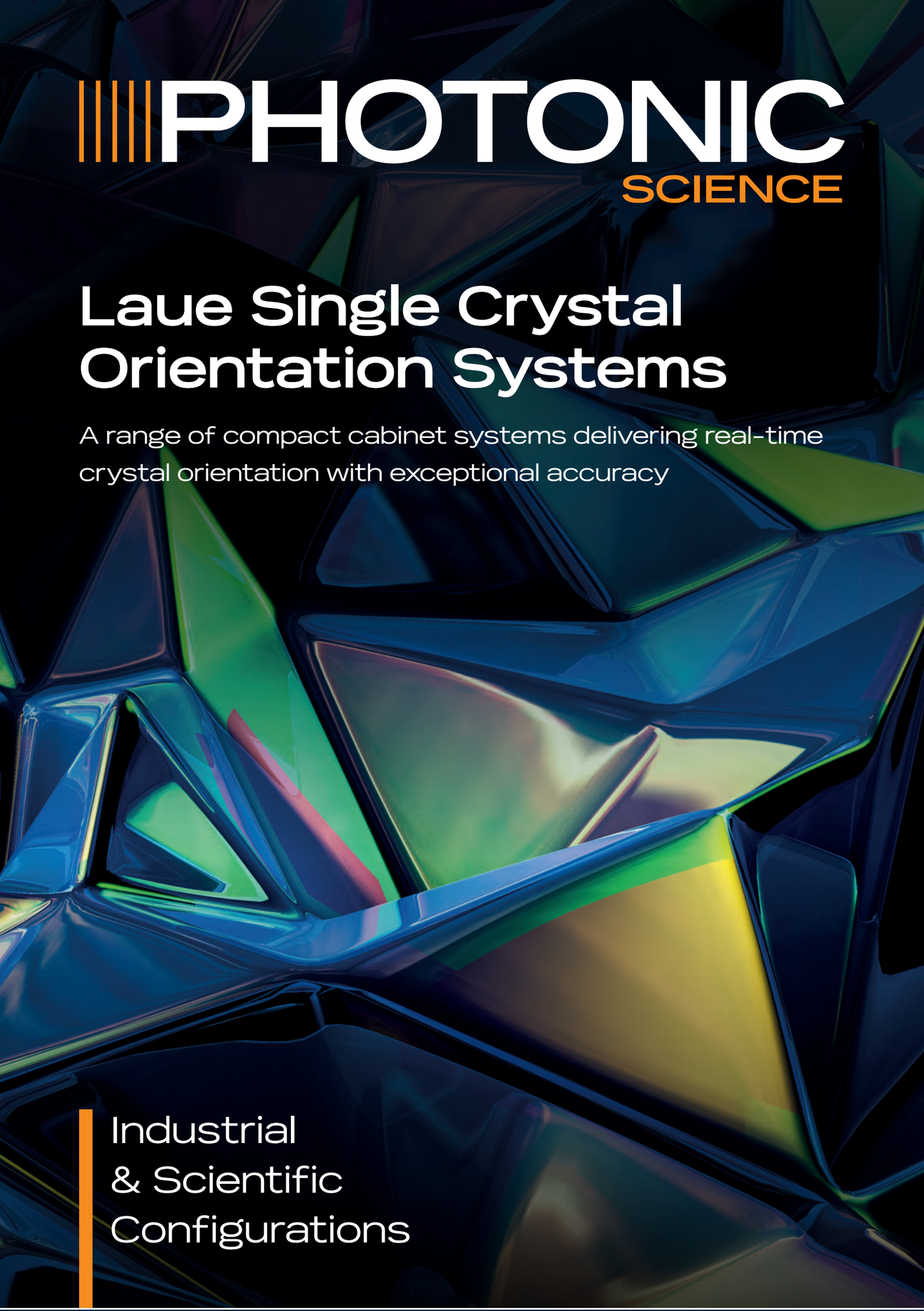
PHOTONIC
SCIENCE

Laue Single Crystal Orientation Systems

A range of compact cabinet systems delivering real-time crystal orientation with exceptional accuracy



Industrial & Scientific Configurations

PRECISOMETER
Official representative of Photonic Science
info@precisometer.com
precisometer.com/photonic-science

