

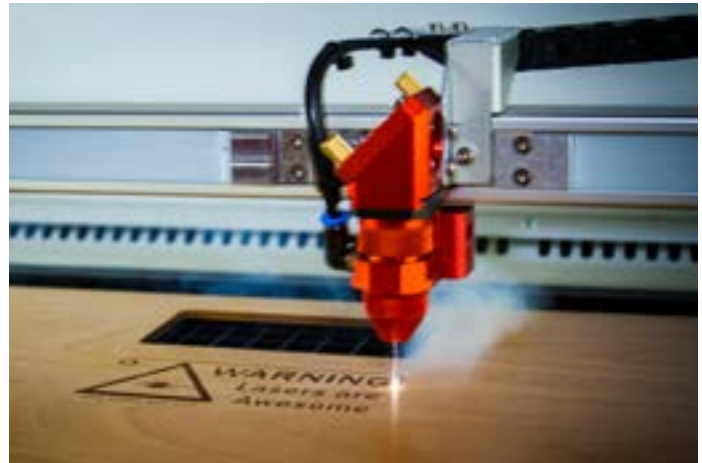
CO₂ or Fiber?

→ How to determine which laser source is right for you

At the heart of every laser system, there is a laser source. The laser source, in a nutshell, is what stimulates light particles, causing them to emit energy in the form of light, which makes up a laser beam. The most common types of laser sources are CO₂ and fiber. Both types have their own set of unique capabilities. With the right laser source, you can take full advantage of the many benefits a laser can offer your business, including increased efficiency, precision and flexibility, to name a few. The following guide will help you determine which type is best for you.

CO₂ Lasers

CO₂ lasers can cut and engrave the widest range of materials, making them the most versatile and widely used types. A CO₂ laser works by vaporizing the material, leaving an indentation or cut into the material. It can cut and engrave a wide range of materials such as plastics, wood, paper, fabric, acrylic, rubber and cardboard. The CO₂ laser can also engrave on glass, ceramic, stone, and coated metals such as anodized aluminum or paint-coated metals. You can even engrave bare metals on a CO₂ laser using a coating or spray that will adhere permanently to the metal where the laser hits it. (After processing, you simply wipe away the excess coating or spray.)



Processing Capabilities

Cut and Engrave:

- plastics
- acrylic
- wood
- cardboard
- paper
- fabric
- rubber

Engrave:

- glass
- ceramic
- stone
- coated metal
- bare metal*

**Requires use of coating or spray.*

Key Features of CO₂ Lasers

- Broad system capabilities (multiple types of CO₂ lasers)
- Usually available with many power options and bed sizes
- Most versatile laser source
- Lowest cost of entry into laser engraving

→ Examples of what you can do with a CO₂ laser



Signs and displays



Cut and engrave acrylic



Personalized gifts and toys



Trophies and awards

Fiber Lasers

Basically, a fiber laser does what a CO₂ laser cannot, and vice versa. The fiber laser is used for marking or engraving bare metals and marking plastics. Fiber lasers are optimally suited for metal marking methods such as annealing and metal engraving, and for making high-contrast markings on plastics. Fiber lasers produce an extremely small focal diameter, which gives them a very high intensity. Fiber lasers are also generally maintenance-free and feature a long service life of at least 25,000 laser hours.



Marking Capabilities

Metals:

- aluminum
- bronze
- copper
- gold
- platinum
- silver
- stainless steel
- titanium

Plastics:

- ABS
- polyamide
- polycarbonate
- PMMA
- plastics with laser additives

Key Features of Fiber Lasers

- Can directly mark and engrave bare metals (no spray or coating is needed)
- Extremely low maintenance
- Long service life (at least 25,000 service hours)
- Can mark or engrave curved surfaces with a rotary attachment

→ Examples of what you can do with a fiber laser



Promotional items



High-contrast marking on plastic



Barcodes and dataplates



Direct part marking



Laser Systems



Materials



Expertise



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www.engraving-supplies.com

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