THE WORLD LEADER IN CLEAN AIR SOLUTIONS

TCO Diagnostic®

LOCALLY OPTIMIZED FILTRATION ANALYSIS

Most Advanced Analytical Software in the Filtration Industry

- Total Cost of Ownership (TCO) diagnostic analysis performed on your HVAC systems to identify financial opportunities and optimize time and expense
- Uses the proper simulation of your system environment to reveal the total impact of your buying decision
- The most complete database of independent test reports on manufacturers' filters
- Analyzes up to 4 stages of filtration, current system and up to 3 optional systems
- Depicts the relative annual costs, by stage, for filters, energy and labor
- Energy usage and cost calculations assure uniformity in the methodology and results
- Dynamically adjusts to view values for total cost, energy cost, and filter cost change
- Documents potential energy savings that may qualify for tax credits or rebates
- Can be used to optimize total cost of ownership for fixed speed fan systems where energy savings are not realized
- Generates written reports clearly illustrating the assumptions used and the calculated savings
- Cross platform capability – PC, tablet, or smartphone

TCO Diagnostic® — Analysis Based on Your Environment, Your Systems, and Your Processes

The purpose of TCO Diagnostic is to assist you in selecting the best filters for your air handling systems and to understand their sensitivity to your operating conditions, in order to operate your system in the most optimal and effective manner. TCO Diagnostic provides the insight to identify improvement opportunities, find the optimized options, and tailor to your specific needs for a comprehensive purchase perspective– improving air quality, energy savings, and operational flexibility while reducing total cost of ownership. Working with application specialists with verifiable filter performance analysis who use this new tool reveals the most effective way to improve productivity, lower expenses, and decrease risk.

TCO Diagnostic® Overview

- Analytical approach to objectively evaluate how filter performance differences affect total cost of ownership
- Addresses life cycle, average pressure drop, and initial resistance driven by dust holding capacity
- Patented program calculates fan efficiency at actual airspeed (FPM) for accurate, dependable values
- Analyzes based on 4 levels of filter service cycle data to address any situation
- Evaluates up to 4 stages of filtration with selections for current system and up to 3 optional systems
- Optimizes filter system based on filter cost, energy consumption, and service cycle
- Identifies locally optimized changeout point
- Reporting system requirements:
  - PC: compatible with the most current version of Chrome OS and Internet Explorer
  - iPad requirements: compatible with the most current version of Chrome OS and Safari

Contact your AAF Flanders Sales Representative for your optimized filtration solution.

Intelligent Data. Your Data.

AAF | Flanders®

Total Cost of Ownership

The most significant cost normally affecting Total Cost of Filter Ownership is energy.

However, other costs, such as the filter itself, installation, disposal, freight, procurement, overhead, storage, and filter effectiveness in maintaining clean coils and ductwork to prevent ancillary maintenance costs, should also be considered in any total cost analysis.

The overall TCO includes direct and indirect expenses, as well as intangible ones that can have monetary values assigned to them. The direct and indirect factors impacting air filter TCO include:

- Energy costs
- Worker productivity costs
- Filter resistance
- Employee and student attentiveness
- Effective filter service life, or Dust Holding Capacity (DHC)
- Procurement activity costs
- Labor costs to change filters
- Duct cleaning frequency costs
- Disposal costs
- AC coil cleaning frequency costs
- Cost of the filter
- Compliance risk and liability costs

TCO Diagnostic accounts for all of these relevant variables while providing the most effective solution for your specific facility and needs.

Comprehensive Purchase Perspective

TCO Diagnostic uses the most accurate methodology and data sources to improve your total life cycle, hidden cost drivers, and expense of execution. It improves performance based on your environment, your systems, and your processes.

