

March 2017: CoolitDC v. 16.00 Release Notes

Version 16.00 is a new release. The list of major changes is included below.

CoolitDC preprocessor

1. Implemented the relative humidity option.
2. Plate object has been enhanced to accurately model in-plane conduction, when Plate is on or inside Solid Blocks. This enhancement permits using Plates for modeling heat spreaders in PCBs, copper plating, and similar applications, thereby reducing grid requirements and improving grid quality by eliminating very thin cells.
3. Mass and volume of some objects is now computed and reported in Objects Manager.
4. Check for Updates command has been added to the Help menu.
5. Added Tmax field for Solid Block components. If computed temperature exceeds the specified Tmax, the component is painted in CoolPlot as "burned" (orange/black pattern).
6. Improved default grids for thin Plates with heat sources to ensure accurate results.
7. Bulk T is now reported for Gauge components.
8. Interface tools have been added to facilitate navigation using keyboard. In Windows 7 and later, clicking Alt key will display all the main menus, drop-down menus and entries in dialogs with underlined characters, e.g. Plate. Clicking the underlined character on the keyboard, will move the cursor to the selected menu or dialog box. (Note: you can make the underlined shortcuts always visible via the Windows Control Panel's "Make the Keyboard Easier to Use" section.)
9. The new command, Transform Local Triad, has been added (Edit|Transform Local Triad). This command is useful for anisotropic Solid Blocks etc. when one wants to change the orientation of local axes without rotating components.
10. Objects Manager now shows the volume of imported objects.
11. Bug fix: Racks import from older Excel 2000 spreadsheet sometimes crashed.
12. Bug fix: in transient problems, incorrect initial T was used in Solid Blocks if the Open's T is lower than $T_{\text{reference}}$.
13. Bug fix: disabled components are no longer treated as (hidden) part of geometry, thereby affecting positioning and sizing operations.
14. Bug fix: T-dependent Heat Source components could lose connection to linked probes under certain conditions.
15. Bug fix: the Selected command did not work for imported objects.
16. Bug fix: Tambient for Room Ventilation Duct components was set to Treference specified in Global Conditions and could not be changed from its dialog

CoolPlot

1. Added a dialog for interactive control of most frequently used animation controls: selection of streamline type, streamline opacity, streamline animation and creation of AVI files, number of streamlines and the new function of domain rotation. The rotation can be done for stationary

streamline displays and during streamline animation; around one, two, or all three axes simultaneously.

2. Added different format options for exporting graphics images.
3. Solid Block components for which the computed temperature exceeds the specified $T_{\max}$ are painted as “burned” (orange/black pattern).
4. Improved video animation to make it smoother.
5. AVI files from transient cases now display model time.
6. The Variable Range dialog now has the Apply button that can be used to preview new settings before saving them.
7. Bug fix: Probe window did not display data if the cursor was inside CAD-imported objects.
8. Bug fix: in some instances radial lines from the CAD-imported object origin (x,y,z=0,0,0) were displayed.
9. Bug fix: x64 version of CoolPlot displayed Objects Manager tree incorrectly.
10. Bug fix: Cannot deselect selected stream line on click out of model.

Solver

1. Bug fix: specifying PPR or PVR objects resistance via Flow Rate vs Pressure drop curve, sometimes produced incorrect results.
2. Bug fix: x64 solver occasionally stopped with error #46

Known Bugs in release version

1. Overlapping Tile components (e.g. two Tiles placed on top of each other, by mistake), which are disabled due to lower priority are still reported as active in CoolPlot report file. The results for such Tiles are reported as obviously incorrect random characters, e.g. Position is reported as 1.\$ etc.