

LASAG Goes Green to Weld Copper

Copper is used extensively for interconnections within the electronics industry and welding by laser is an alternative to soldering which gives higher reliability and greater strength than a soldered joint.

Laser welding of copper has traditionally required high peak power pulsed lasers to overcome the inherent high reflectivity and thermal conductivity of the base material. At room temperature copper absorbs as little as 5% of laser light at 1 micron wavelength. A new patented process of mixing in a secondary wavelength at 532nm (only 10-15% of the total energy) enables the absorption of laser energy to be much improved, offering consistent results even where there are differences in the surface condition of the material.

This technique is used in the new SLS 200 GX made in Thun, Switzerland by LASAG AG (a ROFIN subsidiary). The resulting welds from the SLS 200 GX are more consistent in diameter and penetration, plus very small spot welds (down to 25 microns diameter) are also possible. Following the initial pulse of green light, the energy is reduced however the main infra-red energy is maintained to allow the weld pool to grow. Molten copper absorbs the laser energy much better than solid material at room temperature.



(The new SLS 200 GX laser by LASAG)

LASAG launched the SLS 200 GX at the LASER 2011 exhibition in Munich earlier this year, and applications trials are available via Rofin-Baasel UK.

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