



## Request for Quotation

### **REPETITION RATE LOCKABLE FEMTOSECOND LASER SYSTEM WITH DUAL 1030 NM AND 800 NM OUTPUT TP24\_001**

This procurement is to be carried out in accordance with Article 21 of The Extreme Light Infrastructure ERIC Procurement Rules (hereinafter referred to as the “*Rules*”).

(hereinafter the “*Request*”, “*Procurement*” or “*Procurement Procedure*”)

#### **Organisation:**

**The Extreme Light Infrastructure ERIC**  
with its registered office at  
Za Radnicí 835, 252 41 Dolní Břežany, Czech Republic  
identification No.: 109 74 938  
(hereinafter the “*Organisation*”)

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# 1. Basic data on the Organisation and the Procurement Procedure

## 1.1. Basic data on the Organisation

Organisation	The Extreme Light Infrastructure ERIC
Registered Office:	Za Radnicí 835, 252 41 Dolní Břežany, Czech Republic
Identification No.:	109 74 938
Person authorised to act on behalf of the Organisation:	Roman Hvězda, ELI Beamlines Facility Director
Contact person:	David Pokorný tel. +420266051208 e-mail: david.pokorny@eli-beams.eu

## 1.2. Procurement Procedure

This Procurement Procedure is carried out solely under the Rules available at <https://eli-laser.eu/procurement/rules/>.

# 2. Subject-matter of the Procurement

## 2.1. Specification of the subject-matter of the Procurement

The subject-matter of this Procurement is the delivery of the system that is described in detail in **Annex No. 2 Technical Specification** and further specified in **Annex No. 1 Purchase Contract**.

The information and data listed in this Request and its Annexes define the minimum technical and other mandatory requirements of the Organisation. Suppliers are obliged to respect these requirements in their Quotation.

## 2.2. Technical specification

Technical specification for the subject-matter of this Procurement is given in **Annex No. 2 Technical Specification**.

The technical parameters stated in **Annex No. 2 Technical Specification** are defined as maximal/minimal requirements, i.e. suppliers are entitled to offer more advantageous products/solution.

If the technical specification is set by a direct or indirect reference to particular economic operators or products, or patents for inventions, utility models, industrial designs, trademarks or designations of origin, suppliers may offer another equivalent solution. The Organisation reserves the right to ask for the explanation and/or evidence that the proposed solution satisfies in an equivalent manner the requirements defined by the Organisation.

## 2.3. Business conditions

Business conditions for the performance of this Procurement are specified in **Annex No. 1 Purchase Contract**.

The signed draft of the Purchase Contract does not have to be inserted in the Quotation.

By submitting a Quotation, the supplier confirms his consent with the business conditions according to **Annex No. 1 Purchase Contract**.

Suppliers particularly shall not refer in their Quotations to their business conditions and terms. If a supplier includes his own business terms and conditions in the Quotation, such terms and conditions shall be irrelevant and the supplier will be requested to conclude the Purchase Contract as is attached to this Request.

#### **2.4. Social, ecological and innovative aspects**

The Organisation will award this Procurement in accordance with the principles of socially and environmentally responsible procurement. Socially and environmentally responsible procurement also takes into account the related impacts, especially in the areas of employment, social and labour rights and the environment.

### **3. Requirements for processing the bid price**

Suppliers are required to state **the bid price in EUR excluding VAT** in the **Cover Note** which is the **Annex No. 3** to this Request.

VAT shall be paid in accordance with the applicable legal regulations.

The bid price is the maximum price that cannot be exceeded and shall include all costs incurred by the supplier in connection with the performance hereof.

The bid price must also include costs not explicitly specified but about which the supplier knew or should and could have known considering his professional knowledge, exercising all professional care.

### **4. Evaluation**

#### **4.1. Evaluation criteria**

Quotations shall be evaluated on the basis of best-value-for-money.

The Organisation evaluates the **bid price in EUR excluding VAT**. The bid price shall be given in the structure and under the conditions defined in Article 3. hereof.

The Organisation shall evaluate the best-value-for-money solely on the basis of the lowest bid price. The winning Quotation will be the Quotation with the lowest bid price.

Suppliers shall not be authorised to make the Quotation subject to any conditions. Any such conditions or provision of several different values in the Quotation parts that are subject to the evaluation shall constitute a reason to exclude the supplier from the Procurement Procedure.

