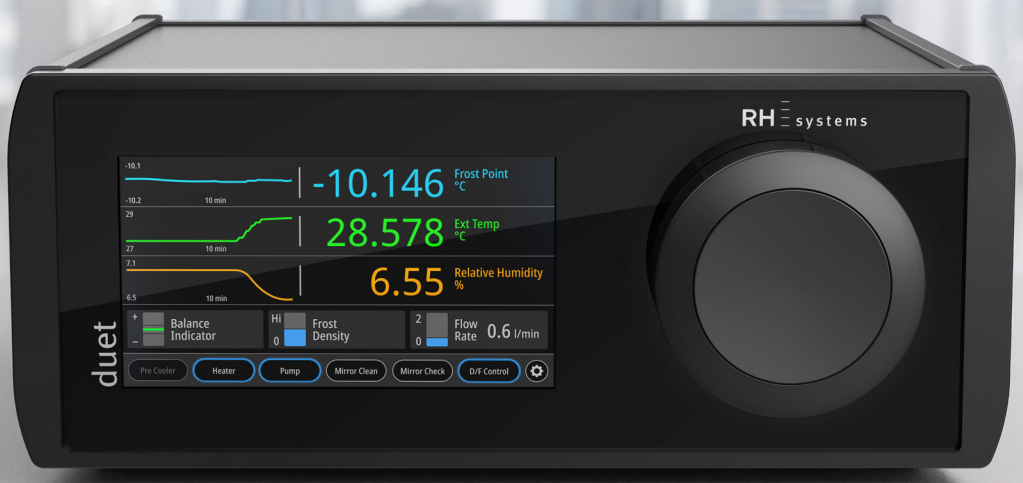
RH systems

PRECISION · POLISHED · PROVEN



Duet Chilled Mirror Hygrometer

Reliability and Performance

Optimizing the chilled mirror principle, the Duet's precision engineering and advanced measurement algorithms deliver accurate, direct humidity measurements, including dew point, frost point, %RH, ppm, ambient temperature and pressure.

Dew-Frost Differentiation

FrostLock ensures a known condensate state – either frost or super-cooled dew – at mirror temperatures below 0 °C, eliminating mixed or ambiguous conditions. This harmonious precision in dew-frost detection resolves longstanding industry misconceptions, ensuring accurate calculation of dependent humidity values.

ARIA – Accelerated Response Injection Algorithm

ARIA minimizes the time required for low frost-point measurement by rapidly depositing a controlled condensate layer on the mirror, ensuring sufficient thickness for reliable frost-point detection.

Dual Mirror PRTs

The Duet is equipped with two independent, 100 ohm, 4-wire, mirror PRTs for precise mirror temperature measurement. The second PRT enables direct temperature monitoring using your own resistance bridge or our optional PT12 Precision Thermometer.

Verifiable Calibration

Using the known 0 °C ice-melt temperature, the built-in IceTest function instantly confirms system accuracy and integrity.

Robust Connectivity

Versatile communication interfaces include RS-232, TCP/IP and USB. Use the included RHS Control software for real-time control and data acquisition, or develop custom software using our straightforward, fully documented command protocol.

Feature Complete

Every Duet comes fully equipped with an integrated pump, flow meter, pressure sensor and external temperature probe, ready for immediate operation.

Duet

Model	Duet	Duet-HT
Measuring range		
Frost/Dew Point	-60 °C FP to 20 °C DP	-40 °C FP to 70 °C DP
Relative Humidity Temperature	0.1 %RH to 100 %RH -100 °C to 100 °C*	
Accuracy		
Frost/Dew point Temperature	± 0.1 °C ± 0.07 °C	
Reproducibility		
Frost/Dew Point Temperature	± 0.05 °C ± 0.05 °C	
Inputs/Outputs		
Digital Communication Analog Outputs 2nd Mirror PRT	RS-232, USB-B, TCP/IP 2 Channel, 0–5 V or 0–20 mA, user configurable Pt100, 4-wire connection	
Measurement and Display		
Mirror cooling Measuring head cooling Display Gas couplings Sample gas flow rate	3-stage Thermoelectric Air Color Touch Screen ¼" or 6 mm Swagelok 0.2 l/min to 2 l/min	
Sample gas circuit	PFA	Heated, Stainless Steel
Environmental		
Operation temperature Storage temperature Ambient humidity	10 °C to 30 °C -20 °C to 60 °C ≤90 %RH, non-condensing	
Power Requirements		
Voltage	100–240 VAC, 50/60 Hz	
Power consumption	200 W	300 W
Physical		
Height Width Depth Weight	155 mm 440 mm 410 mm 12 kg	

* Calibrated range -20 °C to 70 °C

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We reserve the right to change design or technical data without notice.