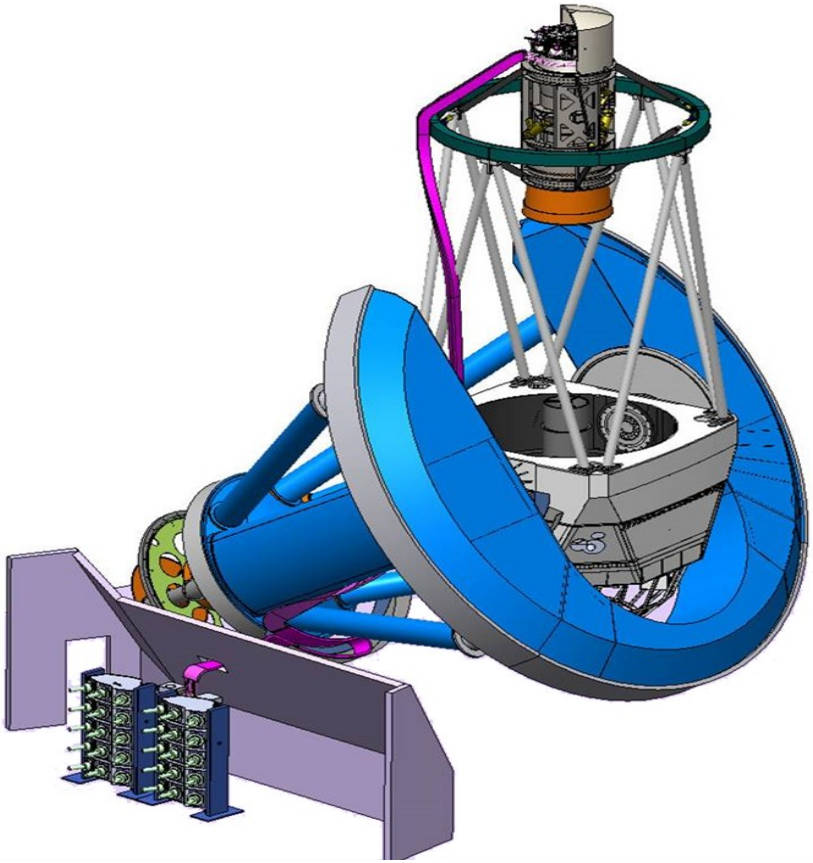
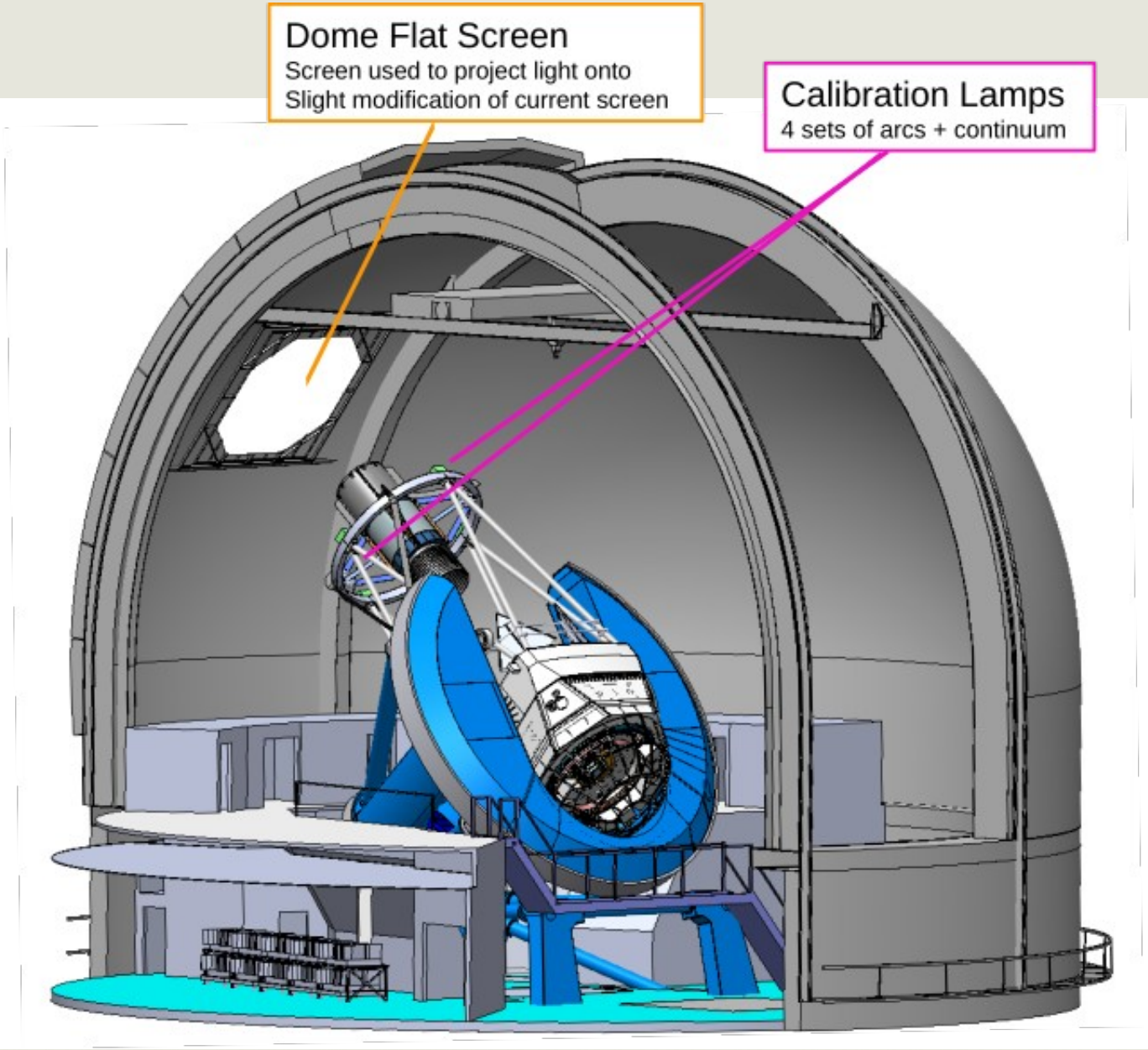


