



Intelligent airflow management services

Ortronics® CFD Analysis, powered by SubZero Engineering



Ortronics



“CFD modeling can help visualize airflow patterns and the resulting temperature distribution in a data center.” —ASHRAE

WHAT IS CFD ANALYSIS?

Computational Fluid Dynamics in the Data Center

CFD analysis uses airflow modeling to simulate the cooling performance and heat transfer in data centers. A CFD analysis is the first step to creating an optimized airflow management program.

WHY USE IT?

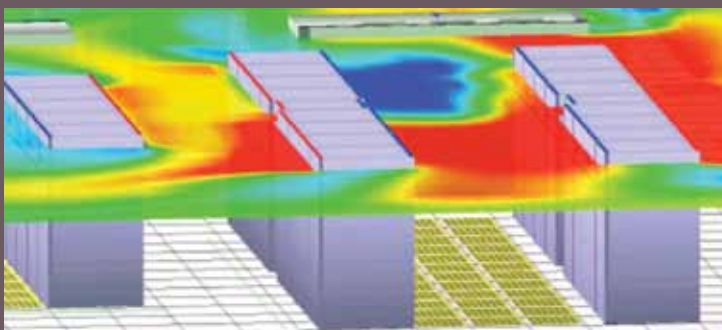
Most data center floor layouts do not consider the fluid dynamics that control airflow and temperature distribution within a data

center. The guidelines provided by standards bodies such as ASHRAE and TIA set only general thermal parameters and server metrics. CFD simulations can predict air velocities, pressure and temperature distribution within the data center facility. For example, they can be used to locate areas of recirculation and short-circuiting or to assess airflow patterns around the racks.

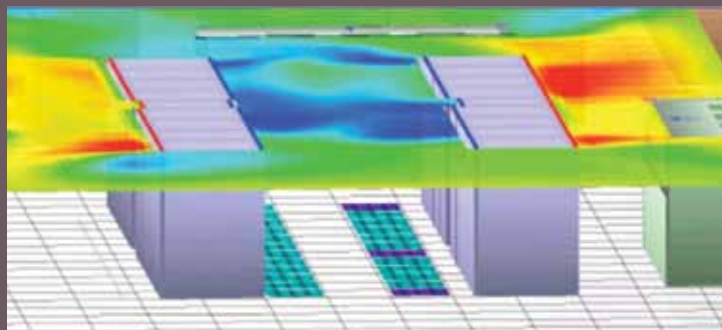
Once a baseline of the facility is established, a CFD model can provide insight, identifying hot spots and guidance to reconfigure the airflow dynamics and floor layout to optimize the cooling system and network performance.

Facilities managers, designers and consultants can also use these reports to estimate the performance of a proposed layout before actually building the facility.

CFD ANALYSIS: DISCOVERING WHAT'S INSIDE YOUR DATA CENTER



BEFORE: This image is a representation of airflow within a data center during analysis. Notice the hot air recirculating through the cold aisle.



AFTER: This image shows the improved cold aisle airflow. Data center corrections were made based on the cfd analysis discovery and suggested changes.

What do we provide?

Our depth of experience provides a distinct advantage when assessing an existing data center or a new facility to create optimal network performance and efficient cooling. Our experience combined with SubZero Engineering, includes performing over 300 CFD studies for data centers throughout the U.S.

ANALYSIS REPORT WITH WEBINAR

The analysis report includes:

A baseline study of the existing data center with all of the gathered data listed and visual studies of the temperature layers shown

An optimized study of the data center showing the improvements that can be expected when the subfloor is balanced, floor openings have been closed, rack openings have been filled and a suggested containment solution has been implemented

A webinar is scheduled at the time of report delivery. The analysis is discussed in depth with the data center customer and time is allotted for interaction and questions about the analysis

DATA GATHERING

The key to creating an accurate CFD analysis is the data gathering process. Ortronics CFD Analysis uses proprietary tablet software to ensure accurate data gathering. During data gathering, an Ortronics CFD Analysis provides a broad spectrum of information such as a full equipment inventory, rack kW usage, airflow obstruction data, etc. We inventory all equipment by location, make, model and heat load. These reports can help in capacity, footprint and hardware planning.

Facility data gathering records:

- Data center airflow envelope
- Subfloor obstructions
- Cable cutouts
- Subfloor depth
- Perforated tiles and percentage of opening
- CRAC make and model
- CRAC set points
- Ceiling plenum data
- Elevation
- Wall locations

Rack data gathering records:

- Rack dimensions
- Airflow directions (front to back, front to top, bottom to top, side to side, etc.)
- Equipment inventory, including make and model
- Placement of equipment in rack
- Blanking panels or open rack space

Ordering Information

Part Number	Description
OR-CFD-5000	CFD Analysis for Data Center from 0 – 5,000 square feet
OR-CFD-1000A	CFD Analysis for Data Center 1,000 square foot adder

Order Example:

A CFD Analysis for a 7,800 square foot data center would need a quantity of (1) OR-CFD-5000 and (3) OR-CFD-1000A

LEARN MORE

To find out more, visit www.legrand.us/ortronics/cfd-analysis or call 800.934.5432

designed to be better.™

Ortronics

125 Eugene O'Neill Drive
New London, CT 06320
800.934.5432

©2011 Legrand - All Rights Reserved rev.0811



Legrand, North America

60 Woodlawn Street
West Hartford, CT 06110
1.877.BY.LEGRAND (295.3472)
www.legrand.us

570 Applewood Crescent
Vaughan, Ontario L4K 4B4
905.738.9195
www.legrand.ca