

NEXT-GENERATION LASER TECHNOLOGY

Weldie Air Laser Welder

Powered by 3rd-Gen Locomotive-Grade 3D VC Phase-Change Cooling.
Designed for 24-Hour continuous industrial production without pausing.

NO WATER CHILLER REQUIRED | AIR-COOLED CORE

The Cold Truth

Why traditional air-cooled laser welders fail to meet heavy-duty industrial workshop standards.

The Air-Cooled Bottleneck

1. The Stop-and-GO Cycle

Traditional air-cooled units force you to stop for 6 seconds after every 2 minutes of welding to protect internal components.

This micro-downtime destroys operator workflow and bottlenecks high-volume production schedules.

2. Power Decay & Heat Build-up

Inferior 1D cooling fins allow extreme heat to build up at the diode chip.

This continuous thermal stress cooks the laser source, causing rapid power attenuation and visible decay in weld penetration depth over time.

Stop Pausing. Start Welding.

Weldie Air solves the air-cooling puzzle by implementing heavy industrial-grade hardware at its core.

Water-Chiller Performance

Achieves steady-state cooling without heavy, high-maintenance water circulation loops.

Continuous Throughput

Allows your fabricators to weld non-stop, maximizing daily workshop output.

Consistent Penetration

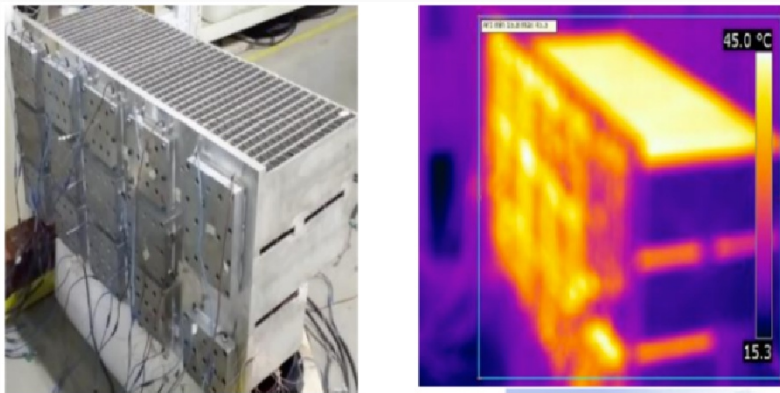
Maintains rated power output even during long-duration runs.



Locomotive-Grade Technology

How ViberLaser laser source adapted bullet-fast-train thermal management systems for handheld laser systems.

3D VC Composite Phase-Change



The Heart of a High-Speed Train

The thermal architecture inside Weldie Air is derived from the exact cooling platform used to cool power-hungry traction devices in high-speed rail systems.

Instead of traditional 1D heat pipes where thermal energy travels linearly, ViberLaser 3D Vapor Chamber (VC) dissipates heat instantaneously in three dimensions.

This results in unprecedented heat exchange efficiency across the entire surface of the laser block.

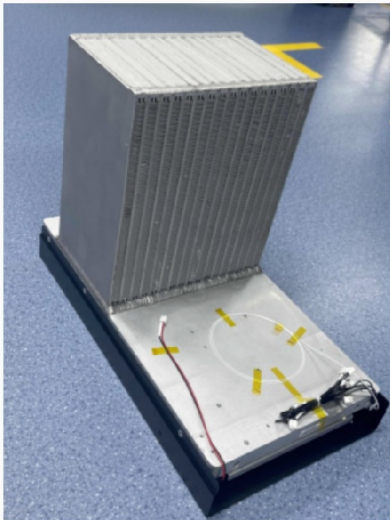
Technical Head-to-Head Comparison

Performance Metric	Weldie Air	Current Market Products
Cooling Platform	3D VC Composite Phase-Change	1D Heat Pipe Fin Radiator
Heat Dissipation Rate	~40 W/(m ² ·K)	~15 W/(m ² ·K)
Continuous Capacity	24-Hour Non-stop Operation	2 Min Work / 6 Sec Overheat Break
Operational Noise	75 dB (Whisper Quiet)	90 dB (Deafening)
Power Decay Threat	Extremely Low (Optimal Thermal Junction)	High (Constant heat-driven decay)

Uninterrupted Production Power

24H

CONTINUOUS DUTY CYCLE



Heavy-Duty Engineering for 100% Load

Traditional laser source manufacturers design for short bursts. Under intense summer heat or 3-shift production cycles, they quickly hit high-temperature alarm triggers.

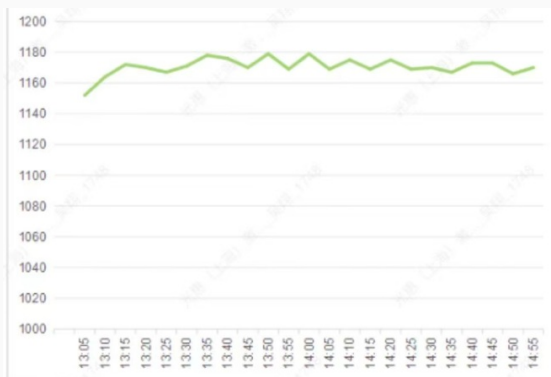
Weldie Air is built specifically to handle 100% continuous output for 24 hours straight.

Your operators will tire out long before the welder does, allowing you to easily handle large backlog demands.

Extreme Heat Dissipation

40 W/(m²·K)

DISSIPATION INDEX



Nearly 3x the Speed of Heat Transfer

Weldie Air achieves a thermal dissipation index of approximately 40 W/(m²·K) compared to only 15 W/(m²·K) from common heat sink structures.

Laser Junction Formula:

$$T_{\text{junction}} = T_{\text{ambient}} - 15^{\circ}\text{C}$$

This accelerated dissipation maintains the laser diode chip at a junction temperature 15°C lower than competing platforms, defending internal optics from thermal degradation.

Designed for Workshop Comfort & Performance

1.2x Power Boost

Massive thermal safety margin allows the unit to run safely at 120% power for 2-3 minutes, permitting deep penetration welding on thicker plates.

75 dB Whisper Quiet

Highly efficient cooling blocks require much less airflow from built-in fans, reducing operating noise from 90 dB down to a comfortable 75 dB.

4200W Low Draw

High photoelectric conversion limits peak draw to 4200W at a full 100% duty cycle, minimizing electrical operating costs to ~0.2 RMB(USD0.03) per watt.

Industry Certification

CE:

EN IEC 61000-6-2:2019, EN IEC 61000-6-4:2019, EN 60204-1:2018, EN ISO 12100:2010, EN ISO 11553-2:2008

RED:

EN 300 328 V2.2.2, EN 301 489-1 V2.2.3, EN 301 489-17 V3.2.4, EN IEC 62311:2020

LVD:

EN 60204-1:2018

IEC 60825-1:2014, EN 60825-1:2014+A11:2021

FCC

FDA

Ready to Upgrade Your Output?

Ask us about live video demonstrations or on-site welding efficiency testing.

Learn more at

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