

GAYA COLLEGE OF ENGINEERING, GAYA

Package Code: TEQIP-III/BH/gceg/32

Package Name : Setting up of Hydrology Lab

Sr. No	Item Name	Specifications
1	Anemometer and wind vane	As per IS: 5912: 1970 and IS: 5799: 1970
2	Automated Weather Station with logger	Annexure 1
3	Current Meter (Propeller type)	Suitable to measure the water velocities from 0.05 to 3.3 m/sec. It has Propeller which spins and having magnetic contact system. It has been manufactured to meet the requirements of IS: 3910, Compact size, Corrosion resistant, requires negligible maintenance and supplied duly calibrated from Govt. Research Institute. Complete unit with highly polished wooden box with wading rod, electrical cable, 10 m suspension cable, 10 Kg Fish weight & minor tools.
4	Current Meter (Cup type)	Suitable to measure the water velocities from 0.05 to 2.5 m/sec. It has 6 Cup SS buckets which spins horizontally and having magnetic contact system. It has been manufactured to meet the requirements of IS: 3910, Compact size, Corrosion resistant, requires negligible maintenance and supplied duly calibrated from Govt. Research Institute. Complete unit with highly polished wooden box with wading rod, electrical cable, 10 m suspension cable, 10 Kg Fish weight & minor tools.
5	Current Meter (Pigmy type)	Suitable to measure the water velocities from 0.05 to 1.0 m/sec. It has 6 Cup SS buckets which spins horizontally and having magnetic contact system. It has been manufactured to meet the requirements of IS: 3910, Compact size, Corrosion resistant, requires negligible maintenance and supplied duly calibrated from Govt. Research Institute. Complete unit with highly polished wooden box with wading rod, electrical cable, & minor tools.
6	Double Ring Infiltrometer	Diameter of inner ring 30 cm; Volume of inner ring > 3000 ml, Diameter of outer ring 60 cm, Volume of outer ring > 10000 ml, Height of cylindrical buckets 50 cm, Material of cylindrical buckets, High-quality mild steel
7	Evaporation pan	Pan size: 1.22 x 0.255 m (diameter x height); Accuracy of reading: 0.1 mm; Point gauge and Stilling well made from brass/copper; Platform: Wooden (size 1225 mm width and 100 mm height). The Pan is manufactured from GI sheet, duly tinned and epoxy pointed as per IS: 5973: 1970, and tested for no water leakage. This is supported on wooden

		platform and covered with reinforced chicken-mesh.
8	Lysimeter Suction type	Should include a single suction line, stopper, finger clamp. Hand vacuum pump with gauge and tubing adapter is used for putting the tube under vacuum for the sample collection. Syringe is used for extraction of the collected soil solution. Complete set contains one each of 6", 12", 18", & 24" long samplers, Hand vacuum pump and suction syringe.
9	Mini disk infiltrometer	Tension measure between -0.5 to 6cm; disk of 0.3cm thick and has diameter of 4.5cm, suction range 0.5 to 7cm
10	Portable suspended sediment analyser	Model Sensor shall consist of the monitor, sensor, battery charger, and computer download kit. Unit shall be zero calibrated at the factory. Continuously display suspended solids in mg/l, time, and date. Provide an extended temperature, UV treated LCD digital display
11	Rain Gauge (Non Recording)	Non Recording Rain Gauge (200 cm sq) is manufactured from non-corrosive fiberglass reinforced plastic as per IS: 5225: 1969. It consists of collector assembled with Gunmetal Ring, Funnel, Locking Rings and Base. This Rain Gauge is supplied with Rain collector of 200-mm capacity and un-breakable 10-mm capacity rain measuring jar; along with a Tipping bucket Rain Gauge with Digital Counter and a reset switch
12	Rain Gauge (recording) with data logger	8" diameter collector, data logger must have min resolution of 0.2mm, USB supported and battery operated
13	Soil moisture sensor with logger	Operation range: -40°C to 85°C; Sensor accuracy: +/-1°C typical, -2/+4°C max Sensor quantization level (resolution): 10-bit, about 0.25°C; Logging and notification; Minimum data resolution. Require 6 sensors and 2 logger (two separate unit)
14	Stevenson screen	As per IS:5948:1970 large size suitable for housing thermo-hygrograph, dry and wet bulb, should be painted in white color. Complete with stand.
15	Thermo Hygrograph	Rotating over period of 24hr, Measuring Temperature range: -20 to 50 °C; Minimum graduation: 1 °C; Humidity range: 0-100% rh, Minimum graduation: 1% rh
16	Thermometer set	Temp measuring range -20 to 70 degree, shows min and maximum both along with Dry-bulb and wet bulb thermometer for measuring RH
17	Water level sensor with logger	Resolution: Approximately 0.8mm; Environmental Protection: Designed to meet IP68; Memory Capacity: 32,000 readings; Dimensions: Logger Diameter: 39mm. Length = 160mm; Sensor Element: Choice of 0.5m, 1.0m, 1.5m, 2.0m, 3.0m or 5.0m. Preferable Odyssey Capacitance Water Level Logger

Annexure- I

Detailed Specification of AWS

	Parameter Measured	Specification
1.	Wind Speed (Anemometer at 2m and 10m)	<ul style="list-style-type: none"> • Measuring range: 0.0 to 85m/s • Starting Threshold: <0.01m/s • Resolution: < 0.01 m/s • Accuracy = 0.3 m/s (with 0.4 to 60m/s) • Operating Temp: -10 to +60°C • Relative Humidity: 5 - 100%
2.	Wind Direction (Wind Vane)	<ul style="list-style-type: none"> • Measuring range: 0 to 360 Deg. • Starting threshold: < 1.0 m/s • Operating temperature: -10 to +60°C • Resolution: 1° • Accuracy: ±2 Deg.
3.	Air Temperature	<ul style="list-style-type: none"> • Measurement range: -20 to +60 °C • Resolution: 0.1 °C • Accuracy: ±0.1°C.
4.	Relative Humidity	<ul style="list-style-type: none"> • Range: 0 - 100% • Accuracy: + 1% RH from 3 to 95%. • Excellent linearity and sensitivity with fast response and long-term stability. • Operating Temp range: - 40 to +60°C
5	Solar Radiation	<ul style="list-style-type: none"> • Spectral range (50% points): 310 to 2800 nm • Sensitivity: 5 to 20 $\mu\text{V}/\text{Wm}^2$ • Response Time: 5 Sec • Maximum irradiance: 4000 W/m^2 • Non-Linearity (0 to 1000W/m^2): ±0.2% • Non-Stability (change/year): ± 0.5 % • Temperature dependency of sensitivity (-10°C to 40°C): 1% • Operating temperature: -40°C to +80°C • Expected daily accuracy: ±2%
6	Rain, Precipitation	<ul style="list-style-type: none"> • Diameter of aperture: 225mm • Orifice: 400cm^2 • Resolution/Sensitivity: 0.2mm • Rainfall capacity: Unlimited • Capacity per Minute: Max. 30 tips (3 resp. 6mm) • Accuracy: ± 1% (at 25 mm/hr.) • Signal output: Pulse signal • Measuring Principle: Tipping bucket - double spoon • Switch closer time: <10 millisecond
7	Pressure	<ul style="list-style-type: none"> • Range: 500-1100hPa • Operating temperature range: -40- +60°C • Resolution: 0.10hPa

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