

INVITATION FOR QUOTATION

TEQIP-III/2018/ntst/Shopping/33

28-Dec-2018

To,

Sub: Invitation for Quotations for supply of Goods

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

Sr. No	Brief Description	Quantity	Delivery Period(In days)	Place of Delivery	Installation Requirement (if any)
1	Equipments for Heat Transfer Lab	1	30	National Institute of Technology, Sikkim, Ravangla-737139: South Sikkim, Sikkim, India	yes

2. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme[TEQIP]-Phase III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.
3. Quotation,
 - 3.1 The contract shall be for the full quantity as described above.

3.2 Corrections, if any, shall be made by crossing out, initialing, dating and re writing.

3.3 All duties and other levies payable by the supplier under the contract shall be included in the unit price.

3.4 Applicable taxes shall be quoted separately for all items.

3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.

3.6 The Prices should be quoted in Indian Rupees only.

4. Each bidder shall submit only one quotation.

5. Quotation shall remain valid for a period not less than **45** days after the last date of quotation submission.

6. Evaluation of Quotations,

The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which

6.1 are properly signed ; and

6.2 confirm to the terms and conditions, and specifications.

7. The Quotations would be evaluated for all items together.

8. Award of contract:

The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.

8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.

8.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.

9. Payment shall be made in Indian Rupees as follows:

Delivery and Installation - 80% of total cost

Satisfactory Acceptance - 20% of total cost

10. All supplied items are under warranty of **24** months from the date of successful acceptance of items.
11. You are requested to provide your offer latest by **17:00** hours on **31-Jan-2019** .
12. Detailed specifications of the items are at Annexure I.
13. Training Clause (if any) **yes**
14. Testing/Installation Clause (if any) **YES**
15. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.
16. Sealed quotation to be submitted/ delivered at the address mentioned below,
NIT Sikkim, Barfung Block, Ravangla, South Sikkim Pin Code-737139
17. We look forward to receiving your quotation and thank you for your interest in this project.
18. You are requested to submit, necessary documents/work orders in support of the delivery of Heat Transfer lab equipments to NITs/ IITs.
19. DSIR certificates will be provided, if required.
20. Quality of equipment and accessories should be the responsibility of the supplier.
21. Institute committee constituted for this purpose has the full right to replace the items which do not adhere the quality parameters.
22. The supplier has to submit performance security deposit. It will be returned after the satisfactory performance of the individual equipment.



(Authorized Signatory)

Name & Designation

Nodal Officer (Procurement)
TEQIP-III

National Institute of Technology Sikkim

Annexure I

Sr. No	Item Name	Specifications
1	Equipments for Heat Transfer Lab	<p style="text-align: center;">1. Steady State and Non-Steady State Heat Conduction (Quantity: 1)</p> <p>Description</p> <p>Unit can be used to study both steady and transient heat conduction. The trainer consists of a heat source and a heat sink, between which cylindrical samples made of different metals are inserted. Each sample is fitted with 12 temperature measurement points. The temperature measurement points are designed to have as little influence on the temperature as possible and the core temperature of the sample is measured.</p> <p>The heat source consists of an electrically heated hot water circuit. An electronic controller ensures the heating water is kept at a constant temperature. The heat sink is realized by means of a water cooling system. An elevated tank ensures a constant cooling water flow rate.</p> <p>A temperature jump can be generated by appropriate regulation of the cooling water flow.</p> <p>Technical data</p> <p>Heater</p> <ul style="list-style-type: none"> ▪ output: 800W ▪ temperature: 20...85°C <p>Samples, Ø 40mm</p> <ul style="list-style-type: none"> ▪ 3x 450mm (copper, aluminum, brass) ▪ 2x 300mm (steel, stainless steel) <p>Temperature sensors</p> <ul style="list-style-type: none"> ▪ 12x thermocouple type K, along the sample ▪ 2x Pt100, in the cooling water ▪ 1x Pt100, in the heating water <p>Measuring ranges</p> <p>temperature: 14x 0...100°C</p> <ul style="list-style-type: none"> ▪ power: 0...1000W ▪ flow rate: 0.1...2.5L/min <p>Experimentation</p> <ul style="list-style-type: none"> • steady and unsteady heat conduction • transient heat conduction • temperature/time profiles • calculate thermal conductivity λ of different metals • Digital Display board must be provided with the set up. • Standard Controller system must be provided.

