

Amendment No. 3

Issued on: December 10, 2024

to

Request for Bids Goods

(One-Envelope Bidding Process)

**Laboratory equipment for BSL-3 laboratory at the
“Torlak“ Institute of Virology, Vaccines and Sera**

***RFB No.* RS-SECRP-9120YF-G-RFB-24-1.1.2.B**
***Project:* Serbia Emergency COVID-19 Response Project**
***Purchaser:* Project Coordination Unit on behalf of the Ministry of
Health of the Republic of Serbia**
***Country:* The Republic of Serbia**
***Issued on:* 5 November 2024**

This **Amendment No. 3** to the RFB no. *RS-SECRP-9120YF-G-RFB-24-1.1.2.B*, for procurement of Laboratory equipment for BSL-3 laboratory at the “Torlak“ Institute of Virology, Vaccines and Sera has been issued on 10 December 2024, and changes the content of the following Sections of the RFB:

1. Section II – Bid Data Sheet (BDS) ITB 18.1, which reads:

The Bid shall be valid until: **February 28, 2025**

Shall now read:

The Bid shall be valid until: **March 15, 2025**

2. Section II, Bid Data Sheet (BDS), ITB 22.1 and ITB 25.1, which reads:

ITB 22.1	<p>For <u>Bid submission purposes</u> only, the Purchaser’s address is:</p> <p>Primary Health Care Center Savski venac <i>Dom zdravlja Savski venac</i></p> <p>Attention: Ms. Žana Cvetković, Procurement Specialist</p> <p>Street Address: Pasterova Street no 1</p> <p>Floor/ Room number: Floor 3rd, Serbia Emergency Covid-19 Response Project, Project Coordination Unit</p> <p>City: Belgrade</p> <p>ZIP/Postal Code: 11000</p> <p>Country: The Republic of Serbia</p> <p>Tel 1: +381 11 36 06 401 Tel 2: +381 11 36 06 402 E-mail: office_pcu@zdravlje.gov.rs</p> <p>The deadline for Bid submission is: Date: 19 December 2024 Time: 10.30 a.m. CET</p> <p>Bidders shall not have the option of submitting their Bids electronically.</p>
-----------------	---

and

ITB 25.1	<p>The Bid opening shall take place at:</p> <p>Primary Health Care Center Savski venac <i>Dom zdravlja Savski venac</i></p> <p>Street Address: Pasterova Street no 1</p>
-----------------	---

	<p>Floor/ Room number: Floor 2nd, Conference room</p> <p>City: Belgrade</p> <p>Country: The Republic of Serbia</p> <p>Date: <i>19 December 2024</i></p> <p>Time: <i>10.45 a.m. CET</i></p>
--	--

Shall now read:

ITB 22.1	<p>For <u>Bid submission purposes</u> only, the Purchaser's address is:</p> <p>Primary Health Care Center Savski venac <i>Dom zdravlja Savski venac</i></p> <p>Attention: Ms. Žana Cvetković, Procurement Specialist</p> <p>Street Address: Pasterova Street no 1</p> <p>Floor/ Room number: Floor 3rd, Serbia Emergency Covid-19 Response Project, Project Coordination Unit</p> <p>City: Belgrade</p> <p>ZIP/Postal Code: 11000</p> <p>Country: The Republic of Serbia</p> <p>Tel 1: +381 11 36 06 401 Tel 2: +381 11 36 06 402 E-mail: office_pcu@zdravlje.gov.rs</p> <p>The deadline for Bid submission is:</p> <p>Date: <i>24 December 2024</i></p> <p>Time: <i>10.30 a.m. CET</i></p> <p>Bidders shall not have the option of submitting their Bids electronically.</p>
-----------------	--

and

ITB 25.1	<p>The Bid opening shall take place at:</p> <p>Primary Health Care Center Savski venac <i>Dom zdravlja Savski venac</i></p> <p>Street Address: Pasterova Street no 1</p> <p>Floor/ Room number: Floor 2nd, Conference room</p> <p>City: Belgrade</p>
-----------------	---

	Country: The Republic of Serbia Date: <i>24 December 2024</i> Time: <i>10.45 a.m. CET</i>
--	--

3. Section VII - Schedule of Requirements, Technical specification, shall now read:

Technical Requirements described below (1-9) are mandatory for all LOTS!

1. General

These General Technical Requirements should be read in conjunction with the bidding document in particular with the Technical Specifications. General technical requirement shall apply to whole items.

Should there be any conflict or inconsistency between the terms of these requirements and the technical specifications, technical specification shall prevail.

The Supplier shall be aware that supply, delivery, installation, integration and final customization must include all needed parts and accessories required for the supplies to be presented for acceptance fully installed, operational and ready for use in accordance with technical and the manufacturers' specifications.

The accessories and components needed for the full laboratory use of the equipment must be included in the bid price.

All specifications and details listed within the bid for each item are the minimum requirements and any higher specification cannot be incompatible with primary performance. Any improvements on the specifications or additional features offered should be clearly identified in the Bidder's bid.

Manufacturers' technical literature should be submitted for each item offered and Bidders shall provide necessary documentation (catalogues, guides, brochures, manuals, booklets, etc.) with detailed technical specifications of all items being offered. **PROOF THAT THE OFFERED GOODS MEET THE REQUIREMENTS OF THE TECHNICAL SPECIFICATION MUST BE CLEARLY MARKED.**

The supply of equipment shall include training courses for laboratory users and for technical service personnel on site, in assembling, start-up, operation and basic maintenance of the supplied goods.

User-oriented documentation should be in English and Serbian. The equipment should be accompanied with the documentation which should include a user manual and a reference manual. User manuals are for day-to-day operation. Reference manuals are for technical staff for troubleshooting and development.

All activities related to the installation, training and maintenance services shall be performed by the authorized/certified representative.

All accessories, components and documentations used during delivery, installation, integration and customization, before acceptance, must therefore be anticipated and included in the bid price.

2. Supplier's Risks during installation

- a) The Supplier must provide necessary measures to prevent any damage during any/all delivery and installation stages.
- b) From the time of arrival of the equipment at the delivery address through all stages of its subsequent installation and until the Purchaser has issued its Certificate or Minutes of Acceptance, the following are the Supplier's risks:
 - The risk of personal injury, death, or loss of or damage to property which are due to negligence, breach of statutory duty, use or occupation of the site by the installation works, or for the purpose of the installation works, which is the unavoidable result of the installation works.
 - The risk of damage to the installation works and to the Purchaser's premises.
 - If damage occurs, it must be rectified in an appropriate way by the Supplier.
- c) The Supplier must keep the work site clean and safe against fire and/or other hazards during any/all delivery and installation stage(s) until formal acceptance.
- d) The Supplier will be responsible for advising of any Health & Safety risks associated with equipment provided and of suitable protective measures.

