

ATS-CVD Series PECVD System for Solar Cell AR Coatings



Special Features

- ◆ Capacitively-Coupled PECVD system with loadlock chamber for R&D and small scale production
- ◆ Automatic loadlock system with cassette
- ◆ Uniform gas distribution through shower head
- ◆ Substrate temperature uniformity: $\leq \pm 2^\circ\text{C}$ @400°C within 6"
- ◆ Thickness uniformity of deposited layers: $< \pm 2\%$ @100nm within 6" (5mm edge exclusion)
- ◆ Cycle time: <15mins
- ◆ Average throughput
Up to 21,600 wafers per year

Applications

- ◆ SiNx dielectric material coating
- ◆ SiOx dielectric material coating
- ◆ SiOxNy dielectric material coating

Specifications

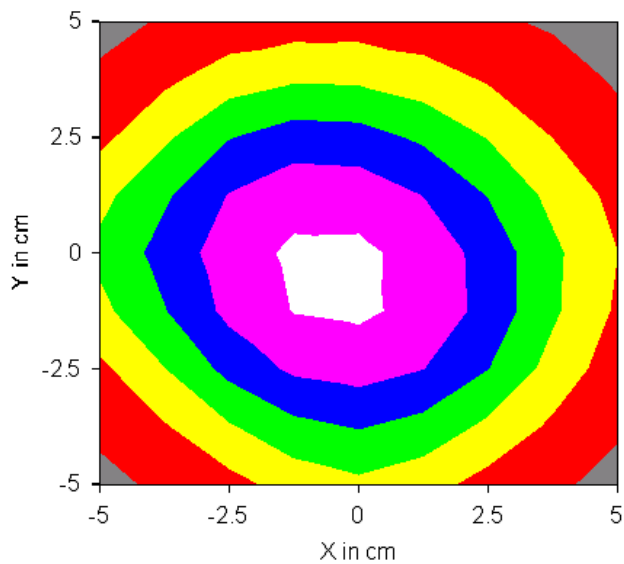
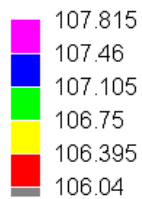
- ◆ Dimension 1,730L × 1,027H × 1,832W (mm³)
- ◆ Others
 - Power : AC 2kW (13.56MHz)
VHF & MF Power compatible
 - Gas : NF₃/O₂/H₂/SiH₄/N₂/NH₃/N₂O/Ar
 - Substrate material : Si wafer
 - Pump : Dry(1,200l/min & 200l/min)
turbo(600l/s)

* SiOx

Fit Parm:	Thickness	n@630	n@700
Average:	107.26	1.5056	1.5043
Minimum:	106.04	1.5042	1.5026
Maximum:	108.17	1.5079	1.5071
Std Dev:	0.65299	0.001143	0.001361
% Range:	0.99287	0.12288	0.14957
1:(0.00,5.00)	106.04	1.5079	1.5071
2:(-2.50,2.50)	107.42	1.5053	1.504
3:(0.00,2.50)	107.5	1.5053	1.5039
4:(2.50,2.50)	106.75	1.5071	1.5059
5:(5.00,0.00)	106.32	1.5071	1.5062
6:(2.50,0.00)	107.6	1.5054	1.504
7:(0.00,0.00)	108.17	1.5042	1.5026
8:(-2.50,0.00)	107.97	1.5045	1.503
9:(-5.00,0.00)	107	1.5054	1.5044
10:(-2.50,-2.50)	107.55	1.5048	1.5035
11:(0.00,-2.50)	107.95	1.5043	1.5028
12:(2.50,-2.50)	107.45	1.5053	1.5041
13:(0.00,-5.00)	106.71	1.5058	1.5049

Thickness

Mean = 107.26
 Min = 106.04
 Max = 108.17
 Std Dev = 0.65379
 Uniformity = 0.60952 %

