Contract

3023/JN - Dilution Refrigerator and Magnet System

UNIVERSITY OF SHEFFIELD

F03: Contract award notice
Notice identifier: 2022/S 000-018163
Procurement identifier (OCID): ocds-h6vhtk-031c6d
Published 4 July 2022, 1:38pm

Section I: Contracting authority

I.1) Name and addresses

UNIVERSITY OF SHEFFIELD

Western Bank

SHEFFIELD

S102TN

Contact

James Noble

Email

james.noble@sheffield.ac.uk

Country

United Kingdom

NUTS code

UKE32 - Sheffield

Internet address(es)

Main address

https://in-tendhost.co.uk/sheffield

I.4) Type of the contracting authority

Body governed by public law

I.5) Main activity

Education

Section II: Object

II.1) Scope of the procurement

II.1.1) Title

3023/JN - Dilution Refrigerator and Magnet System

Reference number

3023/JN

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 Department of Physics and Astronomy at The University of Sheffield, with funding from

the Science and Technology Facilities Council (STFC) requires a dilution refrigerator and magnet system for use in a search for hidden sector dark matter. The dilution refrigerator will be appropriate for cooling a two-component payload, consisting of (i) An electromagnetic resonator, such as a conducting-wall resonant cavity; and (ii) Ultra-low-noise readout electronics in as close proximity as possible to the resonator, allowing them to be coupled together. The space for the electromagnetic resonator should be threaded by a static magnetic field of nominal magnitude 8T, The ultra-low-noise readout electronics should be in a magnetic-field-free region, with magnetic field exclusion achieved via a combination of a field compensation coil and passive normal-conducting and superconducting shields mounted in the bore of the compensation coil. The operating base temperature of the refrigerator should be not more than 10mK at the mixing chamber plate, where the cooling power should be at least 12 microwatts at 20mK and at least 400 microwatts at 100mK. The experiment will run cold and at with the magnetic field threading the cavity for at least 6 months at a time without need to be warmed up. The refrigerator should utilize mechanical pre-cooling to a sufficiently low temperature for the dilution refrigerator to operate, so that the only liquid cryogens that are required are the helium3/helium4 mixture in the closed cycle dilution refrigerator unit and some liquid nitrogen that may be required for a cold trap in the gas handling unit. The system should incorporate its own reliable control system and software for ease of control, and this control system should also be remotely operable from the data acquisition system of the experiment, via an appropriate cable interface. A schedule of tests required to demonstrate function upon delivery of the apparatus are supplied in the technical specification.

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: £700,628

II.2) Description

II.2.3) Place of performance

NUTS codes

- UKE32 - Sheffield

II.2.4) Description of the procurement

The Department of Physics and Astronomy at The University of Sheffield, with funding from the Science and Technology Facilities Council (STFC) requires a dilution refrigerator and

magnet system for use in a search for hidden sector dark matter. The dilution refrigerator will be appropriate for cooling a two-component payload, consisting of (i) An electromagnetic resonator, such as a conducting-wall resonant cavity; and (ii) Ultra-low-noise readout electronics in as close proximity as possible to the resonator, allowing them to be coupled together. The space for the electromagnetic resonator should be threaded by a static magnetic field of nominal magnitude 8T, The ultra-low-noise readout electronics should be in a magnetic-field-free region, with magnetic field exclusion achieved via a combination of a field compensation coil and passive normal-conducting and superconducting shields mounted in the bore of the compensation coil. The operating base temperature of the refrigerator should be not more than 10mK at the mixing chamber plate, where the cooling power should be at least 12 microwatts at 20mK and at least 400 microwatts at 100mK. The experiment will run cold and at with the magnetic field threading the cavity for at least 6 months at a time without need to be warmed up. The refrigerator should utilize mechanical pre-cooling to a sufficiently low temperature for the dilution refrigerator to operate, so that the only liquid cryogens that are required are the helium3/helium4 mixture in the closed cycle dilution refrigerator unit and some liquid nitrogen that may be required for a cold trap in the gas handling unit. The system should incorporate its own reliable control system and software for ease of control, and this control system should also be remotely operable from the data acquisition system of the experiment, via an appropriate cable interface. A schedule of tests required to demonstrate function upon delivery of the apparatus are supplied in the technical specification.

II.2.5) Award criteria

Quality criterion - Name: Quality / Weighting: 85

Price - Weighting: 15

II.2.11) Information about options

Options: No

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.2.1) Previous publication concerning this procedure

Notice number: 2022/S 000-005585

Section V. Award of contract

Contract No

3023/JN

Title

Dilution Refrigerator and Magnet System

A contract/lot is awarded: Yes

V.2) Award of contract

V.2.1) Date of conclusion of the contract

28 June 2022

V.2.2) Information about tenders

Number of tenders received: 2

Number of tenders received from SMEs: 0

Number of tenders received by electronic means: 2

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

V.2.3) Name and address of the contractor

Oxford instruments nanotechnology tools Ltd T/A Oxford Instruments Nanoscience

Tubney Woods, Abingdon

Oxon

OX13 5QX

Country

United Kingdom

NUTS code

- UKJ14 - Oxfordshire

The contractor is an SME

No

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

Initial estimated total value of the contract/lot: £685,000

Total value of the contract/lot: £700,628

Section VI. Complementary information

VI.4) Procedures for review

VI.4.1) Review body

The University of Sheffield

Sheffield

S10 2TN

Email

james.noble@sheffield.ac.uk

Country

United Kingdom