


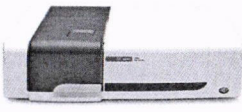


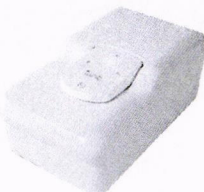

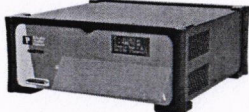
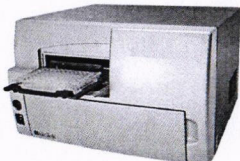


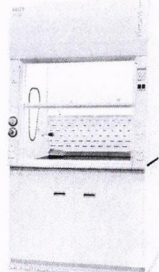
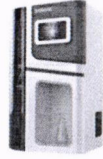



LAMPIRAN SPESIFIKASI BARANG
PENGADAAN PERALATAN LABORATORIUM UPT LABORATORIUM TERPADU PROGRAM REVITALISASI PERGURUAN TINGGI NEGERI
UNIVERSITAS NEGERI MALANG
TAHUN ANGGARAN 2024

NO.	NAMA BARANG	SPESIFIKASI BARANG	JUMLAH SATUAN	GAMBAR
1	Uninterruptible Power Supply (UPS)	285-475 VAC, Freq 46-54 Hz, PF 0.99. Output: 220/230/240 VAC ±1% VAC, Freq 50/60 Hz ±0.1Hz, PF 0.9. Overload 105%-125% (60 sec), 125%-135% (30 sec), ≥ 135% (100 msec). Proteksi: overload, overcharge, low/high voltage, short circuit, voltage/frequency fluctuation, surge, power blackout. Dimensi (WDH) mm : 260x560x717. Berat unit: 100 kg. Alarm untuk kondisi abnormal. Communication port: RS232/USB, SNMP (optional). Kelengkapan paket: panel I/O, kabel I/O @5m, kabel grounding @5m.	2 set	
2	FT-NIR Analyzer	Analysis: Simultaneous Determination of Parameters Within 1.5 Minutes, Spectrum: Transmission, Special Feature: Whole Grain Analysis, Reagents: None Required, Analysis Time: 1.5 Min, Sample Volume: 500mL. This configuration outlines a system designed for rapid and efficient analysis, capable of simultaneously determining multiple parameters within a notably quick timeframe of 1.5 minutes. Utilizing a transmission spectrum method, it allows for thorough analysis without the necessity of altering the sample. A special feature of this setup is its capability to perform whole grain analysis, providing valuable insights without the need for grain destruction or alteration. Notably, no reagents are required for the analysis, ensuring a straightforward and cost-effective operation. The analysis time is a swift 1.5 minutes, promoting high-throughput and efficient workflow in the laboratory. With a sample volume of 500mL, it allows for substantial sample analysis, ensuring comprehensive and accurate results. This setup is tailored for applications requiring rapid, non-destructive analysis, particularly in the agricultural and food science sectors, providing quick and reliable data for informed decision-making. Analysis time 1.5 min; Sample volume 500 ml; Spectral range 13200-8700 cm-1 (760-1150 nm), Resolution 8, 16, 32, 64 cm-1; Power supply 110/220 V, 50/60 Hz, 110 W. Kelengkapan barang: FT-NIR Analyzer Wholegrain, Aksesoris, SpectraLUM/Pro software, PARCEL software package for calibration development, UPS, PC dan Printer	1 set	
3	FTIR Spectrometer	Interferometer : Michelson interferometer (30 degrees incident angle); Optical System : Single-Beam Optics; Beam Splitter : Germanium- Coated KBr; Light Source : High-energy ceramic; Detector : DLATGS detector With temperature Control; Wavenumber range : 7,800 to 350 cm-1; Resolution : 0.9; 2; 4; 8; 16 cm-1; Sample compartment : Equipped With automatic accessory recognition mechanism 200 x 140 x 100 mm center focus. S/N ratio: 37,000:1 or higher (IRSpirit-TX/KBr window) 30,000:1 or higher (IRSpirit-TX/KRS-5 window, IRSpirit-ZX/KRS-5 window) 13,000:1 or higher (IRSpirit-LX/KBr window) 10,000:1 or higher (IRSpirit-LX/KRS-5 window), (4 cm-1 resolution, 1 min scan, around 2,100 cm-1, peak to peak). mirror speed: 2.8 mm/sec. Data Sampling: Temperature-controlled semiconductor laser. Sample compartment: Equipped with automatic