FEATURES

- Special techniques have been used to achieve rapid temperature stabilization. The system is ready for use after only 3 minutes from switch on.
- Each independent voltage module achieves temperature stability below 0.5 ppm of the voltage span per degree Celcius.
- Using 16bit AD converters, the 6 kV power supplies can be set with a resolution of just 92 mV and with a maximum noise level of only 200 µVp-p.
- Each modules can be controlled independently via MODBUS-TCP 460 Kbit/s interface.
- Each module has a floating output which means a wide range of configurations are possible making the unit truly universal - serial configuration is unlimited.

- Any other voltages up to 6000 V available on request
- High linearity controlled with an accuracy of 16 bits
- Up to 28 modules fit into 9U rack
- Voltage deviation calculated with two-point calibration at min and max voltage

DAC MODULES

Output voltage	0… +/- 12.5 V
Precision	16 bit
Step size	200 µV
Protection	surge protection 23 kV

HIGH VOLTAGE MODULES

modules	output voltage	maximum output current
HV 100V	~0 - 100 V, 16 bit, step size ~1.6 mV	~600 µA
HV 600V	~0 - 600 V, 16 bit, step size ~9.2 mV	~300 µA
HV 600/100V	Low range ~0 - 100 V, 16 bit, step size ~1.6 mV High range ~0 - 600 V, 16 bit, step size ~9.2 mV	~300 µA
HV 1900/100V	Low range ~0 - 100 V, 16 bit, step size ~1.6 mV High range ~0 - 1900 V, 16 bit, step size ~23 mV	~200 µA
HV 2200V	~0 - 2200 V, 16 bit, step size ~34 mV	~150 µA
HV 4000V	~0 - 4000 V, 16 bit, step size ~61 mV	~100 µA
HV 6000/600V	Low range ~0 - 600 V, 16 bit, step size ~9.2 mV High range ~0 - 6000 V, 16 bit, step size ~92 mV	~100 µA
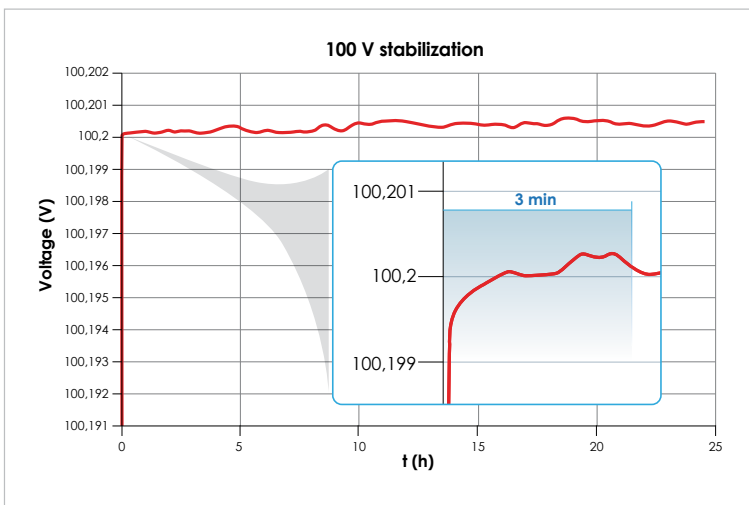
Maximum non-linearity over the range of 100 V is ~0,2 mV.

EA15
HEMISPHERICAL ENERGY ANALYSER

XPS | UPS | ARPES | AES | ISS

DESCRIPTION

PREVAC EA15 hemispherical energy analyser provides high-resolution PES measurements with a 150 mm mean radius analyser.
The analyser is wrapped in a shield constructed of up to two parallel mu-metal plates guaranteeing adequate analysis conditions for low-and high-energy photoelectrons.

Equipped with a total number of 11 slits, the analyser offers the possibility to choose between best energy resolution and best intensity. According to given photoelectron energy the analyser is set up with up to 8 predefined PE to satisfy customer's requirements.

DETECTORS

- **MCP-CCD detector**
  - 40 mm diameter dual MCP detector
  - 656 energy channels available simultanously
  - 494 angular spatial channels available simultanously
  - 90 fps
- **7-MCD detector**
- **DLD detector** (on request)

ANALYSER PACKAGE

The PREVAC analyser package includes:
- EA15 hemispherical energy analyser
- RUDI-EA2 high stable and low noise electronics
- SPECTRIUM acquisition and analyser control software with Windows OS computer system.

ADDITIONAL INFORMATION

EA15 hemispherical energy analyser can be controlled directly by LabVIEW programming environment.

TECHNICAL DATA

Mounting flange	DN 100 CF
Bakeout temperature	up to 150 °C
Working distance	43 mm
Analyser mean radius	150 mm

Pass energies	
XPS	20, 50, 100, 200 eV
XPS/UPS & **XPS/UPS/ARPES**	1, 2, 5, 10, 20, 50, 100, 200 eV

Energy resolution	
XPS	< 20 meV FWHM
XPS/UPS & **XPS/UPS/ARPES**	< 3 meV FWHM

Kinetic energy range	0.5 - 3000 eV
Acquisition modes	fixed, scan
Transmission and angular lens mode:	
▪ lens acceptance angle (transmission mode)	+/- 15°
▪ lens acceptance angle (angular mode)	+/- 10°
Maximum energy window in fixed mode	12.5 % of pass energy (for MCP-CCD)
Completely designed of non-magnetic materials	

SPECTRIUM SOFTWARE

NOTE | The use of a mu-metal analysis vacuum chamber or an inner mu-metal shielded chamber in combination with PREVAC EA15 analyser is recommended in order to minimalize influence of exter-

EA15