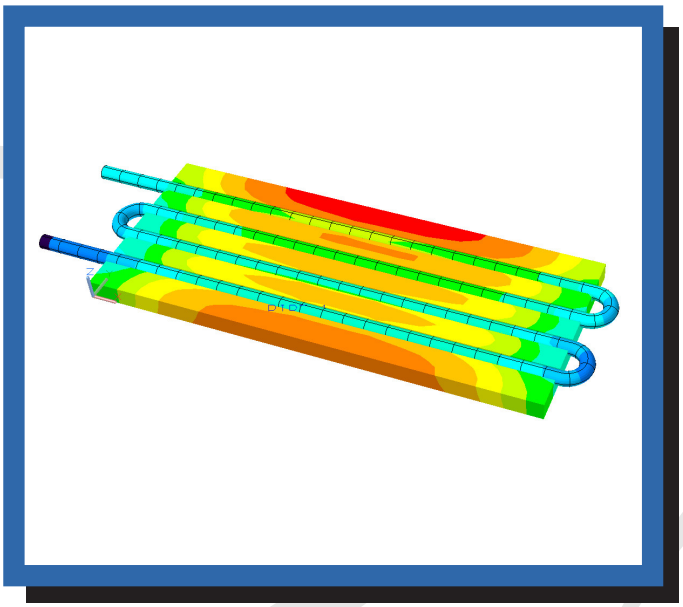
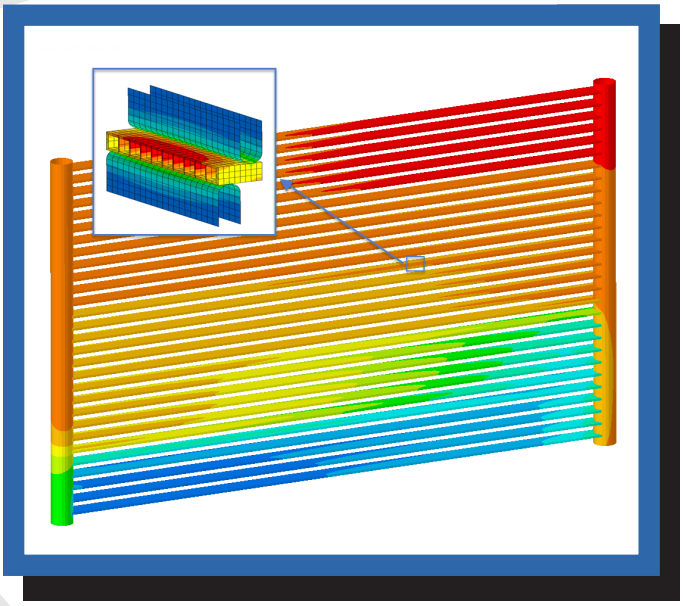
C&R TECHNOLOGIES®



Three dimensional modeling of piping systems, flow channels, and heat pipes



Investigate components such as automotive air conditioning radiators at both system and detailed levels

FloCAD® is an optional module of CRTech's CAD-based Thermal Desktop®. Thermal Desktop® handles conduction and capacitance in surfaces and solids, features arbitrary (nongeometric) nodes, and supports FEM models including innovative automatic network simplification techniques, and mapping to structural FEM codes.

FEATURES

- Generates flow networks and calculates convective heat transfer factors.
- Postprocesses temperatures, pressures, and flow rates for fast interpretation and impressive presentations.
- Faster model building and faster calculations than CFD means more alternatives investigated, sizing and sensitivities performed, and models calibrated to tests.
- Access to 2D/3D thermal surfaces and solids in addition to sketchpad-style 1D fluid network modeling.
- Automatic connection and apportionment of convection links to thermal surfaces.
- Full access to FLUINT fluid network modeling capabilities, with abbreviated inputs for common components: • fans and pumps • flow passages and ducts • filters and loss elements.
- Arbitrary working fluids including dry air, moist air (psychrometrics), water, water glycol, ammonia, and PAO. Accepts user-defined fluids as well.
- Single and two-phase flow, including evaporation and condensation, pure fluids and mixtures.
- Quick and easy generation of "Pipe" component automatically creates associated thermal and fluid networks for piping systems.