3. Equivalency of Standards and Codes

- a) The equipment offered should be manufactured in compliance with Quality Standard ISO 9001 certification for Manufacturer(s).

4. Electrical Specifications

- a) Electrical power supply shall meet the following requirements. All equipment must have internal or integrated power supplies, supply voltage (230 Vac / 50 Hz)
- b) The quality and stability of the supplied current may undergo fluctuations of $\pm 10\%$. All equipment must be suitable for direct connection to the standard power outlets in Serbia. The type of electrical outlets generally installed in Serbia is the type with 2 (two) side mounted earthing poles (Euro Plug). Electrical plugs of equipment should be compliant with the standards of use in Serbia and fit exactly. The Supplier will evaluate the supplied current, the quality of the current and the fluctuations of the current and take the necessary precautions to avoid damages to the equipment.
- c) All equipment shall meet relevant IEC standards.
- d) All equipment shall comply to IEC 61010-1:2010 – Safety requirements for electrical equipment for measurement, control and laboratory use.
- e) All equipment requiring computer software, all the software shall be provided with the equipment, already installed, and the Supplier shall provide the latest available release version of the software with the unit supplied. Software upgrades shall be provided free of charge during the warranty period.

5. Acceptance Testing & Commissioning

- a) The Purchaser will inspect the delivered good checking their quantities and their integrity.
- b) The Supplier shall supply to the Purchaser all the consumables, measurement and calibration instruments used during official commissioning operations. All the expenses necessary for the official testing and commissioning procedure shall be responsibility of the Supplier.
- c) The Purchaser shall evaluate, item by item, the consistency of the goods and the services supplied respecting the contract conditions and the technical specifications.
- d) The Supplier shall be invited by the Purchaser to assist with the measurement operations during official commissioning for provisional acceptance. At the end of the operations the Purchaser shall prepare minutes of the results and make it available to the Supplier.
- e) Each item shall be declared as compliant, not-compliant or revisable.
- f) The official testing and commissioning is declared successful when all the items are declared compliant.
- g) The Supplier shall substitute all not-compliant items with compliant ones at its own cost.
- h) An item is declared revisable only if it has minor defects or is not perfectly compliant. In these cases, only when the Supplier has substituted the item or has solved the defects, he can ask for a new official testing and commissioning.
- i) The not-compliant or revisable items shall be substituted or modified without any break of safety and Manufacturer rules, any cost for the Purchaser or any extension to the contractual deadlines. Any delay due to not-compliant or revisable items is responsibility of the Supplier, thus liquidated damages are applicable.
- j) All inspections and testing of equipment will take place on-site as part of the formal process of equipment acceptance. The Supplier must provide all tools and consumables as necessary to carry out the tests, but not normal utilities such as electric, water, etc. unless required in the specifications.
- k) The Supplier shall test, calibrate and commission the equipment as appropriate in a way that, on installation completion, they are fully operational and can be used. The Purchaser reserves the right to witness the Supplier's testing and commissioning without thereby relieving the Supplier of his obligation to provide equipment in a fully operable condition.
- l) A complete set of commissioning forms with the entire set of tests run and the results obtained will be given to the Purchaser after the final reception of the equipment.
- m) When the Purchaser will proceed with the commissioning, the successful Bidder will make available to Final beneficiary the use of all consumables, measurement and calibration instruments used during the commissioning.
- n) After all equipment has been successfully commissioned (per LOT) Purchaser will issue to the Supplier Operational Acceptance Certificate.

6. Installation

- a) Installation means delivery to site, local vertical transport, unpacking and assembly, testing, certification, calibration, initial setup of an item and all its components and other accessories so as to be a complete and viable set/cell/system.

- b) The Supplier shall clean up the site of any packaging/shipping material after installation and after requesting the Purchaser whether or not the original boxes must be left with the Purchaser.
- c) The Supplier is responsible to install the equipment “ready to start” for testing and commissioning.
- d) Any damage to Institute structures or finishing caused by the supplier personnel during the installation will be repaired by the supplier within 2 weeks using the same construction materials of the damaged areas.
- e) After all equipment (per LOT) has been successfully installed Purchaser shall issue to Supplier Installation Certificate.

7. Training to the maintenance personnel

- a) The Supplier shall train technicians made available by the final Beneficiary in the most frequent problems that could occur during equipment utilization and that are under maintenance technicians’ competencies.
- b) The Supplier shall provide the didactic material. The didactic material will be in Serbian language without any exception.
- c) The training course for maintenance technicians shall be organized to for a minimum of 1 person to a maximum of 5 persons.
- d) The location of the training course delivery for maintenance technicians shall be the place where the equipment is delivered and installed.
- e) The trainers shall be qualified experts belonging to the Manufacturer Company and/or representatives in the country/region of the Supplier and/or by qualified experts certified by the Manufacturer. The course will be held in Serbian language or translated into Serbian language by professional translator and such translation costs shall be on the Supplier account.
- f) The training course for maintenance technicians shall focus at least on the following topics:
 - presentation and contacts of the reference technicians;
 - general equipment functions, specific technical characteristics and alarm signals;
 - main electrical and functional schemes;
 - calibrations (if requested) and daily maintenance in order to assure the longest equipment life;
 - preventive maintenance and its regular recurrence;
 - corrective maintenance (to solve the most frequent problems);
 - equipment safety controls.
- g) The duration of the training course will be as per requirement provided in the technical specifications.
- h) A final test administered by the trainees shall be organized at the end of the training course in order to verify the know-how acquired. The results shall be delivered to the Purchaser before commissioning.
- i) First training should be delivered within 2 weeks upon successful Acceptance Testing & Commissioning. Second training should be delivered three months after first training.

8. Training to the equipment users

The Supplier shall train the users in the equipment maintenance and correct utilization.

