# *ANNEX II + III:* TECHNICAL SPECIFICATIONS + TECHNICAL OFFER

**Contract title: Supply of laboratory equipment for the purposes and functioning of scientific laboratories of the Blue Growth Research centre at Trakya University in Lots**

**Lot 5 Supply of Lab appliances p 1 /…**

**Publication reference:** CB005.3.12.001 - PP – Supply 7

**Columns 1-2 should be completed by the contracting authority**

**Columns 3-4 should be completed by the tenderer**

**Column 5 is reserved for the evaluation committee**

Annex III - the contractor's technical offer

The tenderers are requested to complete the template on the next pages:

* Column 2 is completed by the contracting authority shows the required specifications (not to be modified by the tenderer),
* Column 3 is to be filled in by the tenderer and must detail what is offered (for example the words ‘compliant’ or ‘yes’ are not sufficient)
* Column 4 allows the tenderer to make comments on its proposed supply and to make eventual references to the documentation

The eventual documentation supplied should clearly indicate (highlight, mark) the models offered and the options included, if any, so that the evaluators can see the exact configuration. Offers that do not permit to identify precisely the models and the specifications may be rejected by the evaluation committee.

The offer must be clear enough to allow the evaluators to make an easy comparison between the requested specifications and the offeredspecifications.

