Description of the subject of the contract

Delivery of a motorized hexapod mount

for the PolFEL free-electron laser

The subject of the order is the delivery of a hexapod type mount with accessories. The mount is intended for mounting a specialized mirror on the THz line of the free-electron laser.

The proposed device should meet the technical requirements shown below. The device should be delivered to the recipient within 5 months from the date of signing the contract. Failure to meet the technical requirements is grounds for rejection of the bid.

1. General requirements
   1. The offered device should be covered by a minimum 12-month manufacturer's warranty
   2. The offered device should be delivered to the recipient within 5 months from the date of signing the contract.
2. Technical specification - six-axis manipulator
   1. Type of device: parallel-kinematic motion system with six degrees of freedom
   2. Range of motion along the X axis: 20mm
   3. Range of motion along the Y axis: 20mm
   4. Range of motion along the Z axis: 10mm
   5. Range of rotation around X axis: 20 angular degrees
   6. Range of rotation around Y axis: 20 angular degrees
   7. Range of rotation around the Z axis: 35 angular degrees
   8. Position determination accuracy (closed loop): 1nm, 1 μrad
   9. Compatibility with ultra-high vacuum (UHV) conditions
   10. Made of non-magnetic materials
   11. Design to allow the assembly of components weighing at least 660 g
3. Technical specification - vacuum flange
   1. Type of element: vacuum flange DN200CF made according to the attached technical drawing.
   2. Material: non-magnetic steel 1.4404 (AISI 316L)
   3. Equipped with non-magnetic electrical vacuum feedthroughs for connection of manipulator control cables
4. Technical specification - control cables
   1. The control cables for connecting manipulator with vacuum flange, and vacuum flange with sensors and control module, equipped with appropriate connectors or adapters and necessary accessories.
   2. The wires shall be made of materials with improved resistance to ionizing radiation, and on the vacuum side shall be designed for operation in ultra-high vacuum conditions.
   3. The total length of the wires on the vacuum side shall be no less than 100cm, and on the non-vacuum side shall be no less than 25m
5. Technical specification - control module
   1. Rack housing for mounting control modules to operate the manipulator equipped with power supply.
   2. Control module or modules to support all degrees of freedom of the six-axis manipulator, equipped with an Ethernet connector, mounted in a compatible housing.
   3. Power cable with EU standard plug, full technical documentation, Linux drivers.