PHOTONIC SCIENCE

Find the right Laue system for your application



Laue-LT

Typical Exposure Time Range
120 s - 240 s

Maximum Sample Size
L 50 x D 50 x H 26.5 mm

Scanning Area
Horizontal: 50 x 26.5 mm
Vertical: 50 x 50 mm

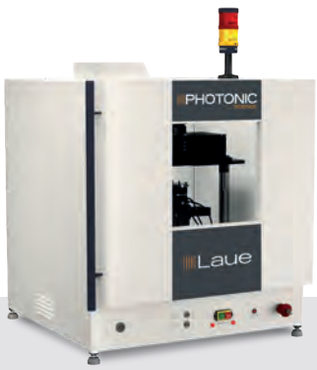
Beam Size on Sample
Adjustable down to 1 mm

Active Input Area
76 mm x 105 mm

Accuracy Down To
0.2°

Sample Alignment Camera (for precision positioning)
Not included

Energy Range
5 to 50 keV



Laue

Typical Exposure Time Range
1 s - 30 s

Maximum Sample Size
Horizontal: L 250 x D 250 x H 40 mm
Vertical: L 250 x D 150 x H 40 mm

Scanning Area
Horizontal: 250 x 40 mm
Vertical: 250 x 150 mm

Beam Size on Sample
450 µm (250 µm fine focus)

Active Input Area
155 mm x 105 mm

Accuracy Down To
0.1°

Sample Alignment Camera (for precision positioning)
Included as standard

Energy Range
5 to 29 keV



Laue-XT

Typical Exposure Time Range
1 s - 30 s

Maximum Sample Size
L 450 x D 250 x H 250 mm

Scanning Area
250 x 250 mm

Beam Size on Sample
450 µm (250 µm fine focus)

Active Input Area
155 mm x 105 mm

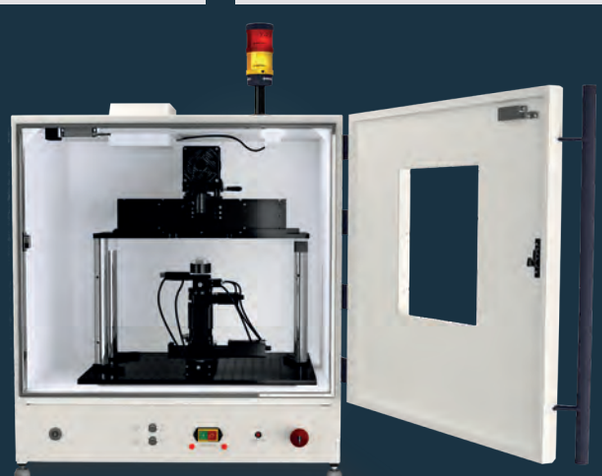
Accuracy Down To
0.1°

Sample Alignment Camera (for precision positioning)
Included as standard

Energy Range
5 to 29 keV

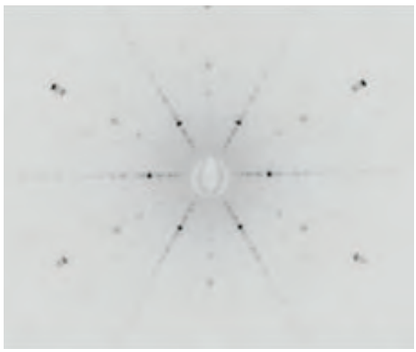
All systems include

- ✓ Sealed x-ray tube with Tungsten target
- ✓ Reference Si sample
- ✓ Custom workbench for cabinet with space for PC, monitor, keyboard and mouse
- ✓ PSEL Laue crystal orientation software

