

# 1000 Series Thermo-Electric Gas Cooler



Model 1050SS Shown

The Series 1000 Sample Coolers are our high capacity thermoelectric coolers. Providing a self-regulated 4.0°C dew point gas sample, the 1000 Series Coolers condense the water from a wet gas sample with a minimal loss of the water soluble gas fraction. This results from the unique design of the heat exchangers. The separation occurs in the impingers which have a highly polished cylindrical surface cooled by thermoelectric Peltier devices to the desired dew point temperature. These impingers are available in variety of materials including 316 Stainless Steel, Kynar/Glass, and Hastelloy C-276.

The 1000 series coolers can be either plate or wall mounted and can contain one or more 10" impingers. The number of impingers and the cooling scheme can be configured to satisfy a number of application requirements. The unit's Peltier elements are cooled by heat sinks which are then cooled using continuously flowing ambient.

Wetted materials are 316 Stainless Steel, Glass/Kynar, Teflon Coated Stainless, or Hastelloy C-276. The 1000 Series Coolers can be easily integrated with other Universal Analyzers supplied sample components including a condensate slip sensor with or without an integrated coalescing filter; peristaltic pump; sample pump; manual, external, or PLC controlled sample handling systems; PLC controlled sample sequencers and our

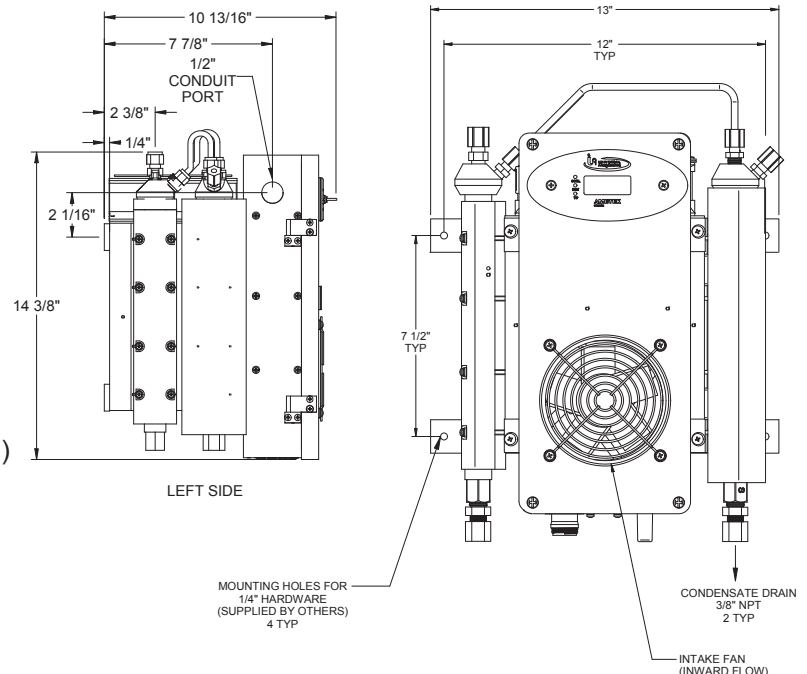
complete line of Stack Filter Probes. For high pressure applications, metal impingers can be welded together as a single assembly. For special applications, stainless steel impingers can be SilcoNert 2000 coated.

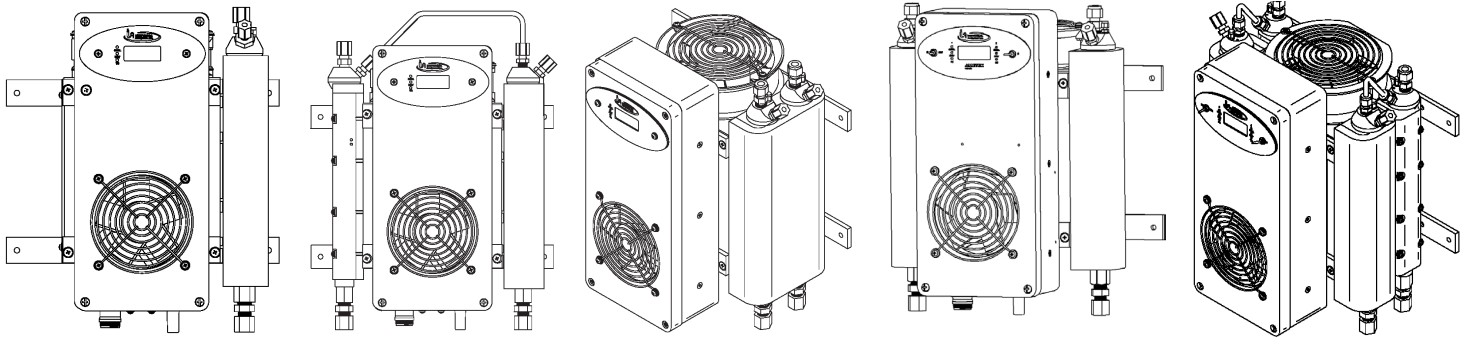
## Applications

- CEMS Integration
- Process Analysis
- Process System Integration
- In-Plant Cooler Requirements

