

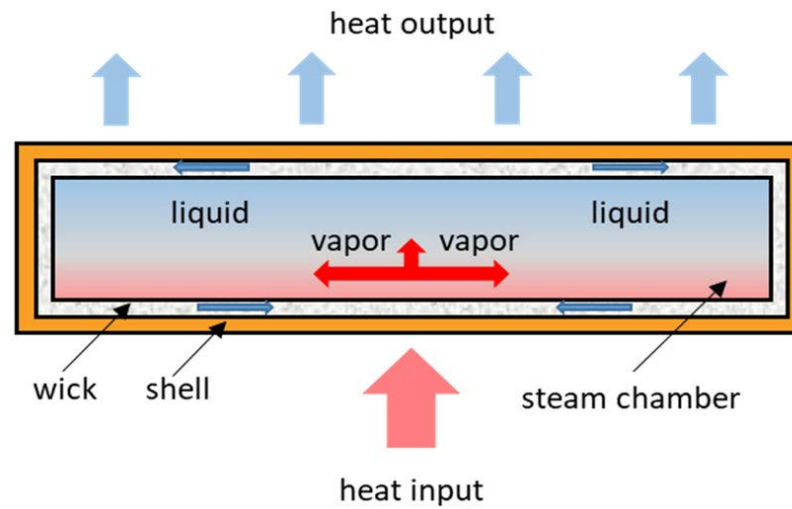


PCIe400 Thermal Model

Jean-Marc NAPPA on behalf of the LAPP team



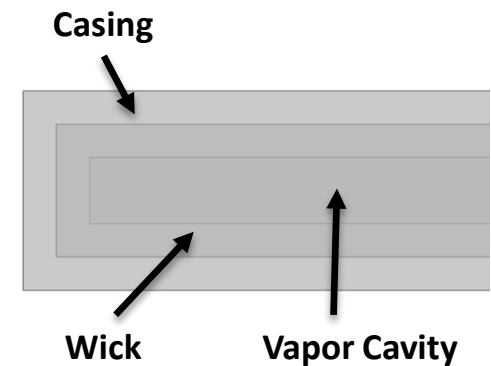
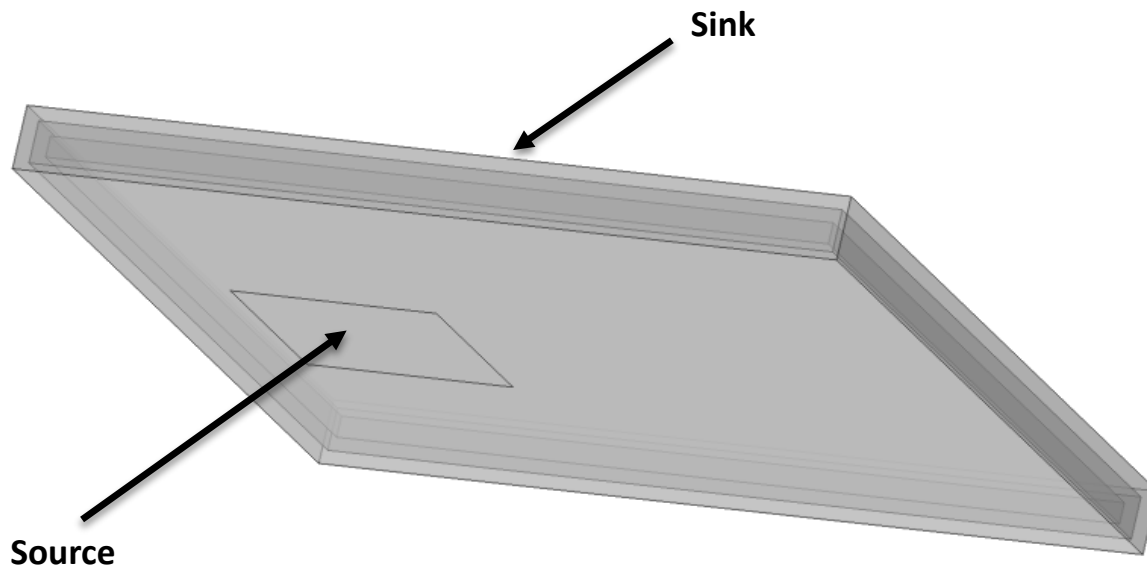
Principe Vapor Chamber



