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| **Qty.** | **Item** | **#** |
| **1** | **T100 Thermal Cycler** | **1** |
| **1** | **: GelDoc Go Imaging System with Software** | **2** |
| **1** | **PCR Laminar flow cabinet with microprocessor control system** | **3** |
| **2** | **Fume hood** | **4** |
| **1** | **: Density / Specific Gravity Meter** | **5** |
| **1** | **Microwave Digester** | **6** |
| **1** | **DSC Specifications** | **7** |
| **1** | **Instrument for colour fastness to light/ xenon light** | **8** |
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| **1** | **Laundry for color fastness to washing** | **10** |
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| **1** | **Water bath** | **12** |
| **1** | **Water bath** | **13** |
| **1** | **Climate chamber ICH stability testing** | **14** |
| **1** | **HPLC System** | **15** |

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| **Item 1 : T100 Thermal Cycler Qty: 1** | |
|  | Block Configuration: 96 Well |
|  | Extremely low evaporation resulting in avoiding condensation and protection sample volume. |
|  | Self-adjusting lid accommodates 96 x 0.2 ml tubes, 0.2 ml tube strips, or a 96-well plate |
|  | Accommodates reaction volumes from 1 to 100 µl |
|  | Seal that protects thermoelectric components from condensation |
|  | Maximum ramping speed of 4°C/sec |
|  | Average ramp rate: 2.5°C/sec |
|  | Lid heating: 40—110°C |
|  | Thermal gradient creates temperature differences of up to 25°C across eight different rows |
|  | Gradient operational range: 30–100°C |
|  | Temperature accuracy is ±0.5°C of programmed target |
|  | Temperature uniformity is ±0.5°C well-to-well within 30 sec of arrival at target temperature |
|  | Two modes of temperature control — calculated sample temperature and block modes |
|  | Block temperature range is between 4 and 100°C. |
|  | Heating and cooling method: Peltier |
|  | Heated lid with adjustable temperature control |
|  | 5.7" color touch screen display with full VGA resolution |
|  | Memory can store up to 500 protocols |
|  | Detailed reports include complete documentation for each run, including each step of the protocol and any run errors |
|  | USB flash drive for protocol transfer and firmware upgrades |
|  | Power failure protection — in the event of a power failure, runs resume upon power-up and the user is notified of the failure. |

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| **Item2: GelDoc Go Imaging System with Software Qty:1** | |
|  | Applications: Fluorescence, Colorimetry, and Gel documentation |
|  | Maximum image area (L x W): (14 cm x 21 cm) |
|  | Touch screen 9.7" (24.64 cm), Multi-touch capable, Resolution: 1024 x 768 pixels. |
|  | Onboard computer system: 2 GB RAM, 32 GB disk space, and 4 USB ports. |
|  | Maximum supported sample thickness: 5 mm |
|  | Excitation source: Trans-UVB, Epi-white, Trans-white, and Trans-blue. |
|  | Detector: 6.3 MP CMOS |
|  | Pixel size: 2.4 µm x 2.4 µm |
|  | Emission filters: 535–645 nm (standard) |
|  | Dynamic range: >3.5 orders of magnitude |
|  | Pixel density (gray levels): 65,535 |
|  | Operating voltage: 100–240 VAC, 50–60 Hz |
|  | Workflow automated selection: Application-driven, tray-based imaging and auto selection of excitation source |
|  | Image flat fielding: Dynamic; precalibrated and optimized per application |
|  | Autoexposure: 2 user-defined modes (rapid or optimal) |
|  | Auto-focus: Precalibrated focus for any zoom setting |
|  | Data output: 16-bit or 8-bit: SCN, TIFF, JPEG image files |
|  | Add a labtop that meets the latest specifications , with high-speed processor to be compatible with the current software or software that will be updated In future |
|  | Add colored laser printer to printed and interpretation the reported of result with at least two spare ink box |

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| **Item 3: PCR Laminar flow cabinet with microprocessor control system Qty:1** | | |
|  | Nominal size | 3 feet |
|  | Internal Dimension (WxDxH) | 1000×650×720mm |
|  | External Dimension (WxDxH)without support stand | 1180x745x1230mm |
|  | External Dimension (WxDxH) with support stand | 1180x745x1920mm |
|  | Net Weight with support stand | 170kgs |
|  | Cleanness Class | ISO 14644-1, Federal Standard 209E for ISO 5/Class 100 air |
|  | Laminar Airflow velocity | 0.3m/s (Adjustable from 0.26m/s~0.38m/s) |
|  | HEPA Filter | ≥99.99% (@0.3μm) |
|  | Prefilter | Washable Pre-filter |
|  | Noise level | ≤65dB（A） |
|  | Vibration amplitude | ≤5μm |
|  | Concentration of descending bacteria | ≤0.5cfu·0.5h（φ90mm Petri dish) |
|  | Illumination | ≥800Lux |
|  | Controller | Microprocessor |
|  | Display | LCD color Display |
|  | Blower Nominal power Quantity | 75Wx1 |
|  | Light （LED Lamp） | 24.5W |
|  | UV Lamp | 20W (253.7 naometer) |
|  | Water proof Sockets qty | 500W/3A x2 |
|  | Work table | 1.2 mm thickness 18 gauge stainless steel grade 304 |
|  | side wall | 0.5mm glass double layers Anti-UV exporue |
|  | Back wall | Baking finish steel |
|  | Front slash window | 0.5mm glass layers Anti-UV exporue |
|  | Exterior | Painted steel |
|  | Power without socket power | 180W |
|  | Voltage | 220V/50HZ;220V/60HZ |
|  | Current | 1.2A |