- a) The training course for users shall be theoretical and practical, using the equipment in the offered configuration and planning simulations of all possible mistakes occurring during equipment utilization.
- b) The Supplier shall provide the didactic material. The didactic material will be in Serbian language without any exception.
- c) The training course shall be organized for at least 2 users for each equipment item installed.
- d) The location of the training course delivery shall be the place where the equipment is delivered and installed.
- e) The trainers shall be qualified experts belonging to the Manufacturer Company and/or representatives in the country of the Supplier/Installer and/or by qualified experts certified by the Manufacturer. The course will be held in Serbian language or translated into Serbian language by professional translator and such costs shall be on the Supplier account.
- f) The training course for users shall focus on least on the following topics:
 - presentation and contacts of the reference technicians;
 - general equipment functions in the offered configuration, alarm signals and error signals showing all the possible equipment functionalities;
 - calibrations (if requested), daily cleaning and maintenance operations in order to assure the longest equipment life;
 - correct equipment utilization and related possible risks for users and patients;
- g) The duration of the training course will be as per requirement provided in the technical specifications.
- h) The evaluation of the know-how acquired will be done through two tests: one entrance test at the beginning of the course and one final test at the end. The trainees shall certify that the received training is satisfactory.
- i) First training should be delivered within 2 weeks upon successful Acceptance Testing & Commissioning. Second training should be delivered three months after first training.

9. Warranty

Definition. A warranty period is the period of time when the Supplier warrants free repair and adjustment services if a malfunction occurs under everyday use that followed instruction manuals.

- a) The Supplier is required to rectify all failures that occur over the warranty period and this is referred to as warranty, comprehensive services contract that must include proper Corrective and Preventive maintenance.
- b) All equipment shall be supplied with the manufacturer warranty period of at least 12 months after installation plus additional 24 months of extended warranty provided by the supplier. This total warranty period of 36 months shall include preventive and corrective maintenance, spare parts, manpower, any other cost, (comprehensive services contract), except consumables.

9.1 Manufacturer Warranty

The manufacturer warranty certificate will be in the name of the final Beneficiary.

- a) The warranty period will be not less than 12 months from the date of issuance of the preliminary acceptance (before installation).
- b) The warranty will cover the entire machine including any and all component parts, spare parts, software modules, accessories and consumables thereof. The warranty coverage will be applied fully and without any cost to Beneficiary and to the users whatsoever, including but not limited to the cost of visits, labor, spare parts, and shall be valid for unlimited consultations within the warranty period save in cases of proven misuse, intentional damage, or force majeure.
- c) If in the opinion of the Supplier, Goods were subject to misuse, intentional damage or force majeure; therefore, not covered by warranty, the Supplier should present indubitable proof of such misuse, intentional damage or force majeure.
- d) The Manufacturer warranty will be carried out at the final beneficiary site. However, being required to transport the equipment to the manufacturer/Supplier/Services provider/ premise, all the travel and transport cost covered by the Supplier.

9.2 The Supplier's additional-extended Warranty¹

- a) The Supplier warranty integrates the manufacturer warranty both for coverage and duration.
- b) The Supplier warranty certificate will be in the name of the final Beneficiary.
- c) **The warranty period for all LOTs (except for LOT1, items 12-22) will be not less than the manufacturer warranty of min 12 months plus additional 24 months of extended warranty, all together 36 months, starting from the date of provisional taking over (after installation and commissioning).**
For LOT 1, items 12-22, the warranty period will be not less than the manufacturer warranty of min 12 months plus additional 48 months of extended warranty, all together 60 months.
- d) The Supplier additional warranty will be carried out at the final Beneficiary's site, being required any cost of equipment transport or technician travelling at Supplier charge and included in the offered price.
- e) At least 95% of one single year of full functioning, i.e. 347 days out of 365/366 days, will be guaranteed by the Supplier within the warranty period. In the event that the equipment supplied has been malfunctioning for more than five percent (5%) of one single year of the warranty period, i.e. more than 18 natural days in one single year, the Supplier shall extend the warranty period for a duration of six times of the time duration when the equipment was malfunctioning. Laboratory equipment for BSL-3 laboratory must have priority in both servicing and repair. Remote technical support (by phone/mail) within 1 hour upon notification from user, inclusive of weekends and public holidays. Response time, on-site technical support within 24 hours upon notification from user, inclusive of weekends and public holidays. Work on the restoration of the

¹ The extended warranty period (24 months or 48 months) provided by the Supplier is in addition to the warranty period (12 months) provided by the Manufacturer.

equipment should begin no later than 24 hours from reporting the fault. It should be completed within three (3) working days.

- f) During the warranty validity period the programmed on-site maintenance and calibration visits will be at least 2 times per year. The schedule of the visit will be presented before the taking preliminary taking over certification. During the visits a concise additional training will be provided to the users and to the maintenance personnel.
- g) During on-site maintenance and calibration visits a short user training update will be carried out by the Supplier.
- h) One month before end of the Supplier warranty period the Purchaser shall receive from the Supplier a written warranty that the manufacturer will continue to grant the availability spare parts and Support Services for the Goods for Specify duration for spare parts availability.

Detailed Technical Specifications and Standards for LOT 1:

No.:	Technical specification – required:	Qty.	Technical specification – offered:
1	<p>Laboratory CO2 incubator</p> <p>The laboratory incubator for tissue cultures with HEPA filter additionally protects cultures from contamination. Stainless steel interior</p> <ul style="list-style-type: none"> - Volume 200-300 L - Temperature range of T amb. +5 °C to +50 °C or wider range, temperature uniformity <+/- 0.3 °C. - CO2 range of 0.2-20%. - Lockable door - Skid with wheels and brakes - Minimum three shelves - TC thermal conductivity sensor. Control via Touchscreen. <p>Microprocessor control of setpoints. Autostart. Automatic calibration. Visual and acoustic alarm.</p> <ul style="list-style-type: none"> - Automatic sterilization - Relative humidity >93% at 37 °C. - Max. External dimensions (WxHxD): 800 x 1000 x 1000 mm - Chamber surfaces must be resistant to chemical decontaminants. - External gas guard automatic change-over to reserve tank. <p>Perform IQ, OQ and, if applicable, PQ tests. The supplier is obliged to submit protocols and perform tests</p>	3	

2	Laboratory incubator	<p>Laboratory incubator with stainless steel chamber</p> <ul style="list-style-type: none"> - Volume 100-130 liters. - Ambient temperature minimum range +10°C to +60°C (or wider range). - Spatial temperature deviation $\pm 0,6$ °C at 37 °C. These values can vary for 5%. - Temperature deviation over time ≤ 0.2°C at 150 °C. These values can vary for 5%. - Chamber surfaces must be resistant to chemical decontaminants. - Max. external dimensions of the device 800x1000x800 mm. - minimum 2 shelves, load up to minimum 18 kg per shelf (These value can vary for 10%) - Interior glass doors. - Microprocessor control of setpoints. - Access port for independent temperature measurement. - Automatic shutdown in case of overheating. - Lockable door - Automatic over and under temperature alarm, audible alarm if the door is left open - push button decontamination - The door opens up to 180° - Skid with wheels and brakes. - Perform IQ, OQ and, if applicable, PQ tests. The supplier is obliged to submit protocols and perform tests 	3	
3	Laboratory freezer with deep freezing	<ul style="list-style-type: none"> - Temperature range from -50°C to -86°C (All temperatures may vary -2°C for the lower temperature and +2°C for higher temperature) - volume 500-750 liters - Max external dimensions (wxdxh): 1200 x 1000 x 2000mm. Dimensions have been given indicative and can vary for +/-15% - minimum 3 shelves, i.e. 4 compartments, each with separate 	4	

