CLEAR PHOTON



THE BASELINE

CP-ORIGIN

Femtosecond galvo processing on your lab bench. Start simple, upgrade in the field.

< 1 µm
galvo repeatability

44 × 44 mm
scan field, f = 100

Class 1
no laser room needed

Laser not included · Budgetary pricing on request

Product brochure · November 2026 · Preliminary

Why CP-ORIGIN

CP-ORIGIN turns your ultrafast laser into a Class 1 micromachining station at the lowest entry price. The galvo scanner does the fast, precise work over a 44 × 44 mm field. The part sits on a fixed plate against a locating fence and the Z hand-wheel sets focus. Enclosure, safety system, front panel and electronics are those of the flagship, with blanking plates where modules are left out.

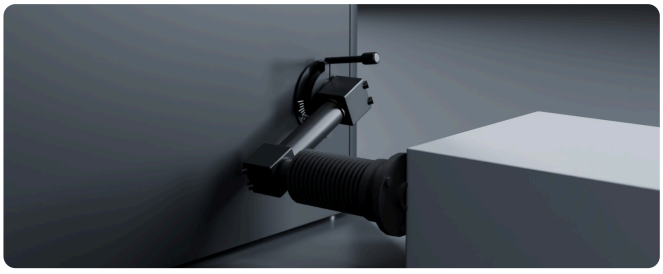
Grow without replacing

Add the CP-Motion kit (motorised XY and Z, active beam stabilisation) and later the CP-Vision kit (camera, coaxial light, zoom expander, 10.1-inch display, joystick, single-shot button). Both fit prepared interfaces and are installed on site.



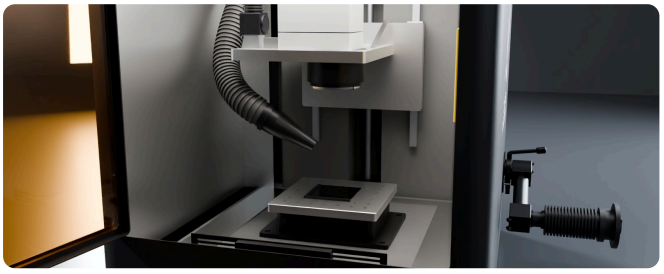
Built like a metrology tool

Polymer-concrete casting, fixed sample plate with an XY-ready bolt pattern, scan head on a stiff Z axis. First structural mode above 150 Hz, no fans in the process chamber.



Bring your own laser

A rotating periscope arm meets any beam height from 40 to 300 mm. The docking bridge seals light-tight onto an adapter plate on your laser head.



Made for the lab

Open chamber with easy access to the part, a status light blade visible across the room and fanless electronics. Run it from your PC or a tablet.



Safe by design

Class 1 with guard-locked door, PL e shutter, hard-wired interlocks and a laser key switch. Blanking plates mark the ports for the upgrade kits.

UPGRADE PATH, SAME ENCLOSURE AND FRONT PANEL

CP-ORIGIN	CP-NEXUS	CP-VERTEX
Fixed plate, manual Z	+ CP-Motion kit	+ CP-Vision kit

Technical specifications

Standard 1030 nm configuration, telecentric f = 100 mm lens, after warm-up, lab stable within ±0.5 K.

Motion architecture	Fixed sample plate on the metrology casting, scan head moves in Z
XY travel	Fixed 200 × 200 mm plate, M6 grid, XY with CP-Motion kit
XY repeatability / accuracy	Not applicable
XY speed	Not applicable
Z travel (scan head)	150 mm, hand-wheel, 10 µm
Largest part	300 × 300 mm footprint, 150 mm tall, up to 25 kg
Scan field (f = 100 telecentric)	approx. 44 × 44 mm
Focused spot (1/e²)	approx. 16 µm
Galvo repeatability	< 1 µm
Field accuracy after calibration	< ±3 µm
Machine vision	With CP-Vision kit
Automated focus	No
Beam pointing	Manual alignment with two irises, active with CP-Motion kit
Operator interface	PC with CLEARPHOTON STUDIO, web HMI on any tablet
Software	CLEARPHOTON STUDIO
Dimensions (W x D x H)	600 × 700 × 800 mm
Mass	approx. 115 kg
Power	100 to 240 VAC, 50/60 Hz, < 400 W (laser not included)