Simulation COMSOL Vapor Chamber

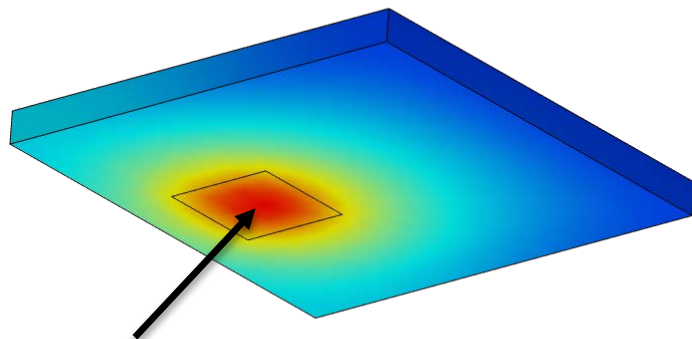
Produits utilisés:

- COMSOL Multiphysics (license IN3P3)
- Heat Transfert Module (license IN2P3)
- CFD Module (license IN2P3)
- Liquid & Gas Properties Module (license Evaluation)

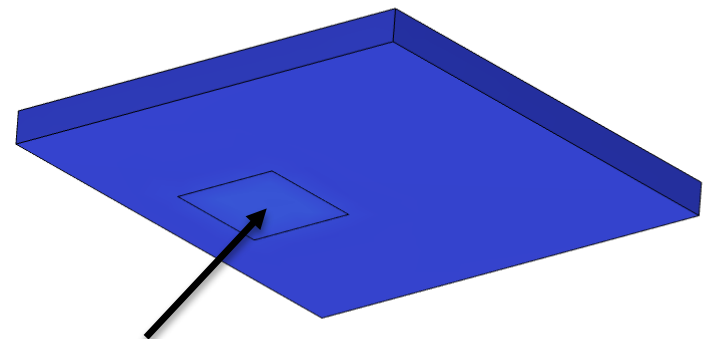


Caracteriques:

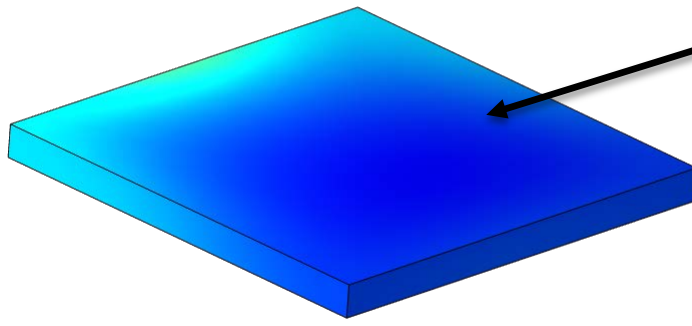
- Dimension 40x40x3mm
- Thickness Casing 0.5mm / Wick 0.5mm / Vapor Cavity 1mm
- Source 10x10mm / 50W