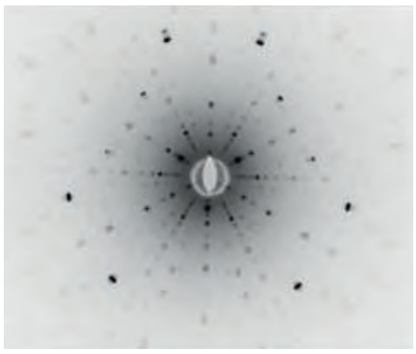


sales@photonicscience.com

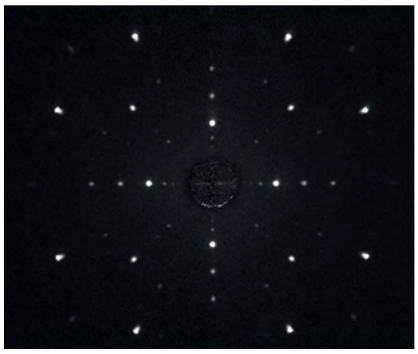
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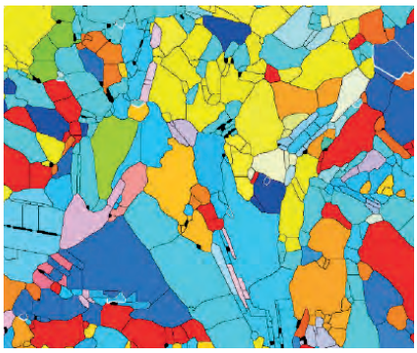
Sapphire C-axis aligned



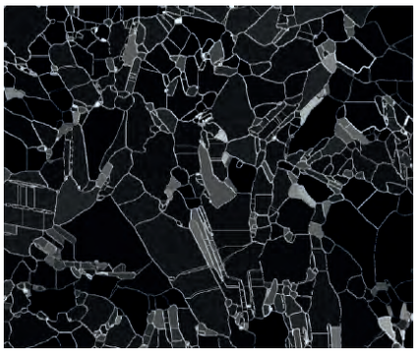
SiC Hex aligned



Silicon alignment to better than 0.1 degree accuracy



Two dimensional orientation map



Poly crystalline Si Wafer



Extraction of contours and centroids for x-ray analysis

Next Generation Laue Systems

Single crystal materials are playing an important role in novel devices, from non-linear optics to jet engine turbine blades and super conducting materials.

A high-resolution Crystal Orientation System is the ideal tool to capture and analyse the Laue diffraction pattern from a wide range of crystalline materials. With dedicated software, the orientation of single crystals can be measured quickly with excellent accuracy.

The Photonic Science range of Laue Systems offers options to suit a variety of applications, from low to high throughput, adjustable beam sizes, and manual or motorised positioning. Our system combines several key innovations to deliver the next generation of Laue single crystal orientation that can be configured to meet your requirements.

Key Features

- **Vertical and horizontal configurations**
- **Plug-n-Play compact cabinet system with no chiller requirements**
- **Zero maintenance, high-resolution, high-sensitivity back reflection x-ray detector**
- **Manual or motorised XYZ stages and goniometer**
- **Class-leading x-ray optics solution**
- **Distance measurement tool for positioning**
- **Fast and precise alignment of crystals**
- **High-throughput sample screening options**
- **Dedicated Laue software with scripting language for full automatisation**

www.photonicscience.com

System Options



Vertical Configuration

Flexible configuration using a vertical beam path for high throughput scanning of multiple crystals in isolation, or multiple areas of interest.

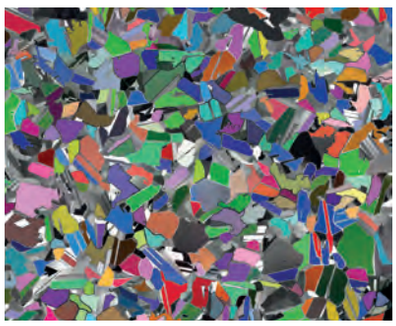
Using gravity, samples do not need to be adhered to platform, allowing easier mounting and orienting of crystals.



Horizontal Configuration

Traditional horizontal beam geometry is well suited to orient the crystal for cutting or to quickly scan the crystal to identify reflections.

Speak with our expert team to help determine which configuration option best suits your requirements.



Grain Map System

Vertical system featuring a special camera, lens, illumination, and mapping software to measure the orientation of each grain.

Grain Map systems include a fully motorised XYZ stage and goniometer as standard. Ideal for grain mapping Silicon Wafers.