		<p>internal door.</p> <ul style="list-style-type: none"> - Each compartment filled with sliding drawer racks (latch) for 2D Barcoded Screw top tubes in laser etched racks; - Refrigeration system with two compressors in a cascade sequence - Audio and visual alarm for: lower or higher temperature than set, battery percentage, power out - The handle on the outer door with locking option. - Access port connections for temperature tests and CO2 injection. - Peak variation from setpoint +6/-3 C (All temperatures may vary -1°C for the lower temperature and +1°C for higher temperature). - CO2 safety system, which automatically switches on in the event of a power outage and maintains a temperature. - Barcode Reader for racks and tubes - 2D barcode to rapidly decode a full rack and 2D coded single storage tube; Sealed unit and anti-frost coating on the glass, to prevent frost and condensation buildup to allow reading of ice-cold tubes at ambient temperatures; - Cryobank vials 1.5 - 2 ml, 2D coded, for biobanking, total minimum 26000 pcs of vials - Stainless steel interior - Noise level (dB) max 55 dB - In case of a power failure, the battery has a 24 hours operating time <p>Perform IQ, OQ and, if applicable, PQ tests. The supplier is obliged to submit protocols and perform tests</p>		
--	--	---	--	--

4	Vertical laboratory refrigerator	<p>Vertical laboratory refrigerator with glass door</p> <ul style="list-style-type: none"> - Volume 600-700L - Operating temperature factory set to +5°C. All temperatures may vary $\pm 1^\circ\text{C}$. - Cooling method - forced- air circulation. - Automatic defrosting, without heating, which ensures maximum temperature uniformity - Insulation of cabinet: High-density water- blown polyurethane foam - Single glass door, self-closing, at an angle of 90° can remain open for easier filling of the drawers. - Number of shelves 3-6 (or more) with capacity of at least 30 kg per shelf. - Four casters, the ability to move in all directions, the front two have brakes - Indoor LED lighting. - Built-in additional temperature sensor in the form of a thermometer - Microprocessor control system with audio and visual alarms. - Battery back-up for temperature and alarm monitoring. - Alarm at all power outages. - Heating and cooling alarm (possibility of setting low and high alarm temperatures). - Low battery alarm. - Alarm at remaining open door. - Max External dimensions: refrigerator dimension 100 x 120 x 200 cm. Dimensions have been given indicative and can vary for $\pm 15\%$. - Possibility of connecting to an external monitoring system. - Additional temperature control using a stainless steel probe immersed in ethylene glycol solution, optional. - Noise level up to 55 dB, noise level can vary up to +5%. 	3	
---	---	--	---	--

		<ul style="list-style-type: none"> - Mains voltage 208-230V/50Hz. CE certificate. - Stainless steel interior - In case of a power failure, the battery has a 24 hours operating time - Temperature Setpoint Security - Perform IQ, OQ and, if applicable, PQ tests. The supplier is obliged to submit protocols and perform tests 		
5	Vertical laboratory freezer	<p>Vertical laboratory freezer</p> <ul style="list-style-type: none"> - Volume 650-850L - Operating temperature range -35 to -20°C; factory set to -30°C (All temperatures may vary -2°C for the lower temperature and +2°C for higher temperature) - Cooling method. Forced-air circulation - Automatic defrosting. - Insulation of cabinet: High-density water- blown polyurethane foam - Number of shelves 4 with capacity of at least 35 kg per shelf. - Four-five casters, the ability to move in all directions, the front two have brakes. - Built-in additional temperature sensor in the form of a thermometer - Microprocessor control system with audio and visual alarms. - Battery back-up for temperature and alarm monitoring. - Alarm at all power outages. - Heating and cooling alarm (possibility of setting low and high alarm temperatures). - Low battery alarm. - Alarm at remaining open door. - External dimensions: up to 800 x 1000 x 2000 mm. Dimensions have been given indicative and can vary for ±15%. - Possibility of connecting to an external monitoring system. - Noise level up to 55 dB, noise level can vary up to +5%. 	3	

		<ul style="list-style-type: none"> - Mains voltage 208-230V/50Hz. - Stainless steel interior - In case of a power failure, the battery has a 24 hours operating time - Temperature Setpoint Security <p>Perform IQ, OQ and, if applicable, PQ tests. The supplier is obliged to submit protocols and perform tests</p>		
6	Centrifuge with cooling	<p>Metal housing</p> <ul style="list-style-type: none"> - Speed range: 500-15,000 rpm or wider. - G force: min 3.000 xg (with swing-out rotors), or min 25.000 xg (with fixed angular rotors); <p>Aerosol tight rotor</p> <ul style="list-style-type: none"> - Changeable rotor without tool. - Automatic rotor locking system. - Imbalance detection. - Operational temperature -20°C to +40°C. (Higher value can vary for 10%.) - Microprocessor control of set parameters spin times, speeds, storing of min. 4 directly accessible programs; - Short spin button; - Minimum 2 degrees of acceleration and deceleration of the spin - Microplate Rotor for minimum 4 x Standard microplates or 2 x Deepwell plates - Capacity 6x50ml or similar; - Adapters for test tubes 15 mL with conical bottom, maximum dimensions 15x120mm, capacity 6x15ml, set = 2pcs. (These values can vary for 10%.) - Fixed Angle microliter rotor for approximately 24x1.5/2.0mL tubes with biosecurity cap. - Min speed: 15000 rpm, RCF: 25000 xg for spins with cooling; <p>Perform IQ, OQ and, if applicable, PQ tests. The supplier is obliged to submit protocols and perform tests</p>	3	

