

What to give for a gift?

High resolution USB-camera

add third dimension to photography

Birthdays, wedding anniversaries, Christmas — the search for the perfect gift can cause many a sleepless night. Vitro Laser GmbH has a special tip: A detailed, life-like portrait engraved inside a solid glass cube. No gift could be more personal! Images taken from portraits or other objects are digitized by a 3D scanner in a matter of seconds. They are then engraved into the glass in just a few minutes by using precision laser technology. The pin-sharp images required for digitizing are supplied by high-resolution cameras from IDS.



Vitro Laser GmbH develops, manufactures and supplies laser systems and 3D scanners for a wide variety of applications. In internal laser engraving of transparent materials the company, which was founded in Minden, Germany, in 1998, even ranks among the global market and technology leaders.

In this process a laser engraves a three-dimensional image into the inside of a solid glass cube. First a high-resolution 3D camera system, which is referred to as a face scanner, takes an image of the motif, e.g. a face. The scan is further processed with specially developed software and then transmitted to a laser system for internal engraving. The precisely dimensioned and focused energy of the laser creates tiny changes in the crystal structure of the glass.



A 3D portrait inside a glass cube. The high-precision master is produced with a uEye USB camera

These changes do not damage the surface of the glass, but are visible as light-colored dots inside the material. The result is truly amazing. The engraved glass cubes display a pin-sharp quality and not only make a perfect personal gift, but can also be used for promotional items. The engraving motifs are not limited to portraits, of course. All kinds of two- or three-dimensional objects are suitable. The procedure can be employed for glass as well as many other transparent materials, such as acrylic or polycarbonate.

Besides the excellent quality of representation the process provides various other advantages, such as the fast completion of the entire production process, to name the most remarkable. Customers can hold the finished product in their hands in just a few minutes. Creating a 5 x 5 x 8 cm size glass cube complete with an individual engraving takes only about four minutes.

The internally engraved glass cubes are meanwhile offered in special shops all over the world. Over 160 of these shops are found in tourist centers, casinos, airports, department stores and shopping malls from Las Vegas to Dubai. The internal laser engravings are big sellers particularly in Asia, Australia and the USA, and are starting to boom in Germany now, as well.

Vitrography also creates market opportunities in the industrial sector. For example, it allows providing exquisite perfume or wine bottles with fraud-resistant data matrix codes, which allow the clear identification of the source and the delivery lot. Other application possibilities are the medical sector, e.g. in orthodontics, as well as prototype design or the creation of reproductions in museums.

Vitro Laser GmbH was founded in late 1998, after extensive research into internal laser engraving. The company pioneered the process of internal laser engraving by developing its own hardware and software ready for series production. The first laser system was shipped in spring 1999. In 2004 Vitro Laser GmbH decided to self-produce the scanners "as the systems available in the market did not have a sufficiently high resolution," and started shipping the new scanners in January 2005. The VitroScan is similar to an overhead projector. Its base contains a projector that directs a stripe projection onto the face to be digitized. This allows creating a 3D image with only one high-resolution camera, which is located in the gooseneck and takes the image.



The uEye® cameras are barely larger than a golf ball and come in different versions, including board-level models

The VitroScan system uses a uEye® UI-1441-M monochrome camera with CMOS sensor in a board-level version and with a 1.3 mega pixel resolution. The camera was successful due to its superior ease of use and because of its competitive price. The USB 2.0 connection and the excellent software support allowed smooth and easy integration into the highly specific application of Vitro Laser.

The software is of core importance to IDS and is regarded the "second half" of the camera. Every camera thus comes with a universal software development kit containing flexible tools, matching drivers and demo programs that make

the camera easy to configure. The best parameters for the connected camera, for example, can be determined without programming a single line of code. The source code of the demo programs is also included. It offers developers a useful programming basis and allows controlling all camera-related settings. Besides the software development kit, which is identical for all uEye® camera models, direct interfaces are also provided for many current image processing programs, such as ActivVision Tools, Common Vision Blox, HALCON or NeuroCheck.



The comprehensive software for the uEye® cameras saves time and money by simplifying integration with the customer's own application.

Vitro Laser GmbH is currently discussing a camera change. Due to its higher photo-sensitivity a uEye® camera with CCD sensor is to replace the UI 1441-M with CMOS sensor. Tests with various samples are in progress. As all uEye® cameras have the same driver interface, models can be exchanged without problems and without complicated reprogramming. Only the basic parameters need to be adjusted — a key factor for OEM customers.

Contact:

IDS Imaging Development Systems GmbH
Dimbacher Strasse 6
74182 Obersulm
info@ids-imaging.com
www.ids-imaging.com