## Features

- Digital Display
- Alarm Contacts
- Status Indicator Lights
- 10" Impingers available in different materials (wetted parts)
- Heat sink cooled by a highly efficient blower
- Stable dew point
- Can be integrated into your sample system





## Flow Capacity Chart:

| Model | Ambient 77 °F/25 °C<br>Water Vapor |           |           |           | Ambient 90 °F/35 °C<br>Water Vapor |           |           |           | Ambient 105 °F/41 °C<br>Water Vapor |           |           |           |
|-------|------------------------------------|-----------|-----------|-----------|------------------------------------|-----------|-----------|-----------|-------------------------------------|-----------|-----------|-----------|
|       | 12%                                | 15%       | 30%       | 50%       | 12%                                | 15%       | 30%       | 50%       | 12%                                 | 15%       | 30%       | 50%       |
| 1040  | 5 l/m                              | 4 l/m     | 2 l/m     | 1 l/m     | 4 l/m                              | 3.5 l/m   | 1.8 l/m   | 0.9 l/m   | 3 l/m                               | 2.5 l/m   | 1.3 l/m   | 0.7 l/m   |
| 1050  | 8 l/m                              | 8 l/m     | 8 l/m     | 8 l/m     | 7 l/m                              | 7 l/m     | 7 l/m     | 7 l/m     | 4 l/m                               | 4 l/m     | 4 l/m     | 4 l/m     |
| 1060  | 8 l/m                              | 8 l/m     | 5 l/m     | 3 l/m     | 8 l/m                              | 8 l/m     | 4 l/m     | 2 l/m     | 6 l/m                               | 6 l/m     | 3 l/m     | 1.5 l/m   |
| 1080  | 2x5 l/m                            | 2x4 l/m   | 2x2 l/m   | 2x1 l/m   | 2x4 l/m                            | 2x3.5 l/m | 2x1.8 l/m | 2x0.9 l/m | 2x3 l/m                             | 2x2.5 l/m | 2x1.3 l/m | 2x0.7 l/m |
| 1090  | 15 l/m                             | 15 l/m    | 15 l/m    | 15 l/m    | 11 l/m                             | 11 l/m    | 11 l/m    | 11 l/m    | 6 l/m                               | 6 l/m     | 6 l/m     | 6 l/m     |
| 1390  | 3x4.6 l/m                          | 3x4.3 l/m | 3x6.6 l/m | 3x3.1 l/m | 3x4.3 l/m                          | 3x4 l/m   | 3x3.3 l/m | 3x2.6 l/m | 3x2.3 l/m                           | 3x2.1 l/m | 3x1.7 l/m | 3x1.4 l/m |
| 1490  | 20 l/m                             | 16 l/m    | 8 l/m     | 4 l/m     | 16 l/m                             | 14 l/m    | 7 l/m     | 3.6 l/m   | 9.2 l/m                             | 8 l/m     | 4.4 l/m   | 2.2 l/m   |

## Technical Information:

|   |   |
|---|---|
| Sample Flow Rate:                           | (Specific to model; See Capacity Chart)   |
| Maximum Inlet Sample Temperature:           |   |
| Stainless Steel Heat Exchanger:             | 700°F. (371°C.)   |
| Kynar/Glass Heat Exchanger:                 | 280°F. (138°C.)   |
| Maximum Inlet Water Concentration:          | 50%*  |
| Maximum Ambient Temperature:                | 105°F. (41°C.)*   |
| Outlet Sample Dew Point:                    | 39° F. (4°C.)   |
| Voltage:                                    | 90-132/180-264 VAC, 50/60 Hz  |
| Electrical Classification:                  | General Purpose/Safe Area (CI, D2 for Model 1090)   |
| Weight:                                     | 38 LBs (17 KG)  |
| Soluble Gas Removal Rates:                  | NO      0% LOSS<br>NO2     <10% LOSS<br>SO2     < 2% LOSS<br>CO      0% LOSS<br>CO2     < 2% LOSS |
| *At reduced flow rates, see capacity chart. |   |