

# VITRO OEM SYSTEMS

## Subsurface laser engraving – The better product marking solution

Vitro Laser Solutions UG is the global leading developer, manufacturer and supplier of laser systems for various industrial application areas. Intensive research, permanent quality management and continuous enhancement of laser systems have established us on the international market. Our competence is based on long years of experience.

As world wide technology leader for subsurface laser engraving we have set our attention on the quality and reliability of our high-tech solutions. Vitro Laser Solutions UG is your strong partner combining forward-looking technology with efficient systems.

As specialist for subsurface engravings, we manufacture reliable laser heads as in-house production. Due to the high vertical range of manufacture Vitro Laser Solutions UG is your specialist for all questions regarding technology, application consulting, system construction and after sales service.



Product may differ  
arrangement example

Beside of these complete laser systems we supply you with OEM solutions for individual conversion.

### Subsurface laser engraving

With the subsurface laser engraving method the surface remains untouched. The desired marking is carried out inside the material, under the surface. Subsurface laser engravings can be made in all kinds of translucent materials e.g. glass, tempered or laminated glass, acrylic glass, ceramic glass, sapphire, polycarbonate etc.

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## Subsurface laser engraving – The better product marking solution

A forgery-proof marking of products has become an essential element of production processes. Most procedures concentrate on the marking of surfaces. A supplementary even coating of the treated surface is thus difficult. Codings beneath the surface – e.g. Barcodes or a Data-Matrix-Code – break new grounds in the field of fraud resistance and product tracking.

Subsurface engraving by means of laser designed and manufactured by Vitro Laser Solutions UG offers the chance to respond to the requirements of the producing and processing industry flexible and cost-effective. The originally usual marking methods are replaced by a material-free method, which is permanent, non-destructive and fraud-proof.

Vitro Laser Solutions UG is the global leading manufacturer of laser systems for the subsurface engraving. With Vitro OEM systems you are able to produce permanent, abrasion resistant and falsification safe product markings.

### Your advantages of subsurface laser engravings

- No damage to the material surface
- Easy subsequent coating
- Ideal for temperature sensitive materials
- Cleanroom capability
- No sand, no processing gas required
- Permanent marking, no changes due to weather, UV-radiation, abrasion ...
- Contact-free processing
- No masks required
- Even „invisible“ markings possible
- Secure against forgery

### Technical Data:

<b>Laser:</b>	Diode-pumped, air-cooled Nd:YVO <sub>4</sub> laser; wave length 532nm  other wave lengths (355nm or 1064nm) on request  pulse repetition frequency 5kHz pulse length < 5ns max. pulse energy 0,6mJ max. laser power 1,2W  laser class IV	<b>Time for marking:</b>	Depending on the size of the motive. Usual marking speed 1.400 points per second
		<b>Resolution:</b>	> 250 dpi marking possible in sub-mm-area
		<b>Software:</b>	System control via VitroNC-software; individual customized solutions available
<b>Optics:</b>	High-performance telecentric lens f = 100mm, scan area 60 x 60mm in flat glass (optional: f = 160mm, scan area 70 x 70mm)	<b>Working voltage:</b>	230V/50Hz (others on request)
		<b>Optional:</b>	Safety goggles

## VITRO OEM SYSTEMS

- Worldwide leading in technology
- Forward-looking systems
- Economical
- High-performance
- Maximum quality
- Easily integrable into existing production lines