



**NII LASER TECHNOLOGY**



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**The nature of laser art**

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## STEP BY STEP

We are fast-growing company with our own business vision. We believe that innovation should not be only an advance in the technology, but it should provide an efficient competitive advantage to our clients. Acting as a leader in design, manufacture and sales of laser equipment as well as various printing clichés and forms we would like to present our portfolio of laser marking machines for beverage industry. For more than 15 years we successfully produce equipment and provide services to our clients in various businesses who find cooperation with us fruitful.

Our company was founded by members of Kharkiv National University from quantum radiophysics department, who researched, developed and designed laser systems, including systems for printing industry. Today our group of companies:

- Over 140 people of staff
- Since 2010 our laser machines sales are growing each year

**1996**  
NII Laser Technology was founded.

**1997**  
The first laser engraving system for flat screen printing forms was designed and produced.

**1998**  
Our company developed and kick-started production of UniMark Fiber series of equipment intended to engrave and mark various products and materials.

**2001**  
Production of laser engraving machines for rollers, rotary screens and tampon printing plates was set.

**2008**  
Our team designed and started the production of upgraded machine for direct laser engraving of printing rolls, including screen printing rollers and anilox rollers.

**2010**  
The first laser system for marking of bearings was designed and produced.

**2010**  
Our company introduces DLM BC Pro laser machines for beverage closures marking and Gravity Sorter feeding unit.

**2011**  
DLM BC Pro-N machine with UV laser was researched, developed and put into production.

**2012**  
Our team designed and started the production of DLM BC Pro-D machine, which includes two lasers of different type, and DLM CR Pro machine, which is intended to marking of crown caps with Centrifugal Feeder.

**2013**  
Our equipment was inspected in accordance with European safety regulations and collected a EC TUV certificate.



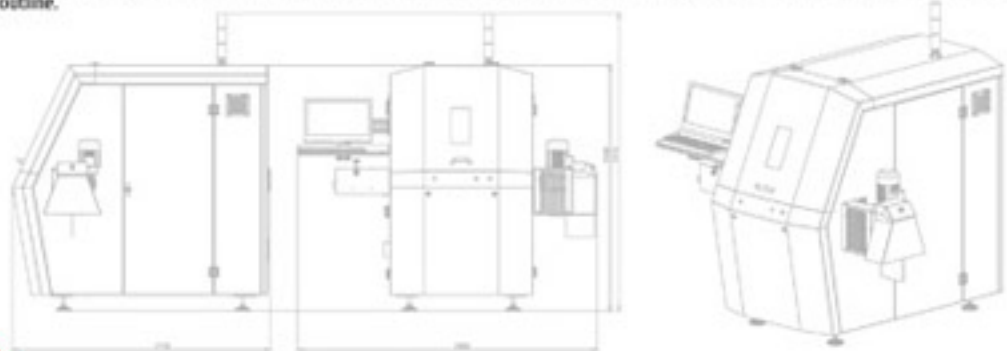




## Dynamic Laser Marker

DLM-BC and DLM-CR (DLM) series of laser systems are designed for laser marking on the internal and outside sides of closures. Marking information could contain all kind of data including but not limited to images, text, PIN codes, promo codes, barcodes and QR codes. DLM systems are suited to work on plastic beverage caps and closures, metal crowns, long plastic and aluminium caps, metal caps amongst others. The main purpose is to run promotional campaigns, add protection and decorative elements to the products.

Laser systems are designed for 'on-the-fly' marking on the conveyor belt. Laser beam is synchronized with the closure movement on the conveyor to maintain maximum image quality. DLM is equipped with the orientation control device and has a summing device as well as flow splitter at the exit to 'output marked closures to two different boxes/bunkers. It is also eliminates the chance of getting unmarked samples using the developed 'mark - ready - go' concept. The body is made of high quality stainless steel AISI 304. For freeing marking area from the combustion products, formed as a result of laser irradiation and a plastic cap material interaction, DLM has to be connected to the ventilation system of production facility or to the self-powered filter-ventilator unit. The machine doesn't have to be additionally connected to the external water cooling outline.



