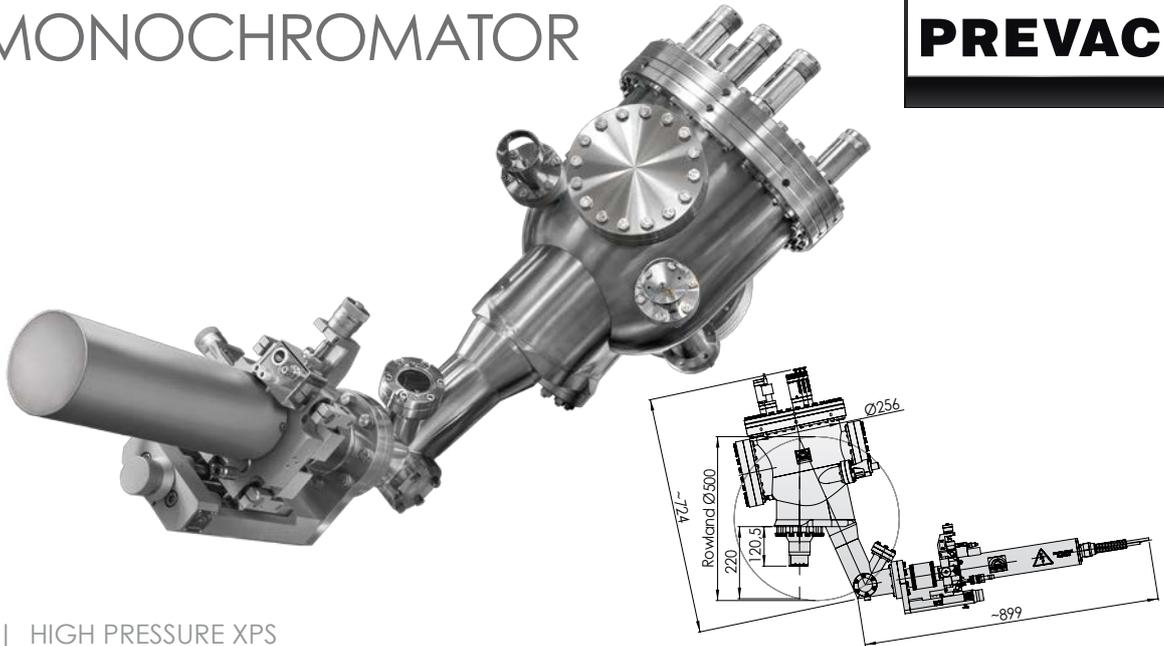


RMC50

X-RAY SOURCE with MONOCHROMATOR



XPS/ESCA | HIGH PRESSURE XPS

DESCRIPTION

The RMC50 X-ray source with monochromator is based on an ellipsoidal quartz crystal and operates according to Bragg Law of X-ray diffraction. Crystal mirror has been installed on special designed independent retraction, pitch, roll mechanism to precise adjustment working position and two halogen heaters controlled via PID regulator. The monochromator with a Rowland circle of 500mm diameter for a high X-ray energy resolution has a compact design with differential pumping ports and an optional polymer aluminized window can be installed to prevent from sputtering. X-ray source based on redesigned dual anode source has been installed on three degrees of motion high precise manipulator. Source has two operate modes – high power up to 600W, and small spot for high spatial/energy resolution measurement.

