LASER SYSTEMS FOR PV MANUFACTURING

- SOLAR POWER
- LASER
- ROFIN

WE THINK LASER
Take advantage of our experience and forward-thinking. Backed by 35 years of experience in laser material processing, ROFIN provides innovative solutions for the photovoltaic industry. Processing of solar cells like drilling, cutting, scribing, doping and ablation of dielectric layers are the key competences as well as thin film applications, edge isolation and marking of silicon wafers. Working closely with our clients and partners, we have established great expertise for laser application in PV manufacturing. ROFIN is the only supplier worldwide offering the complete range of lasers and laser systems for processing solar cells.

ROFIN
- Leading manufacturer for lasers and laser solutions for material processing
- Sales and service teams in 40 countries around the world
- Widest range of laser sources, laser systems and customized solutions
- Large application lab for a wide spectrum of PV material processing

R&D and low volume systems

EasyMark
- Low cost marking/scribing system
- Very easy handling
- Ideally suited for scribe and break applications
- Various types of 1064 nm laser sources available

MPS
- Medium-sized modular laser workstation
- High precision processing for thin film and c-Si applications
- Granite base available
- Various motion systems with up to ±1 µm accuracy

CombiLine Advanced
- RT version with fast turning 800 mm rotary table, throughput up to 700 wafers/h
- WT version with flexible fixture arrangements and optional x/y table
- 300 mm motorized z-axis
- Optional vision system for wafer recognition

Precision R&D System
- Integration of up to 3 laser sources
- Suitable for thin film and c-Si applications
- Accuracy of NC axes ± 2 µm, repeatability ± 1 µm for x/y axis
- Max. travel 300 x 600 mm
The DUAL LINE c-Si is a modular machine platform designed for high throughput solar cell manufacturing with multiple installations at leading PV manufacturers worldwide. The core of the machine is a high precision granite base to support laser optics and rapid wafer handling units. It is equipped with two independently operating lines for cell transport and one laser process chamber each. In general, the machine can be placed in-line with other processing machines or configured with stack and/or cassette handling systems for batch type operation. The machine can be configured with a wide range of ROFIN laser sources in 1064, 532 and 355 nm wavelengths. Various pulse length regimes from continuous wave to femtosecond are also available. In particular, this machine is addressing high cell efficiency processes such as MWT cell drilling, laser doping and opening of dielectric layers on the cell front or back side.
One supplier
- all technologies

Powerline F 30 LP
- Compact setup
- Excellent pulse-to-pulse stability
- High pulse energy
- Air cooling

Powerline F 20 -100
- Different power ranges for various applications
- Completely air-cooled
- Low operating costs
- Single and double scanner

Powerline L 100 SHG
- High average power and high pulse energy
- Round, square and rectangular fiber beam delivery possible
- Top hat beam profile
- Excellent pulse-to-pulse stability

Powerline E SHG/THG
- Different power ranges
- Several wavelengths
- Single and double scanner configuration
- Various scanning head options

Powerline SL 3/20
- Exceptional beam quality
- Excellent pulse-to-pulse stability
- High long term stability with temperature management system
- Integrated shutter and safety circuits

StarPico and StarFemto
- High precision processing and high pulse peak power
- Cold laser ablation of thin layers
- Multiple wavelength options 1064 nm, 532 nm, 355 nm
- Ideal for 24/7 production in industry