

■ 5W YAG SHG Laser Welder



ML-8150A

Perfect for welding of gold and copper!

The world's highest peak power of 1.5kW!
High-power laser enables solderless welding of precision parts and bus bars!

Features

ML-8150A provides 5W of maximum power, which is upgraded more than twice compared with the conventional machine. It enables faster and deeper welding of even copper and gold, which have high reflectance to YAG fundamental laser and are hard to be welded.

Further, its beam becomes so thinner than the conventional one that deeper, thinner, and more beautiful welding can be achieved.

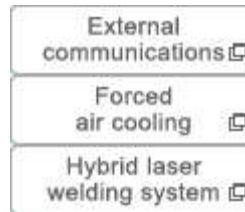
Features

- Solid welding of copper and gold by SHG laser.
- 5W power achieving deeper penetration and faster operation. (Power density is nine times as high as the conventional model.)
- Ø0.2mm fiber enabling high quality precision welding.

Standard Features

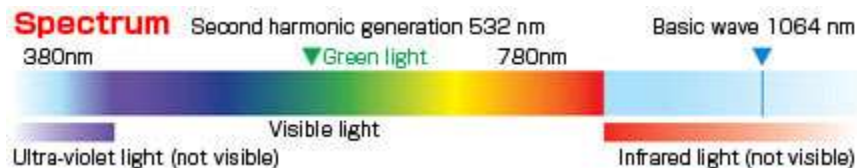
Real-time power feedback
Variable mirrors
Waveform control
Power monitor

- High speed pulse control to shorten the takt time.
(Pulse frequency is three times as high as the conventional model.)
- Two simultaneous energy share enabling two simultaneous processings and processing from two different angles.
- AMADA MIYACHI's original power feedback feature.
- Hybrid laser system combined with fundamental and SHG laser achieving deeper penetration.
- Easy-to-use jog dial.

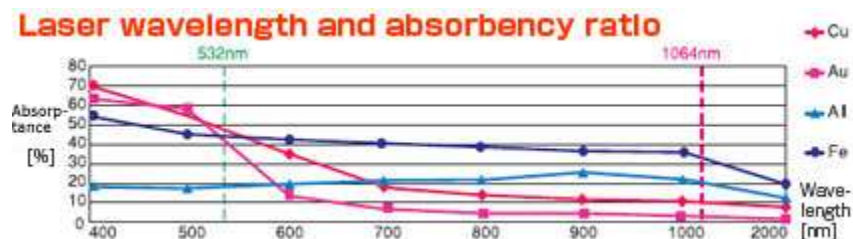


Why can laser weld copper and gold?

SHG laser is green-colored visible light with wavelength of 532nm, which is a half of fundamental laser (1064nm).



Absorption of laser into copper and gold is 4.5 to 20 times higher than fundamental laser so that it is possible for laser to weld copper and gold.



Expand the Environmentally-friendly Method of Welding

Manufacturing by lead-free soldering and solder-less joining methods is recently required considering protection of the environment. Especially

for electronic device manufacturing, their reliabilities have been a significant issue lately.

The Solution is... Laser Welding!