in-situ Calibration System: status

Laurent Le Guillou (UPMC/LPNHE)
Sonia Karkar (IN2P3/LPNHE)

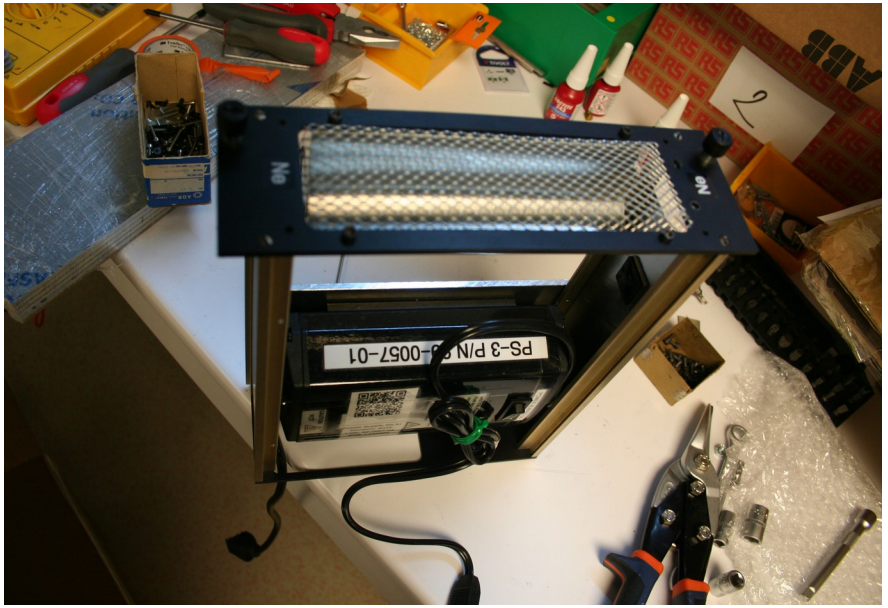
DESI Spectrograph Telecon
June 18th, 2019

Christophe Balland, Julien Coridian, Patrick Ghislain, Julien Guy, Sonia Karkar (project engineer, now at Meudon), Laurent Le Guillou, Philippe Repain


Dome Flat Screen
Screen used to project light onto
Slight modification of current screen
Calibration Lamps
4 sets of arcs + continuum

