

Technical Specification

1. General Description

System Type:	ZV 6000 load lock / inline
Carrier orientation:	vertical
No. of modules:	depends on process
Useable coating area:	400 x 450 mm
single/double-side coating:	double-side coating possible
cathodes:	PK 500
No. of cathodes	max 6 per process module (3 each side)
DC power	p.e. 2 x 10 kW, switchable
Heater:	double-side IR-heater in input module
Cooling water:	
consumption:	approx. 40 l/min
inlet pressure:	min 5 bar, max 7 bar
outlet:	open funnel, no back-pressure allowed
temperature:	2 °C above dew-point temperature but max. 25 °C
hardness of cooling water	6-8 °dH
pH value:	7.5 - 8
electrical conductivity:	< 200 µs/cm
compressed air	
Inlet pressure:	min 6 bar, max 8 bar



Electrical supply

Voltage:	3 x 400V(+5%/-10%),N, PE,
Frequency:	50 Hz
Consumption:	ca. 45 kVA for a 1 process chamber system

Vacuum data:

Ultimate pressure (12 h pumping time)

Module 2	7×10^{-7} mbar
Modules 3,4,5	8×10^{-7} mbar

Pumping speed (opening time for chamber: 1 min)

Module 2	5×10^{-6} mbar in 1 h
Modules 3,4,5	6×10^{-6} mbar in 1 h

■ Stainless steel vacuum chamber

- Stainless steel vacuum chamber with one (1) service door installed on a ground frame. Water cooling lines welded on chamber.

■ Transportation System

Carrier transport system installed in the lower part of the module. Stainless steel drive rollers for transportation of the substrate carrier by friction. Drive of rollers via DC-motors and timing belts installed on atmospheric side. Atmosphere - Vacuum connection by means of intermediate evacuated feed through.



■ Cathodes

six (6) high rate magnetron cathodes Type PK 500 (target size 488 x 88 mm) consisting of:

- rectangular magnets glued on a magnetic yoke
- PFPE insulator
- target backing plate, bonding version, made out of Cu, intensively water cooled with water fitting.
- cathode shielding box made out of Cu

2. Systems control

The system and the process are controlled by an industrial personal computer (IPC) and a programmable logical controller (PLC). Data exchange and communication between PC and PLC are via a local network.

- System background control by PLC
- Systems operation and process visualisation based on a IPC
- operation of system in automatic mode; for service purpose in manual mode
- display of actual status of the system (i.e. vacuum data, process data like heater temperature, sputter power, gas flow, etc.) on a 19-inch TFT
- PC, monitor and key-board are build in a standard desk-top version (not integrated in the systems rack)
- storage of process parameters for each process step, several process steps can be stored together in recipes
- protection of fault recipe operation by different password levels
- alarm messages will be displayed on the systems CRT and stored in an alarm message protocol including date and time
- optionally, the systems computer can be connected to a local computer network