2. Drop wise and Film wise Condensation Apparatus (Quantity 1)

Description

The Experimental unit can be used to demonstrate the different condensation processes using two tubular shaped water-cooled condensers made of different materials. Dropwise condensation can be demonstrated by means of the condenser with a polished gold-plated surface. Film condensation forms on the matt copper surface of the second condenser, thus making it possible to examine film condensation. The boiling point and the pressure in the system are varied by cooling and heating power. Sensors record the temperature, pressure and flow rate at all relevant points. The measured values can be read on digital displays. The heat transfer coefficient is calculated from the measured values.

Technical details

Heater

- output: 3kW, freely adjustable

Condenser

- 1x tube with matt copper surface
- 1x tube with a polished gold-plated surface

Safety valve: 2200mbar absolute

Measuring ranges

- Pressure: 0...10bar abs.
- flow rate: 0,2...6L/min
- temperature: 4x 0...100°C, 3x 0...200°C
- Digital Display board must be provide with the set up.

Experimentation

- dropwise and film condensation
- determination of the heat transfer coefficient
effect of pressure, temperature gases on the heat transfer coefficient

3. Parallel flow and counter flow heat exchanger (Quantity 1)

Description

The apparatus is used for studying the heat transfer through a concentric tube under parallel or counter flow conditions.

The unit consists of a concentric tube heat exchanger, and a service module. The module comprises a hot water tank with a transfer pump and instruments for monitoring and control. Parallel or counter flow is by switching cold hoses valves. The unit requires outside water supply.

Technical details

Construction : 2 sections of insulated concentric stainless steel tubes

Service module consists of :

Hot water tank and pump :
Heater : 3000 W
Temperatures : 6 in numbers
Flow meters : hot water and cold water
Experimentation

- Demonstration of heat transfer under parallel and counter flow. .
Determination of heat transfer coefficient. . Effects of flow rate and temperature difference.
- Digital Display board must be provide with the set up.

4.Vapor Compression Refrigeration Cycle Test Rig - Domestic Type (Quantity 1)

Description

The unit enables students to study the various parameters affecting the performance of a domestic refrigerator. It consists of refrigeration cycle of domestic refrigerator, it consists a hermetically sealed compressor, air-cooled condenser, capillary tube and a natural convection type evaporator. The evaporator is fitted with a small heater to simulate different load conditions various measurements are provided so that power consumption, COP, theoretical and actual refrigerating effects refrigerant flow rate and effect of door opening on power consumption can be studied and also students can visualize automatic operation of unit using a thermostat.

SPECIFICATIONS:

1. Compressor - Hermetically sealed, Kirioskar make having capacity of approx. 1/25 ton of refrigeration.
2. Air - cooled condenser with natural convection airflow.
3. Capillary tube of matched length as expansion device.
4. Evaporator coil with an electric heater inside and adequate glass wool insulation on all side.
5. Measurement
 - ❖ Energymeter Tore compressor input power measurement.
 - ❖ Pressure gauge for condensing and evaporating pressure.
 - ❖ Flow meter for liquid refrigerant flow
 - ❖ Digital Temperature indicator for measurement of temperature
6. Safety & Controls
 - ❖ High & low pressure cutout.
 - ❖ Thermostat.
 - ❖ Necessary Switches.A technical manual accompanies the unit.

**5. Vapour compression refrigeration cycle test rig (computerized)
(Quantity 1)**

Description

The Experimental unit consists of a compressor, a condenser with fan, a thermostatic expansion valve and a coaxial coil heat exchanger as evaporator. A water circuit serves as load, consisting of a tank with a heater and a pump. The temperature in the tank is adjusted at a controller. The purpose of this refrigeration circuit is the production of cold water. The water flows through the jacket of the coaxial coil heat exchanger, transfers heat to the refrigerant and thereby cools down.

All relevant measured values are recorded by sensors. The simultaneous transmission of the measured values to a data recording software. The software displays the key characteristic variables of the process, such as the compressor pressure ratio and the coefficient of performance.

Technical details

Compressor

Refrigeration capacity: approx. 380W.

