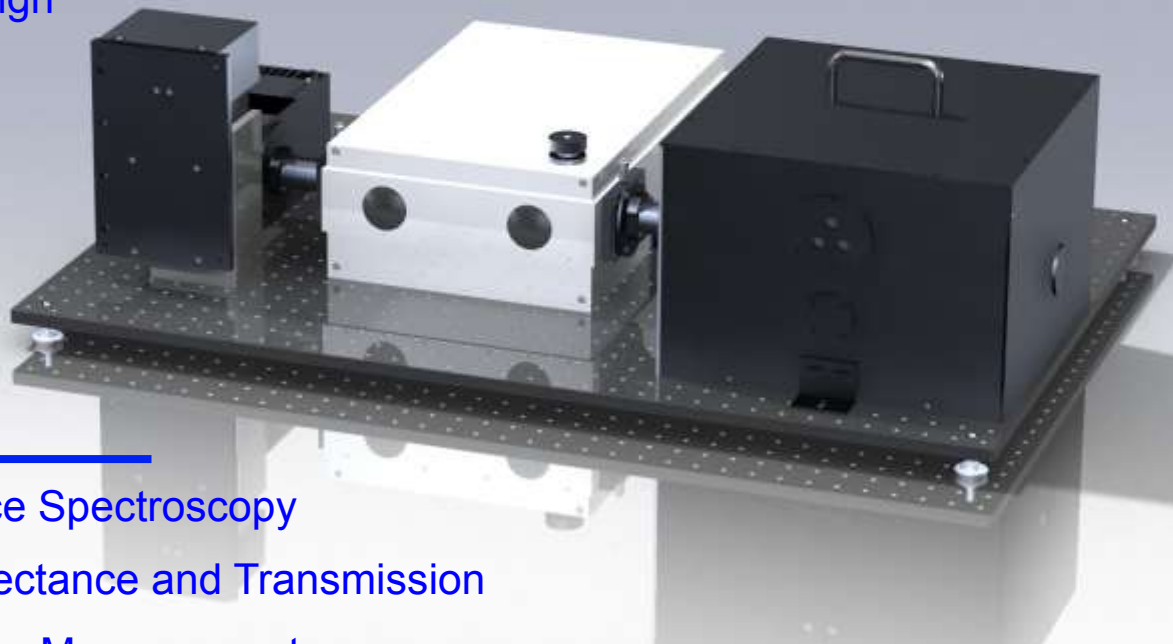




SCIENCETECH SAMPLE CHAMBERS

Features

- Large variety of sample and beam accessories
- Customizable and adaptable
- Light Tight
- Modular Design



Applications

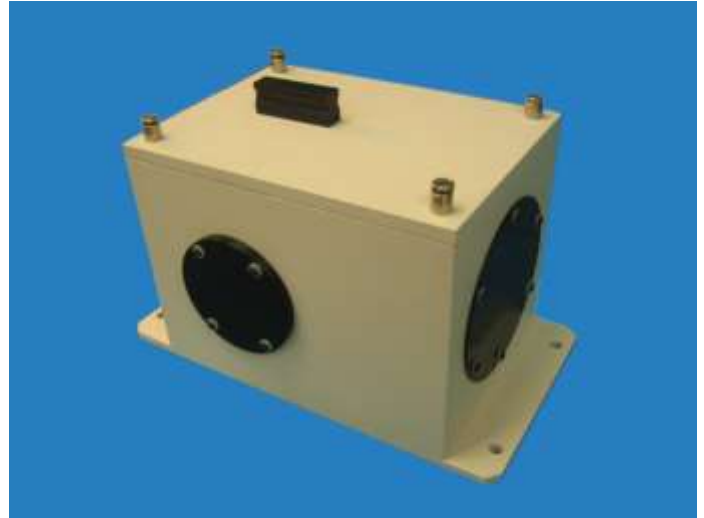
- Fluorescence Spectroscopy
- Diffuse Reflectance and Transmission Spectroscopy Measurements
- Dual Beam Spectroscopy
- Photometry
- Raman Spectroscopy



SC-3201 Light Tight Sample Chamber

(130-9010)

