

# TRACE™ 700

*HVAC load design and analysis software*



## **Compliant calculation methodologies**

TRACE 700 calculations apply techniques recommended by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). The program is tested in compliance with ASHRAE Standard 140-2007, *Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs*, and it meets the requirements for simulation software set by ASHRAE Standard 90.1-2007 and the LEED® Green Building Rating System.

Trane Air Conditioning Economics, or TRACE™, is a design-and-analysis tool that helps HVAC professionals optimize the design of a building's heating, ventilating and air-conditioning system based on energy utilization and life-cycle cost.

A TRACE model can help establish the peak cooling and heating loads during the planning stage of a building project. At the design development stage, it aids evaluation of energy-saving concepts, such as the effects of daylighting, HVAC optimization strategies and high-performance glazing. And near the end of the construction, when the design is finalized, the TRACE model can help document compliance with ASHRAE Standard 90.1-2007 or validate the building's eligibility for LEED® certification.

## **Powerful modeling capabilities**

- Choose from eight load-simulation methodologies, including Heat Balance-based RTS, using algorithms provided in the latest ASHRAE Loads Toolkit. Specify either hour-by-hour (8760) or reduced-year energy/economic analysis.
- Choose from more than 500 predefined weather locations from around the globe.
- Describe building envelope and site orientation, as well as room construction, airflows, thermostat settings, heat sources and utilization schedules.
- Model various HVAC systems including single-zone, VAV-reheat, parallel fan-powered VAV, underfloor air distribution and dedicated outdoor-air systems.
- Model chillers, unitary equipment, water-source and geothermal heat pumps, boilers, electric resistance heating, gas-fired heat exchangers and air terminals.
- Include thermal storage, energy recovery, free cooling, cogeneration and district heating or cooling.
- Model sophisticated evaporative cooling systems and energy recovery devices and leverage associated reports (PUE & WUE).

- Simulate control strategies, such as optimum start/stop, temperature or static pressure setpoint reset, humidification, night purge, fan cycling, demand-limiting and optimal sequencing features.
- Model ventilation airflow based on the requirements of ASHRAE Standard 62.1-2007, including CO<sub>2</sub>-based demand-controlled ventilation (DCV).
- Model ventilation requirements for healthcare facilities per ASHRAE Standard 62.1, 170 or a combination of both.
- Account for daylighting, domestic hot water, process loads, parking lot lights and other elements that consume energy or affect the building's heating/cooling load.
- Predict operating costs based on energy types and utility rates.
- Specify rooms that serve other spaces with the room-to-room air transfer feature.
- Leverage LEED-specific features—automatic building rotation, Baseline Building Creator per ASHRAE 90.1 Appendix G, automatic fan-resizing, Performance Rating Method Reports and a complete set of 90.1-2007 systems, construction types and equipment for LEED® submission.

### Time-saving templates and libraries

TRACE libraries contain common design parameters for construction materials, equipment, base utilities, weather and scheduling. Library members include more than 50 air distribution systems, and a host of HVAC equipment and accessories.

Templates allow the user to enter this information once and then apply it to an unlimited number of rooms. If a design criterion changes, the template can be edited to automatically update all related room information.

### Ease of use

- Utilize “alternatives” to simplify comparisons of the effects of system variations, different utility rates and construction or equipment options.
- Use the LEED Guide for step-by-step instructions on how to model projects for LEED certification.
- Display and enter values in either English I-P or metric SI units.
- View multiple reports simultaneously for easy alternative comparison. Predefined reports include design reports, analysis reports, entered data reports and reports formatted to demonstrate compliance with ASHRAE Standard 90.1-2007 Energy Cost Budget (ECB) Method and LEED Energy and Atmosphere Credit 1.
- Customize energy and load profile reports using the built-in graphing tool.

### Flexible file-handling options

- Import weather data from TMY, TMY2, TMY3, TRY, WY2, CEC, CTZ, CWC, EPW and IWEW files.
- Import fenestration data from LBNL Window software.
- Import/export gbXML data for CAD interoperability.
- Export analysis results as PDF, RTF, Word or Excel files.

### Multifaceted support

Like all Trane products, a TRACE 700 license comes with world-class support. A team of dedicated engineers provide unlimited technical support to help you discover the best solution for your HVAC design. You also receive access to our online eLearning Library, newsletters, webinars and more. To find training sessions, visit [www.tranecds.com](http://www.tranecds.com).

### Try it for free

To download free trial software, visit [www.trane.com/trace](http://www.trane.com/trace) or call C.D.S. Support: 608.787.3926



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