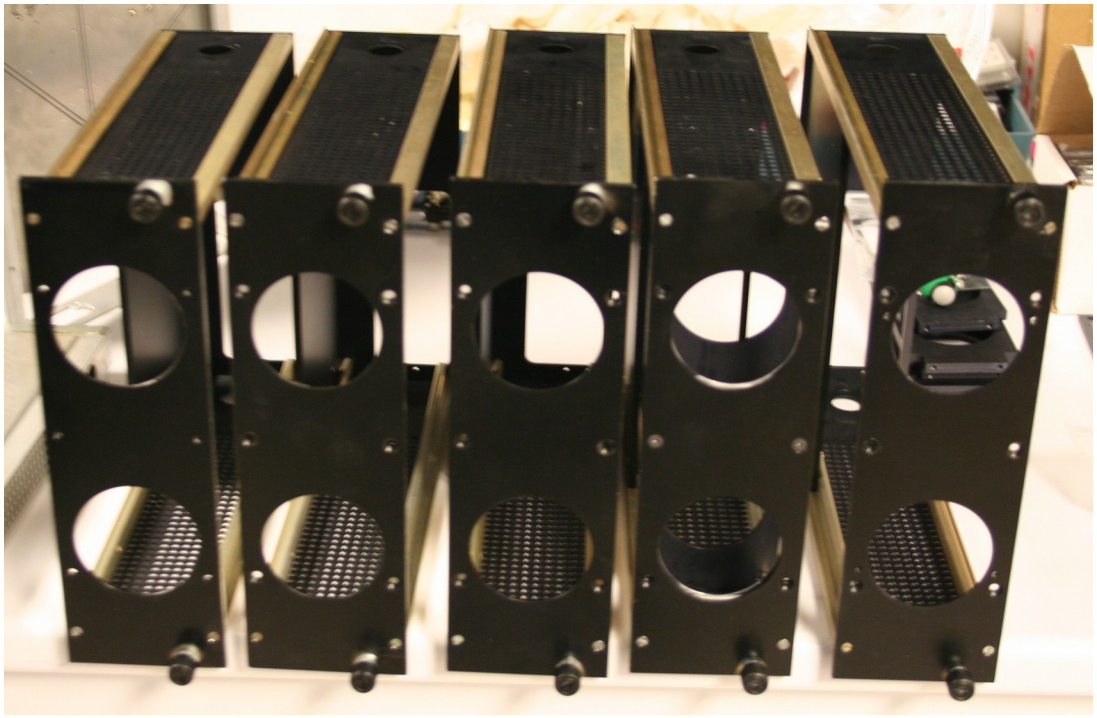
Already delivered

- **4 racks with a 8-slot PDU, validated on the new ring**
- **20 drawers with HgAr, Xe, Kr, Ne spectral lamps** HV power



Continuum: halogens lamps: delivered

- **Halogen lamps + color balancing filter** (less red)
- **Final assembly ongoing,** we will finish in the coming days
- **4 drawers sent in April.** Already at Mayall.



Our long nightmare: Cadmium lamps

- **Power supply with a different geometry**

  → Cannot fit inside a drawer

- **Long & painful redesign of a metallic case**

  → Very difficult to fit inside a NIM-like drawer

- → **Low availability of the LPNHE mechanical engineers**

(Top priority on the **LSST filter** change system + **Accident**)

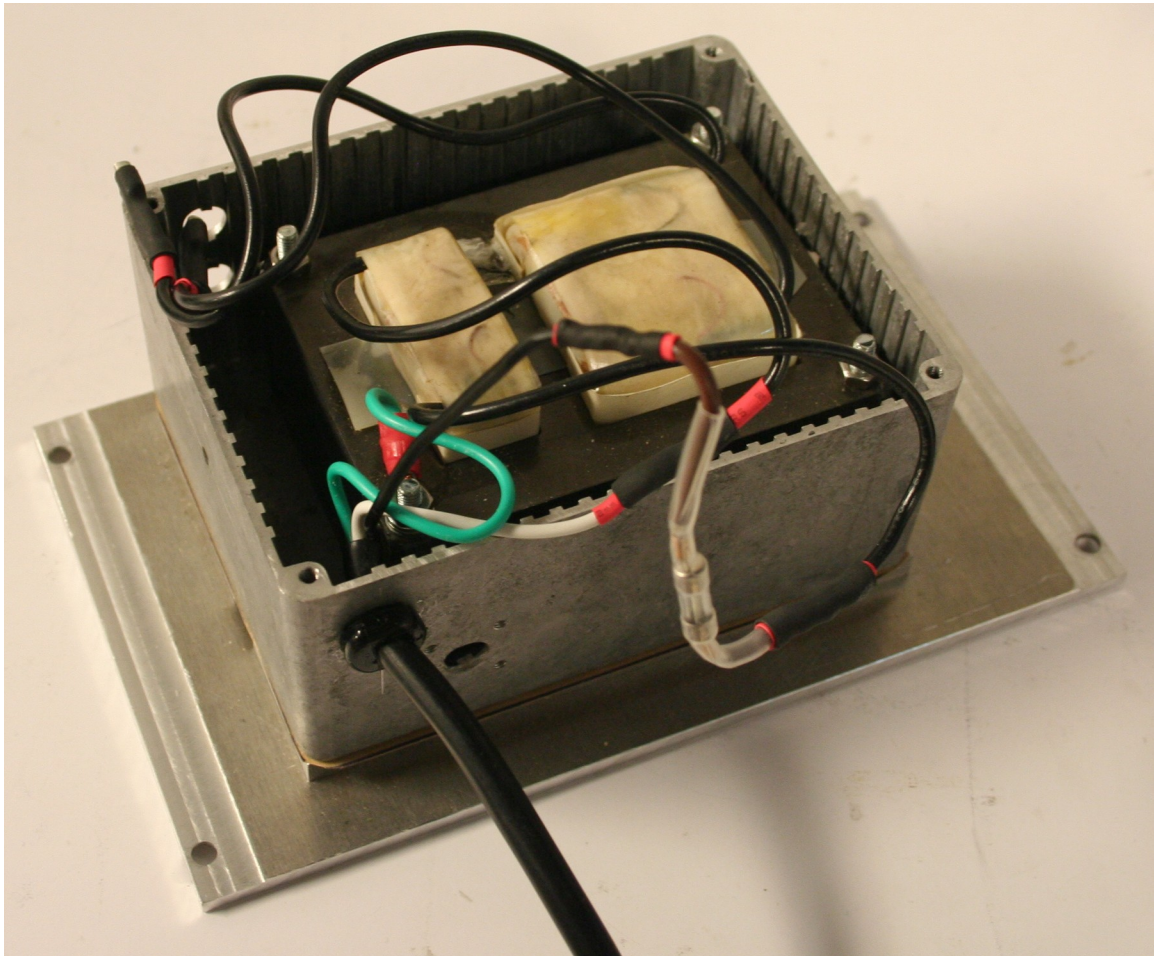
Cadmium lamps: the initial project

Building a new metallic case as compact as possible

Transformer does just fit inside a drawer

→ First and subsequent tests of this design : electric incidents, probably arcs inside the case (corona effect?)

