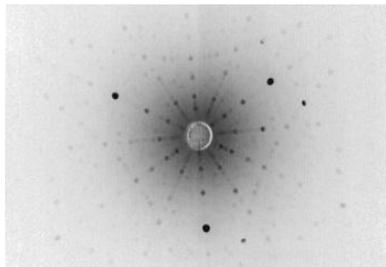
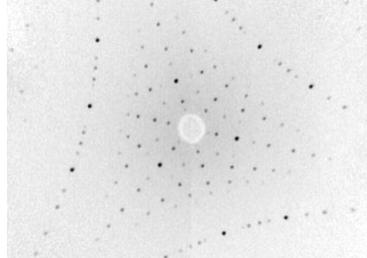


Photonic Science Desktop Systems for LAUE real-time Crystal Orientation and Characterisation



Quartz aligned sample



Tungsten aligned sample

Customer Benefits

- Real-time Crystal Orientation.
- Characterization down to 0.2 degree accuracy (0.02 for high end demand)
- Complete solution including source, camera, goniometer, and orientation software
- Custom, upgrade solutions for your existing systems
- Onsite installation and training.
- Consistency / reproducibility: proven design systems installed in 60 major crystal research laboratories world wide

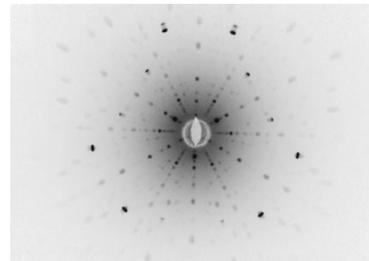
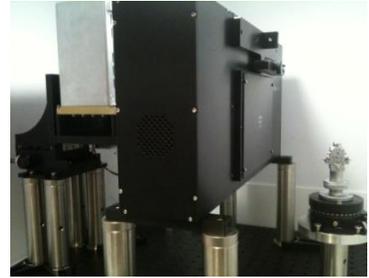
Digital X-ray Laue Solutions

Complete system with microfocus source / X-ray digital Laue detector and motorised goniometer allows real time crystal characterisation

The system allows unique back scattered geometry collection and ultimate alignment accuracy down to 0.2 degree (0.02 degree for high end demand). Exposure time will be reduced by at least up to 2 orders of magnitude compared to that of high sensitivity polaroid films. This enables real time diffraction pattern recording.

Combined with motorised sample rotation, the system brings simpler and more flexible crystal orientation routines.

The acquisition software delivers ready to be indexed digital images from PC, to Linux remote controlled machines. Images are analysed using Orient Express software in order to derive orientation / indexing of existing crystals with known structure.



Sapphire aligned

Integrated beam collimation into Digital Laue detector allows >10x faster collection than film

The camera system can be installed on Cu, Mo or W X-ray sources (Long fine focus, Fine focus or point focus).

The beam is collimated inside the camera directly onto the sample with a net flux gain of one order of magnitude compared to high sensitivity Polaroid films.

Laue patterns are recorded within 1 to 30 sec exposure depending on crystals and type of source used.



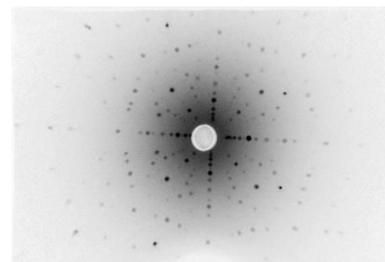
Integrated collimators

Digital X-ray Laue detector replaces Polaroid films within an hour from installation

The upgrade of film cassette detectors can be performed by technicians / engineers thanks to a comprehensive alignment kit delivered with the digital Laue camera.

A choice of collimators allows you to choose the right flux / resolution trade off according to the kind of crystals used.