accessory recognition mechanism W200 x D140 x H100 mm Center focus. Dimensions: W390 x D250 x H210 mm. Weight 8.5 kg. Installation site: Temperature: 10 °C to 35 °C* Humidity : KBr window: 20 to 70 % with no condensation KRS-5 window, 20 to 90 % with no condensation *15 °C to 30 °C for operation. Power supply voltage: AC 100 to 240 V, 50 to 60 Hz. Required power: 75 VA. Power consumption: 40 W (for operation), 7 W (for standby) Kelengkapan barang: PC and Monitor (PC (i7/16GB RAM/512GB SSD/Win10Pro/LED 24") : 1 Pcs; EPSON L3210 All-in-one Printer : 1 Pcs; Software for IR : 1 Pcs; IR Accessory Kit : 1 Pcs; Window Assy KBR : 1 Pcs; Window Assy KRS-5 for humidity more than 90% : 1 Pcs; QATR-S Single bounce Diamond ATR Accessory : 1 Pcs; for IR with Diamond (Extended range plate)" For sample Powder, Molding, Thin Films, Films, Liquid and Rubber : 1 Pcs; Demountable Cell, KBR /IR : 1 Pcs; Demountable Cell, KRS-5 /IR : 1 Pcs; Kris Dehumidifier 10 Ltr : 1 Pcs; Online UPS 3kVA, 1/1 phase, PF 0.9 : 1 Pcs. OS: Windows® 11 Pro. Programs: Postrun, Spectrum, Quantitation, Photometric, Time course (optional). Measurement: Spectrum measurement, Continuous measurement, Atmospheric correction measurement, Simple measurement mode	2 set	
4	Diffuse Reflectance UV-Vis Spectrophotometer	Dual beam UV-Vis Spectrophotometer with PC Controller; Scan from 190-1100 nm in less than 3 seconds; Could be upgrade for Fiber Optic dip probe option, for faster analysis and handle small sample (only 120 uL); Detector : 2 silicon diode detectors; Grating : 27.5 x 35 mm, 1200 lines/mm, blaze angle 8.6° at 240 nm; Monochromator : Czerny-Turner, Single light sources : Xenon flash lamp (guaranteed for minimum of 2 years lifetime); Beam splitting system : Beam splitter; Wavelength range : 190 - 1100 nm; Wavelength Accuracy : ± 0.5 nm at 541.9 nm; Wavelength Reproducibility : ± 0,1 nm; Spectral Bandwidth : Fixed 1.5 nm; Photometric Accuracy : ± 0.005A at 1.0 A; Photometric range : ± 3.3 Abs; Photometric Reproducibility : < 0.003 A at 546.1; Photometric Stability (Abs/hour) : After 30 minute warm up, 500 nm, 10 second, Signal Averaging Time < 0.0004; Photometric Noise (Abs, RMS) : 500 nm at 0 Abs < 0.0001 A RMS; Baseline Flatness : ± 0.001 Abs; Maximum Scan rate : 24000 nm/min; Repetitive scanning: 4800; max. number of cycles : 999; Data interval (nm) : 0.15 - 5.0; Complete with : WinUV Software Assembly & Rectangular Quartz Cell 10 mm. Kelengkapan barang: 1 set Personal Computer + Monitor + Printer; 1x UPS 1,2 kVA; 1x Diffuse Reflectance Accessory (DRA) for solid Sample)	2 set	

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5	UV-Vis Spectrophotometer	<p>Powerful double beam spectrophotometer Basic Unit; Double beam spectrophotometer with variable spectral bandwidth; High-end quartz coated optical components; Monochromator with imaging holographic grating minimizes stray light; Automatic self recalibration for optimum wavelength accuracy and reproducibility; Innovative detector technology with temperature controlled detectors; Additional position particularly suited for turbid samples; An intelligent software design; Extensive accessory portfolio and large sample compartment; Easy and tool-free exchange of lamps; Ease-of-use and flexibility; Mode: energy, Absorption, Transmission, Reflectance; Detector cooled by Peltier element; Wavelength range: 190 - 1100 nm; Spectral bandwidth: variable 0.2/0.5/1/2/4 nm; Scanning