

MAKLUMAT SPESIFIKASI ITEM

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MAKLUMAT SPESIFIKASI ITEM

No Pelawaan	: UiTM/N1/PER/SHR/B/0725/0002
Butiran Tawaran	: CADANGAN MEMBEKAL, MENGHANTAR DAN MENGUJILARI PERALATAN MOISTURE ANALYZER DAN VACUUM
Keterangan Item	: 0609030200022 : Universal/Bitumen/Vacuum Drying/Freeze Dryer/Heating Oven/Heat Sterilization/ Tray
Nama Spesifikasi	: (UMSKP) VACUUM FREEZER DRYER
Kuantiti	: 1.000

Butiran Keperluan

Calit

Tawaran Syarikat

1 SPESIFIKASI (Specifications)

I TECHNICAL SPECIFICATION

- A) Sample frozen in a cooling shelf cooled by a cooling water circulating device.
- B) The cooling shelf temperature can be controlled by the cooling water circulation device.
- C) Outer dimension: Approx. 290 mm x 420 mm x 360 mm
- D) Inner chamber dimension: Approx. 300 mm x 300 mm x 285 mm
- E) Cooling shelf temperature: - 5°C or less (depending on cooling water temperature)
- F) Cooling shelf dimension: 200 mm x 200 mm x 10 mm

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Butiran Keperluan

- G) Vacuum attainment level: 133 Pa (1Torr)
- H) Vacuum room material: Stainless steel (SUS304)
- I) Observation window dimension:280 mm x 270 mm
- J) Vacuum valve hose diameter: 8 mm
- K) Cooling water inlet and outlet diameter: 9.5 mm
- L) Weight: Approx. 29 kg

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2 **ACCESSORIES:**
 (i) COOLING WATER CIRCULATOR

- I Uses durable stainless-steel coils and has strong cooling capability.
 - A) The system should come in the touchscreen, digital display control panel with user-friendly properties.
 - B) Easy to set and monitor parameter of vacuum level, condenser temperature, shelf and sample temperatures, phase of program and time of program.
 - C) Should equipped with SD port for comprehensive logging of important process parameters on SD card.
 - D) The detail programming of method editing for time and temperature ramps, method editor in graphical display can be accessed easily.
 - E) Must be able to set primary and secondary drying phases.
 - F) Must be able to enter sample protective state when sample reaches critical temperature (near collapse temperature).
 - G) Must be able to automatically stops shelf heating and lower system pressure when sample reaches critical temperature, to prevent sample from melting.
 - H) Must come with electronic vacuum main valves, electronic vacuum regulation valve and aeration valve.

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Butiran Keperluan**Calit****Tawaran Syarikat**

- I) Must have sample protection features. Automatic process resumes in the event of a power failure happen.
- J) System should have possibility to connect with pirani and capacitive vacuum sensor. These two sensors will determine the accuracy of end point determination of the freeze dryer process.
- K) Must have easy to access condenser for de-ice and cleaning for maintenance purpose.
- L) The condenser temperature and vacuum condition could be monitored via app on mobile devices.
- M) System supply must have upgradability features. System can be upgrade in future for more application usage.
- II It has an overload protection device, a high -pressure switch, a safety breaker and a self-diagnosis function.
- III Temperature range: -20 to 20°C
- IV Temperature control accuracy: $\pm 2.0^{\circ}\text{C}$
- V Cooling shelf temperature: - 5°C or less (depending on cooling water temperature)
- VI Circulation method: Sealed system circulation
- VII Refrigerating machine : 450W
- VIII Liquid bath: Diameter 180 mm x height 180 mm approximately 4.5L
- IX Power supply: 100VAC 50/60 Hz
- X Time function: 1 minute-99 hour (1-minute unit)
- XI Self-diagnosis function: Upper-lower limit temperature abnormality detection, sensor abnormality, frozen machine overload relay, frozen machine protection timer, power failure detection and control temperature abnormality.

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Butiran Keperluan

XII Size: Approx. 218 mm x 430 mm x 563 mm

XIII Weight: Approx. 32kg

3 OIL-SEALED VACUUM PUMP

I Strong corrosion-resistant vacuum pump with a special surface treatment on the GLD series, which can withstand acid and alkaline solvents as well as carbon tetrachloride and HCl which are highly corrosive.

II Connected with oil filtration.

III Viton is used for the oil seal and O-ring.

IV Size: Approx. 166 mm x 419 mm x 223 mm

V Exhaust speed (L/min): 50/60 Hz

VI Achieving pressure: Gas ballast open 6.7 Pa

VII Power : 220-230V

VIII Oil volume: 500- 800 ml

IX Weight: Approx. 14.1kg

4 GENERAL REQUIREMENTS

I Manufacturer's direct support (Please do provide letter from the local or authorized manufacturer or distributor for support to render the after sales service) inclusive installation, commissioning and on-site training.

5 COST OF DELIVERY

I Cost of delivery of the equipment is borne by the tenderer.

Calit

Tawaran Syarikat

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Butiran Keperluan**Calit****Tawaran Syarikat****6 SUPPORT**

- I Minimum one (1) year warranty against manufacturing defects for item instrument.

☐**7 TRAINING**

- I Tenderers are required to provide training for the use, maintenance, troubleshoot and repair of the equipment to the technical staff of UiTM for minimum 1 (one) day for 4 staffs.

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- A) Inclusive installation, commissioning and on-site training

☐**8 INSTALLATION, COMMISSIONING AND TRAINING**

- I Testing shall be done by the manufacturer's qualified & experienced engineers and shall be completed within one month from the delivery date. The duration / time / training syllabus / number of participants for the training would be discussed on delivery of the equipment.

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