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| **Item 4 : Fume hood Qty:2** | |
| **display** | **LED display** |
| **Front window** | **made of thick transparent toughened glass height adjustable/vertical sliding** |
| **Features** | **Microprocessor control system, LED display.**  **With memory function in case of power-failure.**  **Made of porcelain white PP, resistant to acid, alkali and anti-corrosion. Fluorescent Lamp** |
| **External size (WxDxH) (mm)** | **1800\*800\*2200 to 2200\*800\*2400** |
| **internal size (WxDxH) (mm)** | **1600\*650\*700 to 2000\*750\*1200** |
| **Work Surface Height** | **700- 850 mm** |
| **Air Velocity** | **0.3~0.8m/s** |
| **Noise** | **≤68dB** |
| **Exhaust Duct** | **PVC/steel**    **, 16 - 18 meters, φ 250b-300mm** |
| **Accessory** | **Lightning : lux**  **Base cabinet, 2 Waterproof socket**  **,Water tap ,Gas tap, Water Sink, flexible duct with exhaust fan/ blower** |
| **Power Supply** | **220V±10%, 60/50Hz** |
| **Consumption** | **500W max** |
| **Material** | **Exterior: Cold-rolled steel /polypropylene**  **Interior: High grade melamine or Pergers ceramic or any similar material with good acid and alkali resistance function** |
| **Connection and installation** | **The offer must include delivery, installation ,connections ,and all necessary supplies on-site.** |

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| **Item 5: Density / Specific Gravity Meter Qty:1** | |
| **Hassle-free and safe measurement Easy check of measurement cell No air bubbles, no contamination Calibration at one temperature Easy data transfer** | |
| **Specifications** | **Measurement Range 0～3 g/cm3**  **Measurement Temp Range 0 - 96℃ (32 - 204.8°F)** |
| **Accuracy (Density )** | **(±2 x 10-4 \_ ±1 x 10-4) g /cm3** |
| **Accuracy (Temp)** | **(±0.02 \_ ±0.05) ℃**  **(Calibration with air and water required.)** |
| **Repeatability (Density )** | **(SD 5 x 10-6 \_ SD 5 x 10-5 ) g/cm3** |
| **Minimum Sample Required** | **Approx. 1mL (Syringe)** |
| **Measurement Time** | **1 to 4 mins** |
| **Display** | 1. **5.7-inch colour TFT LCD; 640 x 480** 2. **Shows density, temperature, concentration and other messages.** |
| **With Viscosity Correction Sampling** | **by syringe** |
| **Method** | **Saves up to 100 different methods in built-in memory** |
| **Stability** | **Four modes of stability according to measurement accuracy and time** |
| **Density Auto Correction** | 1. **Saves conversion table or formula at your desired temperatures according to your samples.** 2. **Temperature conversion table programmed according to ASTM standard** |
| **Auto Conversion** | 1. **Between concentration and density** 2. **Between temperature and density** |
| **Statistics** | 1. **Auto or manual calculation of mean value, SD and coefficient** 2. **Recalculation, data deletion** |
| **Interfaces** | 1. **LAN:**   **Personal computer (PC)**   1. **USB 1.1:x 2; USB flash drive, keyboard,**   **barcode reader, printer Wetted Materials PTFE,**  **borosilicate glass**  **Power Supply AC100 – 240V; 50/ 60Hz (Comes with AC adapter)** |
| **standards** | **ASTM D1250**  **ASTM D4052**  **ASTM D5931**  **JIS K0061** |