speed: 12000 nm/min; Photometric display: -9 - 9 A; Wavelength Accuracy : 0.5 nm at 541.9 nm; Wavelength reproducibility (with holmium oxide filter) : < 0.02 nm; Photometric accuracy Vis: + 0.003A; Photometric accuracy UV: + 0.010A; Photometric reproducibility: < 0.0005 A; Wavelength accuracy (Deuterium line at 656.1 nm) : + 0.1 nm; Wavelength reproducibility (with holmium oxide filter) : < 0.02 nm; Photometric reproducibility: < 0.0005 A; Baseline stability at 500 nm : < 0.0001 (RMS); Longterm stability at 500 nm: + 0.0005 A/h.</p> <p>The package included: PC (HP PRO 280/LENOVO AIO V50A or equal); Printer - HP Deskjet (Print, scan, copy); Quartz standard cells, 10 mm pathlength, 4 pieces; Dust cover; Stabilizer or UPS 1000 VA.</p>	1 set	
6	Gas Chromatograph	<p>Maximize uptime and profitability with a unique modular design that provides off-line maintenance and rapid troubleshooting capabilities. * Streamline operations with proprietary, tool-free Thermo Scientific™ iConnect™ Column Lock for quick, safe, and leak-free capillary column installation. * Facilitate daily operations and routine maintenance with easy-to-follow video guides on the high-resolution touch screen. * Advanced local touch screen interface ; 7" HD720p capacitive touch screen , Instrument and consumable health tracking with alert notifications for preventive maintenance, Built-in video maintenance walk-through guides, Real-time signal monitoring, Diagnostic functionalities, Multi-language capabilities, USB port for touch screen updates. Performance Specifications: • Heated zones: up to seven. • Time events: 63 user-selectable events. • Typical retention time repeatability*: <0.0008 min. • Typical peak area repeatability*: <0.3% RSD. GC oven: • Oven Dimensions (H x W x D): 27 cm x 27 cm x 17.7 cm; Volume: 12.9 L. • Hosts up to two capillary columns 105 m length and 0.53 mm I.D.. • Integrated oven light. • Operating temperature range: ambient +3 °C to 450 °C. • Temperature set point resolution: 0.1 °C. • Number of ramps/plateaus: 32/33. • Maximum heating rate setting: 125 °C/min. • Oven cool down (22 °C ambient): 450 °C to 50 °C in less than 4 minutes. • Ambient rejection: < 0.01 °C per 1 °C. Carrier gas control ; Split ratio: up to 12500:1. Pressure range: 0-1050 kPa (0 - 150 psi). Integrated Electronic Control (IEC) Gas specification; Up to 18 channels of integrated electronic gas control. Pressure set points minimum increments : 0.01 kPa (0.001 psi) for entire range of 0-150 psi. Temperature pressure variation: max ±0.07 kPa/°C (±0.01 psi/°C). Pressure accuracy: ≤±1% (FS). Pressure set point precision: ±0.3 kPa. Injectors; Maximum number installed: 2 (except for TSI injector which occupies two injector slots). Available as Instant Connect, user-exchangeable modules. Instant Connect Split/Splitless Injector (SSL). Cold head injector suitable for fast injections (liquid band injections). Suitable for all capillary columns of 0.05 mm to 0.53 mm I.D. Maximum temperature: 400 °C. Autosampler 1 pcs Type : AI 1610. "Sample Capacity: 8 x 2 mL vials". "Injection Mode: Automatically". "Injection Speed: Fast/Slow/Variable (from 1 to 60,000.00 µL /min)". "Injection Volume: 0.01 to 80 µL". "Washing Solvents: Up to 4" Instant Connect Flame Ionization Detector (FID) : 1 pcs Flameout detection and automatic re-ignition, Minimum Detectable Level (MDL): <1.2 pg C/s. Sensitivity: 0.03 Coulombs/gC. Linear dynamic range: >10⁷ (±10%). Maximum temperature: 450°C settable in 0.1°C steps. Integrated gas control (IEC): Air: 0 - 500 mL/min in 0.1 steps. H2 : 0 - 100 mL/min in 0.1 steps. Makeup gas: (N2 or He) 0 - 50 mL/min in 0.1 steps.