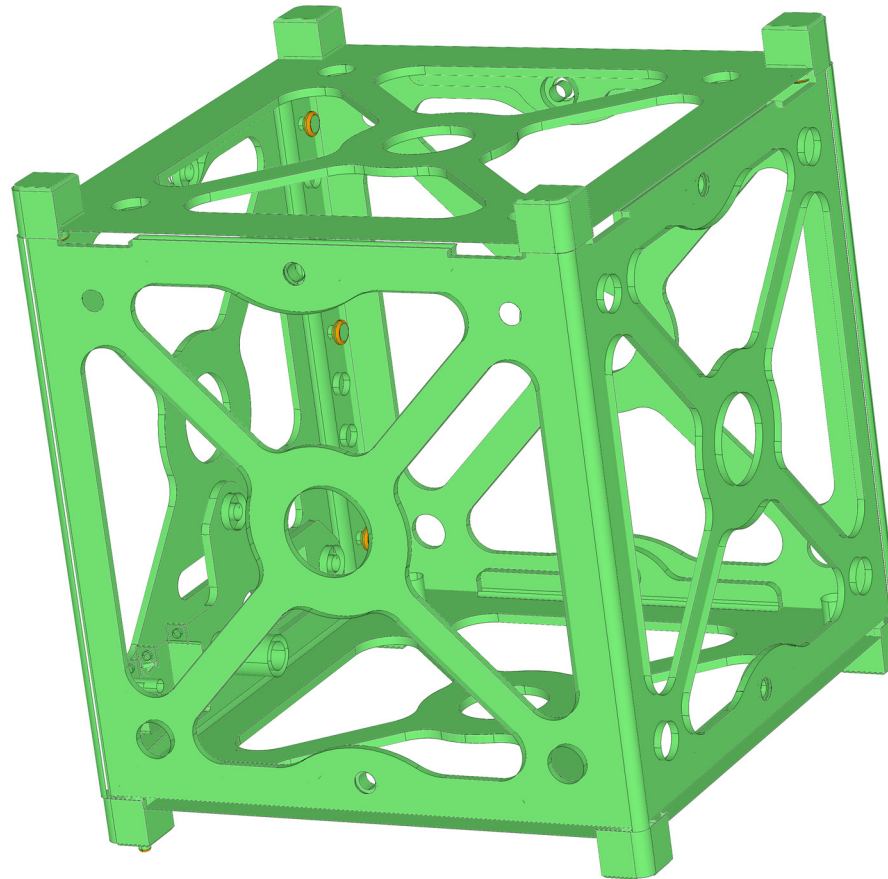


Thermal Synthesizer System v15



Direct Transfer from
CAD file to TSS



Executive

Organizes model files, common launch point for all applications, encapsulates the license manager and provides TSS file system interface.



Transfer

Transfers CAD data from STEP and IGES standards to Geometry, dual view allows for user control to move only important thermal surfaces.



Geometry

High quality computational geometry engine, allows users to easily setup and analyze thermal models. Simple intuitive user interface with built-in help.



Radk

Calculates radiation conductors and view factors with Monte Carlo ray tracing with Oct-cells. Easy output to Sinda/Fluint format. Analyzes CAD model directly.



Orbit

Creates orbits for spacecraft in orbit around any planet and the Sun. Orbits can also be based on trajectory or planetary surface.

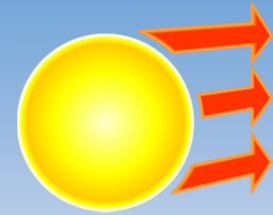


Animation

Automatically points assemblies and components at important targets such as towards the Sun, Star or Planet. Easy to use intuitive kinematics.

Heatsource

Creates heatsources to model thermal vacuum tests with infrared and/or solar sources. Allows the user to model almost any radiation source.



Heatrate

High speed ray tracing makes finding orbital heating fast and easy. Output results are automatically formatted for Spacedesign Sinda/Fluint.



Mesh

Creates finite volume meshes from computational surface geometry to be used in solid radiation to conduction modeling.



Concap

Finite volume analysis to determine conductors both inside surfaces and between objects. Simple and intuitive method for making connections.



FECC

Finite element analysis with computational surface geometry to produce second order analysis for spacecraft and any detailed thermal analysis.





