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**DEPARTMENT OF FACTORIES & BOILERS**

No.A3/3856/F&B/2018(2)

"SURAKSHA BHAVAN"  
OFFICE OF THE DIRECTOR OF  
FACTORIES AND BOILERS,  
MEDICAL COLLEGE P.O,  
THIRUVANANTHAPURAM,  
DATED: 26 -11-2019.  
PHONE: 0471- 2441597,2440974.

**E- TENDER NOTICE**

Online tenders are invited from the manufactures and authorized dealers for the supply and installation of the following high quality branded equipment.

Sl. No.	Item	Quantity ( in Nos.)	Estimate Amount (in Rs.)	EMD	Cost of Tender Form
1	<b>Automated Weather Station</b>	1	10,00,000/-	1 % of the cost of Item	Rs.2000/- +18%GST

Last date for the receipt of filled up Tenders: 4 PM on 21-12-2019

Opening Tender : 2 PM on 26-12-2019

Fore more details contact Director of Factories & Boilers, Thiruvananthapuram on all working days till 21-12-2019, 4 PM. The under signed reserves the right to reject the tender without assigning any reason thereof. The tender notification is also available in the official Website: [www.fabkerala.gov.in](http://www.fabkerala.gov.in). Tender Form and Terms & Conditions may be downloaded from [www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in).



DIRECTOR OF FACTORIES & BOILERS

**SPECIFICATION AND TERMS AND CONDITIONS**

**Specifications: Automated Weather Station- Tower type (15 metre)**

**Supply, installation and commissioning of 15-m tall Automated Weather Station / Met Tower comprising sensors for Wind Speed, Wind Direction, Air Temperature, relative humidity (RH), Atmospheric Pressure, Rainfall, Solar Radiation and Data Logger, Power Supply Unit, Software for operation and data archival, Solar Panel with battery, GPRS for communication.**

**Quantity required - 1 Number (likely to be increased)**

1. Max tower height	15.0 m (Triangular tower)
2. Tower-support -Accessories/Assembly	Triangular stand/ base plate with tower sections and anchor fastening nuts and bolts for Guy wire support. Corrosion resistant construction with fire proofing of 2 hour rating
3. Tower stability	Max Safe wind speed unguyed :50 Km/h (13.88 m/s)
4. Sensor mounting boom levels & boom stability and Enclosure	Temperature and Humidity sensor at 2m & 10m height AGL, Wind speed and wind direction sensor at height 8m & 15m AGL (sensors with mounting hardware kit), Pressure sensor at 2m height AGL, Rain gauge at 1.5m height AGL and Solar radiation sensor at 3m height AGL
<b>5. Sensors</b> Temperature(2m,10m levels) with 17ft and 40ft sensor cables Quantity: 2 Nos  Relative Humidity (2m, 10 m levels) with 17ft and 40ft sensor cables Quantity : 2 Nos  Wind Speed (8m, 15 m levels) with 15ft and 40ft sensor cables Quantity : 2 Nos  Wind direction(8, 15m levels) with 15ft and 40ft sensor cables Quantity: 2 Nos	<b>Specifications</b> Range: -40° to 50 ° C Accuracy : 0.4 °C(over the range of -40 to 70°C)  Range: 0 to 100 % RH Accuracy: ± 3 % RH (over the range of 80-100%) Accuracy: ± 1.8 % RH (over the range of 0-80%)  Range: 0 to 50 m/s Accuracy: ±0.5 m/s  Range: 0- 360° Accuracy : ± 5°

<p>Atmospheric Pressure (2 m level)</p> <p>Solar Radiation (SW) sensor with 17ft cable Quantity: 1 No</p> <p>Rain Gage (1.5m AGL) Quantity: 1 No</p>	<p>Range: 600 hpa-1100 hpa Accuracy : <math>\pm 0.5</math> hpa @20° C</p> <p>Range: 0-2000w/m<sup>2</sup> Accuracy : <math>\pm 5\%</math> for daily total radiation</p> <p>Tipping Bucket Rain gauge Resolution: 0.254 mm per Tip Accuracy: 1 % up to 50mm/hr.</p>
<p>5. Data Logging System</p>	<p>Measurement and Control Industrial Grade Data logging system consisting of sensor signal conditioner modules, with application software. Analog (6 Ch) ,pulse counter(6 Ch) and Digital I/O Channels (7 Ch)</p> <p>Communication port: RS 232 and USB Input analog voltage - 100 mV to +2500 mV Power 10-32 VDC Minimum Scan Rate of 10Hz Analog resolution: 0.30 micro voltage Idle current drain- average 1.5 mA (@ 12Vdc) Temperature Range : -40 to 70 Deg C Real-Time Clock Accuracy : <math>\pm 1</math> min. per month Communication Protocols : PakBus, Modbus, DNP3, SDI-12, TCP, UDP Embedded web page for direct connection via web browser Data storage for Four years with 1 Minute duration</p>
<p>6. Communication Hardware</p>	<p>GPRS Modem with Antenna. Network Technology: 4G LTE WAN, Compatible with data loggers CS I/O communications port, DB9 male RS-232 serial port, DB9 female connection option.</p>
<p>7. Power Supply Unit</p>	<ul style="list-style-type: none"> <li>• <u>Solar panel</u>: Solar Panel 50 Watt 12 Volt with Mount (10 Ft Lead)</li> <li>• 12V, 26AH SMF Battery</li> <li>• Power Supply Charge controller/Regulator</li> </ul>

	<p>12-24 VDC</p> <ul style="list-style-type: none"> <li>• UPS 1</li> </ul>
8. Mounting Hardware / Enclosure Shelter box	Enclosure: Weather-Resistant 12 x 14 inch enclosure. Includes an internal plate punched with a grid of one-inch-on-center holes for mounting devices.
9. Terms and Conditions	<ul style="list-style-type: none"> <li>• The system is to be delivered, installed and commissioned at the field location indicated by the Indenting firm at the time of installation.</li> <li>• Training to be provided in the operation, control and maintenance of the AWS/Tower to the required staff.</li> <li>• Real-time data transmission to the receiving Computer and data archival has to be demonstrated.</li> <li>• Complete user manual/ instruction manual with installation drawings describing the operation and control and data processing to be provided</li> <li>• Acceptance of the item will be based on the performance of the entire system with respect to the specifications mentioned</li> <li>• If there is any deviation in quality and technical details of the Items, whole set of the offer will not be considered.</li> </ul>
10. Additional information	Instruction manuals and data sheets, installation drawings, training, wiring, conduit, installation of equipment or labor, certification, validation, warranty, certificate of calibration and after sales service shall be included in the quotation. Taxes, duties, shipping costs, etc. are to be included. Prices shall be in Indian Rupees.

  
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