

in-situ Calibration System: brief status

Laurent Le Guillou (Sorbonne
Univ./LPNHE)

*DESI Spectrograph Telecon
July 16th, 2019*

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



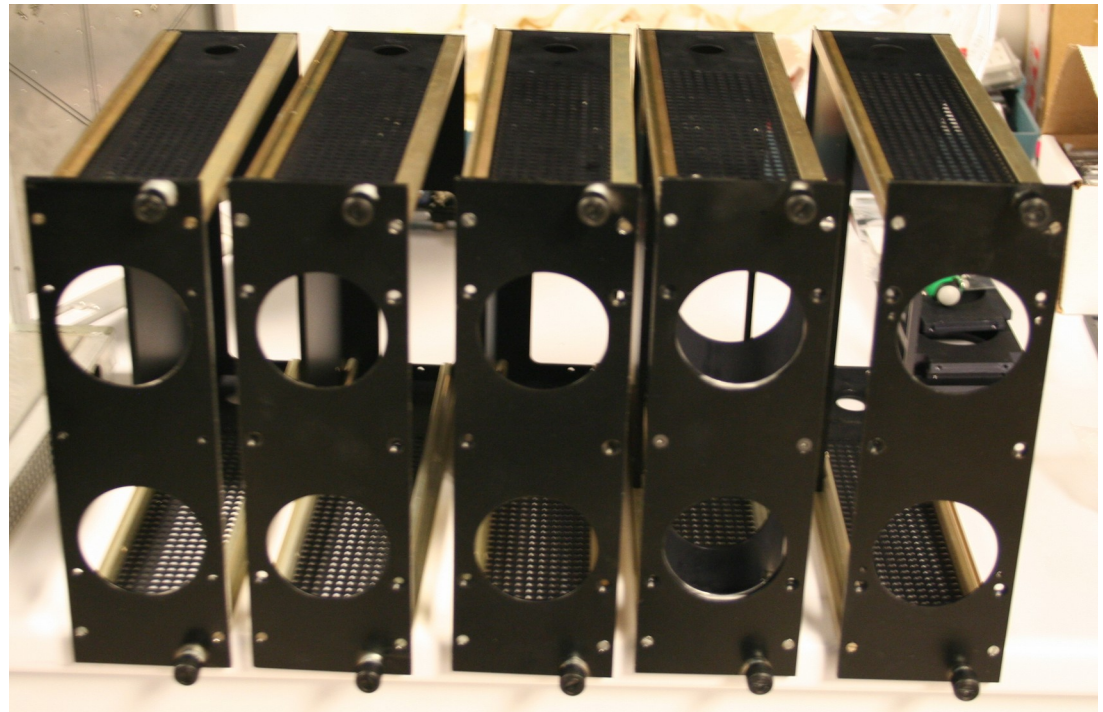
Already delivered

- 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**)



