

COMPANY PROFILE / 2026

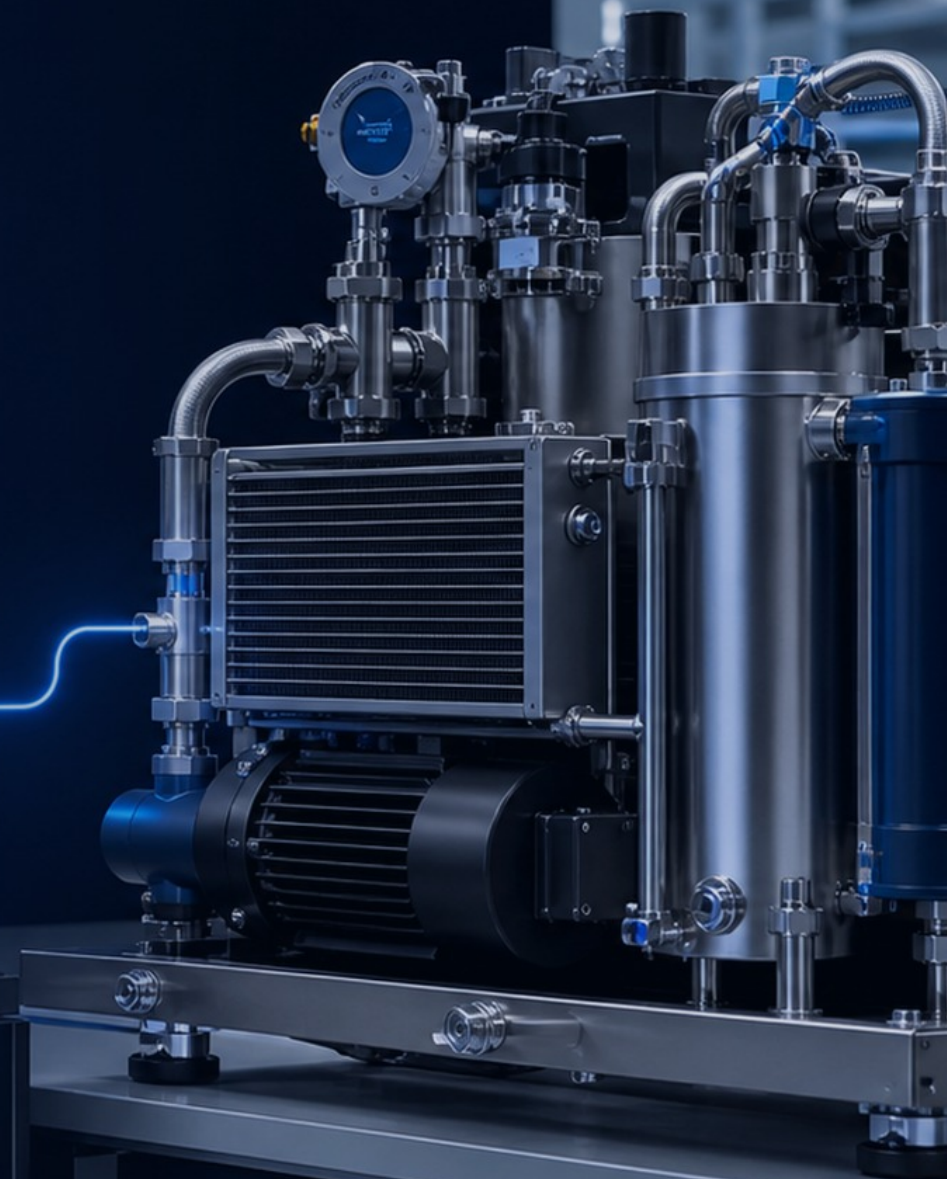
Guangzhou Arkmex Technology Co., Ltd.

ARKMEX TECHNOLOGY

Precision Thermal Control · Thermoelectric Cooling · Intelligent Laser Manufacturing

Built on high-energy laser R&D and manufacturing to deliver stable, precise, integration-ready industrial technology.