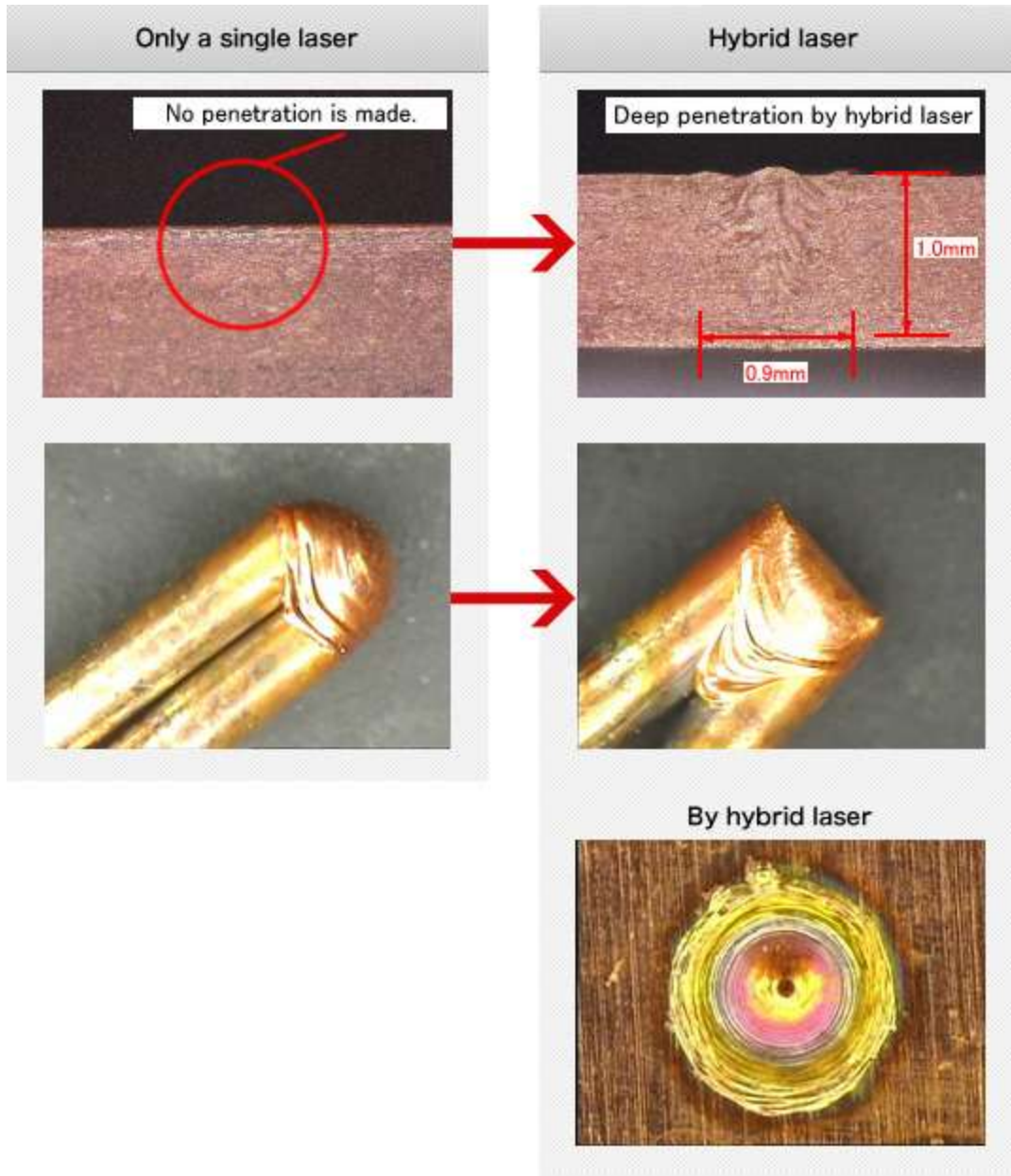
- Heat-affected area can be reduced so that parts with weak heat resistance can be welded.
- No flux is necessary.
- No solder creeping.
- Size and weight of parts can be minimized as solder is reduced.

Hybrid Laser Welding System



By combining SHG laser (ML-8150A) and fundamental laser (ML-2000 series) at the focus unit as illustrated at right, the welding depth and welding spot diameter are greatly improved comparing to that of a single laser.

➤ MLE-300A Series



Applications

Welding of electronic devices, electric devices, IC leads, gold-plated patterns and more.