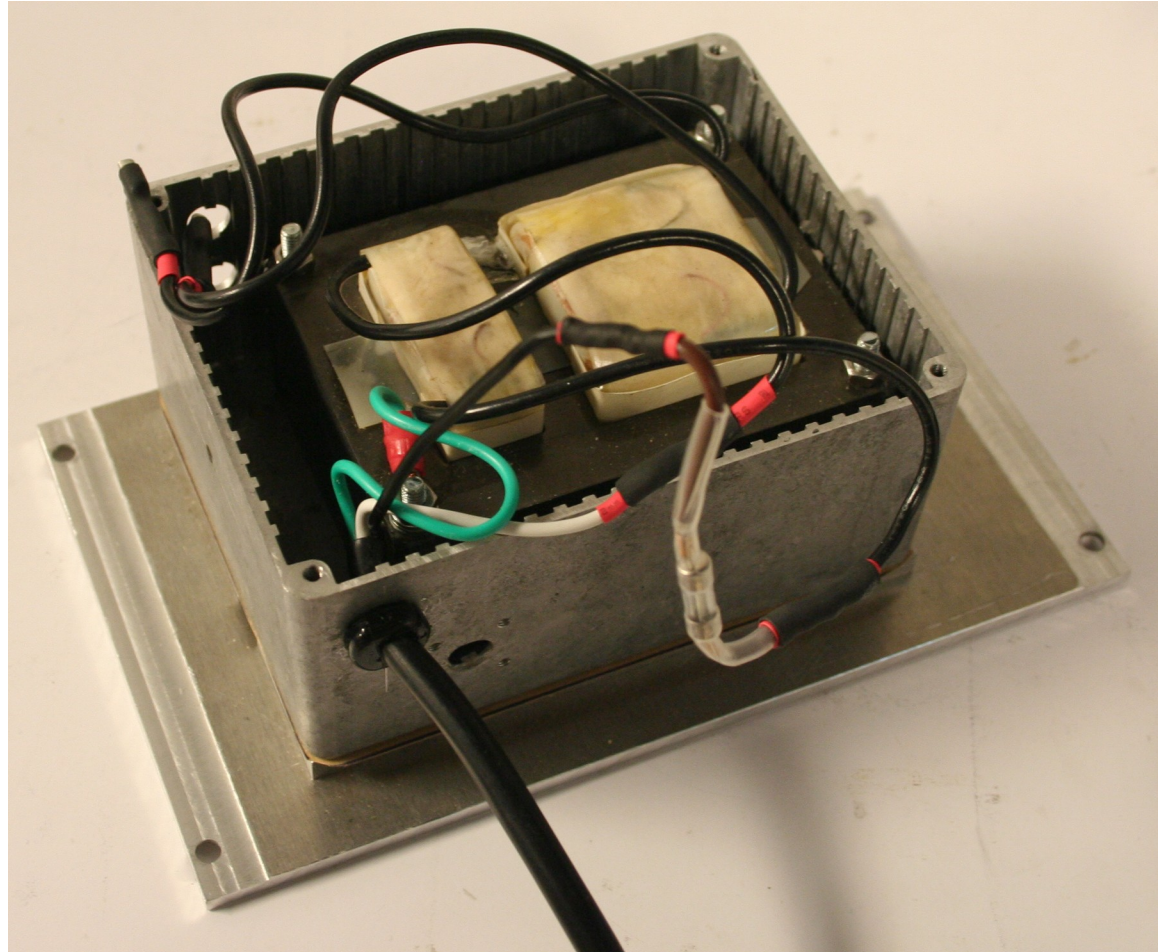
Cadmium lamps: the initial project

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**