</p> <p>Complete with: 10 µL Fixed Needle Syringe 1 pcs, 2 mL Screw Top Vial with 9 mm Cap. (set of 100/pk) 1 pcs, GC COLUMN 1 pcs, CHROMELEON Software 1 pcs, PC iCore 7 , Monitor 1 pcs, Printer 1 pcs, UPS 3 Kva 1 pcs, Isotrans 3 Kva 1 pcs, Gas Hydrogen , Cylinder , Regulator 1 pcs, Gas Nitrogen , Cylinder, Regulator 1 pcs, OIL LESS COMPRESSOR 1 pcs, Autoinjector up to 8 vial.</p>	1 set	
7	Particle Size Analyzer (PSA)	<p>Particle Size Distribution, Zeta Potential, Molecular Weight, Micro rheology, Particle Concentration, Structural Analysis of Gel Networks, Particle size and zeta potential measurement in a wide concentration range from diluted to concentrated solution (~ 40%), Multi-angle measurement to carry out particle size distribution with higher separability, Zeta potential measurement of solid surface in high salt concentration, Particle concentration analysis using Static Light Scattering, Micro rheology measurement using Dynamic Light Scattering, Gel network and gel heterogeneity analysis by measuring intensity of scattered light and diffusion coefficient of sample at multiple points, Standard flow cell which can be used for two types of measurement (Particle size and zeta potential) without replacing samples, Wide range of measurement temperature from 0 to 90°C, Temperature gradient function which enables denaturation (melting temperature) analysis for proteins, Electrophoretic mobility measurement and plot analysis for accurate zeta potential measurement.</p> <p>Measurement range: Zeta Potential : -200 ~ 200 mV; Mobility : -2×10⁻⁵ ~ 2×10⁻⁵ cm²/V · s; Particle Size : 0.6 nm ~ 10000 nm; Molecular Weight : 340 ~ 2×10⁷.</p> <p>Measure conditions: Temperature Concentration: 0 ~ 90°C; Particle Size: 0.00001 % (0.1ppm)~40% *1; Zeta Potential: 0.001%~40% *1 (Latex112nm: 0.00001 ~ 10%, Taurocholic acid: ~ 40%).</p> <p>Principle: Particle size : Dynamic light scattering method; Zeta potential : Electrophoretic light scattering method (Laser doppler method); Molecular weight : Static light scattering method.</p> <p>Optics: Particle size : Homodyne system; Zeta potential : Heterodyne system; Molecular weight : Homodyne system.</p> <p>Cell unit: Zeta potential/Particle size: Standard flow cell unit; Particle size: Particle size cell unit; Particle size/Molecular weight : Particle size multi-angle cell unit.</p> <p>Light source: Narrow-band laser diode Detector : High sensitivity APD Temperature : 0 ~ 90°C (with gradient function) Power : 100V ± 10% 250VA Standards: Particle size: JIS Z 8828:2019/ISO 22412:2017; Zeta potential: JIS Z 8836:2017/ISO 13099-2:2012. Supply with : Standard Flow Cell, Particle Size Cell unit, Particle Size Multi angle cell unit, Computer, Particle Size Standard, Zeta Potential Standard</p>	1 set	

