



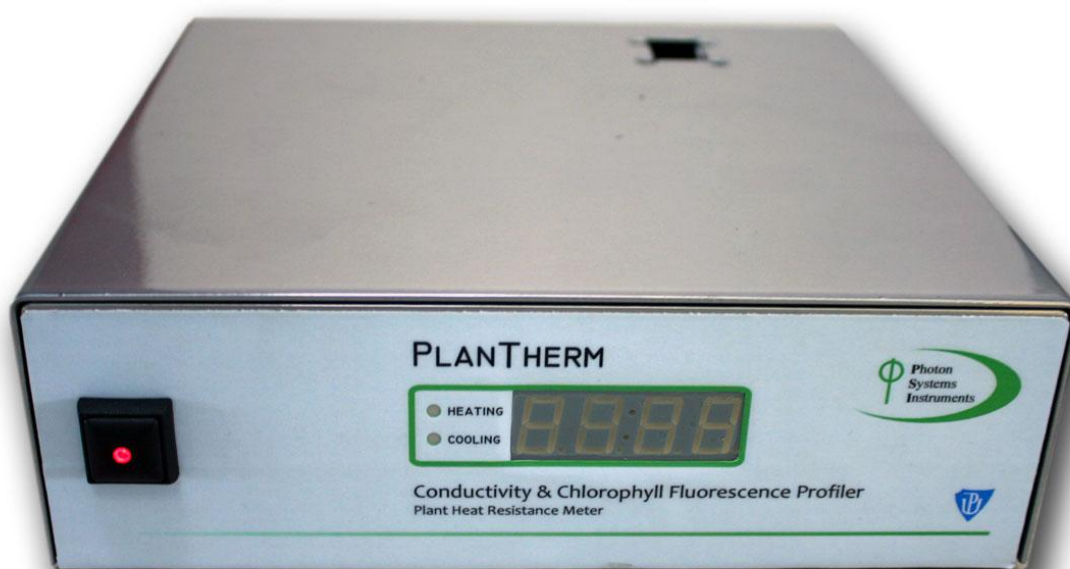
PSI (Photon Systems Instruments), spol. s r.o.
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Welcome to Issue 16 of the PSI NEWS

This issue is dedicated to:

PlanTherm PT 100

Compact device measuring thermal tolerance of plants

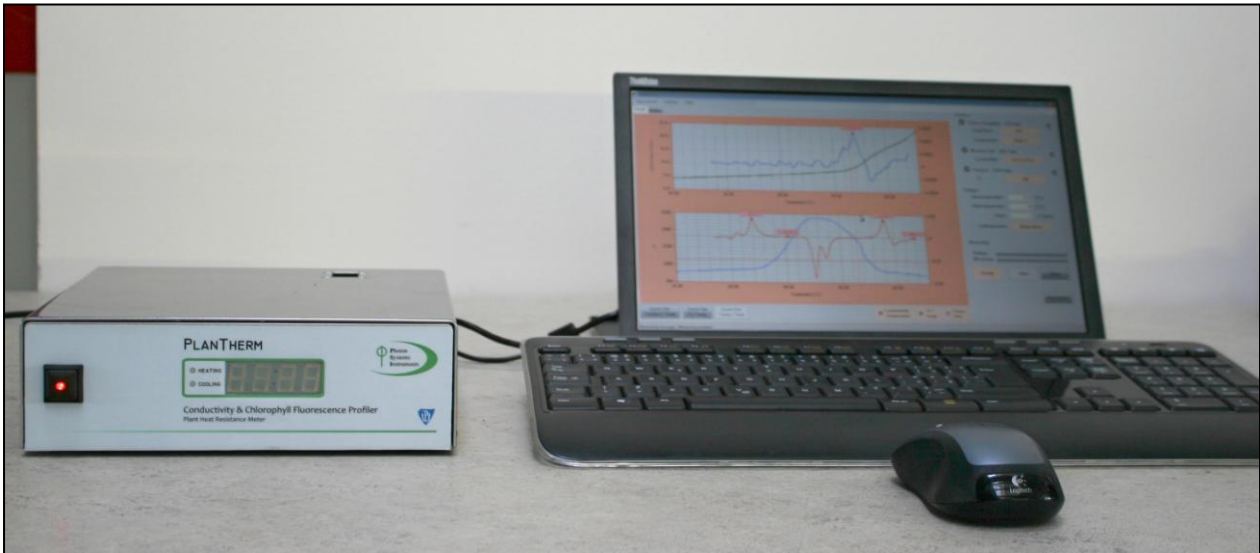


Key Features:

- Compact device including the measuring unit, magnetic stirrer, thermoregulator, and mini-computer in one case
- Sample chamber for small to middle size leaves or leaf segments
- Precisely controlled gradual (linear) heating of plant segments with the slope up to 3 °C/min
- Accurate temperature measurements (+/-0.02 °C) within the range of 20-75 °C
- High accuracy conductivity measurement within 0.01 – 1000 µS/cm
- Measurement of minimum chlorophyll fluorescence intensity (F_0 level) and other chlorophyll fluorescence parameters (e.g., actual quantum yield of Photosystem II photochemistry - Φ_{PSII}) during the linear heating
- OJIP curve measurement at predefined temperatures during the linear heating
- Built-in scripting (R environment) language allows custom analysis of measured responses

