

ProCam® Lab

R&D and laboratory set-up for active alignment of camera modules

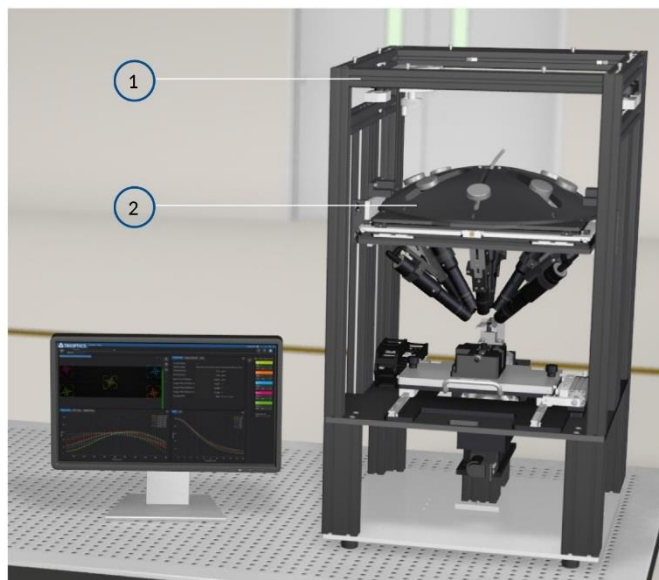
With the new ProCam® Lab, we offer the ideal solution for customers who want to master the critical challenge of active alignment and assembly of high-precision camera modules with a small number of pieces (approx. 50 pieces). In addition to the purchase of our active alignment basic system, we also offer a full package and advice which components are required to set up a complete assembly line. Customers can choose whether they want to buy either single components or the clean room cell including all necessary equipment and accessories.

With this laboratory equipment from the ProCam® series, our customers can easily get started in the camera business and optimize their prototypes for later series production. With the help of TRIOPTICS measurement technology and this all-inclusive package we enable the best and fastest start into the complex topic of active alignment.

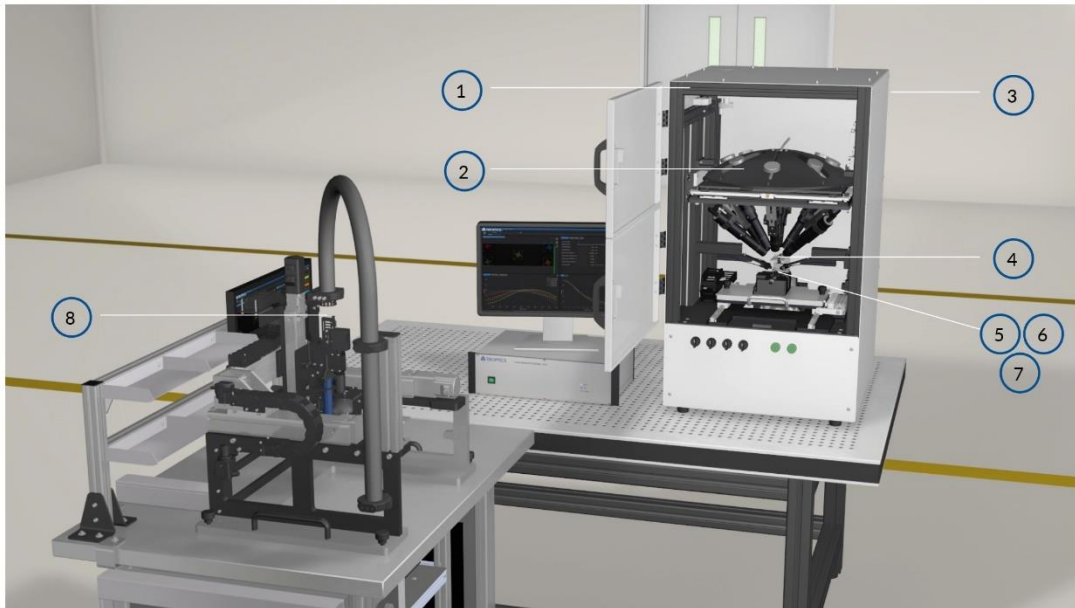
The following 3 different offer variants are available: The ProCam® Lab basic model with software and object generator, the ProCam® Lab basic model with additional equipment or the ProCam® Lab full package solution:

ProCam® Lab Basic

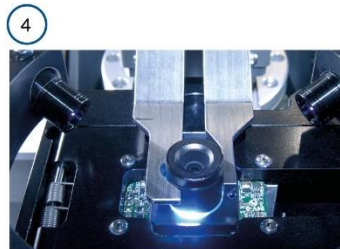
- 1 ProCam® Lab Basic with Software
- 2 Object Generator



ProCam® Lab Basic with Add-ons



- 1 ProCam® Lab Basic with Software
- 2 Object Generator
- 3 Safety enclosure
- 4 UV curing module with 4 UV lamps
- 5 Sample specific workpiece carrier
- 6 Framegrabber
- 7 Sample specific lens gripper
- 8 Dispense module



ProCam® Lab Full Package



- | | | | |
|---|-----------------------------------|----|--|
| 1 | ProCam® Lab Basic with Software | 7 | Sample specific lens gripper |
| 2 | Object Generator | 8 | Dispense module |
| 3 | Safety enclosure | 9 | Thermal curing oven |
| 4 | UV curing module with 4 UV lamps | 10 | Freezer for glue storage |
| 5 | Sample specific workpiece carrier | 11 | Clean room incl. air conditioning system |
| 6 | Framegrabber | 12 | ESD Tester |

Orders for the ProCam® Lab can be accepted from the first of April 2021. The delivery time is around 3 months. The first customer deliveries can therefore take place from July 01, 2021. Please contact our sales department for further information and questions.

Technical Data

	ProCam® Lab Basic
Alignment axes	5 and 6
Resolution linear	0.2 μm (X,Y) 0.08 μm (Z)
Resolution rotatory	2.5 μrad (Θ_x, Θ_y) 5 μrad (Θ_z)
Repeatability linear	$\pm 0.15 \mu\text{m}$ (X,Y) $\pm 0.06 \mu\text{m}$ (Z)
Repeatability rotatory	$\pm 2 \mu\text{rad}$ (Θ_x, Θ_y) $\pm 3 \mu\text{rad}$ (Θ_z)
Typical sample alignment accuracy, linear	$\pm 2 \mu\text{m}^{1)}$
Typical sample alignment accuracy, rotatory	$\pm 1.7 \text{ mrad}^{1)}$ (Sensor to sensor) $\pm 3.5 \text{ mrad}^{1)}$ (Sensor to mechanical reference)
Sample objective lens EFL	0.7 mm ... 30 mm (1 mm ... 12 mm Standard)
Sample objective lens diameter	4 mm ... 30 mm (smaller or bigger diameter on request)
Field of view test chart	up to 70° (up to 100° possible after individual clarification)
Field of view collimators	up to 160° mechanical set up ²⁾ up to 140° for optical measurement ³⁾
Test targets	Test chart or collimators Available with VIS or NIR
Dimensions (h x w x d)	Approx. 1.050 mm x 600 mm x 700 mm
Type	Stand alone

1) Typical accuracy reached on following sample parameter: pixel size 6 μm , F# = 2.8, EFL = 4.5mm.

2) Up to 180° possible after individual clarification, depending on sample and mechanical surrounding, for bigger FoV technical investigations necessary.

3) Depending on distortion, individual clarification necessary.