- www.arkmexthermal.com
- www.arkmex-tech.com



01 / COMPANY OVERVIEW

Engineering Expertise Connecting Thermal Management and Intelligent Manufacturing

OEM / ODM product and system solutions focused on thermal stability, structural integration and production efficiency in advanced equipment

A Reliable Partner in Precision Thermal Management and Industrial Equipment

ArkMex (Guangzhou) Technology Co., Ltd. focuses on precision thermal control, thermoelectric cooling and intelligent laser equipment. With engineering-led R&D at its core, our capabilities cover thermal design, mechanical structures, drive and control systems, prototype development, testing and validation, and production support for mass manufacturing.

Our focus goes beyond individual products: we ensure they operate reliably after integration, integrate quickly and can be supplied consistently.



01

Custom Precision Thermal Control Systems

System-level design based on target temperature, heat load, space and interface requirements.

02

Standard TEC Liquid / Air Cooling Modules

150W, 250W and 300W standard modules plus custom multi-fan TEC assemblies.

03

Laser Cutting & Automation Systems

Solutions for sheet, thick-plate and tube processing, with process and automation integration.

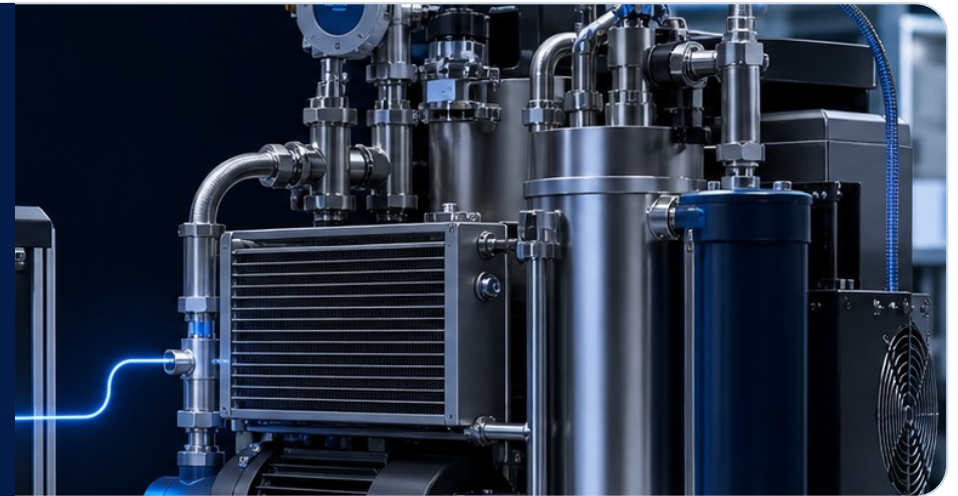
02 / R&D HERITAGE

From High-energy Lasers to Precision Thermal Management

Our technical roots are in high-energy laser R&D and manufacturing, building integrated expertise in optics, mechanics, electronics and thermal engineering

High-energy Systems Begin with Stable Thermal Boundaries

High-energy laser R&D requires optics, thermal management, electrical control and structures to remain stable in concert. This experience shaped Arkmex's engineering understanding of heat loads, cooling circuits, control feedback and reliability validation.

**01**

High-energy Lasers

Understand high heat flux and optical stability

**02**

Thermal Engineering

Identify heat sources, paths and boundary conditions

**03**

Precision Thermal Control

Build fluid circuits, cold sides and closed-loop control

**04**

Intelligent Equipment

Integrate mechanics, controls and process engineering

03 / BUSINESS PORTFOLIO

Three Business Segments

Built on collaborative R&D, spanning custom systems, standard modules and intelligent processing equipment

01

CUSTOM THERMAL CONTROL



Custom Precision Thermal Control Systems

System development around target temperature, heat load, space, fluid circuit, control strategy and mass-production requirements.

Thermal Design Closed-loop Integration

02

TEC COOLING MODULES



Standard TEC Liquid / Air Cooling Modules

TEC / Peltier-based standard and custom modules that are compact, refrigerant-free and configurable.

150-300W Air Cooling OEM

03

LASER & AUTOMATION



Laser Cutting & Automation Systems

Laser cutting for sheet, thick plate and tube, with process and automation solutions configured around production throughput.