- ⊙ Software is a licensed version of Nii Laser Technology Marker
- ⊙ User friendly interface (English, Ukrainian, Russian and other interface languages)
- ⊙ An easy check of the job parameters by starting conveyor from the application. All presets are saved in the file.
- ⊙ All statistics of the operation
- ⊙ Restore of the job in case of mechanical time-outs
- ⊙ Restore of the job in case of emergency stops (i.e. power drop)
- ⊙ Personnel fraud and cheating protection
- ⊙ Automated mix of the winning and non-winning combinations with a set frequency. 14 images (texts) in total
- ⊙ Current statistics of the work
- ⊙ Online technical support and remote setup



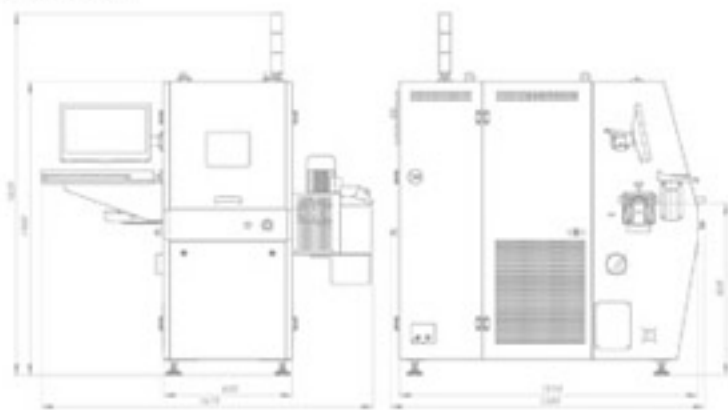


## Dynamic Laser Marker BC Pro

The basic DLM-BC Pro model is supplied with a 100 Watt or 200 Watt pulsed Yb fiber laser with next generation diode pumping. Laser source has ultimately long lifetime and does not require any maintenance during that period.

Laser beam with special characteristics interacts with material and laser marking occurs (dark on light material or light on dark material). Closures material should contain special laser additive that increases laser beam absorption at 1,062  $\mu\text{m}$  wavelength. As a result of laser beam interaction with closures material colour changes and marking occurs.

Gravity Sorter unit is used to feed the system with precisely oriented plastic closures of a 28-38 mm diameter with a 120 000 pc/hour throughput.



- ⊙ Durability and reliability of the fiber laser
- ⊙ Ultimately long lifetime (more than 50 000 hours with relatively low investment for refurbishment)
- ⊙ No maintenance costs and consumables
- ⊙ Laser toner is required for better contrast and throughput
- ⊙ Some colours could be marked without laser toner (black, silver, bronze)
- ⊙ Lowest price in DLM series of laser equipment
- ⊙ Marks closures with or without liner

### Options:

The laser system could be equipped with

- ⊙ Marking quality control vision system
- ⊙ Gravity Sorter
- ⊙ Self-powered filter-ventilator unit





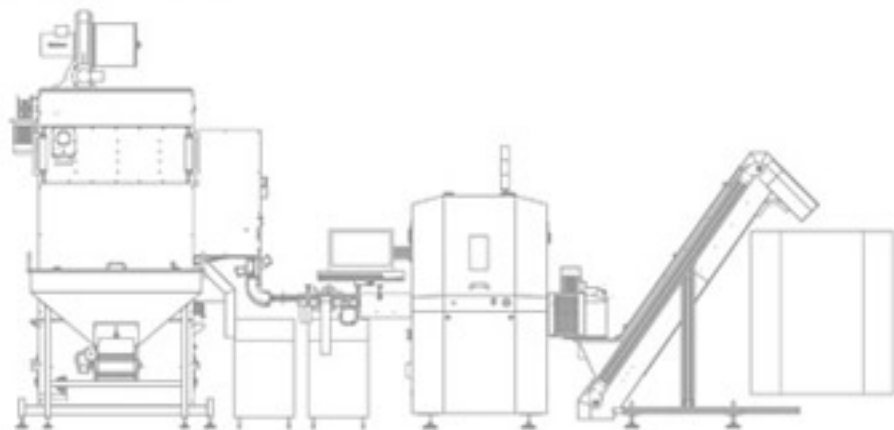


## Dynamic Laser Marker BC Pro-N

DLM-BC Pro-N is supplied with a solid state UV laser. This equipment is complete with a chiller system for laser water cooling.

With this system a high contrast laser marking could be achieved without adding any master batch (laser toner) to closures material. Laser beam interact with the closure material and changes its colour (dark marking on light background and light marking on a dark background. UV-laser allows getting a high contrast white marking with high quality on red, green, blue and other coloured closures.

Gravity Sorter unit is used to feed the system with precisely oriented plastic closures of a 28-38 mm diameter with a 120 000 pc/hour throughput.