**Item 6: Microwave Digester Qty: 1**

**Technical specification:**

1. **Power**: not less than 1800 watts
2. **Magnetron**: at least 2 with solid-state isolater (protecting Magnetron from degrading overtime if run on low loads.)
3. **Vessel Recognition**: automatically recognize the vessel type and number of vessels
4. **Interface:** Touch screen, does not require external control
5. **Build Quality:** must be constructed using 316 stainless steel, with Kydex Shell (chemical resistant). Painted metal is not preferred due to corrosion potential
6. **Library**: Built in.
7. **Safety**: continuous cavity monitoring the can disable magnetron in case of any event, sensors for event detection, Acid sensor, solvent sensor
8. **Temperature Control:** Contactless, up to 330C. Sensors must be floor mounted (Side is less accurate), Internal temperature of all vessels must be measured not just a control vessel,
9. **Cooling:** integrated exhaust system. (external or additional apparatus are not accepted).
10. **Vessels:** At least 16 vessels included
11. **Size:** at least 110 ml
12. **Temperature Control:**

**a.** Temperature sensors must measure the in situ, or internal temperature of the vessel contents, rather than the external vessel surface which relies on heat transfer and is less accurate. Internal

temperature measurement provides rapid system feedback and the greatest degree of reaction

control leading to safer and clearer (complete) digests.

**b.** The internal temperature of all vessels in the cavity must be measured, not just a control vessel, for improved safety and accuracy.

**c.** Vesselsshould be cooled in the microwave in a timely manner using an integrated exhaust system and must not require an additional apparatus such as water baths, chillers or external exhaust systems.

Item7: DSC Specifications Qty:1

The DSC should meet or exceed the following technical specifications when evaluated as described for each value with no post-test desmearing, deconvolution or other manipulation:

**Baseline Bow (-50°-300°C)** **<100 μW**

**Baseline Repeatability (-50°-300°C)** **<40 μW**

**Baseline Accuracy (-50°-300°C)** **±75 μW**

**Heat Flow Digital Resolution** **0.001 μW**

**Baseline Noise (-50°-300°C)** **<0.2 μW**

**Temperature Range** -90 to 550 °C (RCS 90 Mechanical Cooling)

-180 to 550 °C (QCA Liquid Nitrogen)

**Temperature Accuracy** **±0.1°C**

**Temperature Precision** **±0.01°C**

**Temperature Repeatability** **±0.1°C**

**Enthalpy Precision** **±0.1%**

**Enthalpy Repeatability** **±0.4%**

**Indium Response Ratio** **>8**

The DSC should be of the Heat Flux design whereby the sample and reference are measured in the same furnace, on separate stages.

The DSC should employ area temperature detectors directly beneath the sample and reference positions, not platinum resistance thermometers or thermopiles.

The DSC furnace shall be constructed of silver, with platinel heater windings. The benefit of this design is in the uniform thermal environment, and long furnace lifetime.

The DSC should include a third thermocouple, thermally isolated from the sample and reference, to act as an objective reference point for temperature control.

The DSC module must provide for the user the ability to replace the DSC cells (sensor, furnace and associated electronics) by simply removing a few screws. This will allow various research groups to have their own DSC cell for use on a single base platform. The user should not be required to manipulate fragile thermocouple leads and/or tensioning springs to replace DSC sensor.

The DSC cell should include integrated, temperature controlled electronics for stable signal processing.

The DSC must include integrated purge gas delivery control accommodating at least two simultaneously installed gases. This capability must be incorporated into the instrument (*i.e*. shall not be a separate unit) and should not require external tubing to deliver the gas flow from the controlling components to the DSC cell. Purge gas flow rate must be programmable within operating software, and deliverable as a saved signal in the data file. Gas delivery control must also allow for automated switching between the two gases during an experiment.

The DSC must include Modulated DSC, defined and compliant as described in section below.

Must have up to five points for temperature calibration.

Modulated DSC must be supplied with the following criteria:

* Ability to apply sinusoidal temperature wave to sample: Amplitude of sine wave ± 0.01 to 3°C; frequency period from 10 to 200 seconds.
* Must include the ability to perform quasi-isothermal experiments, i.e. holding isothermal with a small temperature modulation.
* The temperature modulation should be strictly periodic to ensure continuous steady-state control and exact experiment reproducibility, random temperature perturbations are not acceptable.
* In order to view the signals real-time, deconvolution of the signals must be done real-time, on board the module using a discrete Fourier Transformation, not after the scan.
* All of the signals above must be collected during one single experiment and stored in one single data file.
* Must be able to view the following signals in real-time during the experiment: Total Heat Flow, Total Heat Capacity, Reversing Heat Capacity, Reversing Heat Flow, Non-Reversing (Kinetic) Heat Flow, Modulated Temperature, Modulated Heat Flow, Heat Flow Phase, Reference Sine Angle, Temperature Amplitude, Heat Flow Amplitude.
* The heat capacity measurements must not require a prior baseline scan that has to be subtracted from the sample scan for quantitative data.
* Must include the ability to measure thermal conductivity of insulators with no hardware modifications to DSC.

***Software***

The DSC must include operating software, which allows for the instrument to be fully calibrated and verified automatically, without the need for operator presence. Calibrations must include baseline, cell constant, and temperature. Scheduling capabilities must be present, such that these calibrations and/or verifications can be programmed to perform during normal quiescent periods, such as overnight or on weekends.