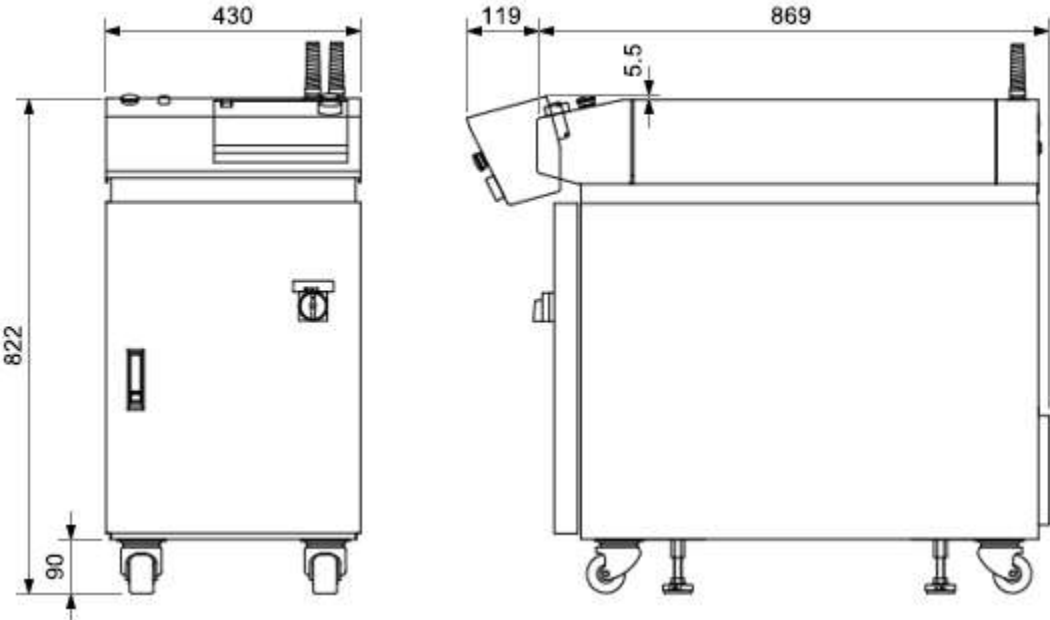
Specifications

Model		ML-8150A
Oscillation wavelength		532nm
Maximum average power		5W
Maximum output energy		4 J/P
Maximum peak power		1.5 kW
Pulse width		0.20 to 5.00 ms (in 0.02 ms increments)
Pulse repetition rate		1 to 30 pps
No. of programmable schedules		32
Counter	Total number of outputs	9 digits
	Number of acceptable outputs	9 digits
Optic fiber		Φ0.2mm (Usable is Φ0.2~1.0mm SI type optical fiber)
Fiber optic delivery		Up to 2 deliveries of laser output, including powersharing and timesharing, are available. (Option)
External communication function		RS-485
Power requirements		Single-phase 200V, 220V, 240V AC +10%, -15%, 50/60Hz
Heat exchange method		Forced air cooling
Dimensions		430(W) X 869(D) X 822(H)
Weight		120kg

*Specifications subject to change without notice.

External View

■ Dimensions in mm
■ ML-8150A



Sample



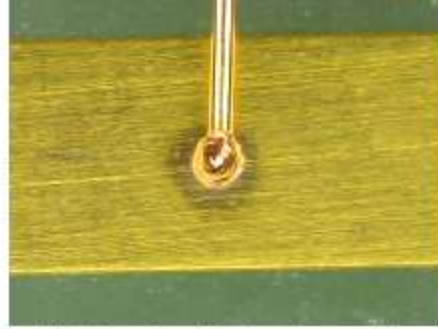
Fine spot welding of copper material
(200 μ m)



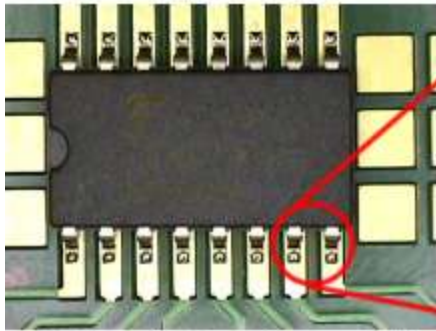
Welding of bus bars made of
0.2mm thick copper plates



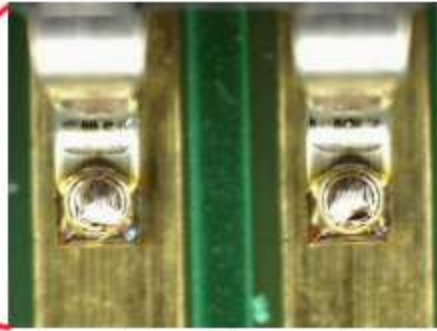
Butt welding of copper materials



Welding of gold-plated materials



Welding of IC leads(50 μ m thick)



Firm weld strength can be obtained