

SPECIFICATION SHEET

Supply, installation and commissioning of a *Climatic Test Chamber* for the ICFO, financed by FEDER Catalunya 2021 - 2027

FILE NUMBER: ICFO-2026-064

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CLAUSE 1. Object of the contract

The object of this contract is the supply, installation and commissioning of a **Climatic Test Chamber** for the ICFO, financed by FEDER Catalunya 2021-2027.

The items to be supplied are classified under the following CPV (Common Public Procurement Vocabulary): - 38000000-5 Laboratory, optical and precision equipment (except glasses).

CLAUSE 2. Needs to satisfy

PhotonChip is a platform project that will help bring photonic technologies, in particular integrated photonics and photonic chips, from scientific feasibility to prototype stage to be applied in, for instance, communications as 6G transceivers, sensors, quantum computing and technology platforms.

Once operational, PhotonChip will cover the whole photonic chip value chain (design, packaging, testing) and train new experts thanks to dedicated programs.

As part of the Institute of Photonic Sciences (ICFO), PhotonChip will use advanced technologies as quantum technologies for cybersecurity, virtual and augmented reality, artificial intelligence, and machine learning.

In the development of the project, ICFO needs to acquire a **Climatic Test Chamber** to perform temperature, humidity and environmental stress testing. As part of the ICFO's Packaging and Testing line, these capabilities are essential for assessing the robustness and long-term reliability of devices and technologies under realistic operating conditions.

The Climatic Test Chamber shall provide a controlled environment capable of executing a full range of environmental stress tests, including temperature and humidity control.

CLAUSE 3. Technical requirements

Minimum mandatory equipment characteristics

The proposed Climatic Test Chamber shall meet, at minimum, the following requirements:

3.1. Programmable thermal, humidity and combined temperature-humidity profiling for environmental stress testing.

3.2. Temperature performance

- a. Operating temperature range: -60 °C to +125 °C.
- b. Temperature stability: ± 0.3 °C or better.
- c. Temperature uniformity within the working volume: ± 2.5 °C or better up to 100°C
- d. Heating rate: minimum **2.5 °C/min**.
- e. Cooling rate: minimum 1.7 °C/min.
- f. Temperature transition time between the minimum and maximum operating temperatures (-60°C to +125 °C): 80 minutes or less.

3.3. Humidity Performance

- a. Relative humidity control range: **35 %RH** to 95 %RH

- b. Relative humidity fluctuation: ± 3 %RH or better.

3.4. System design and construction

- a. Minimum internal chamber volume: 63 L.
- b. External dimensions of the chamber shall not exceed 55 x 95 x 75 cm (width x length x height)
- c. Weight compatible table top machines (<150 Kg)
- d. Minimum 2 cable feedthroughs (one per side) suitable for routing cables while maintaining chamber environmental integrity.

3.5. User Interface, communications and data management

- a. Integrated touchscreen controller for local operation, programming and monitoring.
- b. Ethernet and USB connection for interface with external PC
- c. Temperature and Humidity Recording Terminal.
- d. Electrical Current Control Terminal on Sample.

3.6. Utilities

- a. Continuous water supply connection for the humidity generation system, including pressure valve.

3.7. The system must include the software required to manage all required functionalities described above, including process control, as well as monitoring and data logging.

3.8. The software shall be installed on the system, and shall be supplied with a permanent (non-expiring) license.

CLAUSE 4. Power distributions and safety

The system shall comply with the following requirements:

- 4.1. Electrical Operation: 230V $\pm 10\%$, 50 Hz, in compliance with UNE-EN 61010-1 (Spanish transposition of IEC 61010-1) or equivalent international/harmonised standard providing an equivalent level of electrical safety.
- 4.2. CE-certification.
- 4.3. Safety interlocks

CLAUSE 5. Technical documentation, system layout and services

The tenderer shall include in its technical proposal a documentation package, containing the following information:

Technical documentation:

- 5.1. Datasheets, technical brochures, or equivalent official manufacturer documentation describing the proposed equipment, demonstrating compliance with each of the minimum mandatory technical

requirements set out in Clause 3 of this Technical Specification Sheet. Failure to provide sufficient documentation to verify compliance with any minimum mandatory requirement may result in the exclusion of the tender.

- *Automatic evaluation criteria:* The tenderer shall only be required to provide supporting documentation for those automatically evaluable criteria set out in Annex 2 of the Administrative Clauses that ICFO expressly identifies as requiring documentary substantiation, and only in respect of the specific improvements that the tenderer chooses to offer. No documentation shall be required for criteria or options that the tenderer does not offer. Documentation not submitted within the tender deadline for a criterion that the tenderer has chosen to offer cannot be supplemented at a later stage, and the corresponding criterion will be scored as not offered.

5.2. Comprehensive system user manual, including both hardware and software descriptions, routine servicing and troubleshooting.

System Layout and Services Documentation.

5.3. System layout, including overall footprint and height, weight, drawings and description of the different system components.

5.4. Installation and start-up requirements, including required utilities, service connections, and any applicable environmental specification.