→ 2300 V, 46 mA



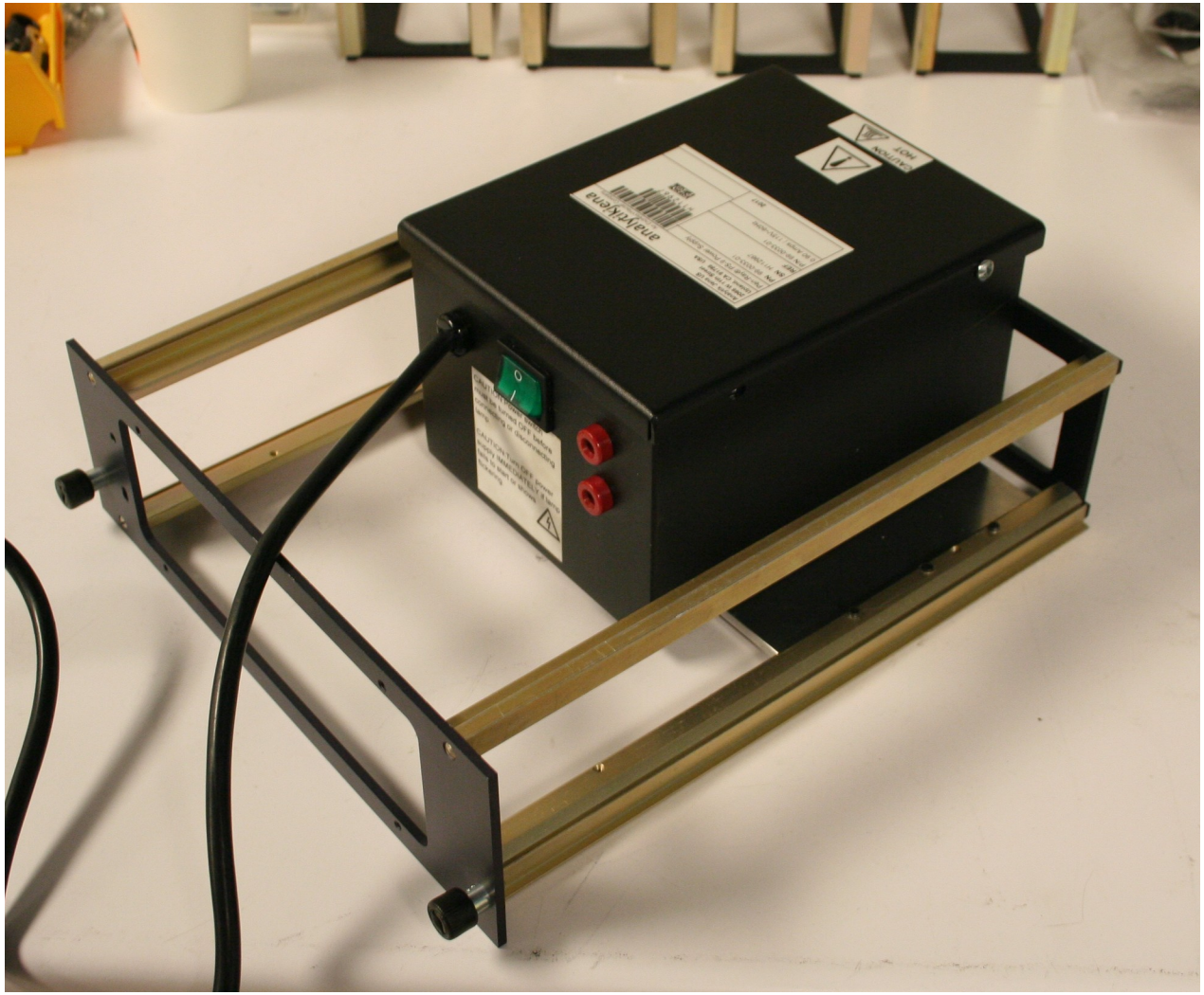
Cadmium lamps: compromise

Using the original HV power supply case

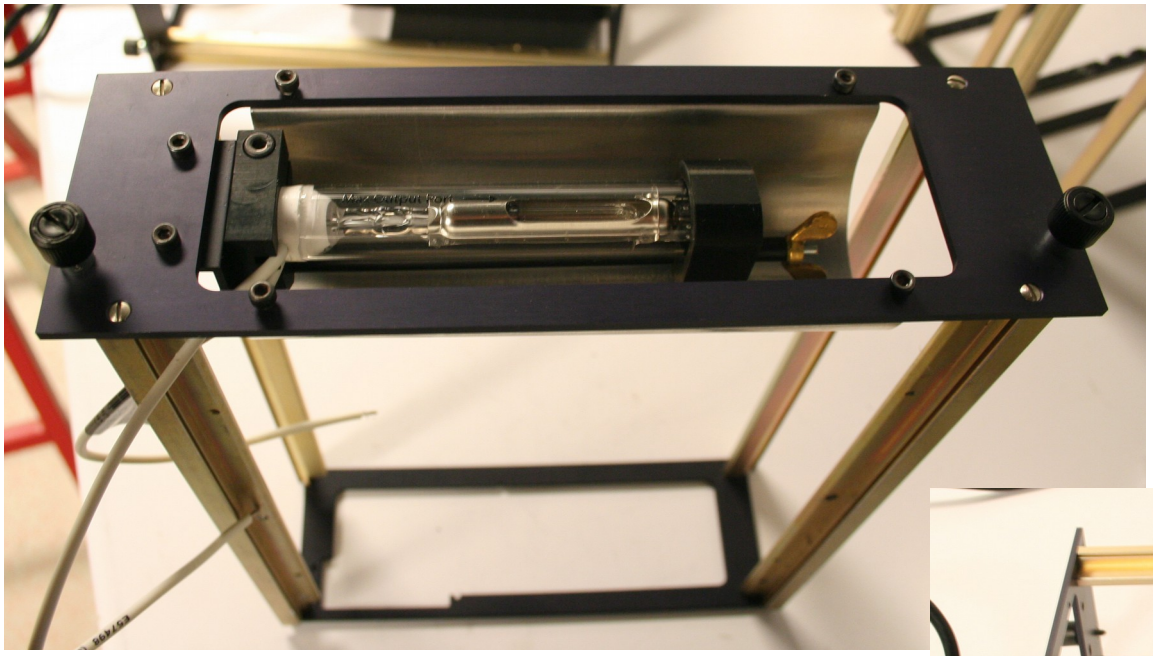
Does not fit into a drawer