Sinda/Fluint

Finite Difference solver with built in logic and sub-routines to do the heavy lifting when you need real time critical solutions for thermal problems.



XYPlot

Plotting made easy to get data into presentations fast and with a focus on displaying thermal results.



Image

Creates photo realistic images using Monte Carlo ray tracing from various light sources to capture specular (mirrored) reflections and shadowing.



Sales Contact

E-mail :

sales@spacedeisgn.com

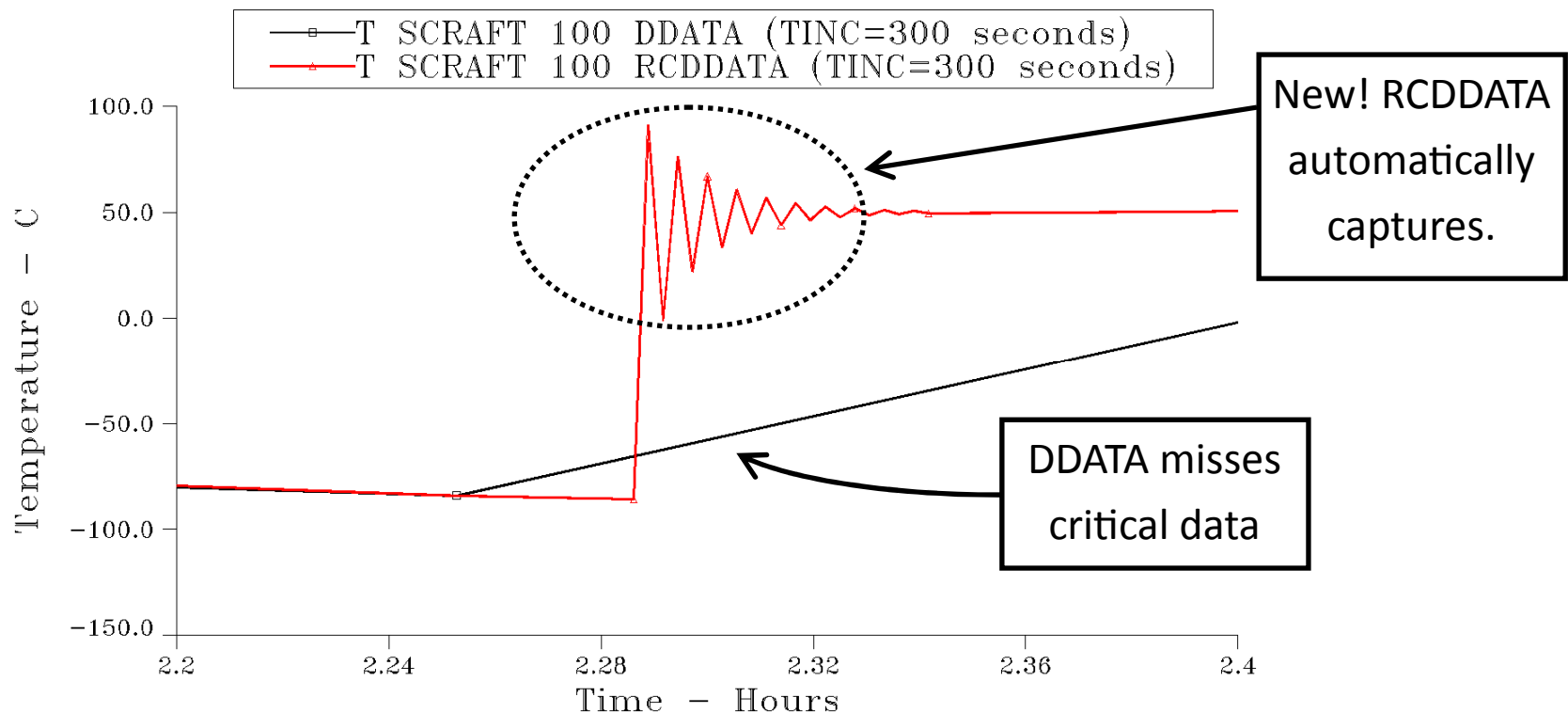
Telephone :

(713) 522-0230

Powerful RCDDATA in Spacedesign Sinda/Fluint

Capture local minimums and local maximums with Remote Control DDATA

Spacedesign Sinda/Fluint is enhanced with a powerful new function that captures local minimums and maximums like never before. The DDATA function has always allowed an easy method to capture data based solely on an increment. The modernized RCDDATA captures oscillations by detecting local minimums and local maximums to produce the data thermal engineers want automatically. It is truly a revolution in thermal software.