#### **4.2. Priority of evaluation**

Similarly to Article 27(8) of the Rules, the Organisation shall assess compliance of the Quotation with this Request upon finalisation of the evaluation and shall carry out the assessment in relation to the Quotation of the supplier recommended for award only.

### **5. Quotation processing conditions and requirements**

The Organisation accepts Quotations in electronic form only, on the following e-mail address: [tenders@eli-laser.eu](mailto:tenders@eli-laser.eu)

**Quotations shall be submitted no later than 11.3. 2023 at 14:00 PM.**

Subject-matter of the e-mail with the Quotation shall be marked 'DO NOT OPEN' and the title of the Procurement "*REPETITION RATE LOCKABLE FEMTOSECOND LASER SYSTEM WITH DUAL 1030 NM AND 800 NM OUTPUT TP24\_001*".

If the subject-matter of the e-mail is properly marked, the Organisation shall not open such e-mail before the end of the period during which the Quotations can be submitted. The Quotation must be prepared in **English**.

The documents constituting the Quotation may be provided in the form of scanned images.

If two or more suppliers submit a Quotation jointly (joint Quotation), they shall indicate in the Quotation the person who is authorised to represent these suppliers when communicating with the Organisation during the Procurement Procedure.

The supplier shall submit a Quotation containing the following documents and sections, the following structure is only recommended:

a) **Cover Note**

The Cover Note shall include the following details: Procurement title, basic identification details of the Organisation and the supplier (including persons empowered to be involved in further proceedings and stating an enterprise categorisation in accordance with the Recommendation 2003/361/EC), contact e-mail address of the supplier (for electronic communication with the Organisation during the Procurement Procedure), the bid price, date and signature of the person authorised to act on behalf of the supplier.

The supplier may use **Annex No. 3** hereto.

b) **Description of the technical parameters of the offered product / solution** that will show that it meets the technical specification set out in **Annex No. 2** hereto (data sheets of the product, technical lists, etc.).

c) **Affidavit regarding international sanctions**

Suppliers shall provide a solemn declaration (affidavit) that awarding the contract to them does not represent any violation of international sanctions according to Czech Act No. 69/2006 Coll., on Implementation of International Sanctions, as amended.

Detailed information is provided in Article 6.3. hereof. Suppliers may use **Annex No. 4** hereto.

## **6. Other conditions**

### **6.1. Rights of the Organisation**

The Organisation may request an explanation or supplement to any Quotation.

Supplementing the Quotation may not change the bid price or other data relevant to the evaluation.

If the Quotation contains data or information inconsistent with the Request (as it was submitted, or even after explanation/supplementation), the Organisation shall exclude it.

The Organisation may verify the credibility of the data, documents, samples or models provided by the supplier and may also acquire them itself.

### **6.2. Explanation of the Request**

The Organisation shall provide explanation of the Request based on the supplier's written request or on its own will. Requests for explanation must be submitted at least 3 working days prior to the deadline for Quotation submission to the e-mail address david.pokorny@eli-beams.eu. The Organisation shall provide explanations without undue delay. The Organisation is not obliged to provide explanations for requests that were not submitted within the deadline stipulated in the second sentence of this paragraph.

### **6.3. International sanctions**

The Organisation shall not award the contract if such award would represent any violation of international sanctions according to Czech Act No 69/2006 Coll., on Implementation of International

Sanctions, as amended. The Act implements mainly international sanctions adopted based on the membership of the Czech Republic in the United Nations organization and in the European Union (especially the EU Regulation No. 833/2014 concerning restrictive measures in view of Russia's actions destabilising the situation in Ukraine, as amended).

Suppliers shall provide a solemn declaration (affidavit) that awarding the Purchase Contract to them does not represent any violation of international sanctions according to Czech Act No 69/2006 Coll., on Implementation of International Sanctions, as amended.

Should the provided declaration prove untrue or should the declaration not be provided by the supplier, the Organisation will exclude the supplier recommended for award based on the evaluation from the Procurement Procedure at any time until the conclusion of the Purchase Contract and may exclude any other supplier from the Procurement Procedure for that reason.

Should the international sanctions apply on a subcontractor of a supplier, the Organization may require the supplier to replace the subcontractor so identified. Should the supplier recommended for award based on the evaluation not replace the subcontractor, the Organisation shall exclude the supplier from the Procurement Procedure at any time until the conclusion of the Purchase Contract.

## **7. Final provisions**

The Organisation does not allow variants of Quotation.

