Technical specification of galvanometric scanning system

	The subject of the procurement	**Multi-head galvanometric scanning system for virtually limitless working area**
	Following tasks to be realized with galvanometric scanning system	- Fast beam displacement in XY coordinates by galvanometric mirrors via RTC6 control board, synchronized with XY movements of stages for virtually unlimited working area to eliminate stop-and-go motion.
		- Ready for 24/7 operation
		- Displacement of 1030, 515 and 257 nm wavelength
		- Signal analysis in the range of 1100 to 2300 nm through the galvanometric system
		- Rapid shift in Z direction synchronized with XY beam displacement via RTC6 control board
		- Compatible with ACS Motion Control
Technical features of galvanometric scanning system		
Marking speed		Must be at least 4 m/s with 160 mm F-theta lens for apertures up to 14 mm in diameter and at least 0.6 m/s for apertures above 14 mm in diameter.
Aperture opening		Must contain heads accommodating beam from 7 to 25 mm in diameter
Positioning speed		Must be at least 30 m/s with 160 mm F-theta lens for apertures up to 14 mm in diameter and at least 6 m/s for apertures above 14 mm in diameter.
Tracking error		Must be 0.6 ms or lower
Repeatability (RMS)		Must be 0.5 µrad or lower
Coating		Multi-head system must contain units compatible with 1030 + 515 nm wavelengths at average power of 100W (1030nm) and 50W (515nm) and unit compatible with 257 nm wavelength at average power of 15W. The unit accepting 1030 nm wavelength must have at least 95% reflection for wavelengths in the rage of 1100nm to 2300nm to allow IR signal analysis from the workpiece.
Gain error		Must be less than 6 mrad
Zero offset deviation		Must be less than 6 mrad
Positioning resolution		Must be better than 11 µrad
Working area		At least one unit must be compatible with ACS motion control and XL Scan technology for virtually limitless working area.
Focus shifting		Multi-head scanning system must be equipped with Z-shifting device to extend 2D scanning systems for 3D processing for 1030 nm and 515 nm units.

Accessories	All devices must be provided with necessary equipment for the operation, including power sources, all necessary data cables for PC connection, software compatible with laserDesk (Scanlab) and Direct Machining Control software. Control boards must communicate via SL2-100 transfer protocol and laser device via 15-pin D-Sub connector with 15 ns resolution. PCI control board must allow possibility to control 3-axis scan systems and processing-on-the-fly functionality for objects in motion. Multi-head scanning system must be provided with telecentric F-theta objective for 1030 nm and focal length of 100 mm, telecentric F-theta objective for 515 nm and focal length of 48 mm, F-theta objective for 257 nm and focal length of 163 mm. All objectives must be provided with necessary mounting kits, cover glass and correction files.
Software	Must be provided with professional software exploiting PCI control board for laser marking and material processing. Must be ready for XL Scan upgrade (or alternative solution) Scanner and software must be compatible with varioScan. Must be compatible with Windows 11 and provided with English help files.
Manuals for usage	Must be provided in English