What is new in TSS v15.01?

Faster load times for Radiation surfaces with Booleans

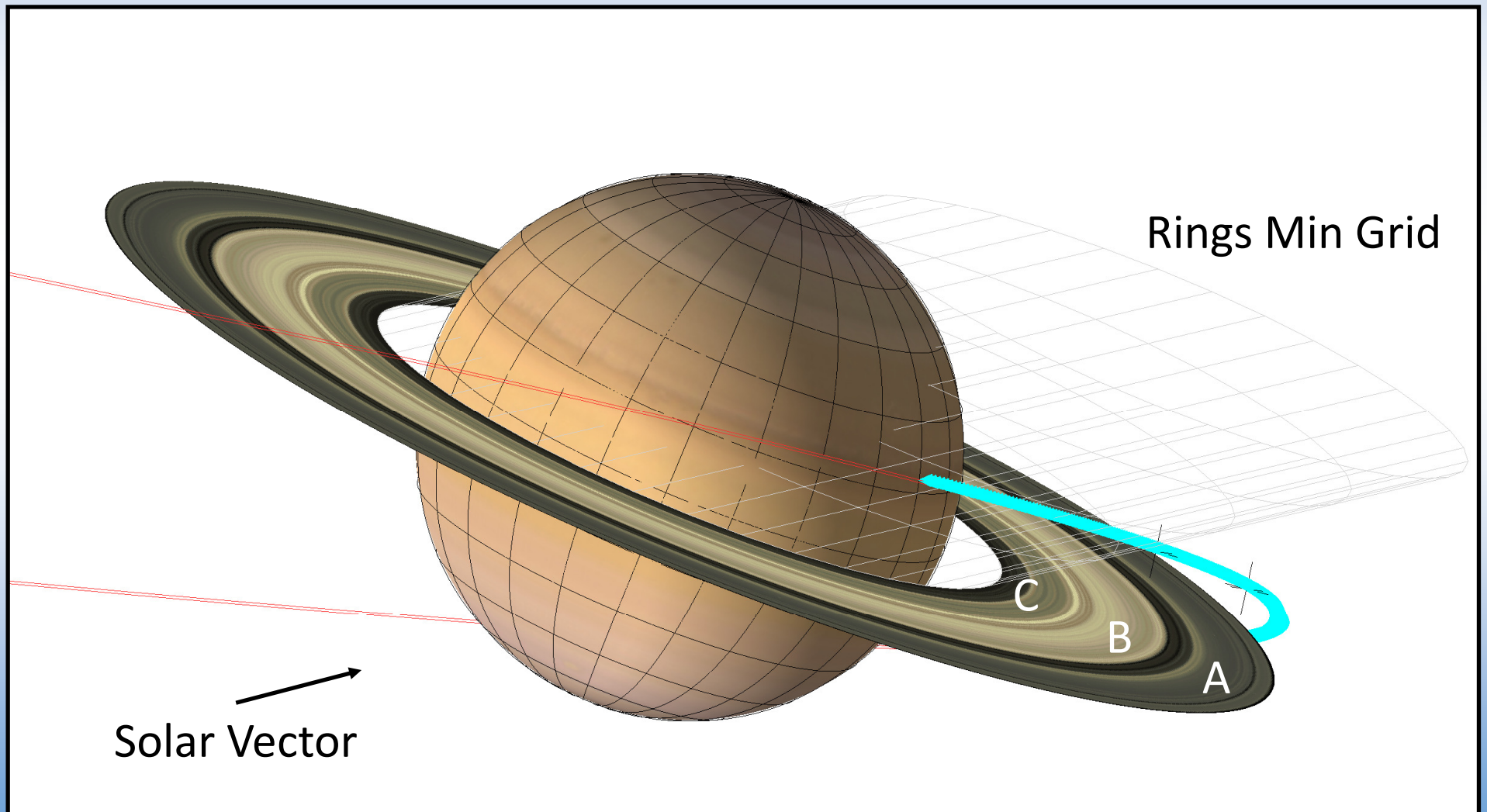
Previous version of TSS have featured Boolean operations for radiation surfaces. V14.01 increased the loading speed over v13.01 with a new mathematical technic. Even with this improved math model loading was still slow. V15.01 takes the v14.01 technic and optimizes it so the loading performance is orders of magnitude faster than previous versions. Loading models with Booleans is now as fast as loading models without Booleans. Yes! It's that fast.