# The data analysis software should be unkeyed, to allow for unlimited installations within one site.

# The data file format should easily allow sharing/transfer of data files as individual electronic documents, which are readable by the same data analysis package.

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| **Item 8: Instrument for colour fastness to light/ xenon light Qty: 1** | |
| Complies to | ISO 105- B02 |
| Digital display ,real time montoring, closed loop controlled &automatically adjust to meet different standards | yes |
| Touch panel, avarity of test monitoring modes operate easily & clearly | yes |
| Set of samples holders & blue wool fabric | yes |
| lamb | Air –cool long arc xenon lamb 2500W(2pes) |
| Temperature range  Resolution | 20- 60 c˚  0.1c˚ |
| Humidity range  -light cycle  -dark cycle  Resolution | 10-70% RH  30-95% RH  0.1% |
| Test time control | ≤10000 hr |
| Irridance  Irridance accuracy | 0.8-1.50 w/m²(420 nm , 340 nm , 300-400 nm , 300-  800 nm(digital set , automatic closed –loop compensation)  ± 0.02 w/m²at 420 nm |
| ISO Sample holder dimension mm | Min. 135\*45 mm  15 pcs |
| Measuring range of BST | 40 – 85 ± 1˚C |
| Gray Scale for color change | 1 psc |
| Rotation speed of sample holder | 5 rpm |
| Calibration certificate | Yes |
| Water pipe | 1 inlet& 1 outlet |
| Solar panel | One |
| Thermometer including irradiance meter | One |
| Set of Standard blue wool fabric( L1-L8) | 50 psc |
| Reference material | One |
| BST Including battery, irradiance meter | 1 psc |
| Brush | 1psc |
| 1/2 cover plate | 15 psc |
| 1/3 cover plate | 15 psc |
| Net weight | Max.300 kg |
| Power | 220 v 50Hz 6.5kw |

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| **Item 9: Data color Qty:1** | |
| scope | Spectrophotometer and / or colorimetric used to choose between different color spaces, After a measurement with the color meter, the reading can be used as a reference value while other readings can be recorded as a sample and later be compared to the reference value easily. |
| calibration | White and black calibration selectable |
| Measuring geometry | 45/0 method (45 ring-shaped illumination,0 vertical viewing), Comply with CIE No.15，GB/T 3978 |
| Integrating sphere Size | Φ58mm |
| Light Source combined LED sources | combined LED sources |
| Sensor | Silicon photoelectric diode array |
| Wavelength range | 400~700nm |
| Wavelength interval | 10nm |
| measuring Aperture | Φ8mm, Φ10mm |
| Color Space | CIE LAB, XYZ, Yxy, LCh, CIE LUV, HunterLAB, WI (whiteness), YI (yellowness) |
| Color Index | ΔE\* ab, ΔE\* uv, ΔE\* 94, ΔE\* cmc(2:1), ΔE\* cmc(1:1), ΔE\* 00, ΔE（h), ΔE\*cmc (l:c) |
| Chromaticity Data | WI(ASTM E313, CIE/ISO, AATCC, Hunter) YI(ASTM D1925，ASTM E313) TI(ASTM E313，CIE/ISO) Metamerism Index Mt Color Stain, Color Fastness, SCI and SCE (specular excluded) |
| Observer | 2°/10° |
| Illuminant | Spectral Value/Graph,  Colorimetric Value,  Color Difference Value/Graph,  PASS/FAIL Result,  Color Offset,  Color Simulation |
| Display Data | D65，A,C,D50，D55，D75，F2，F6，F7，F8，F10，F11, F12 |
| Minimum Interval between Measurement | 1.5 s |
| Repeatability Spectral Reflectance | standard deviation within 0.1% (400~700nm: within 0.2%), Colorimetric Value: Standard deviation within Delta E\*ab 0.04 |
| Errors between each instrument | Within Delta E\*ab 0.2 (Average for 12 BCRA Series II color tiles) |
| Battery | Rechargeable Lithium-ion battery, 5000 times within 8 hours. |
| Lamp Life | 5 years, more than 1.6 million measurements |
| Display Screen | TFT 3.5inch Capacitive Touch Screen |
| Port/ interface | USB/RS-232 |
| Storage | 1000 Standards, 10000 Samples |
| Operating Temperature | 0~40℃（32~104°F） |
| Data color | |
| Storage temperature | - 20~50℃（-4~122°F） |
| Humidity range | less than 85% relative humidity, no condensation |
| Standard Accessories | Power Adapter, Li-ion Battery; Operation Manual, Software CD; USB Cable, White and Black Calibration Cavity, Protective Cover, Wrist Strap |
| parts | Aluminum carrying case 1psc  Ac adapter 1pcs  Lithium ion battery 1psc  Protective cover 1pcs  Usb cable 1pcs  Wrist software 1 pcs  Instruction manual  Calibration plate ( white) 1pcs  Calibration plate (black) 1 pcs |