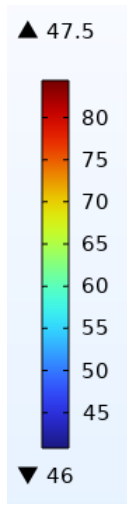
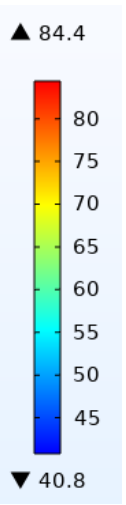
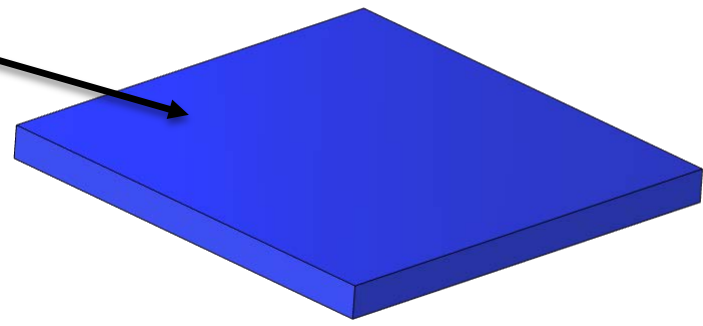
78.8°C