Sheet Thick Plate Tube

04 / CUSTOM THERMAL CONTROL

Custom Precision Thermal Control Systems

Starting from heat load and target temperature, integrate fluid circuits, cold side, sensing, control, electrical and mechanical elements into a buildable solution

Configurable System Boundaries

- Cooling capacity and target temperature
- Cold-side metal structure, fluid circuit and interfaces
- Heat sink, airflow and fan count
- Temperature sensors and controller integration
- Input voltage, cables and OEM connectors
- Enclosure material, mounting and mass-production process

Designed Around the Equipment, Not a Fixed Model

Assess the most suitable thermal-management architecture based on the application, installation space, environmental conditions and production plan.

CLOSED-LOOP THERMAL CONTROL

SENSING · COMPUTING · ACTUATION · FEEDBACK



01 Requirements Definition

02 Thermal Design

03 Prototype Development

04 Testing & Optimization

05 Mass Production

05 / STANDARD TEC MODULES

Standard TEC Liquid / Air Cooling Modules

Standard website series designed for a 25°C target liquid-cooling temperature; actual performance depends on operating conditions and system configuration

150W / 250W / 300W

Rated Cooling Capacity

2-10 L/min

Liquid Flow Rate

±0.1°C

Temperature Control Accuracy

-10°C to 50°C

Ambient Temperature

150W

Single-fan TEC Module

- BL150-24-7 · DC24V / ≥7A
- 162.5×184×178mm · 3kg
- Compact spaces and localized cooling

250W

Dual-fan TEC Module

- BL250-12-20 · DC12V / ≥20A
- 276.6×149×148mm · 5kg
- Aesthetic medical and compact equipment integration

300W

Triple-fan TEC Module

- BL300-24-14 · DC24V / ≥14A
- 274.6×153×138mm · 5kg
- Higher hot-side heat dissipation requirements

CUSTOM

Custom Multi-fan Assembly

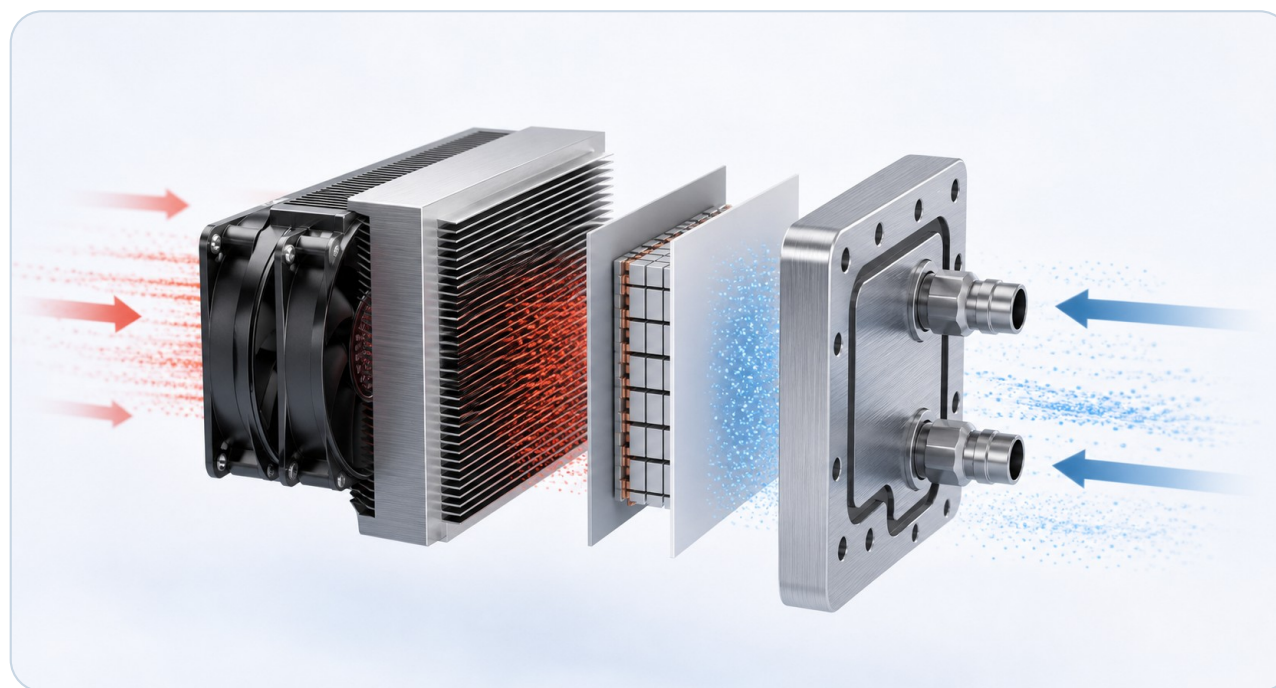
- DC12V / DC24V / Customizable
- Dimensions, cold side and interfaces confirmed per project
- Controller integration and mass production supported