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| **Item 10: Laundry for color fastness to washing Qty:1** | |
| Complies according | ISO 105-C06  ISO 105-C08  ISO 105-D01 |
| water bath containing a rotating shaft/container which support radially , stainless steel containers | At least 8 sample holder |
| Heating rate | 1.5±0.5˚C |
| Temperature accuracy | ±2 ˚C |
| Rotating speed ( frequency ) | 40±2 RPM |
| Temperature and timing controls | Yes |
| Distance between the bottom of the containers and the center of the shaft | 45 ± 10 mm |
| Temperature setting range | 0-95 ˚C |
| stainless steel containers | 75±5 mm diameter  125±10 mm height  550±50 ml capacity |
| Numbers of stainless steel containers | At least 12 pcs |
| Non-corrodible Stainless steel ball Φ6±0.5 mm | 200 pcs |
| Non-corrodible Stainless steel discs | 100 pcs |
| PTEFE container seals 550 ml  Neoprene Container Seal for 550 ml Container | At least 12 pcs  At least 12 pcs |
| Rubber balls | 100 pcs |
| Screen control | Touch |
| Automatic Alert of the end of the test | Yes |
| power | Ac/220v/50/60Hz |
| Inlet pips  and drain pipe | Yes at least 1 pcs  1 pcs |
| Non-corrodible Stainless steel discs | 30±2 mm diameter\* (3±0.5mm) height  Smooth and free rough edges  Of Mass (20±2g) |
| ISO color Gray scale – color change  9 steps  With certificate comply accordance to iso105-a02 | 1 pcs |
| ISO color Gray scale – color staining  9 steps  With certificate comply accordance to iso105-a03 | 1 pcs |
| Sdc Multifeibre adjacent fabric type TV  With certificate comply accordance to ISO105-F10 | 10 meter |
| Detergent without optical brightener (WOB)  AATCC 1993 Standard reference (WOB)  With certificate comply accordance to ISO105-c06 | 1 kg |
| SDC ISO105 F06 silk adjacent fabric | 5 meter |
| SDC ISO105 F03 polyamide adjacent fabric | 5 meter |
| SDC ISO105 F04 polyester adjacent fabric | 5 meter |

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| **Item11: Water bath1 Qty:1** | |
| Temperature Sensor | digital temperature sensor, mounted on the outside of the bath |
| Temperature | Setting Celsius / Fahrenheit |
| Working temperature range | at least 5 above ambient to +100 (with cover, depending on ambient pressure) |
| Setting temperature range | +10 to +100 °C |
| Setting accuracy temperature | 0.1 °C |
| Stainless steel interior  Dimensions  Volume  Liquid level min.  Liquid level max. | Deep-drawn stainless steel tray , without corners and edges for easy cleaning incl. central drain (no disturbing installations)  L\*W\*H> 600\*480\*150 mm  >36 L  >20mm  <115 mm |
| Calibration | 2-point calibration |
| Controller | graphic display with touch screen  digital display of set and actual temperature and of (remaining) programme time |
| temperature control | -two-stage safety system to prevent overtemperature (pressure sensor for level monitoring, thermal fuse for heating shutdown in case of error)  -individually adjustable overtemperature alarm, visual and acoustic  -Independent temperature limiter to switch off the heating in case of failure |
| Ambient temperature | +5 °C to +40 °C |
| Heating | corrosion-proof large-area heating on the outside of the interior |
| Cover | Stainless steel gable cover |
| Drain system | drain system - easy to empty |
| Timer | digital timer from 1 min. up to 99 hours 59 min., visual and acoustic |
| Voltage Electrical load | 230 V, 50/60 Hz |
| Clip for 300 ml flask | 4psc |
| Clip for 500 ml flask | 4 psc |
| Support basket with perforated mounting shelf (stainless steel) with grid perforations to take clips for conical flasks | 1 psc |
| Standard units are safety-approved and bear the test marks CE & EAC | YES |
| Calibration at temperature value | +70 ˚C |

