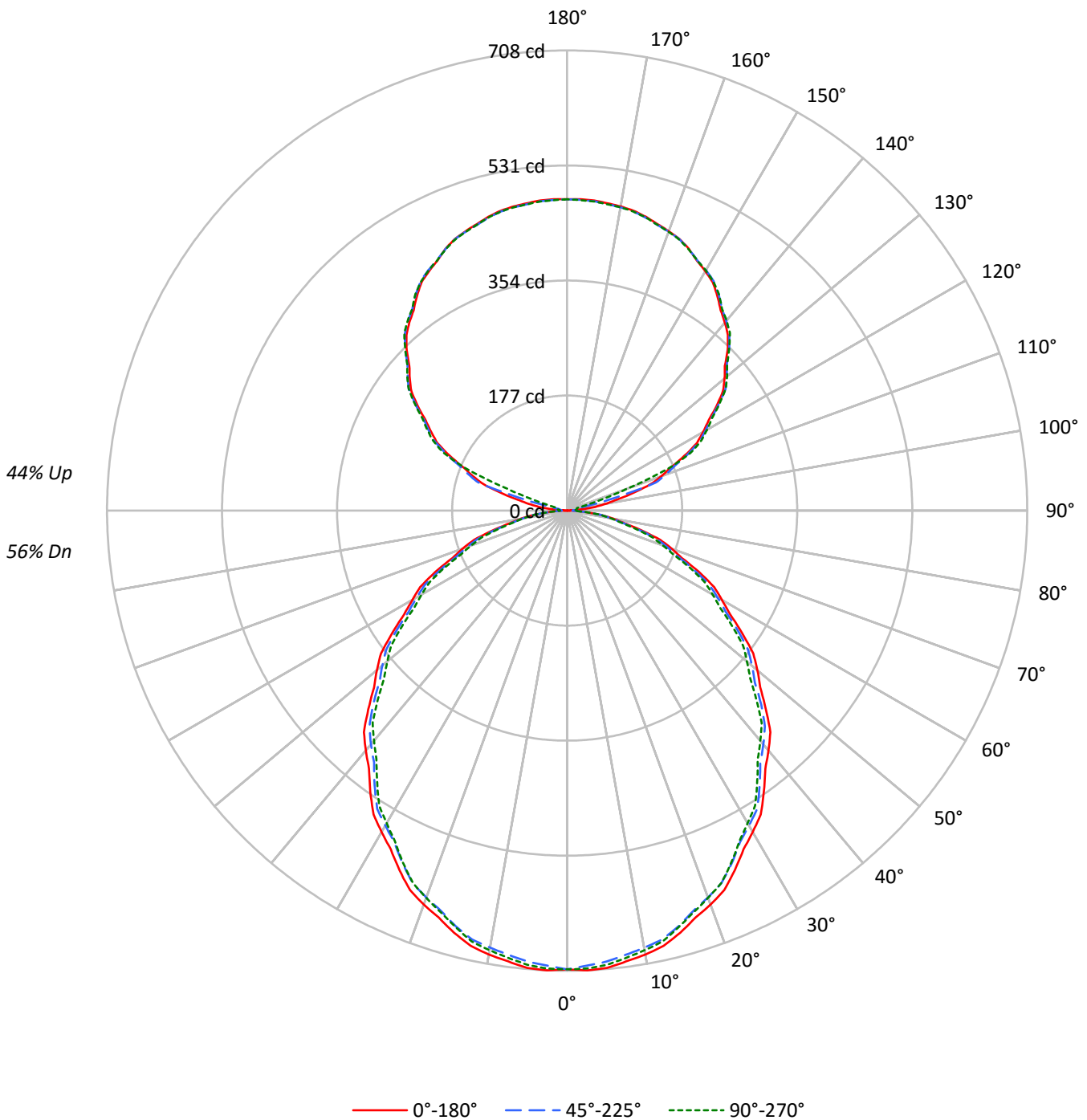
Input Watts (W): 30.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	109	109	109	109	101	101	101	101	87	87	87	73	73	73	61	61	61	56
1	99	95	91	87	92	88	85	82	76	73	71	65	63	61	54	53	52	47
2	90	83	76	71	83	77	71	67	66	62	59	57	54	51	48	45	43	39
3	82	73	65	59	76	68	61	56	59	53	49	50	46	43	42	39	37	33
4	75	64	56	50	70	60	53	47	52	46	42	45	40	37	38	34	32	28
5	69	57	49	43	64	54	46	41	47	41	36	40	35	32	34	30	28	25
6	64	51	43	37	59	48	41	35	42	36	32	36	32	28	31	27	24	22
7	59	46	38	33	55	44	36	31	38	32	28	33	28	25	28	24	22	19
8	55	42	34	29	51	40	32	28	35	29	25	30	25	22	26	22	19	17
9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	18	15
10	48	35	28	23	44	33	27	22	29	24	20	26	21	18	22	19	16	14

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

	0°	45°	90°
0°	7597	7597	7597
5°	7632	7527	7580
10°	7581	7462	7508
15°	7492	7377	7392
20°	7389	7257	7263
25°	7251	7114	7099
30°	7097	6954	6901
35°	6937	6786	6699
40°	6770	6600	6497
45°	6587	6428	6272
50°	6402	6219	6047
55°	6161	6001	5819
60°	5918	5748	5565
65°	5703	5471	5300
70°	5385	5155	4925
75°	4924	4745	4541
80°	4438	4252	4215
85°	3890	3742	3606



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	66.5	2.0
10°-20°	187.7	5.7
20°-30°	277.3	8.4
30°-40°	323.9	9.8
40°-50°	325.6	9.9
50°-60°	286.0	8.7
60°-70°	213.1	6.5
70°-80°	121.4	3.7
80°-90°	36.2	1.1
90°-100°	17.4	0.5
100°-110°	83.0	2.5
110°-120°	199.4	6.0
120°-130°	253.9	7.7
130°-140°	271.3	8.2
140°-150°	253.7	7.7
150°-160°	204.6	6.2
160°-170°	132.1	4.0
170°-180°	45.5	1.4
0°-30°	531.5	16.1
0°-40°	855.4	25.9
0°-60°	1467.0	44.5
0°-90°	1837.7	55.7
90°-120°	299.8	9.1
90°-150°	1078.7	32.7
90°-180°	1461.0	44.3
0°-180°	3298.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	706	706	706	706	706	
5°	706	703	697	702	702	67
15°	672	670	662	666	663	189
25°	610	607	599	599	598	281
35°	528	524	516	513	510	330
45°	433	430	422	415	412	334
55°	328	327	320	313	310	294
65°	224	221	215	210	208	221
75°	118	116	114	111	109	127
85°	32	30	30	29	29	35
90°	0	4	9	10	11	3
95°	22	8	11	13	14	27
105°	106	108	78	18	16	112
115°	199	201	204	208	209	196
125°	280	283	285	285	286	250
135°	349	351	353	354	353	269
145°	403	405	406	407	407	252
155°	444	443	444	445	443	204
165°	468	467	467	469	467	132
