TOP ENERGY

M82200-9/UM PECVD

Overview

M82200-9/UM PECVD utilizes direct plasma deposition process to grow high quality anti-reflection coating on the surface of solar cell. It is one of the tube film coating devices with the largest per stack capacity.

Benefits

- Excellent film uniformity: within wafer⩽±3%, wafer to wafer⩽±3% and run torun⩽±2%.
- 300-600°C temperature control range to meet the process requirements of film coating and wafer annealing.
- 420mm quartz tube to achieve 1800 pcs/h throughput (4 stacks, 308 pcs/stack/run).
- N_2O (laughing gas) pipeline and operation software reserved for anti-PID process.
- Full-automatic loading and unloading system, onekey process control andcomplete alarm and protection function.

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Specification

Process Performance	Film uniformity: within wafer ⩽ ± 3%, wafer to wafer ⩽ ± 3%, run to run ⩽ ± 2% Refractive index uniformity: ⩽ ± 0.02
Throughput	308 pcs/stack, ⩾ 1800 pcs/h (4−stack)
Temperature Control	Flat temperature zone: 1370 mm Method: 5−section cascade control with internal and external thermocouples Range: 300 – 600 ˚C Precision: ⩽ ± 2 ˚C/1250 mm Stability: ⩽ ± 2 ˚C/4 h (at 450 ˚C)
Pressure Control	Range: 1600 mTorr, ± 300 mTorr adjustable Ultimate vacuum: ⩽ 1 Pa Air leakage rate: ⩽ 1 Pa/min after pump stopped and valve closed Vacuum recovery speed: AP → 30 mTorr ⩽ 2 min
Boat Conveyor	Double SiC stainless steel or cantilever bar boat conveyor, with continuously adjustable transfer speed of 0 – 3500 mm/min Positioning precision: ⩽ ± 0.5 mm Max load: ⩾ 25 kg
Gas Piping System	4 pipelines with MFC control, precision ⩽ ± 1% F.S, leakage rate ⩽ 10−7 Pa.m^3/s
Interlock	Furnace door conditions; air pressure, N_2 pressure, water flow pressure and process; special gas valves
System Dimension	10070 mm x 1960 mm x 3070 mm (L x W x H, including vacuum pump)
Power	Peak power: ⩽ 280 KVA, heat preservation: ⩽ 100KVA (4−stack)
Uptime	⩾ 97%
Control Method	Automatic process control and real−time process parameter and procedure monitoring, with fault diagnosis, alarm and protection functions.
Alarm and Safety	Voice and light indicator for process status; alarm for computer fault and over−temperature; alarm and protection for under−temperature, MFC deviation, reaction chamber pressure deviation and ultimate temperature

Configuration

Vacuum Pump	Alcatel ADS602H	ALCATEL 阿尔卡特
	Edwards	EDWARDS
RF Power	AE PE2−10KW	Advanced Energy
	TRUMPF	TRUMPF
Temperature Controller	Azbil	azbil

Mass flow meter	HORIBA	HORIBA Scientific
Diaphragm Gauge	INFINCON	INFICON
Industrial PC	Advantech	ADVANTECH 研華科技
PLC	Mitsubishi	MITSUBISHI ELECTRIC Changes for the Better