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Award

IR Laser System for generating tuneable wavelength of light between 1.5 – 3.5 µm

National Physical Laboratory

F15: Voluntary ex ante transparency notice
Notice identifier: 2024/S 000-029369
Procurement identifier (OCID): ocds-h6vhtk-049aaa
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Section I: Contracting authority/entity

I.1) Name and addresses

National Physical Laboratory

Hampton Road

Teddington

TW11 0LW

Email

nina.heath@npl.co.uk

Country

United Kingdom

Region code

UK - United Kingdom

Internet address(es)

Main address

www.npl.co.uk

I.4) Type of the contracting authority

Body governed by public law

I.5) Main activity

Other activity

Research

Section II: Object

II.1) Scope of the procurement

II.1.1) Title

IR Laser System for generating tuneable wavelength of light between 1.5 – 3.5 µm

II.1.2) Main CPV code

- 38000000 - Laboratory, optical and precision equipments (excl. glasses)

II.1.3) Type of contract

Supplies

II.1.4) Short description

The DIAL team are looking to procure a new and upgraded IR laser system to replace their aging unit.

The pump laser will be a seeded flashlamp pumped laser with pulse duration of 9 ns and line width 0.003 cm-1, it will be capable of simultaneously emit the fundamental and second harmonic at a repetition rate of 20 Hz. The pulse energy in the IR should be around 700 mJ and 400 mJ in the green.

The system needs to be capable of outputting a total wavelength range between 1.5 – 3.5 µm. Obtaining the tuneability utilising a dye laser and a two-stage non-linear mixing component. The system should be designed in such a way that the wavelength can be switched between two wavelengths at a frequency of greater than (or equal to) 5 Hz. Any wavelength drift must be minimal and easily corrected by a competent operator.

The system should be fully integrated, and installed subject to a site acceptance test at NPL’s facility. NPL expect the system to be maintained by the supplier on an ad hoc basis and serviced by the supplier annually.

II.1.6) Information about lots

This contract is divided into lots: No

II.1.7) Total value of the procurement (excluding VAT)

Value excluding VAT: £321,995

II.2) Description

II.2.3) Place of performance

NUTS codes

- UK - United Kingdom

II.2.4) Description of the procurement

The DIAL team are looking to procure a new and upgraded IR laser system to replace their aging unit.

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The system should be fully integrated, and installed subject to a site acceptance test at NPL’s facility. NPL expect the system to be maintained by the supplier on an ad hoc basis and serviced by the supplier annually.

Requirement is for one unit inclusive of Installation and after sale support.

II.2.5) Award criteria

Cost criterion - Name: Technical / Weighting: 80

Cost criterion - Name: Commercial / Weighting: 20

II.2.11) Information about options

Options: No

II.2.13) Information about European Union Funds

The procurement is related to a project and/or programme financed by European Union funds: No

Section IV. Procedure

IV.1) Description

IV.1.1) Type of procedure

Award of a contract without prior publication of a call for competition in the cases listed below

- The procurement falls outside the scope of application of the regulations

Explanation:

A robust tuneable mid-IR laser for this application (DIAL) are very challenging to produce. The number of non-linear stages result in lots of loss of energy. Starting from 700 mJ of 1064 nm and 400 mJ of 532 nm, resulting in just 14 mJ of useable 3.4 µm energy for measuring methane. Coupled with the requirement of the narrow linewidth and short nanosecond pulse excludes many mid-IR laser sources.

The DIAL requires selectivity between two closely separated wavelengths, one which is tuned the target species absorption peak and another which is not absorbed by the species. The DIAL technique requires oscillation between the on and off resonant wavelength and is achieved in the current IR laser system on alternate shots. Furthermore, the DIAL requires the ability to measure multiple hydrocarbon species including CH4, C2H6, CO2, and VOCs, so a platform which allows tuning over a broad wavelength region is required. Both features are achieved using a dye laser for the broad tuneability with a piezo actuator in the resonator for the on and off selectivity.

Photonic Solutions are the only supplier for a complete system which meets the specification therefore competition is absent in the market.

IV.1.8) Information about the Government Procurement Agreement (GPA)

The procurement is covered by the Government Procurement Agreement: Yes

Section V. Award of contract/concession

A contract/lot is awarded: Yes

V.2) Award of contract/concession

V.2.1) Date of conclusion of the contract

12 September 2024

V.2.2) Information about tenders

The contract has been awarded to a group of economic operators: No

V.2.3) Name and address of the contractor/concessionaire

Photonic Solutions Ltd

Unit 2.2 Quantum Court, Heriot Watt University Research Park

Currie

EH14 4AP

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor/concessionaire is an SME

No

V.2.4) Information on value of contract/lot/concession (excluding VAT)

Total value of the contract/lot/concession: £321,995

V.2.5) Information about subcontracting

The contract/lot/concession is likely to be subcontracted

Section VI. Complementary information

VI.4) Procedures for review

VI.4.1) Review body

NPL Management Ltd

Hampton Road

Teddington

TW11 0LW

Country

United Kingdom

VI.4.2) Body responsible for mediation procedures

NPL Management Ltd

Hampton Road

Teddington

TW11 0LW

Country

United Kingdom