

# LUMiKON<sub>MINI</sub>

*3 months free trial  
inside your laboratory*

## Automated photoluminescence imaging system for perovskite solar cells and wafers, with contactless measurement of the true iVoc

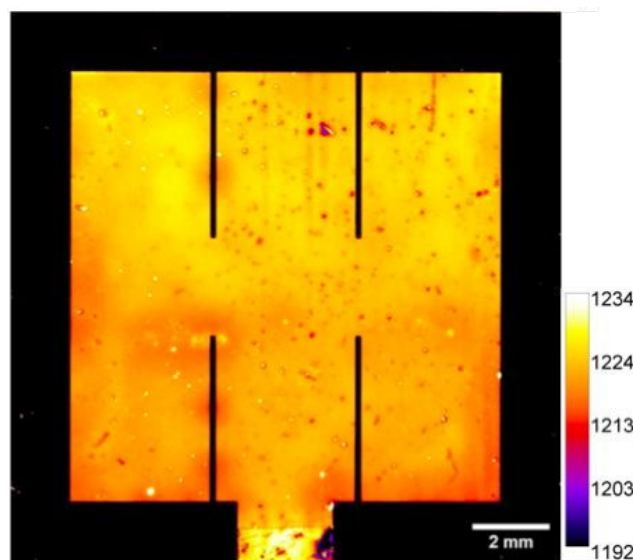
LUMiKON MINI is a compact, glovebox compatible photoluminescence (PL) imaging system that generates calibrated PL images of perovskite samples. The absolute irradiance calibrated images and built-in processing algorithms provide immediate quantitative results, including the true implied open circuit voltage (iVoc). The system is specifically designed for rapid and accurate screening of new material compositions and devices.

A version for perovskite-Si tandem solar cells will be available soon. Contact us to be notified once available.

