

# Strasbourg Gallery

- LED & Cooling Box
- LASER
- The Big Cooling Device
- The Small Cooling Device

# LED & Cooling Box

**UHA:** J.P. Ernenwein, **IReS:** G. Gaudiot, T. Goeltzenlichter,  
J.M. Helleboid, C. Hoffman

- **Goal:** Bonding test before and after one thermal cycle
- **Principle:** Irradiation of Silicon detector by LED pulses  
before and after thermal cycle
- **Time needed:** 1 Hour per module
- **Price:** *Normal lab equipment :* ~ 20 000 Euros  
Devoted equipment: ~ 5 000 Euros
- **Status:** Ready by mid of may

# LASER

**IReS:** F. Didierjean, Ph. Graehling, A. Lounis, C. Maazouzi, S. Moreau,  
R. Strub, T. Goeltzenlichter, P. Van Hove

- **Goal:** Bonding test (adaptable to petals)
- **Principle:** Scanning of Silicon strips with laser beam
- **Time needed:** ~ 30 min per module
- **Price:** Devoted equipment: ~ 6 000 Euros
- **Status:** Ready for module tests

# The Big Cooling Device

**IReS:** J.M. Brom, F. Didierjean, Ph. Graehling, A. Lounis, C. Maazouzi,  
S. Moreau, R. Strub, T. Goeltzenlichter, P. Van Hove

- **Goal:** Testing petals with thermic cycles
- **Principle:** Data acquisition in various conditions before, during and after thermic cycle
- **Time needed:** probably few hours for 2 petals
- **Price:** Devoted equipment: ~ 3900 Euros ( +8900 LLN)
- **Status:**
  - LLN cooling device under construction in LLN,
  - Cooling box under construction at IReS
  - Lyon DAQ is installed, our control program needs to be adapted

