SPECIFICATION SHEET

SUPPLY, INSTALLATION AND COMMISSIONING OF A “TUNABLE, TRANSPORTABLE NARROW LINEWIDTH DIODE LASERS SYSTEM” FOR ICFO, THROUGH AN OPEN PROCEDURE NOT SUBJECT TO HARMONIZED REGULATION

FILE NUMBER: 2025.SU.004

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CLAUSE 1. Object of the contract

The purpose of this contract is the supply, installation and commissioning of a "TUNABLE, TRANSPORTABLE NARROW LINEWIDTH DIODE LASERS SYSTEM" for ICFO's laboratory.

The types of items supplied are linked to the CPV (Common Public Procurement Vocabulary), **38000000-5** Laboratory, optical and precision equipment (except glasses).

CLAUSE 2. Needs to satisfy

We are building a transportable quantum repeater node at ICFO. The system will be a combination of a solid-state quantum memory and of an entanglement source. The system should be rack integrated and easily transportable to perform experiments outside of the laboratory. The current call for tender is for the laser system required for the rack-integrated quantum node, including the laser to address the quantum memory and the pump laser for the entanglement source.

CLAUSE 3. Technical requirements

3.1. The system must fulfil the following specifications (in case it doesn't, the offer will be automatically excluded from the tender):

- Design wavelengths: 606 nm and 435.8 nm.
- Coarse tuning range: at least 604-608 nm and 434 -437 nm.
- Output power: >= 1000 mW in the 605-607 nm range; 150 mW in the 434-437 nm range.
- Short term linewidth: < 20 kHz at 5 µs for 606 nm and < 30 kHz for 435.8 nm wavelengths
- Long term Frequency stability < 200 MHz/K for 606 nm and <100 MHz/K for 435.8 nm wavelengths.
- Mode hop-free tuning: > 15 GHz for both wavelengths.

3.2. Additional mandatory requirements (in case the offer does not fulfil these requirements, it will be automatically excluded from the tender):

- The full system should be integrated in a rack and easily transportable.
- Automatic alignment and optimization of output power.
- All control electronics included, including all necessary current controllers, temperature controllers and locking electronics (including automatic relock) with digital interface.
- Possibility of active frequency stabilization to an external reference via a high-bandwidth Pound-Drever-Hall lock (regulator bandwidth > 50 MHz), including laser linewidth reduction down to sub-kHz level.
- Faster master laser current modulation board DC-60 MHz electrical bandwidth with protection circuit.
- In case of frequency-doubling: probe beam output of fundamental laser beam for frequency stabilization.
- Fiber coupling of output light
- Optical isolation (60 dB).

CLAUSE 4. Operation

- Each laser system should be dye-free, and operate in an all-in-one fashion, with only one laser head.

CLAUSE 5. Transportation, installation, start-up

- The proposal will include transportation to ICFO's facilities including insurance and all export/import and customs duties. **DAP incoterm will apply.**
- The system will be placed in the selected location by ICFO. Contract winner will cover all costs, organization and coordination of system placement, including any required specialized equipment or vehicle, and any required component disassembly and reassembly for system unloading and transportation inside the building to the target lab location.

CLAUSE 6. Warranty and Follow-on Support

- **1-year Full Warranty** on all parts and components of the system irrespective of the manufacturer. The warranty will include the replacement of any faulty or damaged part(s) during normal use of the system, no matter the manufacturer of the component(s). It will cover any cost related with the disassembly, transportation, reparation and re-assembly of the damaged component(s), including all travelling and living costs of the required service engineer(s). An on-site repair, or a justified alternative to reduce the system down time to the minimum, will always be the first service option. A team of properly qualified and skilled service engineers will have to be available.
- **Additional years of warranty will be evaluated positively as stated in the Annex núm. 2.**

CLAUSE 7. CE MARKING

- CE MARKING is required.

CLAUSE 8. Delivery and Installation Time

The system must be delivered and installed at ICFO within a maximum period of **34 weeks**.

Delivery time is defined as the time elapsed since the PO until the system delivery at ICFO facilities. It includes the manufacture of the system, the transportation, the installation and the acceptance test at ICFO's premises.

CLAUSE 9. Target price

- The target price for the system is 182.000,00 € (VAT excluded).
- Payment terms:
    - Payment upon order - 30% total price
    - Payment upon shipping - 70% total price

CLAUSE 10. Funding

El presente contrato podrá ser cofinanciado con los proyectos QIA Phase 1 and Q-Infinity 2023

Castelldefels, on the date of its digital signature

Prof. Dr. Hugues de Riedmatten
GL Quantum Photonics with Solids and Atoms