

COMPANY PROFILE & PRODUCT CATALOG

SENSEFUTURE TECHNOLOGIES CO., .LTD.

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Company Profile

SenseFuture Technologies Co., Ltd., a national high-tech enterprise incubated by the NIM Shenzhen Innovation Institute, brings together PhD talents from Tsinghua and other top universities. With proprietary world-class temperature control technology achieving $\pm 0.001^{\circ}\text{C}$ accuracy, we provide innovative thermal solutions for precision optoelectronics, life sciences, semiconductor equipment, and quantum computing. Driven by market demand and technological excellence, we strive to deliver lasting value to our customers and society.

Brand Story

Optical time-frequency measurement is humanity's most precise technique—an optical atomic clock may drift less than one second over 10 billion years. Yet temperature remains a critical factor affecting the stability and accuracy of optoelectronic measurement.



Dr. Yang Lei, founder of SenseFuture, earned his Ph.D. in Precision Instruments at Tsinghua University under Prof. Zhang Jintao, Chief Scientist at China's National Institute of Metrology and a globally recognized expert in temperature metrology. His research on molecular laser spectroscopy revealed how profoundly temperature drift affects measurement accuracy, inspiring a simple conviction: ultimate temperature control for a bright future in precision optoelectronic measurement.

SenseFuture was founded on this conviction. Our independently developed $\pm 0.001^{\circ}\text{C}$ high-precision temperature control technology helps optoelectronic measurement reach its full potential. We have served over 2,000 leading high-tech companies, universities, and research institutes across dozens of countries, and look forward to working with you.



In 2026, SenseFuture was recognized as a demonstration enterprise of “new quality productive forces” in the inaugural “Qingteng Tech 300” program of the Greater Bay Area, and was featured in a special report on CCTV-13’s News Studio. This national media coverage affirmed the maturity of our core technologies and product readiness.

Company Culture



Business Mission

Striving for the Bright Future of Precision Optoelectronic Measurement.



Corporate Vision

To become a global provider of thermal management solutions for precision instruments and equipment.



Core Values

Sincerity · Integrity · Professionalism



Business Philosophy

Original aspiration shapes the future, Innovation creates value, Sharing brings people together.



Development Outlook

Pursue development at an appropriate pace while ensuring safety.



Talent View

Both integrity and competence: promote exceptionally.
Integrity without competence: train and employ.
Competence without integrity: employ only with restrictions.
Neither integrity nor competence: never employ.

Research Capablity

Company Certifications

Shenzhen Institute for Technology Innovation, NIM

Technology Transfer



- A new-model R&D institute established under a strategic partnership between the State Administration for Market Regulation and the Shenzhen Government, planned and built to high standards. Listed in Shenzhen's 14th Five-Year Plan as a Major Sci-Tech Innovation Project and Major Scientific Infrastructure.
- A key engine for Shenzhen's rise as a strategically important high-tech hub and for global scientific and industrial transformation.

Dr. Yang Lei

Company Founder

Ph.D. in Precision Instruments, Tsinghua University (2019), specializing in gas detection technology. He was the second contributor to an International Cooperation Project of the Ministry of Science and Technology and led a completed Guangdong provincial research project. He has published about 20 papers in leading journals such as *Physical Review Letters* and *Optics Express*, and has filed or been granted over 30 patents. He also serves as an external thesis advisor for Tsinghua University's MEM program and has been recognized as a Shenzhen Reserve-Level High-Level Talent.



Prof. Zhang Jintao

Expert Advisor

A globally recognized expert in temperature metrology, he is Chief Researcher at NIM, China, and Adjunct Doctoral Supervisor at Tsinghua University. His research on primary acoustic gas thermometry for the Boltzmann constant was adopted by CODATA for the redefinition of the kelvin. He has delivered invited lectures at the World Temperature Conference and the Royal Society's "Implementing the New Kelvin" conference. He has received the First Prize and Second Prize of the National Science and Technology Progress Award, and was named a "National Outstanding Professional and Technical Talent."



National High-Tech Enterprise



China Instrument Manufacturers Association



Shenzhen Optics & Optoelectronics Industry Association



Shenzhen Sensor and Intelligent Instrument Industry Association



Guangming Intelligent Manufacturing Industry Association



Utility Model Patents



Design Patents



Software Copyright



ISO 9001 Quality Management System Certification



FCC, CE & RoHS Export Compliance

2024

- CIOE (China International Optoelectronic Exposition)
- Laser Spectroscopy Technology Forum
- ...

2025

- Laser World of Photonics Munich
- Laser World of Photonics Shanghai
- CIOE (China International Optoelectronic Exposition)
- SEMI-e (Shenzhen International Semiconductor Exhibition)
- Laser Spectroscopy Technology Forum
- ...

2026

- Laser World of Photonics Shanghai
- CIOE (China International Optoelectronic Exposition)
- Taiwan International Laser Exhibition
- Analytica China
- DIC EXPO (International Display Technology Exhibition)
- CFCF (China Fiber Connect Forum)
- Symposium on Quantum Frontiers
- Laser Spectroscopy Technology Forum
- ...

2027

- Laser World of Photonics Shanghai
- BCEIA (Beijing Conference and Exhibition on Instrumental Analysis)
- CIOE (China International Optoelectronic Exposition)
- CMEF (China International Medical Equipment Fair)
- CACLP (China International In Vitro Diagnostics)
- ...





TEC103 Temperature Controller

Temperature Stability:
 $\pm 0.001^{\circ}\text{C}$



Features

Ultra-High Precision & Stability

- Temperature Measurement Sensitivity: 0.1mK
- Long-Term Drift (24h): < 1mK
- Temperature Stability: $\pm 0.001^{\circ}\text{C}$ (Meets stringent demands of semiconductor lasers)

Flexible Output & Control

- Selectable Output Modes: Bipolar / Unipolar
- Configurable Max Temperature Ramp Rate to protect loads

Sensor & Safety Protection

- Supports NTC sensors
- Overheat Protection & Power-off Parameter Memory

Compact Integrated Design

- Chip-level Integration for Easy PCB Design

Convenient Operation & Open Platform

- Screen Control Module for Direct Parameter Setting
- Comprehensive Serial Command Set & Open Platform for Secondary Development

Applications

TEC103 Temperature Controller is designed for precise temperature measurement and control of optical components, including lasers, detectors, and small sample chambers.



