Sample Coolers

Sample Coolers

SC30
The SC30 is a portable sample cooler designed to allow samples to be taken quickly and safely at any accessible location within in a clean steam, or high purity steam or WFI distribution system. Cooling water connections are 3/4" Tri-Clamp® compatible which enable the unit to be connected easily to a local water supply. The SC30 is suitable for autoclaving.

SC30

SC50
Designed for use in environments where the cooling water supply may lead to fouling of the coil, the SC50 can be disassembled for cleaning. The orientation of the sample connections also makes the SC50 suitable for continuous inline cooing applications such as conductivity monitoring in high purity water systems.

SC60
The SC60 is intended for permanent mounting. Utilizing the same basic coil design as the SC30 and SC50 units, the SC60 is ideal for obtaining samples at both the point of generation (clean steam generator, WFI still), or at any permanent sampling point throughout the distribution system. The SC60 can be sterilized in-place, thus ensuring continuity of samples regardless of testing frequency.

NEW! Optional Inconel® Alloy 600 sample tubing.

SC50

Product Features

- One continuous piece of tubing from sample inlet to outlet - less potential for tube corrosion cracking and contamination.
- 316/316L Stainless Steel construction
- High efficiency
- Free draining designs
- Fully sterilizable/autoclavable

SC60

Sample Cooler Accessories

(See the Sample Cooler Accessories Data Sheet)

Steriflow offers a complete range of accessory products for use with all sample cooler models:

- SV, steam rated, precision control sample valve
- PTFE-lined Tri-clamp hoses
- Isolation valves
- Hose kits
- Adapter kits

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Steriflow's range of sample coolers allow clean steam and high purity water samples to be taken quickly and easily while maintaining a sterile testing environment. The SC50 and SC60 units are designed to be mounted at the sampling point, while the SC30 is a free-standing portable unit. All models can be operated with chilled water as the cooling medium.

Where the quality of the cooling water may cause fouling of the coil, the SC50 can be easily disassembled for cleaning. A wide range of ancillary products are available for use with all models of sample cooler.

Documentation

The following documentation is shipped with each order:

- Steriflow Unicert
  - — Traceable Material Heat Number for body and ferrels
  - — Certificate of Compliance to FDA and USP Class VI
  - — Certificate of Surface Finish
- Final Test Reports and Certificate of Origin available upon request at time of order

Standards

- Where applicable, all sample cooler models comply with ASME BPE criteria
- All sample cooler models are CE compliant under the SEP category of the PED directive

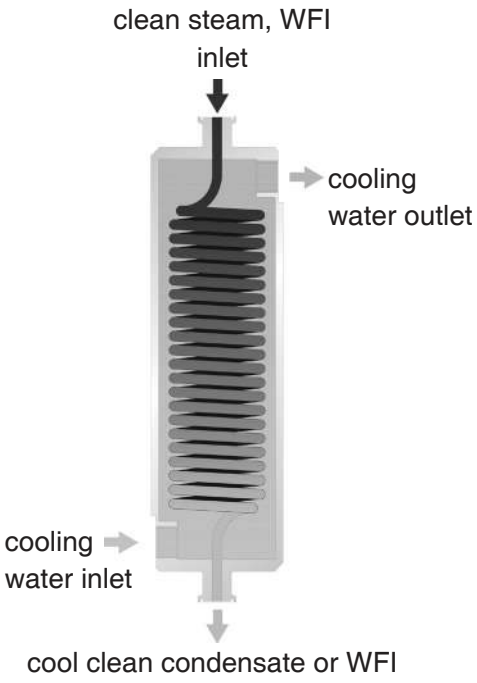
Cleaning & Packaging

- All sample coolers are cleaned after manufacture, capped, sealed in a polythene bag and individually boxed

Typical Applications

- Continuous or select point steam sampling
- Point-of-use cooling
- In-line conductivity monitoring of clean condensate
- Cooling of pump seal water

Sample Cooler Operation



Operation

The cooling medium passes through the center shell of the coil. A hand regulating valve (SV) is used to throttle the sample medium flow through the tubing coil. Cooling water is passed through the shell of the unit in an opposing direction to the sample medium in order to ensure optimum efficiency. The heat energy of the sample medium is absorbed by the flowing cooling water, resulting in a drop in the sample temperature.