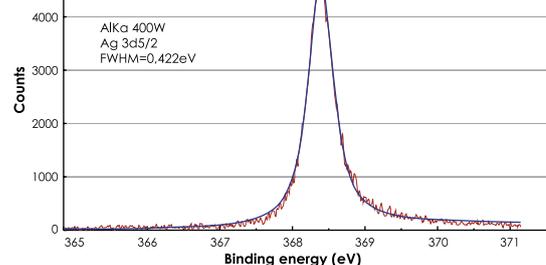
FEATURES

- Two anode types (Al/Ag) radiation to be monochromized with one single crystal
- High photon intensity giving a line width of < 0.2 eV
- Excellent energy resolution
- Satellites and ghosts line eliminated
- Reduce background
- Reduce sample distortion
- Crystal temperature stability
- Small spot working mode (option)

TECHNICAL DATA

Mounting flange	DN 100 CF
Crystal area	200 mm x 100 mm
Rowland circle diameter	500 mm
Chamber diameter	310 mm
Chamber port length	220 mm
X-ray source anodes	single anode Al (standard) dual anode Al/Ag (option)
Modes:	
normal (non-focusing)	1 mm x 4 mm (standard)
small spot (focusing)	1 mm x 2 mm (option)
Voltage	up to 15 kV
Power	Al: 200 W (focusing), 450 W (non-focusing) Ag: 300 W (focusing), 600 W (non-focusing)
Manipulator X/Y/Z range	± 6.5 mm / ± 6.5 mm / 25 mm
Differential pumping	yes
Shutter	option
Bakeout temperature	up to 150 °C
Weight (approx.)	65 kg

ELECTRONICS



Ultimate energy resolution



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RMC50

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XR40B

X-RAY SOURCE ELECTRONICS SET



DESCRIPTION

The **XR40B set** comprises 3 units for full control of the X-ray Source RS40B1: **XR40B-EC Emission Controller**, **XRHV01-PS High Voltage Power Supply** and **XRCB-02 Cooling Box**.

The XR40B-EC unit controls the emission current of the X-ray source and also the XRHV01-PS high voltage power supply, displaying both, the high voltage and emission current, on a single display. The XR40B-EC displayed emission current is the exact emission current (corrected by the water leakage current of the cooling system). This combination allows very convenient and stable control of the X-ray source. The unit stores information about total anode working time and dissipated power. Communication with cooling box is via fiber optic wire. The XR40B set has both operational and standby modes, guaranteeing the most accurate and stable emission at the start of an experiment. The XRCB02 cooling box delivers water cooling safely and efficiently to the anode and to the housing. It is fully interlocked, monitoring water temperature, pressure and flow, so that the instrument can only operate if fully safe to do so. The cooling box can handle up to two X-ray sources.

OPTIONS

- X-ray monochromator quartz crystal heating
- Software control (Version Pro, Extended or Library Module)

NOTE | If any interlock condition is not met, the source cannot be powered on. In addition to these three interlocked safety mechanisms, water leakage current is continuously monitored.

TECHNICAL DATA

Supply voltage	
XR40B-EC	100 - 240 VAC, 50/60 Hz
XRHV01-PS	85 - 260 VAC, 50/60 Hz
XRCB02	230 VAC (with water pump) 110 VAC (with water pump) 110-240VAC (without water pump)
Emission current range (I_e)	0 - 50 mA, accuracy 0.1 mA
Anode high voltage range (U_{HV})	0.5 kV - 15 kV, accuracy 0.1 kV
Cathode current (I_{cath})	output 1: 2.5 A output 2: up to 6 A in operate mode
Anode power limit	750 W
Emission current ramp	0.1 - 50 mA/sec
High voltage ramp	1 - 1000 V/sec
Interlocks XR40B-EC	master, 2 X-ray cover, high vacuum, cooling water, remote
Water cooling XRCB02	max. 6 bar, 6 l/min. prepared for de-ionized water
Communication interface	RS232/485, Ethernet
Communication protocol	MODBUS-TCP
User interface XR40B-EC	7" TFT display with touchscreen, digital encoder
Interface languages	English, German, Polish
Dimensions XR40B-EC	483 × 133 × 380 mm (W×H×D), 19" rack mountable
Dimensions XRHV01-PS	483 × 45 × 420 mm (W×H×D), 19" rack mountable
Dimensions XRCB02	483 × 133 × 295 mm (W×H×D), 19" rack mountable



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