DFB/ICL Lasers



Detectors



Circuits



Sample Chambers

Specifications

Parameter	TEC103D	TEC103L	TEC103
Supported Sensor	NTC		
Temperature Measurement Range	-270-850 $^{\circ}\text{C}$		
Measurement Sensitivity	0.01 $^{\circ}\text{C}$	0.001 $^{\circ}\text{C}$	0.0001 $^{\circ}\text{C}$
Measurement Drift Caused by Ambient Temperature [1]	0.0001 $^{\circ}\text{C}/^{\circ}\text{C}$		
Best Temperature Control Stability (related to your tempcontrol fixture)	$\pm 0.1^{\circ}\text{C}$	$\pm 0.01^{\circ}\text{C}$	$\pm 0.001^{\circ}\text{C}$
Communication Interface	TTL serial / RS485 serial (supports both Modbus and ASCII protocols)		
Supply Voltage Range	7-24 V (short-term maximum voltage: 28 V)		
Output Polarity	Selectable bidirectional, unidirectional, or communication-specified output		
Number of Output Channels	1		
Maximum Allowable Output Voltage	$\pm 90\%$ V_{in} (configurable)		
Output Current Range	0- ± 3 A		
Output Current Limit	± 4 A		
Operating Ambient Temperature Range	-55-60 $^{\circ}\text{C}$		
Operating Ambient Humidity Range	0-98 %RH		
Cooling Requirement	No additional cooling required within the rated operating range		
PCB Over-Temperature Protection	Yes		
Power-Off Memory	Yes		
PID Parameters	Auto-tuning / user-adjustable		
Dimensions	46.3*38.8*8.9 mm (± 0.1 mm), excluding pins		
Weight	≈ 30 g		

[1] Measurement drift of the board was tested using the 10K B3950 temperature calculation model.

TEC107/115/107-4/115-4 Temperature Controller

Temperature Stability: $\pm 0.001^{\circ}\text{C}$
-4 series support 4-wire NTC/PT



Features

Ultra-High Precision & Stability

- Temperature Measurement Sensitivity: 0.1mK
- Long-Term Drift (24h): < 1mK
- Temperature Stability: $\pm 0.001^{\circ}\text{C}$ (Meets stringent demands of semiconductor lasers)

Flexible Output & Control

- Selectable Output Modes: Bipolar / Unipolar
- Configurable Max Temperature Ramp Rate to protect loads
- Solid-State Relay (SSR) Support for high-power loads

Sensor & Safety Protection

- Supports NTC, PT sensors (-4 series support 4-wire)
- Overheat Protection & Power-off Parameter Memory

Analog Output

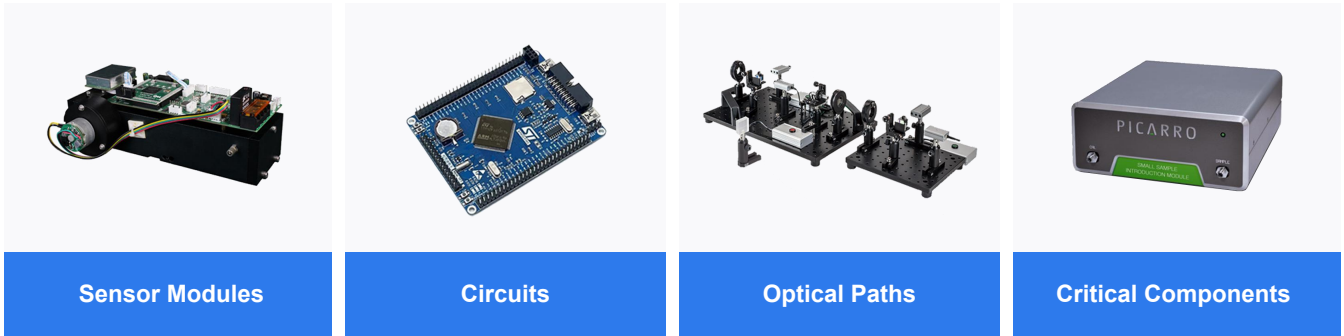
- 4-20mA Signal Output; 0-10V Signal Output

Convenient Operation & Open Platform

- Screen Control Module for Direct Parameter Setting
- Comprehensive Serial Command Set & Open Platform for Secondary Development

Applications

TEC107/115 Temperature Controller is designed for temperature measurement and control of large sample chambers.