Evaporator

refrigerant volume: 0.4L

water volume: 0.8L

Condenser

transfer area: approx. 1.25m²

fan power consumption: 4x 12W

Pump

Max. flow rate: 1.9m³/h

Max. head: 1.4m

Tank

volume: approx. 4.5L

heater: approx. 450W

Measuring ranges

Pressure : -1 15 bar

Power :- 0 750 W

Temperature :- 0 100 degree celcius.

Experimentation

- Digital Display board must be provide with the set up.

**6.Vapor Absorption Refrigeration System
(Quantity 1)**

Description

“Vapour Absorption Refrigerator” earlier known as “Electrolux” refrigerator is an self contained refrigerator working on absorption technology.

In the absence of a compressor or pump, the circulation takes place by density difference. The system is pre-charged with three fluids namely

water, ammonia and hydrogen. Hydrogen is used as an “inert gas” and does not undergo any phase change and heat transfer processes. Its purpose is to keep the pressure of the system constant.

It uses an electrically operated generator, where, the ammonia vapours dissolved in water are separated and pure ammonia vapours enter the condenser. In the condenser, the high pressure vapours reject its latent heat to the surroundings and get liquefied. The liquid ammonia expands through expansion device where its pressure and temperature is reduced and cold low pressure vapour enters the evaporator where it absorbs heat from the space to be cooled and then vaporized ammonia absorbs in water. This strong solution then enters the generator and the cycle repeats.

Technical Specifications:

GROSS VOLUME	41 LITERS
REFRIGERANT	WATER, AMMONIA, HYDROGEN
GENERATOR	ELECTRICALLY HEATED
CONDENSER	NATURAL CONVECTION TYPE
EVAPORATOR	NATURAL CONVECTION TYPE
MATERIAL OF CONSTRUCTION	M.S.
SUPPLY	230 VOLTS, 50 HZ, 1 PH
ENERGY CONSUMPTION	1.07 KWH PER 24 HRS
ENERGYMETER	PROVIDED
TEMPERATURE INDICATOR	DIGITAL INDICATOR AT THE SALIENT POINTS

Digital Display board must be provided with the set up.

7. Calibration of thermocouple (Quantity 1)

Description

The setup consists of constant temperature bath with heating element. This Heat source is controlled with the help of digital temp controller at any preset value. A thermocouple pocket is provided to insert the thermocouple in it. Three thermocouples i.e. CR/AL, Cu-constantan, Fe-constantan and Digital milivolt meter are also provided. All components are assembled on a base plate to form a tabletop set-up.

Technical details:

Heat Source: Provide with ceramic insulation.

Temp. Controller : Digital Temperature Controller, 0-199.9°C

Thermocouple: Standard 3 types of thermocouple a). Fe-Constantan (J-Type) b). CR / Al (K-Type) c). Cu-Constantan (T-Type)

Experimentation

- Digital Display board must be provide with the set up. To calibrate the given thermocouples and to plot the calibration curve

**8. Temperature Measurement apparatus
(Quantity 1)**

Description

The setup is designed to study Different types of temperature sensors for characteristics and time constants, Seebeck effect, Temperature indicator and its calibration, Temperature transmitter and its calibration

It consists of:

Temperature indicator, temperature sensors such as mercury in glass thermometer, bimetal dial thermometer, RTD, thermistor and thermocouple. Two wire temperature transmitter with power supply

Technical Data

Thermometer : Type Mercury in glass, Range (-)10 – 110 ° C

Bimetal thermometer : Dial size 100 mm, Range 0-100 ° C

Temperature sensor : Type PT 100, Sheath dia 6 mm x 100 mm long

Thermistor Type : NTC, Sheath dia 6 mm x 100 mm long

Temperature sensor: Type K, Sheath dia 6 mm x 100 mm long with Al head.

Temperature indicator Input : Thermocouple K type, Range 0-100°C

Temperature transmitter Type Head mounted two wire, Input RTD PT100, Range 0–100 Deg C, Output 4–20 mA

Digital milivoltmeter Range 0-200mVDC, Display 4.1/2 digit

Multimeter Display 3.1/2 digit,

Power supply Output 24VDC

Digital Display board must be provide with the set up.

