



## Building Technologies Program

### Tax Deduction Qualified Software

#### TRACE 700 version 6.2.7

On this page you'll find information about the TRACE 700 version 6.2.7 [qualified computer software](http://www.buildings.energy.gov/qualified_software.html) ([www.buildings.energy.gov/qualified\\_software.html](http://www.buildings.energy.gov/qualified_software.html)), which calculates energy and power cost savings that meet federal tax incentive requirements for commercial buildings.

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*Statements in quotes are from the software developer.*

Internal Revenue Code §179D (c)(1) and (d) Regulations Notice 2006-52, Section 6 requirements as amplified by Notice 2008-40, Section 4 requirements.	
(1) The name, address, and (if applicable) web site of the software developer;	Trane 3600 Pammel Creek Road La Crosse, WI 54601 <a href="http://www.trane.com/trace">http://www.trane.com/trace</a>
(2) The name, email address, and telephone number of the person to contact for further information regarding the software;	CDS Help <a href="mailto:cdshelp@trane.com">cdshelp@trane.com</a> 608-787-3926
(3) The name, version, or other identifier of the software as it will appear on the list;	TRACE 700 version 6.2.7
(4) All test results, input files, output files, weather data, modeler reports, and the executable version of the software with which the tests were conducted; and	Provided to DOE.
(5) A declaration by the developer of the software, made under penalties of perjury, that—	
(a) The software has been tested according to ANSI/ASHRAE Standard 140-2007 Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs;	"TRACE 700 has been tested in accordance with ANSI/ASHRAE Standard 140-2007."
(b) The software can model explicitly—	"TRACE 700 is fully compliant with ASHRAE 90.1-2001 and meets all of the below requirements."
(i) 8,760 hours per year;	"The TRACE 700 software complies."
(ii) Calculation methodologies for the building components being modeled;	"The TRACE 700 software complies."
(iii) Hourly variations in occupancy, lighting power, miscellaneous equipment power, thermostat setpoints, and HVAC system operation, defined separately for each day of the week and holidays;	"The TRACE 700 software complies."
(iv) Thermal mass effects;	"The TRACE 700 software complies."

(v) Ten or more thermal zones;	"The TRACE 700 software complies."
(vi) Part-load performance curves for mechanical equipment;	"The TRACE 700 software complies."
(vii) Capacity and efficiency correction curves for mechanical heating and cooling equipment; and	"The TRACE 700 software complies."
(viii) Air-side and water-side economizers with integrated control.	"The TRACE 700 software complies."
(c) The software can explicitly model each of the following HVAC systems listed in Appendix G of Standard 90.1-2004:	
(i) Packaged Terminal Air Conditioner (PTAC) (air source), single-zone package (through the wall), multi-zone hydronic loop, air-to-air DX coil cooling, central boiler, hot water coil.	"The TRACE 700 software models this system."
(ii) Packaged Terminal Heat Pump (PTHP) (air source), single-zone package (through the wall), air-to-air DX coil heat/cool.	"The TRACE 700 software models this system."
(iii) Packaged Single Zone Air Conditioner (PSZ-AC), single-zone air, air-to-air DX coil cool, gas coil, constant-speed fan.	"The TRACE 700 software models this system."
(iv) Packaged Single Zone Heat Pump (PSZ-HP), single-zone air, air-to-air DX coil cool/heat, constant-speed fan.	"The TRACE 700 software models this system."
(v) Packaged Variable-Air-Volume (PVAV) with reheat, multi-zone hydronic loop, air-to-air DX coil, VAV fan, boiler, hot water VAV terminal boxes.	"The TRACE 700 software models this system."
(vi) Packaged Variable-Air-Volume with parallel fan powered boxes (PVAV with PFP boxes), multi-zone air, DX coil, VAV fan, fan-powered induction boxes, electric reheat.	"The TRACE 700 software models this system."
(vii) Variable-Air-Volume (VAV) with reheat, multi-zone air; multi-zone hydronic loop, air-handling unit, chilled water coil, hot water coil, VAV fan, chiller, boiler, hot water VAV boxes.	"The TRACE 700 software models this system."
(viii) Variable-Air-Volume with parallel fan powered boxes (VAV with PFP boxes), multi-zone air, air-handling unit, chilled water coil, hot water coil, VAV fan, chiller, fan-powered induction boxes, electric reheat.	"The TRACE 700 software models this system."
(d) The software can—	
(i) Either directly determine energy and power costs or produce hourly reports of energy use by energy source suitable for determining energy and power costs separately; and	"The TRACE 700 software complies."
(ii) Design load calculations to determine required HVAC equipment capacities and air and water flow rates.	"The TRACE 700 software complies."
(e) The software can explicitly model:	
(i) Natural ventilation.	"The TRACE 700 software does not explicitly model this feature and shall not be used for projects with this technology."
(ii) Mixed mode (natural and mechanical) ventilation.	"The TRACE 700 software does not explicitly model this feature and shall not be used for projects with

	this technology.”
(iii) Earth tempering of outdoor air.	“The TRACE 700 software does not explicitly model this feature and shall not be used for projects with this technology.”
(iv) Displacement ventilation.	“The TRACE 700 software can model displacement ventilation.”
(v) Evaporative cooling.	“The TRACE 700 software can model direct and indirect evaporative cooling.”
(vi) Water use by occupants for cooking, cleaning or other domestic uses.	“The TRACE 700 software can model water usage.”
(vii) Water use by heating, cooling, or other equipment, or for on-site landscaping.	“The TRACE 700 software does not explicitly model this feature and shall not be used for projects with this technology.”
(viii) Automatic interior or exterior lighting controls (such as occupancy, photocells, or time-clocks).	“The TRACE 700 software can model automatic interior and exterior lighting controls but cannot model photocells to control lighting.”
(ix) Daylighting (sidelighting, skylights, or tubular daylight devices).	“The TRACE 700 software can model daylighting.”
(x) Improved fan system efficiency through static pressure reset.	“The TRACE 700 software can model static pressure reset.”
(xi) Radiant heating or cooling (low or high temperature).	“The TRACE 700 software does not explicitly model this feature and shall not be used for projects with this technology.”
(xii) Multiple or variable-speed control for fans, cooling equipment, or cooling towers.	“The TRACE 700 software can model multiple and variable speed control for fans, cooling equipment, and cooling towers.”
(xiii) On-site energy systems (such as combined heat and power systems, fuel cells, solar photovoltaic, solar thermal, or wind).	“The TRACE 700 software can model combined heat and power systems.”

Date Posted: 20 July 2011