AEROSOL
MAGEE SCIENTIFIC

Dryer

SAMPLE STREAM DRYER

Dry the aerosol stream for accurate data

DRY THE AEROSOL STREAM FOR ACCURATE DATA

KEY FEATURES

- Nafion® Dryer membrane technology
- Sample flow rate to 5 LPM
- Excellent drying efficiency - up to 14oC decrease of dew point
- Extremely low particle loss - < 4%
- 100% copmatible with AE33 Aethalometer®
- Fully functional as a stand-alone device

APPLICATIONS

- Ambient Air Quality monitoring in humid locations
- Laboratory aerosol studies
- Direct combustion emissions measurement
- Low temperature sampling (drying does not affect volatiles)

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PRODUCT SPECIFICATIONS

MEASUREMENT PRINCIPLE

Removal of water vapor from sample stream by diffusion through Nafion® membrane into low-pressure purge air surround. No interference with free flow of aerosol stream. Purge air pressure reduction provided by vacuum pump (supplied).

PERFORMANCE

- Sample air flow: up to 5 LPM
- Drying efficiency: 14 °C reduction of dew point @ input TD = 22 °C
- Particle loss: < 4 %
- Temperature display accuracy: 0.2 °C
- Relative humidity display accuracy: 2%

ENVIRONMENTAL OPERATING CONDITIONS

- Indoor use only; environmental protection IP X0
- Temperature range: 10 – 40 °C, non-condensing

AIR CONNECTORS

- Sampling air: inlet / outlet type –1/4" NTPF
- Purge air, vacuum pump connection: 1/8" NTPF
- Purge air flow: 4 LPM
- Drying pressure: -700 mBar

ELECTRICAL CONNECTORS

- USB Type B (for supply only)
- RS232 serial interface for data export
- Chassis functional grounding

USER INTERFACE

- Display: 4 x 20 alphanumeric character display
- LED status indicators: Red, Yellow, Green
- Vacuum gauge/ Vacuum adjustment screw

PHYSICAL SPECIFICATIONS

- Length: 82 cm, Diameter: 11 cm
- Weight: 4.5 kg
- Power requirement 5 V DC, 100 mA via USB cable (supplied)

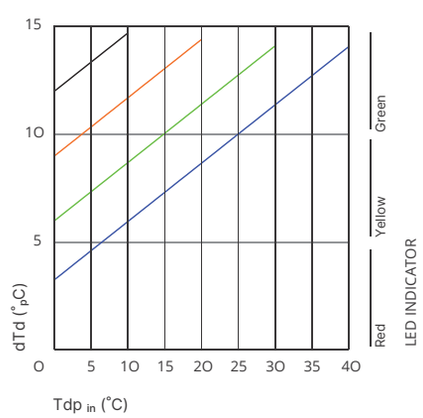
EXTERNAL PUMP included

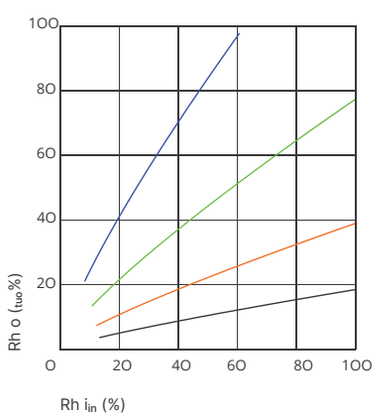
- KNF Neuberger model N838.1.2.KN.18-230V/50 Hz (EU) / N838.1.2.KN.18-115V/60 Hz (US)
- Flow: 37 LPM free air, 5 LPM at vacuum 300mbar abs.
- Maximum vacuum: 100 mbar abs
- Dimensions: 402x121x110 mm
- Weight: 6.8 kg

STORAGE

Data are written to AE33 and/or AE43 internal memory once every time-base period. Stored data may be transferred over a network or to a manually inserted USB drive.

AEROSOL INLET DRYER





Tiin (°C)
10
20
30
40
To out = 20

dTdp = reduction of sample air dew point temp.
Tdp iin = dew point temp. of inlet air
Tin = temp. of inlet air

Rh oout = reduction of sample air dew point temp.
Rh iin = dew point temp. of inlet air
Tout = temp. of outlet air
Tin = temp. of inlet air

Reference: World Meteorological Organization / Global Atmospheric Watch, Aerosol Measurement Procedures: Guidelines and Recommendations. TD No. 1178, September 2003

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Scan for more information