Computed Surface Radiation (CSR) Method for Planetary Rings

The CSR method calculates the initial energy of a ray based on the emitting or reflecting location. Saturn default consists of three discrete ring sources for Ringlets A, B, and C and attenuated solar, based on historical models. The method extends the Solar, Albedo and Planetary IR calculations by adding Ring IR and Ring Albedo (or reflected solar). Shown to the right is the S2 (second Saturn orbit) orbital insertion for the Cassini spacecraft flying over the top of the A, B and C rings.

Computed Surface Radiation (CSR) Method for Planetary Rings -

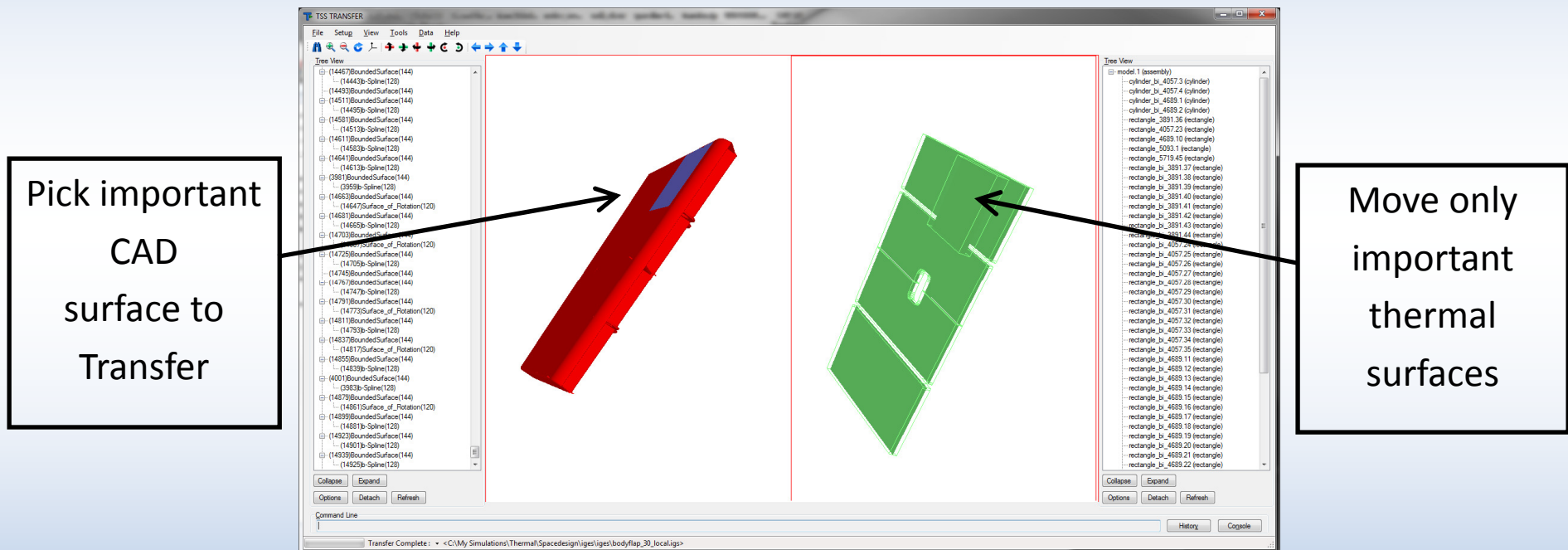
The Orbit application now displays planetary rings. Additionally, there are cones made by the inside and outside edges of the rings for easy visualization of the rings.



What is new in TSS v15.01?

Dual view Transfer allows selectively moving thermal surfaces into TSS -

More powerful transfer, gives control to Thermal Engineers, to make the right choices of which CAD surfaces accurately represent their thermal model.