		<p>NOTE: This centrifuge must be of a true biosafety type centrifuge:</p> <ul style="list-style-type: none"> - Tight rotors or tight tube holder or tight plate holder - Transparent rotor or holder lid or cover or if not, the rotor or holder must be removable for unloading in the BSC. 		
7	<p>Centrifuge min speed 3,500 rpm (60Hz)</p>	<p>Small table centrifuge</p> <ul style="list-style-type: none"> - Capacity 12x 1.5/2ml, and 4 x 8-PCR-Strip 0.2ml - Rotor capacity: 12x1.5/2ml and 4 x 8-PCR-Strip 0.2ml - Spin speed (50Hz): at least 2800 rpm/500xg - Spin speed (60Hz): at least 3500 rpm/700xg - Aerosol tight rotor - Possibility of continuous and impulse operation - Automatic stop in case of opening the lid <p>Perform IQ, OQ and, if applicable, PQ tests. The supplier is obliged to submit protocols and perform tests</p>	4	
8	<p>Centrifuge min speed 15,000 rpm</p>	<p>Compact centrifuge complete with fixed, angular rotor, min. capacity: 12 x 1.5/2ml;</p> <ul style="list-style-type: none"> - Metal housing; -Aerosol tight rotor - Rotor material "black" aluminum, with a steel cover with a screw; - The rotor should be autoclavable, at 120oC, 20min; - Rotor and cover have to be chemically resistant; - The speed is adjustable in steps of 100 rpm from 800-15,000 rpm, or higher; - Min speed range up to 15,000 rpm - Separate command for fast, short spin; timer range 10 s to 30 min or wider (These values can vary for 10%.) 	2	

		- Perform IQ, OQ and, if applicable, PQ tests. The supplier is obliged to submit protocols and perform tests		
9	Magnetic stirrer	Magnetic mixer with ceramic plate - Speed 100-1,500 rpm. - Maximum mixing volume 4l. - LED display for stirring	4	
10	Wireless 24/7 Monitoring Solution for critical equipment parameters	Remote monitoring solution for sample processing and storage applications, real-time 21 CFR Part 11–compliant data logging and monitoring of critical parameters. Instant alerts for out-of-range sample conditions, automatic and continuous data logging, permanent audit trail to support compliance standards. The modular, customizable architecture allows for easy expansion. With the longer range (LoRa™) technology network that increases connectivity range by up to 9 km. Interactive colored touchscreen module displays parameters with audio/visual alarms or at-a-glance monitoring. Modules can monitor up to 4 precalibrated parameters. Automatic and continuous data logging creates permanent record of readings, alarms, acknowledgments with impact notes, system access and program changes with user traceability. Self-monitoring alarm system activates if it exceeds high/low setpoints with immediate notification. The system alerts users in the event of a power or mechanical failure by their preferred method of notification. Includes audiovisual siren, telephone, email, SMS text messaging, and optional mobile app. Sensors have on-board memory that stores sensor type, serial number, and calibration coefficients. Plug-and-play system with auto-detection and precalibration. When the sensors are connected to the modules, the information stored on them is automatically populated in the system. Annual access to the cloud solution for at	1	

		least 50 sensors for 1 year. Notification through SMS and voice calls for at least 50 sensors for 1 year.		
		Datalogging module with two physical connectors allowing a combination of wired single- or dual-sensor probes for up to 4-parameter monitoring. Colour touchscreen interface, audio/visual alarms for local notification, USB port access, user traceability with password protection, view two sensors simultaneously. Delivered with two 3.6 V lithium batteries, two sensor mounting kit, one mounting holder, one antenna and two 1.5 m/5 ft. flat cables.	5	
		Datalogging module with one physical connector allowing a combination of wired single- or dual-sensor probes for up to 2-parameter monitoring. Colour touchscreen interface, audio/visual alarms for local notification, USB port access, user traceability with password protection. Delivered with two 3.6 V lithium batteries, one sensor mounting kit, one mounting holder, one antenna and one 1.5 m/5 ft. flat cables.	9	
		Triple Point Sensor for CO ₂ , temperature, and relative humidity, range CO ₂ : 0.5-9.9%. Temp: 0 - +50°C, RH: 0 - 99%, calibrated at 5% CO ₂ / 37°C / 80% RH. Sensors have on-board memory that stores sensor type, serial number, and calibration coefficients.	3	
		Digital sensor -40 - +80°C, cable length 3.5 meters (long), calibrated at -30°C, -15°C, 0°C, 20°C, 40°C. Sensors have on-board memory that stores sensor type, serial number, and calibration coefficients.	9	
		Sensor Pt100 calibrated at -80°C, -40°C, 0°C, cable length 3.5 meters. Sensors have on-board memory that stores sensor type, serial number, and calibration coefficients.	4	

		Remote audio/visual siren to alert users in a remote location on critical system alarms. Alert device for LoRaWAN solution, with universal power supply. Provides local audio/visual critical alarm notifications.	1	
		Long-range wireless connectivity enables a single gateway to cover large areas, replacing the need for repeaters. This gateway pushes data to the cloud by connecting to local network via an Ethernet or Wi-Fi connection. Dedicated wireless network, support for up to 300 data-logging parameters per gateway.	1	
		Installation, configuration, IQ/OQ qualification and reporting Note: The wireless system must be compatible with the equipment offered (CO2 incubators, deep freezers, freezers and refrigerators) that require monitoring parameters	1	
11	Bottles for CO2	Bottles for CO2 with manometer, accessories for connecting to the equipment (incubator, freezer etc), capacity 25 kg CO2 Safety valve for pressure relief	6	
12	Set of automatic pipettes: 1-10µL micro, 10-100µL, 100-1000µL	Set of 3 variable pipettes, extensions and stand. -Pipette 1-10ul, pipetting in steps of 0.02ul Inaccuracy of ± 2.50% per 1ul, ± 1.0% per 10ul, Imprecision of ± 2.00% per 1ul, ± 0.5% per 10ul. Fully autoclavable without disassembly. -Pipette 10-100ul, pipetting in steps of 0.2ul. Inaccuracy of ± 3.00% at 10ul, ± 0.80% at 100ul. Imprecision of ± 1.00% per 10ul, ± 0.20% per 100ul. Fully autoclavable without disassembly. -Pipette 100-1000ul, pipetting in steps of 1ul. Inaccuracy of ± 1.00% per 100ul, ± 0.60% per 1000ul. Imprecision of ± 0.60% per 100ul, ± 0.20% per 1000ul. Fully autoclavable without disassembly. Warranty 5 years. Calibration of pipettes at least twice a year for a period of 3 years	4	