175°	479	477	478	480	477	46
180°	479	479	479	479	479	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8
2.5°	708.1	707.7	707.3	706.9	706.5	705.6	704.4	703.2	702.1	700.9	702.0
5°	706.3	705.7	705.0	704.3	703.6	702.6	701.1	699.6	698.2	696.6	698.0
7.5°	699.4	698.8	698.1	697.4	696.7	695.6	694.1	692.5	691.0	689.5	690.7
10°	693.6	692.9	692.3	691.6	690.9	689.7	687.9	686.2	684.4	682.7	683.9
12.5°	685.9	685.2	684.7	684.1	683.6	682.5	680.8	679.1	677.6	675.9	676.8
15°	672.3	671.8	671.3	670.7	670.2	669.1	667.3	665.6	663.8	662.0	663.1
17.5°	656.7	656.0	655.3	654.6	653.9	652.7	650.9	649.2	647.5	645.6	646.4
20°	645.1	644.3	643.4	642.6	641.8	640.6	638.8	637.1	635.3	633.5	634.1
22.5°	631.9	631.1	630.3	629.5	628.7	627.4	625.7	623.9	622.2	620.4	620.8
25°	610.5	609.7	608.9	608.1	607.2	605.9	604.2	602.5	600.7	599.0	599.0
27.5°	587.6	586.8	586.0	585.2	584.4	583.0	581.1	579.3	577.4	575.5	575.6
30°	571.0	570.4	569.7	569.0	568.3	567.0	565.1	563.2	561.4	559.5	559.5
32.5°	554.5	553.7	552.7	551.8	551.0	549.8	548.3	546.8	545.4	544.0	543.2
35°	527.9	527.1	526.3	525.5	524.7	523.4	521.7	519.9	518.2	516.4	515.6
37.5°	500.7	499.7	498.7	497.6	496.6	495.3	493.5	491.7	489.9	488.1	487.2
40°	481.8	481.0	480.2	479.4	478.6	477.2	475.3	473.5	471.6	469.7	468.6
42.5°	462.9	462.0	461.1	460.1	459.2	457.8	455.9	454.1	452.2	450.3	449.2
45°	432.7	432.1	431.6	431.0	430.5	429.4	427.6	425.9	424.1	422.3	420.7
47.5°	402.7	401.9	401.2	400.4	399.6	398.3	396.7	395.1	393.4	391.7	390.1
50°	382.3	381.6	381.0	380.2	379.6	378.4	376.6	374.9	373.1	371.4	369.9
52.5°	360.9	360.4	360.0	359.6	359.1	357.9	356.1	354.3	352.4	350.5	349.3
55°	328.3	328.1	328.0	327.9	327.7	326.8	325.0	323.3	321.5	319.8	318.3
57.5°	297.2	296.8	296.3	295.9	295.4	294.5	293.0	291.7	290.3	288.8	287.6
60°	274.9	274.7	274.6	274.5	274.3	273.5	271.9	270.2	268.6	267.0	265.8
62.5°	255.0	254.6	254.3	254.0	253.6	252.6	251.0	249.4	247.7	246.1	244.9
65°	223.9	223.2	222.6	221.9	221.3	220.2	218.9	217.5	216.2	214.8	213.7
67.5°	191.0	190.4	189.8	189.3	188.6	187.8	186.8	185.8	184.7	183.8	182.8
70°	171.1	170.3	169.5	168.7	167.9	167.1	166.3	165.5	164.6	163.8	162.9
72.5°	150.3	149.6	149.1	148.5	147.9	147.1	146.2	145.3	144.3	143.5	142.6
75°	118.4	117.8	117.2	116.7	116.2	115.7	115.3	114.9	114.5	114.1	113.4
