

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: P331942-927

Luminaire Tested: **S123DIP-S560D1025U927-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331942-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S560D1025U927-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1025 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4813.9 lumens  
Efficiency: N/A  
Efficacy: 108.2 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: Semi-Indirect

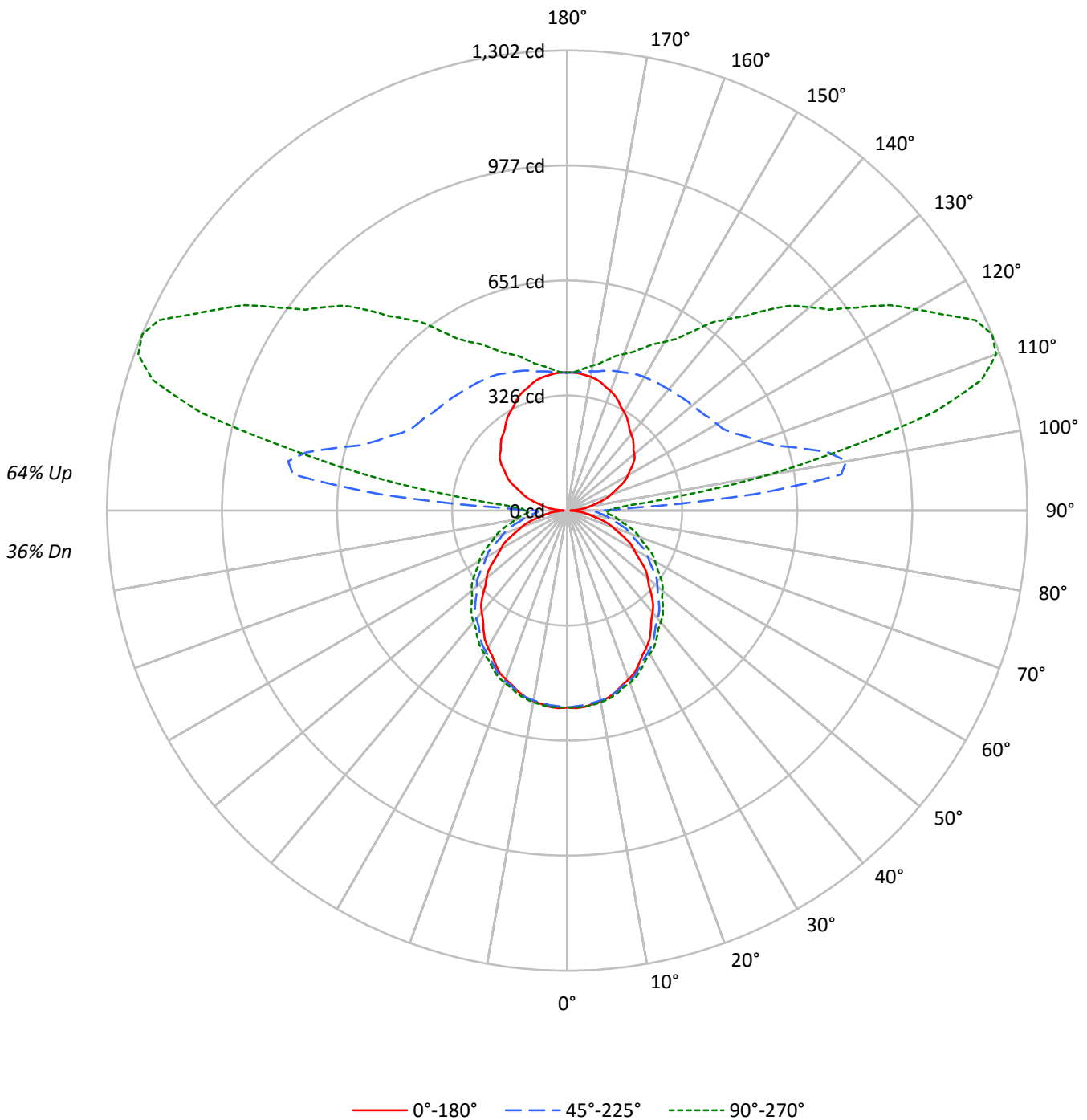
Input Watts (W): 44.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	104	104	104	104	94	94	94	94	75	75	75	58	58	58	43	43	43	36				
1	94	89	85	81	85	81	77	74	65	62	60	50	49	47	37	36	35	28				
2	85	77	71	66	77	70	65	60	56	53	49	44	41	39	32	30	29	23				
3	77	68	60	54	70	61	55	50	49	45	41	38	35	32	28	26	24	19				
4	71	60	52	46	63	54	47	42	44	39	35	34	30	27	25	22	21	16				
5	65	53	45	39	58	48	41	36	39	34	30	30	27	24	22	20	18	14				
6	59	47	39	34	53	43	36	31	35	30	26	27	23	21	20	18	15	12				
7	55	43	35	29	49	39	32	27	32	26	22	25	21	18	18	16	14	11				
8	51	39	31	26	46	35	28	24	29	23	20	23	19	16	17	14	12	10				
9	47	35	28	23	43	32	25	21	26	21	18	21	17	14	16	13	11	9				
10	44	32	25	20	40	29	23	19	24	19	16	19	15	13	14	12	10	8				

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

	0°	45°	90°
0°	5997	5997	5997
5°	6015	5845	5849
10°	5961	5711	5682
15°	5884	5558	5501
20°	5774	5383	5300
25°	5639	5182	5090
30°	5500	5002	4877
35°	5344	4810	4707
40°	5195	4636	4524
45°	5031	4469	4378
50°	4868	4304	4219
55°	4689	4134	4074
60°	4513	3964	3925
65°	4335	3780	3750
70°	4066	3576	3568
75°	3724	3338	3386
80°	3326	3109	3176
85°	2963	2948	3053



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	52.8	1.1
10°-20°	150.5	3.1
20°-30°	225.2	4.7
30°-40°	268.9	5.6
40°-50°	281.3	5.8
50°-60°	264.0	5.5
60°-70°	220.5	4.6
70°-80°	157.8	3.3
80°-90°	97.1	2.0
90°-100°	276.4	5.7
100°-110°	658.9	13.7
110°-120°	634.5	13.2
120°-130°	499.6	10.4
130°-140°	388.2	8.1
140°-150°	285.8	5.9
150°-160°	198.1	4.1
160°-170°	116.4	2.4
170°-180°	37.9	0.8
0°-30°	428.5	8.9
0°-40°	697.4	14.5
0°-60°	1242.7	25.8
0°-90°	1718.0	35.7
90°-120°	1569.9	32.6
90°-150°	2743.5	57.0
90°-180°	3096.0	64.3
0°-180°	4813.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	557	557	557	557	557	
5°	558	556	553	557	557	53
15°	531	533	532	538	538	149
25°	479	485	487	495	495	221
35°	413	422	430	439	442	258
45°	337	352	367	378	384	260
