



Building Technologies Program

Tax Deduction Qualified Software

eQUEST version 3.63b, build 6510

On this page you'll find information about the eQUEST version 3.63b, build 6510 [qualified computer software](http://www.buildings.energy.gov/qualified_software.html) (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;	James J. Hirsch & Associates 12185 Presilla Road Camarillo, California 93012-9243
(2) The name, email address, and telephone number of the person to contact for further information regarding the software;	Jeff Hirsch James J. Hirsch & Associates Jeff.Hirsch@DOE2.com +1 (805) 553-9000 (phone) +1 (805) 532-2401 (fax)
(3) The name, version, or other identifier of the software as it will appear on the list;	eQUEST v3.63b.
(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;	"The software has been tested according to ANSI/ASHRAE Standard 140-2007 Standard Method of Test for the Evaluation of Building Energy Analysis Computers Programs."
(b) The software can model explicitly—	
(i) 8,760 hours per year;	"The eQUEST v3.63b software complies."
(ii) Calculation methodologies for the building components being modeled;	"The eQUEST v3.63b 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 eQUEST v3.63b software complies."
(iv) Thermal mass effects;	"The eQUEST v3.63b software complies."

(v) Ten or more thermal zones;	"The eQUEST v3.63b software complies."
(vi) Part-load performance curves for mechanical equipment;	"The eQUEST v3.63b software complies."
(vii) Capacity and efficiency correction curves for mechanical heating and cooling equipment; and	"The eQUEST v3.63b software complies."
(viii) Air-side and water-side economizers with integrated control.	"The eQUEST v3.63b software complies with the air-side economizer requirements and with two forms of water-side economizers (WSE): dedicated WSE coils in air handlers and 'parallel' (i.e., non-integrated) WSE such as a strainer cycle. The eQUEST v3.63b software cannot model 'parallel' WSE (i.e., with integrated control) and shall not be used for projects with that technology."
(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 eQUEST v3.63b 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 eQUEST v3.63b 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 eQUEST v3.63b 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 eQUEST v3.63b 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 eQUEST v3.63b 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 eQUEST v3.63b 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 eQUEST v3.63b 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 eQUEST v3.63b 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 eQUEST v3.63b software complies."
(ii) Design load calculations to determine required HVAC equipment capacities and air and water flow rates.	"The eQUEST v3.63b software complies."

(e) The software can explicitly model:	
(i) Natural ventilation.	"The eQUEST v3.63b software can model simple single-zone natural ventilation using air changes per hour (user-defined) or Sherman-Grimsrud (calculated)."
(ii) Mixed mode (natural and mechanical) ventilation.	"The eQUEST v3.63b software cannot model mixed mode ventilation."
(iii) Earth tempering of outdoor air.	"The eQUEST v3.63b software cannot model earth tempering of outside air."
(iv) Displacement ventilation.	"The eQUEST v3.63b software cannot model displacement ventilation."
(v) Evaporative cooling.	"The eQUEST v3.63b software models evaporative cooling."
(vi) Water use by occupants for cooking, cleaning or other domestic uses.	"The eQUEST v3.63b software cannot model water use by occupants."
(vii) Water use by heating, cooling, or other equipment, or for on-site landscaping.	"The eQUEST v3.63b software cannot model water use by heating, cooling, and equipment or for on-site landscaping."
(viii) Automatic interior or exterior lighting controls (such as occupancy, photocells, or time-clocks).	"The eQUEST v3.63b software models automatic interior or exterior lighting controls such as occupancy sensors or time-clocks, but cannot model photocells."
(ix) Daylighting (sidelighting, skylights, or tubular daylight devices).	"The eQUEST v3.63b software models sidelighting and skylights, but cannot model tubular daylight devices."
(x) Improved fan system efficiency through static pressure reset.	"The eQUEST v3.63b software cannot model improved fan system efficiency through static pressure reset."
(xi) Radiant heating or cooling (low or high temperature).	"The eQUEST v3.63b software models low temperature radiant systems but cannot model radiant cooling systems or high temperature radiant heating systems."
(xii) Multiple or variable-speed control for fans, cooling equipment, or cooling towers.	"The eQUEST v3.63b software models 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 eQUEST v3.63b software models on-site energy systems including engines, gas turbines,

	steam turbine generators and photovoltaic arrays. eQUEST v3.63b cannot model fuel cells, solar thermal, or wind systems."
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