Note: Standard website data also specifies 8mm OD ports. For target liquid temperatures below 25°C, cooling capacity must be reassessed against the actual liquid temperature differential.

06 / THERMOELECTRIC COOLING

TEC Cooling Principles & System Integration

Solid-state thermoelectric cooling uses electric current to transfer heat, combining efficient hot-side dissipation and cold-side interfaces for compact temperature control



Typical Closed-loop Fluid Circuit

- 01 **TEC Module / Cold Side**
Absorbs heat from target component or fluid
- 02 **Temperature Control Module**
Reads sensors and adjusts output
- 03 **Pump & Reservoir**
Maintains stable coolant circulation
- 04 **Tubing & Fittings**
Forms an integration-ready equipment loop

Cold-side Absorption > TEC Transfer > Hot-side Dissipation

Heat-side Design Sustains Real Cooling Output

Semiconductor

Medical

Aesthetic

Laboratory

Optics / Laser

New Energy

Key benefits: compact modular design, fast thermal response, no compressor, no refrigerant, and easy OEM / ODM integration.

07 / THERMAL APPLICATIONS

Typical Precision Thermal Management Applications

Integrated liquid-cooling, air-cooling and localized temperature-control solutions tailored to each equipment's heat load, stability and structural constraints

Define Thermal Boundaries Using Real Operating Conditions

The same rated capacity performs differently with changes in ambient conditions, cold-side structure and duty cycle. Project evaluation must consider the application, heat source, temperature target and installation conditions together.



01 Medical Diagnostic Equipment

Stable liquid cooling, sensor feedback and reliable cold-side integration

Liquid Cooling · Precision Control

02 Aesthetic & Medical Equipment

For IPL, DPL, OPT, laser hair removal and contact cooling

Compact Modules · Fast Response

03 Laboratory & Analytical Instruments

Sample cooling, localized control and low-vibration embedded integration

Sample Control · Low Maintenance

04 Semiconductor Test Equipment

Stable thermal boundaries for fixtures, chambers and test components

Test Control · Thermal Stability

05 Optical Communications & Industrial Lasers

Thermal stability for lasers, optical components and electronic systems

Opto-mechatronics & Thermal · Continuous Operation

06 New Energy & Industrial Equipment

For battery testing, control cabinets, inspection and compact industrial systems

Equipment Cooling · OEM Integration

08 / LASER & AUTOMATION

Laser Cutting & Automation Systems

Match machine structure, laser power, cutting head and control system to material, thickness, work area, output and service requirements

Equipment Configurations for Real Production Throughput

From sheet and thick-plate to tube processing, Arkmex provides production-oriented fiber laser cutting equipment, supported by control, loading / unloading, monitoring and maintenance solutions for sustained operation.

- Sheet Cutting
- High-power Thick-plate Cutting
- Tube Cutting
- Automatic Loading / Unloading & Process Integration



Stable Configuration · Clear Selection · Spare Parts Support · Remote Technical Service

Helping metal fabricators balance efficiency, precision and long-term operating cost

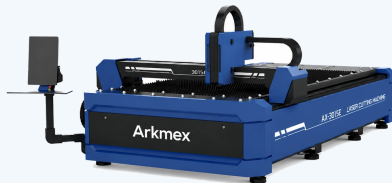
09 / MACHINE MATRIX

Laser Equipment Product Matrix

Representative models cover sheet, thick-plate and tube processing. Final configurations are evaluated against customer materials and production requirements