55°	257	277	299	315	320	230
65°	178	202	228	246	252	176
75°	96	125	155	175	183	103
85°	30	60	92	112	119	31
90°	10	47	88	111	118	7
95°	34	118	529	215	177	34
105°	97	156	681	1174	1074	102
115°	165	213	518	1112	1275	164
125°	227	269	473	854	1001	202
135°	265	316	455	695	803	205
145°	302	345	442	560	618	189
155°	342	369	428	486	507	157
165°	374	385	410	434	442	105
175°	390	390	393	398	398	37
180°	391	391	391	391	391	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1
2.5°	559.5	559.2	558.9	558.5	558.2	557.6	556.7	555.9	555.0	554.1	555.0
5°	557.7	557.4	557.1	556.9	556.6	556.0	555.2	554.4	553.7	552.8	553.9
7.5°	552.2	552.2	552.3	552.4	552.5	552.1	551.3	550.5	549.7	548.9	550.2
10°	547.4	547.6	547.9	548.2	548.4	548.3	547.6	546.9	546.2	545.6	546.9
12.5°	541.5	541.9	542.3	542.6	543.0	543.0	542.6	542.1	541.6	541.1	542.4
15°	531.0	531.4	531.8	532.2	532.6	532.7	532.6	532.4	532.3	532.2	533.5
17.5°	517.6	518.4	519.3	520.1	520.9	521.3	521.2	521.1	521.1	521.0	522.2
20°	507.9	508.7	509.5	510.3	511.1	511.7	512.0	512.2	512.5	512.8	514.0
22.5°	497.7	498.5	499.3	500.2	501.0	501.5	501.9	502.3	502.7	503.0	504.6
25°	479.4	480.8	482.1	483.5	484.8	485.7	486.1	486.5	486.9	487.3	489.0
27.5°	461.0	462.5	464.1	465.6	467.1	468.3	469.1	470.0	470.9	471.7	473.2
30°	447.8	449.6	451.3	453.1	454.9	456.3	457.3	458.4	459.5	460.6	462.2
32.5°	433.2	435.2	437.2	439.2	441.2	442.8	444.3	445.6	447.0	448.5	450.2
35°	412.6	414.8	416.9	419.1	421.3	423.3	425.0	426.7	428.5	430.2	432.3
37.5°	390.8	393.2	395.6	398.1	400.5	402.8	405.0	407.1	409.2	411.5	413.8
40°	376.2	378.7	381.1	383.5	386.0	388.5	391.2	393.9	396.6	399.3	401.6
42.5°	360.2	363.2	366.1	369.1	372.1	374.9	377.8	380.6	383.4	386.2	388.7
45°	337.4	340.6	343.9	347.1	350.3	353.6	357.0	360.4	363.8	367.1	369.7
47.5°	313.5	317.2	320.8	324.5	328.1	331.9	335.8	339.6	343.5	347.4	350.2
50°	297.9	301.7	305.5	309.3	313.1	317.0	321.2	325.4	329.5	333.7	336.8
52.5°	281.5	285.4	289.5	293.4	297.4	301.7	306.3	310.9	315.5	320.2	323.4
55°	257.3	261.7	266.2	270.6	275.1	279.7	284.6	289.5	294.3	299.1	302.8
57.5°	233.8	238.4	243.0	247.6	252.3	257.3	262.6	267.9	273.2	278.5	282.2
60°	217.2	222.1	227.0	231.8	236.6	241.9	247.4	252.9	258.4	264.0	267.8
62.5°	201.7	206.7	211.7	216.6	221.6	227.0	232.8	238.7	244.5	250.4	254.1
65°	177.8	183.1	188.3	193.6	198.8	204.5	210.4	216.3	222.2	228.1	232.2
67.5°	153.5	159.1	164.7	170.2	175.9	181.6	187.7	193.8	199.8	205.8	210.2