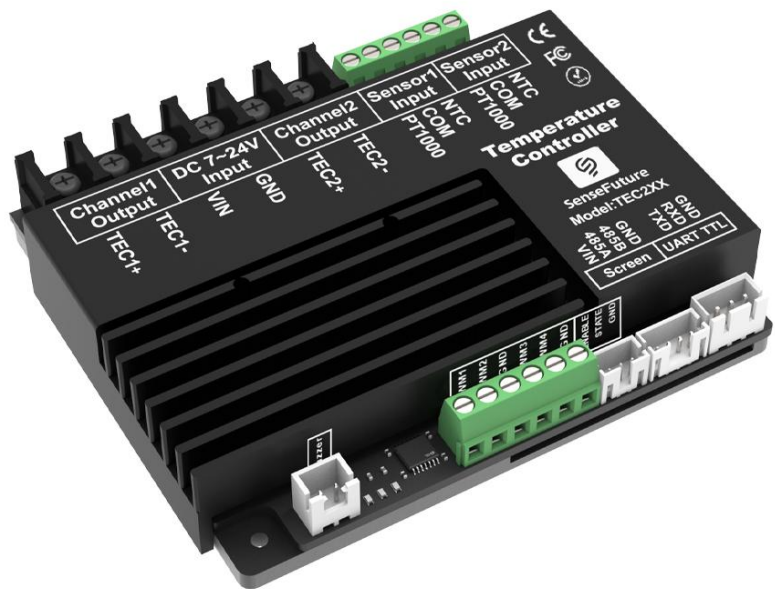
Specifications

Parameter	TEC107D TEC107D-4	TEC107L TEC107L-4	TEC107 TEC107-4	TEC115D TEC115D-4	TEC115L TEC115L-4	TEC115 TEC115-4
Supported sensors	NTC/PT1000/PT100 (-4 series support 4-wire NTC/PT)					
Measurable temperature range	-270-850 °C					
Measurement resolution	0.01 °C	0.001 °C	0.0001 °C	0.01 °C	0.001 °C	0.0001 °C
Measurement drift caused by ambient temperature[1]	0.0001 °C/°C					
Best temperature-control stability (related to your temp-control fixture)	±0.1 °C	±0.01 °C	±0.001 °C	±0.1 °C	±0.01 °C	±0.001 °C
Communication method	TTL / RS485 serial ports (Modbus and ASCII)					
Supply voltage range	7-24 V(short-term limit voltage: 28 V)					
Output polarity	Bidirectional, unidirectional, or communication-set selectable					
Output Voltage/Current	Supports 0-10 V and 4-20 mA signal output					
Number of output channels	1					
Maximum allowable output voltage	±90%Vin V (configurable)					
Output current range	0-±7 A		0-±15 A; 0-±80 A/SSR			
Output current limit	±10 A		±20 A			
Operating ambient temperature range	-55-60 °C					
Operating ambient humidity range	0-98 %RH					
Cooling requirement	When current exceeds 12 A, add cooling as needed.					
PCB over-temperature protection	Yes					
Power-off memory	Yes					
PID parameters	Auto-tuning / user adjustable					
Dimensions	94.3*79.5*18.3 mm(±0.2 mm)					
Weight	≈240g					

[1] Measurement drift of the board was tested using the 10K B3950 temperature calculation model.

TEC207/215 Temperature Controller

Temperature Stability:
±0.001°C



Features

Ultra-High Precision & Stability

- Temperature Measurement Sensitivity: 0.1mK
- Long-Term Drift (24h): < 1mK
- Temperature Stability: ±0.001°C (Meets stringent demands of semiconductor lasers)

Flexible Output & Control

- Selectable Output Modes: Bipolar / Unipolar
- Configurable Max Temperature Ramp Rate to protect loads
- Solid-State Relay (SSR) Support for high-power loads

Sensor & Safety Protection

- Supports NTC, PT sensors
- Overheat Protection & Power-off Parameter Memory

High-Power Output

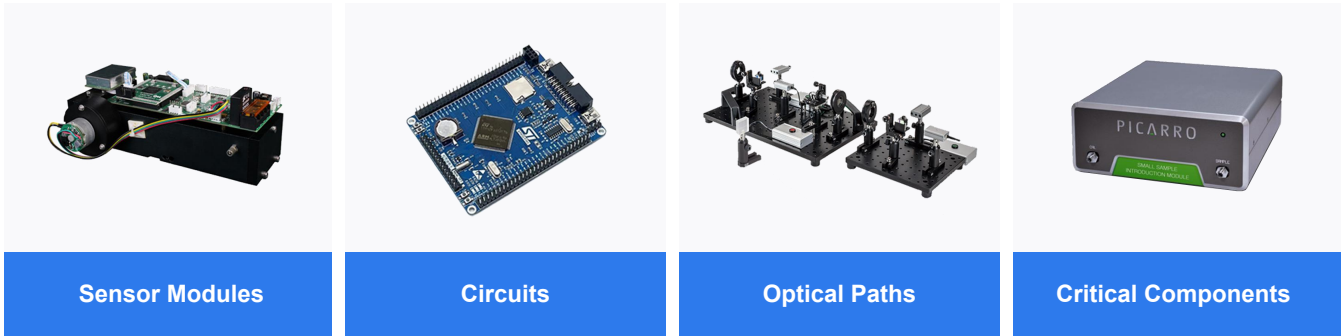
- Two channels combinable for up to 30A output

Convenient Operation & Open Platform

- Screen Control Module for Direct Parameter Setting
- Comprehensive Serial Command Set & Open Platform for Secondary Development

Applications

TEC207/215 Temperature Controller is designed for temperature measurement and control of large sample chambers.



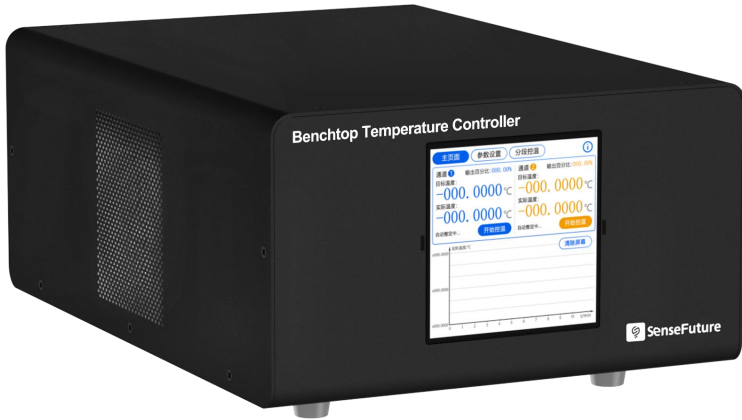
Specifications

Parameter	TEC207D	TEC207L	TEC207	TEC215D	TEC215L	TEC215
Supported sensors	NTC/PT1000/PT100					
Measurable temperature range	-270-850 °C					
Measurement resolution	0.01 °C	0.001 °C	0.0001 °C	0.01 °C	0.001 °C	0.0001 °C
Measurement drift caused by ambient temperature[1]	0.0001 °C/°C					
Best temperature-control stability (related to your temp-control fixture)	±0.1 °C	±0.01 °C	±0.001 °C	±0.1 °C	±0.01 °C	±0.001 °C
Communication method	TTL / RS485 serial ports (Modbus and ASCII)					
Supply voltage range	7-24 V(short-term limit voltage: 28 V)					
Output polarity	Bidirectional, unidirectional, or communication-set selectable					
Number of output channels	2					
Maximum allowable output voltage	±90%Vin V (configurable)					
Output current range	0-±7 A/channel			0-±15 A/channel 0-±80 A/SSR		
Output current limit	±10 A			±20 A		
Operating ambient temperature range	-55-60 °C					
Operating ambient humidity range	0-98 %RH					
Cooling requirement	When current exceeds 12 A, add cooling as needed.					
PCB over-temperature protection	Yes					
Power-off memory	Yes					
PID parameters	Auto-tuning / user adjustable					
Dimensions	94.3*79.5*18.3 mm(±0.2 mm)					
Weight	≈240 g					

^[1] Measurement drift of the board was tested using the 10K B3950 temperature calculation model.