The Organisation shall not reimburse the suppliers for the costs incurred in connection with their participation in the Procurement Procedure, even if the Procurement Procedure has been cancelled by the Organisation.

### **List of Annexes:**

- 1. Purchase Contract**
- 2. Technical Specification**
- 3. Cover Note**
- 4. Affidavit regarding international sanctions**

On behalf of the Organisation:

.....  
Roman Hyězda, ELI Beamlines Facility Director

**Purchase Contract**



## PURCHASE CONTRACT

This purchase contract ("Contract") was concluded pursuant to section 2079 *et seq.* of the act no. 89/2012 Coll., Civil Code ("Civil Code"), on the day, month and year stated below by and between:

- (1) **The Extreme Light Infrastructure ERIC,**  
with registered seat at: Za Radnicí 835, Dolní Břežany, 252 41,  
registration no.: 10974938

("Buyer"); and

- (2) [REDACTED],  
with its registered office at: [REDACTED],  
registration no.: [REDACTED],  
represented by: [REDACTED]

("Seller").

(The Buyer and the Seller are hereinafter jointly referred to as "**Parties**" and individually as "**Party**".)

### WHEREAS

- (A) The Buyer is an owner and operator of a research infrastructure ELI Beamlines. For the successful operation of the infrastructure it is necessary to purchase the Object of Purchase (as defined below).
- (B) The Seller wishes to provide the Object of Purchase to the Buyer for consideration.
- (C) The Seller's bid for the public procurement entitled "*REPETITION RATE LOCKABLE FEMTOSECOND LASER SYSTEM WITH DUAL 1030 NM AND 800 NM OUTPUT TP24\_001*", whose purpose was to procure the Object of Purchase ("**Public Procurement**"), was selected by the Buyer as the most suitable.

### IT WAS AGREED AS FOLLOWS:

#### 1. BASIC PROVISIONS

- 1.1 Under this Contract the Seller shall hand over to the Buyer a repetition rate lockable femtosecond laser system with dual 1030 nm and 800 nm output (including all accessories) that is described in Annex 1 (*Technical Specification*) to this Contract in the quality described therein ("**Object of Purchase**") and shall transfer to the Buyer ownership right to the Object of Purchase, and the Buyer shall take over the Object of Purchase and shall



pay the Seller the Purchase Price (as defined below), all under the terms and conditions stipulated in this Contract.

1.2 Under this Contract the Seller shall also:

- a) transport the Object of Purchase to the place of delivery;
- b) to elaborate and hand over to the Buyer operational and maintenance manuals of the Object of Purchase in the extent specified in Annex 1 (Technical Specification) or other documents which are necessary for the proper takeover and use of the Object of Purchase in Czech or English language;
- c) carry out other activities specified in Annex 1 (Technical Specification); and
- d) cooperate with the Buyer during the performance of this Contract  
**(“Related Activities”)**.

## 2. THE PLACE OF DELIVERY

The place of delivery is at the address: ELI beamlines, Průmyslová 836, 252 41 Dolní Břežany, Czech Republic.

## 3. THE TIME OF DELIVERY

3.1 The Seller shall deliver the Object of Purchase within 9 months from the effectiveness of this Contract.

3.2 The Buyer shall extend the time of delivery at the request of the Seller, if the Seller is not able to fulfill this Contract due to circumstances that the Seller had no control over and such circumstances were hard to anticipate and are hard to overcome (e.g. covid-19 measures and/or impacts). In order for the Buyer to extend the time of delivery, the Seller must prove to the Buyer that such circumstances happened. The Buyer shall extend the time of delivery by the period corresponding to the time that is necessary for obstacles to disappear or to be overcome by the Seller. However, this does not affect the right of the Buyer to withdraw from this Contract in accordance with the Article 10.

## 4. THE OWNERSHIP RIGHT

The ownership right to the Object of Purchase shall be transferred to the Buyer upon the signature of the acceptance protocol by both Parties.

## 5. PRICE AND PAYMENT TERMS

5.1 The purchase price for the Object of Purchase is [REDACTED],- EUR (“Purchase Price”) without value added tax (“VAT”). VAT will be paid in accordance with the applicable legal regulations.