| **1.**  **Item number** | **2.**  **Specifications required** | **3.**  **Specifications offered** | **4.**  **Notes, remarks,  ref to documentation** | **5.**  **Evaluation committee’s notes** |
| --- | --- | --- | --- | --- |
| **1** | **Ultrapure Water System** – 1 pcs.  1-The device must be able to meet CAP and ISO Type I water standards.  2-The device should be able to operate more than one dispensing unit with a single device if desired.  3-The device must offer real-time TOC and resistivity / conductivity monitoring.  4-Users should be able to see the required information (water quality, system status, warnings) in the distribution unit and center console at any time  5- Device should have minimum 7 L reservoir  6-The quality of the water produced by the device should be as followed;  -Applications (Type I - ultrapure water):  -Applications (Type III - RO water):  7-Technical specifications of the device should be as follows ;  Feed water Tap water (conductivity: <2000 µS/cm / TDS: <1000 ppm)  Flow rate (l/min) Min. 0,5  TOC content <5 ppb  Resistivity at +25 °C 18,2 MΩ·cm (Type I)  Particles No particles (with a 0,2 μm final filter or Bio filter)  Endotoxin <0,001 EU/ml (with Bio filter)  Microorganisms <0,1 cfu/ml (with a 0,2 μm final filter or Bio filter)  RNases <1pg/ml (with Bio filter)  DNases <10 pg/ml (with Bio filter)  8. The device should be guaranteed for at least 2 year against any manufacturing and assembly defects. Spare parts and service must be guaranteed for 10 years after the end of the warranty period. |  |  |  |
| **2** | V**acuum dryer –** 1 pcs.  1The device should be able to make desired temperature and time settings with digital LCD display and microprocessor control. 2. The elapsed time indicator should be on the device screen.3. The device should have a weekly schedule timer that also shows the real time. 4. The internal volume of the device should be at least 50 litre. The interior of the cabinet must be corrosion resistant stainless steel. 5. The heaters are placed all over the working circle, and effective heating will be provided inside the device. Also, there will be no heater in the volume used. 6. The piping system, inner cabinet and valves of the device must be made of stainless steel and resistant to vacuum. 7. The device should operate at a temperature from room temp. + 15 C up to 200 ºC. Temperature should be changeable at 1 ºC intervals. The device must have an inert gas connection.The device must have an digital vacuum indicator 8. Two aluminium shelves should be supplied with the device, and the number of these shelves should be able to increase to 5 if desired.9. Temperature change of the device at 100ºC ± 2K; Temperature change should be ± 4.5K at 200ºC.  10.The electrical connection of the device should be 230V, 50/60 Hz.  11.The features of the vacuum pump to be supplied with the device should at least be as follows.  Vacuum Pump;  • The device must have high pumping speed.The device should be capable of continuous pumping without oil. The device should work with low noise and vibration.  • The propeller and insulation material of the device should not contain asbestos.  • The device must have a 2-stage diaphragm pump.  • Volume flow rate of the device should be minimum 2.0 / 2.3  m3 / h.  12. Motor The motor power of the device should be minimum 180W. 13.The water vapor tolerance of the device should be mimum 40 // 30 mbar // torr.  14. The final vacuum value of the device should be minimum 7 mbar.  The device should be guaranteed for at least 2 year against any manufacturing and assembly defects. Spare parts and service must be guaranteed for 10 years after the end of the warranty period. |  |  |  |
| **3** | **Autoclave – 1 pcs.**  1. The total usable internal volume of the device should be at least 50 liters.  2. The device must have ISO and CE certificates.  3. The device must be suitable for use in solid, liquid, closed container, waste sterilization.  4. The device operating maximum temperature should be between 135-150 ° C.  5. Working pressure range of the device should be between 0- 4 bar.  6. The device must have an electric resistance and an integrated water tank for steam.  7. The device must have high temperature, high pressure, loop error, cycle interruption, sterilization error, low water level, open door warning systems.  8. To prevent user injuries caused by accidental door opening after the cycle, the device should not be turned on before the temperature goes below 80 ° C.  9. On the control panel, parameters such as temperature, pressure, graphical cycle status, error messages, cycle programming, time & date, schedule timing should be easily monitored on a single screen.  10. Device memory should be able to save at least 500 cycles and export via USB memory.  11. At least Two Loading baskets should be provided  12. The device should be able to work with the city network at 230V, 13A, 50 / 60Hz.  The device must have warranty of 2 years against production defects, and a total of 10 years availability of a spare parts. |  |  |  |
| **4** | **Rotary evaporator system – 1 pcs.**  1-Device rotary evaporator should be horizontal model.  2-Motor speed range of the device is between 10-280 rpm  3-The device must have a automatic lift system  4-The device should have a special motor that does not spark  5- Long-lasting Teflon (PTFE) gasket in the device should have PTFE vacuum seal feature.  6-The electrical power of the device should be 100-240V, 50-60Hz.  7-The water bath of the device should be suitable for the rotary evaporator, it should be digital temperature controlled and touch screen.  8-The temperature sensitivity of the water bath of the device should be 1 ° C  9-Device compatible vacuum pump should be provided separately and the features of the pump; The ultimate pressure of the device should be maximum 12 mbar ; Flow rate of the device should minimum be 20 L / min; The device must have a vacuum regulator to prevent liquid from entering the pump; The device should work with 230V, 50-60 Hz, 150W.  10. Device should have vapor temperature sensor.  11. Device should be compatible standard flasks.  12. Device should have vacuum valve for controlling vacuum  The device should be guaranteed for at least 2 year against any manufacturing and assembly defects. Spare parts and service must be guaranteed for 10 years after the end of the warranty period. |  |  |  |