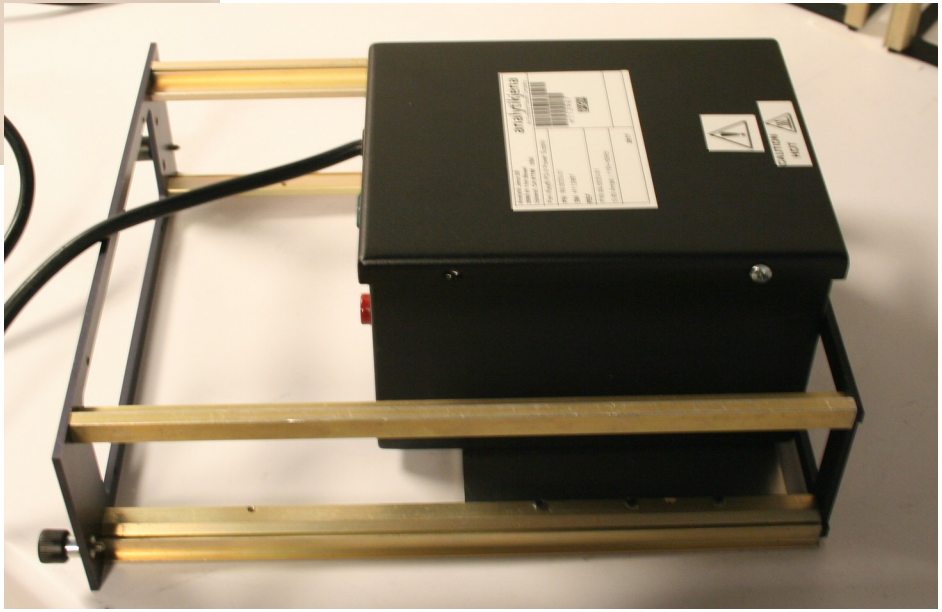
→ Works (no incident)

=> Reorganize lamps in the the 4 drawers (spectral lamps)



Cadmium lamps: assembly ongoing (LLG)





Schedule :