- ⊙ Ultimate contrast of laser marking
- ⊙ High contrast white colour marking on the red, blue and green closures
- ⊙ No laser toner required what reduces the cost of products
- ⊙ The machine doesn't have to be additionally connected to the external water cooling line
- ⊙ An advance of DLM-BC Pro technology
- ⊙ Laser sources have high reliability and do not require any parts, consumables or maintenance during lifetime
- ⊙ Balanced Technology-Quality-Price ratio
- ⊙ Marks closures with or without liner





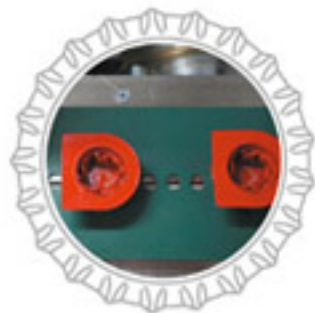


## Dynamic Laser Marker BC Pro-D

DLM-BC Pro-D is designed for laser marking with a synchronized use of two different laser sources on different wavelengths. Laser marking could be performed with both lasers at the same time as well as with each laser source separately. In the first case a two colour laser marking will occur (dark and light colour marking). This provides with an opportunity to improve protection of the products and avoid counterfeit. Moreover, such specification of laser system allows marking almost all closure colours without adding any laser additive.



- Unique innovative technology that combines advantages of both DLM-BC Pro and DLM-BC Pro-N
- Flexible solution for all types and colours of closures
- 2 colour marking option
- Most suitable solution for any requirements and manufacture type
- More efficient investment cost-wise by getting two-in-one system instead of two fully separate systems

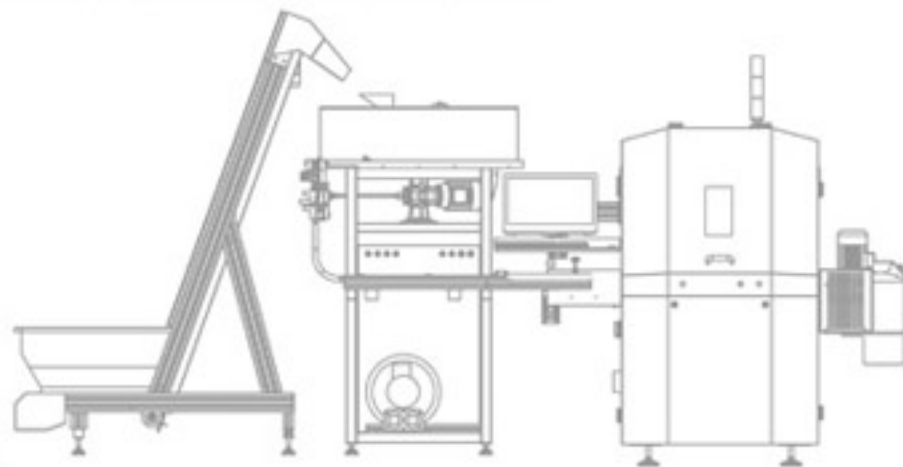






## Dynamic Laser Marker CR Pro

DLM-CR Pro is designed for crowns laser marking on the metal surface or PVC liner (on the inside or outside surface). As well DLM-CR Pro could be used for marking on metal cap used with muselet (champagne bottles). Laser beam is special characteristics interacts with material and laser marking occurs (dark on light material or light on dark material). A centrifugal sorting unit is used to feed the system with products to mark.



- ⊗ High quality marking/print that does not require any consumables (no ink required)
- ⊗ Better printing quality and resolution compared to ink marking
- ⊗ Marking is done on the metal surface through the transparent liner without affecting it.
- ⊗ With the white liner marking is done on the liner surface
- ⊗ Change of the marking parameters would not affect other production line throughput compared to ink markers
- ⊗ Could be done before or after liner insertion
- ⊗ Crowns type: pry-off, twist-off
- ⊗ Excellent Technology-Quality-Price ratio