Experimentation

- Study of Different types of temperature sensors
- Characteristics of RTD (PT-100)
- Characteristics of Thermistor
- Characteristics of Thermocouple
- Study and Calibration of Temperature indicator
- Study and calibration of Temperature Transmitter
- Study of Seebeck effect
- Time constant of mercury in glass thermometer
- Time constant of Bimetal thermometer
- Time constant of RTD (Pt100) sensor
- Time constant of Thermistor sensor
- Time constant of Thermocouple sensor

**9. Energy transfer by radiation (Emmisitivity and Stefan Boltzmann apparatus)
(Quantity 1)**

Description

The experimental unit contains two radiation sources: a heat radiator and a light emitter. Thermal radiation is detected by means of a thermopile. Light

radiation is recorded by means of a luxmeter with photodiode. Various optical elements can be set up between the emitter and the detector. All components are mounted on an optical bench. The distance between the optical elements can be read from a scale along the optical bench. Luxmeter, thermopile and light emitter can be rotated to study how the angle of incidence affects the radiation intensity. The angles are read off the angular scale.

The optical elements are used to investigate the reflection, absorption and transmission of different materials at different wavelengths and temperatures. The radiant power of both emitters can be adjusted. The measured values are displayed digitally on the pane provided with the set-up.

Technical data

Thermal radiator

material: AlMg3, black anodized

Light source : halogen lamp

Range of rotation : 0 to 90° C

absorption plate and reflection plate with thermocouple type K, matt black lacquered

Digital Display board must be provide with the set up.

Measuring ranges

- Illuminance: 0...1000 lux
- temperature: 2x 0...200°C
- radiant power: 0...1000W/m²
- Experimentation
- Lambert's direction law
- Lambert's distance law
- Stefan-Boltzmann law
- Kirchhoff's laws
- radiation emission

**10. Thermal conductivity of Metal Rod Test Rig
(Quantity 1)**

Description

The experimental set up consists of metal bar, one end of which is heated by an electric heater while the other end of the bar projects inside the cooling water jacket. A cylindrical shell filled with insulating material surrounds the middle portion of the bar. The temperature of the bar is measured at different sections. Heat Input to the heater is given through variac. By varying the heat input rates, data can be obtained. Water at constant rate is circulated through the jacket and its flow rate and temperature rise is noted.

Technical data

Metal bar

- Material : Copper
- Length : 400 mm (approx.)
- Diameter : 25 mm

Insulating shell

- Length : 250 mm
- Diameter : 200 mm
- Cooling Water Jacket Length : 75 mm
- Diameter : 50 mm

Heater : Nichrome Wire.

Water Flow measurement : By Measuring cylinder & Stop watch

Control panel comprising of

- Digital Voltmeter : 0-300 Volt.
- Digital Ammeter : 0-2 Amp.
- Variac : 0-230 V, 2 Amp.
- Digital Temp. Indicator : 0-199.9°C, with multi-channel switch,
- Temperature Sensors : RTD PT-100 Type - 8 Nos.
- Digital Display board must be provide with the set up.

Experimentation

- To plot the temperature distribution along the length of Bar.
- To determine the thermal conductivity of given bar at various temperatures

11. Thermal conductivity of liquid (Quantity 1)

Description

Two cylinders form the main component of the experimental unit: an electrically heated inner cylinder situated in a water-cooled outer cylinder. There is a concentric annular gap between the two cylinders. This annular gap is filled with the fluid being studied. The heat conduction occurs from the inner cylinder, through the fluid to the outer cylinder. The narrow annular gap prevents the formation of a convective heat flux and allows a relatively large pass-through area while at the same time providing a homogeneous temperature distribution. The experimental unit is equipped with temperature sensors inside and outside of the annular gap.

Technical data

Heater

heating power: 350W
temperature limitation: 95°C

Measuring ranges

temperature: 2x 0...325°C
heating power: 0...450W

- Digital Display board must be provide with the set up.

Experimentation

- steady heat conduction in gases and liquids:
- determine the thermal resistance of fluids

- determination of thermal conductivities k for different fluids at different temperatures

12. Thermal conductivity measurement of insulating powder (Quantity 1)

Description

This apparatus is designed to determine the thermal conductivity of insulating powder. The apparatus consists of two thin walled concentric copper spheres. Inner sphere houses Nichrome Wire heater. Insulating powder is filled between the two spheres. Heat flows radially outwards. Temperature sensors at proper positions are fitted to measure surface temperatures of spheres. Heat input to the heater is given through a variac and measured by Digital Voltmeter & Digital Ammeter. By varying the heat input rates, data can be obtained.