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8	Potentiostat/Galvanostat with Electrochemical Impedance Spectroscopy Module	<p>Potentiostat/Galvanostat Modular : Yes; Maximum current : + 400 mA; Compliance voltage : + 20 V; Potentiostat : Yes; Galvanostat : Yes Potential range : + 10 V; Applied potential accuracy : + 0.2 % mV; Applied potential resolution : 3 μV; Current ranges : 100 mA to 10 nA; Current accuracy : + 0.2 %; Applied current resolution : 0.015% of current range; Measured current resolution : 0.0003% of current range; Electrode connections : 2, 3 and 4; Computer interface : USB; Potentiostat Bandwidth : 1 MHz; Input Impedance : >100 GOhm; Dimensions (WxDxH) : 15x26x20 cm3; Control software : NOVA.</p> <p>Ag/AgCl reference electrode with ceramic diaphragm Shaft material : Glass; Shaft diameter top (mm) : 12; Diaphragm : Ceramic; Bridge electrolyte type : c(KCl) = 3 mol/L; Resistance (kOhm) : 3; Temperature range, short-term ($^{\circ}$C) : 0 ... 80; SGJ sleeve : flexible SGJ sleeve; Reference electrolyte type : c(KCl) = 3 mol/L (thickened); Temperature range, long-term ($^{\circ}$C) : 0 ... 80; Electrolyte flow rate (μl/h) : 5 ... 30 μl/h; Plug for filling opening : Orifice; Shaft diameter bottom (mm) : 12; Min. immersion depth (mm) : 10; Internal reference electrode type : Ag/AgCl cartridge; Electrode plug-in head : Metrohm socket B. Pt-Auxiliary Electrode WOC Temperature range, long-term ($^{\circ}$C) : -20 ... 70; Measuring unit : mV; Indicator electrode type : Pt; Shaft material : Glass; Shaft diameter top (mm) : 12; Measuring range : -2000 ... 2000; Temperature range, short-term ($^{\circ}$C) : -20 ... 70; Shaft diameter bottom (mm) : 12; Min. immersion depth (mm) : 10; SGJ sleeve : flexible SGJ sleeve; Indicator electrode shape : Wire; Electrode plug-in head : Metrohm plug-in head B. FRA32M Module - Impedance analysis Frequency range : 10 μHz - 32 MHz; Frequency resolution : 0.00003; Input range : +/- 10 V; Signal types : 1 sine, 5 sine, 15 sine; Input channels : E and i from the potentiostat/galvanostat or X and Y external signals; AC amplitude : 0.2 mV to 0.35 V rms in potentiostatic mode, 2 mV to 3.5 V rms (optional), 0.002 - 0.35 times current range in galvanostatic mode; Data presentation : Nyquist, Bode, Admittance, Dielectric, Mott-Schottky; Data analysis : Fit and Simulation, Find circle, Element subtraction.</p> <p>Kelengkapan barang: Potentiostat/Galvanostat with Electrochemical Impedance Spectroscopy Module, Ag/AgCl Reference Electrode, Separate Pt Wire Auxiliary Electrode, Support rod-mount for 649/728, Titr. Vessel Lid SGJ, Vessel galss 10-90 mL, Vessel galss 50-150 mL, Module FRA32M for Impedance, PC Computer with UPS, Software NOVA.</p>	1 set	
9	Electrochemical Workstation	<p>Compliance Voltage \pm 48 V; Polarization Voltage \pm 10 V; DC Voltage Accuracy (Measured) \pm0.025% of reading \pm1 mV; impacts every experiment; DC Voltage Accuracy (Applied) \pm0.025% of setting \pm1 mV; impacts all potentiostatic experiments; Input Impedance of Electrometer 1E14 Ohms (100 TW) Typical; EIS Frequency Range 10 MHz to 10 μHz; Maximum Current 4-Amps, 20-Amps with option; Lowest Current Range 40-pA (40E-12 Amps), 80-fA (80E-15 Amps) with option; Dynamic Current Range (mA/pA) 100; Data Acquisition Rate 1000 kS/sec (1 μs time base resolution); EIS Bandwidth 10 MHz; Functionality All techniques, including FRA for EIS; Software Control VersaStudio and VersaStudio Developer's Kit (VDK); Connectivity USB</p> <p>Kelengkapan barang: Single Channel Potentiostat Galvanostat, VersaStudio Software, ZVIEW Software (EIS Modeling Software), ZSIMPWIN Software, RDE0021 Platinum Counter Electrode Wire 6 Inches, RDE0025 Counter Electrode Cap, RDE0023 Counter Electrode Bridge Tube, Ag/AgCl Reference Electrode (RDE0020, RDE0024, & RDE0022), PC and</p>	1 set	