→ End of assembly (5 drawers)
→ ~ June 25th 2019

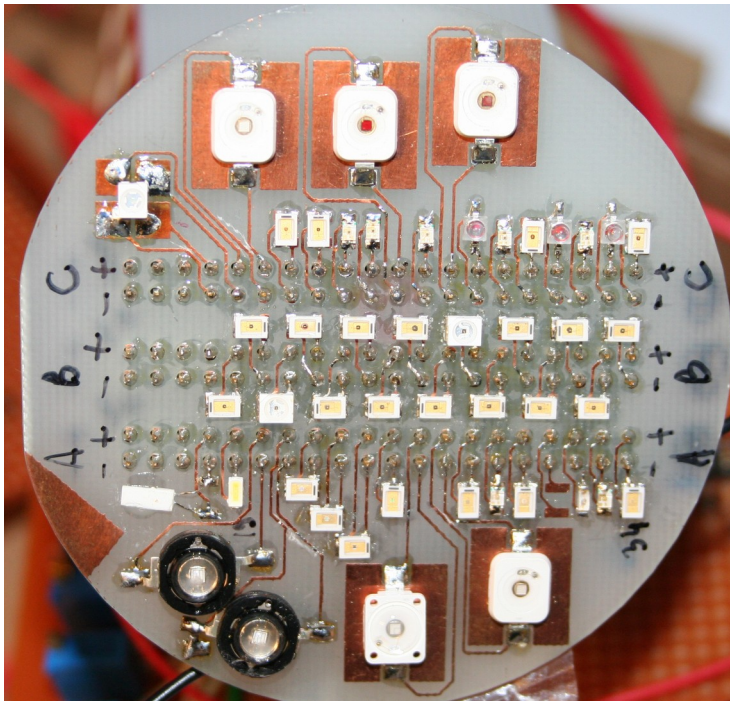
→ Tests (photometry)
End of June

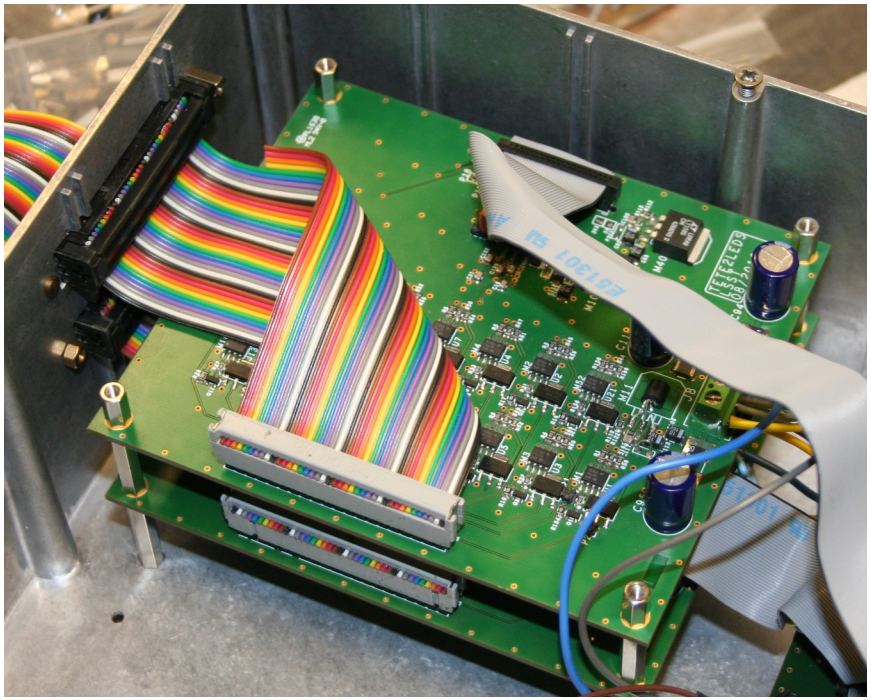
→ Delivery ~ Early July.

Cadmium lamps: assembly ongoing (LLG)

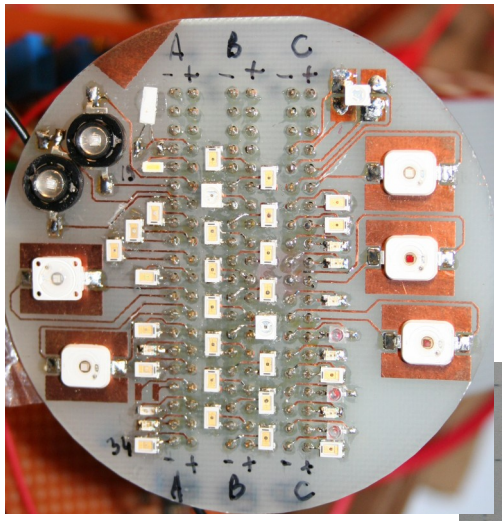
Continuum: extra drawers with LEDs

- Concept : produce a **flat continuum** using a **combination of LEDs from 355 to 1050 nm**.
- Prototypes developed for StarDICE

