



Inquiry No.C00178
Laser Soldering System

Laser Soldering System

OPTO LASER® ULD-730 UNIX-413LII

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UNIX-413LII

- Descriptions in this catalog are valid as of September, 2007. The specifications and exterior described in this catalog are subject to change without notice due to improvements.
- Safety note : Be absolutely sure to familiarize yourself with the Operating Instructions to ensure that this product will be used safely.

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Laser Soldering System ULD-730

Patent awarded

Next generation soldering

Noncontact soldering has the following advantages:

- no icicle is formed,
- any impurities are not mixed into solder, and
- It is appropriate for control of the solder amount or fine work such as fixing of a part that is difficult to be done.

This system provides the next generation soldering method that is expected to be applied to lead-free soldering also.

Reduction of Consumables and Waste

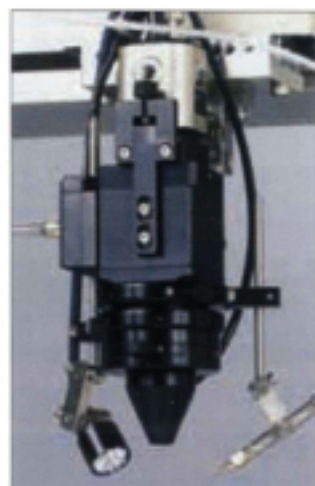
Since the amount of the wasted solder is far less than that of the flow soldering this system contributes for reduction of industrial waste. In addition, it does not require consumables such as an iron tip and heater, so it is very easy to perform routine maintenance.

Laser Diode

The laser diode (fiber coupling type) whose output is high (30 W) is used.

Laser Head into Which a Coaxial CCD Camera is Incorporated

The CCD camera incorporated on the vertical axis onto which laser is irradiated shoots an image of the target point.



Simple and Compact Design

Since the laser oscillator section, output control unit and laser head are separated, you can design installation or configuration of the system as desired. This is a small device that uses laser diode. Soldering is available even for a minute work without missing the laser irradiation point.

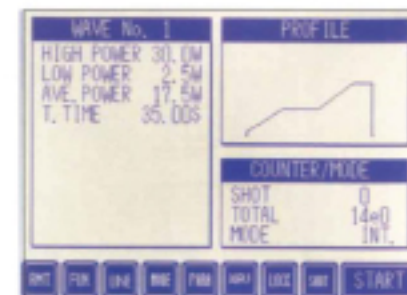
Teaching on the Monitor

While observing an image of the point irradiated with laser on the monitor, teaching operation is available also. You can operate this system safely.

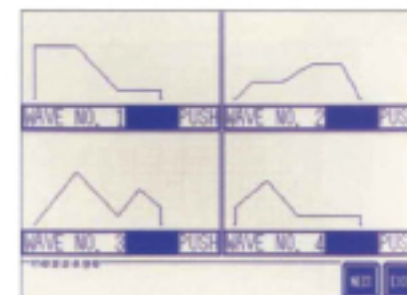


LCD Touch Panel System

The LCD touch panel equipped with the backlight is used.



You can intuitively check various settings such as the laser output power and irradiation time.



Laser Output Control Mode

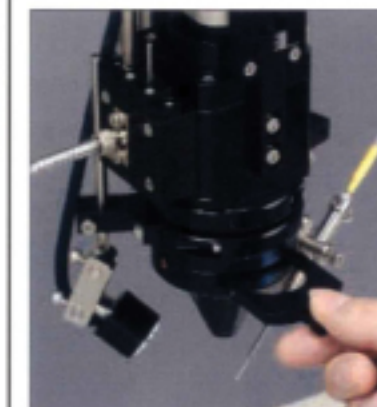
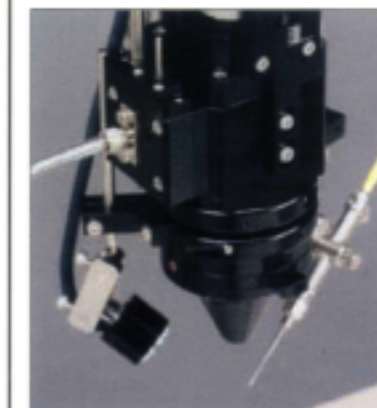
In Output Control mode, this system allows you to check the laser power and time with observing the waveform displayed on the LCD panel. It can store up to 32 output conditions also.



