

HD Series On-The-Fly Laser Coding Machine

Infrared Picosecond Laser Marking System



Introduction

The HD Series Infrared Picosecond Laser Coding System is a high-precision marking solution powered by a 1064nm infrared picosecond laser source. With an ultrafast pulse width of <15ps (1 picosecond = 10⁻¹² seconds) and >200μJ pulse energy, it delivers peak power up to 10MW (1MW = 10⁶ W), enabling true cold ablation on metals and plastics. The marking result is rust-free, high-contrast marks with exceptional corrosion resistance that endure harsh industrial environments.



Ultra-Fine Cold Ablation, Zero Heat Damage

Damage-free cold processing with no burning, melting, or warping. Marks remain permanently rust-free even under prolonged exposure to humid or wet environments.



High Contrast, Superior Corrosion Resistance

Ultra-clear, permanent marking with superior resistance to abrasion, corrosion, and sterilization, ideal for medical device UDI traceability. Capable of passing salt-spray as well as acid-base tests.



High Efficiency, Zero Post-Processing

Boost productivity with faster engraving speeds and zero post-processing. Achieve direct on-line assembly while reducing labor costs and quality risks.



Maintenance-Free, Low Cost of Ownership

Minimize downtime with a maintenance-free design that optimizes operating costs and maximizes long-term enterprise value.

Applications

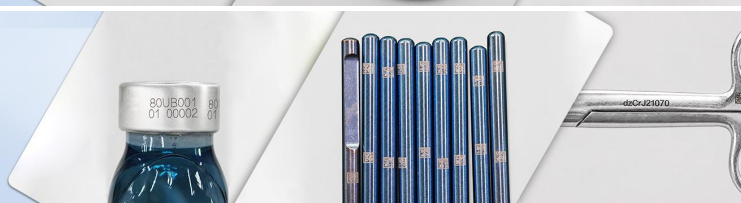
Food & Beverage

Metal bottle caps, Aluminum cans, Curved aluminum lids, Food packaging



Medical Products

Medicine bottle caps, Aluminum foil sheets, Medical devices, Ampoule bottles



Precision Components

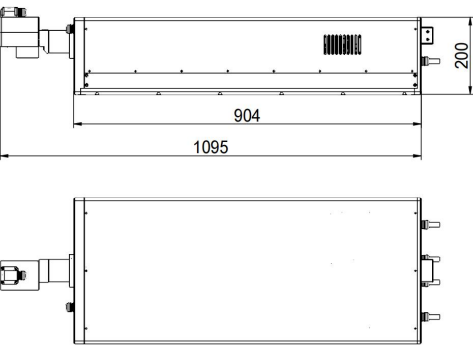
Titanium alloy parts, Aluminum components, Automotive parts, Stainless steel components



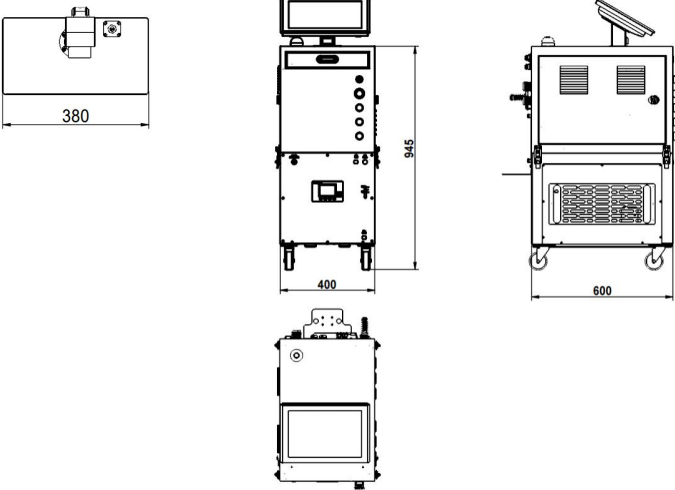
Model		HD50C	HD100C
Basic Configuration	Laser power	50W	100W
	Laser type	Infrared picosecond laser	
	Laser wavelength	1064nm @ 15ps	
	Mark field	Standard: 110mm x 110mm, maximum: 400mm x 400mm	
	Positioning method	Red-light positioning	
Marking Features	Writing speed	1350 characters / second	
	Production line speed	0~300m/min (varies according to materials and printing contents)	
	Image format	BMP/DXF/PNG/JPEG/PLT/JPG	
	Code type	Code128A, Code128B, Code128C, Code39, Code93, Ean13, PDF417, 01 Code; QR, DM, GS1-DM, AztecCode, HanxinCode, DotCode	
	Lines of characters	No limits within mark field	
System Features	Operating system	SUNINE V6 platform Linux Based	
	Type of drawings	Both dot matrix and vector	
	Language	Chinese Simplified, Chinese Traditional, English, German, Spanish, French, Italian, Japanese, Korean, Portuguese, Hindi, Russian, Turkish, Arabic, Persian, etc.	
	Interfaces	RS-232C / USB2.0 / Ethernet, I/O	
Structure and Conditions	Machine material	Anodized Aluminum (Laser Head) & Stainless Steel (Control Unit)	
	Power supply	200~240VAC 50/60Hz (100~110V 50/60Hz optional)	
	Power consumption	≤2475W	
	Machine weight	≤120kg	
	Cooling system	Water-cooled	
	Dimensions	1095mm x 380mm x 200mm (Laser head) 600mm x 400mm x 945mm (Control box)	
	Working conditions	5-40°C; 30%-85% RH (No-condensing)	

Dimensions (mm)

50W / 100W Laser Head



50W / 100W Control Unit



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Portal to official website