

TruDisk with green wavelength

Welding on the
green side of light

Laser power
up to 3 kW

01

Top quality

02

**Maximum
reproducibility**

03

**Highest
productivity**

04

**Proven disk laser
technology**

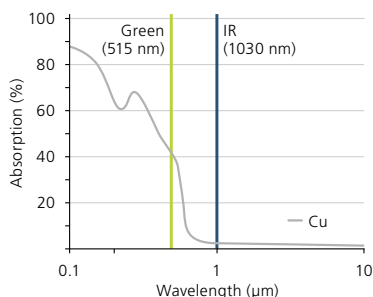


Top quality

The green wavelength is absorbed very well in copper: At room temperature, the absorption of the green wavelength is 8 times higher than that of infrared. With the TruDisk with green wavelength, it is therefore possible to weld copper with superb stability and almost free of spatter. This fulfills the highest of quality requirements for the weld seam and the welded part. With BrightLine Weld, optionally available for the TruDisk 3022, you can process copper workpieces at high welding depth with unsurpassed weld seam quality and productivity.

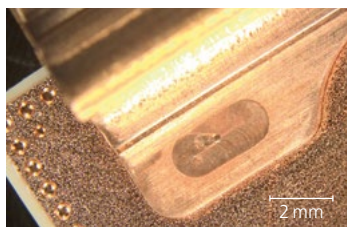
Absorption curve of copper

With a wavelength of 515 nm, the green TruDisk lasers are the ideal tool for copper welding.

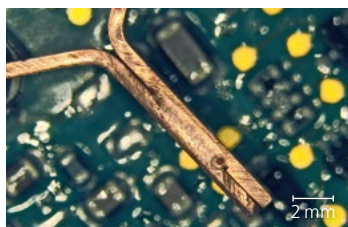


Maximum reproducibility

The TruDisk with green wavelength is perfectly suited for the reliable heat conduction welding of thin copper sheets and of edges. This could not be done reproducibly with IR lasers. With deep penetration welding, the TruDisk with green wavelength is known for its very constant welding depth. You get ideal weld seam quality with both applications, regardless of the material surface. Previous steps involved in process preparation can now often be omitted.



Welding of copper contacts on DCB substrate with well controlled welding depth using TruDisk 1020.



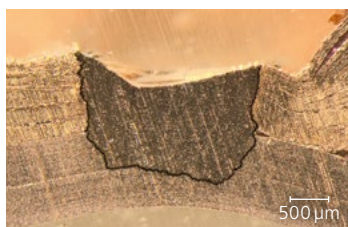
Welding of electronic components with minimum spatter formation thanks to green wavelength.



Welding of battery foil stacks consisting of 100 copper foils with TruDisk 2021.

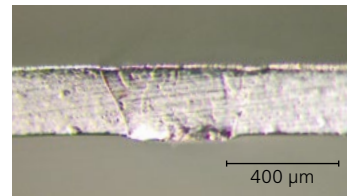
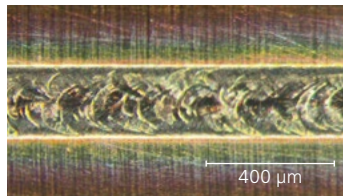
Left: Regular seam surface without ejections.

Right: Cross section of the poreless weld seam with large joint area.



Highest productivity

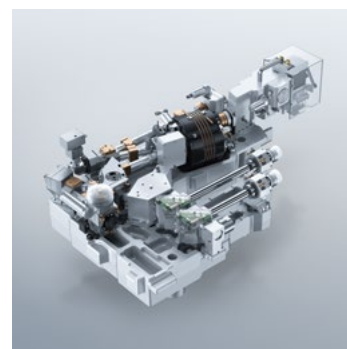
Thanks to the optimal absorption of the green wavelength in copper, you can weld significantly faster with the TruDisk with green wavelength than with infrared lasers of the same power. You therefore increase productivity and also profit from minimum distortion of the parts. There is no need for additional process techniques, such as beam oscillation, which makes it easier to set up the process.



Heat conduction welding of copper foil with $v = 10$ m/min, seam surface and cross section.

Proven disk laser technology

When it comes to robustness, reliability and industrial suitability, put your trust in the TruDisk lasers from TRUMPF. There are already 20,000 disk lasers in use around the world. TRUMPF offers you a unique all-inclusive package: laser, laser light cable, focusing optics and sensor system – developed and tested for the green wavelength.



Technical Data

| | | TruDisk 1020 | TruDisk 2021 | TruDisk 3022 |
|-------------------------------|-----------|------------------------------------|--------------|--------------|
| Laser power | W, cw | 1000 | 2000 | 3000 |
| Typ. power stability > 8 h* | % | ± 0.5 with laser power control | | |
| Wavelength | nm | 515 | | |
| Typ. beam quality | mm · mrad | 2 | 4 | 8 |
| Min. Ø of laser light cable | μm | 50 | 100 | 200 |
| Number of outputs | | 2 (time-sharing or energy-sharing) | | |
| Length of laser light cable | m | 10 or 20 | 20 | |
| Numerical aperture behind LLK | | 0.1 | | |
| Size (W x H x D) | mm | 1340 x 1430 x 725 | | |
| Accessories | | Integrated heat exchanger | | |

* At nominal power and constant ambient temperature.

Subject to alteration. Only specifications in our offer and order confirmation are binding.