77.5°	90.1	89.8	89.4	89.2	88.9	88.5	88.0	87.5	87.0	86.5	86.1
80°	71.6	71.2	70.8	70.4	69.9	69.6	69.4	69.1	68.8	68.6	68.4
82.5°	53.6	53.6	53.5	53.4	53.3	53.2	53.2	53.2	53.1	53.1	52.8
85°	31.5	31.3	31.1	30.7	30.5	30.3	30.3	30.3	30.3	30.3	30.1
87.5°	12.7	12.5	12.4	12.2	12.0	12.0	12.1	12.2	12.3	12.4	12.4
90°	0.3	1.1	1.9	2.7	3.5	4.4	5.5	6.5	7.5	8.6	8.9
92.5°	6.7	6.4	6.2	5.9	5.7	6.0	6.8	7.5	8.3	9.1	9.6
95°	21.7	18.5	15.2	12.0	8.7	7.5	8.4	9.3	10.1	11.0	11.6
97.5°	43.6	42.1	40.7	39.3	37.8	34.2	28.5	22.8	17.2	11.5	12.1
100°	60.1	61.7	63.3	64.9	66.5	61.1	48.8	36.4	24.1	11.7	12.4
102.5°	78.9	80.1	81.2	82.4	83.5	77.3	63.8	50.4	36.9	23.4	21.5
105°	106.1	106.9	107.8	108.7	109.6	106.4	99.3	92.2	85.1	78.0	63.9
107.5°	134.7	135.4	136.1	136.7	137.4	138.4	139.5	140.6	141.7	142.8	132.6
110°	153.8	154.4	155.0	155.7	156.3	157.0	157.9	158.8	159.6	160.5	157.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	172.0	172.5	173.1	173.6	174.3	175.0	175.9	176.7	177.6	178.5	178.5
115°	198.9	199.4	199.9	200.3	200.8	201.5	202.2	202.9	203.6	204.3	205.1
117.5°	225.1	225.7	226.2	226.8	227.4	227.9	228.2	228.6	229.0	229.3	230.0
120°	241.3	242.0	242.7	243.4	244.2	244.6	244.9	245.1	245.3	245.6	246.2
122.5°	257.9	258.4	259.0	259.6	260.2	260.6	260.9	261.2	261.5	261.8	262.2
125°	280.4	281.1	281.7	282.3	283.0	283.4	283.8	284.1	284.4	284.7	284.9
127.5°	302.4	303.0	303.6	304.3	304.9	305.4	305.8	306.2	306.6	307.0	307.2
130°	316.1	316.7	317.3	318.0	318.6	319.1	319.4	319.7	320.0	320.3	320.6
132.5°	329.2	329.8	330.4	331.1	331.7	332.1	332.4	332.6	332.9	333.1	333.4
135°	349.1	349.6	350.1	350.5	351.0	351.4	351.7	352.0	352.4	352.7	352.9
137.5°	366.2	366.9	367.4	368.0	368.6	369.0	369.2	369.4	369.6	369.7	370.1
140°	377.6	378.1	378.6	379.1	379.5	379.9	380.1	380.3	380.6	380.8	381.1
142.5°	388.2	388.6	389.1	389.6	390.1	390.4	390.6	390.9	391.1	391.3	391.6
145°	402.9	403.5	404.0	404.6	405.1	405.4	405.6	405.8	405.9	406.1	406.2
147.5°	416.8	417.2	417.5	417.9	418.2	418.5	418.7	418.8	419.0	419.1	419.3
150°	425.3	425.6	425.8	426.0	426.3	426.4	426.6	426.7	426.9	427.1	427.2
152.5°	433.0	433.1	433.2	433.3	433.5	433.6	433.6	433.7	433.8	434.0	434.2
155°	443.8	443.6	443.5	443.4	443.2	443.1	443.2	443.3	443.4	443.5	443.9
157.5°	452.3	452.2	452.2	452.2	452.2	452.1	452.0	451.9	451.9	451.8	452.3
