

MASS CONCENTRATION COMPARISON BETWEEN THE AIRASSURE™ PM2.5 MONITOR AND AN EPA FEDERAL EQUIVALENT MEASURING DEVICE (TEOM 1405F)

APPLICATION NOTE PM2.5-002

This application note compares the performance of TSI's AirAssure™ IPM2.5-AD, PM2.5 monitor in real time with a Tapered Element Oscillating Microbalance (TEOM) 1405F unit. The TEOM 1405F is an EPA recognized Federal Equivalent Measuring instrument (EQPM-0609-181). This study was done over a period of 3 weeks, from November through early December, in an indoor environment in a commercial building in Beijing, China using 3 units of the AirAssure™ IPM2.5-AD prototypes and comparing them with the readings from the TEOM.

The AirAssure™ units were calibrated at the TSI Shoreview facility on October 15, 2014. Mass concentrations measured in this study were that of actual indoor air in Beijing, China in order to simulate real world conditions in which the AirAssure™ unit would be operating. All meters were placed in close proximity (within 3 feet of each other) in the same unoccupied office space.

Figure 1 is a plot of hourly average concentrations measured by the AirAssure™ meters plotted against the hourly average concentrations measured by the TEOM 1405F unit. The plot indicates that the IPM2.5-AD has consistently excellent correlation to the TEOM for PM2.5 measurements. Figure 2 shows the excellent tracking of the AirAssure™ unit with a Federal Equivalent measuring instrument over time.

In summary the AirAssure™ PM2.5 Monitor can be effectively used for continuous monitoring of an indoor space. It has high correlation with a standard reference equivalent instrument like TEOM which is widely used for environmental monitoring.

AirAssure™ Features & Benefits:

- ❖ Ideal for commercial buildings
- ❖ Easy to use
- ❖ Simple wall mount installation
- ❖ Analog and ethernet output available
- ❖ Measures PM2.5 dust concentrations
- ❖ At a glance interpretation of data, correlates to the Air Quality Index
- ❖ Patent-pending auto-zero mechanism ensures consistently accurate performance
- ❖ Field-serviceable



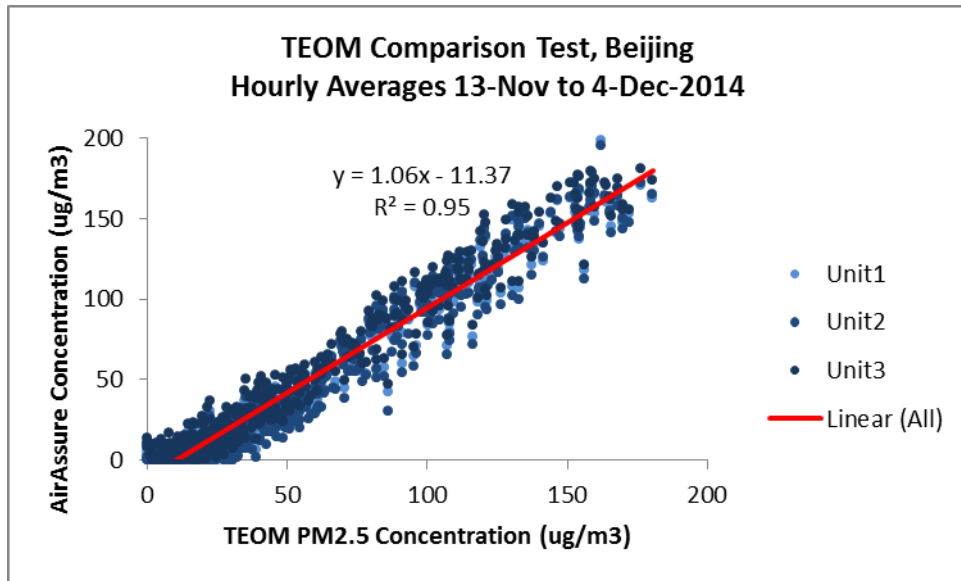


Figure 1: Correlation between AirAssure™ and TEOM 1405F

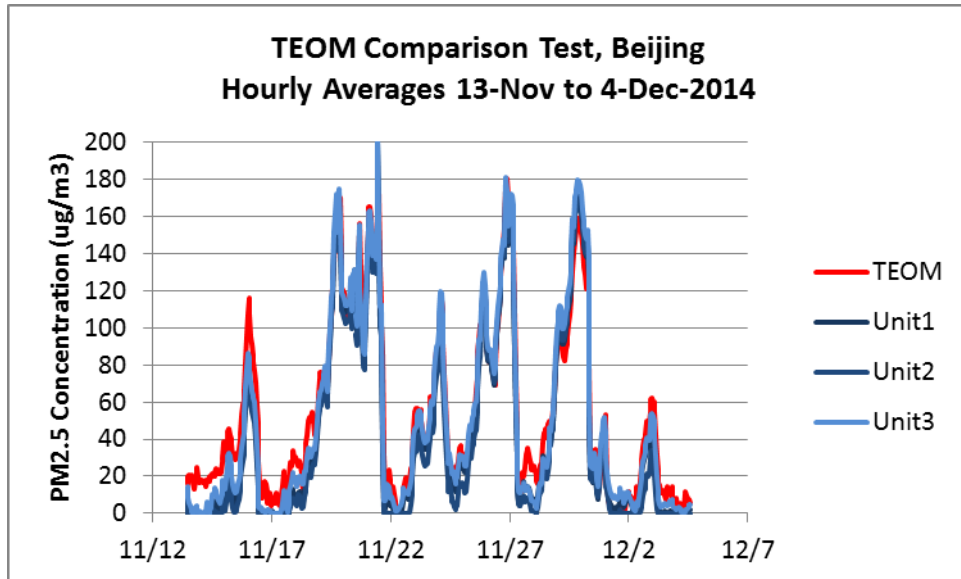


Figure 2: AirAssure™ and TEOM 1405F readings over time



UNDERSTANDING, ACCELERATED

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