Data Center
Energy Savings

Cut Energy Costs with the Sharpest Knife from the Smartest Source

Energy Sleuth™ is the first energy-modeling solution that enables enterprise-class data centers and labs to accurately quantify and reduce energy consumption using the most comprehensive set of techniques available. Even better, it incorporates the latest standards and calculation methods from the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE).

> “Energy Sleuth will be the next chapter in our energy book! It’s the first time energy consumption will be analyzed using the new ASHRAE standards.”

The Process

Energy Sleuth is the only solution that digs into all of the factors that have an impact on energy consumption: geography and climate; the data-center’s structure, interior layout, and features; the building management system (BMS), a complete inventory of all computer thermal loads and their placement; all cooling components including chillers, pumps, economizers, CRAH and CRAC units; heat-rejection method; and power consumption records and costs. Pulling it all together, Energy Sleuth generates the industry’s most detailed model of the life cycle path of data center energy consumption. And we can simulate a variety of scenarios to pinpoint different ways to address your challenges. Nobody else takes it to such a deep and comprehensive level.

And Energy Sleuth is ready for the future. It employs the new ASHRAE 90.4 data center energy standards and TC9.9 thermal guidelines. This puts you way ahead of the curve. By now, it should be no surprise that the creators of Energy Sleuth place more than 80 years of experience at your disposal.

The Payoff

Energy Sleuth does more than save money. It does it the smart way. First, our model depicts your current “as is” situation. It identifies and accurately quantifies all costs, including “weak links” in the overall system architecture. This enables you to set rectification priorities that correspond to your budget constraints. In addition to rectification options and the associated costs, we calculate the return on investment (ROI) for each option based on your current expenditures. As a result, the projected savings are immediately visible. Finally, the executive summary makes a clear-cut case to streamline the approval process. Complete, accurate, advanced, and practical: that’s Energy Sleuth.

Energy Calculations

Energy Calculation Results for an “Unrectified” (As-Is) Model

This is an example of a data center with poor power usage effectiveness (PUE) – with energy consumption costs of $762,102 per year.

Parameter	Value
COP - Coefficient of Performance Specified by User	3
PUE - Power Utilization Effectiveness	1.62
DCIE - Data Center Infrastructure Efficiency (%)	61.77
RTI - Return Temperature Index[1] (%)	67.29
RCI_HI - Rack Cooling Index - High[1] (%)	100
RCI_LO - Rack Cooling Index - Low[1] (%)	21.77
Total Facility Power (kW)	867.7
Annual Operating Cost ($USD)	760,102

[1] RTI, RCI_HI, and RCI_LO are trademarks of ANCIS Inc.

Energy Calculation Results for “Rectified” Model Output

This is an example of data-center calculations that predict a $148,000 saving per year by implementing Energy Sleuth consumption rectification measures.

Parameter	Value
COP - Coefficient of Performance Specified by User	3.47
PUE - Power Utilization Effectiveness	1.3
DCIE - Data Center Infrastructure Efficiency (%)	76.75
RTI - Return Temperature Index[1] (%)	83.07
RCI_HI - Rack Cooling Index - High[1] (%)	100
RCI_LO - Rack Cooling Index - Low[1] (%)	100
Total Facility Power (kW)	689.38
Annual Operating Cost ($USD)	611,785

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Energy Sleuth™