



LASERMARKING



The strength of chemicals.

Leave your mark!

Laser marking advantages

Today, the marking of manufacturing goods has become a standard feature of almost every production process.

In contrast with the traditional methods of ink printing, sublimation printing and screen printing, laser-marking of plastics provides:

- Excellent images without contacting the surface
- Improved details quality
- Increased design flexibility

Light Amplification by Stimulated Emission of Radiation

Laser is an acronym for “Light Amplification by Stimulated Emission of Radiation”. It provides a very high, localized energy input onto the surface to be marked, which produces local degradation or chemical reaction causing a color change. There are different types of marking techniques: the photo masking and the most commonly used beam steering.

Advantages of laser marking:

- Indelible marks
- No Contact with the surface
- Highly defined images without smudging
- No pre or post- treatments
- No solvent use and no associated disposal
- Precise positioning of marks & letters
- Quick design change via programmable software



Image 1: EVLASER – Model: HR20 Fiber - Moonlight



Image 2: ICG application – Animal tags

Photo masking and beam steering

With the photo masking process the images are typically produced using a mask that has the information etched into it. The resulting image is focused and redirected into the object. It's most indicated for serial labels, nameplates, logos etc.

The beam steering operates with a computer that controls the laser direction with a mirror system that enable high definition and flexibility. For the beam steering technique the primary source is the Nd:YAG, while for the photo masking it's CO².

The main parameters that can affect the quality of the laser marking are the homogeneity of moulded compound and additives distribution as well as wavelength, output power, energy-density, incident spot size, pulse rate, pulse power-peak and beam velocity. (Table 1.1)

Type of laser	Wavelength (Nanometers)	Power (Watt)
Nd: YAG (red)	1064 nm	10 W
Nd: YAG (green)	532 nm	3-5 W
Nd: YAG (UV)	355 nm	1-3 W
CO²	10600 nm	10 – 200 W 6J/pulse when marking

DOMAMID® lasermarkable product line

DOMAMID® 6 LS2	PA6 , unfilled, UV laser markable
DOMAMID® 66 LS2	PA66 , unfilled, UV laser markable
DOMAMID® 6 (G10-35) LS2	PA6 , glass fibre reinforced (10-35%), UV laser markable
DOMAMID® 66 (G10-35) LS2	PA66 , glass fibre reinforced (10-35%), UV laser markable
DOMAMID® 6 LS3	PA6 , unfilled, YAG laser markable
DOMAMID® 66 LS3	PA66 , unfilled, YAG laser markable
DOMAMID® 6 (G10-35) LS3	PA6 , glass fibre reinforced (10-35%), YAG laser markable
DOMAMID® 66 (G10-35) LS3	PA66 , glass fibre reinforced (10-35%), YAG laser markable
DOMAMID® 6 G8 ST UV LS3	CUSTOMIZED: PA6 , 8% glass fibre reinforced, impact modified, uv stable, YAG lasermarkable