10	Fluorescence spectrophotometer	<p>GENERAL: Detection modes UV-Vis absorbance, Fluorescence Intensity, Luminescence, Timeresolved fluorescence (secondary mode). Alpha; Microplate types 6- to 384-well plates; Read methods End point, kinetic, spectral scanning and well area scanning; Other labware supported PCR plates, Petri and cell culture dishes. Take3 Micro-Volume Plates; Temperature control 4-ZoneTM incubation to 50 $^{\circ}$C with Condensation ControlTM, +0.2 $^{\circ}$C at 37 $^{\circ}$C; Shaking Linear, orbital; Software Gen5TM Microplate Reader and Imager Software; Automation BioStack and 3rd party automation compatible.</p> <p>ABSORBANCE: Light source Xenon flash; Detector photodiode; Wavelength selection monochromator; Wavelength range 200 - 999 nm, 1 nm increments; Monochromator bandwidth 2.4 nm; Dynamic range 0 - 4.0 OD; Resolution 0.0001 OD; Pathlength correction; Monochromator wavelength accuracy +2 nm; Monochromator wavelength repeatability +0.2 nm; OD accuracy <1% at 2.0 OD, <3% at 3.0 OD; OD linearity <1% from 0 to 3.0 OD; OD repeatability <0.5% at 2.0 OD; Stray light 0.03% at 230 nm. Reading speed (kinetic) 96 wells: 14 seconds; 384 wells: 26 seconds.</p> <p>FLUORESCENCE INTENSITY: Light source Tungsten halogen, Xenon flash (option); Detector PMT; Wavelength selection Filters; Wavelength range 300 - 700 nm (200 - 850 nm option); Dynamic range >6 decades, Sensitivity Top and Bottom: Fluorescein 5 pM (1 fmol/well 96-well plate); Reading speed (kinetic) 96 wells, 31 seconds; 384 wells: 80 seconds.</p> <p>LUMINESCENCE: Wavelength range 300 - 700 nm; Dynamic range >6 decades, Sensitivity 10 amol ATP (flash) - Lum and Abs / Lum configurations; 30 amol ATP (flash) - Multi-mode configurations.</p> <p>TIME-RESOLVED FLUORESCENCE: Light source Xenon flash; Detector PMT; Wavelength selection Monochromator.</p> <p>ALPHA DETECTION: Light source Tungsten halogen; Detector PMT; Wavelength selection Filters; Sensitivity 300 amol of biotinylated-LCK-P peptide, 25 μL/ well in 384-well plate; Read speed 2 minute (96-well plate).</p> <p>PHYSICAL CHARACTERISTICS: Connectivity 1 USB, 1 RS232 for external PC control; Power 100-240 VAC, 50/60 Hz; Dimensions 16"W x 15"D x 10"H (40.6 x 38 x 25.4 cm); Weight 40 lbs (18 kg).</p> <p>REGULATORY: Regulatory CE and TUV marked. RoHS Compliant.</p> <p>Kelengkapan barang: Includes 2 fluorescence filter set, Software Gen5, Compatible PC/Laptop, Color Printer, UPS.</p>	1 set	

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11	Colony Counter Microbiology Bakteri	This instrument consists of counter, sensor, counting cell etc, reasonable design which can give a visible colony comparing, easy to observe, couple with special pen, it will be ring when count and ensure the accuracy of the testing, apply to Petri dish from 050-0100mm, the magnification is variable. It is a necessary instrument for all levels of health and epidemic prevention stations. Voltage: CA 100-240V (50/60Hz) Power rating of lamp: 16W Total power consumption: 20W Capacity of the Counter: 0-999 Diameter of the counting plate: Ø 115mm External Dimension: 255x210x 160mm Magnification: 3 times (9 times)	4 set	