HTC Benchtop Temperature Controller

Temperature Stability:
 $\pm 0.001^{\circ}\text{C}$



Features

Ultra-High Precision & Stability

- Temperature Measurement Sensitivity: 0.1mK
- Long-Term Drift (24h): < 1mK
- Temperature Stability: $\pm 0.001^{\circ}\text{C}$ (Meets stringent demands of semiconductor lasers)

Flexible Control

- Configurable Max Temperature Ramp Rate
- Solid-State Relay (SSR) Support for High-Power Loads

High-Power Output

- Single Channel (Max): 24V/15A
- Dual Channels Combined: 24V/30A

Sensor Compatibility

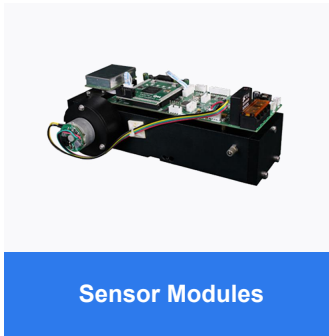
- Supports NTC, MF, PT

Convenient Operation

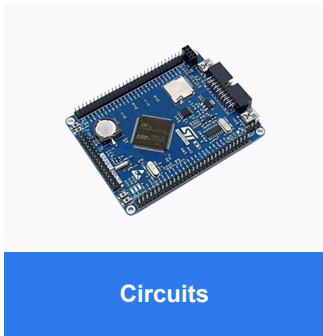
- Integrated Display & Control
- Open Platform

Applications

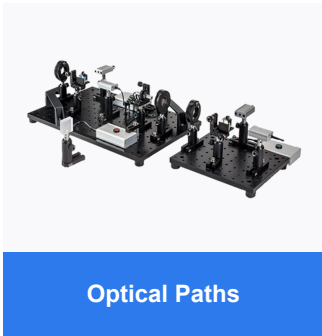
HTC Benchtop Temperature Controller is primarily designed for high-precision temperature measurement and control across various applications.



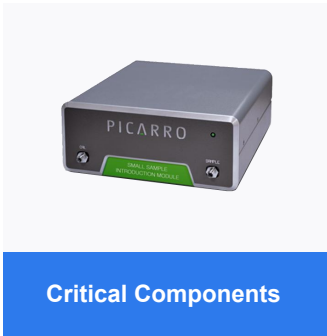
Sensor Modules



Circuits



Optical Paths



Critical Components

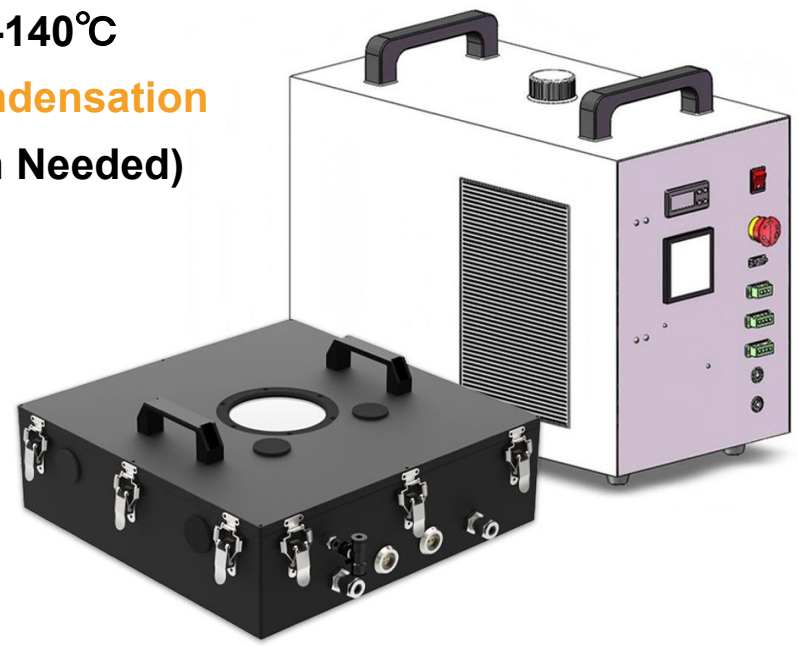
Specifications

Parameter	HTC115L	HTC115	HTC207L	HTC207	HTC215L	HTC215
Supported sensors	NTC/MF501/PT1000/PT100					
Measurable temperature range	-270-850 °C					
Measurement resolution	0.001 °C	0.0001 °C	0.001 °C	0.0001 °C	0.001 °C	0.0001 °C
Measurement drift caused by ambient temperature ^[1]	0.0001 °C/°C					
Best temperature-control stability (related to your temperature-control fixture)	±0.01 °C	±0.001 °C	±0.01 °C	±0.001 °C	±0.01 °C	±0.001 °C
Communication method	Default: RS485 serial port, supporting both Modbus and ASCII communication protocols.					
Supply voltage range	170-264 V AC					
Output polarity	Bidirectional, unidirectional, or communication-specified output					
Number of output channels	1			2		
Maximum allowable output voltage	±90% Vin (settable)					
Output current range	0-±15 A/channel 0-±80 A/SSR		0-±7 A/channel		0-±15 A/channel 0-±80 A/SSR	
Output current limit	±20 A		±10 A		±20 A	
Operating ambient temperature range	-55-60 °C					
Operating ambient humidity range	0-98 %RH					
Cooling requirement	No additional cooling is required within the rated operating range					
PCB over-temperature protection	Yes					
Power-off memory	Yes					
PID parameters	Auto-tuning / user adjustable					
Dimensions	230*320*142 mm(±2 mm), including feet.					
Weight	≈3 kg					

^[1] Measurement drift of the board was tested using the 10K B3950 temperature calculation model.

