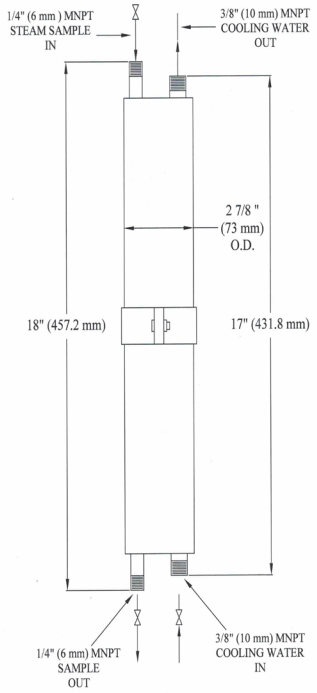
SAMPLE COOLER SC-316

PRODUCT DATA SHEET



PURPOSE

To cool hot water or steam samples for easy handling and effective sample collection. The Eddington Industries Sample Cooler is suitable for use on hot water, saturated steam, or superheated steam services.

FEATURES

- Rugged all-welded construction
- Internal baffles to insure maximum heat transfer
- Heat exchange area - one sq. ft.
- Design ratings of sample tubing - 3500psi at 750℉
- Design ratings of shell - 300psi at 250℉
- All 316 Stainless Steel construction

Coil Material	Shell Material	Coil Pressure	Shell Pressure	Coil Pressure Drop	Shell Pressure Drop
316 SS, ASTM A249	316 SS, ASTM SA312	3500 PSIG @ 750℉	300 PSIG @ 250℉	2 PSIG @ 500 CCM	3 PSIG @ 3 GPM
				8 PSIG @ 1000 CCM	8.5 PSIG @ 5 GPM
				20 PSIG @ 1500 CCM	

Pressure drop above is for flowing samples of water (not steam).

PERFORMANCE

Cooling water flow: 3 to 5 GPM

Hot Water Samples Approach Temperature

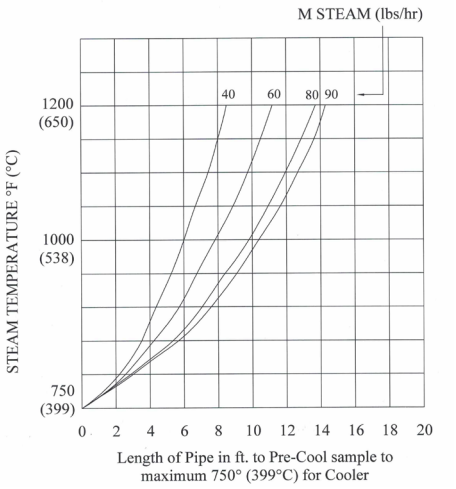
Sample Flow (CCM)	Sample Inlet Temperature (℉) 200℉	400℉	600℉	700℉
500	2	4	6	7
1000	8	23	38	65
1500	20	55		

Saturated Steam Samples Approach Temperature

Sample Flow (CCM)	Sample Inlet Temperature (℉) 150 PSIA @ 358℉	250 PSIA @ 401℉	500 PSIA @ 467℉	750 PSIA @ 511℉	1000 PSIA @ 545℉
500	70	55	37	28	22
1000			113	95	80

Superheated Steam Samples Approach Temperature

Sample Flow (CCM)	Sample Inlet Temperature (℉) 1000 PSIA @ 750℉
500	39



- Approach temperature is added to the cooling water inlet temperature to obtain sample outlet temperature.
- Numbers given above vary with steam quality and are approximate.
- Increasing cooling water flow will reduce cooling water outlet temperature.
- Steam samples are to be throttled on the discharge of the cooler.
- For superheated samples over 750℉, leaving a portion of the tubing run to the cooler from the source uninsulated typically will reduce the temperature sufficiently to the max 750°F. See the graph showing a general guideline for minimum exposed pipe/tube needed.

HOT WATER SAMPLING - OPERATION

1. Open the cooling water inlet valve first.
2. Open the sample inlet valve and gradually open the sample outlet valve to regulate the flow to achieve a cooled sample.
3. Allow the sample to run for a while before collection.
4. When enough liquid has been collected close the sample inlet first, and then the cooling water inlet valve.

Superheated Steam Sampling

The chart referenced can be used as a guide on how to dissipate temperature to produce a useable superheated steam sample.