

Dimensions in brackets LC-1212 ALPHA IV NT

Technical data	LC-1212 ALPHA IV NT	LC-2415 ALPHA IV NT
Maximum traverse range with automatic readjustment	(X) 1270, (Y) 1270, (Z) 300 mm (X) 2540, (Y) 1270, (Z) 300 mm	(X) 2520, (Y) 1550, (Z) 300 mm (X) 5040, (Y) 1550, (Z) 300 mm
Maximum sheet thickness	9.0 mm	12.0 mm
Maximal Table loading weight	210 kg	330 kg
Cutting speed	0-20 m/min	
Positioning speed	X-, Y- axis: 80 m/min Z-axis: 60 m/min	
Positioning accuracy	±0.01 mm/500 mm	
Repeatable Positioning accuracy	±0.005 mm	
Work chute	(Y) 1450, (X) 550 mm	(Y) 1750, (X) 550 mm
Electrical connection	400 V, 50 Hz, 3 Phases	
Connected load (Machine)	2500-W-Laser: 50 kVA 4000-W-Laser: 72 kVA	
Air requirement (Machine)	250 l/min; 6.0 bar	
Machine weight 2 kW	5600 kg	7500 kg
Machine weight 4 kW	5800 kg	7700 kg

Oscillator/model	FANUC AF 2000E (LU 2.5)	FANUC AF 4000
System principle	AC HF-stimulated, fast streamed	
Maximal laser output	cw 2500 W	cw 4000 W
Laser wavelength	10,6 µm	
Beam mode	comparable to TEM ₀₀	
Beam divergence	< 2 mrad	
Laser stability	±1 %	
Laser gas consumption	around 10 l/hr	

Laser class 1 in accordance with DIN EN 60 825-1 when operating in accordance with intended usage.

Subject to technical changes The specifications of precision are based on VDI/DGQ 3441. The workpiece precision and the material thickness specifications are, among other things, dependent on the cutting conditions, the material, the type of workpiece, its pretreatment, the panel size and the position in the work area.

CNC control, Model AMNC-F	
Screen	14" LCD
Number of controlled axes	3
Input resolution	0.001 mm
Input format	ISO/EIA
Disk drive	3.5" HD
CD-drive	Standard
Storage capacity	10 MB

Equipment features (Standard):

LC-1212 and 2415 ALPHA IV NT:

- Adaptive optics (Active cut)
- HS-2003 sensor cutting head
- High pressure cutting device (clean cut)
- Aluminum cutting device (Alu cut)
- Automatic focal point setting
- Automatic gas pressure setting
- Automatic readjustment device
- Parts chute
- Extractor
- Chiller
- Diode laser for positioning
- Beam path flushing
- Cutting gas filter system

AMNC-F Multimedia control

- Cutting data library
- Editing mode in cutting operation
- Laser output display
- Laser output control
- Programmable cutting gas setting
- Self diagnostic system
- Hand wheel for manual positioning mode

Special accessories: by request



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Laser cutting machine LC-ALPHA IV NT



Laser technology



 **AMADA**



Speed and precision – high performance and improved processes with the LC-2415 ALPHA IV

The fourth generation of Amada's successful ALPHA series is still the market leading hybrid laser cutter. Completely reworked, the ALPHA IV will convince you with its numerous improvements, which once again accelerate the cutting process, optimize the process sequences and show a clear increase in productivity.

Above all, the extremely short piercing times, the high traverse and cutting speeds and the outstanding workpiece quality distinguish this compact laser cutting system – for thin or medium sheet thickness, in medium or large format. Advanced laser technology, engineering know-how, intelligent control systems and modular automation make it possible for the ALPHA IV series to achieve consistently high results.