CLAUSE 6. Transportation, installation, start-up

6.1. Transport and delivery

- a. The contract includes the supply, transportation, installation and commissioning of the system at ICFO's facilities, as well as all components and consumables required for initial start-up, and any works or services necessary for its correct and full operation.
- b. The contractor shall deliver the system to ICFO's facilities. Accordingly, the contractor shall bear all costs and risks associated with transport, export and import licences, customs clearance and duties, import taxes, and any other charges arising until the system is made available at ICFO's premises. The contractor shall take out and maintain adequate transport insurance covering the full replacement value of the system until the moment of formal reception by ICFO.
- c. Any other customs or miscellaneous expenses, unexpected and not covered in the tender, which may arise until the equipment arrives at ICFO, must initially be borne by the Supplier and will be reimbursed by ICFO upon submission of supporting documentation proving the actual incurrence of such expenses.

6.2. Installation and placement

- a. The system shall be placed at the location designated by ICFO. The contractor shall cover all costs, organisation and coordination related to placement, including the provision of any specialised equipment or vehicles, and any necessary disassembly and reassembly of

components required for building access or internal transportation, strictly following the route and access conditions specified by ICFO.

Note: The designated location has level, step-free access. Delivery shall be performed using a vehicle equipped with a loading ramp or liftgate, together with appropriate wheeled handling equipment. Any deviation from the agreed access route requires prior written authorisation from ICFO.

6.3. Packaging management

- a. The contractor shall be responsible for the removal and proper disposal of all packaging materials upon delivery and unpacking of the system, in compliance with Ley 7/2022, de 8 de abril, de residuos y suelos contaminados para una economía circular, and any applicable waste management regulations. Where the contractor determines that original packaging must be retained during the warranty period for potential return or re-shipment purposes, it shall notify ICFO in writing at the time of delivery. In such cases, the contractor shall store the packaging at its own cost and risk, unless ICFO agrees in writing to provide on-site storage space.

6.4. Site Acceptance Test (SAT)

- a. Site Acceptance Test (SAT) will be required as part of the delivery and acceptance process of the equipment.
- b. It shall include, at minimum:
 - Machine parameters verification, such as min/ max temperature reached, humidity max/min levels, cool down rate, etc. demonstrating compliance with the specification.
- c. Successful completion of the SAT shall trigger the formal act of reception (Acta de Recepción) pursuant to Article 210 LCSP. ICFO shall issue the Acta de Recepción within one (1) month of SAT completion.

6.5. Protocol in the event of SAT failure and remediation deadlines

- a. Should the equipment fail any of the tests or verifications established in the SAT, the following protocol shall apply:
 - Formal notification of failure (Day 0): ICFO shall notify the contractor in writing and through a verifiable channel of the deficient results obtained, specifying in detail the parameters that did not meet the required values and attaching the corresponding measurement reports.
 - Corrective Action Plan (deadline: 5 working days from notification): the contractor shall submit to ICFO a written corrective Action Plan, identifying the root cause of the non-compliance, the proposed corrective measures, and an implementation schedule not exceeding 30 calendar days from the date of failure notification.
 - Re-execution of the SAT (deadline: maximum 30 calendar days from notification): once the corrective measures have been implemented, the contractor shall repeat the SAT in the presence of ICFO technical staff, within the aforementioned deadline. All costs associated with this repetition shall be borne entirely by the contractor.

CLAUSE 7. Warranty and Follow-on Support

7.1. 1-year Full Warranty covering all parts and components of the system irrespective of the original manufacturer of each component. The warranty period shall begin to run from the date of the formal acceptance record (Acta de Recepció) referred to in Clause 6. The warranty shall cover, at a minimum and at no additional cost to ICFO:

- a. Replacement or repair of any part or component that fails or is found defective during normal operation, regardless of the component's manufacturer.
- b. All costs of diagnosis, disassembly, repair or replacement, reassembly, and recommissioning, including consumables required for the repair.
- c. Travel, accommodation and subsistence costs of all service engineers required for on-site intervention.
- d. Shipping, insurance and handling costs for any component transported between ICFO and the contractor's facilities.

7.2. The supplier shall guarantee the availability of spare parts and specialized technical support for a minimum of 10 years from the delivery of the system. The supplier must provide a response from a qualified technical specialist within a maximum of five (5) business days from the request.

7.3. An estimation of the cost of a warranty extension or available support contract options after warranty period will be included in the proposal.

CLAUSE 8. Training

8.1. The contractor shall provide a comprehensive training programme (minimum 1 day) for ICFO personnel as an integral part of the contract, at no additional cost to ICFO.

8.2. The training shall ensure proper and safe operation of the system and shall cover basic and advanced functionalities, including process development, programming and automation features.

8.3. The training program shall also provide an overview of basic maintenance procedures, covering routine preventive tasks and essential troubleshooting guidelines.

CLAUSE 9. Delivery and Installation Time

9.1. The maximum execution period of the contract shall be **SIX (6) MONTHS**, counted from the day following the date of its formalisation.

9.2. This period includes all the necessary phases for the full performance of the contract described in Clause 6, from manufacturing to the formal acceptance of the equipment at ICFO's facilities.

CLAUSE 10. Tender budget

10.1. The maximum tender budget (Presupuesto Base de Licitación) for the supply, installation and commissioning of the system is **30.000,00 €** (VAT excluded).

10.2. Payment terms: full payment will be made in a single instalment, once the final reception certificate (Acta de Recepción) covering supply, installation and commissioning is issued, within thirty (30) days following said record.

Castelldefels, on the date of its digital signature

Prof. Dr. Valerio Pruneri

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