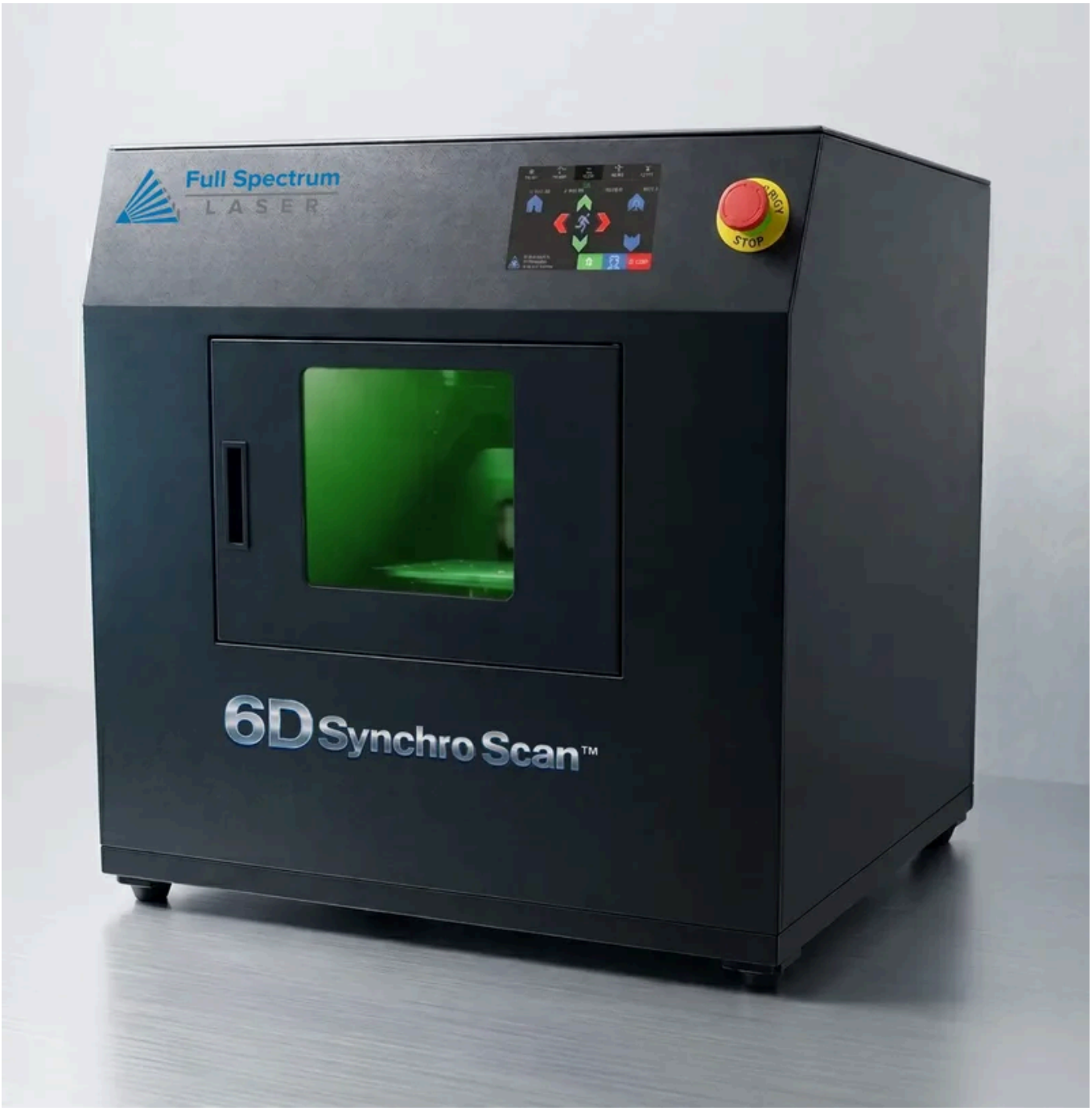
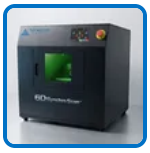
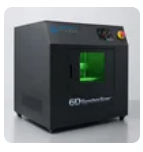




1064nm MOPA SynchroScan Laser — 6D SynchroScan Case

SKU: MOPASS-1064

$42,995.00

MC SERIES LASERS

1064nm MOPA fiber galvo laser with FSL 6D SynchroScan built in — 100W/200W MOPA source, continuous large-field motion, zero stitch lines, AI 3D coaxial vision. Price includes the $20,000 SynchroScan upcharge.

− 1 +

Add to Cart

SynchroScan Work Volume (XYZ) * ?

300 x 300 x 200mm (Standard)

Laser Source * ?

100W MOPA Fiber Source

Warranty * ?

1 year included - Free

Included Lens * ?

F160 1064nm Lens 100mm Field Spot=27.1um DOF=2mm

Additional Lens ?

None

Fumes/Air Handling Equipment (optional) ?

None

Rotary Option (optional) ?

None

Software * ?

RetinaEngrave v5 / 3D AI Edition (Included: $1500 value)

FSL Beam Profiler (optional) ?

