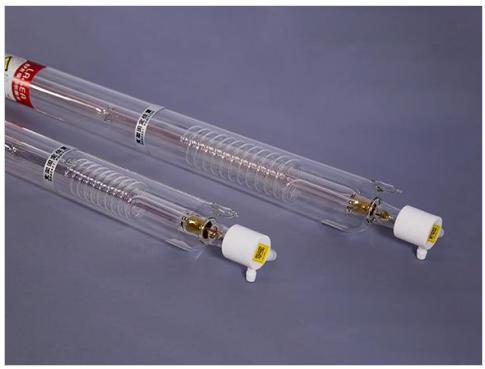
# CL Series $CO_2$ Laser Tube

## (Laser Consumable for Laser Marking Machine, Laser Cutting Machine & Laser Engraving Machine)

**Country of Origin:** China
**Product Standard:** Q/EFR/J 1.1-2012
**Certifications:** CE certificate, Chinese technical letters patent



### Performance and Application

Our standard CL series $CO_2$ laser tube is a common laser equipment accessory that is characterized by a stable performance, reliable quality and low failure rate.

The $CO_2$ laser tube is applicable for laser cutting, laser engraving, and laser marking in different industries, including advertising, packaging, craftwork processing, decorative construction materials, and clothing.

### Parameters

| Model | Length(mm) | Outer Diameter(mm) | Outer Power(w) | Maximum Power(w) | Operating Current | Catalyst |
|---|---|---|---|---|---|---|
| 700CL | 700±20 | ¢ 50±2 | 35 | 40 | 20 | No |
| 800CL | 800±20 | ¢ 50±2 | 40 | 50 | 20 | No |
| 1000CL | 1000±20 | ¢ 50±2 | 50 | 60 | 20 | No |
| 1200CL | 1200±20 | ¢ 55±2 | 60 | 70 | 22 | Yes |
| 1600CL | 1600±20 | ¢ 60±2 | 80 | 95 | 25 | Yes |

### Product Showcase




### Features

**1. Stable Laser Power:** We use special equipment and US imported gas to allow this laser consumable to have a stable laser power, effectively slowing down the dissociation rate of working gas, and prolonging the service life.

**2. Good Beam Mode:** The $CO_2$ laser tube can achieve a TEM00 mode above 95%, and features a laser spot size ranging from 3-5mm.

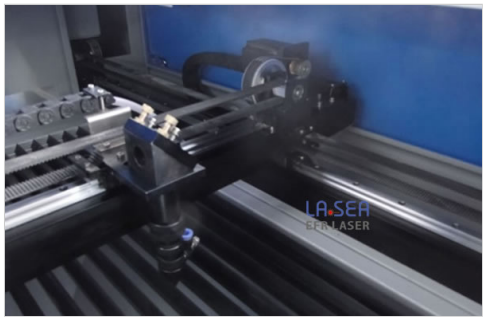
**3. High Power:** The laser power is generally above 70W, and the power of the 1,600mm CL series $CO_2$ laser tube can exceed 100W.

**Operating Current**

| Model | Input Current (mA) | Max. Operating Current (mA) | Max Current in Long-term Operation | Service Life | Matched EFR Power Supply | Starting Voltage |
|---|---|---|---|---|---|---|
| 700CL | 20mA | 20mA and below | 20mA and below | 3000 hours(operation current ≤20mA) | PS-T60 | 14KV |
| 800CL | 20mA | 20mA and below | 20mA and below | 3000 hours(operation current ≤20mA) | PS-T60 | 14KV |
| 1000CL | 20mA | 20mA and below | 20mA and below | 3000 hours(operation current ≤20mA) | PS-T60 | 16KV |
| 1200CL | 22mA | 22mA and below | 22mA and below | 3000 hours(operation current | PS-60,PS-ES80,PS- | 19KV |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | ≤22mA) | F80 | |
| 1600CL | 25mA | 25mA and below | 23mA and below | 3000 hours(operation current ≤23mA) | PS-80,PS-ES80,PS-F80 | 28KV |

**1600 CL Series $CO_2$ Laser Tube**



The 1600 CL series $CO_2$ laser tube has an excellent engraving performance and can achieve a high frequency pulse engraving under the 6mA current. The laser tube is matched with a PS-N80 EFR power supply, and has a high voltage on the positive pole, with a starting voltage at 28KV.

**Operating Condition**
1) Water cooling
Coolant: pure water
Flow rate: 3-5L/min.
Standard water temperature: 10℃ -40℃

2) Working environment
Temperature: 2℃-40℃
Humidity: 10%-60%

3) Operating current
The $CO_2$ laser tube requires an input current of 25mA, a maximum operating current of 25mA and a current of 23mA and below for long-term operation. If the operating current is kept at 23mA or below, the service life is up to 3,000 hours. These currents should be based on the currents displayed on the ammeter, which is in a series connection with the cathode.

**1200 CL Series $CO_2$ Laser Tube**

With excellent capabilities to cut and engrave, the 1200 series $CO_2$ laser tube can be used as a laser cutting machine accessory and a laser engraving machine accessory. It can achieve a high frequency pulse engraving under a 5mA current. The laser tube is matched with a PS-N80 EFR power supply and has a high voltage on the positive pole, with the starting voltage at 19KV.