- 5.2 The Purchase Price cannot be exceeded and includes all costs and expenses of the Seller related to the performance of this Contract. The Purchase Price includes, among others, all expenses related to the handover, installation and acceptance of the Object of Purchase and execution of Related Activities, costs of copyright, insurance, customs, warranty service and any other costs and expenses connected with the performance of this Contract.
- 5.3 The Purchase Price for the Object of Purchase shall be paid on the basis of a tax document – invoice, to the account of the Seller designated in the invoice. The Purchase Price shall be paid after the signature of the acceptance protocol. The copy of the acceptance protocol must be attached to the invoice.
- 5.4 The Buyer shall realize payments on the basis of duly issued invoices within 30 days from their receipt (maturity period). The invoice shall be considered to be paid for on the day when the invoiced amount is deducted from the Buyer's account on behalf of the Seller's account. To avoid any doubts Parties declare that if on the invoice is stated a maturity period that is shorter than 30 days, then such maturity period may be disregarded by the Buyer.
- 5.5 The invoice issued by the Seller as a tax document must contain all information required by the applicable laws of the Czech Republic. Invoices issued by the Seller in accordance with this Contract shall contain in particular following information:
- a) name and registered office of the Buyer,
  - b) tax identification number of the Buyer,
  - c) name and registered office of the Seller,
  - d) tax identification number of the Seller,
  - e) registration number of the tax document,
  - f) scope of the performance (including the reference to this Contract),
  - g) the date of the issue of the tax document,
  - h) the date of the fulfilment of the Contract,
  - i) Purchase Price,
  - j) registration number of this Contract, which the Buyer shall communicate to the Seller based on Seller's request prior to the issuance of the invoice.
- 5.6 In case that the invoice shall not contain the above mentioned information, the Buyer is entitled to return it to the Seller during its maturity period and this shall not be considered as a default. The new maturity period shall begin from the receipt of the supplemented or corrected invoice to the Buyer.



Purchase. In such a case the Seller and the Buyer shall list the deficiencies in the acceptance protocol, including the manner and the date of their removal (remedy). If the Parties do not reach agreement in the acceptance protocol regarding the date of the removal, the Seller shall remove the deficiencies within ten (10) working days.

## 8. WARRANTY

8.1 The Seller shall provide a warranty of quality of the Object of Purchase for the period of 1 year. If on the warranty list or other document is the warranty period of longer duration, then this longer warranty period shall have priority over the period stated in this Contract.

8.2 The warranty period shall begin on the day of the signature of the acceptance protocol by both Parties. If the acceptance protocol lists any deficiencies, the warranty period shall be extended by the period, during which the Seller remedied the last deficiency.

8.3 The Seller shall remove defects and deficiencies that occur during the warranty period free of charge and in the terms stipulated in this Contract.

8.4 If the Buyer ascertains a defect or deficiency of the Object of Purchase during the warranty period, the Buyer shall notify such defect or deficiency without undue delay to the Seller. Defects and deficiencies may be notified on the last day of warranty period, at the latest.

8.5 The Buyer notifies defects and deficiencies in writing via e-mail. The Seller shall accept notifications of defects on the following e-mail address: [REDACTED]. The Seller shall confirm within 24 hours from the receipt of the notification.

8.6 In the notification the Buyer shall describe the defect or deficiency and the manner of removal of the defect. The Buyer has the right to:

- a) ask for the removal of the defect by the delivery of new Object of Purchase or its individual parts, or
- b) ask for the removal of the defect by repair, or
- c) ask for the reasonable reduction of the Purchase Price.

The choice among the above mentioned rights belongs to the Seller.

8.7 The Seller shall remove the defect within 4 weeks from its notification, unless Parties agree otherwise.

8.8 Parties shall execute a protocol on the removal of the defect, which shall contain the description of the defect and the confirmation that the defect was removed. The warranty period shall be extended by a period of time that elapses between the notification of the defect until its removal.

8.9 In case that the Seller does not remove the defect within stipulated time or if the Seller refuses to remove the defect, then the Buyer is entitled to remove the defect at his own



costs and the Seller shall reimburse these costs within 10 days after the Buyer's request to do so.

- 8.10 The warranty does not cover defects caused by unprofessional manipulation or by the failure to follow Seller's instructions for the operation and maintenance of the Object of Purchase.

## 9. **PENALTIES**

- 9.1 If the Seller is in delay with the removal of the defect, the Seller shall pay to the Buyer a contractual penalty in the amount of 0,05% of the Purchase Price for every (even commenced) day of delay.
- 9.2 The Seller shall pay contractual penalties within fifteen (15) days from the day, on which the Buyer enumerated its claims. The payment of contractual penalties shall not affect the right of the Buyer to damages even to the extent to which such damages exceeds the contractual penalty.
- 9.3 The total amount that the Seller shall be obliged to pay on contractual penalties shall not exceed 10% of the Purchase Price.
- 9.4 The Buyer is entitled to unilaterally set off claims arising from the contractual penalties against the claim of the Seller for the payment of the Purchase Price.