System Options	Laue-LT	Laue	Laue-XT
Vertical Configuration	✓	✓	On request
Horizontal Configuration	✓	✓	✓
Grain Map System	×	✓ Vertical only	×
Mechanical Distance Measurement Tool	✓	✓ Horizontal only	✓
Laser-Guided Distance Measurement Tool	×	✓ Vertical only	On request
Manual XYZ Stage & Goniometer	✓	✓	✓
Motorised XYZ Stage & Goniometer	×	✓	✓
Sample Alignment Camera - as standard	×	✓	✓
X-ray Source Alignment Camera	×	✓	✓
Automated Point-Scanning Routines	×	✓	✓

Dedicated Laue Software

Alignment Software

Automatically detects diffraction spots
and calculates spot position against reference crystal

Automatically calculates misorientation
against goniometer and crystallographic axis

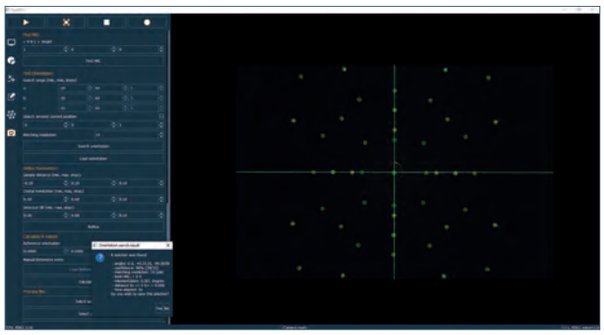
Intuitive workflow for multiuser operation
and non-expert crystallography users

Saves angular measurements in CSV format
for Quality Assurance traceability

Built-in Macro interface
for automating repetitive routines

Compatible with CFL data files

Remote access control
for ongoing service support, minimising system downtime



Applications

Crystal Orientation

Quality Control

Turbine Blade Inspection

Benefits of a Vertical System

- ✓ A vertical beam path takes up less room in the cabinet, leaving more space for experiments
- ✓ Allows scanning experiments with wafers, rods, and multiple samples, for example diamonds on trays up to 30x 30 cm
- ✓ Compatible with additional optics or inspection modalities
- ✓ Laser-guided distance sensor for more accurate and repeatable sample positioning
- ✓ Safer mounting of samples away from detector
- ✓ More loading space makes sample setup easier and faster
- ✓ Allows motorised goniometers to operate at larger tilt and rotation degrees
- ✓ Software supports automated macro routines

> “The Photonic Science Laue is our system of choice as we have found it very dependable. Beyond the accuracy and reliability, the major feature is the convenience and speed of the system... it runs off a normal wall plug and quickly boots up to check your crystals immediately.
>
> It really is the best value that I have found on the market, with the complete kit delivered onsite with an installation video - you set it up and, in an hour or two, you are ready to go.”

Gavin Hester, PhD
Assistant Professor, Dept. of Physics,
Brock University

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Installation

Video Installation

As a plug-n-play system, with no specialist requirements, the Laue is easy to install and setup. Each Laue is delivered pre-configured with an installation video that takes you through the complete process step-by-step.

Our support team is available by phone or email to answer any questions you may have.

In-person Installation

Should a system require an in-person install, our service team will deliver and setup the Laue at your facility.

After Sales Services

Training

Laue systems come with a comprehensive User Manual to guide users, both new and experienced, through all the features and how to setup and run your Laue experiments. Training videos are also available.

A training session via Teams or on site can be arranged.

Remote support

Our support team is on hand to help diagnose and troubleshoot problems to get your experiment back on-track.

Quality Assurance

Quality and continuous improvement is at the heart of everything we do at Photonic Science, to ensure we deliver on-spec systems every time.

Photonic Science is an ISO9001 qualified company and as standard we provide a 12 month warranty on all our products; with warranty extensions available on request.

Photonic Science also provides after sales support for the lifetime of our products, and we can provide maintenance and repairs for all Photonic Science systems.

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Part of Tibidabo Scientific Industries

PS-BR001-Laue System-Rev05-Feb2026

bsi ISO 9001 Quality Management Systems CERTIFIED ISO 14001 Environmental Management CERTIFIED

PRECISOMETER
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Product selection, configuration & integration support

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Explore products & discuss your experiment