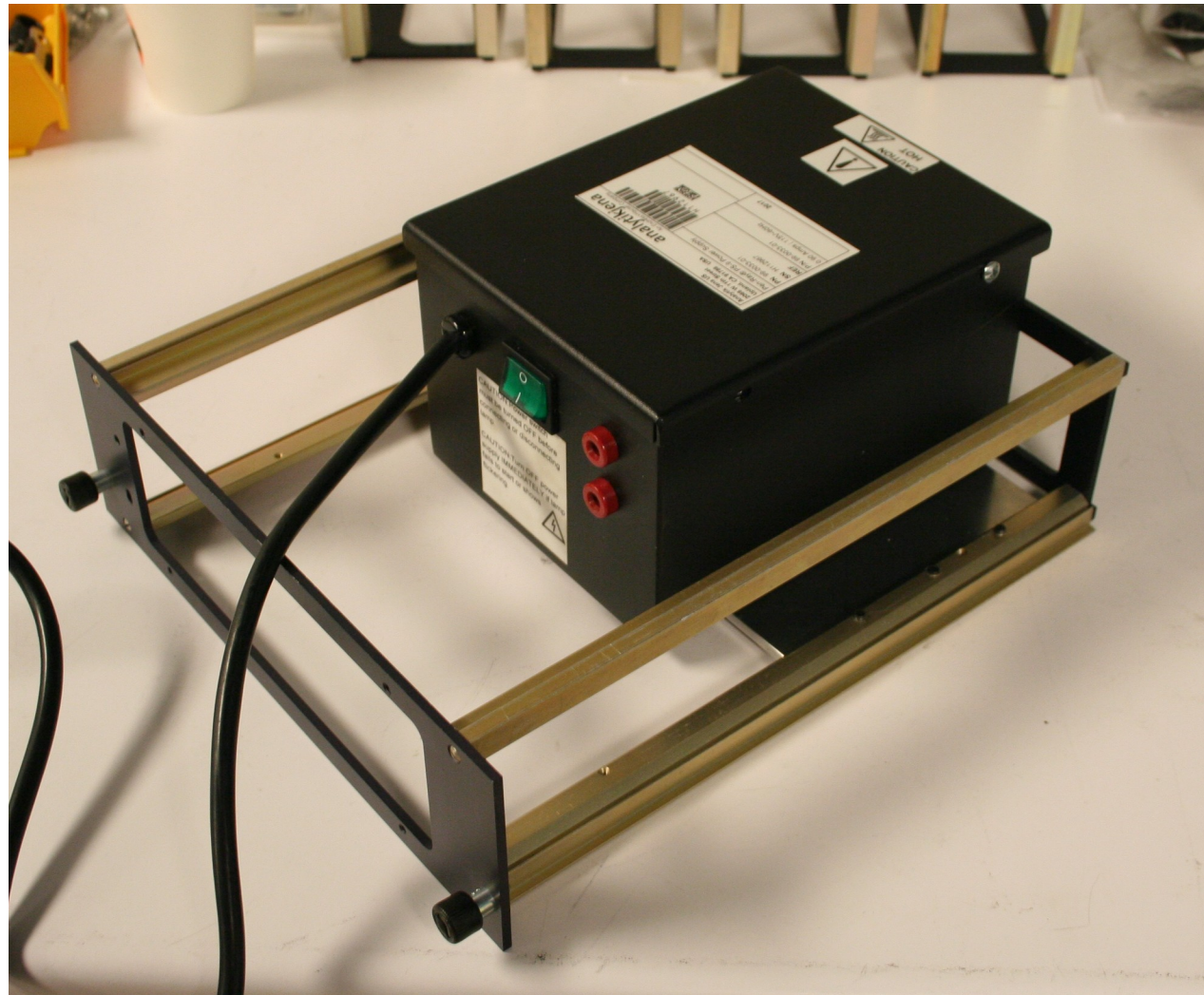
Cadmium lamps: compromise

Using the original HV power supply case

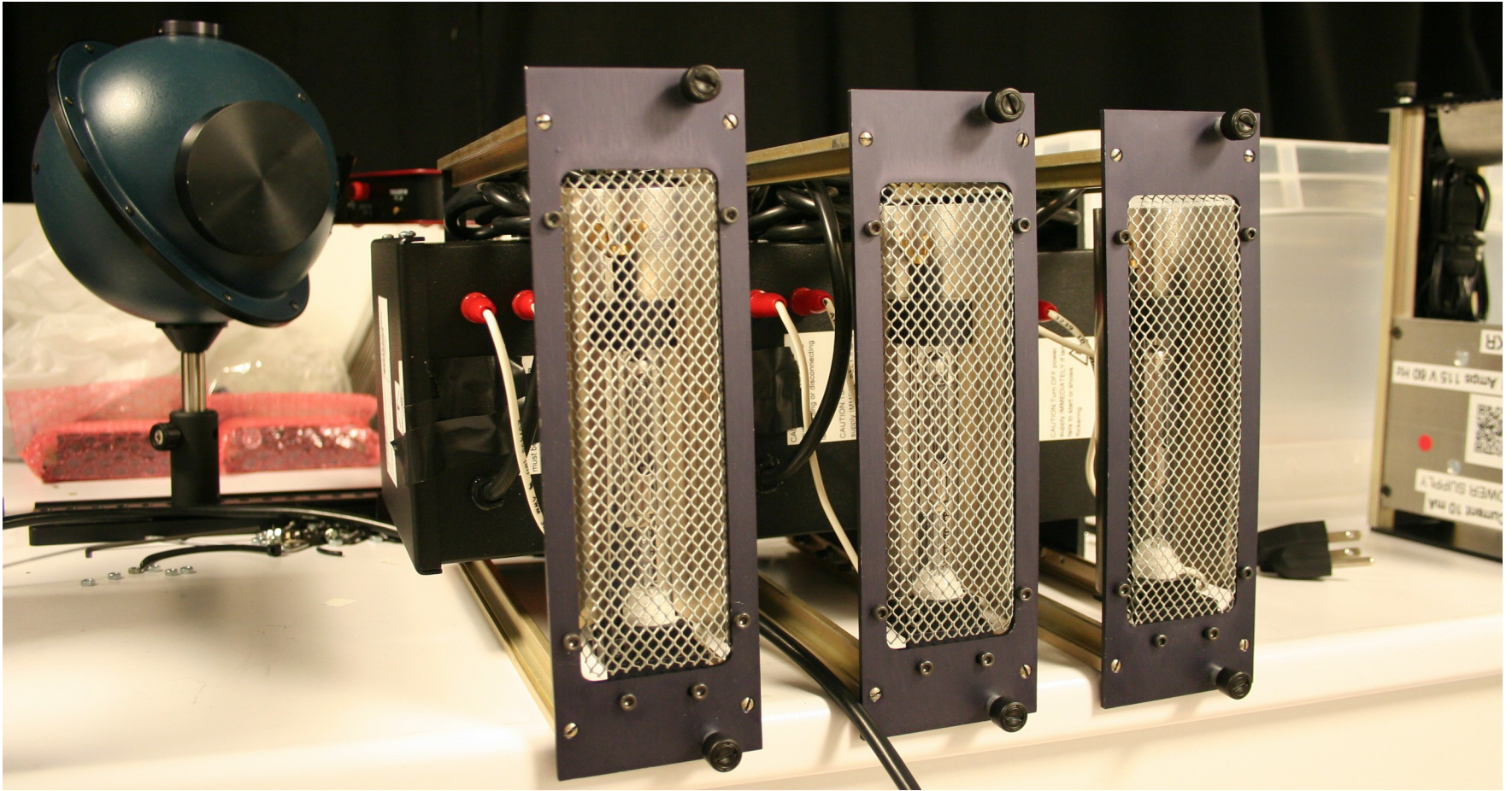
Does not fit into a drawer

→ Works (no incident)

⇒ Reorganize lamps in the the 4 drawers (spectral lamps)



Cadmium lamps: assembly and tests done



Schedule :

