

Isokinetic Heated Probe

Outstack heated Probe



Main Characteristics :

- Compliant with international testing methods: EN13284-1, US EPA M5, ISO9096...
- Built-in AISI 316 stainless steel.
- Total insulation of heating element and thermocouple from stack gases.
- Interchangeable suction lines (stainless steel, glass, titanium and quartz).
- Heating up to 160°C
- Compatible with all instack and outstack accessories (filterholders, Pitots, impactors, cooling baths, dioxin kits....).
- Large choice of lengths

Principle:

The moisture content in the sampled gases obliges to heat both the probe and the collection devices.

The material ensures resistance to temperature and corrosion caused by aggressive gases.

The materials used for the collection must be compatible with gas composition, to ensure the integrity of the compounds to determine.

To meet these requirements, suction tubes are interchangeable.

Complete Package

length	suction line material			
	Stainless steel	Titanium	Glass	Quartz
0,5 m	ES100-0100	ES100-0200	ES100-0300	ES100-0400
1 m	ES100-0101	ES100-0201	ES100-0301	ES100-0401
1,5 m	ES100-0102	ES100-0202	ES100-0302	ES100-0402
2 m	ES100-0103	ES100-0203	ES100-0303	ES100-0403
2,5 m	ES100-0104	ES100-0204	ES100-0304	ES100-0404
3 m	ES100-0105	ES100-0205	ES100-0305	ES100-0405
3,5 m	ES100-0106	ES100-0206	ES100-0306	ES100-0406

Ready-to-use packages including:

- Probe body
- Suction tube, gooseneck and nozzles
- Elongation pitot tube and pitot tube termination
- Heated box
- Support for traps
- Flange

Filterholder not included.

References are for 230V AC power supply. 110V AC power supplied probes, other lengths and accessories available on request.

Technical specifications may change without previous warning



Probe body:

- . Probe body in AISI 316
- . The main body of the probe has a circular section with a diameter of 42 mm, available in different standard lengths. Inside the body, there is an electrically heated tube, which wire is not in contact with stack gases. An expansion cylinder absorbs dilation differences, allowing to realize probes up to 5 m length with no deformation.
- . Max. operation temperature: 400°C
- . Max. heating temperature: 160°C

length	Probe body	
	230V AC	110V AC
0,5 m	ES101-0000	ES101-0010
1 m	ES101-0001	ES101-0011
1,5 m	ES101-0002	ES101-0012
2 m	ES101-0003	ES101-0013
2,5 m	ES101-0004	ES101-0014
3 m	ES101-0005	ES101-0015
3,5 m	ES101-0006	ES101-0016

Sampling line

Sampling tubes exist in 4 materials to comply with all international standards:

- Stainless steel
- Titanium
- Glass
- Quartz

length	Stainless steel	Titanium	Glass	Quartz
Suction tubes				
0,5 m	ES102-0100	ES102-0200	ES102-0300	ES102-0400
1 m	ES102-0101	ES102-0201	ES102-0301	ES102-0401
1,5 m	ES102-0102	ES102-0202	ES102-0302	ES102-0402
2 m	ES102-0103	ES102-0203	ES102-0303	ES102-0403
2,5 m	ES102-0104	ES102-0204	ES102-0304	ES102-0404
3 m	ES102-0105	ES102-0205	ES102-0305	ES102-0405
3,5 m	ES102-0106	ES102-0206	ES102-0306	ES102-0406
Curve and nozzles kit (4,5,6,7,8,10,12,14 mm)				
Curve	ES103-0100	ES103-0200	ES104-9300 ES104-9400	
Nozzles kit	ES104-9100	ES104-9200		

Pitot tube**Pitot extension tubes**

The "S" Pitot tube with thermocouple for measuring the gas temperature can be easily clamped to the heated probe.



length	Pitot prolongation tube
0,5 m	ES107-0100
1 m	ES107-0101
1,5 m	ES107-0102
2 m	ES107-0103
2,5 m	ES107-0104
3 m	ES107-0105
3,5 m	ES107-0106

Pitot extremities

The final part of "S" Pitot tube is detachable to allow a replacement in case of damage or for determination of the calibration factor.

The final part of "S" Pitot tube is realized in three lengths:

Designation	reference	Use	
"S" Type Pitot Tube - Short	ES107-0000	sampling with out-stack filter assembly	
"S" Type Pitot Tube - Long	ES107-0001	sampling with in-stack filter assembly	
"S" Type Pitot Tube - XL	ES107-0002	sampling with impactors	



Technical specifications may change without previous warning

Heated Box:



To sample according to outstack method, it is necessary to heat also the filterholder, to prevent condensation of water and volatile organic compounds.