TCP Thermal Test Box

- » Ramp Rate: 0-40°C/min
- » Temp. Range: -40-140°C
- » Patented Anti-Condensation (No CDA / Vacuum Needed)



Features

- Fast Ramping & Improved Efficiency**

 - Ramp rate up to 40°C/min
- Precise & Reliable Temperature Control**

 - Temperature stability up to ±0.05°C / ±0.005°C
 - Temperature range: -40°C-140°C
- Reliable Connections for Harsh Environments**

 - Aviation connectors for main unit, load, and sensors; dustproof and waterproof for high reliability
- Efficient Heat Dissipation & Integrated Water Cooling**

 - Water-cooled heat dissipation
 - Integrated WTC industrial water chiller
- Flexible Customization for Diverse Needs**

 - Customizable dimensions
 - Patented anti-condensation technology requiring no dry air (CDA) or vacuum
- Multi-Layer Safety Protection**

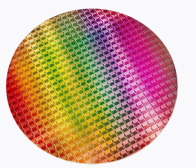
 - Overcurrent, overvoltage, and overtemperature protection

Applications

TEC Thermal Test Box enables rapid high/low temperature testing for microdisplays, LEDs, wafers, chips, detectors, sensors, and photomultiplier tubes (PMTs).



Microdisplay



Wafer



Detector



Photomultiplier Tube

Specifications

Parameter	TCP
Temp. Control Platform Size	55*55 mm(Customizable)
Built-in Sensor	PT1000
Dimensions	370*370*120 mm (excluding feet)
Weight	≈13 kg

Parameter	WTC115L	WTC115	WTC215L	WTC215
Optimal Temp. Stability @30°C (Measured using the TCP)	±0.05 °C	±0.005 °C	±0.05 °C	±0.005 °C
Ramp Rate	0-30 °C/min			
Temperature Range	-40-140 °C			
Output Channels	1		2	
Temperature Cycling	Display-programmable			
Communication	RS485 (Modbus and ASCII protocols)			
Pump Power	30 W			
Tank Capacity	6 L			
Operating Temperature	-10-50 °C			
Operating Humidity	0-98 %RH, non-condensing			
Atmospheric Pressure	80-110 Kpa			
Dimensions	610*320*430 mm (excluding feet)			
Weight	≈27 kg			

TEB Temperature Stability Chamber

Temperature Stability:
±0.005°C



Features

- Easy to use; plug-and-play; PC connectivity for display software
- Foam thermal box with user-customizable cutouts (cutting template included)
- High control accuracy; typical stability ±0.005°C
- Wide temperature setting range

Applications

TEB Temperature stability Chamber provides research and corporate clients with a highly precise, stable temperature environment (±0.005°C) during product R&D. It accommodates temperature-sensitive optical elements, circuit boards, sample chambers, sensors, or even entire instruments, enabling improved experimental metrics and precise analysis of temperature effects on components.



Standard Resistors



Sample Chambers



Optical Paths



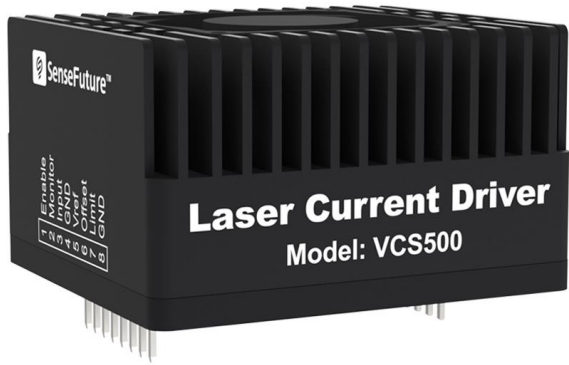
Critical Components

Specifications

Parameter	Minimum	Typical	Maximum
24-hour Temperature Control Stability	/	±0.005 °C@30°C	±0.01 °C
Temperature Setting Range	13-60 °C at an ambient temperature of 25°C		
Internal Temperature Gradient	0.15 °C		
Internal Air Temperature Stability (ambient temperature 25±2°C)	±0.02 °C@30°C		
Instrument Power Requirements	AC 220 V		
Instrument Power Consumption	<102 W		
Ambient Temperature Range	-15 °C	Room temperature	60 °C
Ambient Humidity Range	0 %RH	(In high humidity environments during cooling, condensation may form on the internal cooling fins)	98 %RH
Overtemperature Protection	Yes		
Power Loss Memory	Yes		
PID Parameters	User Adjustable		
External Dimensions	560*460*390 mm		
Internal Dimensions	500*380*340 mm Dimensions with fan protruding from the front panel: 90*90*53mm		
Weight	≈7 kg		
Enclosure Material	High-quality expanded polypropylene (EPP) foam		

VCS Laser Current Driver

Current Noise (RMS):
<0.4μA



Features

Ultra-Low Noise & High Stability

- Current Noise: RMS < 0.4 μA
- Ultra-stable output current bias, supporting positive current modulation

Remote Control & Monitoring

- Supports remote output enable control
- Supports remote output current monitoring

Wide Output Voltage & Current Range

- Output Voltage: Up to 23 V; Output Current: Up to 1 A
- Capable of driving almost all low-power lasers (e.g., DFB, VCSEL, ICL, QCL)

Laser Safety Protection

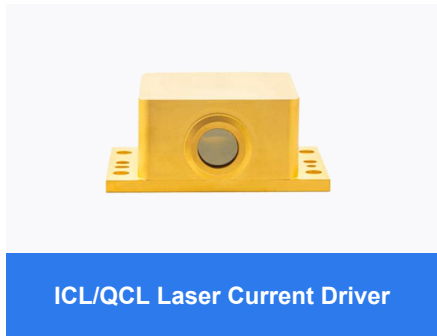
- Max output current limitable to 60% of nominal maximum via potentiometer

Applications

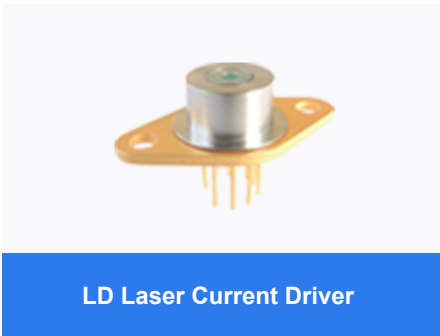
VCS Laser Current Driver is primarily designed for low-noise current driving of lasers, with the laser drive current adjustable via input voltage.



