The Model SIM-12H is a thermostatically controlled heated two-stage chilled mirror sensor with 85°C depression capability at 75°C. It is designed for high dew point measurement applications up to 85°C. For elevated dew point measurement all components that come in contact with the sample gas must be heated to a temperature above the dew point to prevent condensation and unreliable readings. The sensor is available with either a field replaceable Rhodium mirror or a more robust Platinum mirror. The vapor barrier may also be upgraded from the standard mylar to stainless steel. The SIM-12H may also be purchased as a component on the turnkey HSS-12 heated sampling system which also includes a heated filter, flow meter and sampling line assembled on mounting plate. When used with an Optica Chilled Mirror Analyzer, the system provides precise primary measurement of humidity.

**Specifications:**

- **Sensing Element**: 4-Wire 1/3 Class A DIN 43760 PRT, 100 @ 0ºC (32ºF)
- **Dew/Frost Point Accuracy**: Standard: ±0.2ºC (±0.36ºF), Optional: ±0.15ºC (±0.27ºF)
- **Sensitivity**: > 0.03ºC (0.05ºF)
- **Repeatability**: ±0.05ºC (±0.09ºF)
- **Hysteresis**: Negligible
- **Cooling Stages**: Two Stage TEC Module
- **Auxiliary Cooling**: N/A
- **Depression**: 85ºC (153ºF) at 75ºC Body Temperature and Atmospheric Pressure
- **Typical Measurement Range**: -10º to +75ºC (14º to 167ºF) Dew Point/Frost Point (Td) in Air at @ 75ºC (167ºF) Body temperature in 25ºC (77ºF) Ambient Temperature and Atmospheric Pressure. Equivalent to 1 to 100% RH. Other Parameters Based on Calculations
- **Sample Flow**: 0.5 to 5.0 SCFH (0.25 to 2.5L/min)
- **Operating Temperature**: -15º to +100ºC (+5º to 212ºF)
- **Heater Control**: Thermostatically Controlled. Set Points of 25, 40, 55, 70, 85 & 100ºC
- **Pressure**: -3 to 50 PSIG (0.8 to 4.5 Bar)
- **Power**: 100/115/230 VAC, 50-60 Hz, 75 Watts.
- **Sensor Body**: Cast Aluminum with 314 Stainless Steel Flow Cell. Sensor Wetted Material 302, 316 Stainless Steel, Silicone O-Ring, BK-7 Glass, Rhodium or Platinum Mirror.
- **Mirror**: Rhodium Plated Copper Standard. Solid Platinum Optional.
- **Vapor Barrier**: Mylar (Upgradeable to Stainless Steel)
- **Electrical Connectors**: MS Style Multipin Connector Mates with 2120 Cable. IEC Receptacle for Power.
- **Weight**: 7 Lbs (3.2 Kg) Net

**Accessories/Upgrades**

- **P**: Platinum Mirror
- **X**: Enhanced Accuracy: ±0.15ºC Td
- **S**: Stainless Steel Vapor Barrier
- **HSS-12**: Heated Sampling System. SIM-12 Heated Chilled Mirror, SIM-HFT Heated Filter Module and SIM-HFM Heated Flow Meter mounted on a plate with SIM-HSL Heated Sample Line
HSS-12 Heated Chilled Mirror Sensor & Sampling System
The Model HSS-12 heated sample conditioning system is designed for use with the SIM-12H heated sensor for use in applications where the dew point is higher than the ambient temperature. The individual SIM modules control the temperature of the components so that they are above the dew point, thereby eliminating condensation. The HSS-12 provides a prewired, preassembled turnkey solution for measuring elevated dew points. The HSS-12 system consists of the components listed below.

Please contact our applications engineers to discuss your requirements.

Model SIM-HFT - Heated Filter Module
The SIM-HFT filters the sample gas of particulate contaminants prior to entering the SIM-12H sensor. The incoming gas is first passed through a 90 micron pre-filter, and then a 15 micron final filter. All parts in contact with the gas sample are heated to a constant 105ºC (221ºF) to prevent condensation. The filter elements are easily removable for cleaning or replacement.

- Ambient Temperature: 0º to +50ºC (+32º to +122ºF)
- Control Temperature: 105ºC (221ºF)
- Material: Sintered stainless steel
- Pressure: 50 psig (4.5 bar) max.
- Voltage: 115/230 VAC, 50-60 Hz
- Power: 100 watts

Model SIM-HFM - Heated Valve/Flowmeter
The SIM-HFT controls the sample gas flow rate for the SIM-12H sensor. A front panel mounted metering valve allows control over a range of 0 to 2 SCFH. All parts in contact with the gas sample are heated to a constant 105ºC (221ºF) to prevent condensation. The SIM-HFM is mounted downstream of the SIM-12H sensor.

- Ambient Temperature: 0º to +50ºC (+32º to +122ºF)
- Control Temperature: 105ºC (221ºF)
- Material: Glass, aluminum
- Pressure: 50 psig (4.5 bar) max.
- Voltage: 115/230 VAC, 50-60 Hz
- Power: 75 watts

SIM-HFT - Heated Sample Line
The SIM-HSL is self-regulated at a temperature high enough to ensure that no condensation will occur. It is available in standard 15 ft. (4.6 m) lengths for 115 VAC, and 35 ft. (10.7 m) lengths for 230 VAC. Several lengths may be connected in series.

- Ambient Temperature: -15º to +60ºC (+5º to +140ºF)
- Control Temperature: 125ºC (257ºF)
- Material: Teflon
- Pressure: 50 psig (4.5 bar) max.
- Voltage: 115/230 VAC, 50-60 Hz
- Power: 250 watts

SiM-MPL - Mounting Plate
The SiM-MPL accepts the SiM-12H, SiM-HFT, and SiM-HFM. The mounting plate provides a convenient method of wall mounting the entire heated sampling system. All mounting, internal connections, and wiring is done at the factory, providing a complete system ready for installation.

- Dimensions: 23” H x 13” W (584mmH x 330mmW) mounting plate