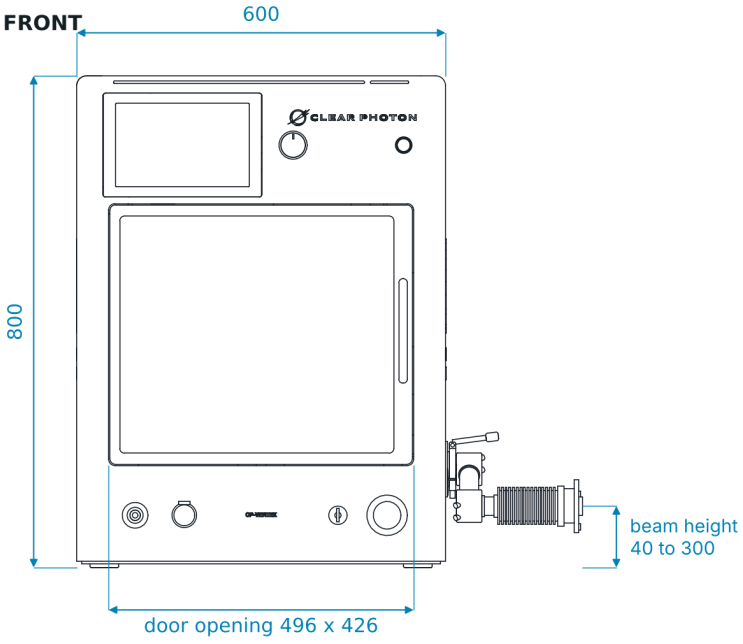
Laser compatibility

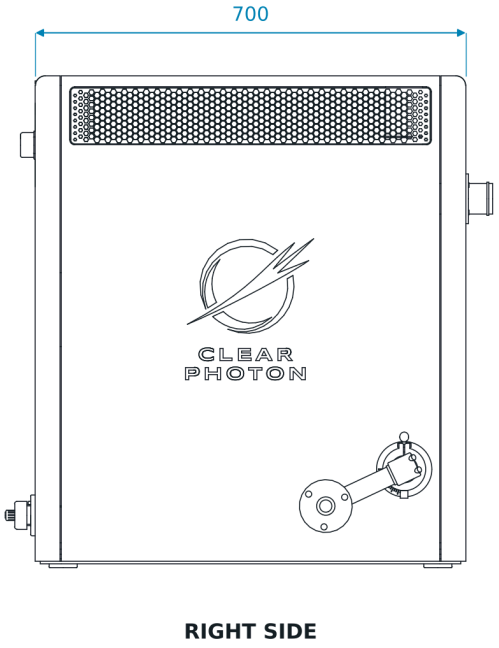
Wavelength	1030 to 1064 nm (515 nm and 343 nm as factory variants)
Average power / pulse energy	up to 20 W / up to 200 µJ
Pulse duration	approx. 150 fs to 10 ps (ns and CW on request)
Input beam	1 to 6 mm, expander matched to your laser
Beam input	Rotating periscope arm, 40 to 300 mm above the bench, light-tight docking bridge on an adapter plate

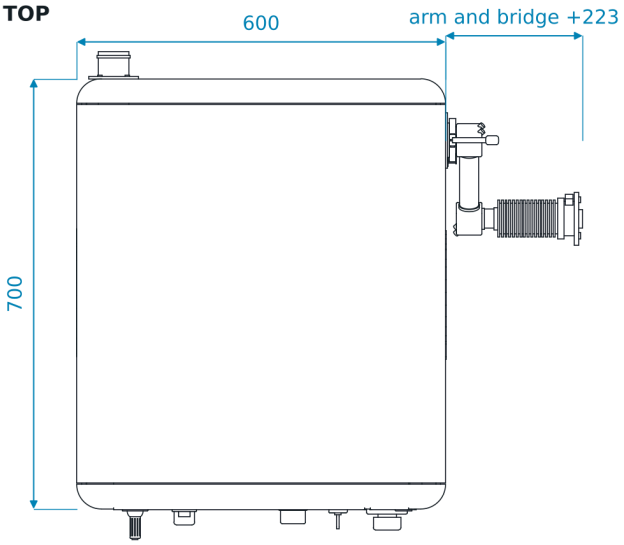
Rear laser interface. SMA: gate, trigger, laser clock in, 0 to 10 V · D-sub 15: ready, error, shutter, reset, enable · M12: 2-channel interlock loop, external E-stop, laser-active output · RS-232, USB, Ethernet, HDMI

Safety and conformity. Class 1 to IEC 60825-1, one amber window to EN 60825-4 for 343, 515 and 1030 nm (OD 7+), interlocks to ISO 13849-1 PL d, electrical to EN 60204-1. CE and UKCA on delivery.

Dimensions







Site requirements

Bench
≥ 250 kg, approx. 1200 × 800 mm for station and laser

Access
100 mm at the rear, door swing approx. 500 mm

Environment
18 to 26 °C, ±0.5 K for full accuracy

Extraction
60 to 120 m³/h, HEPA and carbon, Ø50 mm

Power
1 × 100 to 240 VAC socket

Install
By you, with setup wizard and remote support

Talk to us about your application.

Try It Out rental from EUR 5 000 per month, job-shop processing and process development through our partner network. Budgetary pricing on request, laser not included.

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