ISOKINETIC COUPLER FOR THE MODEL 3302A AEROSOL DILUTER AND MODEL 3340 LASER AEROSOL SPECTROMETER

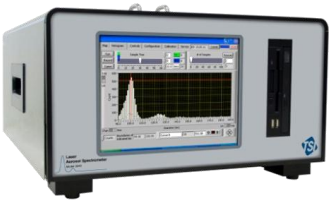
USER'S GUIDE

Description

The Model 3302A Aerosol Diluter is used for many applications where aerosol dilution is required. The dilution ratios and the calibrated flow rate through the diluter are determined at 5 L/min. The Model 3340 Laser Aerosol Spectrometer (LAS) runs at a lower sampler flow rate. An isokinetic coupler between the 3340 LAS and the 3302A Aerosol Diluter is described here (Part Number 1140001) which will enable the use of the 3302A Aerosol Diluter with the 3340 Laser Aerosol Spectrometer.

3302A Aerosol Diluter

A sampling probe designed to allow low-flow isokinetic sampling to the Laser Aerosol Spectrometer is inserted in a modified, Swagelok fitting which couples to the 3302A outlet. Critical orifices protected by a filter and an external pump (not supplied) are used to pull an auxiliary flow which will maintain a flow of 5 L/min through 3302A, while maintaining the necessary sample flow for the 3340 LAS.

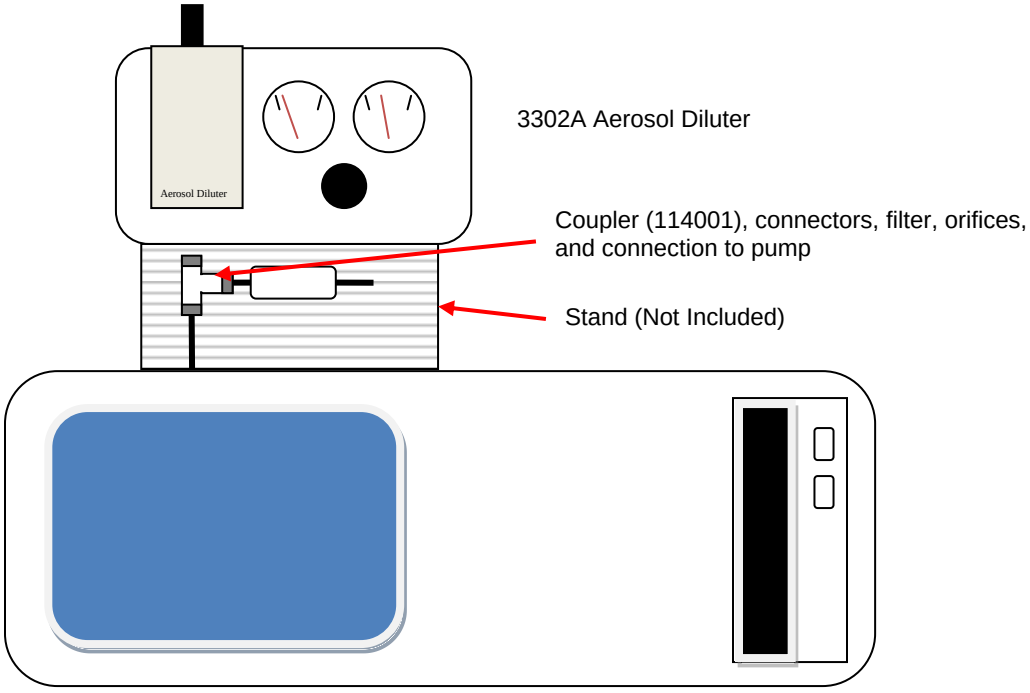


3340 Laser Aerosol Spectrometer

Operation

1. Install the 1:100 capillary into the 3302A Aerosol Diluter.
2. Connect the 1140001 Isokinetic Coupler to the **bottom** outlet port of the 3302A.
3. Place the assembly on top of the 3340 using a spacer or stand (not included). The tube from the 3340 inlet to the Isokinetic Coupler should be straight.
4. Connect and switch on the external pump (e.g. TSI model 3032).
5. Set the LAS sampling flow to 0.10 L/min.
6. Adjust the pressure across the capillary ($\Delta p_{aerosol}$) in the 3302A according to the calibration sheet supplied with the instrument.

Schematic



Parts List

Isokinetic Coupler (P/N 1140001) includes:

- Connector fitting with isokinetic sampling probe
- Critical orifice to set auxiliary flow
- Absolute filter to protect orifices
- Tubing

Accessories Needed

- External pump to maintain main flow through coupler (e.g., TSI model 3032)
- Stand to place 3302A on top of LAS (if not mounted in test rig)

UNDERSTANDING, ACCELERATED

TSI Incorporated – Visit our website **www.tsi.com** for more information.

USA	**Tel:** +1 800 874 2811	**India**	**Tel:** +91 80 67877200
UK	**Tel:** +44 149 4 459200	**China**	**Tel:** +86 10 8219 7688
France	**Tel:** +33 4 91 11 87 64	**Singapore**	**Tel:** +65 6595 6388
Germany	**Tel:** +49 241 523030		

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Kenelec Scientific Pty Ltd
1300 73 22 33
sales@kenelec.com.au
www.kenelec.com.au

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