

Justification of Purposefulness of Public Contract

Public Contract name: Lasers for Alignment

Type of Public Contract and Procedure: above-the-threshold public contract for supplies in the open procedure.

Number in the Official Information System of Public Contracts: 499424

Contracting Authority: Fyzikální ústav AV ČR, v. v. i.
Seat: Na Slovance 2, 182 21 Praha 8
Identification No.: 68378271
Tax Identification No.: CZ68378271
Person authorized to represent the Contracting Authority: prof. Jan Řídký, DrSc., Director

Statement of Reasons for Purposefulness of Public Contract Pursuant to Sec. 2 of the Decree n. 232/2012 Coll.	
The data pursuant to Sec. 1, where a modification occurred in contrast to the facts pursuant to Sec. 1 of the regulation (modifications in contrast to Justification of Purposefulness of Public Contract for Purposes of Contracting Authority Prior Information Notice):	
a) description of the needs to be accomplished through the performance of a public contract	No changes
b) description of the subject matter of a public contract	No changes
c) a mutual relationship between the subject matter of a public contract and the needs of the contracting entity	No changes
d) foreseen deadline of the performance of a public contract	No changes

The description of the risks attaching to the performance of a public contract which were taken into account by the contracting entity in setting forth tender conditions. It particularly involves the risks of failure to execute a public contract, delay with the performance of a public contract, reduced quality of the performance, expending additional financial costs	Not realizing the Public Contract might jeopardize a fulfilment of aims and conditions emerging from a realization of the projects, whose proper realization the Contracting Authority has pledged to.
The contracting authority may delimit the variants of the accomplishment of the need and justification of the selected variant of the public contract <i>(optional)</i>	The Contracting Authority is not aware of any other way of accomplishing its needs.
The contracting authority may delimit to what extent the public contract will influence the performance of envisaged target. <i>(optional)</i>	A successful realization of the public contract achieves a fulfilment of the Contracting Authority needs and a reaching of the envisaged target.
Supplementary information justifying the purposefulness of a public contract <i>(optional)</i>	

Statement of Reasons for Proportionality of the Requirements on Technical Qualifications Prerequisites for the Performance of a Public Supply Contract Pursuant to Sec. 3(1) of the Decree n. 232/2012 Coll. <i>(justification of proportionality of the requirements on technical qualifications prerequisites in relation to the subject matter of the public contract and to the risks attaching to the performance of the public contract)</i>	
Justification of proportionality of the requirements for the list of principal deliveries. <i>(The contracting entity shall fill it in compulsorily, where the required financial value of all principal deliveries amounts in the aggregate to at least three times the estimated value of the public contract.)</i>	Not relevant

Justification of proportionality of the requirement for submission of the list of technicians or technical bodies. (<i>The contracting authority shall fill it in compulsorily, where it requires the submission of the list of more than three technicians or technical bodies</i>).	Not relevant
Justification of proportionality of the requirement for production of the description of technical facilities and measures used by the economic operator for ensuring quality control, and description of facilities or equipment of the economic operator designed for research.	Not relevant
Justification of proportionality of the requirement on the check carried out on the production capacities by the contracting authority or on its behalf by another person and, if necessary, a check on measures relating to assurance of quality and research.	Not relevant.
Justification of proportionality of the requirement for submission of samples, descriptions or photographs of the products to be supplied.	Not relevant
Justification of proportionality of the requirement for production of evidence attesting conformity of a required product issued by the relevant authority.	Not relevant

Statement of Reasons for Delimitation of Commercial Terms and Conditions for Public Supply Contracts and Public Service Contracts Pursuant to Sec. 4 of the Decree n. 232/2012 Coll.

Justification of delimitation of the commercial term setting forth maturity of invoices longer than 30 days	Not relevant
Justification of delimitation of the commercial term setting forth the requirement for third party liability insurance for the damage brought about by the economic operator to third persons amounting to twice the estimated value of the public contract.	Not relevant
Justification of delimitation of the commercial term setting forth the requirement for a bank guarantee higher than 5 % of the public contract value.	Not relevant
Justification of delimitation of the commercial term setting forth the requirement for a guarantee period longer than 24 months	Not relevant
Justification of delimitation of the commercial term setting forth a contractual penalty in the event of default of the economic operator higher than 0.2 % of the estimated value of the public contract for each day of delay.	Not relevant
Justification of delimitation of the commercial term setting forth a contractual penalty in the event of default of the contracting entity higher than 0.05 % of the due	Not relevant
Justification of delimitation of other commercial terms and conditions pursuant to Sec. 5(2). The contracting authority shall justify delimitation of commercial terms and conditions of a public supply contract and public service contract in proportion to its needs and to the risks attaching to the performance of the public contract.	Not relevant

Justification for Technical Conditions specification of Public Contract Pursuant to Sec. 5 of the Decree