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| **Item 12: Water bath 2 Qty:1** | |
| **Temperature Sensor** | digital temperature sensor, mounted on the outside of the bath |
| **Temperature** | Setting Celsius / Fahrenheit |
| **Working temperature range** | at least 5 above ambient to +100 (with cover, depending on ambient pressure) |
| **Setting temperature range** | +10 to +100 °C |
| **Setting accuracy temperature** | 0.1 °C |
| **Stainless** **steel interior**  **Dimensions**  **Volume**  **Liquid level min.**  **Liquid level max.** | Deep-drawn stainless steel tray, without corners and edges for easy cleaning incl. central drain (no disturbing installations)  L\*W\*H>590\*470\*200 mm  >50L  >20 mm  <170 mm |
| **Calibration** | 2-point calibration |
| **Controller** | graphic display with touch screen  digital display of set and actual temperature and of (remaining) programme time |
| **temperature control** | -two-stage safety system to prevent overtemperature (pressure sensor for level monitoring, thermal fuse for heating shutdown in case of error)  -individually adjustable overtemperature alarm, visual and acoustic  -Independent temperature limiter to switch off the heating in case of failure |
| **Ambient temperature** | +5 °C to +40 °C |
| **Heating** | corrosion-proof large-area heating on the outside of the interior |
| **Cover** | Stainless steel gable cover |
| **Drain system** | innovative drain system - easy to empty |
| **Timer** | digital timer from 1 min. up to 99 hours 59 min., visual and acoustic |
| **Voltage Electrical load** | 230 V, 50/60 Hz |
| **Clip for 300 ml flask** | 8 psc |
| **Clip for 500 ml flask** | 8 psc |
| **Support basket with perforated mounting shelf (stainless steel) with grid perforations to take clips for conical flasks** | 1PSC |
| **Calibration at temperature value** | +55 ˚C |
| **Standard units are safety-approved and bear the test marks CE & EAC** | YES |

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| **Item 13: Water Bath3 Qty:1** | |
| **Temperature sensor** | digital temperature sensor, mounted on the outside of the bath |
| **Temperature** | ( Celsius) |
| **Working temperature range** | at least 5 above ambient to +100 (with cover, depending on ambient pressure) |
| **Setting temperature range** | +10 to +100 °C |
| **Setting accuracy temperature** | 0.1 °C |
| **Calibration** | 2-point calibration |
| **Controller** | 1. intuitive 3.5" colour graphic display with touch screen 2. digital display of set and actual temperature and of (remaining) programme time |
| **Temperature control** | 1. two-stage safety system to prevent overtemperature (pressure sensor for level monitoring, thermal fuse for heating shutdown in case of error). 2. individually adjustable overtemperature alarm, visual and acoustic. 3. Independent temperature limiter to switch off the heating in case of failure. |
| **Auto diagnostic system** | microprocessor PID-temperature controller with integrated auto diagnostic system with fault indicator |
| **Heating** | corrosion-proof large-area heating on the outside of the interior |
| **Drain system** | innovative drain system - easy to empty |
| **Timer** | digital timer from 1 min. up to 99 hours 59 min., visual and acoustic |
| **Interior** | Deep-drawn stainless-steel tray without corners and edges for easy cleaning incl. central drain (no disturbing installations) |
|  | lx w x h: 602 x 482 x 150 mm |
| **Volume** | 37.5 l |
| **Liquid level min.** | 20 mm |
| **Liquid level max.** | 114 mm |
| **Dimensions** | lx w x h: 868 x 554 x 375 mm |
| **Voltage Electrical load** | 230 V, 50/60 Hz approx. 2800 W |
| **Ambient temperature** | +5 °C to +40 °C |
| **Humidity rh** | max. 80 %, non-condensing |
| **Accessories** | 1. Flat stainless-steel cover with concentric ring sets for ring set openings: 8 openings / 107 mm diameter 2. Perforated bottom shelf, reversible for 2 heights (30 or 60 mm), stainless steel 3. Support basket with perforated mounting shelf (stainless steel) with grid perforations to take clips for conical flasks 4. 8 Clips for 300 ml flask |

**Item 14: Climate chamber ICH stability testing Qty:1**

**Ideal for food and cosmetics, as well as quality tests and humidity-controlled storage.**

**Temperature adjustment ranges: 0 to +70 °C**

**Humidity adjustment ranges: 10 to 90 % rh**

**Temperature**

* **Setting temperature range : with light, with humidity: +5 to +70 °C.**
* **Working temperature range:** with light, without or with humidity: 15 to +40 °C.
* **Temperature sensor:** 2 Pt100 sensors DIN Class A in 4-wire-circuit for mutual monitoring, taking over functions in case of an error.
* **Setting accuracy temperature : 0.1 °C**

**Humidity**

* **Setting range humidity: 10 - 90 % rh**
* **Humidity: humidity supply with distilled water from external tank by self-priming pump**
* **Humidification: humidification by hot steam generator**
* **Dehumidification: dehumidification by cold trap using the Peltier technology**
* **Setting accuracy humidity: 0.5 % rh**

**Control technology**

* **Language setting: English**
* **adjustable parameters: temperature (Celsius or Fahrenheit), relative humidity, program time.**
* **Timer: Digital backwards counter with target time setting, adjustable from 1 minute to 99 days**
* **Function Setpoint WAIT: the process time does not start until the set temperature is reached**
* **Calibration: three freely selectable values each, temperature and humidity**

