

TECHNICAL SPECIFICATION OF SUPPLY

Servicing of PHOIBOS 150 R7 SN 335-18.07 electron analyser on the instrument Spin- and Angle-Resolved Photoelectron Emission Spectrometer (SARPES)

Description of service: "The subject of servicing work is the cleaning of a PHOIBOS 150 R7 SN 335-18.07 electron analyser and its decontamination with focus on the entrance slits, and the replacement of the CCD/VLEED detector. A condition to the cleaning of the electron analyser is opening it in a sterile environment ("clean room"). Servicing work includes an inspection of all components of the electron analyser, replacement of seals, and the testing of the electron analyser using pre-defined samples. A report from the acceptance test at the Contractor's premises and after reinstallation at the specified place of performance after reinstallation at the SARPES instrument. Servicing work also includes the replacement of the defective component: the CCD/VLEED detector".

Repair and servicing of the PHOIBOS 150 R7 SN 335-18.07 electron analyser:

- a) Inspection of the condition of the detector with focus on the inspection of cleanness at the entrance slits.
- b) The entrance slits must be cleaned / decontaminated or replaced, depending on its current condition,
- c) Servicing work includes the disassembly of the electron analyser at the address Teslova 9a, 323 Plzeň, Czech Republic, the chamber's transport box, packaging and transport to the place of cleaning, decontamination of the electron analyser in a sterile environment,
- d) Servicing work further includes the transportation back to the address Teslova 9a, 323 Plzeň, Czech Republic, in the SARPES laboratory. The reassembly and installation of the analyser chamber at the SARPES instrument, including new seals. Servicing work includes a full installation and commissioning on the instrument at the SARPES laboratory.
- e) Servicing work shall be subject to a warranty period not shorter than 3 months.

Replacement of the defective component CCD/VLEED camera for a 2D-CMOS/VLEED camera

- a) The existing CCD/VLEED camera shall be replaced with a fully compatible, high-speed 2D-CMOS camera with the technical requirements as per below:
 - high-speed CMOS camera with a framerate of no less than 150 fps
 - the dynamic range of the camera higher than 10^6 cps ($> 10^6$ cps)
 - lateral resolution of the detector up to $60 \mu\text{m}$ ($< 60 \mu\text{m}$)
 - overall noise in the detector area lower than 3 cps
 - detector resolution no less than 1285×730 pixels
- b) 2D-CMOS/VLEED camera shall connect to a DN100CF flange
- c) The supply shall include the necessary accessories to the CMOS/VLEED camera (e.g., a compatible readout controller) and cables.

The warranty period for the 2D-CMOS/VLEED camera shall be no less than 12 months.