AX-3015E

Sheet Fiber Laser Cutting Machine



POWER 1.5-3kW

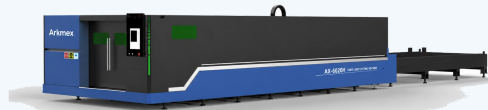
WORK AREA 3000×1500mm

THICKNESS 1-5mm

Thin sheet, kitchenware, cabinets, panels and custom metal parts

AX-6020H

High-power Fiber Laser Cutting Machine



POWER 6-20kW

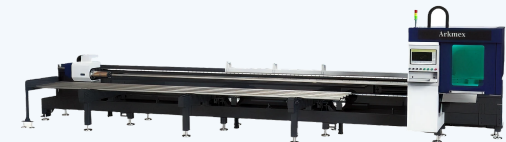
WORK AREA 4000×2000 / 6000×2000mm

THICKNESS 5-30mm

Thick plate, machinery, steel structures and volume production

AX-6000T

Tube Fiber Laser Cutting Machine



POWER 1.5-3kW

TUBE DIAMETER 10-350mm

THICKNESS 1-5mm

Tube, furniture frames, automotive parts and fitness equipment

Note: Website data is provided for model selection. Actual cutting capability depends on material quality, assist gas, process parameters, laser power and machine configuration.

10 / PROJECT DEFINITION

Custom Project Definition & Solution Inputs

Clear application, temperature, heat-load, structural and mass-production requirements enable faster development of verifiable, manufacturable solutions

Information Recommended from Customer

The closer the data reflects real operating conditions, the more accurate the evaluation

01 Application & Equipment

Equipment function and cooling target

02 Target Temperature

Temperature range and control accuracy

03 Heat Load

Peak, steady-state and heat distribution

04 Ambient Conditions

Ambient temperature, humidity and duty cycle

05 Space & Interfaces

Dimensions, mounting holes, tube diameter and orientation

06 Electrical & Control

Voltage, sensors and communication

07 Quantity & Schedule

Prototype quantity, annual demand and milestones

08 Reference Materials

Drawings, photos and existing solutions

ArkMex Solution Deliverables

Convert requirements into manufacturable, testable and deliverable engineering documents and prototypes

01

Recommended Thermal Architecture

TEC, fluid circuit, air cooling or a combined solution

02

Cold Side, Fluid Circuit & Heat-side Design

Cold plate, pump, reservoir, tubing, heat sink and airflow

03

Structural, Electrical & Control Interfaces

Dimensions, mounting, cables, sensors and control strategy

04

Prototype & Manufacturing Plan

BOM, processing and assembly route, and critical material confirmation

05

Test Validation & Mass-production Recommendations

Performance, stability, optimization records and delivery conditions

PROJECT GOAL

Validate Critical Boundaries at the Prototype Stage for Stable Mass Production

Confirm temperature, flow, pressure, noise, mounting, electrical and reliability requirements to reduce later interface changes and repeated prototyping.

11 / ENGINEERING DELIVERY

From Requirements Evaluation to Stable Delivery

Connect R&D, prototypes, testing and production to reduce customer integration risk



OEM / ODM Development Process

- | | | |
|----|-----------------------------------|---|
| 01 | Submit Requirements | Application, temperature, structure and quantity |
| 02 | Solution Evaluation | Thermal design and equipment configuration |
| 03 | Prototype Development | Structural, electrical and interface implementation |
| 04 | Testing & Optimization | Verify performance and stability |
| 05 | Mass Production | Process control and delivery support |

Key Application Industries

Semiconductor

Medical

Aesthetic

Optics / Laser

New Energy

Metalwork





BUILD WITH ARKMEX

Make High-energy Systems Work More Reliably

If you are developing equipment that requires precision thermal control, thermoelectric cooling or laser-processing automation, send us your application, target temperature, heat load, structural space, material and output requirements. We will evaluate the appropriate solution.

Precision Thermal Control · Thermoelectric Cooling · Laser Cutting & Automation

01 PRECISION Define system boundaries around real operating conditions

02 RELIABILITY Prioritize validation and long-term operation

03 COLLABORATION Progress from prototype development to stable mass production

Contact Arkmex

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PRECISION THERMAL WEBSITE

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LASER EQUIPMENT WEBSITE

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