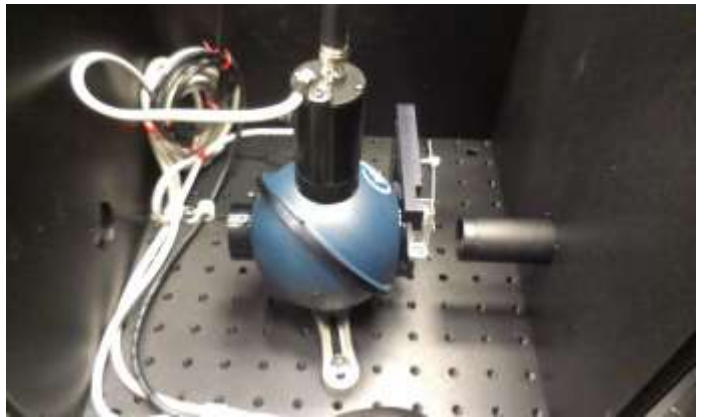
This sample chamber has one input port and two output ports. One of the output ports is 90 degrees to the input port, allowing it to be used for fluorescence spectroscopy applications. The other output port is directly across from the input port allowing it to be used for transmission measurement applications. The lid of the sample chamber can be removed to access the sample holder. The standard system comes with the SC-CUV cuvette holder. Other sample holders, such as a thin film sample holder, can be accommodated.



SC-12 General Purpose Sample Chamber

(130-9011)

The SC-12 general purpose sample chamber has four input/output ports located orthogonally to each other. The base of the SC-12 is a 12"x12" (305mmx305mm) bread board allowing for maximum customizability. The walls of the sample chamber are machined to high tolerances and designed to achieve a high degree of light tightness. The lid of the sample chamber can be removed and if necessary a wall of the sample chamber may be removed to access and align the sample chamber area. The SC-12 is intended for researchers who need a customizable sample chamber area.



The SC-12 includes a light tight accessories panels that can be machined to accommodate electrical and optical feedthroughs. Size = 12" x 12" x 8" (can be customized)

SC-3310-FB

The Model SC3310 fiber optic sample chamber is a 2" x 2" x 2.5" light tight enclosure that allows for fiber input illumination and fiber output collection on a small sample. The sample chamber has one fiber input port and two fiber output ports positioned at 90° and 180° for fluorescence/reflection and transmission measurements respectively. For fibers smaller than 1.2mm diameter, SMA connector ports are used. For larger fiber bundles, Sciencetech's proprietary fiber bundle connector ports are used. The fiber ports are positioned at the geometric center of the sample chamber such that the central axis of the sample is illuminated and measured. The standard sample chamber has a cuvette holder, but an optional 2" x 2" square thin film holder is available as an upgrade. Nitrogen purging ports and TE sample cooling platform is also available.



[Browse Sample Chambers on our Website](#)

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SAMPLE HOLDERS

Cuvette Holder (SC-CUV)

The SC-3200 sample chamber comes standard with a holder for standard 10mm path length cuvettes. Such cuvettes typically have an outer dimension of 12.5mm x 12.5mm x 45mm (L x W x H) This holder can be replaced with a thin film holder. Cuvette holders can be integrated into the SC-1200 if required.

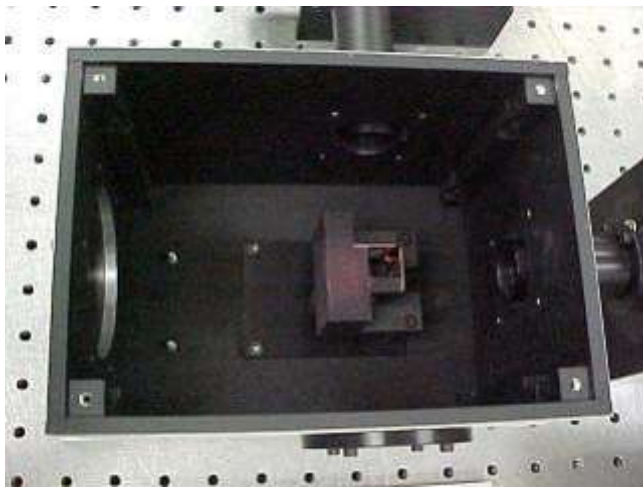
Thin Film Holder (SC-TFH)

The cuvette holder inside the sample chamber can be replaced with an optional thin film holder. This

thin film holder is 2" x 2" square, although other sizes are available (please enquire). The thin film holder is placed at an angle to the input port such that the angle of incidence is 45 degrees. Should the optional TE sample cooling pad be ordered, this cooler connects directly to the thin film holder frame at the base. Hence cooling of the sample is done through physical contact with the frame.

