Highlighting innovative design features
and useful applications information for
**Thermo Scientific Biological Safety Cabinets.**

# smart notes

**design and innovation**

LAMINAR AIRFLOW PRODUCTS

SMARTNOTE 1

## Q A Why is a dual blower system better than a single blower system?

**A dual blower system ensures personal and product protection, not only on the day of the biological safety cabinet's certification, but every day it is in use.**

The balance of inflow and downflow is critical in providing both the personal and product protection characteristic of the Class II biological safety cabinet. Loading of the HEPA filters over time requires regular adjustment of airflows to maintain performance and protection. Traditional biological safety cabinets require the adjustment of a manual damper to balance inflow and downflow, whereas Thermo Scientific biological safety cabinets balance the air automatically through the use of their unique dual blower system.

# Why Thermo Scientific Biological Safety Cabinets?

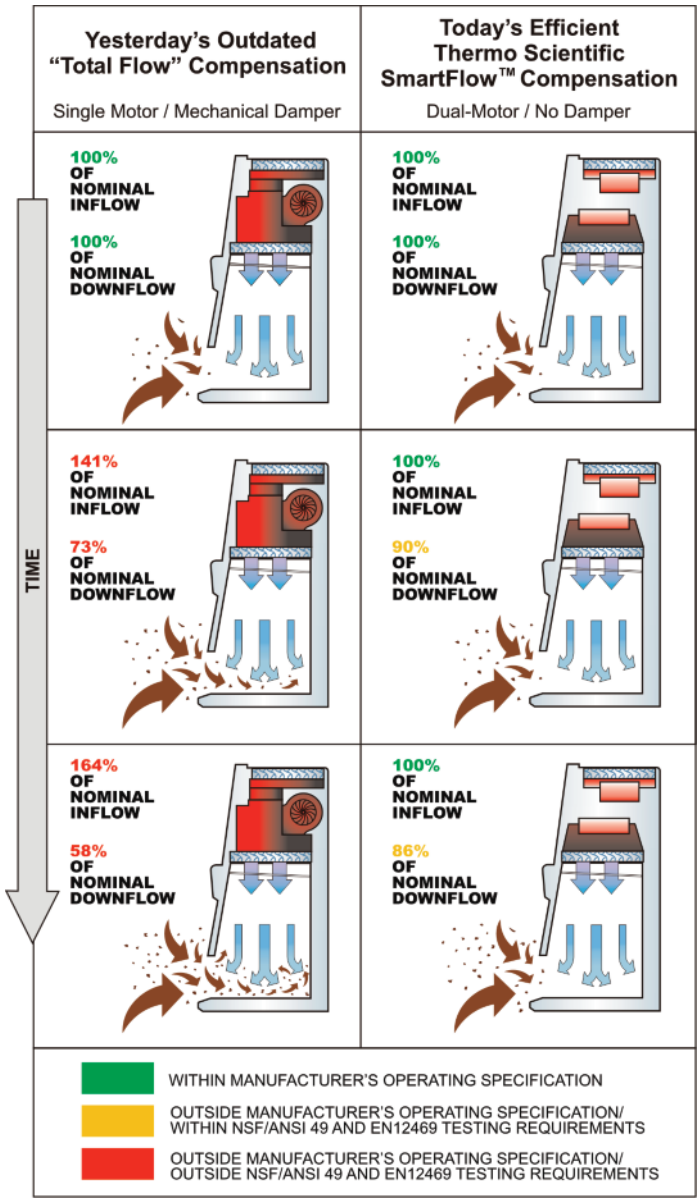
## Yesterday's Outdated Approach

Speed adjustment on a single motor/blower biological safety cabinet only allows adjustment of the total airflow, which is then divided into downflow and inflow by use of a manual air damper. Single motor designs can only maintain total flow without consideration for the allocation of the airflow into the work area or out of the exhaust stream. This outdated design requires a manual damper to adjust the airflow balance, and cannot adjust in real-time to filter loading or airflow blockage. Because this damper is only adjusted during annual certifications, there is greater potential of airflow balance disruptions during routine use of the cabinet.

## Today's Thermo Scientific SmartFlow Approach

Thermo Scientific biological safety cabinets' advanced **SmartFlow™** design uses a dual blower system where the exhaust blower controls and maintains inflow in real-time, assuring a higher degree of personal protection. Simultaneously, the downflow blower automatically balances the downflow air stream as the inflow adjusts, eliminating the need for a manual damper while providing superior product protection.

This Thermo Scientific dual blower combination exceeds NSF/ANSI49 and EN12469 requirements – providing constant **confidence and security of real-time airflow** balance that is critical to maintaining both **cleanliness and containment!**




The advantage of the dual blower based Thermo Scientific SmartFlow design is shown here. As the filters load, the total flow compensating/ system with mechanical damper (left) results in increasingly divergent downflow and inflow, while the SmartFlow systems (right) remain within the validated performance envelope. Brown arrows and particulates depict the loss of product protection over time as the airflow balance changes due to filter loading.

**See how the Thermo Scientific SmartFlow dual motor design optimally controls airflow velocities.**
**Learn more at www.thermoscientific.com/bsc**



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