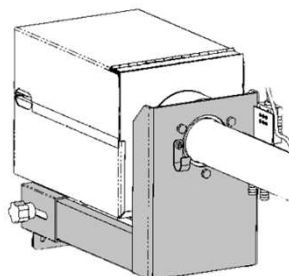
The maximum heating temperature of the box is 160°C.

The box can receive different type of filterholders (47mm, 90mm, thimbles) for different applications (multi-derived line...).

Heated box			
Voltage	Power	Reference	
		Short box	Long Box
230V AC	200W	ES105-0000	ES105-0001
110V AC	400W	ES105-0010	ES105-0011

Cooling system support

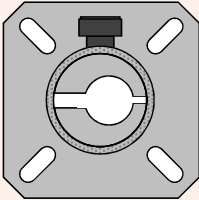
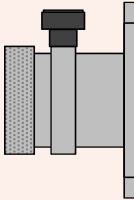
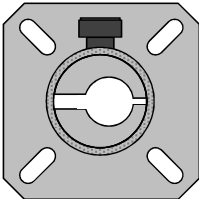
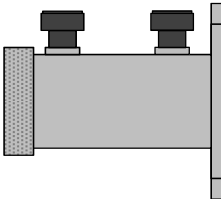
This support is necessary to attach dioxin kits or impingers bath to the heated probe body. It is installed below the heated box.



Reference	
For Short Box	ES401-0001
For Long Box	ES401-0002

Flange

- . enables to fix the probe on most of stack
- . easy rotation of probe into the flange
- . realized in light alloy

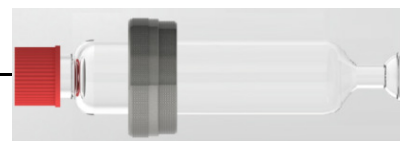
Probe Length			Reference
0,5 m to 1.5m			ES108-0000
2m and above			ES108-0001

Technical specifications may change without previous warning

Isokinetic Heated Probe

*OutStack FilterHolders Mainline***FilterHolder for thimble****Main characteristics :**

- Diameter: 25 mm.
- For thimble diam. 25 mm, length 100 mm, in glass fiber or in high purity quartz fiber.
- Supplied complete with light alloy fastening ring.



Material	P/N
Glass	ES106-1300
Quartz	ES106-1400

Glass and Quartz 47 mm FilterHolders**Main characteristics :**

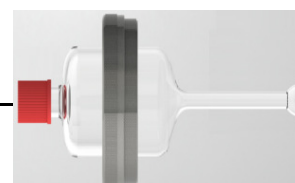
- Available in glass or quartz, supplied with membrane support in PTFE.
- On request the membrane support is available in Titan.
- It is supplied complete with light alloy fastening ring.



Material	P/N
Glass	ES106-0300
Quartz	ES106-0400
Titanium Support	ES106-0390

Glass and Quartz 90 mm FilterHolders**Main characteristics :**

- Available in glass or quartz, supplied with membrane support in Titan.
- It is supplied complete with light alloy fastening ring.



Material	P/N
Glass	ES106-0310
Quartz	ES106-0410

Stainless Steel and Titanium 47 mm FilterHolders**Main characteristics :**

- Metal to metal joints
- Complete built in stainless steel Aisi 316 or Titanium
- Supplied complete with adapter kit.



Material	P/N
Aisi 316	ES106-0100
Titanium	ES106-0200

Stainless Steel and Titanium 90 mm FilterHolders**Main characteristics :**

- Metal to metal joints
- Complete built in stainless steel Aisi 316 or Titanium
- Supplied complete with adapter kit.



Material	P/N
Aisi 316	ES106-0110
Titanium	ES106-0210

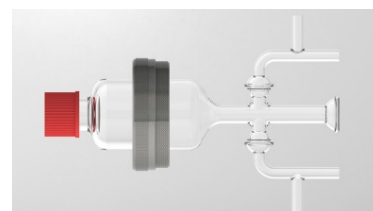
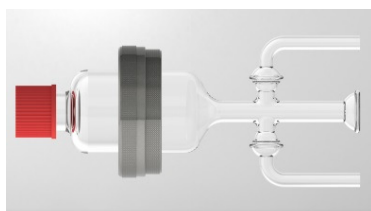
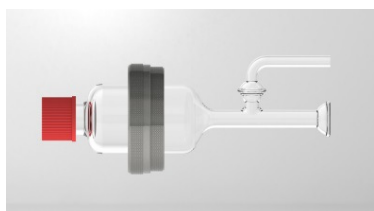
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*OutStack FilterHolders Derivations***Glass and Quartz derivations****Main characteristics :**

- Complete filterholder with derivation.
- Up to 4 derivations.
- It is supplied complete with light alloy fastening ring.