None

Measurement / Scanning (optional) ?

None

Air Compressor /w Swivel Nozzles (optional) ?

None

Hold Down Clamp (optional) ?

None

Fiber Laser Safety Glasses (1064nm, OD4) * ?

One Pair (Included)

Shipping Insurance (recommended) * ?

None

Truck Liftgate Required For Delivery (No Forklift) * ?

None

Address Type * ?

Commercial

Premium Support ?

None

Rotary Height Measurement Tool (optional) ?

None

Weight: 150.0 lbs

Dimensions: 31.0" × 26.5" × 25.0"

Designed & built in Las Vegas, USA

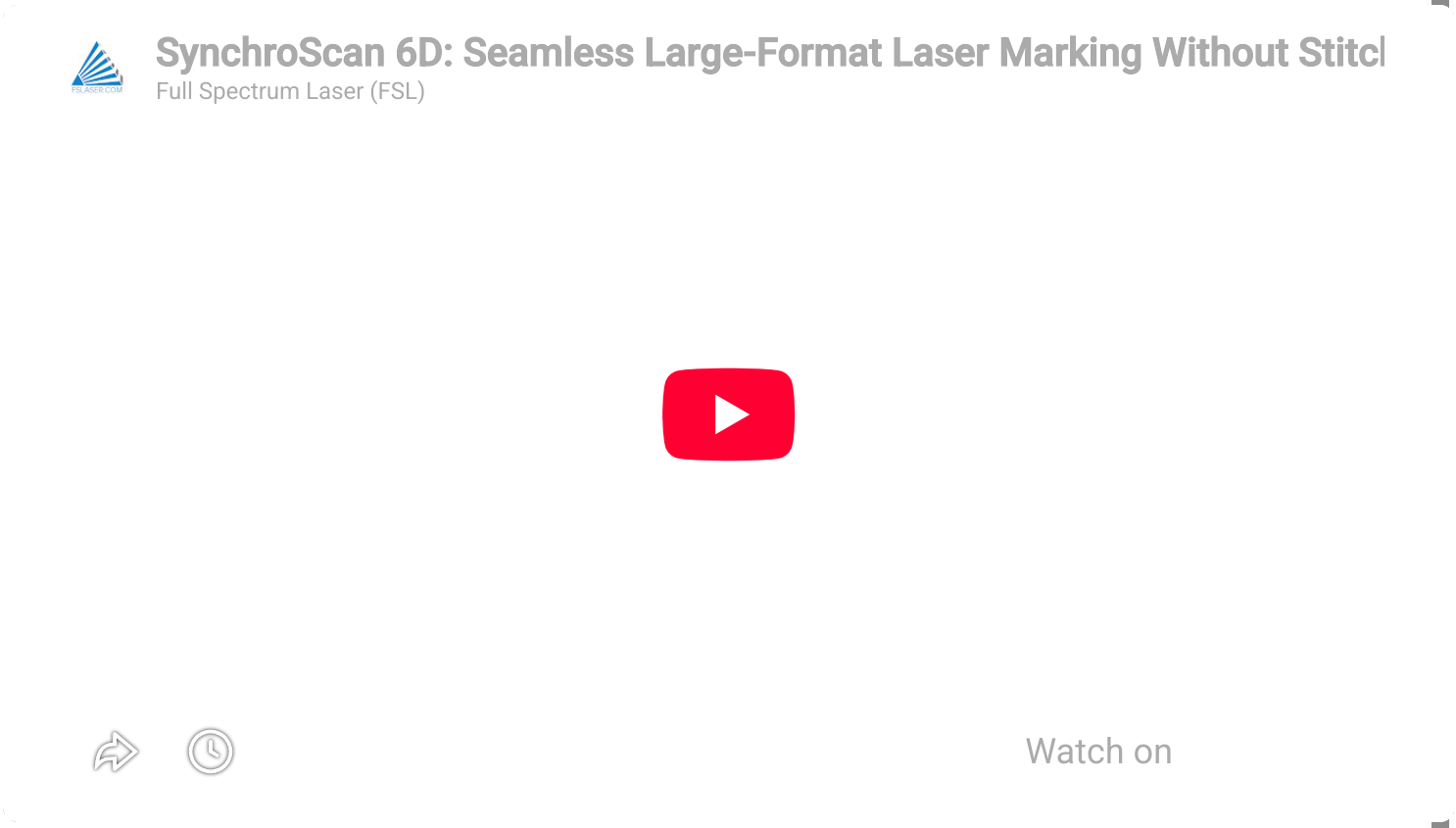
US-based expert support

Financing available

Engineering: (702) 802-3100

WATCH

Product Videos



SynchroScan 6D: Seamless Large-Format Laser Marking Without Stitching

A large-format motion platform that synchronizes a high-speed galvo with encoder-controlled EtherCAT servo motion in real time. The stage and galvo keep moving together instead of stopping to index, so there are no stitching seams and a large vector runs as one continuous path — more than 2× faster than conventional stitch-

scan systems. The controller reads servo encoder position continuously and compensates the galvo for stage movement as it goes. It is not limited to XY either: the galvo can be slaved to an encoder-driven rotary axis, or to virtually any combination of synchronized motors.