Cuvettes(SCA-CUV10)

These are small 3.5mL vials for holding liquid and solid samples inside the sample chamber. They are made of polished Suprasil Quartz which allows light between 200nm~2500nm to pass through. The path length inside the sample is 10mm, but the outer dimensions are 45mm x 12.5mm x 12.5mm (H x W x D). *Please ask a Sciencetech Applications Sales Specialist to confirm number of cuvettes in a box at sales@Sciencetech-inc.com.*



The SC-3201 shown with a SC-CUV cuvette holder

TEMPERATURE CONTROLLERS

External Temperature Controller (PMH-TC)

This External Temperature Controller allows the user to adjust the temperature of a thermoelectric cooling device or Peltier cooler through its front control panel or through a computer by connecting it to an RS-232 serial port. There are two software available for computer control (a full featured Windows based application and Labview modules for incorporation into other software applications). There is also a manual of the RS-232 command set for customer who need to write their own software for non-Windows based computers. This External Temperature Controller supports the Sciencetech

PURGING OPTIONS

Nitrogen Purge Ports (SC-N2P)

This option adds two sealed ports to the sample chamber lid for nitrogen purging. One port allows the nitrogen in, and the other is out.



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OPTICAL COUPLING

Optical Coupling Tube - Sample Chamber to Monochromator/Spectrograph (CO-CM)

Sciencetech sample chambers can be connected to either the input or output port of a Sciencetech monochromator/spectrograph. The coupling tube that connects them together is 1" in diameter, and has one lens with a matching monochromator f number. When the sample chamber is connected to the input port of a monochromator/spectrograph, collimated light from the sample chamber is then focused into the slit of the monochromator matching its input f number using a single lens. When the sample chamber is connected to the output port of a monochromator, the output light of the monochromator is collected by a single lens with matching output f number and then collimated for entry into the sample chamber. The coupling tube has a flange on one end that mates to the monochromator/spectrograph slit and one of the ports of the sample chamber. The user must specify which monochromator model and port and which sample chamber model and port at time of ordering.

Coupling Tube for Series 201 Arc Lamp Housing to Sample Chamber (CTC)

The output beam of the Model 201-100 and 201-1K arc lamp housings are collimated and hence can be directly coupled to a sample chamber without any optical elements. This is because the sample chamber accepts collimated light. To couple these light sources to a sample chamber, the light source horizontal bracket is required (sold separately) to lower its optical height, but the 2 inch beam condensing assembly (CON2-2L) that is typically used to couple into a fiber or monochromator is not required. This coupling tube has no lens inside. It does have a flange on its output end to mate to the sample chamber. The diameter of the tube is 2" for the Model 201-1K housing and 1" for the Model 201-100 housing.



APPLICATION EXAMPLES: FLOURESCENCE SPECTROSCOPY

Fluorescence Spectroscopy is a powerful analytical technique with applications in biology, biochemistry, physics, chemistry and medicine.

