SenseFuture

Water-Cooled

Heating and Cooling Stage

PRODUCT MANUAL

Striving for the Bright Future of Precision Optoelectronic Measurement.

SenseFuture Technologies Co., Ltd.

01 Product Functions

The water-cooled heating and cooling stage provides customers with a stable high-and-low-temperature test platform during product R&D. Temperature-sensitive small samples – such as crystals, optical components, PCBs, and sensors – can be placed on the stage (with optional thermal conductive pads or grease as needed). This facilitates improved experimental performance and enables thorough analysis of temperature-induced effects on component behavior.

Water-Cooled Heating and Cooling Stage Product Image (product functions may be iterated)

02 Product Features

- Easy installation – simply connect the wiring, plug in, and it is ready for use; optional PC software support for convenient operation.
- Wide temperature range: –40℃ to +120℃, suitable for most laboratory and industrial applications.
- Compact and portable – 55×55 mm stage, weighing only 300 g.
- Safe operation – low-voltage design with water-circulation cooling system to prevent overheating, ensuring operator safety.
- Customization available – broader temperature ranges and different stage sizes can be provided upon request.

03 Specifications

(Measured with our TEC215 temperature controller and matching sensors)

Parameter	TEA5555
24h Temp. Control Stability	±0.005 @30℃
Temperature Setpoint Range	-40~120℃ @25℃ ambient)
Cooling Water Temperature	15~28℃ @25℃ ambient)
Temp. Gradient on Stage Surface	0.1℃
Stage Surface Stability (@25±2℃ ambient)	±0.01@30℃±30℃ (with thermal grease and insulation cotton)

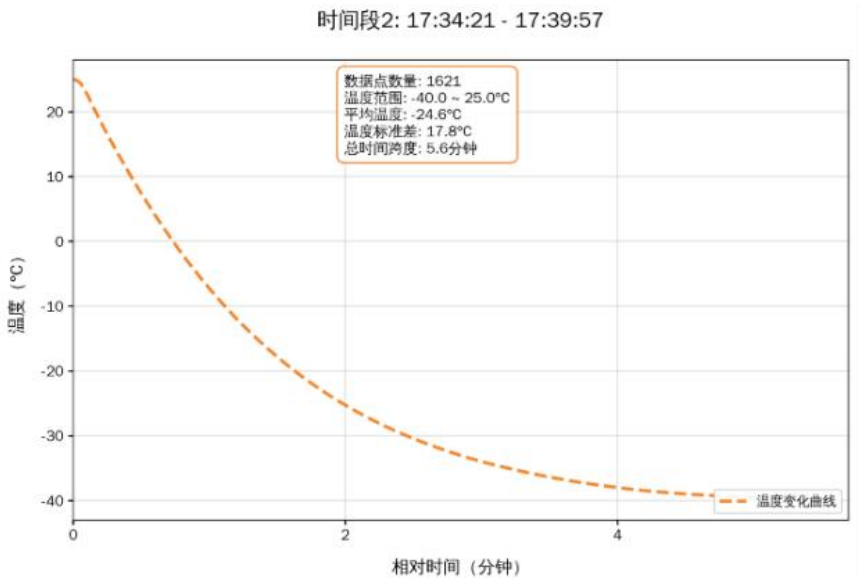
Power Supply Requirement	DC 24V
Power Consumption	<150W
Operating Ambient Temp. Range	-55~85℃
Operating Ambient Humidity Range	0~98%RH (Condensation may form on stage surface in high-humidity environments during cooling)
Stage Surface Dimensions	55*55mm
Sensor Mounting Hole	φ5mm，D30mm
Overall Dimensions	55*55*32mm Fitting Protrusion：9.2*25mm Φ8*18mm barbed fitting
Material	Aluminum alloy
Weight	≈300g

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

Interface Name	Description
Power Cable	DC 24V, for connecting to the temperature controller
Water Cooling Fittings	Φ8*18mm barbed fittings, for connecting to the water cooling unit
Sensor Mounting Hole	Φ5mm hole for installing the temperature sensor

04 Measured Performance Data

- Temperature measurement range: -40~25℃
- Temperature sensor: PT1000
- Controlled object: 55*55*10mm aluminum block
- Cooling water temperature: 20℃
- Ambient temperature: 25±2℃



Version Change Log

Version	Change description	Change date	Reviewed by
1.0.0	Initial version	2026/8/17	YJH/WYR

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SenseFuture

Original Aspiration Shapes the Future;
Innovation Creates Value;
Sharing Brings People Together;

We look forward to win-win cooperation with you!