## 10. **RIGHT OF WITHDRAWAL**

- 10.1 The Buyer is entitled to withdraw from this Contract without any penalties, if any of the following circumstances occur:
- a) the Seller shall be in delay with the fulfilment of this Contract and such delay lasts more than 2 months;
  - b) the Object of Purchase shall not fulfil the requirements stipulated in this Contract, in particular in Annex 1 (*Technical Specification*) and such defects or deficiencies cannot be remedied;
  - c) the insolvency proceeding is initiated against the Seller; or
  - d) the Buyer ascertains that the Seller provided in its bid for the Public Procurement information or documents that do not correspond to the reality and that had or could have had impact on the result of the tendering procedure, which preceded the conclusion of this Contract.



## 11. SOCIAL, ECOLOGICAL AND INNOVATIVE ASPECTS

- 11.1 The Buyer aims to conclude contracts with the suppliers that take into account and implement the principles of social responsibility, ecological sustainability and innovation. Therefore, the Seller shall ensure that
- 11.1.1 this Contract shall be fulfilled only by persons that are employed in accordance with the applicable legal regulations (no illegal or child workers);
  - 11.1.2 while performing this Contract, all applicable health and safety regulations and rules at work place are observed;
  - 11.1.3 all persons performing this Contract are employed under fair and non-discriminatory working conditions;
  - 11.1.4 if presented with different manners of fulfilling this Contract, the Seller shall select the solution/process that is in accordance with the principles governing nature conservation and nature protection, ecological sustainability and ecological waste management; and
  - 11.1.5 if presented with different manners of fulfilling this Contract, the Seller shall select the solution/process that is the most innovative.

## 12. REPRESENTATIVE OF THE BUYER

- 12.1 The Buyer authorizes the employee Roman Antipenkov, email: roman.antipenkov@eli-beams.eu to act on behalf of the Buyer in connection with this Contract. The employee is authorized to execute any and all protocols and other documents foreseen by this Contract, notify defects and deficiencies, and communicate with the Seller. The employee is not authorized to change or supplement this Contract.


## 13. FINAL PROVISIONS

- 13.1 This Contract is governed by the laws of the Czech Republic, especially by the Civil Code.
- 13.2 The terms and conditions of this Contract represent the whole agreement between the Parties regarding the subject matter of this Contract and any prior or oral agreements have been either consolidated into this Contract or are disregarded by the Parties.
- 13.3 All disputes arising out of this Contract or out of legal relations connected with this Contract shall be preferable settled by a mutual negotiation. In case that the dispute is not settled within sixty (60) days, such dispute shall be decided by courts of the Czech Republic in the procedure initiated by one of the Parties.
- 13.4 The Seller is not entitled to set off any of its claims or his debtor's claims against the Buyer's claims. The Seller is not entitled to transfer its claims against Buyer that arose on



**ANNEX 1**  
**TECHNICAL SPECIFICATION**


**Technical Specification**

<b>Document classification</b>	<i>PU - Public</i>	<b>ID / Revision</b>	<i>40011214/C</i>
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<b>Document type</b>	<i>Specification (SP)</i>		
<i>[RSD product category B]</i>			
<b>REPETITION RATE LOCKABLE FEMTOSECOND LASER SYSTEM WITH DUAL 1030 NM AND 800 NM OUTPUT</b>			
<b><i>TP24_001</i></b>			
			
<b>Keywords</b>			
N/A			
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<i>Reviewed By</i>			
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*NOTICE (RSD product category B)*

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## 1. Introduction

### 1.1. Purpose

This Requirements Specification Document (RSD) lists the technical requirements and constraints on one dual output 1030 nm and 800 nm laser system for ELI Beamlines L1-Allegra system. This can lead to the identification of product interfaces with the ELI Beamlines science-based technology and ELI Beamlines facility. This RSD also acts as the parent document for the technical requirements that need to be addressed in lower-level design description documents.

### 1.2. Subject

This RSD contains all of the technical requirements: functional, performance and design, delivery, safety and quality requirements for the following product (tender code: TP24\_001): **“Repetition rate lockable femtosecond laser system with dual 1030 nm and 800 nm output”** (further referred to as **“Laser system”**).

