

Subject : Installation requirements for system **MPL2515 1000W**

We are pleased to let you have the following information in order to make easier the arrangement of all the necessary devices before the system installation :

- Compressed air:

Compressed air has to be supplied without water and oil (in particular the humidity can't be higher than 95% at 18° Celsius). The supply pressure has to be within 5 and 6 bar and the max. consumption is around **500 NI/min.**

- Gas mixture :

A bottle with gas mixture has to be supplied when the laser is installed. The bottle capacity has to be 6m³ at 150 bar at least. A pressure reducer is necessary and it has to be suitable for the high pureness usage, it has to have the following characteristics :

- output working pressure 4/5 bar;
- inlet filter membrane;
- the parts that get in touch with the gas have to be made of metal, (inox membrane);
- Helium compatible gaskets;

(We recommend a Helium detection test, Leak detection 1x10⁻⁷ Ncc/sec)

Connection on the reducer is required to be suitable for a Elastollan^{®(1)} 8x6 tube (8 mm = external Ø / 6 mm = internal Ø).

Gas mixture as follows:

SLOW AXIAL FLOW LASER [FAL]		
GAS	PERCENTAGE %	PURENESS %
CO ₂	4.5	99.99 (IP4.0)
NITROGEN	13.5	99.999 (IP5.0)
HELIUM	82	99.998 (IP4.8)

The CO₂ quantity tolerated into the mixture is up to 10%.

- Cooling liquid :

10 litres of demineralised water has to be supplied at the installation for eventual filling-up.

(1) Elastollan[®] is a TPU (thermoplastic Polyurethane), produced by reacting a Polyester or Polyether Polyol with diisocyanates and diols.

- Suction system :

When the suction system is supplied by the customer a total flow of **3000 m³/h** has to be foreseen, with a useful prevalence to the attack of **120** mm H₂O approximately. Moreover, if a upper suction joint is provided, 300m³/h per each focussing head has to be added to the foreseen flow. Even in case the suction system is supplied by CUTLITE PENTA, discharge tubes are required to have low roughness. Moreover, the section of tubes has to be the same of the suction system outlet flange for a length below 7m. When the suction system is supplied by CUTLITE PENTA the discharge tubes diameter is around 200 mm, but, as the position of the discharge tubes can be influent on the discharge losses, the installation of tubes manufactured by a specialist is recommended in order to meet the provisions in force.

Connections of the suction system to the system :

MPL SYSTEMS	2 adapters for tube with 150 mm diameter
Upper suction joint (optional)	1 adapter for tube with 100 mm diameter per each focus. head

For the connection between the equipment and the suction system the use of flexible and self-extinguishing tubes, with low roughness is recommended. It is necessary to limit the length of the tubes.

Should it be necessary the use of jumper tubes, it is required the employ of components well-joined (angle of the flow deviation within 15 degrees).

Unless different agreement, the Customer has to supply tubes and clips.

- Electrical supply :

400 V_{AC} 3P + G ±10% 50 Hz **25** kVA

- The connection to the supply system has to be provided with safety devices realised to protect the user from the up mentioned power.

- Earth connection :

The earth wire has to meet the Provisions of the Directive C.E.I. 46-90.

- Floor :

The floor has to support a charge of 1500 Kg/m² at least and a contacting pressure of 40 Kg/cm².

- Temperature :

The unit is able to work with temperatures included in a range from 15° to 35° Celsius.

- Relative humidity : lower than 85%