Technical details

Inner Sphere: Dia. - 100 mm.

Outer Sphere: Dia. - 200 mm.

Heater: Nichrome Wire.

Control panel comprising of:

Digital Voltmeter: 0-300 Volt.

Digital Ammeter: 0-2 Amp.

Variac: 0-230 V, 2 Amp.

Digital Temp. Indicator : 0-199.9°C, with multi-channel switch

Temperature Sensors : RTD PT-100 type-10Nos.

- Digital Display board must be provide with the set up.

Experimentation:

- Determination of thermal conductivity of insulating powder.
Comparison of thermal Conductivity of insulating powder at different temperatures.

13. Free and forced convection unit (also covers pin fin apparatus) (Quantity 1)

Description

The experimental unit is a vertical air duct into which heating elements are inserted. An axial fan is located on top of the air duct. The fan draws in ambient air and guides it through the air duct. The air flows past a heating element and absorbs heat. The heating elements are designed in such a way to release heat only at their surface. The compact design ensures rapid heating and a short time for experiments.

The experimental unit is equipped with temperature sensors at the inlet and outlet of the air duct. The air velocity is measured to determine the air flow rate. Heating power and flow rate are adjusted and displayed on the panel provided with the

unit.

Technical data

Air duct : 120 X 120 mm

Height: 0.8 m appx.

Heating elements temperature limitations : 90 degree

Fin type, Flat plate, Cylinder

Axial fan : upto 500 m³/h

Measuring range :

Air velocity : 0 to 10 m/s

Temperature : 0 to 400° C

Heating power : 0 to 50 W

230 V, 50 Hz. 1 phase

- Digital Display board must be provide with the set up.

Experimentation

- free and forced convection
- calculation of convective heat transfer at different geometries
 - flat plate
 - cylinder
 - Fins
- experimental determination of the Nusselt number
- calculation of typical characteristic variables of heat transfer
 - Nusselt number
 - Reynolds number

14. Pool Boiling Apparatus (Critical Heat Flux) (Quantity 1)

Description

The present setup is designed to study the critical heat flux of a given nichrome wire. The setup consists of temperature controlled water bath with controller. Temperature of the water bath can be varied from ambient to 80°C to achieve different environment for nichrome wire. Test heater wire is placed in the bath & voltage is varied by variac provided. The system is complete with digital temperature controller, voltmeter, and ammeter & voltage control facility.

Technical details

Boiling chamber : Rectangular chamber (Material SS) with transparent window for observation of test heater

Test heater : With holding arrangement for quick change of wire

Control panel comprises of:

Digital Temp. Controller : 0-199.9 °C, for water bath

Voltmeter : 0-200 V

Ammeter : 0-2 Amp (with Peak Hold Facility)

Dimmerstat : 0-4 A, 230 V

- Digital Display board must be provide with the set up.

Experimentation

- To determine the critical heat flux of given wire
- To study the pool boiling phenomenon up to Critical Heat flux point

15.Refrigerant Leak Detector

(Quantity 1)

Description

Detectable Refrigerants: R-22, R-134a, R-404a, R-410a, and all CFCs, HCFCs and HFCs

Sensor: Heated Diode

Sensitivity Levels: High 0.25oz/yr (7g/yr), Medium 0.5oz/yr (14g/yr), Low 0.99oz/yr (28g/yr)

Warm up Time: 90 seconds

Auto Power OFF: Automatic shut off after 10 minutes

Low Battery Indication: LOW-BATT light switches ON

Power Supply: 9V Battery

Battery Life: 13 hours of continuous use

Operating Conditions: 0°C to 50°C (32°F to 122°F)<80%RH

Storage Conditions: -10°C to 60°C (14°F to 140°F)<70%RH

Digital Display board must be provided with the set up.