The Laser System is considered to be a part of L1 Allegra Laser technology and will be placed in the L1 laser hall. This Laser System is product **Category B** according to the ELI Beamlines RSD categories.

The **Category B** is an Off-the-shelf Product with customization (e.g., product performance) that does not require any design modifications of the product. All verification activities performed by a supplier shall be executed in accordance with the supplier’s plan of outgoing inspection and tests. The verification of all specified parameters listed in this RSD shall be undertaken by the supplier before delivery to the ELI Beamlines facility and the Laser System shall be finished with a verification protocol (FAT protocol) and a declaration of conformity, to reflect their proper characteristics. Furthermore, the Laser System will be subject to testing and verification upon delivery and installation at the ELI Beamlines facility by qualified ELI Beamlines personnel. All non-conformances (if any) must be addressed by the supplier in a timely manner.

### 1.3. Terms, Definitions and Abbreviations

For the purpose of this document, the following abbreviated terms are applied:

Abbreviation	Meaning
CA	Contracting Authority (ELI ERIC)
ELI	Extreme Light Infrastructure
FAT	Factory Acceptance Test
FWHM	Full Width at Half Maximum
RF	Radio Frequency
RMS	Root Mean Square
RSD	Requirements Specification Document
SAT	Site Acceptance Test
SDK	Software Development Kit

## 2. Functional, Performance and Design requirements

REQ-400101/A

The **Laser system** shall meet all the general requirements defined in Tables 1, 2, 3 and 4 below.

REQ-400102/A

The **Laser system** shall be provided with a Remote Control Interface for basic device control and monitoring from the CA's software, without requiring any particular software to be installed. The physical interface shall be either RS-232, RS-485, Ethernet. The detailed documentation describing the interface and the commands shall be provided.

REQ-400103/A

The **Laser system** shall be equipped with an interlock input for an external dry contact (closed to enable) which disables laser emission via a reliable mechanism.

REQ-400104/A

Locking electronics are not requested from the Supplier, but fine control of the repetition rate of the main oscillator via an externally driven piezo within a limited range, and a method of coarse tuning the repetition rate over a larger range shall be provided (see more details in Table 3).

*NOTE 1: The CA will lock the oscillator of the **Laser System** to 80 MHz repetition rate using their own RF reference and locking electronics.*

*NOTE 2: The fine and coarse repetition rate control parameters (e.g., sensitivity, range, capacitance, resonance) shall be documented by the Supplier in the product user manual (see REQ-400111/A).*

REQ-400105/A

The repetition rate coarse adjustment shall be controlled by adjustment of an absolute set point (e.g., temperature, actuator position, piezo voltage).

REQ-400107/A

During the coarse repetition rate tuning, the **Laser system** shall continue to simultaneously satisfy all performance requirements defined in Tables 1 and 2.

REQ-400116/A

If the Laser System requires a water cooling system, it shall be provided with water-to-water type chiller unit. The chiller unit will be placed ~10 meters away from the Laser System and at approximately the same height. The chiller unit shall be 19" rack mountable.

REQ-400117/A

If the Laser System control unit comes in a separate enclosure, the umbilical between the control unit and the main laser unit shall be at least 5 meters long and disconnectable at least on one end. The control unit shall be 19" rack mountable.

**Table 1: The parameters of the laser system 1030 nm output**

Parameter	Value
Pulse energy	> 4 nJ in the whole bandwidth, >200 pJ in the 1029-1031 nm spectral range.
Repetition rate	80.0 MHz $\pm$ 0.5 kHz achievable at 20 deg C, with possibility to manually adjust for 80 MHz $\pm$ 0.5 kHz repetition rate for any ambient temperature within the range of 17 – 23 deg C. Absolute frequency measurements shall be made in reference to a GPS-locked 10 MHz source during the SAT.
Pulse duration	< 30 ps (stretched) and compressible to < 300 fs
Bandwidth (FWHM)	< 30 nm
Output power stability	< 0.5 % RMS for one hour (3 s max averaging)
Pulse energy stability	< 3 % difference of any pulse energy from the average pulse energy in a random 500 ns interval (minimum of 5 consecutive measurements).
Output power drift over 24 hours	< 3 % difference of average output power (3 s max averaging) from the mean value of the oscillator output power over 24 hours within an ambient temperature variation range of +/- 0.5 deg C (Larger temperature variation is allowed for the test).
Output specifications	1030 nm output: Option 1: free space, collimated, linear polarization, max diameter 2 mm at $1/e^2$ peak intensity level. Option 2: FC/APC port or PM980 single mode PM fiber (3 m minimum length), FC/APC connectors keyed to slow axis, linear polarization.
Output isolation for 1030 nm (built-in)	> 25 dB
Timing jitter of oscillator	The oscillator shall be lockable to external reference frequency >950 MHz signal with < 150 fs RMS integrated timing jitter (in-loop measurement, measured from 10 Hz to 500 kHz) under stable ambient conditions, using built-in fast piezo.
Beam pointing	Max. deviation of 50 $\mu$ rad for the temperature range of 20-22 deg C, humidity 45-55 %, within 8 hours of operation

