



KOHAT UNIVERSITY OF SCIENCE AND TECHNOLOGY, KOHAT

Kohat 26000 Khyber Pakhtunkhwa, Pakistan (Ph: 0922-52914785 - Ext: 4785)

Name of Firm/ Bidder						
Phone/ Mobile Number						
Address						
NTN/ CNIC Number						
GST Number						
Call Deposit Amount						
Call Deposit No. & Date						
Tender Applied For		Purchase of Lab Equipments for Department of Botanical & Environmental Sciences, KUST (Dr. Aziz ullah NRPJ Project)				
Unit Rate for Kohat Basis (PKR)						
S.No.	Item Type	Quantity	Per Unit Cost (Including Income Tax) PKR	Total Cost without GST	GST Amount	Total Cost (Including GST) PKR
1	PAM Chlorophyll Fluorometer	1				
Total Bid Cost						
<u>Technical Specification for the above mentioned Equipments</u>						
PAM Chlorophyll Fluorometer						
<u>Technical Specification</u>						
<p>Portable Chlorophyll Fluorometer for measurements on leaves and suspensions; with USB- and Bluetooth interface; to connect</p> <p>Leaf Clip Holder or Mini Quantum/Temp.-Sensor. Featuring red Measuring-Light LED-Array (630 nm), red Chip-On-Board Power LED-Array (630 nm) for continuous actinic illumination (max. 5000 $\mu\text{mol m}^{-2} \text{s}^{-1}$ PAR), Saturation Pulses/Multiple Turnover flashes (max. 25000 $\mu\text{mol m}^{-2} \text{s}^{-1}$ PAR) and saturating Single Turnover flashes (max. 125000 $\mu\text{mol m}^{-2} \text{s}^{-1}$ PAR; adjustable between 5 and 50 μs); with LED-Array for continuous blue light (max. 800 $\mu\text{mol m}^{-2} \text{s}^{-1}$ PAR) and far-red light for selective PS I illumination; max. time resolution of 10 μs. Including PAM Software (Windows 7/8/10) for instrument operation, data acquisition and analysis via PC; with Special Fiberoptics 2010-F, Distance Clip 60° 2010-A, battery charger for charging internal battery, battery cable to connect external 12 V battery, USB adapter cable, carrying bag and transport box</p> <p>The following accessories are must with PAM chlorophyll fluorometer</p> <p>Mobile Demand x Tablet T8540 Rugged tablet PC (IP67 / MIL-STD810G) including pen for PAM operation connected via USB or BT, Pam software in use. Data acquisition and analysis in the field; operating system Windows 10 Pro (64 Bit); processor Intel® Atom Quad-Core Z8300; 1.44-1.84GHz; 4GB DDR3L RAM; eMMC hard drive 64 GB; 8" WXGA Touch-Display with 1280 x 800 pixels resolution; internal Li-Ion-polymer battery (29 Wh, 3.7 V, not exchangeable) including 5 V, 3 A power supply. Operating temperature -4° F to +140° F (-20° C to +60° C), humidity up to 95% non-condensing. Interfaces: USB 3.0 Micro-B, Micro HDMI, WiFi 802.11 a/b/g/n/ac; Bluetooth 4.0, Ublox GPS.</p> <p>Leaf-Clip Holder: for attachment of the PAM or MINI-PAM fiberoptics at 60° angle relative to the leaf plane. With swivel-mounted, cosine-response mini quantum sensor to measure PAR, thermocouple, amplifier electronics and remote control push button to trigger saturation flashes. Display, storage and processing of light intensity and temperature data in conjunction with the PAM or MINI-PAM Fluorometer</p>						

Arabidopsis Leaf Clip: Leaf clip for small leaves. Positioning of PAM, MINI-PAM or MINI-PAM-II fiberoptics at 60° angle relative to the leaf plane, with notches to attach the light and temperature sensors of the Mini-Quantum/Temp.-Sensor 2060-M or 2065-M (additional accessory)

Dark Leaf Clips: made from aluminium, with sliding shutter for dark-adaptation

Mini-Quantum/Temp.-Sensor: with cosine-response mini quantum sensor to measure PAR, thermocouple and amplifier electronics. Display, storage and processing of light intensity and temperature data in conjunction with the PAM or MINI-PAM Fluorometer.

Suspension Cuvette: featuring 400 µl stainless steel sample compartment in PVC body; with 7 mm fiberoptics window-adaptor, injection port for Hamilton syringes, nozzles for connecting an external flow-through water-bath (temperature control), 3 pieces 6 x 1.5 mm magnetic stir bars

Magnetic Stirrer with Fiberoptics Holder based on MINI MR (IKA), featuring PVC centering ring for KS-2500 Suspension Cuvette, Perspex base-plate with stand bar for mounting fiberoptics on top of cuvette

FireStingO2 (1-Channel): fiber-optic oxygen meter including microsensor, USB cable, logger software (Windows) and transport case

Interface Converter for FireStingO2 for connecting the oxygen meter FireStingO2 to the Photosynthesis Yield Analyzer MINI-PAM-II

Installation of the equipment and intensive training to gain expertise in instrument by the provider

Convener

University Purchase Committee