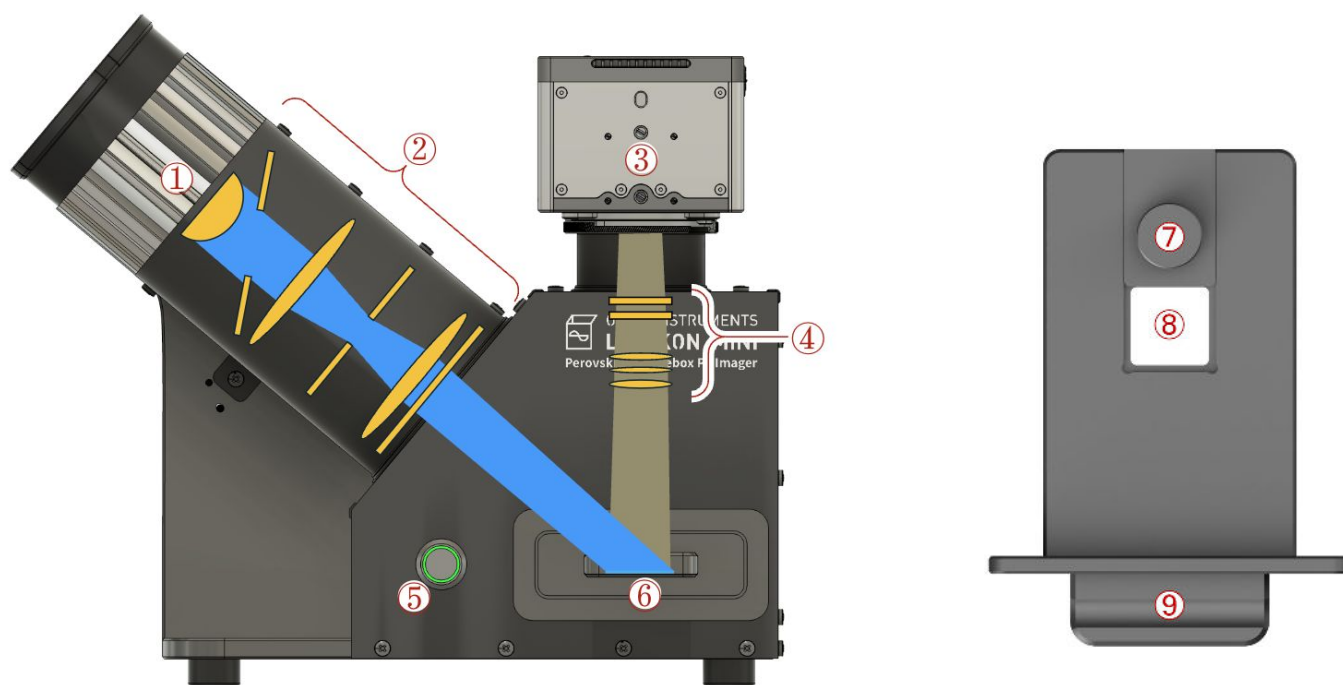


### Features

- **iVoc imaging** : Directly produces images of the true implied open circuit voltage, allowing quantitative comparison between all images
- **Glovebox compatible** : Can be installed inside your glove box, via the load lock, and easily operated whilst wearing gloves.
- **Simple operation** : Image acquisition is triggered by a single large button, allowing users to keep their hands in the glovebox
- **Fully automated settings** : The system optimises all settings so you always obtain images of the highest quality and accuracy
- **Light-soaking** : Set variable pre-measurement light soaking times to study degradation
- **Point-by-point PL spectrum** : Optional upgrade to allow measurement of the full PL emission point-by-point, enabling mapping of material bandgap and compositional uniformity
- **iFF & iMPP imaging** : Optional upgrade that enables generation of images showing the implied fill factor (iFF) and implied maximum power point (iMPP)



iVoc image of the perovskite layer of a perovskite-silicon tandem cell.



- |   |  |
|---|--|
| 1 : Air-cooled high-power light source          | 6 : Sample 30 mm x 30 mm   |
| 2 : Optimised beam shaping and filtering        | 7 : Glove-friendly lock screw                                    |
| 3 : 26.1 MP low noise camera                    | 8 : Sample mount, up to 30 mm x 30mm<br>(custom sizes available) |
| 4 : Camera objective with multi-stage filtering | 9 : Easy to grip handle for sample tray                          |
| 5 : Easy access trigger button & indicator      |  |

## Specifications

Material compatibility	Perovskites, or others with PL emission between 525 and 1000 nm
Sample size	Up to 30 x 30 mm
PL / EL imaging modes	iVoc and raw PL images
Image calibration	Factory calibrated for absolute irradiance in $\mu\text{W}/\text{cm}^2$
Image resolution	Better than 20 $\mu\text{m}$ for 30 mm x 30 mm FOV
Image format	6248 x 4176 (26.1 MP), 16-bit TIFF
Illumination source	450nm
Illumination uniformity	+/-5% over the sample plane
Glovebox feedthroughs	IEC C13 AC power cable, USB A-B cable or Wifi
Input power	110-240 VAC +/- 10%, 250 W
Dimensions	325 mm x 370 mm x 208 mm (W x H x D)
Weight	8 kg
Compliance	EN60204-1, EN60825-1, and EU Machinery Directive 2006/42/EC

## Contact

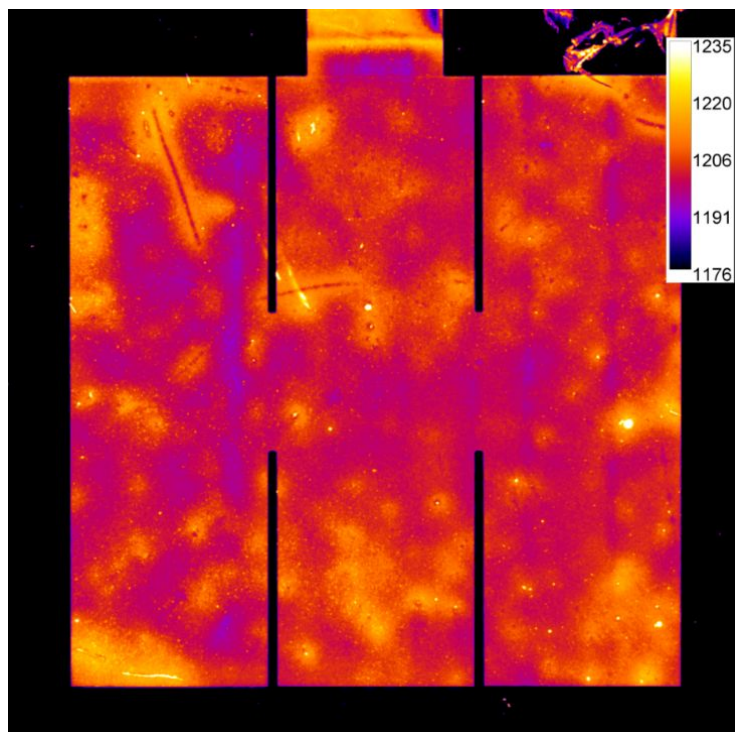
Email: [info@openinstruments.com](mailto:info@openinstruments.com)  
 Phone: +61 (0) 406 687 908  
 Hours: 9am – 7pm, Mon – Fri (GMT+11)

Address: Suite 106, 100 Collins St  
 Alexandria, NSW 2015  
 Australia

[Connect with us](#) on LinkedIn

**Example measurements** of perovskite solar cells. The images show the implied voltage (iVoc) of the perovskite cell.

Implied voltage (iVoc) image of Cell A



Implied voltage (iVoc) image of cell B