DFB Laser Current Driver



ICL/QCL Laser Current Driver



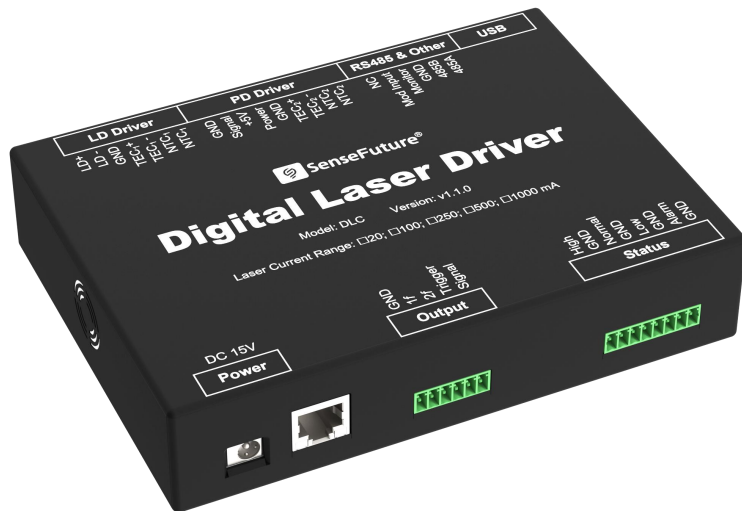
LD Laser Current Driver

Specifications

Parameter	VCS20	VCS100	VCS250	VCS500	VCS1000
Current-to-Voltage Ratio	4 mA/V	20 mA/V	50 mA/V	100 mA/V	200 mA/V
Maximum Output Current	20 mA	100 mA	250 mA	500 mA	1000 mA
Supply Voltage	12-24 V				
Output Voltage(Compliance Voltage)	Supply Voltage-1 V				
RMS Current Noise	< 0.4 μA	< 2 μA	< 5 μA	< 20 μA	< 40 μA
Temperature Coefficient	<50 ppm/°C				
Leakage Current	2 mA				
Modulation Rise/Fall Time	800/600 ns				
Modulation Depth	90% @1MHz				
Bandwidth (3 dB)	2 MHz				
Modulation Input Voltage Range	0-5 V				
Input Pin Impedance	10 MΩ				
Remote Enable Voltage Input	Output Enable: High Level (>2 V, I>5 mA) Output Disable: Low Level (<2 V)				
Current Monitor Coefficient	250 V/A	50 V/A	20 V/A	10 V/A	5 V/A
Operating Ambient Temperature Range	-20-60 °C				-20-35 °C
Operating Ambient Humidity Range	0-98 %RH				
Cooling Requirements	No additional cooling required within the rated operating range				
Dimensions	47.5*42.8*19.5 mm(±0.1 mm)		47.5*42.8*32.2 mm(±0.1 mm)		
Weight	≈47 g			≈72 g	

DLC Digital Laser Driver

Multi-Waveform Modulation & Demodulation µA-Level Current Noise



Features

Flexible Configuration & Broad Compatibility

- Flexibly pairs with temperature control modules and current drivers
- Compatible with all low-power lasers (VCSEL, DBR, DFB, LD, ICL, QCL, etc.)

Ultra-Low Noise Current Output

- µA-level current noise
- Output Voltage / Current: 23V / 1A
- Supports 2 MHz current modulation

Ultra-High Temperature Control Accuracy

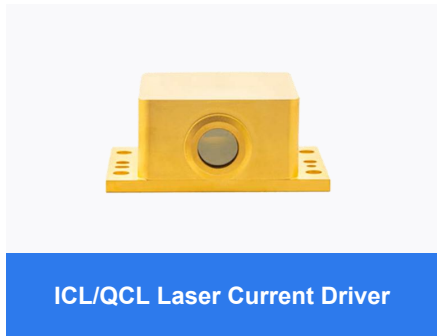
- Temperature Control Accuracy: ±0.001°C

Applications

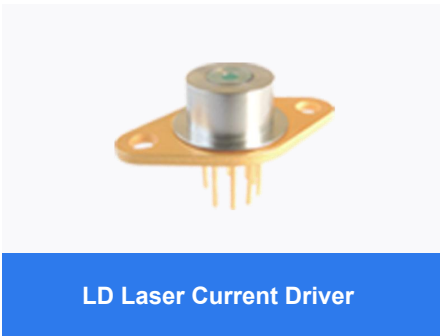
DLC Digital Laser Driver Board is designed to drive all lasers up to 1000 mA, including VCSEL, DBR, DFB, LD, ICL, and QCL. The laser drive current is adjustable via input voltage.



DFB Laser Current Driver



ICL/QCL Laser Current Driver



LD Laser Current Driver

Specifications

Parameter	DLC
Waveform Type	Triangle wave scan + sine modulation wave
Modulation Frequency Range	10 kHz (currently fixed; user-configurable in a future firmware upgrade)
Detector Input Voltage Range	-5-5 V
Harmonic Signal Extraction	1f and 2f harmonic signals, with hardware output support
Phase Adjustment Range / Resolution	0-360°
Communication Interface	9600 bps, RS-485, half-duplex, Modbus RTU
Supply Voltage Vin	15 V, 24 V (optional), DC-060 connector
Maximum Output Current	20 mA, 100 mA, 250 mA, 500 mA, 1000 mA (Matched with VCS20, VCS100, VCS250, VCS500 and VCS1000 current driver modules respectively)
Maximum Output Voltage(Compliance Voltage)	Supply voltage-5 V
Current Noise (RMS)	<0.4 µA, <2 µA, <5 µA, <20 µA, <40 µA (Matched with VCS20, VCS100, VCS250, VCS500 and VCS1000 current driver modules respectively)
Rise/Fall Time (Tuning)	800 / 500ns
Modulation Depth	90% @500kHz
Bandwidth	2MHz
Modulation Input Voltage Range	0-5V
Input Pin Impedance	> 1MΩ
Current Temperature Drift	-50ppm/°C
Maximum TEC Output Current/Voltage	±3A/Vin × 90%V
Temperature-Control Stability	±0.001°C
Operating Ambient Temperature Range	-15 to 60 °C (additional heat dissipation is required above 250 mA)
Operating Ambient Humidity Range	0-98 %RH
Dimensions	165.0*120.0*42.0 mm
Weight	≈250 g



Features

- System Integration & Compatibility**
- Compatible with our TEC series temperature controllers; pairs with mechanical enclosures and power supplies to form a complete temperature control system
- Hardware & Display Core**
- Powered by T5L0 chip running DGUS II system; ultra-thin wired controller
 - 4.0-inch IPS display, 480 × 480 resolution, 262K colors, wide viewing angle
 - Fully laminated capacitive touchscreen with triple-proof (conformal coating) process

Specifications

SCR touch display serves as a display terminal for our TEC series temperature controllers, supporting actual temperature readout, target temperature setting, automatic PID parameter setting, parameter configuration, multi-stage temperature control, and temperature calibration.

