

## Student set Biochemistry and Plant Physiology, TESS advanced Biology

Item No. 15620-88D



### Function and Applications

Set allowing the performance of 13 experiments about the following topics:

- Photosynthesis (2 methods)
- Transpiration of leaves
- Breathing (CO<sub>2</sub> and O<sub>2</sub> measurement)
- Glycolysis (2 methods)
- Ionic permeability of the cell membrane
- Determination of the Michaelis constant
- Enzyme inhibition
- Substrate inhibition of enzymes
- Enzymatic activity of catalase

### Benefits

- For both demonstration and student experiments
- Data acquisition with the free app "measureAPP" for mobile devices (iOS, Android, Windows)
- Sharing and exporting of the data
- 11 standard experiments in one set
- Compact setup
- All components in one package

### Equipment and Technical Data

- Cobra SMARTsense Temperature: Measuring range: -40 ... 120 ° C, resolution: 0.01 ° C, sampling rate: 10 Hz
- Cobra SMARTsense pH: Measuring range: -0 ... 14, resolution: 0.01, sampling rate: 10 Hz
- SMARTsense Conductivity: Measuring range: 0 ... 20,000 μS / cm, 0 ... 100 ° C, resolution: 1 μS / cm, 0.1 ° C, sampling rate: 10 Hz
- Cobra SMARTsense Light: Measuring range: 1 lx ... 128 klx, resolution: 0.1 lx, sampling rate: 10 Hz
- Cobra SMARTsense Pressure: Measuring range: 20 ... 400 kPa, resolution: 0.1 kPa, sampling rate: 800 Hz
- Cobra SMARTsense CO<sub>2</sub>: Measuring range: 0 ... 100,000 ppm, resolution: 2 ppm, sampling rate: 1 Hz
- Lamp socket with reflector, diameter 20 cm, and 120 W filament lamp
- Special glassware
- Special stand material for the experiment setups

## Scope of supply

Cobra SMARTsense Light - Sensor for measuring the illuminance 0 ... 128 kLx (Bluetooth + USB)	12906-01	1
Cobra SMARTsense Temperature - Sensor for measuring temperature -40 ... 120 °C (Bluetooth)	12903-00	2
Cobra SMARTsense CO2 - Sensor for measuring the carbon dioxide content 0 ... 100000 ppm (Bluetooth + USB)	12932-01	1
Cobra SMARTsense pH - Sensor for measuring the pH value 0 ... 14 (Bluetooth)	12921-00	1
Cobra SMARTsense - Conductivity, 0...20000 µS/cm, 0...60°C (Bluetooth)	12922-01	1
Cobra SMARTsense Absolute Pressure - Sensor for measuring the absolute pressure 20 ... 400 kPa (Bluetooth + USB)	12905-01	1
Support base, variable	02001-00	2
Support rod, l = 600 mm, d = 10 mm, split in 2 rods with screw threads	02035-00	2
Boss head	02043-00	3
Universal clamp	37715-00	2
Beakers, Boro, high form, various sizes	46026-00	2
Beakers, Boro, high form, various sizes	46027-00	1
Beakers, Boro, low form, various sizes	46056-00	1
Erlenmeyer flasks, Boro, narrow neck, various sizes	46142-00	1
Glass tube, straight, l=80 mm, 10/pkg.	MAU-16074541	1
Glass rod, boro 3.3, l=200mm, d=6mm	40485-04	1
Funnels (glass), Boro, various sizes	34457-00	1
Graduated pipettes, various sizes	36595-00	1
Graduated pipettes, various sizes	36598-00	1
Graduated pipettes, various sizes	36600-00	1
Graduated pipettes, various sizes	36601-00	1
Graduated cylinders, Boro, various sizes	36627-00	1
Graduated cylinders, Boro, various sizes	36629-00	1
Spoon, special steel	33398-00	1
Dialysis clips, 2	64209-00	2
Dialysis tubing 24A,diam.44mm, 1m	64208-00	1
Rubber stopper 26/32, 1 hole 7 mm	39258-01	1

Rubber stopper,d=35/29mm, 1 hole	39259-01	1
Rubber stopper,d=41/34mm, 1 hole	39261-01	2
Tubing adaptor, ID 3-5/6-10 mm	47517-01	1
PVC tubing, various inner diameters	03985-00	1
Magnetic stirring bar, 50 mm, cylindrical	46299-03	1
Pipettor,bulb,3 valves,100ml max.	47127-02	1
Sieve, fine mesh, d=60 mm	40968-00	1
Test tube,200x30 mm,side arm,PN29	MAU-17080801	1
Test tubes,160x16mm, 10pcs	36301-03	1
Mount for halogen lamp with reflector	05781-00	1
Halogen lamp with reflector, 12V / 20W	05780-00	1
Protecting glasses, clear glass	39316-00	2
TESS box, plastics, high, 305 x 425 x 150 mm	15200-01	2
Lid for TESS box, plastic	15205-01	2
Plug with hole for use with Cobra SMARTsense CO2	12932-10	1
Dye set for coloring water	35040-10	1

## Necessary accessories

Necessary accessories for Basic set Biochemistry and plant physiology 15620-88D	65980-77D
Chemicals set Biochemistry & plant physiology	65980-10
Button Cell CR2032, 3V (2 pieces)	07922-17

## Recommended accessories

USB quick charger with 8 USB ports	07934-99
Carrying system for student experiment boxes	25200-00