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Tender

## **Procurement of Dilution Refrigerator for Measurements of Superconducting Qubits**

National Physical Laboratory

F02: Contract notice

Notice identifier: 2024/S 000-024507

Procurement identifier (OCID): ocids-h6vhtk-0487a1

Published 5 August 2024, 1:49pm

### **Section I: Contracting authority**

#### **I.1) Name and addresses**

National Physical Laboratory

Hampton Road

Teddington

TW11 0LW

#### **Contact**

Nina Heath

#### **Email**

[nina.heath@npl.co.uk](mailto:nina.heath@npl.co.uk)

#### **Country**

United Kingdom

#### **Region code**

UK - United Kingdom

**Internet address(es)**

Main address

[www.npl.co.uk](http://www.npl.co.uk)

**I.3) Communication**

The procurement documents are available for unrestricted and full direct access, free of charge, at

<https://lupc.bravosolution.co.uk/>

Additional information can be obtained from the above-mentioned address

Tenders or requests to participate must be submitted electronically via

<https://lupc.bravosolution.co.uk/>

Tenders or requests to participate must be submitted to the above-mentioned address

**I.4) Type of the contracting authority**

Body governed by public law

**I.5) Main activity**

Other activity

Research

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## **Section II: Object**

### **II.1) Scope of the procurement**

#### **II.1.1) Title**

Procurement of Dilution Refrigerator for Measurements of Superconducting Qubits

#### **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 National Physical Laboratory [NPL] requirement is for a dilution refrigerator to be used for measurements of superconducting quantum processors and other quantum circuits. The purpose is to complement our existing measurement systems and add measurement capability, in particular for long measurements of e.g., superconducting qubits.

The dilution refrigerator needs to be suitable for RF measurements of complex quantum circuits, meaning it must be equipped with a large number of coaxial input lines, as well as low-loss output lines suitable for use with low-noise amplifiers, isolators and parametric amplifiers. In many cases the system will be used to measure two or more independent samples (in different shielded enclosures) concurrently, and it is important that the system design can accommodate this.

The asset must enable the measurement of high-coherence superconducting qubits/processors based on the following:

- 1) Base temperature of less than or equal to 10 mK.
- 2) Mixing chamber plate diameter of at least 275mm
- 3) Low vibrations
- 4) Plenty of free space available for custom equipment.
- 5) We do NOT require a magnet.

### **II.1.5) Estimated total value**

Value excluding VAT: £175,000

### **II.1.6) Information about lots**

This contract is divided into lots: No

## **II.2) Description**

### **II.2.3) Place of performance**

NUTS codes

- UK - United Kingdom

Main site or place of performance

Teddington, UK

### **II.2.4) Description of the procurement**

Procurement of Dilution Refrigerator for Measurements of Superconducting Qubits

Qty: 1

Condition: New

### **II.2.5) Award criteria**

Price is not the only award criterion and all criteria are stated only in the procurement documents

### **II.2.6) Estimated value**

Value excluding VAT: £575,000

### **II.2.7) Duration of the contract, framework agreement or dynamic purchasing system**

End date

31 July 2025

This contract is subject to renewal

No

**II.2.10) Information about variants**

Variants will be accepted: Yes

**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

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## **Section IV. Procedure**

### **IV.1) Description**

#### **IV.1.1) Type of procedure**

Open procedure

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

The procurement is covered by the Government Procurement Agreement: Yes

### **IV.2) Administrative information**

#### **IV.2.2) Time limit for receipt of tenders or requests to participate**

Date

5 September 2024

Local time

5:00pm

#### **IV.2.4) Languages in which tenders or requests to participate may be submitted**

English

#### **IV.2.7) Conditions for opening of tenders**

Date

6 September 2024

Local time

9:00am

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## **Section VI. Complementary information**

### **VI.1) Information about recurrence**

This is a recurrent procurement: No

### **VI.4) Procedures for review**

#### **VI.4.1) Review body**

NPL Management

Teddington

Country

United Kingdom