→ Shipping : early next week



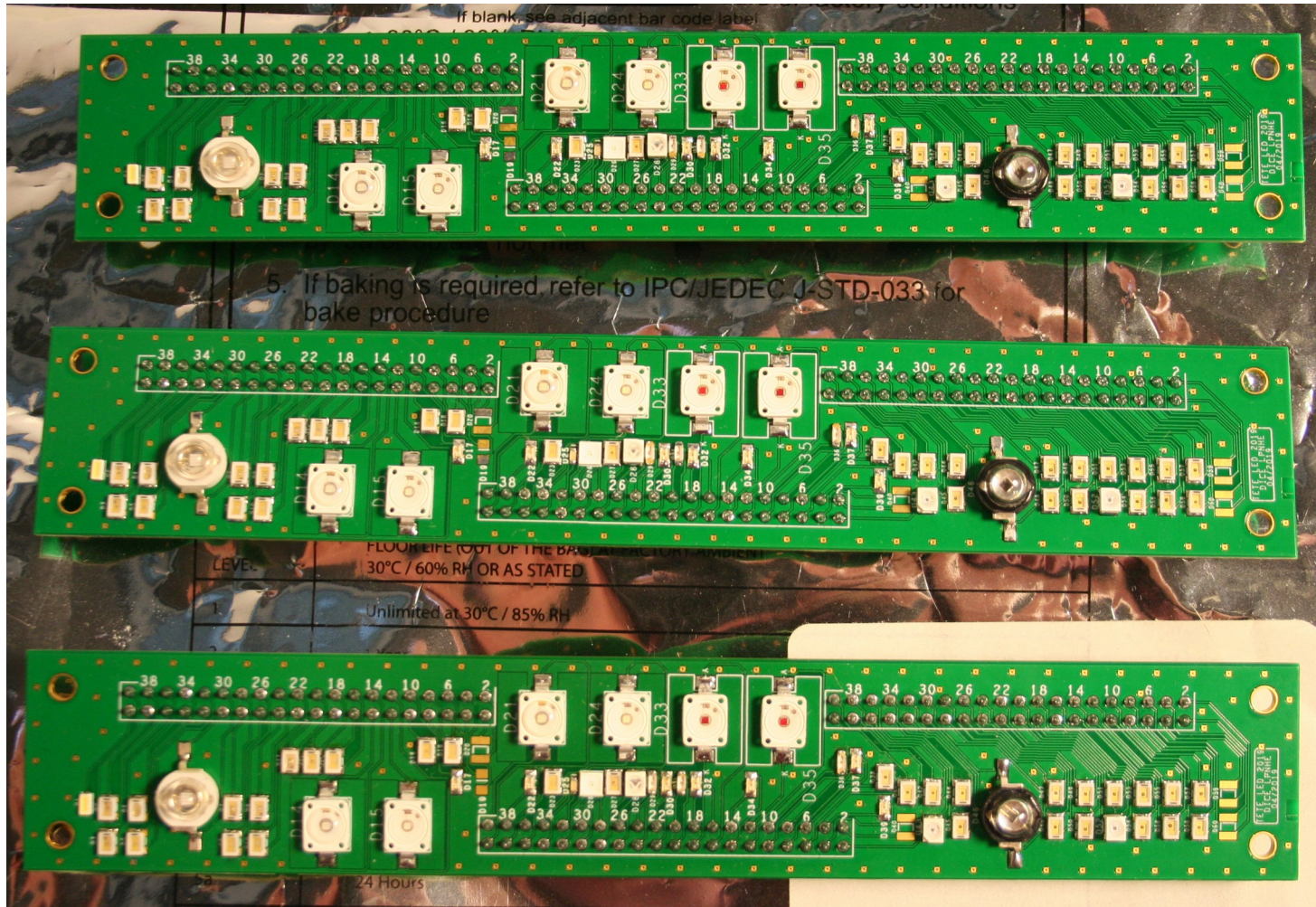
Cadmium lamps: takes 1.5 slot per lamp

Cd drawers takes more space : rearranging lamps in the 4 calibration racks



Continuum: extra drawers with LEDs

- LEDs boards are populated (55) and under ongoing tests



LED drawers: power supply & mechanics

Power supply :

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

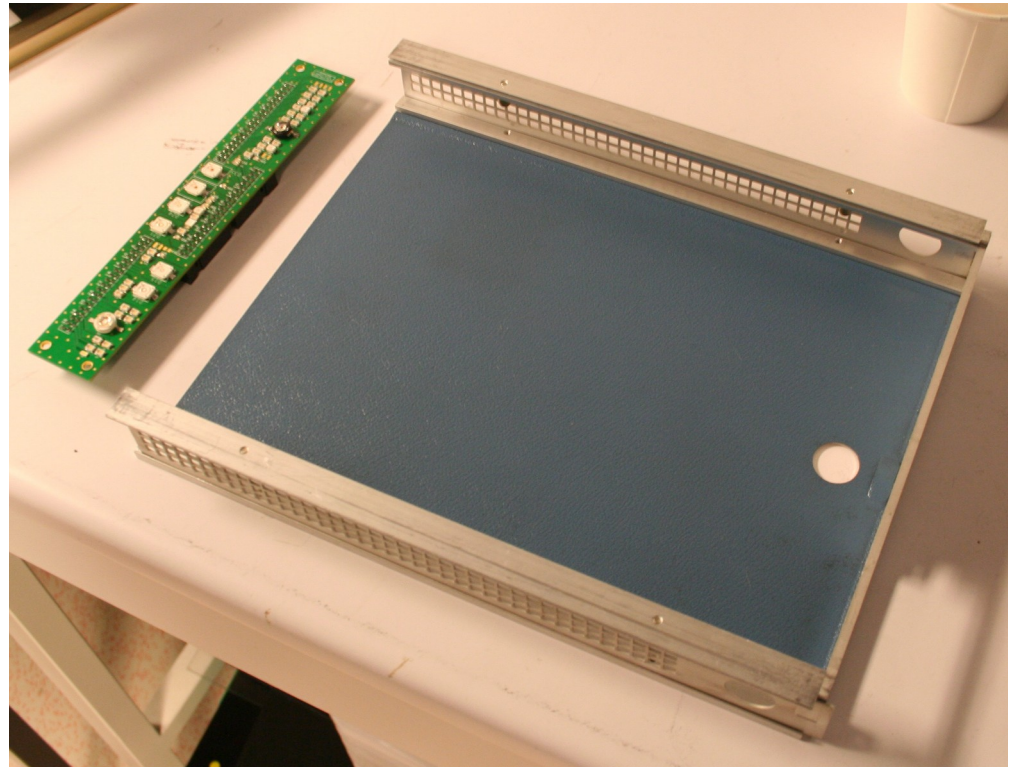
→ **PCB** were delayed

→ Soldering components → End of July

→ Tests → August

Mechanics : drawers available, a few more holes, and black anodisation is delayed (the company closes most of August)

Delivery : I hope early september.