70°	136.6	142.4	148.1	153.9	159.7	165.9	172.3	178.8	185.3	191.8	196.1
72.5°	121.0	126.8	132.6	138.4	144.2	150.4	157.1	163.8	170.5	177.2	181.6
75°	96.5	102.8	109.2	115.5	121.8	128.4	135.1	141.9	148.6	155.3	159.8
77.5°	75.1	81.5	87.9	94.3	100.7	107.3	114.1	120.9	127.7	134.5	139.2
80°	60.0	66.7	73.3	79.9	86.5	93.3	100.3	107.3	114.4	121.4	126.0
82.5°	47.0	53.7	60.4	67.1	73.8	80.7	87.9	95.0	102.1	109.2	113.8
85°	29.7	36.4	43.3	50.0	56.7	63.6	70.8	78.0	85.1	92.2	96.8
87.5°	16.5	23.5	30.5	37.7	44.8	51.9	59.2	66.5	73.9	81.3	85.7
90°	9.5	17.7	25.8	34.9	43.0	51.3	60.6	69.9	79.1	88.3	92.1
92.5°	17.2	27.9	40.5	52.7	65.3	83.3	110.8	151.5	191.7	186.3	160.9
95°	33.6	41.2	55.1	73.8	99.7	136.4	210.2	334.7	471.0	529.0	444.6
97.5°	51.8	57.4	68.9	85.3	110.4	149.2	219.8	358.9	581.4	782.4	837.2
100°	64.0	69.1	78.9	94.3	117.6	153.7	215.2	338.5	552.6	801.6	961.3
102.5°	76.8	82.1	90.9	105.2	126.1	159.5	215.2	320.6	511.9	757.6	964.6
105°	96.6	102.2	110.2	122.9	141.2	170.2	218.7	305.9	461.2	681.3	912.0
107.5°	117.0	122.2	129.5	141.6	158.4	185.3	228.3	301.5	427.5	613.5	823.2
110°	131.7	136.6	142.9	154.1	169.9	196.0	236.9	302.5	413.8	575.0	767.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	145.7	150.0	156.0	166.7	182.1	207.2	245.4	306.3	404.8	548.0	718.3
115°	165.2	169.9	176.3	185.8	200.9	225.5	260.4	313.5	398.9	518.5	658.5
117.5°	185.1	189.7	194.7	203.0	219.0	241.5	275.8	323.4	396.4	499.1	620.5
120°	198.5	201.6	206.2	214.8	230.4	252.8	285.7	331.3	396.6	489.6	600.3
122.5°	210.6	213.3	217.6	226.5	241.2	264.5	296.6	338.8	398.9	482.8	583.2
125°	227.2	228.8	233.5	242.2	257.2	280.5	312.1	350.9	402.2	473.3	560.7
127.5°	240.3	242.6	248.3	257.0	273.5	296.4	326.3	360.8	406.8	466.8	540.5
130°	248.5	250.8	257.8	267.1	283.6	306.2	335.0	367.7	410.0	462.5	529.1
132.5°	254.4	257.4	265.1	276.4	293.0	314.8	342.4	374.0	411.9	459.5	518.3
135°	265.3	268.3	276.9	288.7	305.1	327.2	353.2	381.5	414.6	454.9	503.9
137.5°	275.6	278.8	287.2	299.8	316.2	336.3	360.7	387.1	416.1	450.2	491.4
140°	282.1	286.1	294.0	306.7	322.4	342.4	365.8	389.8	417.2	447.6	483.6
142.5°	289.7	292.9	301.3	312.6	328.4	346.8	369.2	392.4	417.5	444.4	476.4
145°	301.9	304.1	311.1	322.8	336.1	354.3	374.8	396.2	418.3	442.0	468.4
147.5°	313.6	315.1	322.0	332.2	345.2	360.8	379.5	398.7	418.3	439.0	461.0
150°	321.9	322.7	328.9	339.2	350.3	364.6	382.7	399.3	418.3	436.5	456.2
152.5°	330.0	330.2	336.5	345.5	355.4	369.0	384.6	400.6	416.4	433.3	451.2