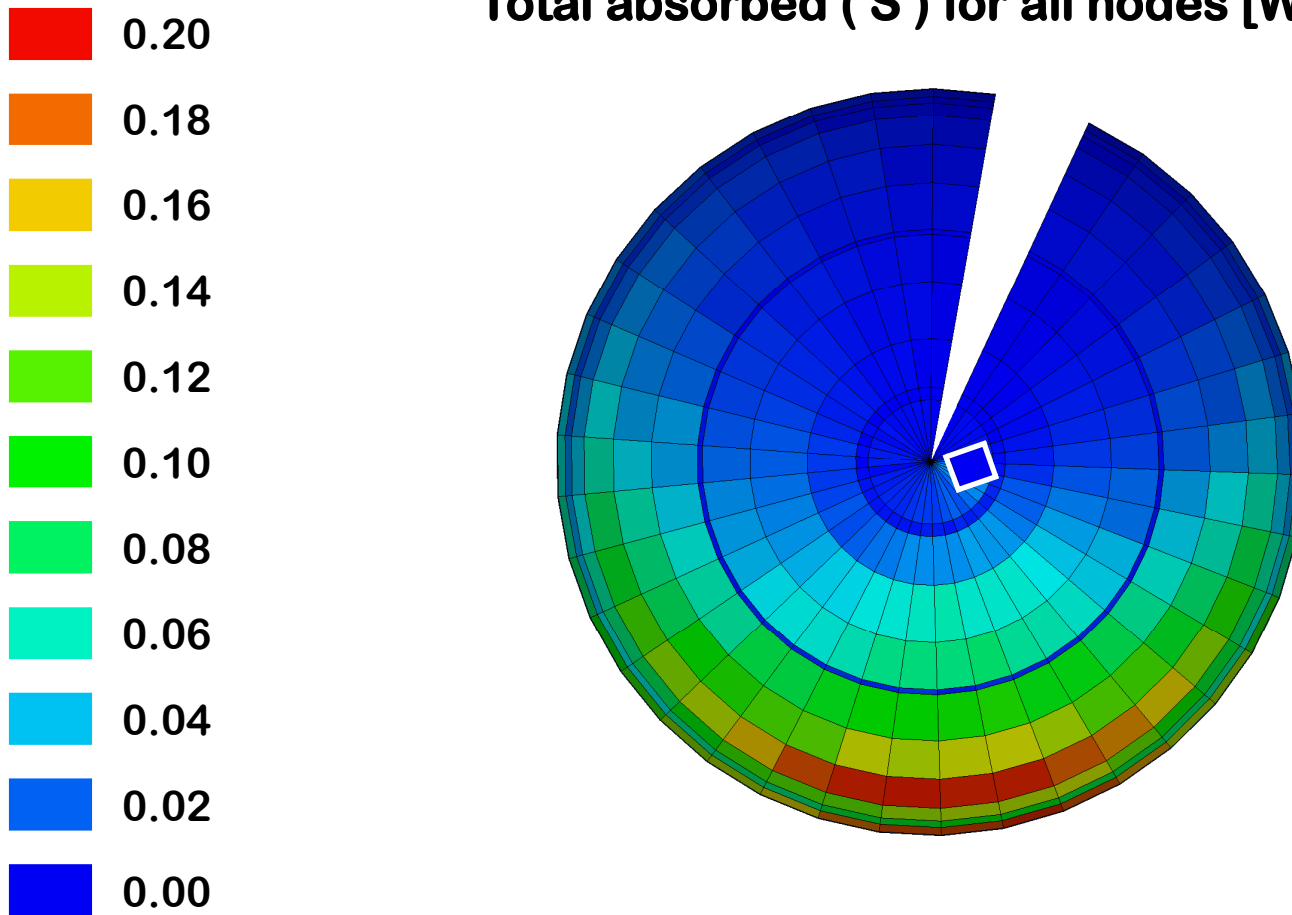
Under the hood improvements -

- B-spline surfaces transfer into Geometry with booleans
- Participating media ray-tracing with rays originating from within solid volumes
- Oct-cell only qualifier for Heatrate and Radk for discrete speed testing

