CLEAR PHOTON



THE WORKHORSE

CP-NEXUS

Motorised XY and Z with linear encoders. Stitch, step and repeat over 150 × 150 mm.

< 2 µm
stage repeatability

< 5 µm
absolute over 150 × 150 mm

150 mm
motorised Z, automated focus

Laser not included · Budgetary pricing on request

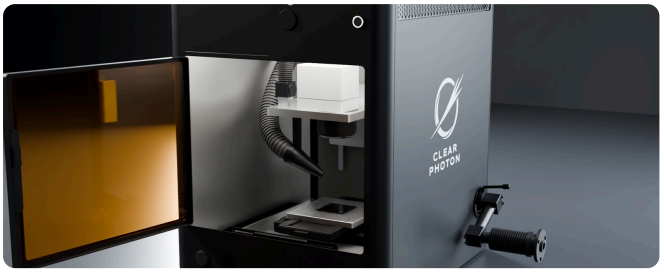
Product brochure · November 2026 · Preliminary

Why CP-NEXUS

CP-NEXUS adds motorised XY with linear encoders and a motorised Z head to the CP-Series platform. Jobs larger than one scan field are stitched with stage moves and focus is found automatically. You run it from CLEARPHOTON STUDIO on your PC or from the web HMI on a tablet.

Stage and scanner in one loop

Linear encoders and a 2D error map hold < 5 µm absolute accuracy over the full 150 × 150 mm travel. Beam stabilisation keeps the path aligned after docking. Add the CP-Vision kit when you need the camera, display and joystick.



Built like a metrology tool

Polymer-concrete casting, XY stage fixed on the base, 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	XY stage on the metrology casting, scan head moves in Z
XY travel	150 × 150 mm, motorised, linear encoders
XY repeatability / accuracy	< 2 µm / < 5 µm (mapped)
XY speed	up to 100 mm/s
Z travel (scan head)	150 mm, motorised with brake, < 2 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	Yes
Beam pointing	Active stabilisation after docking and during jobs
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. 125 kg
Power	100 to 240 VAC, 50/60 Hz, < 400 W (laser not included)

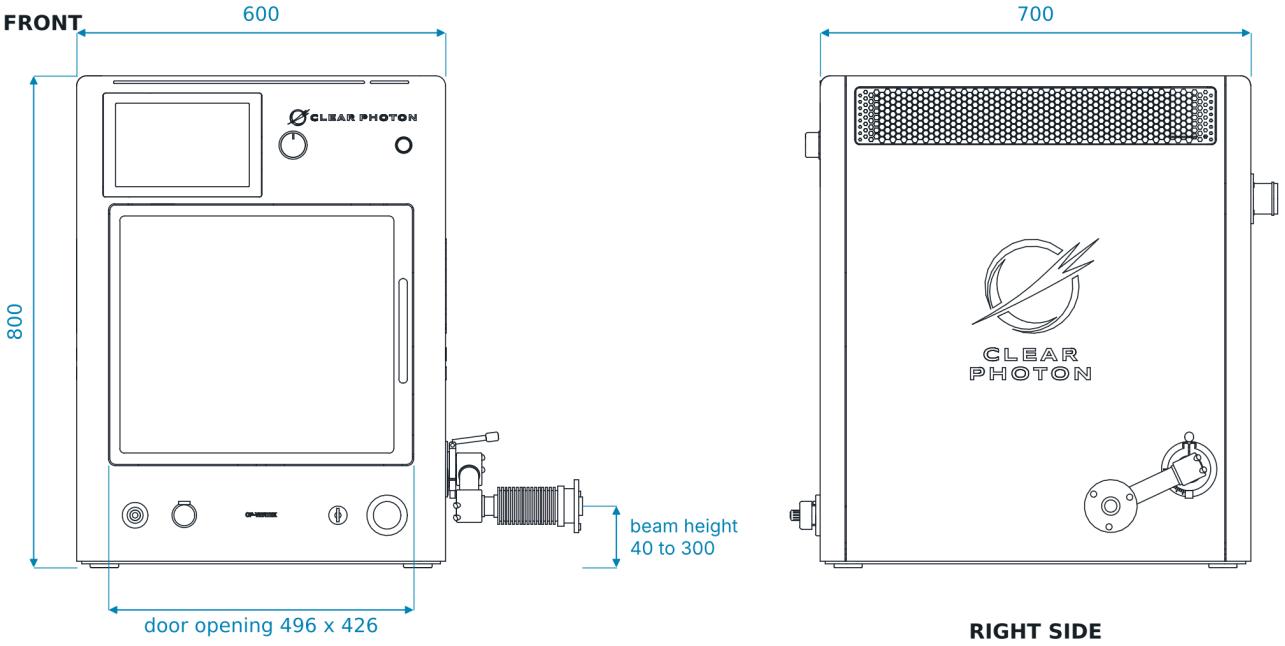
Laser compatibility

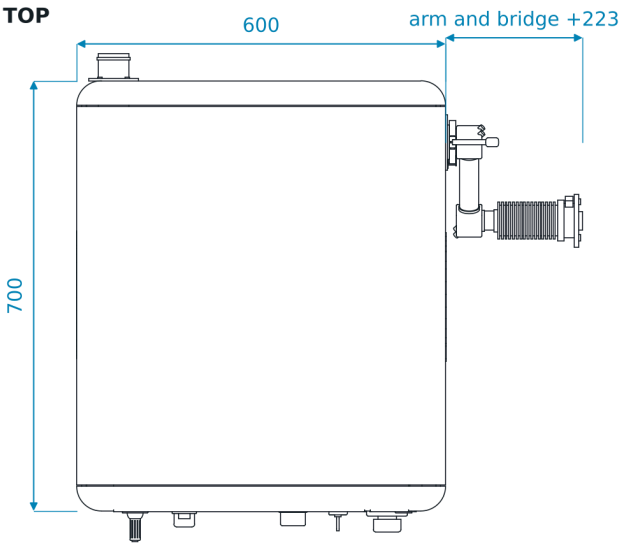
Wavelength	1030 to 1064 nm (515 nm and 343 nm as factory variants)
Average power / pulse energy	up to 20 W / up to 200 µJ
Pulse duration	approx. 150 fs to 10 ps (ns and CW on request)
Input beam	1 to 6 mm, expander matched to your laser
Beam input	Rotating periscope arm, 40 to 300 mm above the bench,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