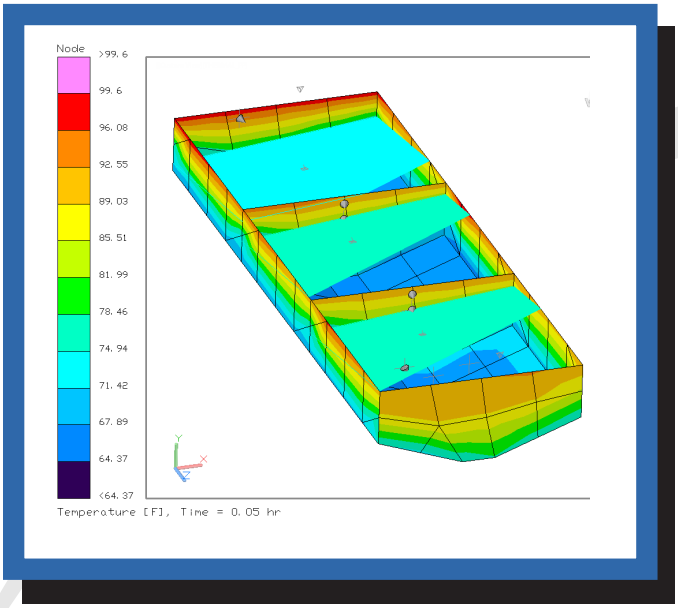
FloCAD®

FloCAD®

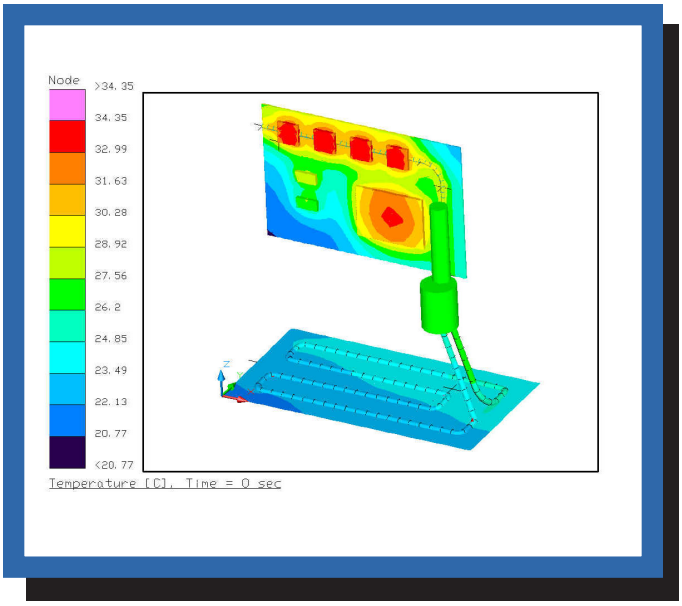
- Modeling of constant conductance heat pipes, gas loaded and variable conductance heat pipes, and loop heat pipes.
- Simplified or detailed modeling of heat exchangers.
- User-selectable natural convection routines.
- Enables concurrent engineering by providing full access to CAD-based geometry and CAD model building methods without compromising good modeling practices.
- Imports many file formats including NX, SolidWorks, Creo, ACIS, STEP
- Uses CAD geometry directly, or accepts snap-on thermal surfaces, i.e., cones and spheres, avoiding thousands of tiny facets.
- Offers true curved geometric surfaces.
- User-defined symbols and expressions add spreadsheet-like parametric modeling.
- K-factor resistance utility for common fittings and losses.
- Merging and diverging flows in tees and manifolds.
- Helper utilities for calculating flow lengths and flow areas.
- Extensive CAD functions make model building fast and effective: • Boolean, revolved, extruded surfaces • layer management.
- Snap-on entity building • drag and drop model editing • user-defined light sources.
- Capture radiation within fluid tanks and through fluids

ALSO AVAILABLE

- RadCAD® for radiation analysis.
- TD Direct® for extracting tank volumes and pipe centerlines from geometry.



Track Liquid Surface and Fluid Temperature in Complex Baffled Tanks



Quickly model the effects of two-phase cooling for electronics

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