

## Tax Deduction Qualified Software

### Tas version 9.2.1.6

On this page you'll find information about the Tas version 9.2.1.6 [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.

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| (1) The name, address, and (if applicable) web site of the software developer;  | Environmental Design Solutions Ltd.<br>13-14 Cofferridge Close<br>Stony Stratford<br>Milton Keynes<br>Buckinghamshire<br>MK11 1BY<br><a href="http://www.edsl.net">http://www.edsl.net</a> |
| (2) The name, email address, and telephone number of the person to contact for further information regarding the software;  | Michael Sawford<br><a href="mailto:michael@edsl.net">michael@edsl.net</a><br>+44 (0)1908261461   |
| (3) The name, version, or other identifier of the software as it will appear on the list;   | Tas<br>Version 9.2.1.6   |
| (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—  | "On behalf of the Tas development team I certify the following:"   |
| (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 Computer Programs."                        |
| (b) The software can model explicitly—  | "Tas 9.2.1.6 Software is fully compliant with ASHRAE 90.1-2001 and meets all of the below requirements."   |
| (i) 8,760 hours per year;   | "Tas 9.2.1.6 Software complies."   |
| (ii) Calculation methodologies for the building components being modeled;   | "Tas 9.2.1.6 Software complies."   |
| (iii) Hourly variations in occupancy, lighting power, miscellaneous equipment power, thermostat setpoints, and HVAC system operation, defined                         | "Tas 9.2.1.6 Software complies."   |

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| separately for each day of the week and holidays;   |  |
| (iv) Thermal mass effects;  | "Tas 9.2.1.6 Software complies."           |
| (v) Ten or more thermal zones;  | "Tas 9.2.1.6 Software complies."           |
| (vi) Part-load performance curves for mechanical equipment;   | "Tas 9.2.1.6 Software complies."           |
| (vii) Capacity and efficiency correction curves for mechanical heating and cooling equipment; and   | "Tas 9.2.1.6 Software complies."           |
| (viii) Air-side and water-side economizers with integrated control.   | "Tas 9.2.1.6 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.                                | "Tas 9.2.1.6 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.   | "Tas 9.2.1.6 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.  | "Tas 9.2.1.6 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.  | "Tas 9.2.1.6 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.   | "Tas 9.2.1.6 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.  | "Tas 9.2.1.6 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.                            | "Tas 9.2.1.6 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. | "Tas 9.2.1.6 Software models this system." |

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| (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 | "Tas 9.2.1.6 Software complies."   |
| (ii) Design load calculations to determine required HVAC equipment capacities and air and water flow rates.   | "Tas 9.2.1.6 Software complies."   |
| (e) The software can explicitly model:  |  |
| (i) Natural ventilation.  | "Tas 9.2.1.6 Software models natural ventilation."   |
| (ii) Mixed mode (natural and mechanical) ventilation.   | "Tas 9.2.1.6 Software models mixed mode ventilation."  |
| (iii) Earth tempering of outdoor air.   | "Tas 9.2.1.6 Software models earth tempering of outdoor air."  |
| (iv) Displacement ventilation.  | "Tas 9.2.1.6 Software models displacement ventilation."  |
| (v) Evaporative cooling.  | "Tas 9.2.1.6 Software models evaporative cooling."   |
| (vi) Water use by occupants for cooking, cleaning or other domestic uses.   | "Tas 9.2.1.6 cannot model water use by occupants and shall not be used for projects with this requirement."  |
| (vii) Water use by heating, cooling, or other equipment, or for on-site landscaping.  | "Tas 9.2.1.6 cannot model water use by heating, cooling, and other equipment as well as for on-site landscaping and shall not be used for projects with this requirement." |
| (viii) Automatic interior or exterior lighting controls (such as occupancy, photocells, or time-clocks).  | "Tas 9.2.1.6 Software models automatic interior and exterior lighting controls."   |
| (ix) Daylighting (sidelighting, skylights, or tubular daylight devices).  | "Tas 9.2.1.6 software models sidelighting, skylights, and tubular daylighting devices."  |
| (x) Improved fan system efficiency through static pressure reset.   | "Tas 9.2.1.6 software models improved fan system efficiency through static pressure reset."  |
| (xi) Radiant heating or cooling (low or high temperature).  | "Tas 9.2.1.6 software models low and high temperature radiant heating and cooling."  |
| (xii) Multiple or variable-speed control for fans, cooling equipment, or cooling towers.  | "Tas 9.2.1.6 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,   | "Tas 9.2.1.6 software models on-site energy systems including combined heat and power,   |

solar thermal, or wind).

photovoltaic systems, and solar water and air systems.”

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