Glass	0 to 1 Derivation	0 to 2 Derivations	0 to 4 Derivations
47mm	ES106-0301	ES106-0302	ES106-0304
90mm	ES106-0311	ES106-0312	ES106-0314

Quartz	0 to 1 Derivation	0 to 2 Derivations	0 to 4 Derivations
47mm	ES106-0401	ES106-0402	ES106-0404
90mm	ES106-0411	ES106-0412	ES106-0414

**Titanium derivations****Main characteristics :**

- Built in Titanium.
- Up to 4 derivations.
- Adaptable for 47 and 90 mm filterholders.

Titanium	P/N
0 to 1 derivation	AS106-0290
0 to 2 derivations	AS106-0291
0 to 4 derivations	AS106-0292

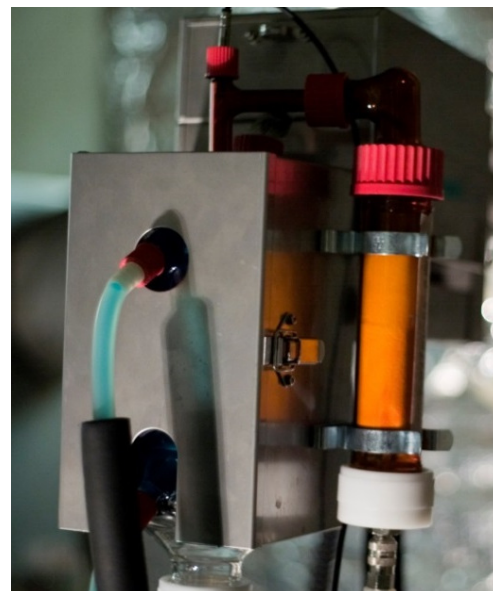


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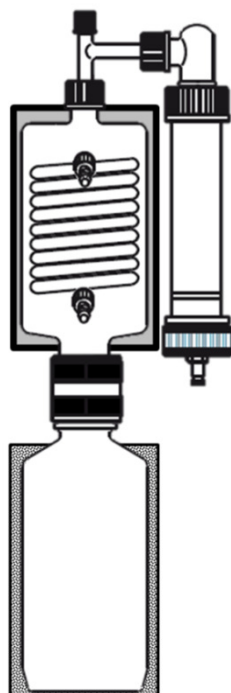
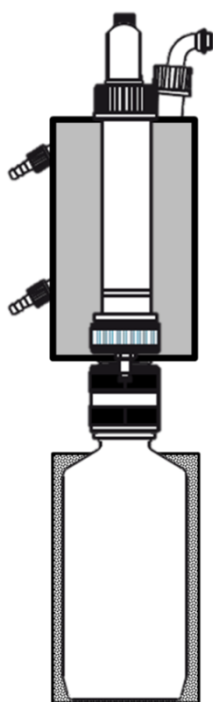
PCDD/PCDF trap - EN1948-1

Main Characteristics :

- The EN 1948-1 “Filter condenser” method enables to trap micropollutants in the 3 phases:
 - Solid on heated filterholder (see datasheet 1.302.02)
 - Liquid via use of condenser and water phase collection in dedicated flask
 - Vapour with the PUF/XAD2 cartridge after the condenser
- This system is dedicated to the determination of the following compounds:
 - Polycyclic Aromatic Hydrocarbons (PAH)
 - Polychlorinated dibenzo dioxins (PCDD)
 - Polychlorinated dibenzo furans (PCDF)
 - Polychlorinated biphenils (PCB)
- Cooled with CDL chiller, this trap meets the requirements of the standard and grants a precise and automatic temperature control of the gas after the condenser .
- PUF/XAD2 adsorbing trap and the condense collection flask can be quickly installed, removed and sealed with caps for the transport.



Description	Code
EN1948-1 PCDD/PCDF sampling kit	ES401-0000
Spare condenser	ES401-0100
Spare cartridge	ES401-0101



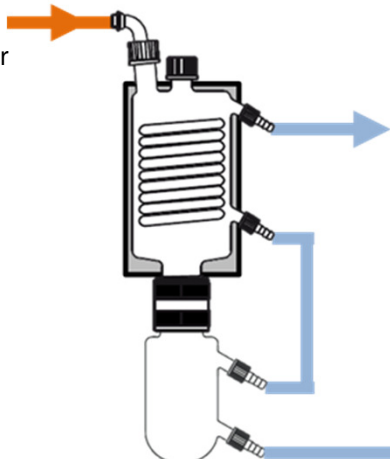
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*PCDD/PCDF trap - USEPA 23***Main Characteristics :**

- The USEPA M23 enables to trap micropollutants on the phases:
 - Solid on heated filterholder (see datasheet 1.302.02)
 - Gas and liquid with the PUF/XAD2 cartridge after the condenser
 - Liquid in impingers set.
- This system is dedicated to the determination of the following compounds:
 - Polycyclic Aromatic Hydrocarbons (PAH)
 - Polychlorinated dibenzo dioxins (PCDD)
 - Polychlorinated dibenzo furans (PCDF)
 - Polychlorinated biphenils (PCB)
- Additionally to the trap, a set of impingers shall be used.
- Cooled with CDL chiller, the impingers bath ES400-0001 and this trap are designed in accordance with USEPA M23.