**Communication**

* **Interface: Ethernet LAN, USB.**
* **Documentation: program stored in case of power failure.**
* **Programming: Auto-CONTROL software on a USB stick for programming, managing and transferring programs via Ethernet interface or USB port.**

**Safety**

* **Temperature control: over- and under temperature monitor TWW, protection class 3.3 or adjustable temperature limiter TWB, protection class 2, selectable on display.**
* **Auto SAFETY: additionally integrated over- and under temperature protection "ASF", automatically following the setpoint value at a preset tolerance range, alarm in case of over- or under temperature, heating function is switched off in case of over temperature, cooling function in case of under temperature.**
* **Auto diagnostic system: integral fault diagnostics for temperature and humidity control.**
* **Alarm: visual and acoustic**

**Standard equipment**

* **Standard works calibration certificate : +25 °C / 60 % rh, +40 °C / 75 % rh**
* **Door : fully insulated stainless steel door with 2-point locking (compression door lock)**
* **Door: inner glass door .**
* **Entry Port: Entry port (silicone), 18 mm clear diameter, moisture tight, can be closed by silicone stopper, in the side panel, center left**
* **Internals: 2 stainless steel grid(s), electropolished.**
* **Standard accessories: Water tank including connection hose , Stainless steel grids, electro polished.**
* **Stainless steel interior (Dimensions:** w(A) x h(B) x d(C): 560 x 480 x 400 mm (d less 32 mm for fan – Peltier), (**Volume:** 108 l), (**Max. number of internals:** 5),( **Max. loading of chamber:** 150 kg),( **Max. loading per internal:** 20 kg).
* **Small foot print.**

**Services**

|  |  |
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|  | * **Guarantee extension by 3 year.** |

* **calibration for a selectable temperature and humidity value .**

|  |  |
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|  | * **Maintenance minimum duration 3 years .** |

**Item 15: HPLC System Specifications Qty:1**

**1. Pump**

1. Type: Binary Gradient or Quaternary Gradient, depending on application
2. Flow Rate Range: 0.001 – 10 mL/min
3. Maximum Operating Pressure:

* 600 bar for general applications
* 1000 bar for UHPLC applications

1. Flow Rate Accuracy: ±1%
2. Flow Rate Precision: ≤0.1% RSD
3. Pump Head Material:

* Stainless Steel for non-reactive compounds
* PEEK for pharmaceuticals and sensitive compounds

1. Degassing System: Integrated with at least 4 channels, using membrane-based degassing technology
2. Safety Features: Leak detection, automatic shutdown in case of overpressure

**2. Auto-sampler**

* 1. Injection Volume Range: 0.1 – 100 µL, expandable up to 500 µL

1. Injection Precision: ≤0.3% RSD
2. Injection Cycle Time:

* ≤10 sec for small volume injections
* ≤30 sec for large volume injections

1. Needle Washing System:

* Internal and external washing to prevent carryover
* Configurable solvent selection

1. Sample Capacity: Up to 100 vials (1.5 mL and 2 mL compatible)

**3. Detectors**

* 1. UV-Vis DAD/PDA Detector
* Wavelength Range: 190 – 700 nm
* Simultaneous Wavelengths: At least 8
* Light Source:
* Deuterium lamp (D2) for UV
* Tungsten lamp for visible wavelengths
* Wavelength Accuracy: ±1 nm
* Signal-to-Noise Ratio: ≥250 at 254 nm

1. Fluorescence Detector (FLD)

* Excitation/Emission Range: 200 – 800 nm
* Light Source: Long-life Xenon lamp
* Sensitivity: ≤0.5 fmol for anthracene

1. Refractive Index Detector (RI)

* RI Range: 1.00 – 1.75 RIU
* Accuracy: ±0.0001 RIU

d. Conductivity Detector

* Conductivity Range: 0.1 – 1000 µS/cm
* Sensitivity: 0.1 nS/cm

**4. Column Oven**

* 1. Temperature Range: 10 – 85°C
  2. Temperature Accuracy: ±0.2°C

1. Thermal Stability: ±0.1°C
2. Column Capacity: Up to 3 columns (max 300 mm length)

**5. Columns**

* 1. For Vitamins, Preservatives, Pesticides: C18 (150 × 4.6 mm, 3 µm particle size)
  2. For Lipids, Cosmetics: C8 (150 × 4.6 mm, 5 µm particle size)

1. For Sugars, Carbohydrates: HILIC Column
2. For Polymers and Organic Solvents: Silica Column
3. For Pharmaceuticals and Plant Extracts: Reverse Phase C18

**6. Software & Data Management**

* 1. Compliance: FDA 21 CFR Part 11
  2. Functions: Data processing, peak integration, concentration calculations, automatic error correction
  3. Connectivity: LAN and USB, LIMS compatibility
  4. User Management: Multi-level access control