Where steam is the sample medium, the cooling water will first absorb the steam's latent heat content, condensing it back to water. Further heat transfer as the condensate passes through the coil will reduce its sensible heat/temperature prior to discharge.

Capacity

- Pure/Clean Steam: All models will condense approximately 22 lbs/hr (10 kg/h) of steam from 43.5 psig (3 barg) to 86°F (30°C) condensate with 0.1 l/s of cooling water. The cooling water outlet temperature will increase from 68°F to 113°F (20°C to 45°C) during operation at these conditions.
- WFI: All models will cool approximately 66 lbs [30 kg/hr (30L/hr)] of WFI from 185°F(85°C) to 86°F (30°C) using 0.2 L/s of cooling water at 68°F (20°C).

Specifications

SC30 Sample Portable Cooler

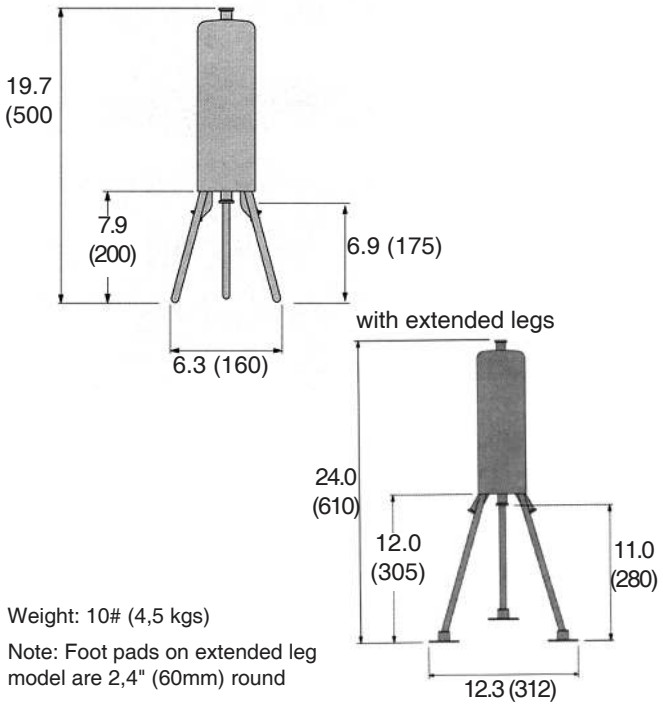
The SC30 Sample Cooler is designed to facilitate sampling of clean steam and Water For Injection (WFI), while maintaining product sterility during testing. Constructed in 316L stainless steel, the SC30 is intended for portable operation at any access point in those systems.

Sampling is achieved by regulating a flow of clean steam or WFI through the central coil controlled using the SV hand valve. A cooling medium, typically city main water, passes through the shell of the unit absorbing heat from the test sample, condensing or cooling the sample prior to discharge from the coil.

All surfaces wetted by the sample medium have a maximum surface finish of SF5, 20 Ra µin (0.5 µin Ra) electropolish.

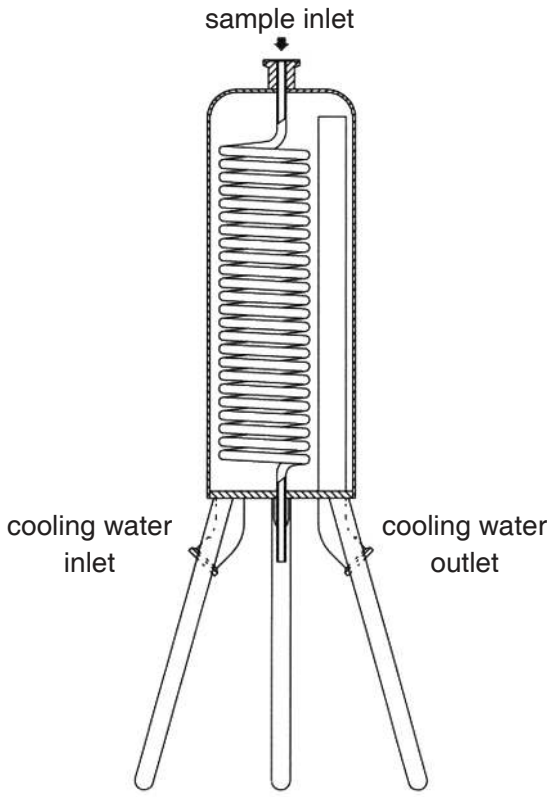
Features offered by the SC30 include:

- 316L stainless steel construction – suitable for clean steam and WFI systems
- Self-draining design – eliminates possibility of sample retention
- Fully sterilisable/autoclavable – satisfies validation criteria
- Availability of hygienic sample valve – allows fine control of sample flow during testing
- Portable design – single unit can be used to take samples throughout a system, carrying case available



Weight: 10# (4,5 kgs)

Note: Foot pads on extended leg model are 2,4" (60mm) round



Sample inlet/outlet connection: 1/2" Tri-Clamp®

Cooling water connections: 3/4" Tri-Clamp®

Shell, coil and fittings: 316L Stainless Steel

Coil surface area: 0.97 ft² (0.09m²)

Coil design pressure: 145 psig @ 365°F (10 barg @ 185°C)

Shell design pressure: 145 psig @ 212°F (10 barg @ 100°C)

Surface finish

- Wetted surfaces: SF5, 20 Ra µin (0.5 µm Ra electropolish for wetted surfaces) Note: coil formed from tube having an internal finish of 10 Ra µin (0.25 µm Ra);
- External body and fittings: satin polish

Available accessories (See the Sample Cooler Accessories Data Sheet)

- Sample valve
- Cooling water hose adaptor kit
- Sample hose
- Carrying case
- Extended Legs

Capacities (approximate)

- Steam – 10 l/h of condensate at 86°F (30°C) from steam at 43.5 psig (3 barg)
- Water – 30 l/h of water from 185°F to 86°F (85°C to 30°C)

SPECIFICATIONS

SC50 Sample Cooler

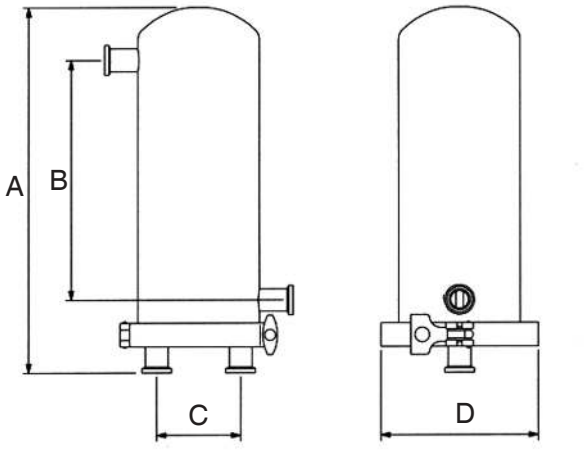
The SC50 Sample Cooler is designed to allow clean steam and Water For Injection (WFI) samples to be taken quickly, easily and safely while maintaining product sterility during testing. Intended for use in systems where fouling of the coil through scale build-up is anticipated, the SC50 can be easily disassembled for cleaning.

Sampling is achieved by regulating a flow of clean steam or WFI through the central coil by using a precision, hand control sampling valve (SV). Cooling medium: typically city main water, passing through the shell of the unit absorbs heat from the test sample, condensing or cooling the sample prior to discharge from the coil.

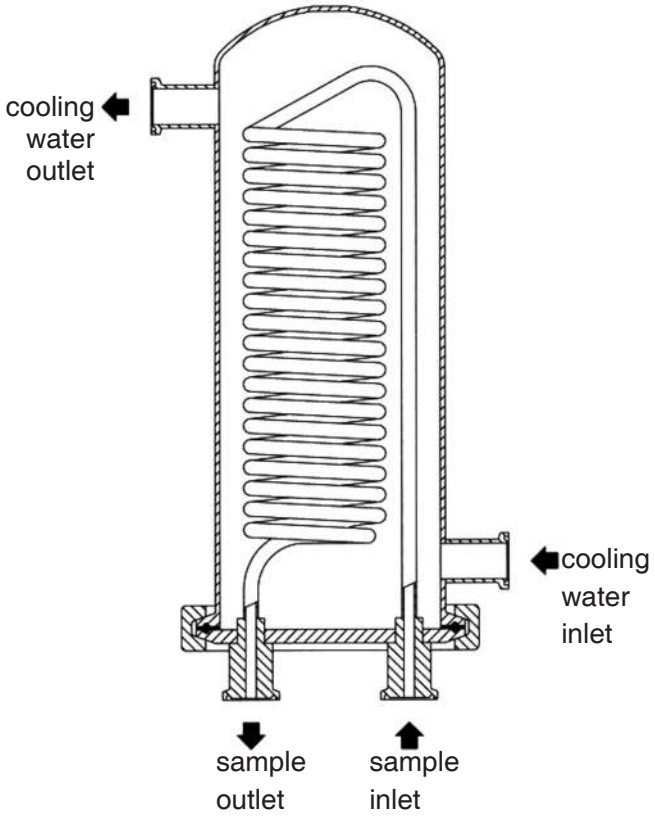
All surfaces wetted by the sample medium have a maximum surface finish of SF5 20 Ra µin (0.5 µm Ra), electrpolish. Full material certification is supplied for wetted parts.