160°	457.3	457.2	457.2	457.1	457.0	456.9	456.9	456.8	456.7	456.6	457.1
162.5°	462.2	462.0	461.8	461.6	461.4	461.2	461.1	461.1	461.0	460.9	461.4
165°	468.0	467.8	467.5	467.3	467.1	466.9	466.8	466.8	466.7	466.6	467.2
167.5°	472.6	472.3	472.0	471.7	471.3	471.2	471.2	471.2	471.2	471.2	471.8
170°	475.2	474.8	474.5	474.2	473.9	473.7	473.7	473.7	473.7	473.7	474.4
172.5°	476.8	476.5	476.1	475.7	475.3	475.2	475.2	475.3	475.4	475.4	476.0
175°	479.0	478.6	478.2	477.8	477.4	477.3	477.4	477.4	477.5	477.6	478.2
177.5°	479.6	479.3	479.0	478.6	478.3	478.2	478.3	478.3	478.4	478.5	479.0
180°	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8
2.5°	703.1	704.1	705.2	705.7	705.6	705.4	705.4	705.3
5°	699.3	700.7	702.0	702.6	702.3	702.0	701.8	701.5
7.5°	691.9	693.1	694.3	694.8	694.7	694.5	694.3	694.2
10°	685.1	686.3	687.5	688.0	687.8	687.5	687.2	686.9
12.5°	677.6	678.6	679.5	679.8	679.6	679.5	679.3	679.1
15°	664.2	665.3	666.4	666.5	665.7	664.9	664.1	663.3
17.5°	647.2	647.9	648.7	648.9	648.6	648.3	648.0	647.7
20°	634.6	635.2	635.6	635.7	635.3	634.9	634.5	634.1
22.5°	621.3	621.7	622.2	622.1	621.6	621.1	620.6	620.0
25°	599.2	599.4	599.4	599.4	599.0	598.6	598.1	597.7
27.5°	575.8	575.8	575.9	575.8	575.2	574.7	574.2	573.7
30°	559.5	559.5	559.5	559.0	558.1	557.1	556.2	555.2
32.5°	542.5	541.7	540.9	540.3	539.8	539.3	538.8	538.3
35°	514.8	514.0	513.2	512.5	511.7	511.1	510.4	509.8
37.5°	486.2	485.2	484.3	483.5	483.2	482.7	482.3	481.8
40°	467.5	466.4	465.4	464.5	464.0	463.5	463.0	462.4
42.5°	448.1	447.0	445.9	445.1	444.6	444.1	443.5	443.0
45°	419.1	417.5	415.9	414.7	414.1	413.4	412.7	412.0
47.5°	388.6	387.0	385.4	384.3	383.7	383.1	382.5	381.9
50°	368.4	366.9	365.4	364.3	363.5	362.7	361.9	361.1
52.5°	348.0	346.7	345.5	344.4	343.6	342.8	342.0	341.2
55°	316.8	315.4	313.9	312.8	312.1	311.4	310.8	310.1
57.5°	286.2	284.9	283.6	282.5	281.7	281.0	280.2	279.4
60°	264.6	263.4	262.1	261.2	260.5	259.8	259.2	258.5
62.5°	243.7	242.5	241.3	240.4	240.0	239.6	239.1	238.6
65°	212.6	211.6	210.5	209.8	209.4	209.0	208.6	208.1
67.5°	181.9	180.9	180.0	179.2	178.6	178.1	177.5	177.0
70°	161.9	161.1	160.1	159.2	158.6	157.9	157.2	156.5
72.5°	141.8	140.9	140.1	139.5	139.2	138.8	138.5	138.1
75°	112.7	112.1	111.4	110.8	110.4	110.0	109.6	109.2
