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Award

C-Trap Dymo 400. Optical Tweezers-Fluorescence Microscope

THE UNIVERSITY OF BIRMINGHAM

UK5: Transparency notice - Procurement Act 2023 - [view information about notice types](#)

Notice identifier: 2025/S 000-039280

Procurement identifier (OCID): ocds-h6vhtk-055daa

Published 11 July 2025, 1:47pm

Scope

Reference

SC14161/25

Description

The University of Birmingham, within the College of Medicine and Health, is expanding its capabilities for advanced single-molecule biophysics research. This expansion includes the acquisition of a highly specialised instrument: the C-Trap® Dymo 400, manufactured by LUMICKS B.V. This instrument integrates cutting-edge optical trapping, confocal fluorescence microscopy, and laminar flow microfluidics into a single, coherent system.

The C-Trap® Dymo 400 will be installed at the University to support high-precision, real-time studies of molecular interactions, particularly in areas involving DNA-protein complexes, RNA structures, ubiquitin structures and cytoskeletal filament dynamics. It includes multi-colour confocal fluorescence (488, 561, 638 nm), dual force detection (x,y), short tether capabilities, microfluidics, and full system integration with proprietary Bluelake software, all required to maintain the scientific edge of our ongoing biophysical and molecular biology research.

Contract 1

Supplier

- Lumicks B.V.

Contract value

- £650,000 excluding VAT
- £650,000 including VAT

Above the relevant threshold

Earliest date the contract will be signed

12 July 2025

Contract dates (estimated)

- 12 July 2025 to 31 July 2025
- 20 days

Main procurement category

Goods

CPV classifications

- 33100000 - Medical equipments
- 45214630 - Scientific installations

Contract locations

- UK - United Kingdom

Participation

Particular suitability

Small and medium-sized enterprises (SME)

Other information

Conflicts assessment prepared/revised

Yes

Procedure

Procedure type

Direct award

Direct award justification

- Single supplier - technical reasons
- Extreme and unavoidable urgency

This procurement is being undertaken via a single-source route due to the unique technical capabilities of the C-Trap® Dymo 400 and the exclusive rights held by its manufacturer, LUMICKS B.V. the unique elements of this are:

- Multi-trap continuous-wave optical tweezers,
- Multi-colour confocal fluorescence microscopy, and
- Multi-channel laminar flow microfluidics.

These technologies are protected by several granted patents, including: US9952421, EP3256254B1 (optical traps), US9766180, EP3004848B1 (fluorescence imaging), S11156513B2 (optical force measurement) and EP3737756B1 (DNA supercoiling).

No other commercially available instrument can provide simultaneous, correlated force-distance-fluorescence measurements with the required resolution and sensitivity.

Key performance features exclusive to the C-Trap include:

- Force resolution < 0.1 pN and drift stability < 0.3 pN over 2 minutes
- Confocal localisation precision < 15 nm
- Real-time imaging of single molecules under physiological flow conditions
- Escape force > 1000 pN, allowing for broad biological applicability
- Integrated hardware/software for fast setup and automated experimental workflows.

Additionally, the system includes a complete service and application support package, exclusive training kits, and proprietary components that are not available from any other provider.

Supplier

Lumicks B.V.

- Companies House: 60187263

Paalbergweg 3

Amsterdam

1105AG

Netherlands

Email: m.brettpitt@lumicks.com

Small or medium-sized enterprise (SME): No

Voluntary, community or social enterprise (VCSE): No

Contract 1

Contracting authority

THE UNIVERSITY OF BIRMINGHAM

- Companies House: RC000645

- Public Procurement Organisation Number: PHCQ-3464-LVTM

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Region: UKG31 - Birmingham

Organisation type: Public authority - sub-central government