13	Single channel variable pipette 2-20ul	Single-channel variable pipette 2-20ul. pipetting in steps of 0.02ul. Inaccuracy of $\pm 3.0\%$ at 2ul, $\pm 1.0\%$ at 20ul. Imprecision of $\pm 2.5\%$ at 2ul, $\pm 0.4\%$ at 20ul. Fully autoclavable without disassembly. Warranty 5 years. Calibration of pipettes at least twice a year for a period of 3 years	4	
14	Single-channel variable pipette 20-200ul	Single-channel variable pipette 20-200ul, pipetting in 0.2ul steps. Inaccuracy of $\pm 1.8\%$ at 20ul, $\pm 0.6\%$ at 200ul. Imprecision of $\pm 0.7\%$ at 20ul, $\pm 0.2\%$ at 200ul. Fully autoclavable without disassembly. Warranty 5 years. Calibration of pipettes at least twice a year for a period of 3 years	4	
15	8-channel automatic pipette with variable volume 5-50ul	8-channel automatic pipette with variable volume 5-50ul, pipetting in steps of 0.1ul. Inaccuracy of $\pm 5.0\%$ at 5ul, $\pm 1.50\%$ at 50ul. Imprecision of $\pm 2.0\%$ at 5ul, $\pm 0.7\%$ at 50ul. Fully autoclavable without disassembly. Warranty 5 years. Calibration of pipettes at least twice a year for a period of 3 years	4	
16	8-channel automatic pipette with variable volume 30-300ul	pipetting in steps of 1.0ul, Inaccuracy of $\pm 5.0\%$ at 30ul, $\pm 1\%$ at 300ul, Imprecision of $\pm 2.0\%$ at 30ul, $\pm 0.3\%$ at 300ul. Fully autoclavable without disassembly. Warranty 5 years. Calibration of pipettes at least twice a year for a period of 3 years	4	
17	12-channel automatic pipette with variable volume 5-50ul	12-channel variable pipette 5-50ul, pipetting in 0.1ul steps. Inaccuracy of $\pm 5.0\%$ at 5ul, $\pm 1.50\%$ at 50ul. Imprecision of $\pm 2.0\%$ at 5ul, $\pm 0.7\%$ at 50ul. Fully autoclavable without disassembly. Warranty 5 years. Calibration of pipettes at least twice a year for a period of 3 years	4	
18	12-channel automatic pipette with	12-channel variable pipette 30-300ul pipetting in steps of 1.0ul, Inaccuracy of $\pm 5.0\%$ at 30ul, $\pm 1\%$ at 300ul, Imprecision of \pm	4	

	variable volume 30-300ul	2.0% at 30ul, \pm 0.3% at 300ul. Fully autoclavable without disassembly. Warranty 5 years. Calibration of pipettes at least twice a year for a period of 3 years		
19	Single channel electronic pipette 1-10ul	Single-channel variable electronic pipette 1-10ul. pipetting in steps of 0.01ul. Inaccuracy of \pm 3.5% at 1ul, \pm 1.0% at 10ul. Basic Functions: Pipette (forward technique), Reverse pipet (reverse & the repetitive technique), Stepper, Dilute Advanced Functions: Mix + Pipette Mix, Pipette + Count, Seq Stepper, Mix + Dilute, Manual, Seq + Aspirate Warranty 5 years. Calibration of pipettes at least twice a year for a period of 3 years	1	
20	Single channel electronic pipette 10-100ul	Single-channel variable electronic pipette 10-100ul. pipetting in steps of 0.1ul. Inaccuracy of \pm 3.0% at 10ul, \pm 0.8% at 100ul. Basic Functions: Pipette (forward technique), Reverse (reverse & the repetitive technique), Stepper, Dilute Advanced Functions: Mix + Pipette Mix, Pipette + Count, Seq Stepper, Mix + Dilute, Manual, Seq + Aspirate Warranty 5 years. Calibration of pipettes at least twice a year for a period of 3 years	1	
21	Single channel electronic pipette 100-1000ul	Single-channel variable electronic pipette 100-1000ul. pipetting in steps of 1ul. Inaccuracy of \pm 3.0% at 100ul, \pm 0.6% at 1000ul. Basic Functions: Pipette (forward technique), Reverse pipet (reverse & The repetitive technique), Stepper, Dilute, Advanced Functions: Mix + Pipette Mix, Pipette + Count, Seq Stepper, Mix + Dilute, Manual, Seq + Aspirate Warranty 5 years. Calibration of pipettes at least twice a year for a period of 3 years	1	

22	8 channel electronic space adjustable pipette 10-300ul	8 channel electronic space adjustable pipette 10-300ul, Adjustable Tip Spacing 9 to 14.2 mm, Increments 0.1µL, Programmable with lockable tips 300uL in racks, lockable tips sterile in racks, lockable tips with filter sterile in racks, 5 boxes of each tips (300ul Racked, 96 tips/rack, 10 racks/pack; 300ul Racked, Sterile, 96 tips/rack, 10racks/pack and 300ul Racked, Filtered, Sterile, 96 tips/rack, 10racks/pack) Warranty 5 years. Calibration of pipettes at least twice a year for a period of 3 years	1	
23	Countdown timer	Countdown Timer Countdown Timer with 3 independent channels, alarm and time-out function 99 hours, 59 minutes, 59 seconds 3 Channel display; Alarm: Audible and Visual Alarm Battery power: 1.5 V silver oxide	6	

Detailed Technical Specifications and Standards for LOT 2, shall now read:

No.:	Technical specification – required:		Qty.	Technical specification – offered:
1.	Semi-Motorized Research inverted microscope	<p>Optical system – UIS2 optical system Light path selection: 1. 100% for observation light path, 2. 20-50% for observation light path, 50-80% for camera port, 3. 100% for camera port Focusing movable range upper side: 6.0 mm or more from the original position Lower side: 2 mm or more from the original position Illumination halogen bulb 100W or more. 2 x Eyepieces: magnification 10x, minimum field of view FN 22 one with diopter adjustment ring. Observation Tube: tilting binocular, minimum field of view FN 22, interpupillary distance adjustment 55-75 mm or more, with diopter adjustment range -3 to + 3 or more. Motorized long working distance condenser, min NA 0.50, min. working distance of 25 mm. Suitable for brightfield, phase contrast, DIC, simple polarizing and objective magnifications from 4x - 100x. Turret with min. 6 positions. Motorized revolving nosepiece for objectives with min. 6 positions, operating by control pod</p> <p>Plan Semi Apochromat Phase contrast objectives: - 4-5x (min. NA 0.12, working distance 14 mm or more) - 10x (min. NA 0.25, working distance 9.5 mm or more)</p>	2	