**Operating Condition**
1) Water cooling
Coolant: pure water
Flow rate: 2-5L/min.
Standard water temperature: 10℃ -40℃

2) Working environment
Temperature: 2℃-40℃
Humidity: 10%-60%

3) Operating current
The input current of the $CO_2$ laser tube is 22mA, as is the maximum current, and the long-term operation current is 22mA or below. The service life can be up to 3,000 hours if the current is kept at 22mA and below.

The above currents should be in accordance with the actual currents displayed on the ammeter, which is in a series connection with the cathode. If the laser tubes are used incorrectly for long-term, over-current use, the color of the negative electrode will change, and the service life significantly reduced.

**Cleaning Tips:** Please do not use cotton swabs or other wipes to scrub the windows on this laser equipment spare part. Doing so affects the output power.

**The specified cleaning method for the windows is as follows**
1. When the lens is stained, turn off the laser tube.
2. Use an air dust blower to blow away dust and dirt on the lens.
3. Use a syringe to spray ethanol on the lens.
4. After the ethanol evaporates, turn the laser tube back on.
5. If the above methods do not work effectively, professionals are required, who will use a cotton swab dipped in ethanol to clean the lens in a rotating fashion away from the center, outwards to the edge.

The best method is to protect the windows from contamination.

**Special Notice**
1. Do not use acetone to clean the glass.
2. When testing the light spot on organic glass, please keep the organic glass 300mm away from the windows.

**Safety:** As the $CO_2$ glass laser device generates invisible light, please wear eye protection gear when operating. A safety sign for high voltage is marked on the positive pole.

**Storage and Transportation Requirements:** When storing and transporting the $CO_2$ laser tube, please drain the cooling liquid and cover the tube ends with dustproof plastic bags. For storage, the required environmental temperature is 2-40℃ and the humidity ranges from 10-60%.

Adhesive tapes and sponges should be used to fix the laser tubes and prevent sliding during transport. A 70mm sponge should be use at the end of the windows, and a 50mm sponge should be at the end of the fully reflecting mirror.

**Package Size**

ZS Series $CO_2$ Laser Tube

F Series $CO_2$ Laser Tube

CL Series $CO_2$ Laser Tube

$CO_2$ Laser Power Supply

**Model of Laser Tube: 1200CL**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Quantity of Laser Tube | 1 | 1 | 2 | 4 | 6 | 8 | 10 |
| Product Net Weight (Kg) | 1.7kg | 1.7kg | 3.4kg | 6.8kg | 10.2kg | 13.6kg | 17kg |
| Carton Capacity | 1 laser tube, small carton | 1 laser tube, large carton | 2 laser tubes | 4 laser tubes | 6 laser tubes | 4 laser tubes +4 laser tubes | 4 laser tubes |
| Carton Dimension (L×W×H) | 131×16.5×12.5 | 141×25×21 | 141×42×21 | 141×42×34 | 141×42×47.5 | / | / |
| Carton Dimension (with Sponge) (L×W×H) | 131×24.5×20.5 | 141×33×29 | 141×50×29 | 141×50×42 | 141×50×55.5 | / | / |
| Product Rough Weight (Kg) | 2.5kg | 4kg | 7kg | 12.6kg | 17.9kg | 24kg | 29.5kg |

**Model of Laser Tube: 1600CL**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Quantity of Laser Tube | 1 | 1 | 2 | 4 | 6 | 8 | 10 |
| Product Net Weight (Kg) | 2.45kg | 2.45kg | 4.9kg | 9.8kg | 14.7kg | 19.6kg | 24.5kg |
| Carton Capacity | 1 laser tube, small carton | 1 laser tube, large carton | 2 laser tubes | 4 laser tubes | 6 laser tubes | 4 laser tubes +4 laser tubes | 4 laser tubes |
| Carton Dimension (L×W×H) | 168×16×12 | 179×25×21 | 179×42×21 | 179×42×34 | 179×42×48 | / | / |
| Carton Dimension (with Sponge) (L×W×H) | 168×24×20 | 179×33×29 | 179×50×29 | 179×50×42 | 179×50×56 | / | / |
| Product Rough Weight (Kg) | 4.0kg | 5.75kg | 10.3kg | 14.95kg | 21kg | 29kg | 35kg |

**Note**
1. Carton dimension error: ±1cm
2. Rough weight error: ±1 kg

**Quality Guarantee**
Warranty: 360 days

1. Within 180 days from ex-factory date on the label, we replace free of charge if the power is less than 80% of rated power while the users operate according to our manual. The replaced laser tube will have same warranty as new ones. The single transportation freight will be afforded by buyer. When the laser tube structure is damaged or changed, we will not be responsible.

2. From 181st days to the 360th days from ex-factory date on the label, we repair or replace free of charge if the power is less than 75% of rated power while the users operate according to our manual. The replaced or repaired laser tube will have same warranty as the one which buyer purchased first time from us. The single transportation freight will be afforded by buyer. When the laser tube structure is damaged or changed, we will not be responsible.

3. We are not responsible for damage or problems that occur during the incorrect usage and do not fall in line with the instruction books.

**Inquiry Form**

*Email
Your Email

*Content

Product Name
http://efrlaser.com:8080/4-co2-laser-tube/200481

Your Name
Your Full Name.

Company
Your Company Name.

Tel./Fax.

**Other products**