12	High Performance Liquid Chromatography	<p>Optical design: UV/VIS/NIR photometer (tunable Czerny-Turner monochromator) with additional internal reference beam. Light source: Deuterium lamp Tungsten lamp (optional). Spectral bandwidth: 6 nm at 254 nm. Wavelength accuracy: ±1 nm. Wavelength repeatability: ±0.1 nm. Wavelength calibration: Internal calibration with D-alpha line of the deuterium lamp. Wavelength validation: Internal validation with holmium-oxide glass filter. Number of signal channels: Up to 2. Data collection rate (single-channel): Up to 125 Hz. Data collection rate (multi-channel): Up to 5 Hz. Noise (single-channel): <±2.5 µAU at 254 nm. Noise (multi-channel): <±10 µAU (typical <±7 µAU) at 254 nm and 280 nm. Drift: <0.1 mAU/h at 254 nm. Linearity: <5% at 2.5 AU (typical <3% at 2.5 AU). Flow cell pressure limit Standard biocompatible and semi-micro biocompatible flow cell: 5 MPa (50 bar, 720 psi) Semi-preparative biocompatible flow cell: 10 MPa (100 bar, 1450 psi) Standard and semi-micro flow cell: 12 MPa (120 bar, 1740 psi). Flow Range: 0.001-10 mL/min, Pressure Range: 2-70 Mpa. Detector: UV-Vis. Light source: Deuterium and Tungsten lamp. Wavelength range: 190-750 nm. Wetted parts Standard and semi-micro flow cell: Fused Silica, PEEK, PTFE, SST. Safety features Power-up diagnostics of optics, cooling fans, motors, and electronics Leak detection and safe leak handling.</p> <p>PC connection USB 2.0; 3-port HUB to connect further modules. I/O interfaces 2 x 6 pin Mini-DIN connectors each having functionality: 1 input, 1 relay out</p> <p>GLP Predictive performance functions for scheduling maintenance procedures based on the actual operating and usage conditions of the detector: lamp age and ignitions, lamp intensity degradation, leak detection, service monitoring period. All system parameters logged in the Chromleon CDS Audit Trail.</p> <p>Environmental conditions Operation: 5-35 °C, 20-80% RH (non condensing), max. 2000 m above sea-level Storage: -20-45 °C, max. 60% RH (non condensing)</p> <p>Power requirements 100-240 V AC, 50/60 Hz, max. 245 W/255 VA</p> <p>Dimensions (h x w x d) 159 mm x 420 mm x 620 mm (6.3 in x 16.5 in x 24.4 in)</p> <p>Weight 16 kg (36 lbs)</p> <p>Standard biocompatible, semi-micro biocompatible and semi-preparative biocompatible Fused Silica, PEEK</p> <p>Kelengkapan barang: Syringe 1pc, Column C18 1pc, Syringe Filter 100pcs, Software Chromleon, PC core i7, LED Monitor, Printer, UPS 2KVA 1pc, Bottle Eluent 2pcs</p>	3 set	
13	Fume Hood	<p>External Dimensions: 1220 x 900 x 1400 mm, Internal Dimensions: 996 x 675 x 1230 mm, Exhaust Duct: Fiberglass, 305 mm Ø x 3 m, Blower: PP Casing and Impeller, highly corrosion resistant, The Esco Exhaust Blower is specifically designed for corrosive fume hood applications. Its plastic impeller and casing are highly resistant to chemicals and corrosion. Explosion-proof option is also available, 3 305 mm / 12" internal measurements 220-240V/415V, 3 phase, 50/60HZ, 1.1 kW, 1500 rpm (motor) / Approx 1400 rpm (fan). Fluorescent Lighting System Pre-wired hood lighting with electronic ballast for energy efficiency and instant start, 886 lux (82.3 foot-candles). Controller: Rocker Switches. Main Body: Electrogalvanized steel with Epoxy-polyester hybrid Isocide™ powder coating. Sash Material: Laminated-Tempered and Framed Safety Glass. Sash Configuration: Combination. Sloping: 50 Sloped. Maximum Sash Opening: 50 Sloped. Maximum Sash Opening: 670 mm (26.4"). Cabinet Full Load Amps (FLA): 32 A. Cabinet Nominal Power: 220-240 VAC, 50/60 Hz, 10, 100 W. This configuration outlines a system with external dimensions of 1220 x 900 x 1400 mm, providing a substantial structure that will need adequate space for installation and operation. The internal dimensions