New BRDF with bivariate normal-distribution and trivariate arrays -

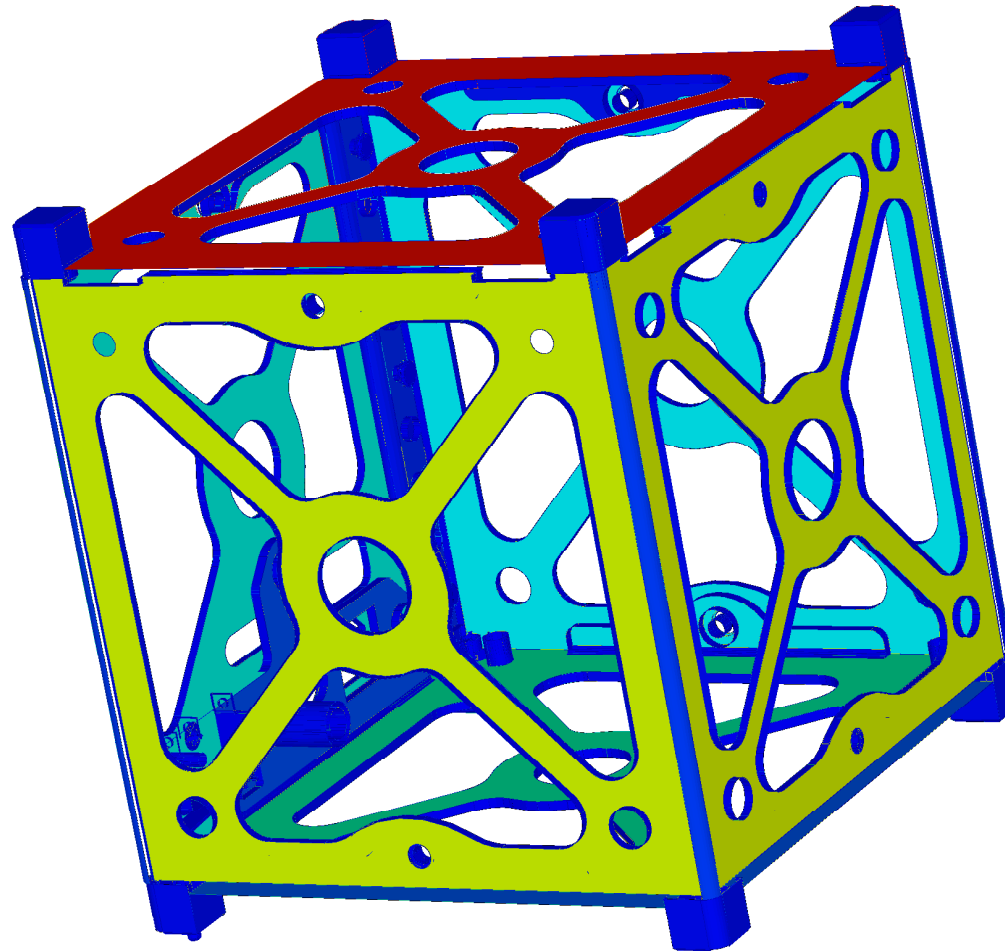
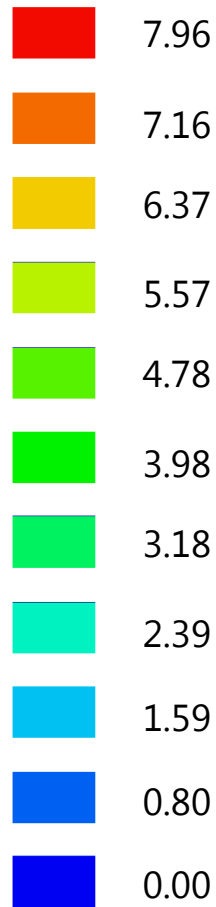
The Bi-directional Reflection Distribution Function (BRDF) bivariate array method has been optimized to within our high speed ray tracing process. Below is a sample coupon with solar energy entering the slit. The reflection is back towards the hemisphere.

Total absorbed (S) for all nodes [Watts]



Thermal Synthesizer System v15.01

Radk to space for all nodes. [inches²]



From CAD package
to Radks in
minutes. Your
Engineers need the
TSS advantage.



Executive

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