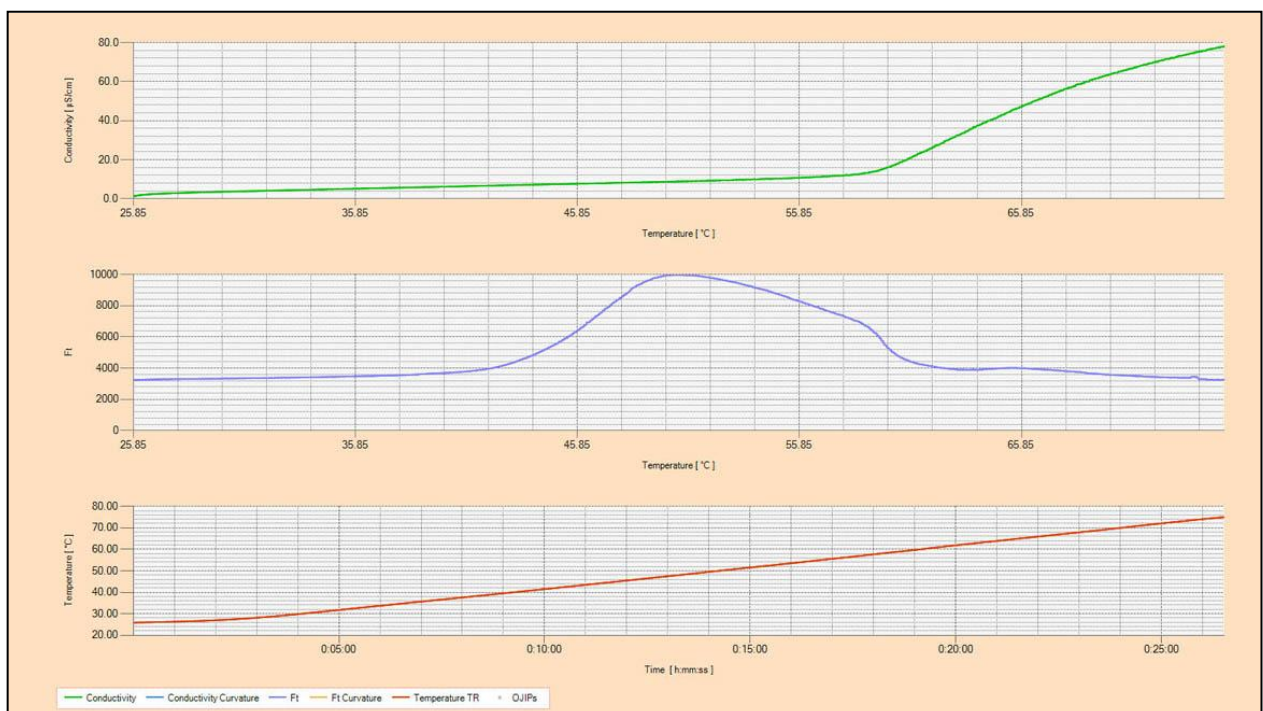
Applications:

- **Fast estimation of constitutive and inducible heat tolerance of plants**
- **Investigations of thermal stability of plants**
- **Studies on stress tolerance and acclimation responses**
- **Photosynthesis research**
- **Detection of biotic and abiotic stress**
- **Plant resistance or susceptibility to stress factors**
- **Agriculture and horticulture**



Software:

- **ProfileCon control and visualization software**
- **Pre-installed Windows 7 operation system**
- **R software environment for running custom analysis on measured signals**



Technical Specification:

Measured Fluorescence Parameters:	F_0 , F_M , F_V , OJIP curve, F_T , $\Phi_{PSII}(T)$, Fluorescence/Temperature curve with up to four fluorescence critical points estimation
Measured Conductivity Parameters:	Conductivity/Temperature curve with conductivity critical point estimation
Fluorescence Module Excitation Light Sources:	460 nm for both the saturation light and F_T measuring pulse; individual intensity settings
Protocols:	Custom-defined linear heating (1-3 °C/min) in the defined temperature range
Temperature Control Range:	20-75 °C
Water Bath Volume:	7 mm
Conductivity Measurement Resolution:	0.01 μ S
Temperature Measurement Resolution:	0.01 °C
Stirrer Frequency:	0-2000 RPM
Data Sampling Frequency:	2 Hz
Typical Samples:	Detached leaf segments of maximum size 0.5cm x 2.0 cm
Analysis:	Predefined R script for critical point searching; analysis scripts free for custom modifications
Mini-PC Configuration:	Intel NUC Golden Lake D33217GKE i3-3217-U 1.8 GHz; min 90GB SSD HD, 2 GB DDR3 RAM
Power Input:	Maximum 70 W
Dimensions:	5 cm x 20 cm x 20 cm
Weight:	2 kg
Electrical:	90 – 240 V

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