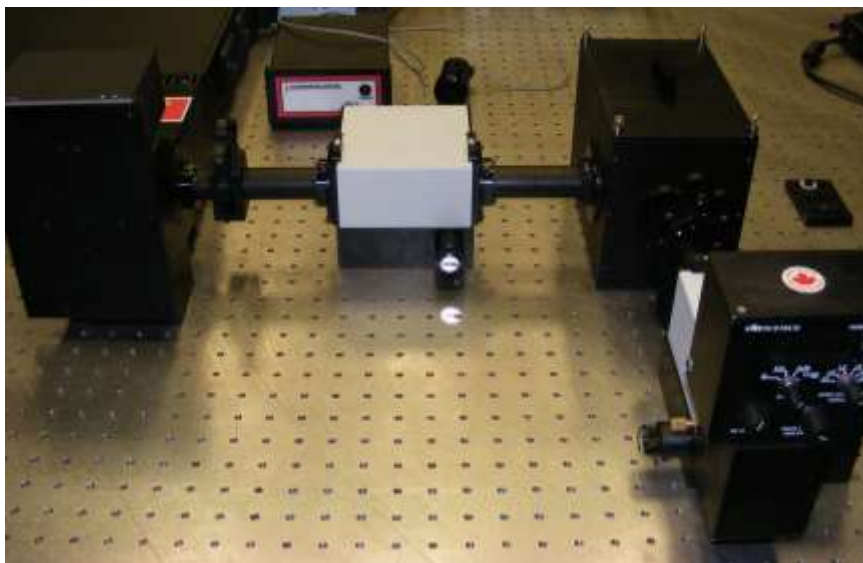
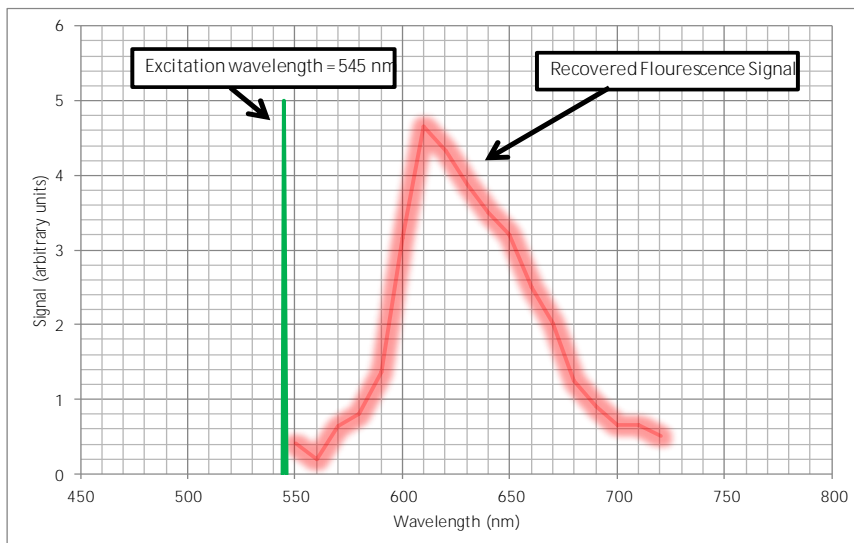
The upgradable capacity of Sciencetech Fluorometer systems provide the customer with the opportunity to begin with low-end options and improve the system as requirements and funds increase. Sciencetech currently offers two Steady State Fluorometer systems, models 7336 and 7556. Model 7336 is available only as a steady-state system. Model 7556 has upgrade options that include T-configurations, infrared detectors and fluorescence lifetime measurements in milliseconds, microseconds and nanoseconds. The standard Sciencetech Steady State Fluorometer system includes a light source, excitation monochromator, sample chamber, emission monochromator and detector.

Model 7336 uses the Sciencetech 9030 100 mm monochromator for both the excitation and emission monochromator components. The 9030 is a compact monochromator with a single concave holographic grating.

Model 7556 uses Sciencetech's 9055, quarter meter monochromator for both the excitation and emission monochromator components. The 9055 is a high resolution instrument with a triple grating turret and automatic grating switching. Light sources for Steady State Fluorometer systems are Xenon arc lamp systems.

The 7336 and 7556 both use the SC3201 transmission/fluorescence sample chamber and a photomultiplier detector system including photomultiplier housing with power supply and photomultiplier tube. A thermoelectric cooled PMT housing with temperature controller is also available. Model 7556 includes a Reference UV-enhanced Silicon PIN fast photodiode for synchronization when pulsed sources are used. This component is offered as an option to the 7336. Both models include all coupling optics required for source, monochromators, sample chamber and detector. Data acquisition board and system control software are included with both systems.

Other accessories and options such as optical breadboards and filter wheels are also available.