T1	0.30 S	0.0 W	10.0 W
T2	0.50 S	10.0 W	10.0 W
T3	0.50 S	10.0 W	20.0 W
T4	0.50 S	20.0 W	20.0 W
T5	0.30 S	20.0 W	0.0 W

Easy Cleaning of the Optical Lens Protective Glass

The dual structure of protective glass blocks any splashing flux and/or solder ball. This glass is the sliding type, so it is easy to clean.



Laser Soldering Unit ULD-730

<Standard configuration>

Output control section
Laser oscillator section
Head section

*An external monitor and a light source for a CCD camera are optional.

Specifications

Rated output	30W or 50W	
Waveform length	Selectable from 2 types	
Laser spot diameter *1	φ0.4~ or φ0.6~	
Laser focal distance *2	60mm (from the bottom side of the lens)	
Fiber length	3m	
Maximum operating current	50A	
Power voltage	Single-phase 100V AC±10% 50/60Hz	
Power capacity	800VA	
Laser positioning system	Observation of the same axis with a CCD camera	
Weight	Output control section	16kg
	Laser oscillator section	9kg
	Head section	0.7kg
Safety standards/regulations	JIS Class 4 labels	
	Warning label	
	Explanation label	

*1 The minimum diameter becomes φ0.2 when you use an optional unit.
*2 The long focal distance is available when you use an optional unit.



Soldering Robot

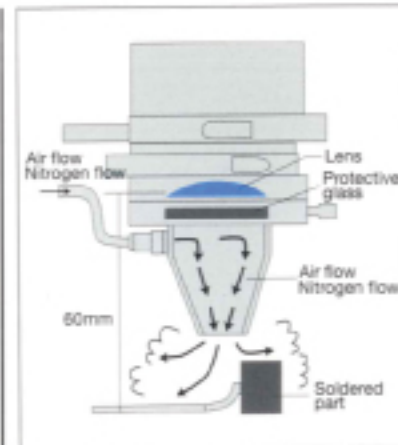
UNIX-413LII

Large Work Area

The long focal length optical system is adopted so that a large area from the lens to the work can be secured.

Air Jet Type Soldering Smoke Preventing Mechanism

Parts around the optical system inside the laser head are shielded from the outside, and the air jet system is incorporated into the robot. Therefore, this structure does not allow any smoke from the soldering flux to be blown into the inside easily. This robot can spray nitrogen also.



System Configuration Example Laser Soldering Robot UNIX-413LII

<Standard Configuration>
Laser soldering system package
Robot main unit
Solder feeding unit
Soldering controller

※An external monitor and a light source for a CCD camera are optional.