**7. Accessories & Consumables**

1. Solvent Bottles: 4 × 1L with air separation system
2. b. Filters:

* 0.22 µm for sample filtration
* 0.45 µm for solvent filtration

1. Maintenance Kit: Pump seals, pressure gauge, and flow verification tools
2. Calibration & Diagnostics Kit: Certified reference standards
3. PC (Lenovo, Dell, or HP) + LED 22"

**8. Training & Technical Support**

* 1. Training: Theoretical and practical sessions on system operation, data analysis, and reporting
  2. Technical Support:
* 2-year warranty
* Local technical support with spare parts availability
* Free software updates for 3 years

**الشروط الخاصة :**

1. **على الشركة تقديم كتالوجات حديثة وأصلية من الشركة الصانعة مع العرض.**
2. **على الشركة ارفاق قائمة مطابقة الشروط لمواصفات الأجهزة مدعومة برقم الصفحة ومظللة بشكل واضح على كتالوج الجهاز .**
3. **على الشركة تقديم العروض الفنية والمالية على نسختين متطابقتين منفصلتين مع ضرورة عدم ذكر اية معلومة مالية في العرض المالي وعد ذكر اية تفصيلات فنية في العرض المالي .**
4. **يجب ان تكون جميع الأسعار خاضعة لنسبة (الصفر ) من قانون الضريبة العامة على المبيعات .**
5. **يجب أن تكون الاسعار على اساس الاجهزة واصلة المختبرات العسكرية لمراقبة الجودة .**
6. **يجب أن تكون جميع الأجهزة ولوازمها جديدة (100%) وخالية من أية عيوب في الصنع وتكون من طراز حديث سنة الصنع (2024) فما فوق.**
7. **يجب أن لا تزيد مدة التسليم عن( 120) يوم من تاريخ التبليغ بقرار الإحالة.**

**الاستلام والتركيب.**

1. **أن يكون العرض شاملاً التركيب والتجهيز والتشغيل تشمل توصيلات الغازات وتوصيلات الكهربائية وتركيب جهاز UBS للجهاز .**
2. **عند تركيب الجهاز في الموقع يتم اختبار كفاءه الجهاز التشغيلية باستخدام مواد مرجعيه معتمده (ان وجدت) ويتم تزويد المختبرات بشهاده وتقرير يؤكد عمليه التحقق من عمل الجهاز بكفاءة عالية .**
3. **تلتزم الشركة المحال عليها العطاء بإرفاق دليل الصيانة (ان وجد) وتعليمات التشغيل وبرمجيات الجهاز .**

**التدريب الداخلي والخارجي .**

1. **يتم التدريب الداخلي على جميع الاجهزة بعد التركيب في المختبرات ولمده لا تقل عن اسبوع .**
2. **يتم التدريب الخارجي على الأجهزة وكما هو مبين تالياً ولمدة لا تقل عن (5 ) أيام في بلد المنشأ على نفقة الشركة المحال عليها العطاء بعد شهرين من انتهاء التدريب الداخلي .**

|  |  |
| --- | --- |
| **اسم الجهاز** | **عدد الفنيين** |
| **Microwave digestion system** | **2** |
| **DSC** | **3** |
| **جهاز ثبات اللون لضوء النهار** | **3** |
| **Data Color** | **1** |
| **جهاز ثبات اللون للغسيل** | **1** |
| **HPLC** | **3** |

1. **يتم التدريب على الـ Software والبرمجيات الخاصة والتابعة للجهاز , تحضير عينات فحص و تحضير المحاليل المرجعية, الية استحداث طرق فحص وتطويرها , التدريب على الصيانة الوقائية وعمليه تبديل القطع و بالأخص المستهلكة منها .**

**الكفالة والصيانة.**

1. **وجود وكيل معتمد للشركة الصانعة داخل المملكة على ان يتوفر لديهم مهندس معتمد حاصل على شهادة معتمدة من الشركة الصانعة .**
2. **كفالة الجهاز لمدة (3) سنوات من تاريخ التشغيل للجهاز شاملة الصيانة وقطع الغيار.**
3. **تقدم الشركات المتقدمة للعطاء قائمة بأسعار قطع الغيار و المستهلكات اللازمة للجهاز والتعهد بها لمده لا تقل عن خمس سنوات**
4. **تلتزم الشركة المحال عليها العطاء بتقديم صيانة فورية للجهاز بحيث لا تزيد مدة توقف الجهاز عن 5% من الوقت التشغيلي للجهاز وفي حالة التقصير يفرض غرامة مالية مقدارها (5%) خمسة بالمائة من قيمة الصيانة .**

**الاستمرارية والتحديث .**

1. **تلتزم الشركة المحال عليها العطاء باستمرارية تحديث وتطوير ال Software التابع للجهاز مجانا وبشكل دوري .**