155°	342.4	342.4	347.1	355.1	363.8	374.8	388.2	400.9	414.3	427.8	443.6
157.5°	352.2	352.8	356.6	363.6	371.0	379.5	390.3	401.7	411.7	422.9	435.1
160°	359.8	359.8	363.0	369.2	374.8	382.7	392.2	401.7	410.4	419.1	429.4
162.5°	365.5	365.5	368.0	373.0	378.0	384.6	392.8	401.1	407.9	415.3	423.7
165°	374.0	373.2	374.8	378.7	381.9	387.5	393.8	399.3	404.1	409.6	415.9
167.5°	380.5	379.5	380.3	383.3	385.6	389.0	393.6	398.1	400.3	403.9	408.5
170°	384.3	382.7	383.5	385.9	387.5	389.0	393.0	396.2	397.8	400.1	404.1
172.5°	386.8	385.9	386.0	387.8	388.7	389.7	393.0	395.5	395.9	397.0	399.7
175°	389.8	389.0	388.2	389.8	389.8	390.6	392.2	393.8	393.0	393.0	394.6
177.5°	391.3	390.6	390.0	390.6	390.6	390.6	391.3	392.5	391.3	390.6	391.3
180°	390.6	390.6	390.6	390.6	390.6	390.6	390.6	390.6	390.6	390.6	390.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1
2.5°	555.9	556.7	557.6	558.0	557.9	557.8	557.7	557.5
5°	555.0	556.0	557.1	557.6	557.5	557.3	557.2	557.1
7.5°	551.6	552.9	554.4	554.9	554.8	554.6	554.4	554.3
10°	548.3	549.6	551.0	551.4	551.2	551.0	550.6	550.4
12.5°	543.7	544.9	546.1	546.6	546.4	546.1	545.8	545.6
15°	534.9	536.2	537.6	538.2	538.1	537.9	537.8	537.7
17.5°	523.5	524.7	525.9	526.4	526.2	526.0	525.9	525.6
20°	515.2	516.4	517.6	518.3	518.4	518.6	518.7	518.8
22.5°	506.1	507.7	509.2	509.9	509.8	509.8	509.7	509.6
25°	490.8	492.6	494.3	495.2	495.2	495.2	495.2	495.2
27.5°	474.8	476.3	477.8	478.6	478.7	478.8	479.0	479.0
30°	463.8	465.4	467.1	467.9	467.9	467.9	467.9	467.9
32.5°	451.9	453.6	455.3	456.4	456.7	457.0	457.3	457.6
35°	434.3	436.3	438.3	439.6	440.1	440.7	441.2	441.8
37.5°	416.0	418.3	420.6	422.0	422.4	422.8	423.3	423.7
40°	403.9	406.2	408.4	409.9	410.4	411.0	411.5	412.0
42.5°	391.2	393.7	396.2	397.8	398.6	399.3	400.1	400.8
45°	372.2	374.8	377.4	379.2	380.2	381.4	382.5	383.5
47.5°	353.2	356.0	358.9	360.8	361.6	362.4	363.3	364.1
50°	339.9	343.1	346.2	348.2	349.1	350.1	351.0	352.0
52.5°	326.6	329.8	333.0	335.2	336.4	337.5	338.7	339.8
55°	306.4	310.1	313.7	316.1	317.2	318.2	319.3	320.4
57.5°	285.9	289.5	293.2	295.6	296.9	298.2	299.4	300.7
60°	271.6	275.3	279.1	281.7	283.2	284.6	286.1	287.6
62.5°	257.9	261.7	265.5	268.1	269.4	270.8	272.2	273.5
65°	236.2	240.3	244.4	247.1	248.4	249.8	251.1	252.5
67.5°	214.7	219.1	223.6	226.3	227.4	228.5	229.7	230.8
70°	200.4	204.7	209.1	211.8	213.2	214.5	215.9	217.2
72.5°	186.0	190.4	194.9	197.8	199.2	200.5	201.8	203.2
75°	164.2	168.7	173.2	176.2	177.8	179.4	181.0	182.7