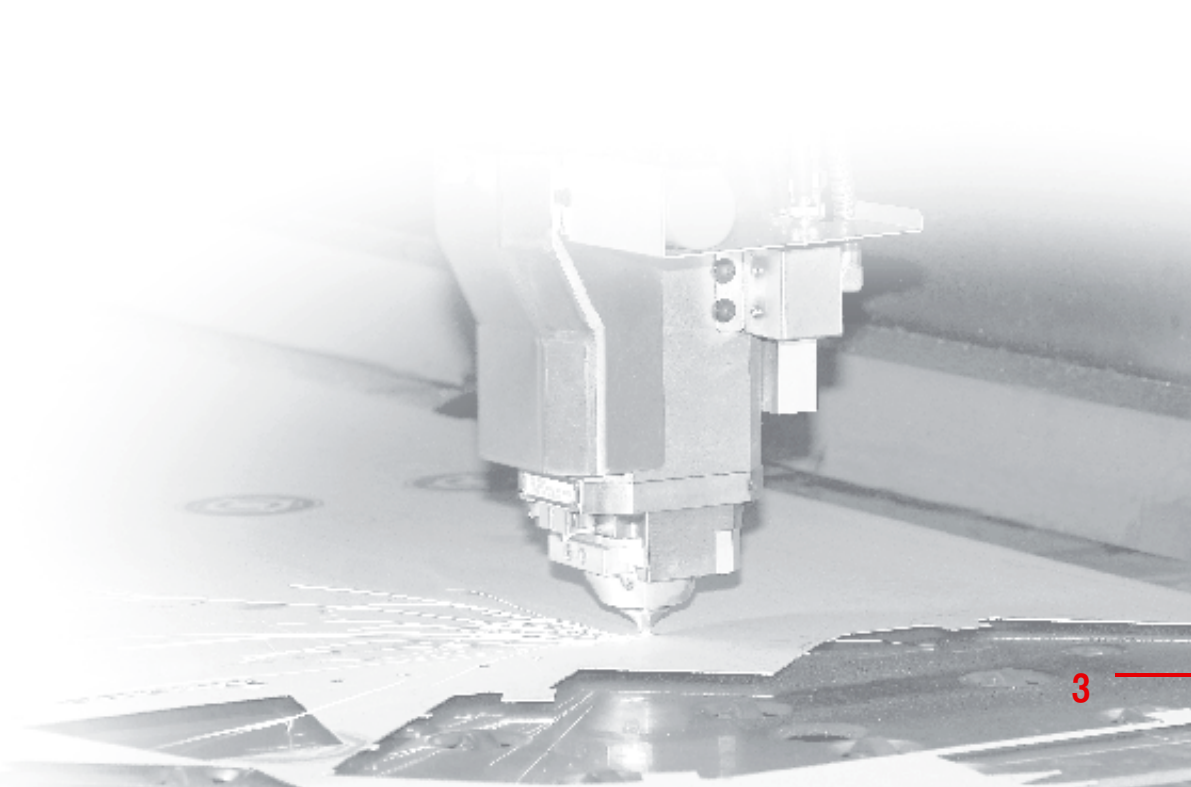




A perfect cut at every speed

The ALPHA IV-Series guarantees high precision cutting results with the principle of its hybrid design: The cutting materials are positioned on the table in the X direction while the laser head travels simultaneously on the Y-axis. This method combines both the advantages of the fixed optics in regard to high beam quality and flying optics in regard to faster cutting head movement and will convince you with its high speed, high precision results.

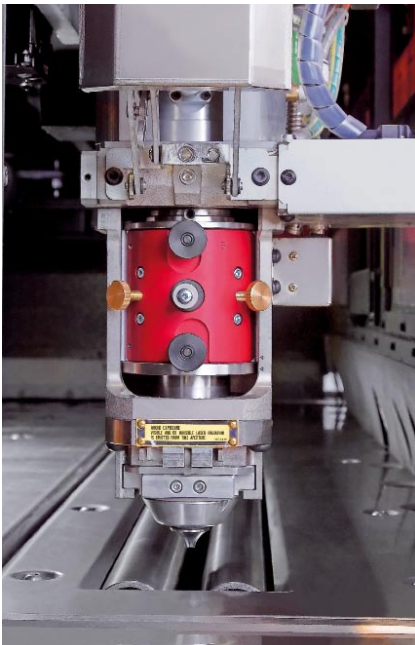
The new HS-2003 laser cutting head ensures a perfect cut. The cutting head is designed for better accessibility and is distinguished by a particularly high sample rate. In this way, an optimally stable cutting process is achieved even at high cutting speeds and thus an exact cut is always guaranteed.



High production quality and a constant process sequence are guaranteed

When cutting at high speeds, the new cutting head also works in a stable process under plasma and the adaptive optics (active cut) enable high cutting speeds with a stable cut. The fast changing cartridge style system integrated into the laser cutting head enables fast and easy replacement of the lens and cutting nozzle.

The ALPHA IV series ensures highly productive quality manufacturing. In the cutting area two stainless steel rollers ensure exact support of the material. A defined clearance between the supports guarantees that cutting gas and slag particles flow downwards without restriction. The stainless steel rollers are synchronized with the material movement. Scratching of the material is prevented in this way. Continuous cleaning of the rollers with dirt wipers additionally guarantees flawless processing at all times.