Analyzes based on 4 levels of filter service cycle data

1. **Full Cycle Data** – filter full service cycle and filter resistance at changeout known
2. **Mid Cycle Data** – filter full service cycle, filter current service cycle, and filter current resistance known
3. **Dust Load Data** – filter full service cycle and dust loading rate (by experience or by measurement) known
4. **Life Cycle Value Data** – filter full service cycle, filter initial resistance, and filter resistance at changeout known

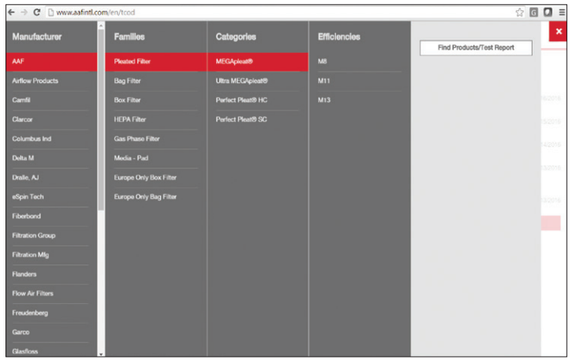
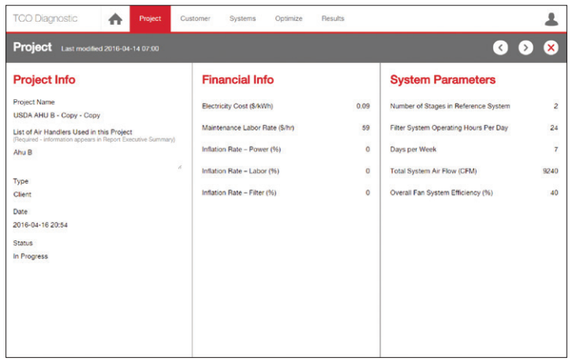
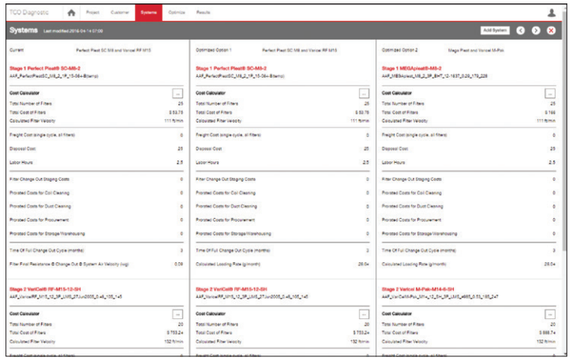


Table of Filters contains test reports on manufacturer's filters to select as the basis for the TCO Diagnostic energy usage and cost calculations, ensuring uniformity in the methodology and results.

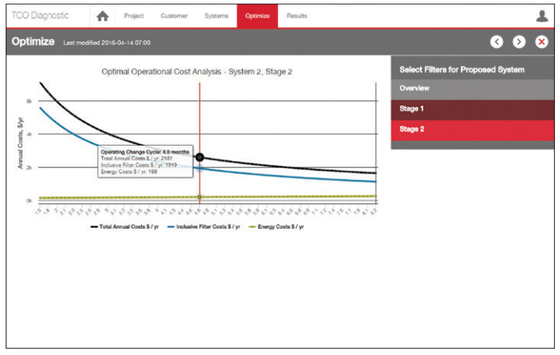


Key project and financial information, as well as key system parameters, are added for the project. Information is changeable to accommodate test sensitivity.

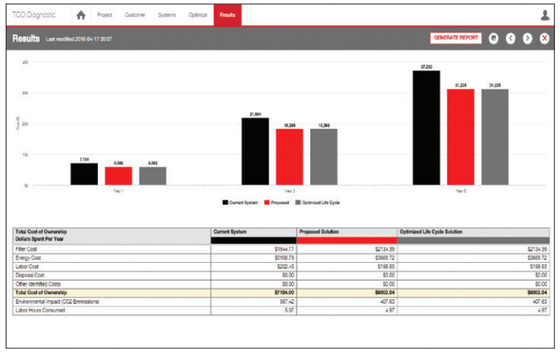


Systems user interface with selected filters in the current system and two optimized options is presented. Key data, such as filter count, sizes, and costs are added for each system stage.