# The Small Cooling Device

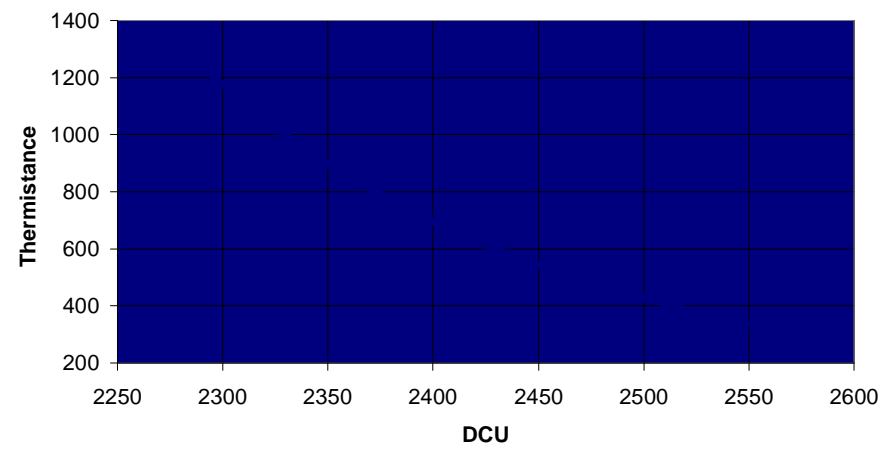
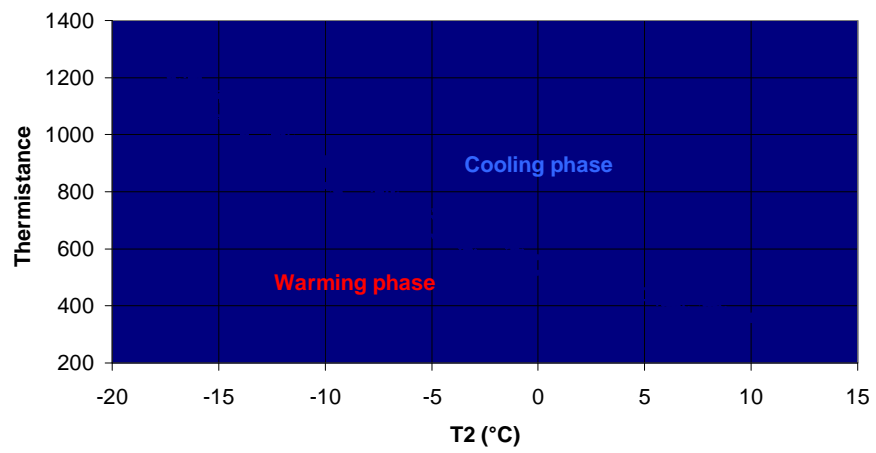
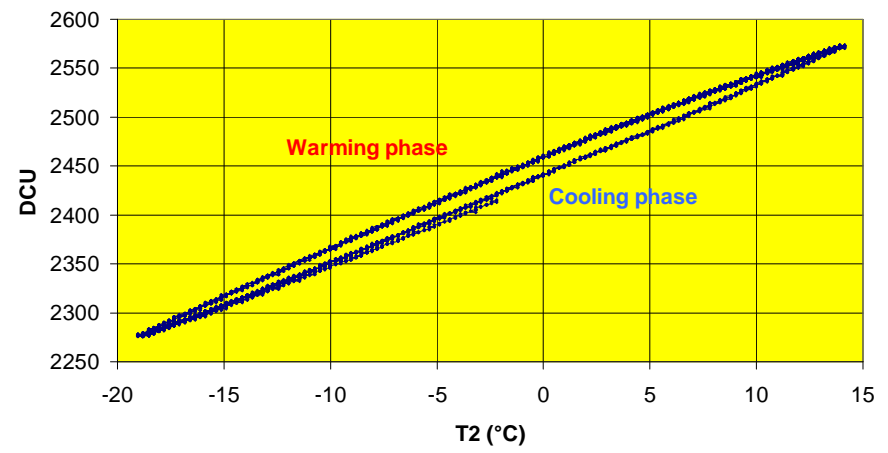
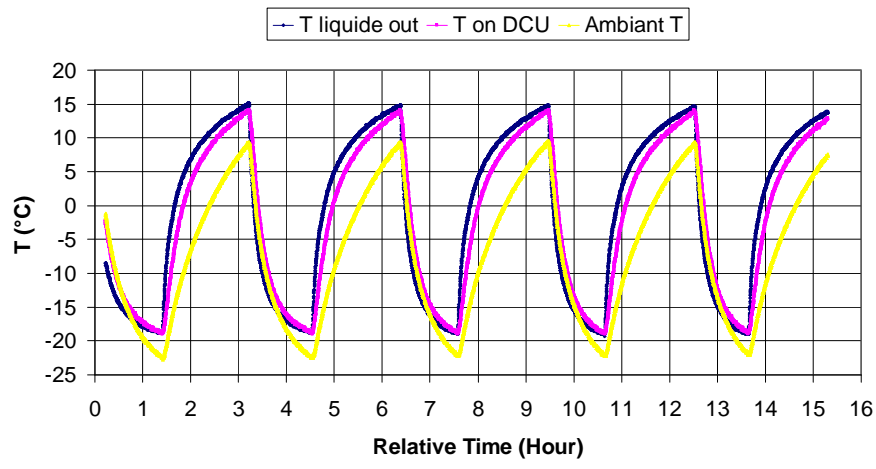
**IReS:** J.M. Brom, F. Didierjean, Ph. Graehling, A. Lounis, C. Maazouzi,  
S. Moreau, R. Strub, T. Goeltzenlichter, P. Van Hove

- **Goal:** Testing modules with thermic cycles, prototype of the big cooling device
- **Principle:** Data acquisition in various conditions before, during and after thermic cycle
- **Time needed:** ~ 3 hours per module or hybrid
- **Price:** Devoted equipment: < 1500 Euros
- **Status:** Ready... and quite versatile  
As for the BCD, Lyon DAQ will be used

# A Bit More on the SCD

- Check properties of hybrids and modules versus temperature:
  - LASER beam available inside the SCD
    - Test APV gain independently of CAL
  - Position of temperature sensor adaptable to the test
    - Calibration of DCU possible (Done with naked FR4 hybrid)

# Cycling FR4 Hybrid without any APV



Cycle period ~ 3 H