LED drawers: power supply & mechanics

Power supply :

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

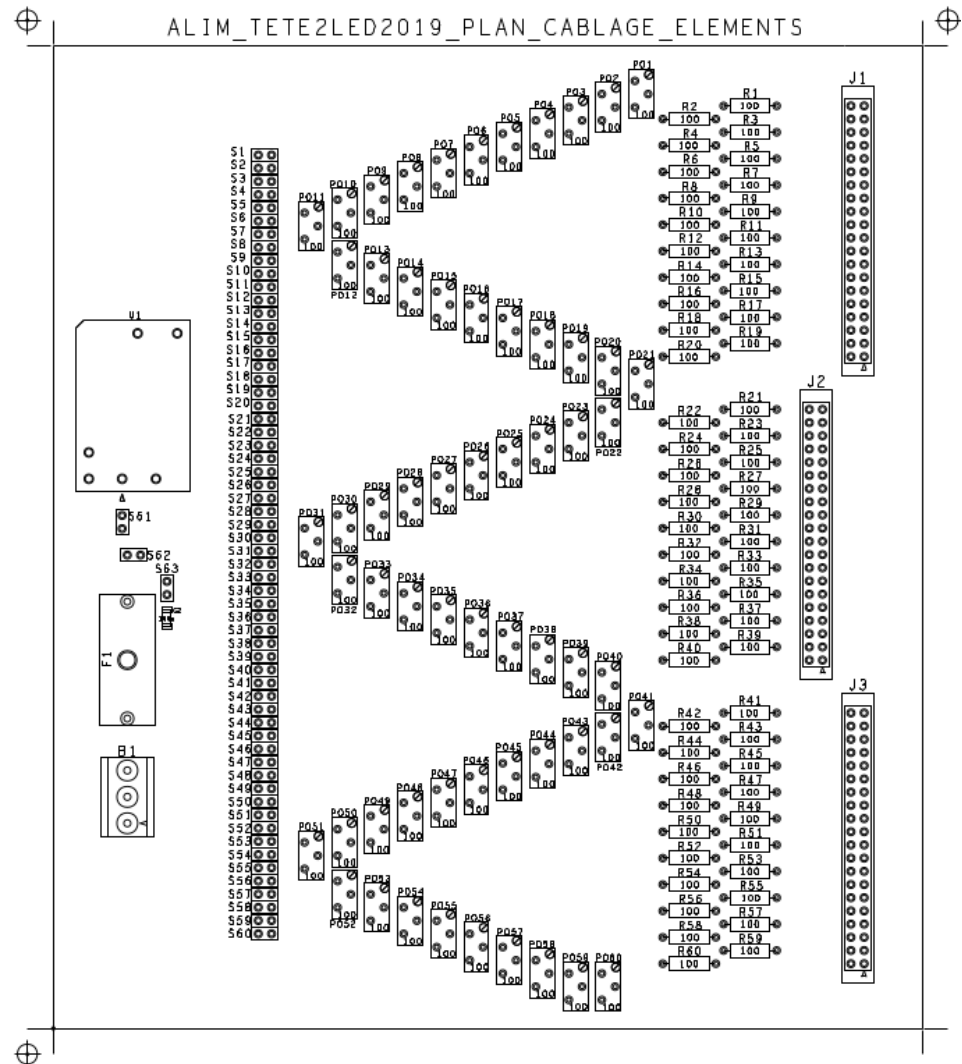
→ PCB were delayed

→ Soldering components → End of July

→ Tests → August

Mechanics : drawers available,
a few more holes, and black
anodisation is delayed (the company
closes most of August)

Delivery : I hope early september.



Question : calibration installation planning ?

Tiny modifications on already delivered drawers :

Mainly : replacing bright covers with black anodised upper and down aluminium covers.

Attaching temperature / humidity sensors

Changing one plastic cover on Raritans (tiny screen)

Last iteration for ICS with Klaus

When are the calibration boxes planned to be installed ?

