EECPC CALIBRATION: ORDER THE RIGHT EQUIPMENT

APPLICATION NOTE EECPC-005 (A4)

Calibration of the Engine Exhaust Condensation Particle Counter (EECPC), TSI model 3790A, requires following the procedures described in EURO 5 Regulation 83. Using these systems these components adhere to the guidelines of ISO 27891.

The instruments needed to construct the calibration bench are similar to standard particle instruments from TSI® Incorporated. See Figure 1 for a schematic of the entire calibration process.

Aerosol Generation

- 3074B Pressurized Air Supply. This optional item is used to assure that the pressurized air used in the calibration process is dry, and free of oil and particles.
- 3480 Electrospray Aerosol Generator (EAG)
- 1050001 Dilution Bridge
- 3082 Electrostatic Classifier
- 3088 Soft X-ray Neutralizer (strongly recommended; in general, it increases the concentration of particles available for calibration)
- 3085A Nano DMA

Flow Balance

- 1602051 Filter
- 4148 Flow Calibrator (includes small filter shown in Figure 1) (permits calculation of relative humidity of air presented to aerosol instrumentation, when ambient humidity is known)

EECPC Calibration

- 3708 Flow Splitter
- 3790A Engine Exhaust CPC (CPC under Test)
- 3750 Condensation Particle Counter (Reference CPC)
- 3068B Aerosol Electrometer (Reference Aerosol Electrometer)

Tubing

- 3001788 Conductive Tubing (fits ¼" barb)
- 3001789 Conductive Tubing (fits ⅜" barb)

Details for generating emery oil aerosol for the calibration process are provided in a separate application note.

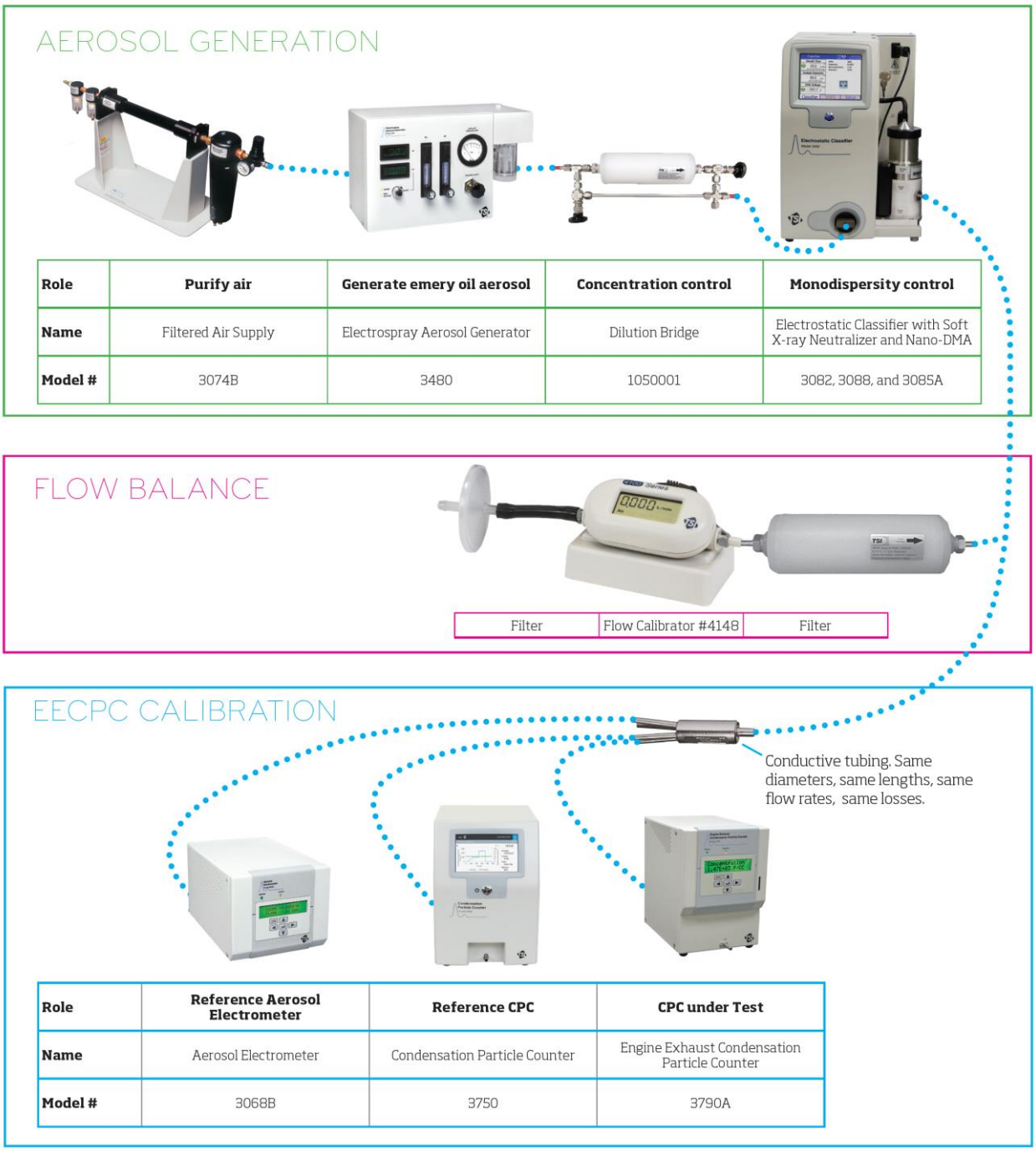

Figure 1: Schematic of the EECPC Calibration Setup

UNDERSTANDING, ACCELERATED

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