Parameter	SCR
Resolution	480 × 480
Color Depth	18-bit (6R6G6B)
Active Display Area	71.9 × 68.0 mm
Display Type	IPS TFT LCD
Touch Screen Type	Capacitive Touch Panel
Touch Screen Structure	G+G (Glass-to-Glass) with tempered glass cover lens
Operating Voltage	6-36 VDC
Operating Current	190 mA (VCC = 12V, max brightness) 80 mA (VCC = 12V, backlight off)
Operating Temperature	-10-+60 °C (12V @ 60%RH)
Operating Humidity	10-90 %RH (typical 60%RH)



Features

- Large temperature differential
- Long lifespan
- Stable performance
- Rapid cooling

Specifications

Parameter		Rated Voltage	Rated Current	Dimensions	Max. Temperature Resistance
Standard Model	TEC1-12703	12 V	3 A	40*40*4.4 mm	110 °C
	TEC1-12706	12 V	6 A	40*40*3.8 mm	
	TEC1-12708	12 V	8.2 A	40*40*3.35 mm	
	TEC1-19912	24.08 V	12 A	40*40*3.0 mm	
	TEC1-24001	29.04 V	1.5 A	40*40*5.3 mm	
Upgraded Model	TEC1-12703A	12 V	3 A	40*40*4.4 mm	230 °C
	TEC1-12706A	12 V	6 A	40*40*3.8 mm	
	TEC1-12708A	12 V	8.2 A	40*40*3.35 mm	
	TEC1-19912A	24.08 V	12 A	40*40*3.0 mm	
	TEC1-24001A	29.04 V	1.5 A	40*40*5.3 mm	



Features

- Precise Temperature Control
- DC Power Supply
- Compact Design
- High Reliability
- Meets Environmental Standards

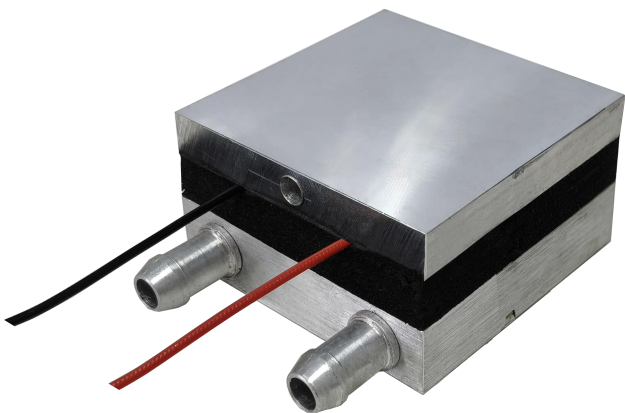
Applications

- Instrumentation, laser equipment, food preservation and refrigeration, medical devices, and industrial instruments.

Specifications

TEA meets the cooling requirements of most applications in medical, analytical, industrial, and telecommunications fields.

Parameter	TEA100
Cooling Power Qcmax	100 W
Running Current	6.5 A
Startup Current	7.8 A
Nominal Voltage	24 V
Max Voltage	31 V
Power Input	160 W
Operating Temperature	-18-80 °C
Weight	≈2.5 kg
MTBF	10,000 fans – hrs
Performance Tolerance	±5 %



Features

Ready to Use, Simple & Efficient

- Pairs with our controllers; ready to use upon power-up

Wide Range, Broad Use

- -40°C to 120°C, covering most lab and industrial scenarios

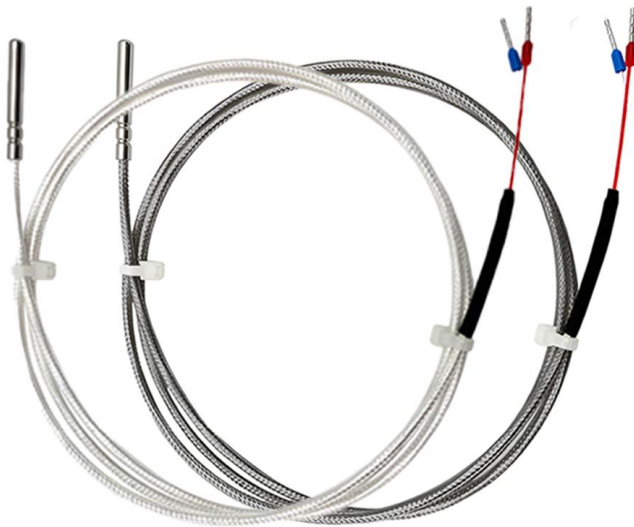
Safe & Reliable

- Low-voltage design for reduced shock risk
- Water-cooling system prevents overheating

Specifications (Some parameters measured with our TEC215 temperature controller and matching sensors.)

Parameter	TEA555
24h Temp. Control Stability	±0.005 @30°C
Temperature Setpoint Range	-40-120 °C@25°C ambient)
Cooling Water Temperature	15-28 °C@25°C ambient)
Temp. Gradient on Stage Surface	0.1 °C
Stage Surface Stability (@25±2°C ambient)	±0.01 @30°C±30°C (with thermal grease and insulation cotton)
Operating Ambient Temp. Range	-55-85 °C
Operating Ambient Humidity Range	0-98 %RH (Condensation may form on stage surface in high humidity environments during cooling)
Sensor Mounting Hole	φ5 mm, D30 mm
Overall Dimensions	55*55*32 mm (Stage Surface Dimensions:55*55 mm) Fitting Protrusion: 9.2*25 mm (Φ8*18 mm barbed fitting)
Material	Aluminum alloy
Weight	≈300 g

Note: During temperature cycling, the heating and cooling rate must be limited to 30°C/min.