ORDERING INFORMATION

Model	Description
7336	Complete fluorescence spectroscopy measurement system, 1nm resolution, 200nm-800nm range
7556	Complete fluorescence spectroscopy measurement system, 0.5nm resolution, 200nm-2000nm range

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APPLICATION EXAMPLES: DIFFUSE REFLECTION/ TRANSMISSION MEASUREMENTS

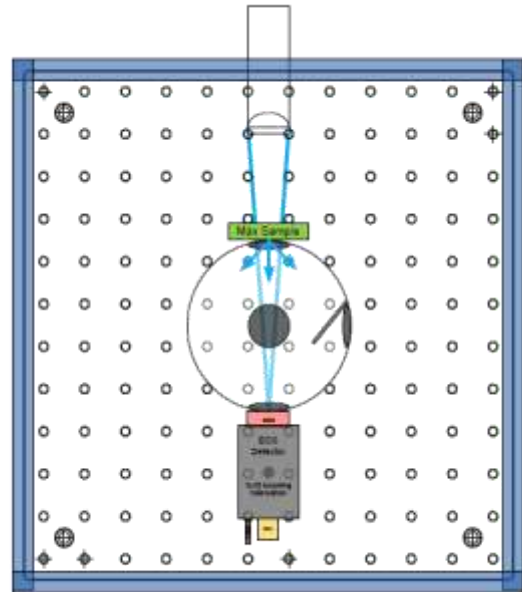
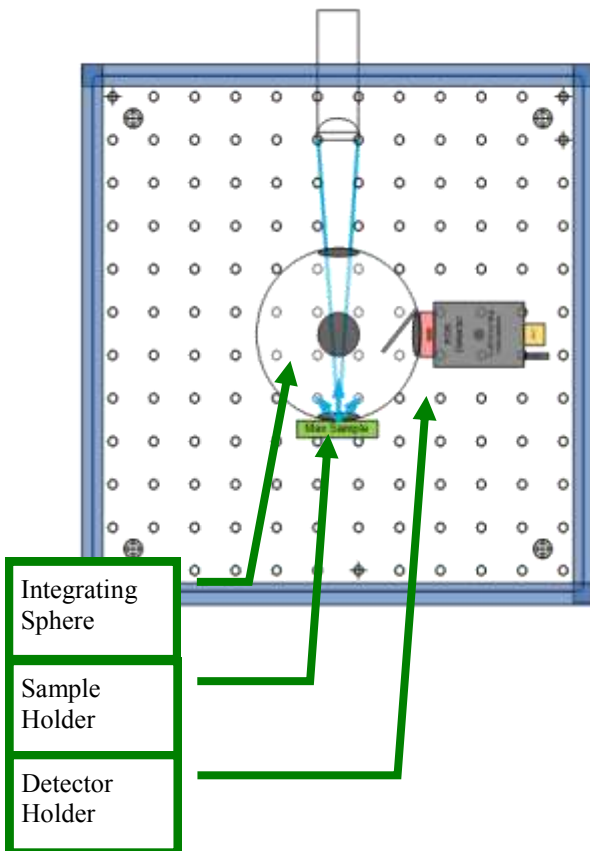
The SC-12 general purpose sample chamber can be easily configured for performing diffuse reflection and transmission measurements. To collect and homogenize diffuse transmission or reflections from a sample an integrating sphere is used. The detector is mounted on an integrating sphere port located 90 degrees from the sample position and baffled from direct light through the entrance port of the integrating sphere. Generally the sample is placed directly over the integrating sphere exit or entrance port depending on whether diffuse reflection or transmission measurements are being performed, respectively.

The SC-12 allows for easy alignment and manipulation of system components within a light tight environment. With the SC-12 other optical components such as beam splitter, polarizers and filter holders can easily be integrated into the beam line.

With the SC-12 sample chamber the choice is yours!