From
Filterholder

**Description****Code**

USEPA M23 PCDD/PCDF sampling kit	ES401-1000
Spare condenser	ES401-1100
Spare cartridge	ES401-1100
USEPA M23 impingers kit	ES400-1001

To Sampler

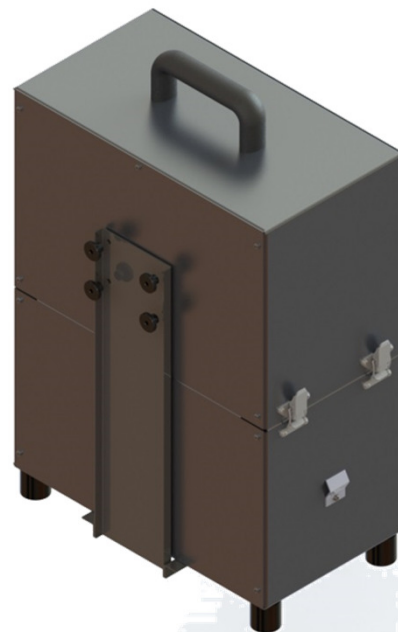
From CDL Chiller

Isokinetic Heated Probe

Cooled impingers bath

Main Characteristics :

- Easy to install on isokinetic heated probe
- Easy to transport with its protection cap
- Cooled with CDL chiller – no needs to bring ice on stack for cooling
- Designed to contain glassware sets according to:
 - USEPA M5 (dusts)
 - USEPA M8 (Sox),
 - USEPA M13A (HF),
 - USEPA M26A (HCl and HBr),
 - USEPA M29 (Heavy metals)...
- Designed to contain main line and derived line according to:
 - EN14385 (heavy metals)
 - EN13211 (Hg)
 - EN1911 (HCl)
 - EN14791 (Sox)



Serpentine for bath cooling

Easy connector for cooling liquid



Product

Code

Impingers cooled bath

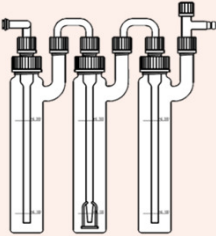
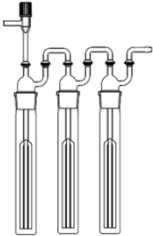
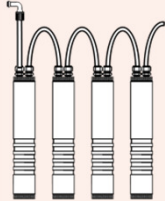
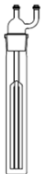
ES400-0001

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*Impingers for EN standards***Main Characteristics :**

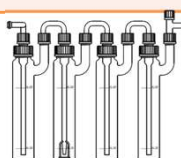
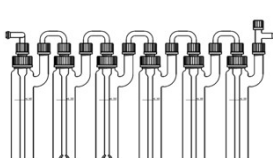
- European standards describe the trapping of chemicals with side lines sampling. The glasswares to perform these sampling is described here.
- EN15713 describes the sampling of HF with PE impingers. Impingers for this application are also available.



Designation	Reference	
Main line 3x500 ml impingers	ES400-0002	
Side line 3x250 ml impingers	ES400-0003	
Set of 4x250 ml impingers in polyethylene for HF sampling according to EN15713	ES400-0004	
Single 250mL impinger	ES400-0100	
Inlet for 250mL impingers	ES400-0101	
Bridges between 250mL impingers	ES400-0102	
Outlet for 250mL impinger	ES400-0103	
Single polyethylene impinger	ES400-0104	
Connection for filterholders for polyethylen impingers	ES400-0105	

Isokinetic Heated Probe

US EPA impingers sets

Designation	Reference	
Greenburg-Smith type impinger	ES400-1100	
Greenburg-Smith type modified impinger	ES400-1101	
Inlet connector	ES400-1102	
Impingers bridge	ES400-1103	
Outlet glass connector with temperature probe connector	ES400-1104	
USEPA M5 impingers kit	ES400-1000	
USEPA M23 impingers kit	ES400-1001	
USEPA M26A impingers kit	ES400-1002	
USEPA M8 and M13 filterholder kit	ES400-1004	
USEPA M7c impingers kit	ES400-1005	