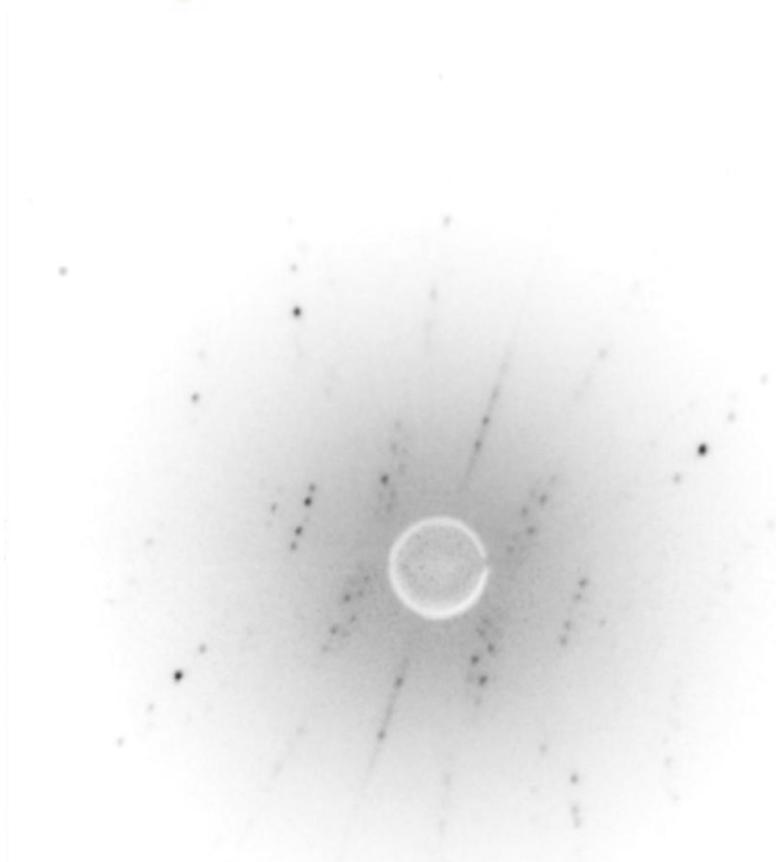
The standard digital Laue camera reduces acquisition time two fold compared to high sensitivity Polaroid films.



Si sample

Technical Features

Photonic Science Laue X-ray crystal Alignment System	
Description	The system allows unique live digital backscattered LAUE diffraction pattern recording. It features a 6.2mm centre hole that allows the X-ray beam to pass through the camera system and hit the crystal. The camera allows live exposure (at the expense of resolution) as well as extended exposure (at full resolution) up to 20 for crystals requiring more accurate orientation down to 2/10th degree accuracy for the standard system and 2/100 th degree for the micro diffraction option.
Photonic Science Laue X-ray Imaging camera	Active input area of 150 (h) x 105 (v) mm (approx.) imaged on the sensor. Minimum input pixel size of 83 μ square, 1913 x 1280 pixels (optional with 42 μ square) Available gain range: 10:1 range. Selectable exposure from 1ms to > 20 minutes. Automatic background subtraction mode. 16-bit high precision acquisition mode. 12-bit fast readout for real time preview. Alignment of the camera with respect to the x-ray source. Horizontal and Vertical geometry available.
High brilliance X-ray source	Typical spot size on sample 0.5mm, micro diffraction option (beam size down to <100 microns in micro diffraction) Flux on sample > 3 10 ⁸ photons. Average spectrum: 5 to 25 keV Bremsstrahlung. X-ray shielding down to beam exit collimator. Ambient operating temperature: 20 to 30 degree C. Air forced cooling with < 0.5% RSD over 8 hours, temperature independent. Pre alignment of the X-ray source with respect to the Laue camera. Horizontal and Vertical geometry available.
Crystal orientation software	Imports BMP / JPEG format. Allows crystal orientation down to 0.2 degree accuracy from known crystal structures, (0.02 degree accuracy for high end demand) Working distance from 30-70mm. Automatic indexing for industrial applications (sapphire, mono crystalline silicon, YAG, magnetic / superconducting materials, casted samples...)
Goniometer assembly	Manual goniometer head: 49 to 64mm height, 3 motorized axis of rotation Rx / Ry: +/- 10 degrees amplitude and 0.001 degree resolution, 360 degree rotation base with 0.001 degree resolution, X/Y displacement: +/-2.5mm, Z displacement 5mm (for crystals max. 30 x 30 mm), incl. 2 crystal holders, adjustment point, and adjustment spanner. Limit switch bridge connectors, users manual, software. pre alignment of the goniometer with respect to the X-ray source and Laue camera. Heavy duty set up for large sapphire boules.
X-ray cabinet	Cabinet dimensions: 800mm (width) x 800mm (depth) x 800mm (height) with sliding opening door (larger cabinet available on demand) Magnetic interlocks. Signalling for High Voltage ON, and shutter OPENED. Lights + 2 air extractors allowing cooling for the source and the Laue camera.



ZnBi2212 5 sec exposure

Contact:

info@photonic-science.com

Sales and Marketing Office
Place Bievre Toutes Aures - Bat Amelia Earhart-
FR-38550 St Etienne de St Geoirs

Tel:+33(0)4 76 93 57 20

mob:+33(0)6 86 58 12 06

Fax:+33(0)4 76 93 57 22

Head Office

Millham, Mountfield,

Robertsbridge,

E.Sussex, TN32 5LA

Tel: +44 (0)1580 881199

Fax: +44 (0)1580 880910

<http://www.photonic-science.co.uk/>