

1. Tipping Bucket Rain-gauge

Particulars	Specification
Brand/Make	Specified by the Bidder
Model	Specified by the Bidder
Country of Origin	Specified by the Bidder
Type of Sensor	Tipping Bucket
Bucket Tip/Sensitivity/Resolution	0.2mm /tip
Accuracy	$\pm 2\%$ or less for 0 to 250mm/hr $\pm 3\%$ or less for 250 mm/hr to 500 mm/hr
Switch	Rugged Magnetic Proximity Switch (Reed switch)
Collecting Area	200 mm to 204 mm diameter
Accessories	Data logger connection cable of at least 10 m length
Output Interface	Pulse count (additional interface optional)
Materials	Housing: Anodized Aluminum or stainless steel or brass or UV-resistant ASA polymer or combination of these. Bucket: Teflon plastic or stainless steel or synthetic ceramic coated brass
Manufacturer Authorization certificate	Compulsory
Documentation	Bidder shall provide the details of wiring layout, pin diagram, installation and configuration manual in English language. Calibration certificate shall be submitted during the delivery of equipment.
Warranty	Bidder's warranty of minimum 3 years.

2. Tipping Bucket Rain-gauge Stand

Particulars	Specification
Stand material	Galvanized iron pipe
Diameter	2 inch
Thickness	At least 2 mm
Height	The height of orifice of provided rain gauge after installation shall be 1 m.
Upper surface	The surface shall be such that it will be able to fit the proposed rain gauge with the help of clamp or knot bolt.

4. Temperature and Relative Humidity Sensor

Particulars	Specification
Brand	Specified by the Bidder
Model	Specified by the Bidder
Country of Origin	Specified by the Bidder
Operating temperature range	At least -40 °C to +60 °C
Power Supply	5 VDC to 16 VDC
Output interface	RS485 or RS232 or SDI-12 or UART (additional interface optional)
Traceable standard	ISO 17025 or International Electro technical Commission (IEC) or National Institute of Standards and Technology (NIST) or National Physical Laboratory (NPL) standard. Calibration certificate must be submitted during the delivery of equipment.
Accessories	Connector and standard cable 5 m compatible with the provided sensor.

Documentation	Bidder shall provide the details of wiring layout, pin diagram, installation and configuration manual in English language.
Manufacturer Authorization certificate	Required
Warranty	Bidders warranty of minimum 1 year
Temperature Parameter	
Sensor Type	Platinum resistance Thermometer
Measurement range	At least -40°C to +60°C
Accuracy	±0.2°C or less tested at any one point within 0°C to 40°C
Resolution	At least 0.1°C
Relative Humidity Parameter	
Sensor type	Capacitive
Probe type	Standard or Heated
Range	0 % – 100%
Accuracy	± 2 % Rh or less at any one point between (a) 0°C to 40°C Temperature, or (b) 10% to 90% RH
Resolution	1%
Long term stability	±1.0 % per year or ±2% over 2 years

6. Compact Data Logger

<i>Particular</i>	<i>Specification</i>
Brand/Make	Specified by the Bidder
Model	Specified by the Bidder
Country of Origin	Specified by the Bidder
Manufacturer Authorization Letter	Required
Data logger	
Processor	16 bits or more
Flash Memory	At least 8 MB
Input/ Output Interface	RS485 or RS232 and SDI-12, compatible with analog signals (4-20 mA, 0 -1 VDC), at least one pulse/event count. Shall provide any connector/ converter required for configuration or downloading data from USB/ Ethernet port of laptop.
Software	English language version windows software for system configuration/ communication. All required licenses included.
Configuration and Data Posting	Remote Configuration shall be possible.
Communication protocol	http, TCP/IP (additional protocol optional)
Communication System	
Technology/Frequency	GSM (3G/4G) or better / must support/compatible with service provider of Nepal
Power Supply System	
External supply	5 VDC to 30 VDC
Solar Panel	Minimum 10 Wp with cable
Solar charge controller	Inbuilt Solar charge controller Should have digital communication interface with data logger
Battery	Rechargeable Lithium battery at least 5500mAh capacity.
General	The above data collection platform is integrated system designed in such a way that must be enclosed in a box with IP65 or better protection
Enclosure Size	Less than 3000 cubic cm
Operating Temperature	At least -20°C to + 60°C
Display Type	LCD or LED
Accessories	User manual, configuration manuals in English language, supporting clamps for data logger and solar panel
Warranty	Bidder's warranty of minimum 3 years.
Certification	FCC or CE or equivalent.
Manufacturer Authorization Letter	Compulsory
Features	Shall have ability to log different parameters (from sensors, battery voltage, solar voltage etc.) at required time intervals (10 minutes, 1 hour and 1 day).

11. Radiation Shield

Particulars	Specification
Brand	Specified by the Bidder
Model	Specified by the Bidder
Country of Origin	Specified by the Bidder
Diaphragm	Overlapping circular diaphragms to support natural ventilation while blocking both direct and reflected solar radiation.
Type	Thermoplastic or UV stabilized ASA
Louvered	Minimum 10 plates
Ventilation	Natural
Sensor port	Minimum 2 ports (one for Temperature and another for Temperature and RH combined sensor)
Mounting Accessories	Mounting bracket and U Bolt clamp made of Aluminum or Stainless-steel.
Warranty	Bidder's warranty of minimum 3 years.