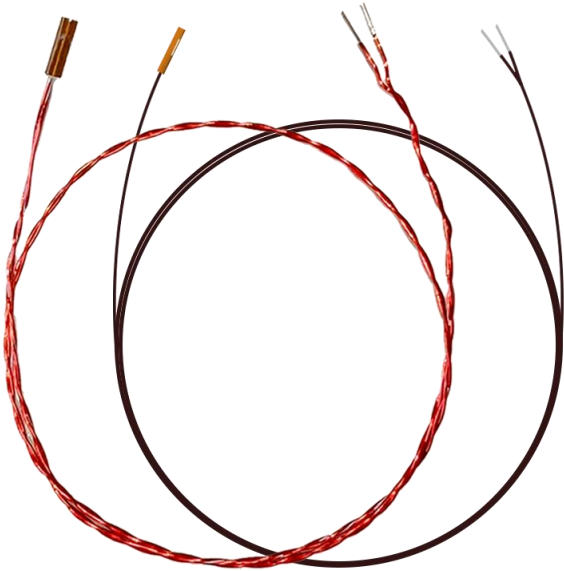
Features

- Long-Term Stability
- High Accuracy
- Fast Response
- Vibration Resistant

Specifications

Parameter	PT1000--200-200-2L	PT1000-0-600-2L
Accuracy Class	Class A	
Tolerance	$\pm(0.10+0.002\times t)^{\circ}\text{C}$	$\pm(0.15+0.002\times t)^{\circ}\text{C}$
Temperature Measurement Range	-200-+200 °C	0-+600 °C
Cable Length	1000 mm (Customizable)	
Probe Dimensions	Φ4x30 mm	
Wiring Configuration	2-wire	
Response Time	Water@0.5m/s=0.5s; Air@2m/s=10.0s	
Temperature Resistance	Probe: up to 600°C Sensor cable: long-term operation up to 500°C High-temperature customization available	

For PT1000 temperature sensors with [ultra-fine probe diameters](#) (Φ1 mm, 2 mm, etc.), [4-wire configuration](#), or [higher accuracy](#) (Class B, 1/3B, 1/10B, etc.), please visit our website or contact us.



Annual Drift:
0.1 / 0.01 / 0.001°C

Features

- Micro Ultra-Fine Probe
- Fast Thermal Response
- Wide Range, High Accuracy
- High Stability

Specifications

Parameter	0.6mm 10K B3977 1%	1.0mm 2.252K B3935 1%
Nominal Zero Power Resistance R ₂₅	10±1% KΩ	2.252±1% KΩ
B _{25/50} Value	3977±1% K	3935±1% K
Dissipation Constant	≥0.5 mW/°C	
Thermal Time Constant	≤6.5 S	
Temperature Measurement Range	-25-+125 °C	
Operating Temperature Range	-40-+300 °C	
Insulation Resistance	≥10 MΩ	
Probe Diameter	Φ0.6 mm	Φ1.0 mm



Features

Core Performance

- Latest-generation MOSFETs; stable and reliable
- Ultra-low on-resistance & leakage current

Protection

- Input/output transient overvoltage protection

Structural Design

- Copper electrodes: higher current capacity, larger contact area
- Seamless DBC substrate soldering: high thermal conductivity, excellent specific heat capacity

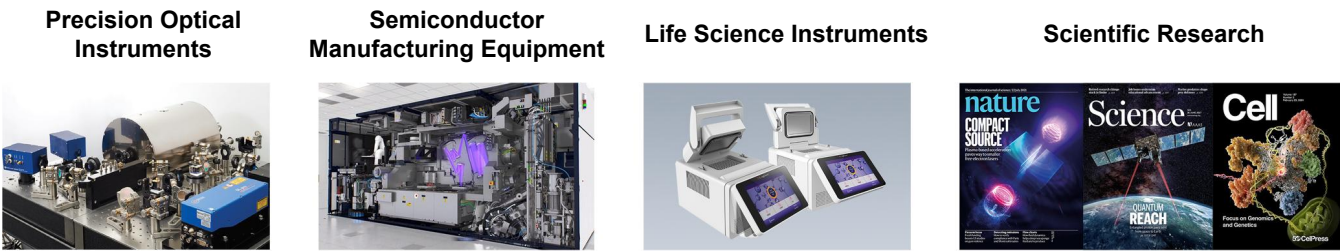
Specifications

Parameter	RLDCR24V50A	RLDCR24V100A	RLDCR60V40A
Load Voltage (Inductive)	0-24 V		0-60 V
Load Current	50 A	100 A	40 A
Control Voltage	4-32 VDC		
Peak Voltage	60 V		160 V
Control Current	17-23 mA		
On State Resistance	1 ÷ Load Current (Ω)		
Off State Leakage Current	≤0.1 mA		
Turn On Time / Turn Off Time	0.08 ms / 0.2 ms		
Isolation Voltage (Inpu to Output)	≥4000 V		
Insulation Voltage (Input/Output to Ground)	≥2500 V		
Operating Temperature	-40-+80 °C		
Dimensions	58*44*30 mm		
Cooling method (I=actual current, I _{rated} =rated current)	No heatsink: I < 25% I _{rated} Heatsink: 25% I _{rated} ≤ I < 50% I _{rated} Heatsink + fan: I ≥ 50% I _{rated}		

- Professional Team
- Customized Solutions
- Efficient Service

- We offer comprehensive custom temperature control system services—from design to implementation—delivering efficient, reliable solutions tailored to your needs.
- For inquiries, please contact us at sales@sensefuture.com / rd@sensefuture.com. We are committed to providing you with the highest quality service.

Applications



Service Advantages

Professional Design & Development

- Our engineering team designs optimal temperature control systems tailored to your specific needs. Supports ultra-wide temperature ranges for precise control in various environments.

Flexible Customization

- Whether for laboratories, industrial production, or special environments, we deliver tailored solutions. Customizable functions include remote monitoring, automated control, data logging, and more.

High-Quality Assurance

- We use internationally leading temperature control technology and premium materials, with multiple rounds of testing to ensure system stability and durability. All products undergo strict quality inspection and comply with international standards.

One-Stop Service

- From requirements analysis and solution design to installation and commissioning, we provide full technical support and service. Our after-sales team is always ready to ensure long-term stable operation.

Customization Process



**Original aspiration shapes the future,
Innovation creates value,
Sharing brings people together.**

**Looking Forward to Achieving Win-win
Cooperation with You!**

