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

**Contract title: SUPPLY OF LABORATORY EQUIPMENT FOR THE PURPOSES AND FUNCTIONING OF THE SCIENTIFIC LABORATORIES OF THE BLUE GROWTH RESEARCH CENTRE AT “PROF. D-R ASEN ZLATAROV UNIVERSITY OF BURGAS”**

**Lot 1** Supply of Multiparametric probe for the purposes of the Water Polution Monitoring Lab **p 1 /…**

**Publication reference:** CB005.3.12.001 - LP – Supply 3

**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** |
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| **1.** | **Multi parametric probe – 1 pcs**  Debth 100m; Measurement of overall pollution according to the following parametres:  Chlorophyll, Conductivity, Dissolved Oxygen mg/L и %, fDOM(CDOM), ORP and pH, Temperature,Turbidity, Salinity, Specific Conductance, Total Dissolved Solids (TDS), Total Suspended Solids (TSS).  The probe shall be compatible to work with optic nitраtе sensor; Central cleaner against pollution  Debt: 0-100 m.; Flow cell; Languages: English and German is required; Recording options; Working environment: fresh, marine and pollutant water  Memory: > 1000 000 registered indications, min 512 MB; Coating against deposition of microorganisms made of copper alloy; Working temperature: -5 - +50 ° C; Power: 4 alkaline batteries; Sampling; Intelligent sensors: Temperature of storage: -20 - + 80° Calibration by the user; Waterproof; Battery life: approximately 90 days at 20° C and 15 minutes interval of registration; Communications: Computer interface: Bluetooth (between the probe and handheld or computer), USB; Outlet options: USB with signal output adapter (SOA); RS-232 & SDI-12 with DCP-SOA; Handheld display: GPS, barometer, keyboard, connector, LED display, protection class IP-67, recharging battery; Frequency of sampling: up to 4 Hz |  |  |  |
|  | Sensors: 7 (6 in case of central cleaner use); Chlorophyll: range (0 – 400 μg/L Chl; 0-100 RFU); accuracy (linearity with prototype buffers R²> 0,999); resolution (0.01 μg/L Chl; 0.01 RFU); Conductivity and temperature sensor for the following parameters: conductivity, specific conductivity, salinity and temperature:  Conductivity: range (0 – 100 mS/cm); accuracy (± 1% of the measurement or 0,002 mS /cm which of the two is greater); resolution (0,0001 - 0,01 mS/cm); Specific conductivity: range (0 – 100 mS/cm); accuracy (± 1% of the measurement or 0,002 mS /cm which of the two is greater); resolution (0,0001 - 0,01 mS/cm); Salinity: range (0 – 70 ppt); accuracy (± 2% of the measurement or 0,2 ppt which of the two is greater); resolution (0,01ppt); Temperature: range (-5 - 50°C); accuracy (±0.2°C); resolution (0.001°C); Debt 100 m: range (0 - 100 m); accuracy (±0.04% FS (±0.04 m or ±0.13 ft)); resolution (0.001 m (automatic range))  Dissolved oxygen sensor: range (0 - 500% (air saturation); 0 - 50 mg/L); accuracy (0 - 200%: ± 1% of the measurement or 1% saturation; 200 - 500%: ± 5% of the measurement; 0 - 20 mg / L: ± 0,1 mg / L or 1% of the measurement; 20 - 50 mg / L: ± 5% of the measurement); resolution (0.1% air saturation; 0.01 mg/L) |  |  |  |
|  | Fluorescent dissolved organic matter sensor fDOM (CDOM): range (0 - 300 ppb quinine sulphate equivalents (QSU)); accuracy (linearity with prototype buffers R²> 0,999); resolution (0.01 ppb QSU)  pH and ORP sensor: pH: range (0 - 14); accuracy (± 0,1 pH units within the range of ± 10° C of the calibrating temperature; ± 0,2 pH units for the whole temperature range); resolution (0.01 units)  OPR: range (-999 - 999 mV); accuracy (±20 mV в Redox standard solution); resolution (0.1 mV)  Turbidity sensor: range (0 - 4000 FNU); accuracy: (0 - 999 FNU: 0,3 FNU or ± 2% of the measurement; 1000 - 4000 FNU: ± 5% of the measurement); resolution (0 to 999 FNU = 0.01 FNU; 1000 to 4000 FNU = 0.1 FNU)  TDS Total dissolved solids: Calculated from conductivity and temperature: range (0 - 100 000 mg/L; Cal constant range 0,30 – 1,00 (0,64 by default)  TSS Total suspended solids: Calculated from turbidity and users’ referent samples, range (0 - 1500 mg/L)  Suitcase with wheels for carrying the probe and its accessories.  24 months guarantee 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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