SC-12 Configured for Diffuse Reflectance Measurements

SC-12 Configured for Diffuse Transmission Measurements



ORDERING INFORMATION

Model	Description
SC-12-DRTM	SC-12 configured for diffuse reflectance and transmission measurements

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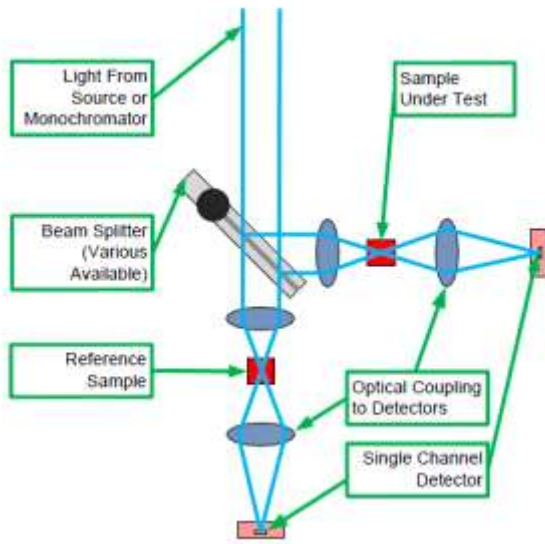
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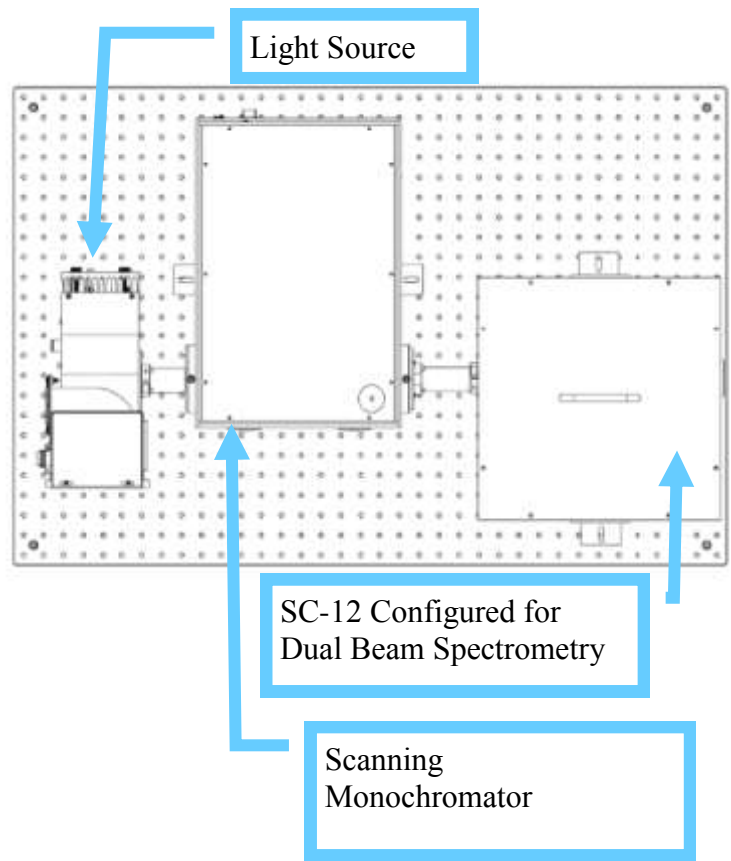
APPLICATION EXAMPLES: DUAL BEAM SPECTROMETER

In dual beam spectrometry the monochromatic output of a scanning monochromator is separated into two channels. One channel is focused on a reference sample and either reflected or transmitted light is collected and sent to a detector. The second channel is focused on a sample to be tested and either reflected or transmitted light is collected from the sample and sent to a second detector.

Shown below is a schematic representation showing the SC-12 configured for dual beam spectrometry.



Simplified Representation of a Dual Beam Spectrometer



The SC-12 general purpose sample chamber can be configured for transmission and reflective studies of samples in a dual beam configuration. The standard system is configured for transmission measurements.

With Sciencetech's modular instrumentation approach you are never limited by single components of a fully integrated system. The choice of light source and monochromator is yours. This approach allows you to build the best possible system for your application. The system bandpass, resolution and light source are all customizable!

ORDERING INFORMATION

Model	Description
SC-12-DB	Dual beam spectrometer module for transmission sample measurements
SC-12-DB-R	Dual beam spectrometer module for reflective sample measurements



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