16.Thermal Imager

(Quantity 1)

Description

Detector Type: Focal plane array (FPA), Uncooled microbolometer

Detector IR Resolution: 320 × 240 pixels or more

UltraMax (super-resolution): Should be available

Spectral range: 7.5–14 μm

Thermal Sensitivity/ NETD: <40 mK or better

Field of view: 24° × 18°

Minimum focus distance: 0.15 m

Focal length: 17 mm

Spatial resolution (IFOV): 1.31 mrad/pixel

Standard lens: 24°

Lens identification: Automatic

Lens Size: Same for all lenses

Camera should be with Tilttable lens, adjustable for 180° rotation

Image frequency: 30 Hz

Focus: Continuous LDM, one shot LDM & manual

Digital zoom: 1 to 4x continuous

Display: Touch screen, 4.0 in. LCD, 640 × 480 pixels

Auto Orientation: Yes

Programmable buttons: 2

Image adjustment: Auto, Auto max, Auto min & manual

Image modes: IR image, visual image, MSX, picture in picture, thumbnail gallery

IR image with enhanced detail presentation should be available

	<p>Picture in Picture: Resizable & movable IR area on visual image</p> <p>Object temperature range: -20°C to 1200°C</p> <p>Accuracy: $\pm 2^{\circ}\text{C}$ ($\pm 3.6^{\circ}\text{F}$) or $\pm 2\%$ of reading</p> <p>Spotmeter: 3 in live mode</p> <p>Area: 3 in live mode</p> <p>Automatic hot/cold detection: Auto hot or cold spotmeter markers within area</p> <p>Color alarm (isotherm): Above, below, interval, condensation & insulation</p> <p>Difference temperature: Delta temperature between measurement functions or reference temperature</p> <p>Emissivity correction: Variable from 0.01 to 1.0 or selected from materials list</p> <p>External optics/windows correction: Automatic, based on inputs of optics/window transmission and temperature</p> <p>Color palettes: Arctic, Gray, Iron, Lava, Rainbow and Rainbow HC</p> <p>Image storage: Standard JPEG, including measurement data (Infrared-only mode)</p> <p>Remote control operation: using USB & over Wi-Fi</p> <p>Voice Annotation: 60 seconds (via Bluetooth)</p> <p>Text Annotation: Text from predefined list or soft keyboard on touch screen</p> <p>Area measurement information: Yes Should be available</p> <p>Laser distance meter information: Yes Should be available</p> <p>GPS: Yes: location data automatically added to every still image and the first frame in video from built-in GPS</p> <p>Report generation: Using software</p> <p>Radiometric infrared: video recording - RTRR (.csq)</p> <p>Non-radiometric IR video recording: H.264 to memory card</p> <p>Visual video recording: H.264 to memory card</p> <p>Radiometric IR video streaming: Yes: over UVC or RTSP (Wi-Fi)</p> <p>Non-radiometric IR video streaming: H.264 (AVC) over RTSP (Wi-Fi), MPEG4 over RTSP (Wi-Fi), MJPEG over UVC and RTSP (Wi-Fi)</p> <p>Visual video streaming: Yes</p> <p>Built-in digital camera: 5 MP with LED light</p> <p>Interfaces: USB 2.0, Bluetooth, Wi-Fi, DisplayPort</p> <p>Video out: Display Port</p> <p>Battery type: Rechargeable Li ion battery</p> <p>Battery operating time: > 4 hours</p> <p>Charging time: 3.5 h</p> <p>Storage temperature range: -40°C to $+70^{\circ}\text{C}$ (-40°F to $+158^{\circ}\text{F}$)</p> <p>Humidity (operating and storage): EC 60068-2-30/24 h 95% relative humidity $+25^{\circ}\text{C}$ to $+40^{\circ}\text{C}$ ($+77^{\circ}\text{F}$ to $+104^{\circ}\text{F}$) / 2 cycles</p> <p>Encapsulation: IP 54 (IEC 60529)</p> <p>Shock: 25 g (IEC 60068-2-27)</p> <p>Vibration: 2 g (IEC 60068-2-6)</p> <ul style="list-style-type: none"> • Digital Display board must be provided with the set up.
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FORMAT FOR QUOTATION SUBMISSION

(In letterhead of the supplier with seal)

Date: _____

To:

Sl. No.	Description of goods (with full Specifications)	Quantity	Unit	Quoted Unit rate in Rs. (Including Ex Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
Total Cost							

Gross Total Cost (A+B): Rs. _____

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. _____ (Amount in figures) (Rupees _____ amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of ————— months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: _____

Address: _____

Contact No: _____