	<p>- 20x (min. NA 0.40 working distance 3.0 mm or more) - 40x (min. NA 0.60, working distance 1.9 mm or more) Motorized x/y/z stage, with travel range 110 x 70mm or more, accuracy 3 μm or better. Operating by joystick. Dust cover</p> <p>Microscope digital camera</p> <p>Type 8.9-megapixel or more, color camera Imaging sensor 1-inch or bigger color CMOS, with Global shutter Pixel size 3.45 μm × 3.45 μm or bigger Camera adaptor C-mount, magnification 1x Exposure time 27 μs–15 s or better Camera interface USB 3.1 Type-C Image size 3840×2160 (full resolution) or better Live image display 60 fps or faster</p> <p>Camera imaging software with PC Ability to overlay multi-color images (fluorescence channels image overlay), manual object counting, movie playback, side-by-side image comparison, snap/movie acquisition, time-lapse at specific intervals, option for manual panoramic imaging, option for extended focus image, Geometry/combine/filter processing, interactive 2D measurements, measurement results can be exported to Excel.</p> <p>Minimum PC requirements – PC type All-in-one, touchscreen, processor Core i7, RAM 16 GB - SSD 512 GB , Win 11 Pro, LED monitor 27" Perform IQ, OQ and, if applicable, PQ tests. The supplier is obliged to submit protocols and perform tests</p>		
--	---	--	--

2	<p>Semi-Motorized Research inverted microscope with fluorescence</p>	<p>Optical system – UIS2 optical system Light path selection: 1. 100% for observation light path, 2. 50% for observation light path, 50% for camera port, 3. 100% for camera port Focusing movable range upper side: 6.0 mm or more from the original position Lower side: 2 mm or more from the original position Illumination halogen bulb 100W or more. 2 x Eyepieces: magnification 10x, minimum field of view FN 22, one with diopter adjustment ring. Observation Tube: tilting binocular, minimum field of view FN 22, interpupillary distance adjustment 55-75 mm or more, with diopter adjustment range -3 to + 3 or more. Motorized long working distance condenser, min NA 0.50, min. working distance of 25 mm. Suitable for brightfield, phase contrast, DIC, simple polarizing and objective magnifications from 4x - 100x. Turret with min. 6 positions. Motorized revolving nosepiece for objectives with min. 6 positions, operating by control pod</p> <p>Plan Semi Apochromat Phase contrast objectives: - 4-5x (min. NA 0.12, working distance 14 mm or more) - 10x (min. NA 0.25, working distance 9.5 mm or more) - 20x (min. NA 0.40 working distance 3.0 mm or more) - 40x (min. NA 0.60, working distance 1.9 mm or more) Motorized x/y/z stage, with travel range 110 x 70mm or more, accuracy 3 µm or better. Operating by joystick.</p> <p>Straight fluorescence illuminator, manual fluorescence cube turret with minimum 6 positions 3 x filter cubes for fluorescence:</p>	1	
---	---	--	---	--

	<ul style="list-style-type: none"> - Excitation filter 360-370nm, emission filter 420-460 nm or wider - Excitation filter 460-495nm, emission filter 510-550nm or wider - Excitation filter 530 – 550 nm, emission filter 575 – 625 nm or wider <p>LED fluorescence excitation light source, LED channels with excitation spectrum 365-635nm or wider (or similar). Light intensity control 0-100%, (1% increments) via control pod, cooling by internal fan, Dust cover</p> <p>Microscope digital camera</p> <p>Type 8.9-megapixel or more, color camera</p> <p>Imaging sensor 1-inch or bigger color CMOS, with Global shutter</p> <p>Pixel size 3.45 μm \times 3.45 μm or bigger</p> <p>Camera adaptor C-mount, magnification 1x</p> <p>Exposure time 27 μs–15 s or better</p> <p>Camera interface USB 3.1 Type-C</p> <p>Image size 3840\times2160 (full resolution) or better</p> <p>Live image display 60 fps or faster</p> <p>Camera imaging software with PC</p> <p>Ability to overlay multi-color images (fluorescence channels image overlay), manual object counting, movie playback, side-by-side image comparison, snap/movie acquisition, time-lapse at specific intervals, option for manual panoramic imaging, option for extended focus image, Geometry/combine/filter processing, interactive 2D measurements, measurement results can be exported to Excel.</p> <p>Minimum PC requirements – PC type All-in-one, touchscreen, processor Core i7, RAM 16 GB - SSD 512 GB , Win 11 Pro, LED monitor 27"</p> <p>Perform IQ, OQ and, if applicable, PQ tests. The supplier is obliged to submit protocols and perform tests</p>		
--	--	--	--

3	<p>Motorized upright microscope with fluorescence</p>	<p>Optical system UIS2 (UIS) optical system (featuring infinity correction) Illumination: LED light source, built-in motorized field stop. Focusing mechanism: sample is focused using the motorized nosepiece, up-down movement by cross-roller guide, enabling the stage to be fixed for added stability. Motorized revolving nosepiece with minimum 6 places for objectives, position of objectives is controlled by hand switch. Observation Tube: tilting trinocular, minimum field of view FN 22, interpupillary distance adjustment 55-75 mm or more, 3 position light path selection: Binocular 100%, Binocular 50% - Camera 50%, Camera 100%. 2 x Eyepieces: magnification 10x, minimum field of view FN 22, both with diopter adjustment ring. Swing-out condenser: min. NA 0.90, applicable objective powers 1.25x-100x. Objectives - Plan Achromat: 2x (min. NA 0.05 min.) Plan Semi Achromat: - 4-5x (min. NA 0.12, working distance 14 mm or more) - 10x (min. NA 0.25, working distance 9.5 mm or more) - 20x (min. NA 0.40 working distance 2.1 mm or more) - 40x (min. NA 0.60, working distance 1.9 mm or more) - 60-65x (min. NA 0.70, min. working distance 0.13mm) - 100x (min. NA 0.80, min. working distance 0.13mm), oil immersion</p> <p>Motorized light illuminator for fluorescence observations. Minimum 6-position cube turret with shutter function and easy exchange of filter cubes without tools. Fly-eye lens illumination system for maximal homogeneity in fluorescence observations. Illuminator is controlled by hand switch. 3 x filter cubes for fluorescence: - Excitation filter 325-375nm, emission filter 435-485 nm or wider - Excitation filter 460-495nm, emission filter 510-550nm or wider</p>	1	
---	--	--	---	--