This depicts filter cost optimization relative to annual costs for filters, energy, labor, and other total cost of ownership for the Current System, two Optimized Options, and the Proposed System.



Service Cycle Optimizer allows the user to adjust the service cycle and see the values for total cost, energy cost, and filter cost change.



The results depict the Current System cost versus selected Proposed Solution and Optimized Life Cycle Solution.

The Most Accurate Methodology and Data Sources

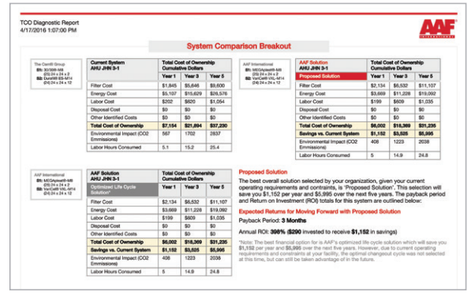
TCO Diagnostic is more than the typical software program that calculates total cost of ownership using generalized data and user assumptions, which in reality "assumes" the answer. The basis of TCO Diagnostic is to use the real-life, local filter performance information from your air handlers and their current state. This information is then benchmarked against standard loading testing results for the specific class of filters you use. It is your facility's information that is the basis for determining total cost of ownership on your current filters and the protocol under which they are being used.

The alternative filters, benchmarked against the current filters, are evaluated using your operating parameters. TCO Diagnostic will calculate a series of total cost of ownership solutions over a wide range of service cycles. The wide perspective of ownership costs over the service cycles allows you to make comprehensive decisions, as the cost of maintaining the same protocol with alternative filters can be compared. This service cycle optimizer dynamically presents the values for total cost, energy cost, and filter cost change, identifying significant financial and operational improvement opportunities.

TCO Diagnostic solutions have been validated by direct energy logging systems to ensure that the total cost of ownership calculations are accurate. It is this ability to combine real-life, local filter performance results with local operating costs that differentiates TCO Diagnostic from other total cost of ownership programs.

Optimizing to meet the needs of your facility will result in a Proposed Solution that takes your current operating requirements and constraints into account. This Proposed Solution will be the best optimum filter for each stage, based on the facility's objectives. A report utilizing this real-time data is generated providing reliable, verifiable analysis:

- System Comparison Overview and Breakout
- Total Cost of Ownership Assessment
- Performance Analysis
- Annual Cost savings
- Environmental Impact Improvement
- Expected Returns



TCO Diagnostic®

The First Step In Optimizing Your Clean Air Spending

Executives and Facility Management teams need the support of a trusted advisor who can perform Air Filtration Audits and Diagnostics, to ensure that the most optimal effective solution is selected and installed in their air filtration systems. A thorough air filter audit of your HVAC Systems is the first step, in order to provide you with professional guidance and analysis for cost savings and risk reduction. By conducting this audit, we will be able to understand your current state and then utilize TCO Diagnostic to identify how you can perform even better.

Our locally optimized filtration analysis will provide the highest level of air filtration solutions, while minimizing your total life cycle costs. We do this by taking a true consultative and technical approach to understanding your complete air filtration needs, application, and business goals, to optimize your performance and lower your total cost of ownership.

A Long History of Technical Knowledge

Only AAF Flanders has a long history with deep, technical knowledge and archives to bring the experience, expertise, and reliable data to the customer. Our mission is to help you protect your environment, reduce your business risk, and optimize your clean air related spending. We will always strive to invest our time and expertise to help you improve your business, not just to sell you a product.

AAF Flanders operates its Clean Air Innovation & Research Center (Clean AIR Center) near its World Headquarters in Louisville, Kentucky.

AAF Flanders®

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ISO Certified Firm AFP–1–101A 01/17