**Table 2:** The parameters of the laser system **800 nm output**

Parameter	Value
Pulse energy	> 20 nJ in the bandwidth from 750 nm to 920 nm
Repetition rate	Fixed repetition rate within the range of 100 kHz - 80 MHz (multiple of 100 kHz), optically synchronized with the 1030 nm output
Pulse duration	compressible to < 15 fs, maximum allowed stretched pulse duration at the output: 400 fs.
Bandwidth (FWHM)	Minimum bandwidth 750-920 nm at 1% peak level, 780-900 nm at 10% peak level.
Output power stability	< 1 % RMS for one hour (3 s max averaging)
Pulse energy stability	< 3 % difference of any pulse energy from the average pulse energy in a random 500 ns interval (minimum of 5 consecutive measurements).
Output power drift over 24 hours	< 3 % difference of average output power (3 s max averaging) from the mean value of the oscillator output power over 24 hours within an ambient temperature variation range of +/- 0.5 deg C (Larger temperature variation is allowed for the test).
Output specifications	800 nm output: free space, collimated, max 3 mm diameter at $1/e^2$ peak intensity level. Beam shape: Gaussian, $M^2 < 2$ .
Beam pointing	Max. deviation of 50 $\mu$ rad for the temperature range of 20-22 deg C, humidity 45-55 %, within 8 hours of operation

**Table 3:** The parameters of piezo control of repetition rate and coarse adjustment range.

Parameter	Value
Fast piezo voltage range	0 - 150 V
Fast piezo assembly resonance frequency	> 2 kHz
Coarse tuning range	+/- 0.5 kHz from 80 MHz
Coarse tuning rate	> 1 kHz per minute

**Table 4:** General requirements

Parameter	Value
Electrical power	Single-phase 230 V/50 Hz; IEC (C13) socket or SCHUKO plug
Electrical controller/driver	19-inch standard rack mount dimensions
Control interface	RS-232, RS-485, Ethernet

### 3. Delivery requirements

REQ-400108/A

The transportation of the **Laser System** to the final destination at the ELI Beamlines premises shall be conducted by the Supplier.

REQ-400109/A

The **Laser System** and its components shall be delivered in a protective package to prevent damage and contamination. The Laser System and its components shall be cleaned and packaged in compliance with the cleanliness of class 7 according to ČSN EN ISO 14644 (or equivalent, e.g. EN ISO 14644).

*NOTE: If the Supplier cannot fulfill class 7 cleanliness requirements, the Supplier and the CA shall agree on the cleaning methods to be used to achieve the corresponding level of cleanliness.*

### 4. Safety Requirements

REQ-400110/A

The Supplier shall supply a Declaration of Conformity (DoC) for each product type. The DoC shall declare compliance in part with:

- Act No. 118/2016 Coll., as amended (2014/35/EU);
- Act No. 117/2016 Coll., as amended (2014/30/EU);
- the other relevant EU/EC regulation and ISO standards.

Compliance with these obligations shall be demonstrated by the (EU/EC) DoC and the CE/CCZ marking.

### 5. Quality Requirements

#### 5.1. General Quality Requirements

REQ-400111/A

The Supplier shall provide the Product User Manual (Instructions for use) as part of the delivered Laser system. The Product User Manual shall include the instructions and descriptions regarding the following:

- transport, handling and storage;
- installation and cleaning;
- user manual for the software, SDKs and/or communication protocol;
- safe operation and maintenance procedures.

*NOTE: The content of the Product User Manual shall be agreed upon with the CA.*

REQ-400112/A

The Supplier shall provide a declaration of conformity with technical requirements defined by the product RSD and ensure completeness of the Laser System.