	<p>- Excitation filter 530 – 550 nm, emission filter 575 – 625 nm or wider LED fluorescence excitation light source, LED channels with excitation spectrum 365-635nm or wider (or similar). Light intensity control 0-100%, (1% increments) via control pod, cooling by internal fan. Motorized x/y, stage - Travel range 110 x 70 mm or more, accuracy 3 µm or better. Controlled by joystick. Dust cover</p> <p>Monochrome camera for microscope</p> <table border="0"> <tr> <td>Image Sensor</td> <td>Backside illuminated monochrome CMOS</td> </tr> <tr> <td>Sensor Size</td> <td>1/1.8 inch (7.41 mm × 4.98 mm) or bigger</td> </tr> <tr> <td>Resolution</td> <td>3088x2076 pixels or more</td> </tr> <tr> <td>Pixel size</td> <td>2.4 × 2.4 µm or bigger</td> </tr> <tr> <td>Binning</td> <td>2 x 2 or more</td> </tr> <tr> <td>Live Frame Rates</td> <td>Up to 60 fps at 1920 × 1080 pixels (Full HD 16:9)</td> </tr> </table> <p>Camera imaging software with PC Ability to overlay multi-color images (fluorescence channels image overlay), manual object counting, movie playback, side-by-side image comparison, snap/movie acquisition, time-lapse at specific intervals, option for manual panoramic imaging, option for extended focus image, Geometry/combine/filter processing, interactive 2D measurements, measurement results can be exported to Excel.</p> <p>Minimum PC requirements – PC type All-in-one, touchscreen, processor Core i7, RAM 16 GB - SSD 512 GB , Win 11 Pro, LED monitor 27" Perform IQ, OQ and, if applicable, PQ tests. The supplier is obliged to submit protocols and perform tests</p>	Image Sensor	Backside illuminated monochrome CMOS	Sensor Size	1/1.8 inch (7.41 mm × 4.98 mm) or bigger	Resolution	3088x2076 pixels or more	Pixel size	2.4 × 2.4 µm or bigger	Binning	2 x 2 or more	Live Frame Rates	Up to 60 fps at 1920 × 1080 pixels (Full HD 16:9)		
Image Sensor	Backside illuminated monochrome CMOS														
Sensor Size	1/1.8 inch (7.41 mm × 4.98 mm) or bigger														
Resolution	3088x2076 pixels or more														
Pixel size	2.4 × 2.4 µm or bigger														
Binning	2 x 2 or more														
Live Frame Rates	Up to 60 fps at 1920 × 1080 pixels (Full HD 16:9)														

Detailed Technical Specifications and Standards for LOT 3, shall now read:

No.:	Technical specification – required:		Qty.	Technical specification – offered:
1	Next generation sequencing platform	<p>A next generation sequencing system using SBS sequencing technology (sequencing by synthesis) or other technologies.</p> <ul style="list-style-type: none"> - The system must have an IVD mark and/or RUO mark - The possibility of analysis by the sequencing method and the microchip method in the same apparatus or semiconductor sequencing on chips or DNA Nanoballs (DNB) technology. 	1	
		<p>If using SBS technology minimal specification is following:</p> <ul style="list-style-type: none"> - Number of reads per run: ≥ 600 M paired-end reads in Dg mode or up to 800 M paired-end reads in RUO mode - Bandwidth of the device: ≥ 90 Gb in Dg mode and up to 120 Gb in RUO mode. - Handling of reagents: The reagents compartment has capacity for 1 reagent cartridge containing reagent for cluster generation, paired-end chemistry up to 300 cycles of sequencing and washing - Reagents arrive pre-mixed in an integrated RFID cartridge 		
		<ul style="list-style-type: none"> - Sample loading: Libraries are loaded into the cartridge and transferred automatically from the tank after the start of operation - Duration of operation (cluster generation, sequencing and base calling) of the sequencer in Dg mode: ≤ 35 hours for 2 150 bp reads. - Duration of operation (cluster generation, sequencing and base calling) of the sequencer in RUO mode: ≤ 11 hours for a single read of 1 75 bp, 15-18 hours for 2 75 bp paired-end reads, 26-29 hours for 2 150 bp paired-end reads. 		

		<p>Additional equipment with sequencing unit:</p> <p>Incubation System:</p> <ul style="list-style-type: none"> - high precision tube and plate heating system with heated lid, for sample preparation. Specified for NGS sample prep and BeadChip applications. <ul style="list-style-type: none"> - Temperature Regulation: $\pm 0.1^{\circ}\text{C}$ - Temperature Range: ambient $+5.0^{\circ}\text{C}$ to 99.0°C - 2 blocks: 0.2 ml PCR block. Holds 96 x 0.2ml tubes or plate and 0.6 ml tube block. Holds 60 x 0.6 ml tubes - Heated lid minimizes cap condensation - Simple temperature calibration - Compatible with MIDI block heat insert 		
		<p>High speed shaker</p> <ul style="list-style-type: none"> - High speed/ high performance shaker to handle a wide range of applications across biotechnology, pharmaceutical and academic research. - Shaking compatible with: microplates, tubes and glass vials - Mixing frequency: 200 - 3,000 rpm - Mixing orbit: constant 2.0 mm diameter - Display for mixing set up - Timer integrated - Aluminum anodized housing - Instrument enables easy fixation of microplates, deep well plates or PCR plates without adapters <p>Magnetic rack 96</p> <ul style="list-style-type: none"> - Magnetic rack designed for sample purification during library preparation steps - Compatible with 96-well plate, midi plates and thermocycler plates 		

		- Ring-shaped magnets provide better purification of samples without contact with magnetic beads		
		<p>If using semiconductor sequencing on chips minimal specification is following:</p> <ol style="list-style-type: none"> 1. Max. throughput/day: 15 Gb 2. Total sequencing and analysis time at max. Throughput: 19 hours 3. Number of reads: 80 M 4. Read length (output): 200 bp (10–15 Gb) 5. Server storage: ~12 TB 6. System should include automated library preparation, template generation, and chip loading compatible with sequencing device 		
		<p>If using DNA Nanoballs (DNB) technology minimal specification is following:</p> <ol style="list-style-type: none"> 1. Number of Flow cells: 2 2. Effective Reads*/Flow Cell: 80 M 3. Supported Reads Lengths: SE100/PE50; Data Output: 8 Gb~16 Gb; Run Time: 5 hours 4. Supported Reads Lengths: SE400; Data Output: 32 Gb~64 Gb; Run Time: 20 hours 5. System should include automated library preparation, compatible with sequencing device and flow cell loader. 		
		All the systems has integrated computer. Software is integrated into apparatus for creating runs, monitoring status, analysing sequencing data, and viewing results.		

		<p>Applications that can be run: somatic and germline analysis, Exome sequencing, Targeted and whole transcriptome sequencing, Small genome sequencing, 16S metagenomics sequencing, methylation sequencing.</p> <p>Touch screen monitor.</p> <p>Device dimension for sequencing unit and following devices: maximum two tables, each W x D, 200 cm x 150 cm. Adequate laboratory tables for offered equipment must be included.</p> <p>Perform IQ, OQ and, if applicable, PQ tests. The supplier is obliged to submit protocols and perform tests</p>		
--	--	--	--	--

4. Other

All other clauses of the RFB remain unchanged.