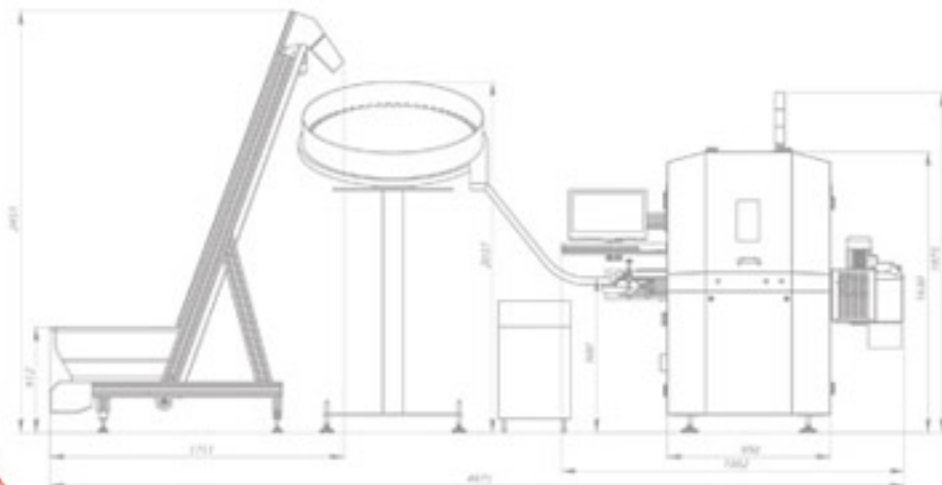




## Other solutions

We are laser-dedicated company. We specialize at turnkey solutions that are suited for different closure types of different materials. These include plastic closures, metal crowns (pry-off, twist-off), metal screw caps (Stelvin cap), clip-on closures, dog-pack closures, muselet for champagne bottles amongst others.

We have enough knowledge and experience to complete projects with the highest requirements. These could be stand-alone solutions, feeding units as well as built-in systems into existing production lines.



- ✳ We would make any marking samples for free so you could decide what type of equipment you need and prefer.
- ✳ We can even do a marking job at our facility to help you explore the market.
- ✳ We can develop, integrate and adopt equipment to your production site.
- ✳ Manufacture equipment in accordance with your individual requirements
- ✳ All equipment is aimed to achieve the highest throughput to enable quicker completion of the job.
- ✳ High quality components from the world known manufacturers that we use allow avoiding maintenance and achieving high durability of laser systems. In addition, our systems comply with European safety regulations.
- ✳ We provide quick response to all customer concerns and are ready to help you whenever it is needed.







## VISION SYSTEMS

Any laser system from DLM series could be supplied with a video control system of the laser marking quality and closures geometrical properties. The software combines images from cameras and performs an analysis to determine product and image quality.

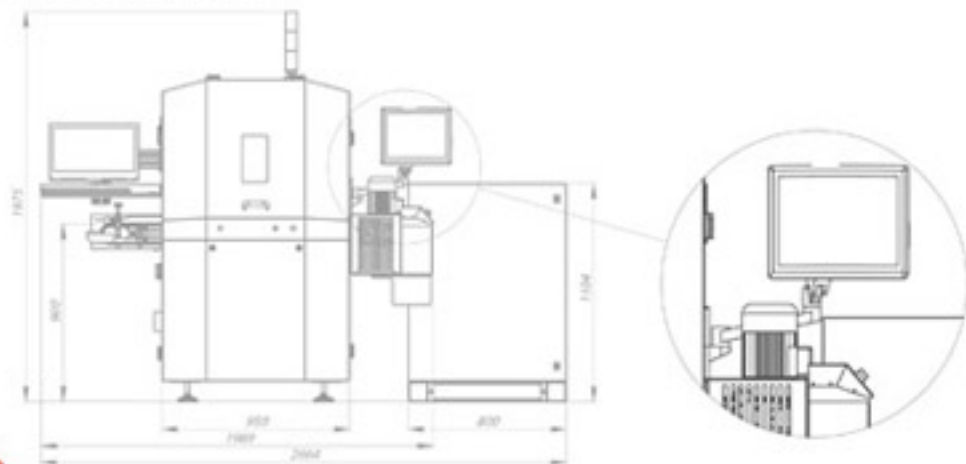
The system learns model samples that are determined by the operator. These models could be saved for use in the future. Every marking is checked and if system rejects a sample by any of criterion the closure is blown out as a defect one to a designated box.

### Video control system controls:

- ⊗ Closure geometry
- ⊗ Marking presence
- ⊗ Image center positioning
- ⊗ Marking contrast

### VCS advantages:

- ⊗ Easy and quick setup
- ⊗ Reliability for any product
- ⊗ Performs 100% control







## Our customers. Service providing

Our list of clients includes large closure manufacturers in Ukraine, Russia, Kazakhstan and Lithuania. Every second client is a returning customer. We constantly develop our technology what allows us increase our market presence and coverage. We help our clients to turn an innovation into an efficient competitive advantage to help them lead the market. All our equipment has passed certification process to ensure safety and compliance with European standards.



- ⊙ We will provide all answers and all the information you are interested in.
- ⊙ We will deliver to any location in the world.
- ⊙ We will perform training of your staff.
- ⊙ You will get warranty and post-warranty maintenance.
- ⊙ We provide online/remote technical support and immediately head to client's site if needed.

