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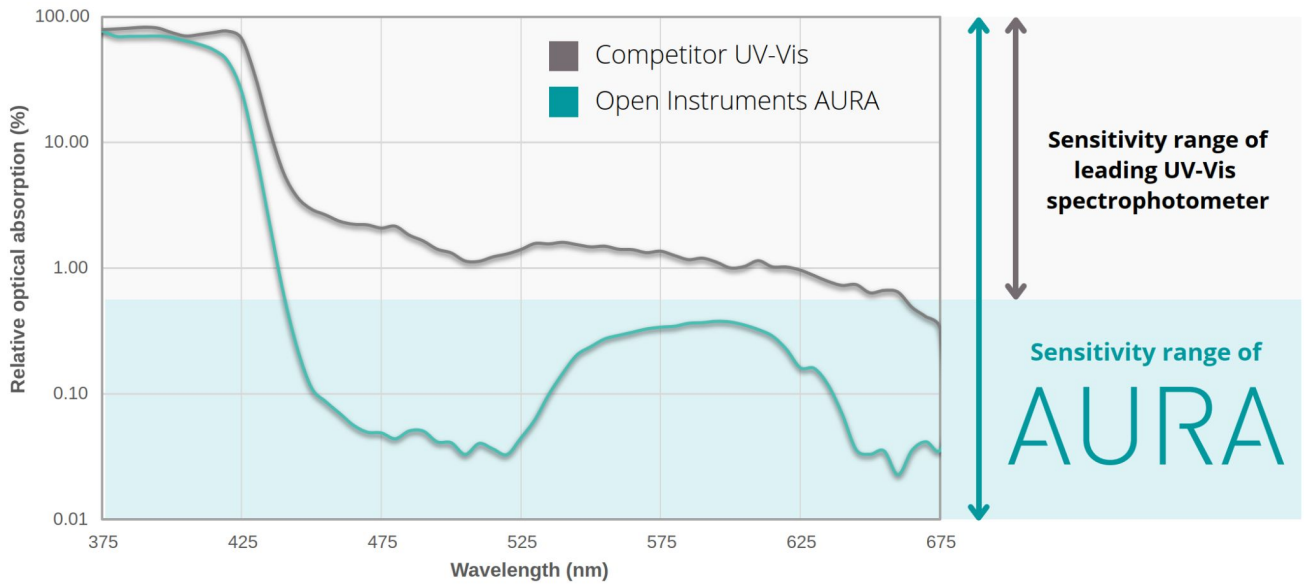
AURA

Thin film material analysis and detection of defects in solar cells with up to 1,000x higher sensitivity than competing systems

AURA is the first commercially available photothermal deflection spectrometer (PDS) that is specifically targeted at R&D in the field of thin films and devices such as solar cells, optical coatings, LEDs, and novel materials. It enables researchers in photovoltaics to discover performance-limiting non-radiative defects in their materials, which remain undetectable by other characterization methods

Features

- Easy alignment-free sample mounting
- Small measurement spot of 5.5 x 0.75 mm
- Photo-absorption spectra with up to 5 orders of magnitude dynamic range
- Seamless automated measurement from 250 to 2,500 nm, with optional IR extension
- Able to measure absorption on extremely rough surfaces
- Double-monochromator light source for high spectral contrast
- Intelligent adaptive acquisition minimizes measurement time
- No detector changeovers to cause spectral artefacts
- Built-in vibration and acoustic isolation



Measurement of a single crystal 2D perovskite, revealing deep sub-bandgap information

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Applications

- Photovoltaics
- Material discovery
- Trace-level contaminants
- Nano particles
- Chemical analysis
- LEDs
- Thin film displays
- Process quality control
- Environmental monitoring
- Medical diagnostics

We also offer sample measurement as a service

Specifications

Technique	Transverse photothermal deflection
Material compatibility	Perovskites, silicon, or thin film materials
Sample size	Up to 25 x 25 mm
Calibration	Relative to calibrated black body reference
Spectral range	250 to 2500 nm
Detection limit	0.005% (S/N = 1)
Temperature range	Room temperature
Deflection liquid	3M Fluorinert FC-72 (inert and non-toxic), or compatible solvent
Sample contacting	SMA feed-through for user connection to device
Sample mounting	Clamped by leaf spring in chamber
Noise reduction	Extraneous noise detection, adaptive measurement time
Input power	110-240 VAC +/- 10%, 47-63 Hz, 350 W
Dimensions	910 mm x 470 mm x 870 mm (W x H x D)
Weight	55 kg
Compliance	EN60950-1, EN60824-1, and EU Machinery Directive 2006/42/EC

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