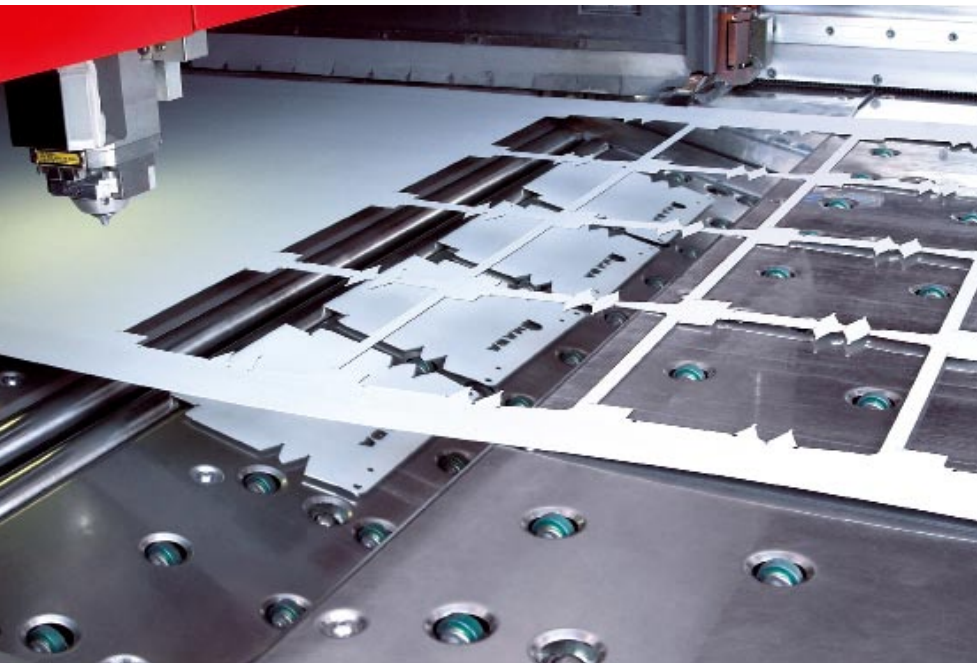


The ALPHA IV clearly surpasses the previous series in cutting speed: Complex contours can now be produced with the new cutting head in the shortest time with the same high quality.

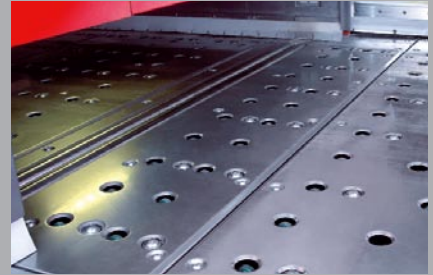
- Increased productivity
- Safe process sequences
- High traverse and cutting speeds
- Outstanding workpiece quality
- Reliable cutting processes
- Reduced setup times



Programmable table runner with plastic or steel rollers



Parts chute open



Parts chute closed

The improved table runner of the ALPHA IV is also designed for processing which is gentle to the material and does not cause scratches. Program commands are used to select between a plastic or steel roller support. The steel rollers are used for conventional cutting tasks, while the plastic rollers are used for surface sensitive cutting operations, giving material movement with very low friction. This process meets the highest standards of quality.

The program-controlled parts chute located under the laser head gives the advantage of uninterrupted production. The enlarged

chute can be used to unload parts from the production process without delay, allowing them to be moved to the next production stage. It is not necessary to wait until the end of a process, a continuous process sequence is thus guaranteed.

The extraction of cutting gases and material particles, which accrue solely within the Y-axis area by reason of the hybrid machine design, is also reliably solved by the ALPHA IV. The improved covering of the X-axis against flying sparks as well as the new beam protection cabinet ensure even safer operation of the system.

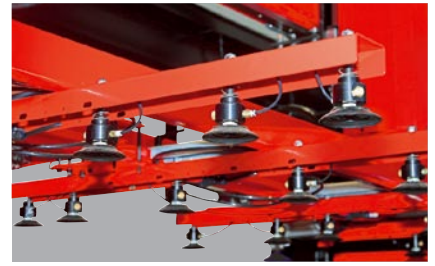
- Exact material support
- Low friction material movements
- Scratch-free processing
- Optimal workpiece quality for every material
- Continuous process sequence
- User-friendly due to easy, menu-driven operation



Automatic production with the highest flexibility

The ALPHA IV laser is fully automation ready. Using the AMADA modular loading and unloading systems, a partial or fully automatic production system can be easily configured to suit your production. Regardless of batch sizes, different programs and materials can be continuously processed with minimal operator input and with the highest flexibility. In the process, loading and unloading occurs simultaneously: While a sheet is still being cut, the next sheet is ready to be loaded.

- Increase in productivity
- Modular automation meeting demands: All Amada automation modules are retrofittable.
- Flexible production for both large and small series
- Simultaneous, continuous production



Suction cup used for the sheet metal pick-up



Sheet thickness measurement



Air jet for separating the sheets





Automatic Control

With the new AMNC control system the ALPHA IV series is equipped with a multimedia network control system, which offers an optimal solution for multiple Amada machine installations. Product data must only be stored in the database once and then all machines connected to the network will be available. The uniform user interface simplifies the transfer of programs and helps to reduce setup times when changing between different jobs.

The AMNC control system is designed for user friendliness and "thinks" together with the user: In accordance with the material data stored in the cutting database, the control system selects the optimal cutting parameters for piercing and automatic edge finishing independently.

- Data only needs to be generated once
- Database access for all machines linked to the network
- Faster, easier operational change for production processes using different machines.
- Automatic determination of the optimal cutting parameters
- Optimal user friendliness, a high degree of operating comfort

