

# Trotec Speedy 100 Laser Cutter

## Trotec Speedy 100



**Tool Type:** Laser cutter

**Location:** Microfluidics Lab

**Description:** Laser cutter and engraver

**Manufacturer:** Trotec

## About

The Trotec Laser Cutter uses a 30-60W CO2 laser to cut and engrave various materials. It utilizes CorelDraw as a 2D sketch manager, which is then imported into Trotec's specific cutting software. CorelDraw can be used to create the 2D sketch, however importing a DXF file or PDF into CorelDraw from Solidworks or other CAD packages is preferred due to the CAD packages integrated features and functions.

## Safety Concerns

This laser engraving system contains a class 4 carbon dioxide (CO2) laser that emits intensive and invisible laser radiation. Without safety precautions the direct radiation or even diffuse reflected radiation is dangerous!

- Always wear safety glasses when using the machine.
- Always work with the machine cover closed.
- NEVER leave the laser machine alone when running a job. If you do need to leave, make sure there is someone else nearby who is aware that it is on and cutting.
- The machine door must be left open while you are away.
- Do not store any flammable materials in the inside of the device or in the immediate vicinity of the device.
- Remove leftovers of previously produced materials before running a job.
- A fire extinguisher/fire blanket must always be handy as the laser beam can ignite flammable materials.
- Metals, particularly un-coated aluminum, copper in particular, silver and gold, cannot be

processed with the laser and lead to high reflections of the laser beam. If needed, metals can be coated with a paint/tape which chemically bonds to the surface when engraved.

- Before processing materials the user must verify whether harmful materials can be generated and whether the filter equipment of the exhaust system is suitable for the harmful materials.
  - PVC (polyvinyl chloride) must under no circumstances be processed with the laser.
  - Looking directly into the laser can cause retinal damage.
  - Confirm that the fume collection system is running whenever the laser is cutting or engraving.
  - Whenever heat is a concern, please use the nitrogen air assist. This includes cutting features with high surface density, or cutting materials that like to melt, such as delrin.
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## Training Documentation

[Laser Cutter Training SOP](#)

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## Detailed Specifications

- Working area (W x D): 24 x 12 in
  - Max. height of workpiece : 5.2 in
  - Loading area (W x D): 27 in x 17 in
  - Overall dimensions (W x D x H): 40 x 31 x 40 in
  - Max. processing speed: 1.8 m/s
  - Max. acceleration: 1,969 ips<sup>2</sup>
  - Technology motion system: Brushless DC servo motors
  - Laser power CO2: 30 - 60W
  - Laser class:2
  - Weight: 150 kg
  - Power consumption: 1 ~ AC 110-230V 50/60Hz, 1.3 kW (60 watts)
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## Reference Documentation

[Marking Tape/Paint](#)

[Atmos Compact Operation Manual](#)

[Service Manual](#)

[Plastic Processing Guide](#)

[Job Control Software Manual](#)

[Bonding Acrylic with Methylene Chloride](#)

[Laser cutting data](#)

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