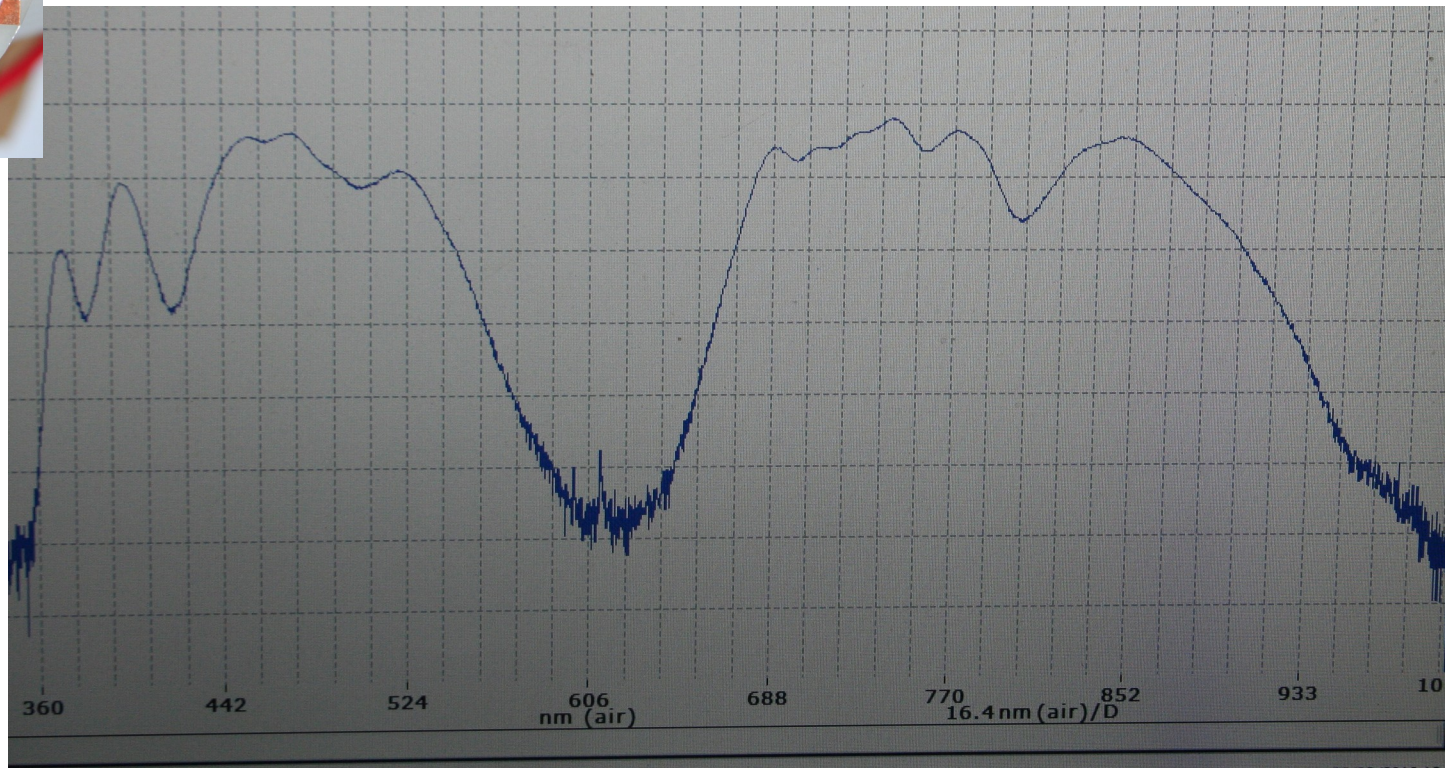




Continuum: extra drawers with LEDs

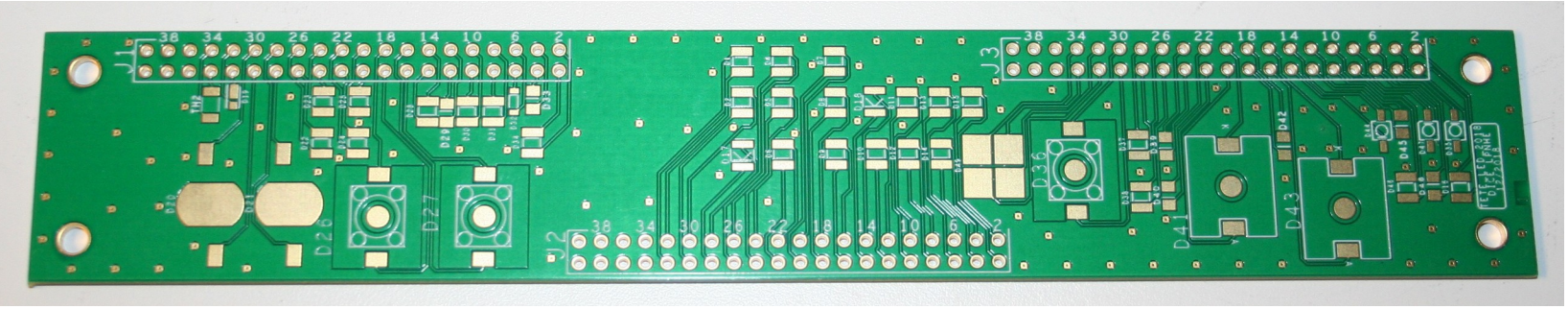


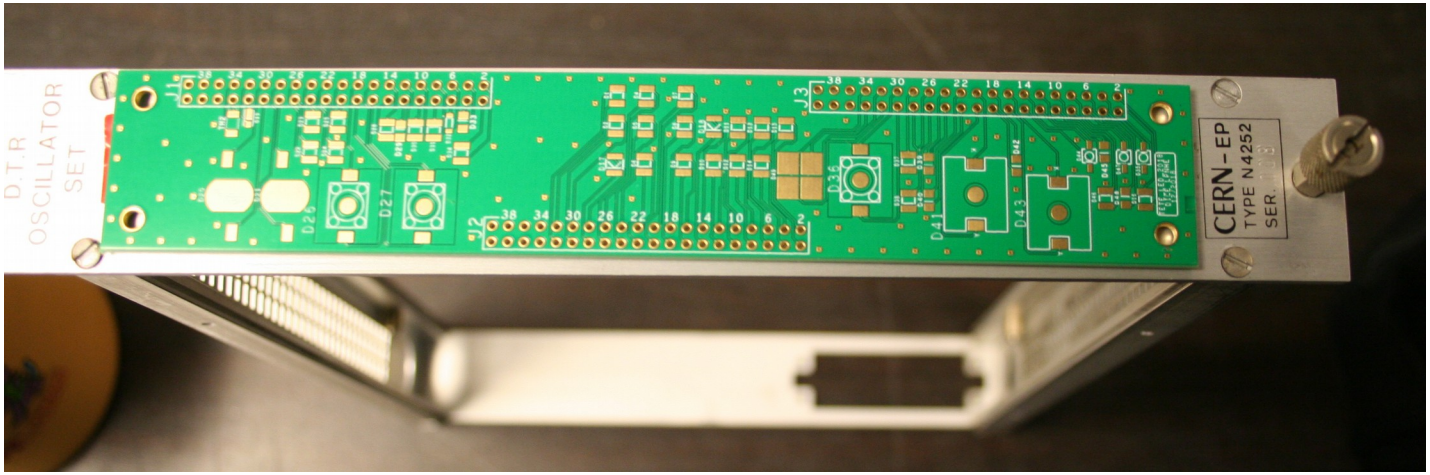
Below : Connected : Only from 360 to 540 and from 660 to 900 nm



Continuum: extra drawers with LEDs

Developping the final version with around 60 LEDs to cover from 350 nm to 1050 nm
→ Extra drawer of half width





Continuum: extra drawers with LEDs

Developping the final version with around 60 LEDs to cover from 350 nm to 1050 nm
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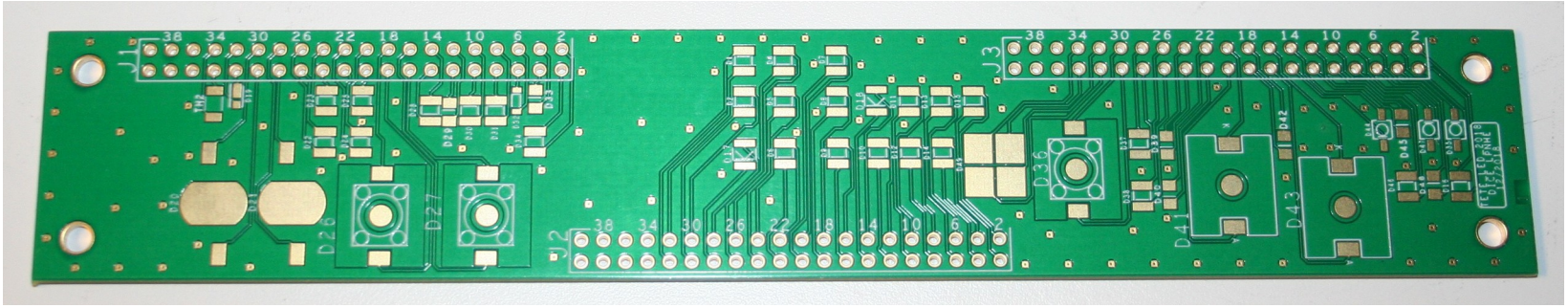
