

Through a government sponsored collaboration with an esteemed Indiana Engineering University a comprehensive, independent test of the Exhale Fan EF-34 was completed on November 30, 2013. The entire test “Executive Summary Report” is included as part of this report.

In addition to the attached report we will explain why the Exhale Fan is a viable part of any true aid for energy efficiency within your living space as well as unmatched comfort.

Thermal Destratification is the method of mixing the internal air that eliminates differing temperature layers and thus achieves temperature equalization throughout the living space. It is the reverse of the natural process of temperature stratification which is the layering of differing air temperatures from floor to ceiling.

All year we hope to warm up or beat the heat when we are indoors, and in addition, reject a feeling of a draft moving over our bodies. Within any building we live or work in, a natural process of warmer air rising to the ceiling occurs; and of course, cooler air remains closer to the floor. Intuitively we know that if we can get the hot air off the ceiling in the winter or conversely get the colder air off the floor to in summer months our comfort is assured. As a top consideration for the energy saving technology the Carbon Trust places **Thermal Destratification** as one of the top three methods to employ as a reduction to energy consumption.

We know that HVAC systems over compensate to overcome the stratified temperatures within a building or room. HVAC systems are remaining on longer then necessary because the air within is not circulated in a fashion that causes a uniform temperature where we work or sit.

Not until the introduction of the Exhale Fan has there been an affordable or proven technology to ensure that a claim of **Thermal Destratification** will be guaranteed to the buyer of a ceiling fan.

Referring to the Executive Summary Report:

“It is clearly shown that the fan is able to mix room air efficiently and temperature stabilization can be achieved in less than 2 minutes.”

Will Thermal Destratification result in savings for your living space? Emphatically **YES**. By answering yes we must also ask how much can we expect to save?

Quantifying the cost savings to be seen at your location is dependent upon numerous variables with each installation. Richard Aynsley Ph.D, Director Research & Development for a US based bladed fan company published his formulation for savings during the winter. According to his formulation the variables include:

- Average indoor air temperature
- Air temperature above heaters before mixing
- Floor area of the space
- Height above heaters to the *ceiling* [sic]
- Temperature of air below heaters or setting on heating thermostat (°C) (around head height above floor)
- Height below heaters to floor level

The formulation that has been derived demonstrates that the amount of heat required is substantially reduced due to **Thermal Destratification**.

In the past **Thermal Destratification** came with a \$9,000.00 dollar price tag and for use only in large industrial areas. The introduction of the Exhale Fan gives the home owner as well as businesses large and small the ability to have the efficiencies of **Thermal Destratification** at a price that will pay dividends rapidly due to lower heating and cooling costs. For users of the Exhale Fan this amount will range from **23% to 38%** based on research done as of date.

Considering all the comfort and benefits the Exhale Fan will exceed your expectations!