



Closed-cycle Sensor test unit

Senseseeker’s Closed-cycle sensor test units (STUs) have been an industry standard fixture in laboratories across the United States for many years. These units enable efficient testing of infrared focal plane arrays (FPAs) across a wide range of cryogenic temperatures and do not consume LN2.

Features

- ◆ Modular design concept enables the unit to be easily reconfigured to support different FPAs
- ◆ Includes Active Vibration Cancellation (AVC) for reduced vibration and noise
- ◆ Power supply included and integrated into cryocooler assembly
- ◆ Both the FPA Personality board (PBA) and the optics can be reconfigured for maximum flexibility
- ◆ Supports high-speed readout of electronics signals and data with robust electrical feedthrough connectors
- ◆ These closed-cycle cryostats are favored for use when testing requires a wide range of cryogenic temperatures and LN2 refills are not practical
- ◆ Available in standard, large and extra-large sizes to accommodate different FPA sizes
- ◆ Many customization options offered including optics configuration and lens choices
- ◆ Support for many existing industry standard readouts and FPAs available

Product Options

Closed-cycle STU products are available in two sizes: large and semi-custom extra large models. The large model is available with DB37 connectors or a Flex 198 interface that couples directly to a Senseseeker CoaxSTACK™ electronics unit .

Part number	Description	FPA LCC package sizes supported
STU-CC-LG-DB37	Large Closed-cycle cryostat with four DB37 hermetic feedthrough connectors	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-CC-LG-FLEX198	Large Closed-cycle cryostat 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”.
STU-CC-XXX-XL	Semi-custom extra large STUs for large FPAs and simultaneous multiple FPA testing.	All LCC package sizes and custom FPA/ Sensor modules up to 8.5” x 8.5”.

Key Specifications

Parameter	STU-CC-LG-DB37	STU-CC-LG-CT-FLEX198	STU-CC-XXX-XL
Min. operating temperature (K)	55	55	55
Cool-down time (minutes)	60	60	120
Warm-up time @ 25W (mins)	60	60	120
Minimum vacuum pressure (Torr)	1E-6	1E-6	1E-6
Temperature accuracy (K)	±0.25	±0.25	±0.25
Cryo-cooler type	Sunpower CT	Sunpower CT	Sunpower GT
Maximum FPA size (LCC)	2.3" x 2.3"	2.3" x 2.3"	5" x 5"
Maximum module size	4" x 4"	4" x 4"	8.5" x 8.5"
Max # connections	148	198	> 1500
Capable of accommodating sensor modules (non-LCC type)	Yes	Yes	Yes
Senseseeker commercial readout ICs supported	Oxygen® RD0092, RD0033 Calcium™ RP0033, RP0210 Magnesium® MIL RP0092 Neon™ RD0033, RD0131 Zinc™ RP0033	Oxygen® RD0092, RD0033 Calcium™ RP0033, RP0210 Magnesium® MIL RP0092 Neon™ RD0033, RD0131 Zinc™ RP0033	Very large format DROICs
Teledyne FLIR FPAs supported	ISC analog output ROICs	Digital output ROICs	

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.

All three versions of the Senseseeker Closed-cycle STUs are available to order now.

Contact sales for pricing information:
products@senseseeker.com

Customization

Senseseeker Closed-cycle 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 FPA that is to be tested. Senseseeker has a wide range of personality boards available that are already configured to accommodate industry-standard FPAs.

A window type that supports the waveband of interest can be selected when the STU is ordered. The diameter size for the window, aperture and cold shield may also be selected. There is also an option to include cryosorb.