



-Innovative Products and Engineering-

CHAMELEON THERMAL RADIATOR

- Louver controlled thermal radiator for variable emissivity

- Benefits-

- *Passive*
- *Turn down ratio up to 20x*
- *Reliable, independent vane actuation*
- *Scalable*
- *Efficient TMT isothermal panel radiator*
- *Adaptable to a wide range of applications*

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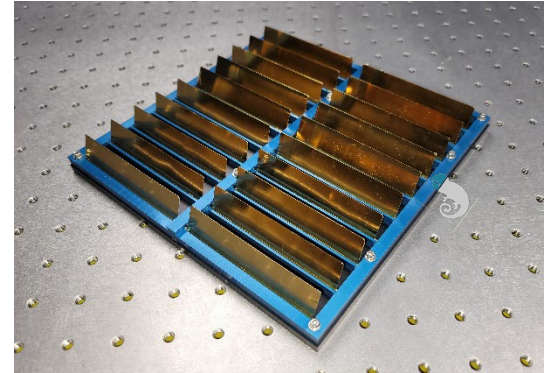
Chameleon Louver Radiator: Adaptable thermal control surfaces

Variable Thermal Radiator

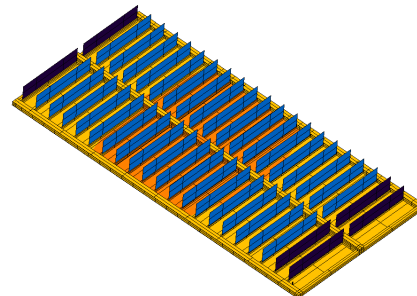
Small spacecraft and other space systems require adaptable, reliable, and low-cost thermal solutions.

All spacecraft heat eventually radiates to space and there are few methods for varying the heat rejection from thermal radiators.

TMT offers the Chameleon Thermal Radiator to support the need for thermal adaptability. Using a TMT isothermal panel radiator, and independently varying louvers, the effective emissivity can change with temperature. The design has a 20 cm width and adaptable length. Multiple assemblies can be used for wider



TMT Chameleon Thermal Radiator



Thermal Simulation of radiator/louver assembly

Typical Applications:

- *Battery temperature control*
- *Reduce heater power in long eclipse*
- *Extended thermal storage*
- *Satellite component temperature stabilization*
- *Custom applications*

Design

The thermal radiator is a flight proven, heat pipe embedded thermal radiator for superior heat spreading and efficiency. Louvers are attached to the radiator and supported off the radiator with a thin frame. Actuators are passive, redundant, and act independently for spatial control. The basic unit closes and opens over a -20 °C to +30 °C range.

The louver assembly is designed using a licensed NASA developed and flight proven technology.

Contact TMT to discuss your application

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