

Welding

Dissimilar Metal Welding: Copper to Aluminium

Fiber Lasers have now matured into exceptionally reliable and stable industrial tools. These Lasers have unique capabilities that ensure a wide range of high quality micromachining processes; of particular interest here is their ability to produce high quality welds between dissimilar metals.

Using ns Pulsed Lasers such welds can be applied in thin section lap welding applications. The joints are often found in consumer electronics and batteries.

The challenge with this application is that welding dissimilar metals often has issues with heat input and formation of brittle inter metallic phases. Using Fiber Lasers for such an application reduces the heat input and the heat-affected zone to further reduce cycle time. Additional benefits of using Fiber Lasers are that they are able to produce accurate, controllable, consistent and repeatable welds.

The process uses our redENERGY 70W EP-Z Laser to create 3 spot welds, taking approximately 1 second, to produce an extremely strong hold between the Copper and Aluminium. The process is very quick and clean with no oxide layers and a low electrical resistance.

This is an SPI Lasers patented process.

Related Product



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redENERGY G4



Application Parameters

Type	G4 70W EP-Z
Power	70W
M ²	1.6
Beam Ø	5-10mm
Scanner/Lens	163mm or 254mm FL - theta
Energy	Multi-waveform process

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