Description of the subject of the contract

Delivery of a motorized gimbal-type manipulators

for the PolFEL free-electron laser

The subject of the order is the delivery of three pieces of motorized gimbal-type manipulators with accessories. The manipulators are intended for mounting specialized mirrors in free-electron laser electron gun.

The proposed devices should meet the technical requirements shown below. The devices 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 equipment should be covered by a minimum 12-month manufacturer's warranty
	2. The offered equipment should be delivered to the recipient within 5 months from the date of signing the contract.
2. Technical specification - gimbal type manipulator
	1. Type of device: Tip-Tilt piezoelectric manipulator.
	2. Range of rotation around the X axis: at least 180 angular degrees
	3. Range of rotation around the Y axis: at least 180 angular degrees
	4. Positioning accuracy (closed loop): at least 0.5 μrad
	5. Compatibility with ultra-high vacuum (UHV) conditions
	6. Fabrication from non-magnetic materials
	7. Design to accommodate a mirror with a diameter in the range of 0.5 - 1 inch
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 DN40CF and DN63CF vacuum ports
	4. Equipped with non-magnetic electric vacuum feedthrough for connection of manipulator control cables
4. Technical specification - control module
	1. Rack housing for mounting control modules for up to three manipulators, equipped with power supply module
	2. Control module(s) supporting three Tip-Tilt manipulators, equipped with an Ethernet connector, mounted in a compatible housing.
	3. Power cable with EU standard plug, full technical documentation, Linux drivers.
5. Technical specification - control cables.
	1. Control cables to connect ports in the DN200CF vacuum flange with the control module, equipped with the appropriate connectors, along with the necessary accessories and adapters
	2. The cables should be made of materials with increased resistance to ionizing radiation, the cables on the vacuum side should be intended to use in ultrahigh vacuum environment.
	3. The total length of cables should be no less than 60cm on the vacuum side, and no less than 25 meters on the non-vacuum side.