Features offered by the SC50 include:

- 316L stainless steel construction – suitable for clean steam and WFI systems
- Unit designed to be disassembled – easy to clean
- Fully sterilizable/autoclavable – satisfies validations criteria
- Availability of hygienic sample valve – allows fine control of sample flow during testing
- Simple to install – use of Tri-Clamp® compatible fittings ensures that the SC50 is simple to install
- Mounts using standard pipe clamps



Dimensions, inches (mm)				Weight
A	B	C	D	Lbs, Kgs
12.0 (305)	7.9 (200)	2.8 (70)	5.5 (140)	7.1 (3,2)



Sample connection: (inlet/outlet) 1/2" Tri-Clamp® compatible

Cooling water connections: 3/4" Tri-Clamp® compatible

Shell, coil and fittings: 316L Stainless Steel

Coil surface area: 0.97 ft² (0.09m²)

Coil design pressure: 145 psig @ 365°F (10 barg @ 185°C)

Shell design pressure: 145 psig @ 212°F (10 barg @ 100°C)

Surface finish

- Wetted surfaces: SF5, 20 Ra µin (0.5 µm Ra electropolish for wetted surfaces) Note: coil formed from tube having an internal finish of 10 Ra µin (0.25 µm Ra);
- External body and fittings: satin polish

Mounting: The SC50 is designed to be mounted in a vertical orientation using a standard 4" pipe clamp

Capacities (approximate)

- Steam – 10 l/h of condensate at 86°F (30°C) from steam at 43.5 psig (3 barg)
- Water – 30 l/h of water from 185°F to 86°F (85°C to 30°C)

Available accessories:

* See the Sample Cooler Accessories Data Sheet

SPECIFICATIONS

SC60 Sample Cooler

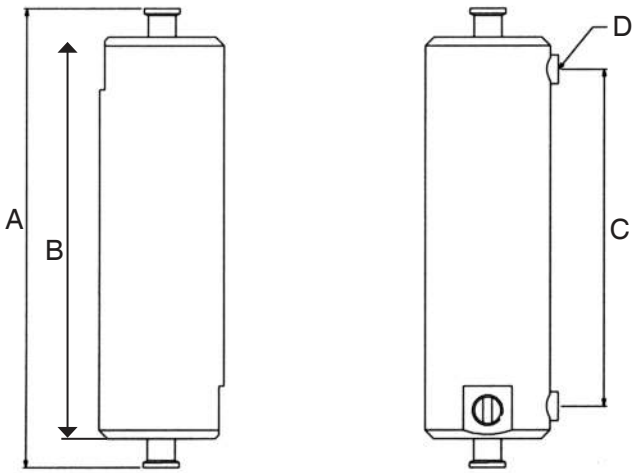
The SC60 Sample Cooler is designed to allow clean steam and Water For Injection (WFI) samples to be taken quickly, easily and safely while maintaining product sterility during testing. Constructed in 316L stainless steel, the SC60 is intended for permanent installation at the sampling point.

Sampling is achieved by manually controlling a flow of clean steam or WFI through the central coil by using a precision, hand control sampling valve (SV). The cooling medium is typically city main water. Passing through the shell of the unit, the cooling water absorbs heat from the test sample, condensing and cooling the sample prior to discharge from the coil.

