

2PMTM - Cryo

Compact Cryo Two-Photon Microscope

High submicron resolution imaging during freezing and heating based on near infrared femtosecond laser technology

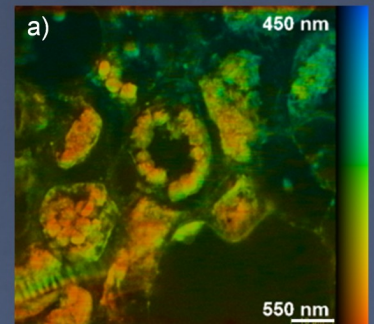
-196°C - +600°C (77K – 873K)
cooling rates: 0.01K/min - 150K/min

- Label-free autofluorescence of frozen samples
- Fluorescence Lifetime Imaging (FLIM)
- Second Harmonic Generation (SHG)
- Microspectroscopy

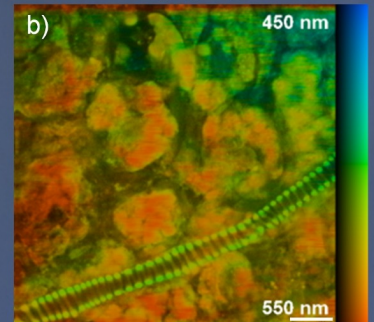
Applications:

Cryopreservation, thermostress, climate change,
optimization of cryogenic protocols,
High Tech tool for cryobanks,
Human, animal, plant tissue/ cells/ minerals

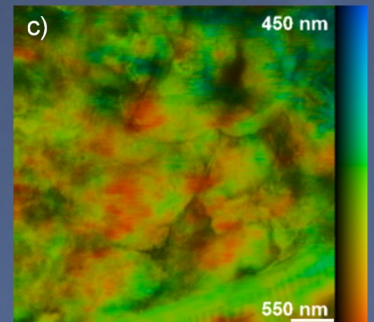
+ 26°C



- 35°C



- 80°C



Technical data

- compact turn-key tunable Ti:Sapphire femtosecond laser
 - laser pulse width: 100 fs - 200 fs
 - repetition frequency: 80 MHz
 - laser power: < 1.3 W
 - wavelength range: 710-920 nm
- full-frame scanning, region-of-interest (ROI) scanning, line scanning, single-point illumination (spot scan)
- typical FOV: 250 μm x 250 μm (horizontal); WD: < 2 mm
- typical spatial resolution: < 0.5 μm (horizontal); < 2 μm (vertical)
- typical temporal resolution: 200 ps (TCSPC, up to 256 time channels)
- focusing optics: 40x NA 1.3 (standard), other objectives possible
- control and image processing software (JenLab Control, JenLab Image)
- temperature range -196°C (nitrogen) - +600°C (77K - 873K)
- cooling rates: 0.01K/min - 150K/min
- power requirements: 230 VAC (50 Hz) or 115 VAC (60 Hz)
- CE certified
- 700x520x800mm³ (without laser)

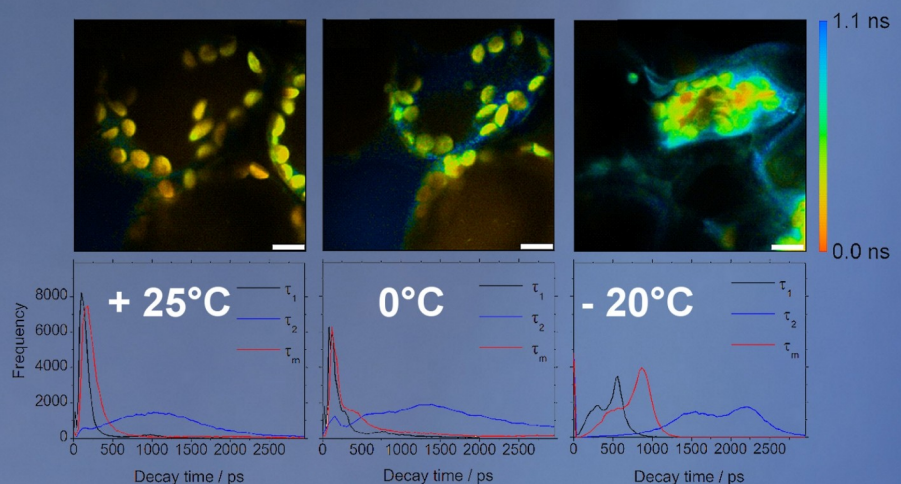
Notes: These specifications are subject to change without notice.

Reference:

Breunig, Tümer, König. Multiphoton imaging of freezing and heating effects in plant leaves. J Biophotonics (2012), in press



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Two photon cryo FLIM microscopy of plant leaves (*Arabidopsis thaliana*). Chlorophyll fluorescence in intratissue chloroplasts. High spatial and temporal resolution (300 nm / 200 ps).