



TEC SENSOR TEST UNIT  
Thermoelectric Cooler/Heater

Senseseeker’s TEC sensor test units (STUs) provide a testing platform at an accurate and steady temperature for sensors that require limited cooling for stability such as microbolometer based sensors or high-operating temperature (HOT) focal plane arrays for SWIR and other types of cameras.

Features

- ◆ Modular design concept enables the unit to be easily reconfigured to support different sensors
- ◆ Both the FPA personality board and the optics can be reconfigured for maximum flexibility
- ◆ Robust design intended for practical use in the lab
- ◆ Supports high-speed readout of electronics signals and data with robust electrical feedthrough connectors
- ◆ Supplied with an ultra-stable TC10 LAB Series 10 A Temperature Control Instrument
- ◆ Design optimized to allow generous allocation of working space for reconfiguration, in a compact footprint
- ◆ Many customization options offered including optics configuration and lens choices
- ◆ Ability to both cool and heat device under test (DUT)

Product Options

TEC STU products are available in a large sized unit with two electrical interfacing options supporting either four DB25 connectors or four DB37 connectors, the latter providing more electrical feedthrough connections for higher speed data transfer.

Part number	Description	FPA LCC package sizes supported
STU-TEC-LG-DB37	Large TEC sensor test unit with four DB37 hermetic feedthrough connectors for high-speed data transmission.	68-pin, 84-pin, 100-pin, 124-pin. Other LCCs up to 2.3” x 2.3” and custom FPA/Sensor modules up to 4” x 4”.
STU-TEC-LG-FLEX198	Large thermoelectric cooler sensor test unit with Flex198 interface to connect directly to CoaxSTACK™ electronics.	68-pin, 84-pin, 100-pin, 124-pin. Other LCCs up to 2.3” x 2.3” and custom FPA/Sensor modules up to 4” x 4”.

## Key Specifications

Parameter	STU-TEC-LG-DB37	STU-TEC-LG-FLEX198
Operating temperature (K)	240—335	240—335
Cool-down time (minutes)	30	30
Warm-up time (minutes)	30	30
Stability (K)	±0.02	±0.02
Accuracy (K)	±0.25	±0.25
Maximum FPA size (LCC)	2.3" x 2.3"	2.3" x 2.3"
Maximum module size	4" x 4"	4" x 4"
Max # connections	148	198
Capable of accommodating sensor/FPA modules	Yes	Yes
Temperature controller (included)	TC10 LAB Series 10 A Temperature Control Instrument (Wavelength Electronics)	TC10 LAB Series 10 A Temperature Control Instrument (Wavelength Electronics)

## Customization

Senseseeker TEC sensor test units are commercial off-the-shelf products that can be configured to meet exact customer requirements before shipment.

Senseseeker can configure the sensor test unit to accommodate the exact sensor that is to be tested.

A window type that supports the waveband of interest can be selected when the STU is ordered. The diameter size for the window and aperture may also be selected.

## Availability and Contact Information

Senseseeker STUs are built to order. You can configure your own STU at the Senseseeker website. The web-hosted configuration tool allows you to consider and select the appropriate options that best fit your objectives for using the STU.

Both DB37 and FLEX198 versions of the Senseseeker TEC STUs are available to order now.

Contact sales for pricing information:  
products@senseseeker.com

## Precision Temperature Control

Senseseeker TEC sensor test units are supplied with a TC10 LAB Series 10 A Temperature Control Instrument. The TC10 provides temperature stability better than 0.0009°C and utilizes an intuitive user interface touchscreen.

The TEC STU can maintain precision temperature control at both cold and hot temperatures, with an operating range from 255 to 335 Kelvin.

The higher operating temperatures are intended to enable component stress testing and accelerated life testing.