77.5°	143.9	148.5	153.2	156.2	157.5	158.7	159.9	161.2
80°	130.6	135.1	139.7	142.7	144.0	145.4	146.7	148.1
82.5°	118.4	122.9	127.5	130.6	131.9	133.2	134.6	135.9
85°	101.4	106.0	110.6	113.5	114.9	116.2	117.6	118.9
87.5°	90.5	95.1	99.9	103.2	104.4	105.9	107.4	108.6
90°	97.5	102.9	108.3	112.8	113.4	115.5	117.6	118.2
92.5°	140.2	130.9	129.3	128.0	127.8	126.7	128.7	128.5
95°	353.1	265.5	227.8	202.2	188.5	182.7	178.5	176.7
97.5°	773.3	636.1	538.1	446.2	389.3	355.1	335.0	329.5
100°	992.9	932.8	844.1	734.5	656.0	599.6	570.1	572.3
102.5°	1063.8	1065.6	1015.4	946.8	886.0	841.6	817.2	800.4
105°	1081.0	1163.9	1182.6	1164.6	1129.4	1100.6	1076.5	1073.8
107.5°	1014.2	1146.2	1219.1	1249.6	1251.4	1242.5	1235.2	1229.1
110°	952.0	1101.1	1204.2	1261.8	1285.1	1292.4	1292.0	1291.4





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	890.1	1042.1	1157.2	1230.7	1272.3	1293.1	1300.3	1301.8
115°	808.0	948.9	1068.3	1156.7	1217.0	1252.9	1269.8	1274.9
117.5°	747.3	869.3	976.8	1066.4	1129.3	1170.2	1194.1	1200.5
120°	714.9	824.7	922.7	1004.6	1068.0	1113.3	1133.2	1138.8
122.5°	688.8	788.5	879.4	955.5	1012.0	1052.8	1074.6	1081.6
125°	653.7	742.8	821.5	886.6	938.2	973.9	994.7	1001.1
127.5°	622.6	702.1	773.2	832.6	878.6	909.3	928.0	934.0
130°	602.9	676.5	743.1	798.6	841.4	870.6	888.0	895.2
132.5°	584.4	652.3	714.4	767.3	807.6	837.0	852.6	857.9
135°	559.4	617.9	671.7	718.4	757.8	782.2	797.1	803.3
137.5°	536.4	584.6	631.0	671.4	704.6	729.4	742.0	746.4
140°	522.8	565.1	605.1	640.5	671.2	694.0	707.3	707.3
142.5°	509.7	546.1	580.8	611.6	637.9	658.2	670.3	670.2
145°	494.8	522.0	548.3	572.1	592.4	609.5	616.4	618.5
147.5°	482.7	503.7	524.4	541.1	556.7	568.4	574.9	576.0
150°	474.4	492.7	509.2	524.4	536.5	545.5	550.5	550.8
152.5°	467.5	483.2	497.9	510.4	519.8	527.9	530.8	530.8
155°	457.0	469.7	481.6	491.1	498.2	504.5	506.0	506.8
157.5°	446.0	456.5	465.7	473.2	479.3	484.1	485.4	485.2
160°	439.7	448.4	456.2	461.8	467.3	472.1	472.1	471.3
162.5°	432.1	439.5	446.8	451.7	455.3	459.4	459.4	458.6
165°	422.2	427.0	432.5	436.5	439.7	442.8	442.0	442.0
167.5°	413.7	417.3	420.5	423.3	424.8	427.0	426.2	426.2
170°	408.1	410.4	413.5	415.1	415.9	417.5	416.7	416.7
172.5°	403.0	404.7	407.3	408.2	408.4	410.0	408.5	407.9
175°	396.2	397.0	398.5	398.5	398.5	399.3	398.5	397.8
177.5°	391.9	392.5	393.2	393.2	392.5	393.2	391.9	391.9
180°	390.6	390.6	390.6	390.6	390.6	390.6	390.6	390.6

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