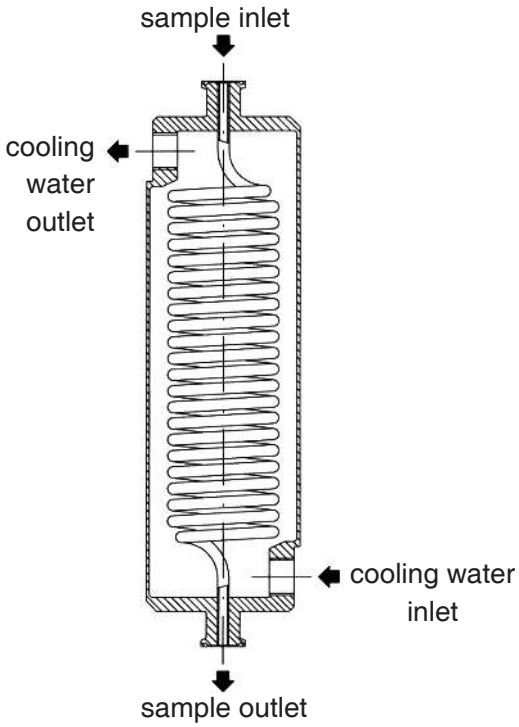
All surfaces wetted by the sample medium have a maximum surface finish of SF5 20 Ra µin (0.5 µm Ra), electropolish. Full material certification is supplied for wetted parts.

Features offered by the SC60 include:

- 316L stainless steel construction – suitable for clean steam and WFI systems
- ***NEW!*** Optional Inconel® Alloy 600 sample tubing
- Self-draining design – eliminates possibility of sample retention
- Can be sterilized in place or autoclaved – satisfies validation criteria
- Availability of hygienic sample valve – allows fine control of sample flow during testing
- Mounting bosses : wall mount bolt kit included



Dimensions, inches (mm)				Weight
A	B	C	D	Lbs (Kgs)
12.6 (320)	11.0 (279)	9.3 (235)	M8	6.6 (3,0)



Sample connection: (inlet/outlet) 1/2" Tri-Clamp®

Cooling water connections

- 1/2" BSPT, NPT
- 1/2" Tri-Clamp® compatible

Shell, coil and fittings: 316L Stainless Steel, Optional: Inconel® Alloy 600 sample tubing

Coil surface area: 0.97 ft² (0.09m²)

Coil design pressure: 145 psig @ 365°F (10 barg @ 185°C)

Shell design pressure: 145 psig @ 212°F (10 barg @ 100°C)

Surface finish

- Wetted surfaces: SF5, 20 Ra µin (0.5 µm Ra electropolish for wetted surfaces) Note: coil formed from tube having an internal finish of 10 Ra µin (0.25 µm Ra);
- External body and fittings: satin polish

Available accessories

* See the Sample Cooler Accessories Data Sheet

Capacities (approximate)

- Steam – 10 l/h of condensate at 86°F (30°C) from steam at 3 barg
- Water – 30 l/h of water from 185°F to 86°F (85°C to 30°C

ORDERING SCHEMATIC – SC30/SC50/SC60 SERIES

Model	—	Cooling Water Connection	—	Legs	—	Finish

	Model
SC30	Sealed Body Portable Unit with 1/2" Tri-Clamp® sample inlet, outlet
SC50	Tri-Clamp® body Unit with 1/2" Tri-Clamp® sample inlet, outlet
SC60	Sealed Body Unit with 1/2" Tri-Clamp® sample inlet, outlet

	Cooling Water Connection
	SC30/SC50 Series
D	3/4" Tri-Clamp®

	Cooling Water Connection
	SC60 Series
A	1/2" Tri-Clamp®
B	1/2" NPT Female
C	1/2" BSP Female
D	3/4" Tri-Clamp®
E	1" Tri-Clamp®

	Legs
	SC30 Series
SL	Standard Legs
FL	Extended Legs with Floor Pads

	Legs
	SC50/SC60 Series
00	None

	Finish
EP	SF5, 20 Ra µin (0,5 µm Ra), Electro-Polish

Note: Steriflow Unicert included with each order

NOTE: See the Sample Cooler Accessories Data sheet for the following items:

* Manual, precision flow control Sample Valve
* Sample Hose
* Sample outlet adapter
* Carrying Case for Sample Cooler model SC30

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