Description

The 1064nm MOPA SynchroScan is a complete, self-contained laser system that ships with **FSL's 6D SynchroScan platform already built in**. The basics are the same MOPA fiber galvo laser you know — a 1064nm MOPA fiber galvo with adjustable pulse durations for color marking, deep engraving, and annealing on metals and polymers — but housed in an enclosed 6D SynchroScan case with every benefit of a SynchroScan machine included from the factory. No upgrade to install, no integration to schedule: it arrives ready to run large-field, continuous-motion jobs out of the box.

The listed price **already includes the $20,000 SynchroScan platform and the coaxial galvo camera**, on top of the base MOPA fiber laser, so this is the turnkey way to own a SynchroScan system rather than adding it later.

What SynchroScan gives you

Continuous motion — no tiles, no stitching. True on-the-fly processing across a large field.
4 EtherCAT closed-loop servo motors (X, Y, Z + rotation) with encoder feedback, synchronized to the galvo scanner for seamless large-field coverage.
Ballscrews on all rails — backlash-free precision motion on every axis.
Zero stitch lines — the galvo and servos move together as one coordinated system.
AI 3D vision + coaxial galvo camera, included as standard. SynchroScan is calibrated with the coaxial camera to achieve **10µm camera-to-laser placement accuracy**. The camera is not an option on a SynchroScan machine — the calibration depends on it.
RetinaEngrave 5 SynchroScan edition license included.

Same accessories as the standard MOPA fiber galvo

All the options you'd configure on the standard machine are available here — 100W / 200W MOPA source options, the 30W picosecond upgrade, lenses, rotaries, linear extensions, fume

handling, safety glasses, and support packages. The coaxial galvo camera is standard on SynchroScan machines rather than an accessory.

Picosecond IR upgrade — 30W, 5ps

For the most demanding micromachining work, the machine can be upgraded to a **30W picosecond IR laser with 5 picosecond pulses (+$40,000)**. Picosecond lasers need an advanced optics chain, so this is a complete upgrade rather than a bare source: the price includes replacing the lenses and mirrors with picosecond-compatible optics. That is roughly **1000× shorter than the nanosecond pulses** of a MOPA fiber source, and it changes how the laser removes material:

- **Minimal heat-affected zone.** Each pulse is over before its heat can spread into the surrounding material, so material is vaporized directly ("cold ablation") instead of melted. The result is crisp edges with no melt ridges, recast, burrs, discoloration or microcracks.
- **Two-photon (multiphoton) absorption.** Concentrating the energy into 5ps gives very high peak power, so a material can absorb two photons at once, even when it is transparent to a single IR photon. That lets it mark and machine glass, sapphire, quartz and clear polymers, at the surface or focused inside the part.
- **Finer features, cleaner results.** Little thermal spread means the feature is about the size of the focused spot, which makes it ideal for microtexturing, fine drilling, thin-film and coating removal without damaging the layer below, and electronics and medical device work.
- **Durable dark marks on metals.** High-contrast black marks on stainless steel, titanium and anodized aluminum with little heat input, so the surface stays smooth and corrosion-resistant, which suits medical device and aerospace UDI marking.
- **Works on almost any material.** Because absorption doesn't rely on the material's linear absorption at the laser wavelength, one source handles metals, ceramics, semiconductors, glass and polymers.

The 30W picosecond source is fully integrated with SynchroScan, so the same continuous, stitch-free large-field motion applies to picosecond micromachining.

Specifications

Wavelength	1064nm (MOPA fiber)

Laser source	100W MOPA standard; 200W MOPA option; 30W picosecond IR upgrade (5ps pulses, picosecond-compatible optics included, +$40,000)
SynchroScan	Built in — 4 EtherCAT closed-loop servos with encoder feedback, continuous synchronized motion, zero stitch lines
Work volume (XYZ)	300×300×200mm standard — 300×600×200mm optional (+$5,000)
Motion	Ballscrew drive on all rails, closed-loop encoder feedback on every axis
Vision	AI 3D scanner + coaxial galvo camera (standard)
Placement accuracy	10µm camera-to-laser, calibrated with the coaxial camera
Dimensions	31" (L) × 25" (W) × 26.5" (H)
Weight	150 lb

APPS + TECH

Explore MOPA applications

Open the MOPA applications guide to review marking samples, supported materials, and process strengths in the same modal workflow.

Open applications guide

KEEP EXPLORING

Related Products



FSL Muse Core Desktop CO2 Laser Cutting and Engraving Machine

$2999.00 ~~$3500.00~~

Add to Cart



Dual Head CO2 Laser 51"x34" with Fixed Z

$7000.00 ~~$12995.00~~

Add to Cart



Dual Head Motorized Z

$8000.00

Questions about the 1064nm MOPA SynchroScan Laser — 6D SynchroScan Case?

Talk directly with our Las Vegas engineering team about your application, materials, and throughput — or send us a part and we'll run samples on this system.

Talk to engineering (702) 802-3100