| **5** | **Magnetic stirrer – 9 pcs.**  1. The temperature of the device should be adjustable up to 450 ° C.  2. The mixing capacity of the device should be 15 liters.  3. Mixing speed of the device should be between minimum 50 and maximum 2000 rpm.  4. The heating power of the device should be 500 W.  5. The heating table of the device should be covered with chemical resistant ceramic.  6. A contact thermometer for controlling the liquid temperature should be provided with the device.  7. The device should be guaranteed for at least 2 year against any manufacturing and assembly defects. Spare parts and service must be guaranteed for 10 years after the end of the warranty period. |  |  |  |
| **6** | **Ball mill - 1 pcs.**  1. The device should be a ball mill to separate small sample volumes, which can also be used to shake / mix microtubes and microplates.  2. The device must have a simple button and keypad to control the frequency and timer.  3. The technical specifications of the device should be as follows ;  -Max. sample volume (ml) 2×50  -Vibrational frequency (Hz) 5-25  -Grinding time setting: minimum between 30 s to 60 min  -Power consumption (W) 200 VA  4. Two stainless steel containers with 50 ml capacity should be supplied with the device.  5. Two stainless steel containers with 10 ml capacity should be supplied with the device.  6. Two packs of 20 stainless steel balls in a 7 mm diameter should be supplied with the device.  The device should be guaranteed for at least 2 year against any manufacturing and assembly defects. Spare parts and service must be available for 10 years after the end of the warranty period. |  |  |  |
| **7** | **Centrifuge – 1 pcs.**  1. The device should be available for micro tubes and smaller tubes.  2. The device must have TUV approved ISO certificate.  3. The centrifuge microprocessor control system should be digital display.  4. There should be illuminated keys for start, cover and braking.  5. The device must have at least 15,000 rpm speed.  6. The maximum capacity of the device should be 4x100 ml.  7. The device should be time programmable  8. The control unit of the device must be lockable.  9. When only rpm value and rotor information are entered into the device, rcf value should be displayed on the screen automatically.  10. The values of the device such as centrifuge speed, centrifuge time, etc. should be programmable.  11. The device must have an automatic type braking program.  12. The device must be capable of showing rotor speeds. 13. Two rotors should be provided for 1-5- 2 mL vials and 15 mL falcon tubes  14. The device can be cooled to minimum -9 C.  The device should be guaranteed for at least 2 year against any manufacturing and assembly defects. Spare parts and service must be guaranteed/available for 10 years after the end of the warranty period. |  |  |  |
| **8** | **Laboratory Oven - 3 pcs.**  1. Temperature range should be digitally adjustable with a sensitivity of 1ºC from room temperature to 300ºC.  2. The volume inside the cabin should be at least 110 liters and the inside of the cabin should be stainless.  3. The internal cabinet of the device should be of seamless AISI 304 quality stainless steel with rounded corners.  4. Microprocessing should be PID controlled.  5. Must have LED digital indicator.  6. Temperature and time settings should be made with digital touch keys.  7. The device should be able to adjust the time between 0 and 99 hours and it should have the function of continuous operation,  8. There should be a warning light that determines that the heating is made.  9. The values set on the device can be monitored by the user during operation.  10. The outer surface structure should be in accordance with international safety rules.  11. The electrical connection should be 230 V, 50/60 Hz.  12. There should be a possibility of calibration and validation.  13. If desired, the device can be optionally locked, and a glass cover can be attached.  The device should be guaranteed for at least 2 year against any manufacturing and assembly defects. Spare parts and service must be guaranteed for 10 years after the end of the warranty period. |  |  |  |
| **9** | **Fume Cupboard – 3 pcs.**  1. Dimensions: Width 1500mm x Depth 800-1000 x Height 2600-2700  2. Construction: Galvanized Steel  3. Working Surface: Industrial Ceramic, Solid Grade Laminate, Epoxy Resin, Stainless Steel  4. Fume Cupboard Foot: Chemical resistant foot that can counter ground slopes  5. Water and Gas Connections: Compliant with DIN 12898 Standard.  6. Armatures and valves are compliant with EN 13792 and have color codes.  7. The working surface should have high resistance to chemicals, acids and bases  8. Mazimum air flow rate should be minimum 1400 cmh or 2300 m3/h  The device should be guaranteed for at least 2 year against any manufacturing and assembly defects. Spare parts and service must be guaranteed for 10 years after the end of the warranty period. |  |  |  |
| **10** | **Membrane filtration system- 2 pcs.**  1. A system should include with a vacuum pump, 3 filtering bodies, suitable for membrane filters Ø 47mm. The system should consist of: Stainless steal collector allowing the installation of 3 filtering devices 3 filtering funnels with a volume of 300ml  2. Electrical vacuum pump must have minimum 25 l/min capacity |  |  |  |
| **11** | **Vacuum pump – 2 pcs.**  1- The device should be a double-head, dry-running diaphragm pump for a wide range of laboratory applications.  2- The device should pump, compress and drain without affecting the media, that is, the media should not remain dirty.  3- The device should include a patented tension optimization diaphragm that allows the pump to run smaller.  4- The device should be 100% oil-free pump, so the media should not be dirty during pumping and draining.  5- The device must be available for moderately aggressive gases and vapors.  6- The device must have a thermal switch diaphragm pump, mains fuse, plug-in plug cable and hose connector for 9 mm hoses.  7- The technical features of the device should be as follows; -Flow rate 20 l / min, -Working overpressure 1.0 bar, -Post pressure 8mbar, -Protection class IP 44  The device should be guaranteed for at least 2 year against any manufacturing and assembly defects. Spare parts and service must be guaranteed for 10 years after the end of the warranty period. |  |  |  |
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