

## Data Sheet: Sample Cooler

Sample coolers for safe sampling and sub-cooling of hot water and steam. Typical applications include district heating water, boiler feed water, boiler water, condensate, main steam, and exhaust steam.

type		080-250 C	080-500 C	125-300 H	125-400 H	125-600 H
design		compact cooler			high performance cooler	
sample state of matter		liquid			steam, MP/ HP	
sample mass flow		≤ 20 kg/h	≤ 40 kg/h	≤ 60 kg/h		
heat transfer, approx.		1 ... 3 kW	2 ... 6 kW	5 ... 20 kW	15 ... 35 kW	25 ... 55 kW
max. allowable pressure	pipe coil	16 bar	40 bar	160 bar		
	shell	10 bar				
max. allowable temperature	pipe coil	200 °C	250 °C	350 °C		550 °C
	shell	110 °C				
volume	pipe coil	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L
	shell	1.5 L	3 L	5 L	6 L	9 L
Pressure Equipment Directive (PED)		Directive 2014/68/EU, article 4, section 3. Sound engineering practice. The pressure equipment must not bear the CE-marking.				
connections	sample inlet	tube fitting d <sub>0</sub> = 8 mm		butt weld end d <sub>0</sub> = 14 mm		
	sample outlet	pipe d <sub>0</sub> = 8 mm				
	cooling water inlet	threaded, female Rp ½"		threaded, female Rp ¾"		
	cooling water outlet	threaded, male R ¾"		threaded, female Rp ¾"		
	drain	-		threaded, female Rp ½"		
material	pipe coil	stainless steel 1.4571		stainless steel 1.4404		
	shell	stainless steel 1.4541				
	flange, cover	-		stainless steel 1.4571		
	gasket	-		NBR composite		
	sample valves	stainless steel 1.4571				
	cooling water valves	stainless steel 1.4408				
empty mass, approx.		3.5 kg	6.4 kg	8.4 kg	12 kg	15 kg

### Options and Accessories:

- mounting plate,
- skid (SWAS),
- discharge tray,
- system isolating valve,
- blow-down line incl. valves,
- fine filter,
- temperature measuring device,
- high temperature solenoid valve,
- pressure reducing valve,
- relief valve,
- sample flow indicator,
- cation exchanger,
- conductivity measuring device,
- oxygen measuring device,
- pH measuring device,
- turbidity measuring device,
- ...

sample inlet temperature		< 300 °C			≥ 300 °C	
cooling water outlet temperature		≤ 30 °C	≤ 50 °C	> 50 °C	≤ 50 °C	> 50 °C
allowable cooling water quality	water hardness	≤ 2.5 mmol/L ≈ 250 ppm CaCO <sub>3</sub> <sup>(1)</sup>			< 0.1 mmol/L ≈ 50 ppm CaCO <sub>3</sub>	
	chloride	< 200 mg/L	< 50 mg/L	< 25 mg/L <sup>(2)</sup>		< 10 mg/L <sup>(2)</sup>
	other parameters	turbidity < 10 NTU, total suspended solids (TSS) < 10 mg/L, pH ≥ 6, iron < 0.2 mg/L				

<sup>1</sup> When using non-softened water for cooling, the temperature difference between cooling water inlet and outlet should be limited to ≤ 15 K.

<sup>2</sup> In case of sample inlet temperature ≥ 300 °C or cooling water outlet temperature > 50 °C, we recommend using demineralized water for cooling.

Operating instructions and drawings of the sample coolers are available from the internet, see: <http://www.ewt-wasser.de/en/product/sample-cooler.html#download>