Technical Condition	Justification for Technical Condition
Laser Item 1 This system will be used in ELI-Beamlines as alignment laser for L1 laser to E1 experimental hall. The laser of item 1 provides two identical and synchronized outputs. General system requirements The following part of requirements specification is for the laser system itself: The two laser outputs shall be synchronized. Delay between the two laser outputs shall be up to 1 ms. The two laser outputs shall be synchronized with better accuracy than 1% of the delay. Output of System Level Each of the outputs should be as follows: The Central Wavelength shall be 805 ± 10 nm. The average power shall be not less than 5 W. Energy per Pulse shall be not less than 5 mJ. Energy stability (RMS) for 24 hours shall be less than 1%. Pulse duration (FWHM) shall be less than 50 fs. Note: A Gaussian pulse shape (0.7 deconvolution factor) is used to determine pulse width (FWHM) from	This system will be used in ELI-Beamlines as alignment laser for L1 laser to E1 experimental hall. This laser should provide two identical and synchronized output laser beams at the same wavelength as the L1 laser. This is mainly for three reasons: 1. alignment purposes of the different beam paths (two main beam paths and two auxiliary beam paths) along nine different vacuum vessels and for delivering the beams to three different experimental target chambers (HHG, PXS and SRS) 2. alignment of the beam diagnostics as close as possible to the experimental chambers 3. close-loop operation of the two deformable mirrors located on the two main beams. All technical conditions are set in order to receive a device that is capable of fulfilling the needs of experimental research that will take place at ELI-Beamlines facilities.

autocorrelation signal.

The pulse Bandwidth (FWHM) shall be not less than 20 nm.

The repetition rate shall be 1 KHz.

The laser system of item 1 polarization shall be Linear.

Spatial mode shall be TEM00

Warm-up time shall be not more than 30 mn.

M2 shall be less than 1.5

Beam diameter at $1/e^2$ shall be less than 15 mm.

Pointing stability (RMS) shall be less than 2 μ rad.

Note: RMS value measured under stable environmental conditions (laser technology areas and experimental areas: 20 ± 0.5 °C) after warm-up time and over one hour.

Synchronization of out signal shall be TTL or shall be more than +2 V over 50 Ω load.

Pre-pulse contrast shall be more than 1000:1

Note: Defined as the ratio between peak intensity of output pulse to peak intensity of any pre-pulse that occurs >1 ns before the output pulse

Post-pulse contrast shall be more than 100:1

Note: Defined as the ratio between peak intensity of output pulse to peak intensity of any post-pulse that occurs >1 ns after the output pulse.

Design Requirements

General Design Requirements

Breadboard thickness shall be 305 mm (12 inches).

System shall be covered. The laser system shall have stainless steel optical table with internal tuned vibration damper and rigid support structure with passive vibration isolation. The laser system shall be fitted on an optical table. System shall be compliant for use in a clean room ISO 7. Dimensions Dimensions (w x l x h) shall not exceed 1500 x 2700 x 700 mm. Electrical requirements Total average power consumption including system cooling equipment shall be less than 10kW. Power cord length between local power supplier and experimental hall power rack shall be not less than 10 m (min). System shall be with European standard plug-in/socket for 230 V AC. Control system requirements Interface of ELI control system shall be with access to interlocks and system statuses. Transportation and Installation requirements The optical table shall be included in the delivery of the system.	
Laser Item 2 This system will be used in ELI-Beamlines as alignment laser for L4 laser to E3, E4 and E5 experimental halls. Output of System Level Central Wavelength shall be 1064 nm.	This system will be used in ELI-Beamlines as alignment laser for L4 laser to E3, E4 and E5 experimental halls. This laser should provide one output laser beam at the same wavelength as the L4 laser. This is mainly for three reasons: 1. this laser will be used for alignment purposes of the different beam paths (two to

Average power shall be not less than 1 W. Pulse duration (FWHM) shall be not more than 50 ns. The laser system of item 2 polarization shall be Linear. Spatial mode shall be TEM00 M2 shall be less than 1.5. Beam diameter at 1/e2 shall be less than 15 mm. Warm-up time shall be not more than 30 mn. Pointing stability (RMS) shall be less than 2 μrad. Note: RMS value measured under stable environmental conditions after warm-up time and over one hour. Synchronization of out signal shall be TTL or shall be more than +2 V over 50 Ω load. Design Requirements General Design Requirements System shall be covered System shall be compliant for use in a clean room ISO 7 Dimensions Dimensions (w x l x h) shall not exceed either 1000 x 1000 x 500 mm Electrical requirements Total average power consumption including system cooling equipment shall be less than 1kW. Power cord length between local power supplier and experimental hall power rack shall be not less than 10 m (min). System shall be with European standard plug-in/socket for 230 V AC.	E3 , one to E4 and two to E5) 2. this laser will be used for alignment of the beam diagnostics as close as possible to the experimental chambers 3. this laser will be used for close-loop operation of the deformable mirrors located on each beam close to the focusing optical component. All technical conditions are set in order to receive a device that is capable of fulfilling the needs of experimental research that will take place at ELI-Beamlines facilities.
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Control system requirements

Interface of ELI control system shall be with access to interlocks and system statuses.

Justification for Basic and Partial Evaluation Criteria setting pursuant to Sec. 6 of the Decree

Evaluation Criterion	Justification for Evaluation Criterion
Bids shall be evaluated pursuant to Section 78 paragraph 1 b) of the Act based on the total bid price.	Contracting Authority decided to evaluate the bids based on the submitted price. Seeking technical solution can be thoroughly specified in the technical specification annex of the Tender Documentation allowing only qualified bidders to pass the assessment stage of the Public Contract awarding. Remaining bids thus can be evaluated based on their submitted price since all of them will comply with technical criteria.

Justification of Public Contract estimated Value pursuant to Sec. 7 of the Decree

Value	Justification for total Value
800.000,00 - EUR excluding VAT	This tender is not a significant public contract pursuant to Sec. 16a of the Act. The Tender is above-the-threshold pursuant to Art. 12 of the Act. Contracting authority based the value on the market research.