77.5°	85.6	85.2	84.7	84.4	84.4	84.4	84.4	84.4
80°	68.3	68.1	68.0	68.0	68.0	68.0	68.0	68.0
82.5°	52.5	52.3	52.0	51.9	51.8	51.7	51.6	51.5
85°	29.8	29.5	29.2	29.2	29.2	29.2	29.2	29.2
87.5°	12.3	12.3	12.2	12.2	12.2	12.3	12.3	12.4
90°	9.2	9.5	9.8	10.1	10.2	10.4	10.5	10.7
92.5°	10.1	10.6	11.2	11.4	11.6	11.6	11.7	11.8
95°	12.1	12.7	13.2	13.5	13.5	13.5	13.5	13.5
97.5°	12.8	13.4	14.0	14.3	14.4	14.5	14.6	14.7
100°	13.0	13.6	14.3	14.7	14.7	14.8	14.9	15.0
102.5°	19.5	17.5	15.6	14.7	14.8	15.0	15.1	15.2
105°	49.9	36.0	21.9	15.1	15.2	15.4	15.5	15.7
107.5°	122.3	112.1	101.8	91.4	80.8	70.3	59.7	49.2
110°	155.3	152.7	150.0	143.1	131.8	120.5	109.2	97.9





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	178.6	178.6	178.6	177.4	175.1	172.7	170.3	167.9
115°	205.9	206.7	207.5	208.0	208.3	208.7	209.0	209.3
117.5°	230.6	231.2	231.9	232.2	232.3	232.3	232.4	232.5
120°	246.8	247.5	248.1	248.4	248.4	248.4	248.4	248.4
122.5°	262.7	263.2	263.6	263.8	263.9	264.0	264.0	264.1
125°	285.0	285.2	285.3	285.5	285.7	285.8	286.0	286.1
127.5°	307.4	307.7	307.9	308.0	307.8	307.7	307.5	307.4
130°	320.9	321.2	321.5	321.6	321.5	321.3	321.2	321.0
132.5°	333.7	334.1	334.4	334.5	334.2	334.0	333.7	333.6
135°	353.2	353.4	353.6	353.6	353.4	353.2	352.9	352.7
137.5°	370.5	370.8	371.2	371.4	371.2	371.1	370.9	370.7
140°	381.4	381.8	382.1	382.1	382.0	381.8	381.7	381.5
142.5°	391.9	392.1	392.4	392.4	392.1	392.0	391.7	391.5
145°	406.4	406.5	406.7	406.8	406.8	406.8	406.8	406.8
147.5°	419.5	419.6	419.8	419.6	419.3	418.9	418.6	418.2
150°	427.4	427.5	427.7	427.7	427.5	427.2	427.0	426.7
152.5°	434.5	434.7	435.1	435.0	434.7	434.3	434.0	433.6
155°	444.3	444.7	445.0	445.0	444.5	444.0	443.5	443.1
157.5°	452.7	453.2	453.7	453.6	453.0	452.4	451.8	451.1
160°	457.6	458.0	458.5	458.5	458.0	457.4	456.9	456.3
162.5°	462.0	462.6	463.0	463.1	462.6	462.1	461.6	461.1
165°	467.9	468.5	469.1	469.1	468.6	468.1	467.5	467.0
167.5°	472.5	473.0	473.6	473.6	473.0	472.5	471.8	471.2
170°	475.0	475.6	476.3	476.3	475.6	475.0	474.4	473.7
172.5°	476.7	477.3	477.9	477.9	477.2	476.5	475.9	475.2
175°	478.7	479.3	479.8	479.8	479.2	478.6	477.9	477.3
177.5°	479.5	480.0	480.5	480.5	479.8	479.2	478.6	477.9
180°	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0

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