## REQ-400113/A

The Supplier shall provide verification protocols (FAT protocols) outlining the results of tests executed for the Laser System before its delivery at ELI Beamlines premises to confirm specification conformity (see REQ-400112/A). Verification of parameters shall be performed according to Tables 1 and 2 (see chapter 2), excluding “timing jitter of oscillator” parameter which will be verified by CA after the delivery.

*NOTE: The content of the verification protocols shall be agreed upon with the CA.*

## REQ-400114/A

The Supplier shall establish and maintain a nonconformity control system compatible with ČSN EN ISO 9001 (or equivalent, e.g. EN ISO 9001).

## 5.2. Acceptance

Acceptance will be carried out by the CA upon delivery, installation and final verification of the Laser System at the ELI Beamlines facility. The basis for acceptance will be verification protocols (FAT protocols) summarizing the overall verification results together with relevant documentation supporting the verification (see REQ-400110/A, REQ-400111/A, REQ-400112/A and REQ-400113/A).

The Acceptance phase shall demonstrate the following:

- The final product has been successfully verified by the Supplier and this process has been documented in an appropriate way through test protocols (see REQ-400113/A);
- All detected nonconformities have been solved following REQ-400114/A;
- The final product is free of fabrication errors and is ready for the intended operational use.

In case of the successful acceptance phase, the CA will provide the Supplier signed acceptance protocol. In case of the unsuccessful acceptance stage, the CA will provide the Supplier Nonconformity Report (NCR) and the process in accordance with REQ-035196/A will be applied.

## REQ-400115/A

The acceptance shall be complete when the Laser System complies with all specifications verified by the Supplier’s outgoing check (see REQ-400112/A and REQ-400113/A) and after successful passing on-site acceptance tests performed by the CA.

*NOTE 1: Supplier’s outgoing check shall be carried out before delivery.*

*NOTE 2: The final verification will be carried out by the CA after the Laser System installation at ELI Beamlines premises within 8 weeks upon the issuing of the Handover/Takeover protocol.*

## Annex 3

### Cover Note

**Procurement title:**

*“REPETITION RATE LOCKABLE FEMTOSECOND LASER SYSTEM WITH DUAL 1030 NM AND 800 NM OUTPUT TP24\_001”*

<b>Organisation</b>	<b>The Extreme Light Infrastructure ERIC</b>
Registered Office:	Za Radnici 835, 252 41 Dolní Břežany, Czech Republic
Identification No.:	109 74 938
Tax Identification No.:	CZ10974938
Person authorised to act on behalf of the Organisation:	Roman Hvězda, ELI Beamlines Facility Director

**Supplier's Business Name incl. Legal Form:** [to be filled in by supplier]  
**Registered Office:** [to be filled in by supplier]  
**Identification No.:** [to be filled in by supplier]  
**Tax Id. No.:** [to be filled in by supplier]  
**Small / Medium-sized enterprise (in accordance with the Recommendation 2003/361/EC):** [YES/NO - to be filled in by supplier]  
**Person authorized to represent the supplier:** [to be filled in by supplier]  
**Contact person:** [to be filled in by supplier]  
**Contact address:** [to be filled in by supplier]  
**Tel:** [to be filled in by supplier]  
**E-mail of the Contact person:** [to be filled in by supplier]  
**E-mail for the notification of defects:** [to be filled in by supplier]

**Bid price:** EUR [to be filled in by supplier]

The supplier hereby fully and without reservations accepts the business and technical conditions stated in the draft of the Purchase Contract and in the Technical Specification which were the integral parts of the Request for Quotation.

In [to be filled in by supplier] On [to be filled in by supplier]

.....  
[Signature - to be filled in by supplier]  
[Business Name - Authorized Representative to be filled in by supplier]

**Annex 4**

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**Affidavit regarding international sanctions**

**Procurement title:**

*“REPETITION RATE LOCKABLE FEMTOSECOND LASER SYSTEM WITH DUAL 1030 NM AND 800 NM OUTPUT TP24\_001”*

**Supplier’s Business Name incl. Legal Form:** [to be filled in by supplier]  
**Registered Office:** [to be filled in by supplier]  
**Identification No.:** [to be filled in by supplier]  
**Authorized Representative:** [to be filled in by supplier]

The supplier hereby solemnly declares that the award of Purchase Contract to him does not represent any violation of international sanctions according to Czech Act No. 69/2006 Coll., on Implementation of International Sanctions, as amended.

In [to be filled in by supplier] On [to be filled in by supplier]

.....  
[Signature - to be filled in by supplier]  
[Business Name - Authorized Representative to be filled in by supplier]