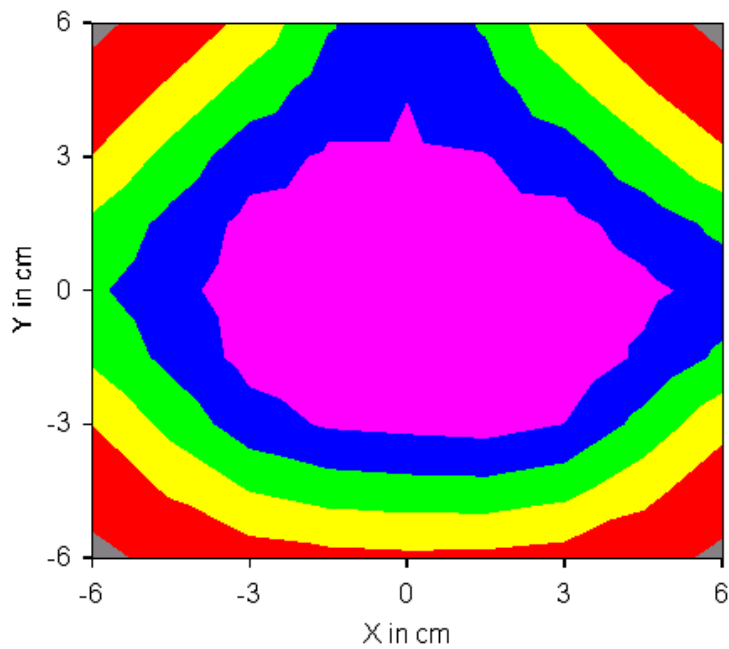


*SiNx

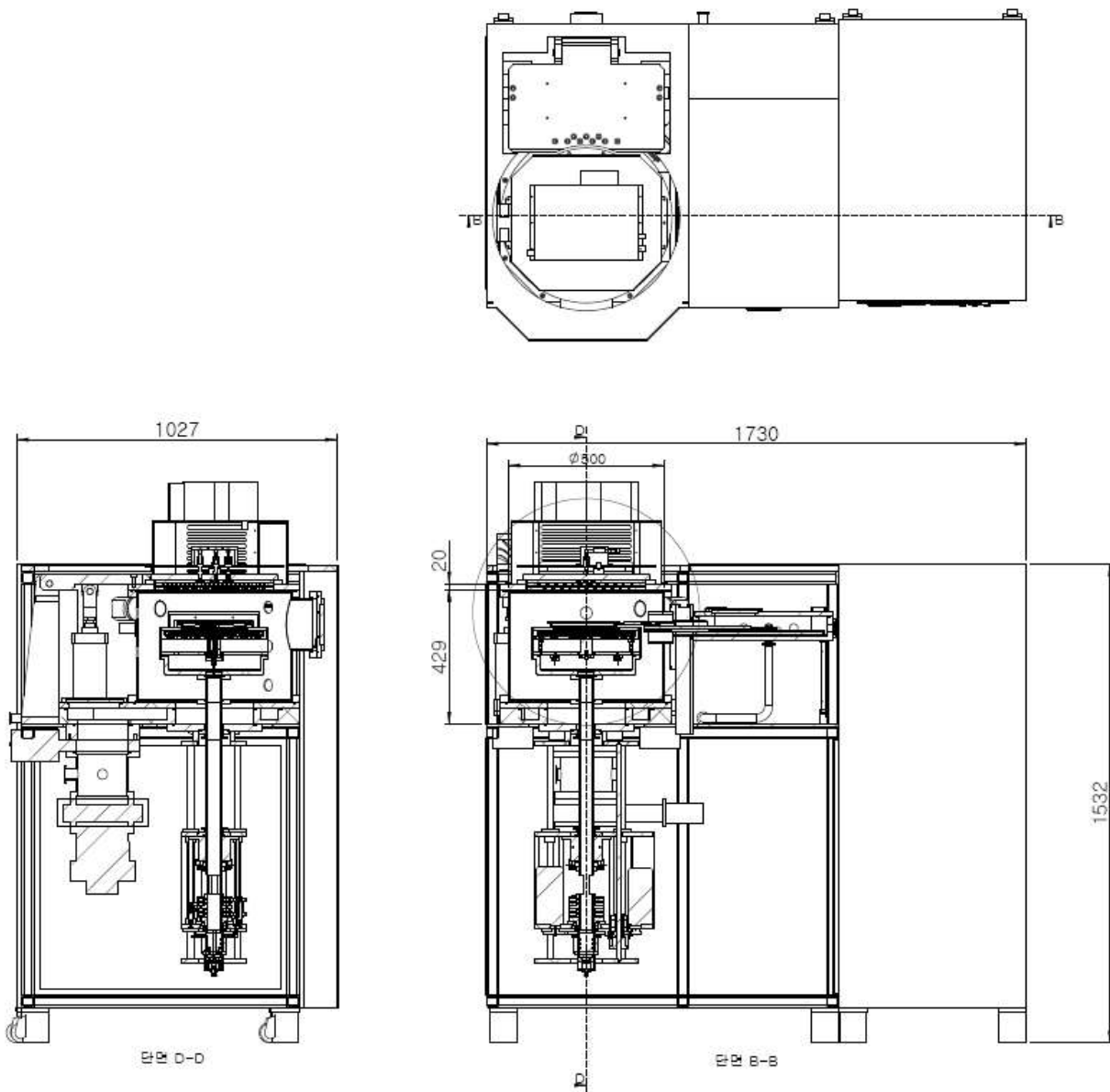
Fit Parm:	Thickness	n@633
Average:	99.632	2.0066
Minimum:	98.397	1.9987
Maximum:	100.03	2.0127
Std Dev:	0.41854	0.004937
% Range:	0.82152	0.34885
1:(0.00,6.00)	99.962	2.0022
2:(-3.00,3.00)	99.84	2.0086
3:(0.00,3.00)	99.416	2.0107
4:(3.00,3.00)	99.741	2.0092
5:(6.00,0.00)	99.784	2.0001
6:(3.00,0.00)	99.788	2.0116
7:(0.00,0.00)	99.475	2.0127
8:(-3.00,0.00)	99.757	2.0108
9:(-6.00,0.00)	99.4	1.9987
10:(-3.00,-3.00)	99.811	2.0056
11:(0.00,-3.00)	99.808	2.0099
12:(3.00,-3.00)	100.03	2.0062
13:(0.00,-6.00)	98.397	1.9996

Thickness

Mean = 99.631
 Min = 98.397
 Max = 100.03
 Std Dev = 0.41822
 Uniformity = 0.41976 %



Layout



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