Specifications

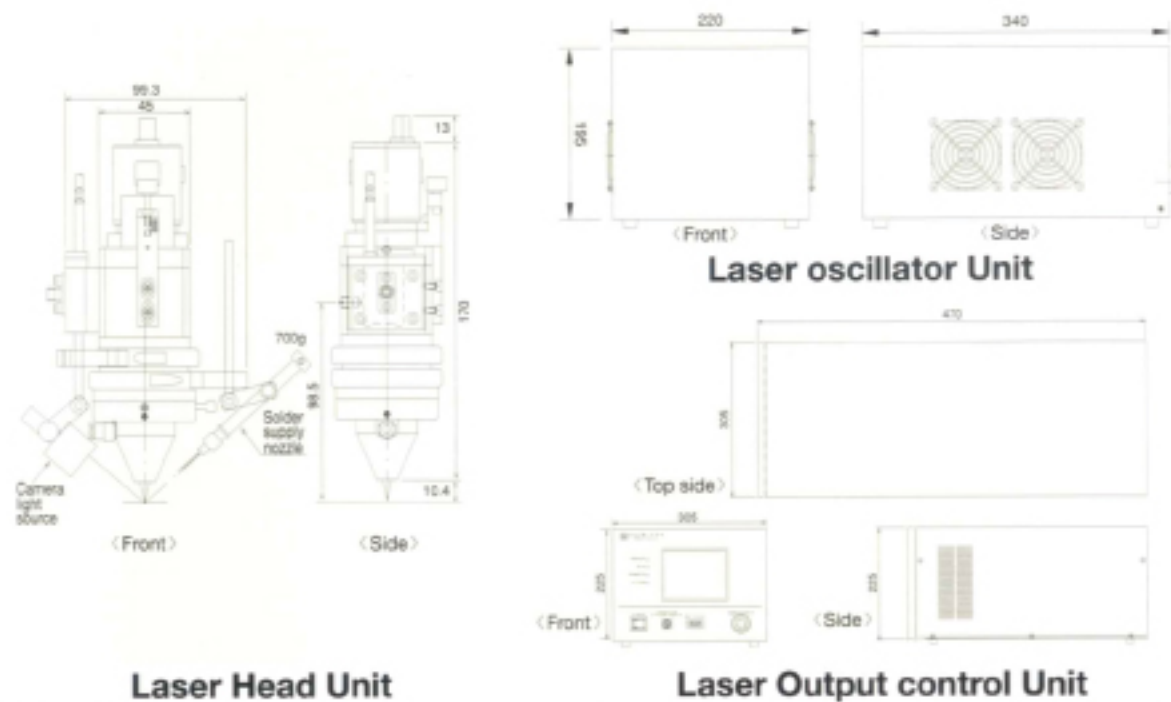
Number of axes	3 (controlled simultaneously)	
Operable range	X-axis/ Y-axis	300 mm to 320 mm
	Z-axis	100 mm
Driving system	Driven by the 5-phase pulse motor	
Positioning repeat accuracy	± 0.01 mm	
Weight of the main unit	Approximately 39 kg	
Number of soldering conditions	63	
Diameter of the used solder	φ 0.5 to 1.2	



Outline Dimensions

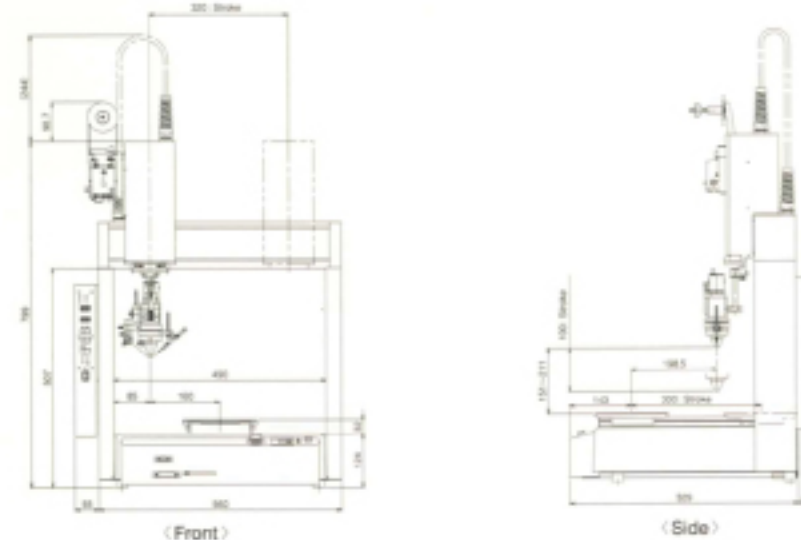
Laser soldering Unit ULD-730

Unit: mm



Laser soldering robot UNIX-413LII

Unit: mm



Robot main body

We Can Change Your Robot to a Laser Soldering Robot.

With combining your robot with the Laser Unit ULD-730, your robot can become a noncontact type laser-soldering robot.



5-axis orthogonal coordinate type soldering robot Super-Robo LS-STPSII



High-performance desktop soldering robot ROBOSOL King UNIX-414



5-axis vertical type articulated soldering robot UNIX-503