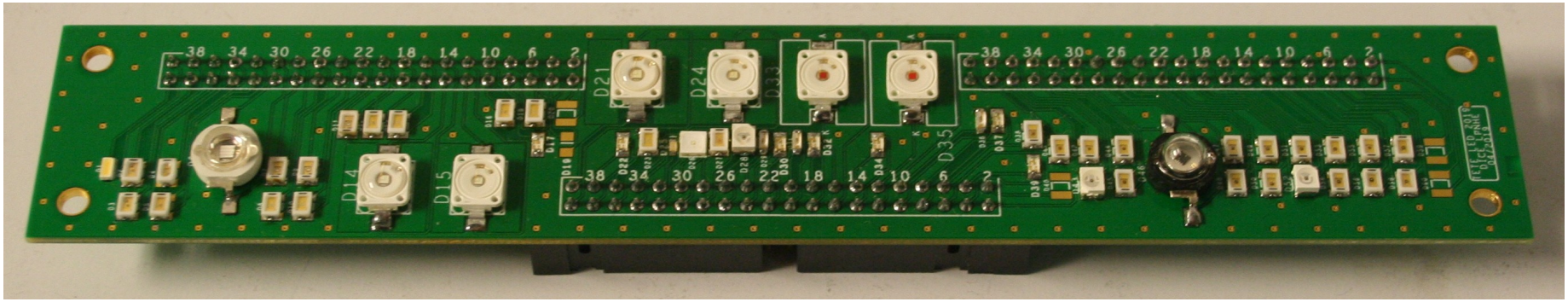


→ Correct PCB version (the upper one is wrong), populated. One currently under tests and fine tuning the LED currents, 4 other are beeing populated with LEDs



LED drawers: power supply & mechanics

Power supply :

A tiny 110V→ 5V DC transformer
A resistor and a potentiometer for each channel.

→ **PCB** design **currently finalised**
→ PCBs fabrication next week

→ Soldering components →
Beginning of July

→ Tests → In July

Mechanics : drawers available, a few more holes, and black anodisation (end of June, early July)

Delivery : I hope in August.