Fiber Laser Cutting Machines

ACE Laser Compact ST 1313 2.0



SKU : 141105

Building on the strengths of the ACE laser machine family, this series impresses with its outstanding price-performance ratio. With high-quality components and versatile software options, it provides all the tools needed for efficient cutting processes. Thanks to its compact design, the machine is ideal for smaller workshops.

- Modern, space-saving design
- Manually extendable table
- Powerful software with nesting function
- High-performance laser source with up to 3 kW beam power
- High-performance cutting head with auto-focus

TECHNICAL SPECS

WORKING AREA

Table dimensions	51 in x 51 in
Workpiece weight (max.)	616 lbs

TRAVELS

Travel X-axis	52,2 in
Travel Y-axis	53 in
Travel Z-axis	4 in

RAPID FEED

Rapid feed X-/ Y-axis	327 fpm
Z-axis rapid feed	98,1 fpm

ACCURACIES

Positioning accuracy	0,002 inch/m
Repeatability	0,0012 inch/m

LASER

Shaft length	1,08 ± 10% µm
Beam power max.	2.000 W
Power consumption	8,72 Hp
Cutting capacity in structural steel	0,63 in
Cutting capacity in stainless steel	0,24 in
Cutting capacity in aluminum	0,197 in
Pulse frequency	50 Hz - 5.000 Hz

MEASURES AND WEIGHTS

Overall dimensions (length x width x height)	121 in x 82 in x 81 in
Weight	2.948 lbs

© 2024 KNUTH Werkzeugmaschinen GmbH. All rights reserved
Published on: 10/21/2026







PRODUCT DETAILS

Design and Construction

- The basis of this compact cutting system is a heavy, carefully welded steel frame.
- To ensure maximum dimensional stability, the entire structure is thermally relaxed during the manufacturing process.
- The large portal is moved by a powerful servo drive on both sides.
- This design enables impressive travel speeds while maintaining maximum rigidity.
- The use of high-quality ball screws and low-maintenance linear guides guarantees precise positioning.
- Even at high accelerations and travel speeds, this ensures precise and clean cutting results.
- The work table is designed so that it can be manually moved out of the fully enclosed housing for loading and unloading.
- This design enables quick material changes and optimal accessibility for the operator, despite the compact dimensions.
- An automatic central lubrication system permanently supplies all moving components and reduces maintenance requirements.
- The fully enclosed housing reliably protects the operator from all sources of danger.
- The machine frame is already designed for optimal connection to a powerful extraction system.
- Thanks to the integrated viewing window made of certified special glass, you can keep a safe and clear view of the cutting process at all times.

Cutting Head

- Outstanding design: The optimised optical configuration of the RayTools autofocus laser cutting head, together with the smooth, efficient airflow design, guarantees outstanding cutting quality and efficiency.
- Precision focusing: Automatic focus adjustment reduces the need for manual intervention. Focus adjustment range: -12 mm to +10 mm; positioning accuracy: 0.05 mm.
- Low wear: An additional protective lens in the collimation unit effectively protects the collimation lens and extends its service life.
- Easy to maintain: The drawer-style design allows for quick and easy replacement of the protective lenses and simplifies maintenance.

Laser Sources

- Proven power: ACE Compact ST models are equipped with high-end laser sources from the renowned manufacturer Raycus.
- Efficiency meets performance: Benefit from high electro-optical efficiency and enormous energy density.
- Robust system: The beam is guided via flexible fibre-optic cables, eliminating the need for moving parts or mirrors. This reduces maintenance requirements and significantly increases the service life compared to other systems.
- Advantages over CO_2 lasers: Fibre lasers are generally more energy-efficient and require less maintenance, which results in significant long-term cost savings.
- Advantages over plasma: Switching from a plasma laser to a fibre laser can significantly reduce annual operating costs.

Controller

- Easy to use: The powerful FSCUT 2000 control system features a clear interface that is optimised for specific applications. This enables short training times and ensures safe operation in the long term.
- Knowledge at the touch of a button: A comprehensive technology database instantly provides you with the appropriate cutting parameters and preset cycles for a wide variety of metals – saving set-up time and trial runs.
- Automatic control: For optimum cutting results, solenoid and proportional valves control the gas pressure setting fully automatically directly from the control system.

Software

- Everything at a glance: Cypcut is a proven software solution that offers all the functions required for editing cutting contours. It also informs the operator in real time about the current operating status.
- Minimal waste: Automatic nesting arranges your components on the sheet metal in the most efficient way possible. This significantly reduces

© 2024 KNUTH Werkzeugmaschinen GmbH. All rights reserved
Published on: 10/21/2026

preparation time and saves a lot of material costs.
- Flexibility: As well as allowing customised adjustments, the software offers a variety of predefined nesting patterns for standard tasks.

STANDARD EQUIPMENT

Complete system with CNC control (FSCUT2000)
CypCut CAD/CAM Software
CypNest offline software
manually extendable cutting table
Ytterbium fiber laser by Raycus
Recirculating water cooling system for the laser source
Raytools autofocus cutting head
aventics proportional valve
Laser safety cabin
Operating manual

OPTIONAL EQUIPMENT

- Vacuum and filter system by Kemper, SKU : 253848
- Oxygen pressure reducer 2900 psi/0-290 psi, infinitely variable, SKU : 254030
- Nitrogen pressure reducer 2900 psi to 725 psi, 1-step, SKU : 254031
- Oxygen pressure reducer 4351 psi/0-290 psi, SKU : 254032
- Nitrogen pressure reducer 4351 psi/0-725 psi, SKU : 254033
- Vanterm vacuum and filter system, SKU : 254173
- Refrigerated compressed air dryers, SKU : 251090

© 2024 KNUTH Werkzeugmaschinen GmbH. All rights reserved
Published on: 10/21/2026