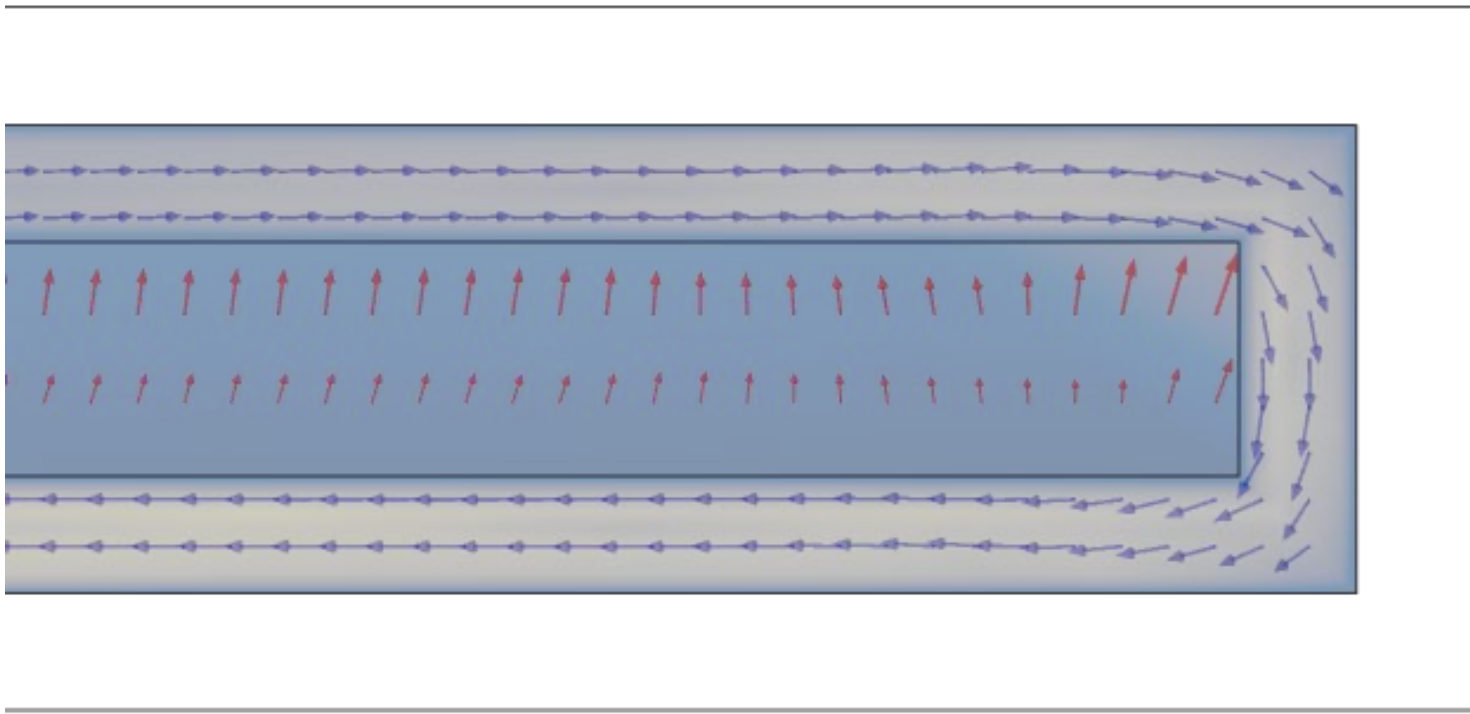


47.1°C



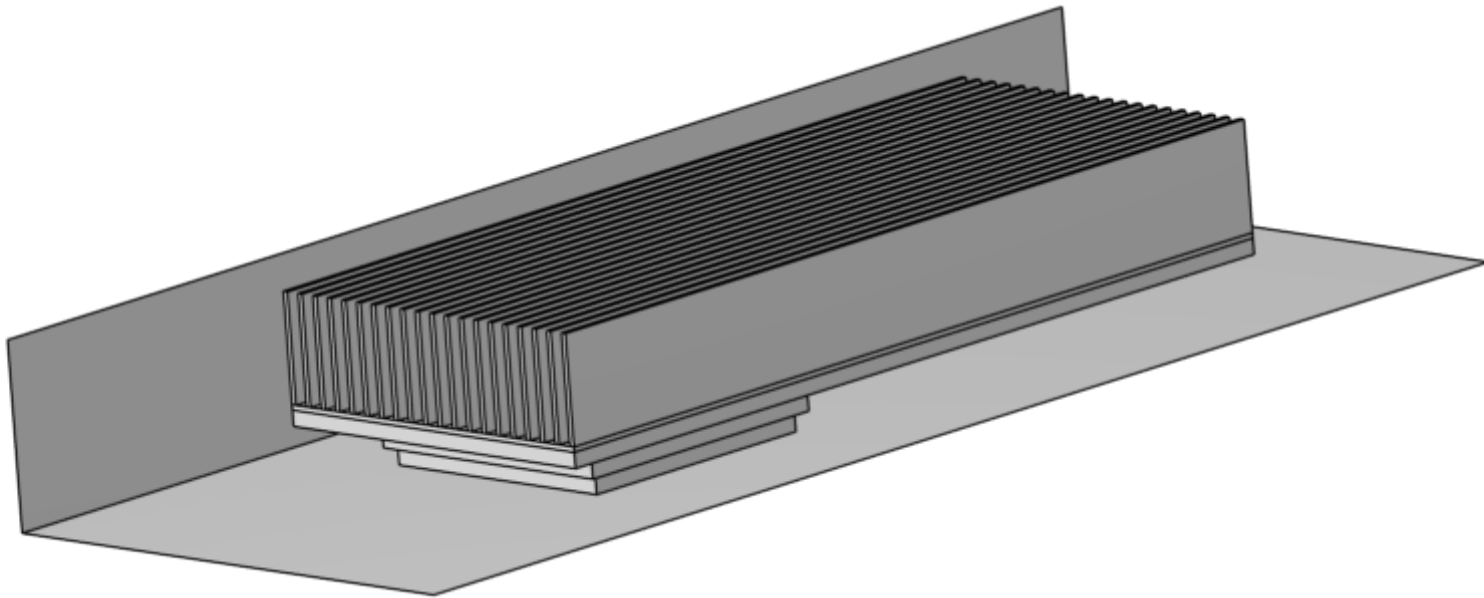
46°C



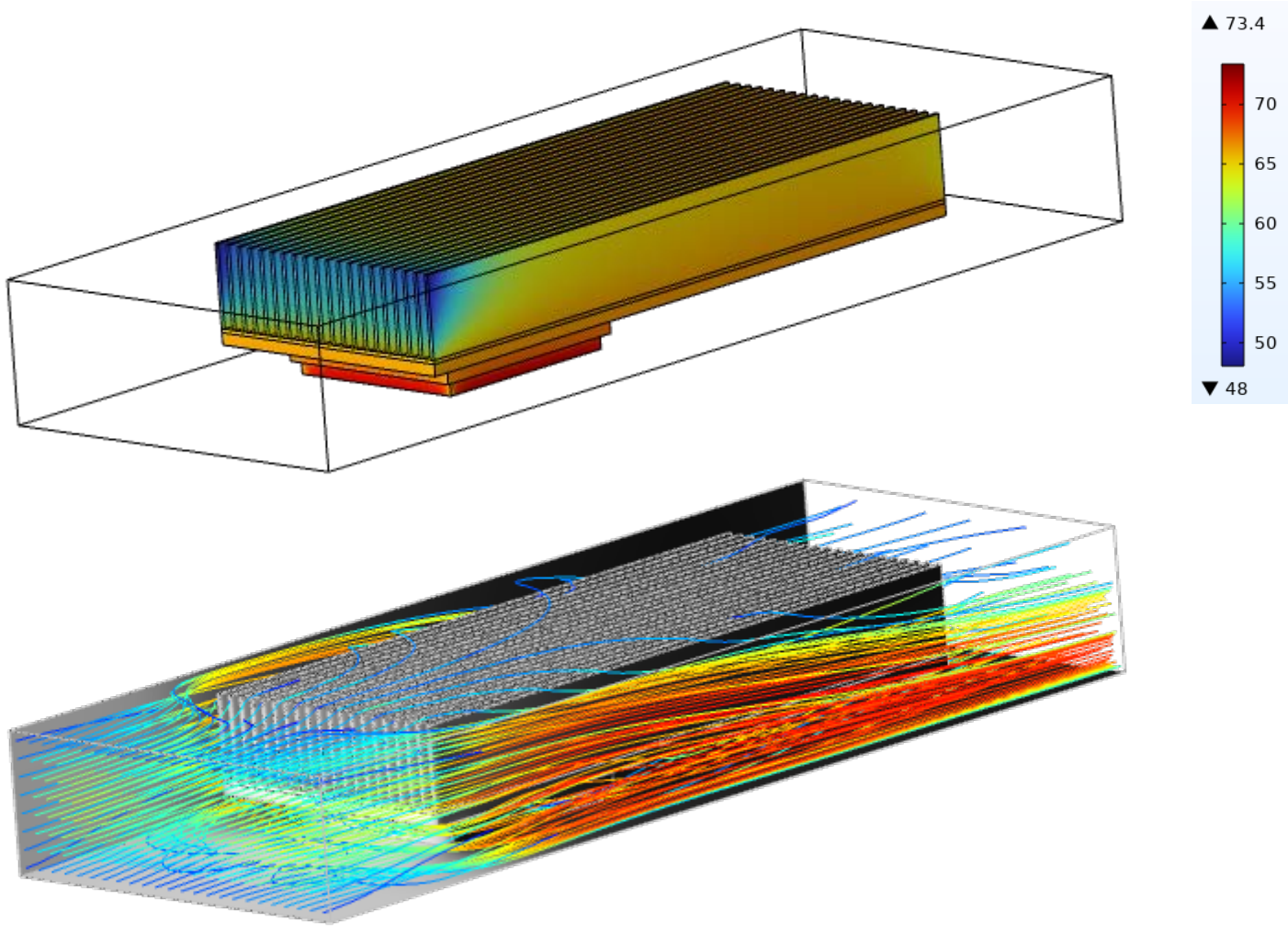


Simulation PCIe400

- **FPGA 52x42x3.5mm**
- **Encoche FPGA 56.3x52x5.4mm (Copper)**
- **Vapor Chamber 177x70x3mm (Copper)**
- **Heat Sink 177x70x25mm with Fins 20x1mm (Aluminum)**
- **Power FPGA 180W**
- **Volume Air 275x102x35mm**



- Air Flow 400LFM (2m/s)
- Temp Ambient 20°C
- Temp FPGA 71.25°C



- Air Flow 600LFM (6m/s)
- Temp Ambient 60°C
- Temp FPGA 102.6°C