are 996 x 675 x 1230 mm, offering a spacious internal environment for various applications. The exhaust duct is made of Fiberglass and has dimensions of 305 mm Ø x 3 m, ensuring efficient expulsion of exhaust and maintaining a safe operational environment. The blower: PP Casing and Impeller, highly corrosion resistant. The Esco Exhaust Blower is specifically designed for corrosive fume hood applications. Its plastic impeller and casing are highly resistant to chemicals and corrosion. Explosion-proof option is also available, 3 305 mm / 12" internal measurements 220-240V/415V, 3 phase, 50/60HZ, 1.1 kW, 1500 rpm (motor) / Approx 1400 rpm (fan). Fluorescent Lighting System Pre-wired hood lighting with electronic ballast for energy efficiency and instant start, 886 lux (82.3 foot-candles). This setup is designed to cater to applications requiring a controlled environment with efficient exhaust management, such as certain chemical and biological experiments, ensuring safety and integrity in various research and industrial applications. Include: a. 1 x Water Enhanz™ Remote Controlled Fixture Plumbed to the Top, b. 1 x Gas Enhanz™ Remote Controlled Fixture Plumbed to the Top, c. 4 x Single Electrical Outlet with Splash Proof Cover, d. Sentinel™ XL Airflow Alarm, e. 1 x Exhaust Blower, f. 1 x Ducting Set</p>	2 set	
14	Kjeldahl Analyzer	<p>Measuring range 0.1mg-240mg N; recovery rate ≥99.5%; sample amount solid ≤6g; liquid ≤20mL; Distillation time 0-60 min; Repeatability ≤0.5%; Cooling water consumption 1.5L/min; Operating mode: automatic/manual dual modes; Automatic drainage: automatic emptying and cleaning digestive tube waste liquid; Reagents bottle liquid level detection; Reagents bottle 4pcs; Protection device: flow rate detection, liquid level alarm, over temperature and over pressure protection; Display 7 inches LCD display; rated power 1.4kW; Power supply: standard 220V 50/60Hz, optional: 110V 50/60Hz.</p>	1 set	

NO.	NAMA BARANG	SPESIFIKASI BARANG	JUMLAH SATUAN	GAMBAR
15	Spectrophoto meter	Optical System: Single Beam, Grating 1200 lines/mm; Wavelength Range: 190-1100nm; Spectral Bandwidth: 2nm; Wavelength Accuracy: $\pm 0.5\text{nm}$; Wavelength Repeatability: $\leq 0.3\text{nm}$; Photometric Accuracy: $\pm 0.002A$ (0-0.5Abs), $\pm 0.004A$ (0.5-1.0Abs), $\pm 0.5\%$ T (0-100% T); Photometric Repeatability: 0.001Abs (0-0.5Abs), 0.002Abs (0.5-1.0Abs), $\leq 0.2\%$ T (0-100% T); Stray Light: $\leq 0.05\%$ T @ 360nm; 220nm; Stability: $\pm 0.001A/h$ @ 500nm; Baseline Flatness: $\pm 0.002A$; Noise: $\pm 0.0005A$; Display: 480 * 272 65 thousand true color TFT LCD; Photometric Mode: T, A, C, E; Photometric Range: 0-200% T, -0.301-3.0A; Detector: Silicon Photodiode; Light Source: Deuterium Lamp, Tungsten Lamp, Input: Membrane Keypad; Output: USB Print and data output, Connect PC; Standard Accessories: 10mm glass cuvette 4 units, 10mm quartz cuvette 2 units; Optional Accessories: Single cell holder, General cell holder, Test tube holder, Solid sample holder, Deuterium lamp, Halogen lamp, 4-place Cell holder, Printer, Water-jacketed cell holder. Reflection accessory 5°. Auto 8-cell changer, Micro cell holder, Water-jacketed cell holder, Constant-temperature system; Power Supply: AC110V/220 \pm 10%, 60/50Hz.	1 set	
Seluruh barang sudah termasuk pemasangan dan pelatihan				

Malang, 27 Juni 2024
Pegawai Pembuat Komitmen



Drs. Taar Setyohadi
NIP. 196411081989031004

Universitas Negeri Malang