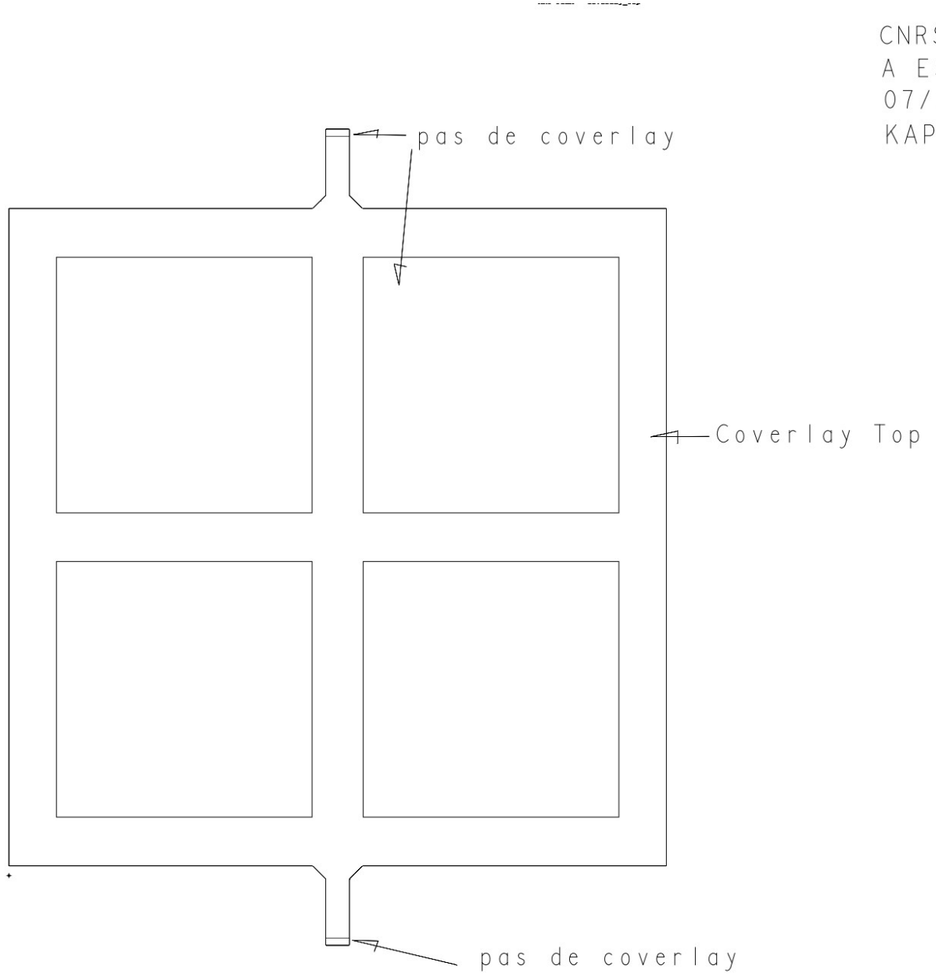
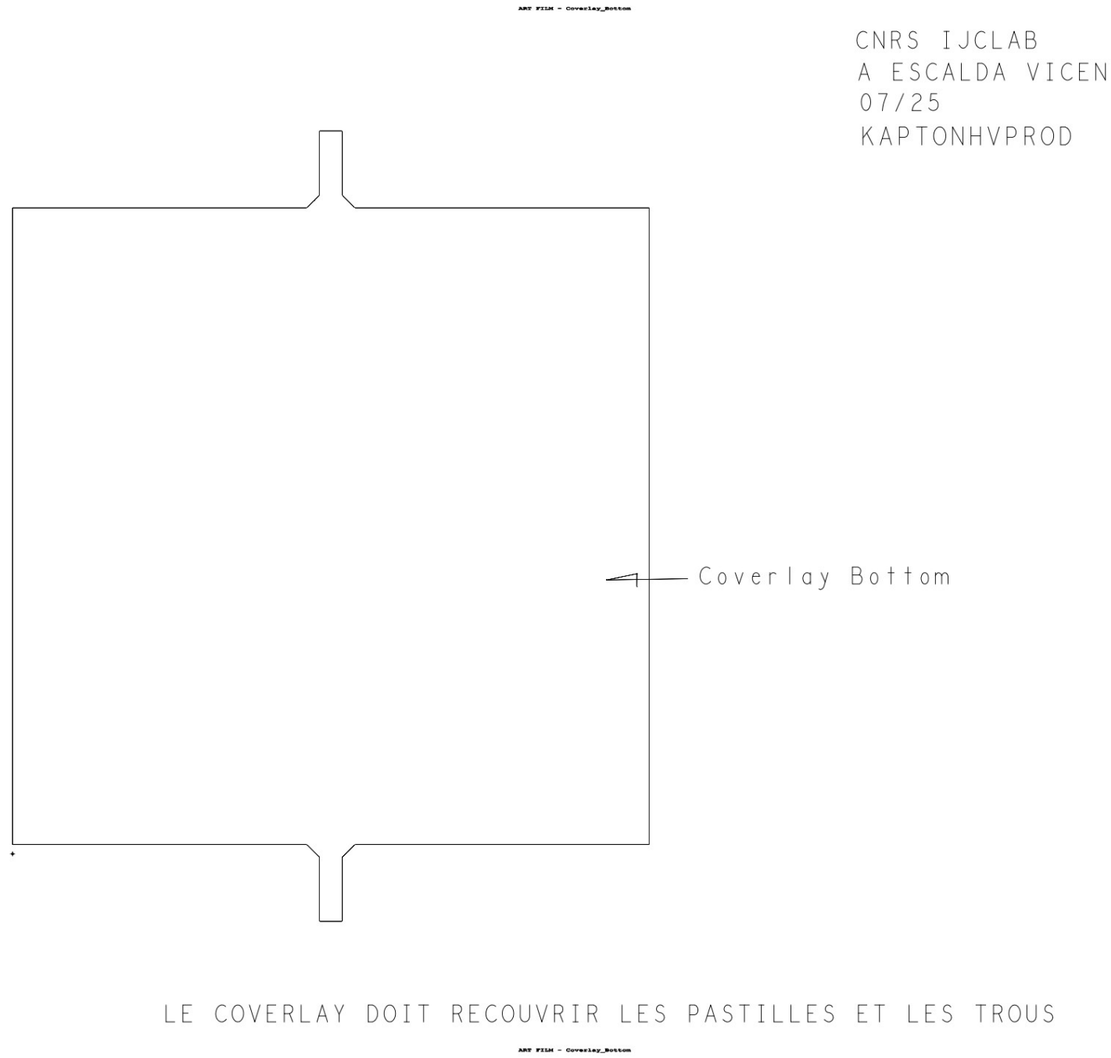
ASU production – Status at IJCLab

Roman Pöschl

SiW ECAL Technical Meeting - October 2025

HV Kapton


CNRS IJCLAB
A ESCALDA VICENTE
07/25
KAPTONHVPROD
pas de coverlay
Coverlay Top
pas de coverlay
LE COVERLAY DOIT RECOUVIR LES PASTILLES ET TROUS


ART FILM - Coverlay_Bottom
CNRS IJCLAB
A ESCALDA VICENTE
07/25
KAPTONHVPROD
Coverlay Bottom
LE COVERLAY DOIT RECOUVRIR LES PASTILLES ET LES TROUS
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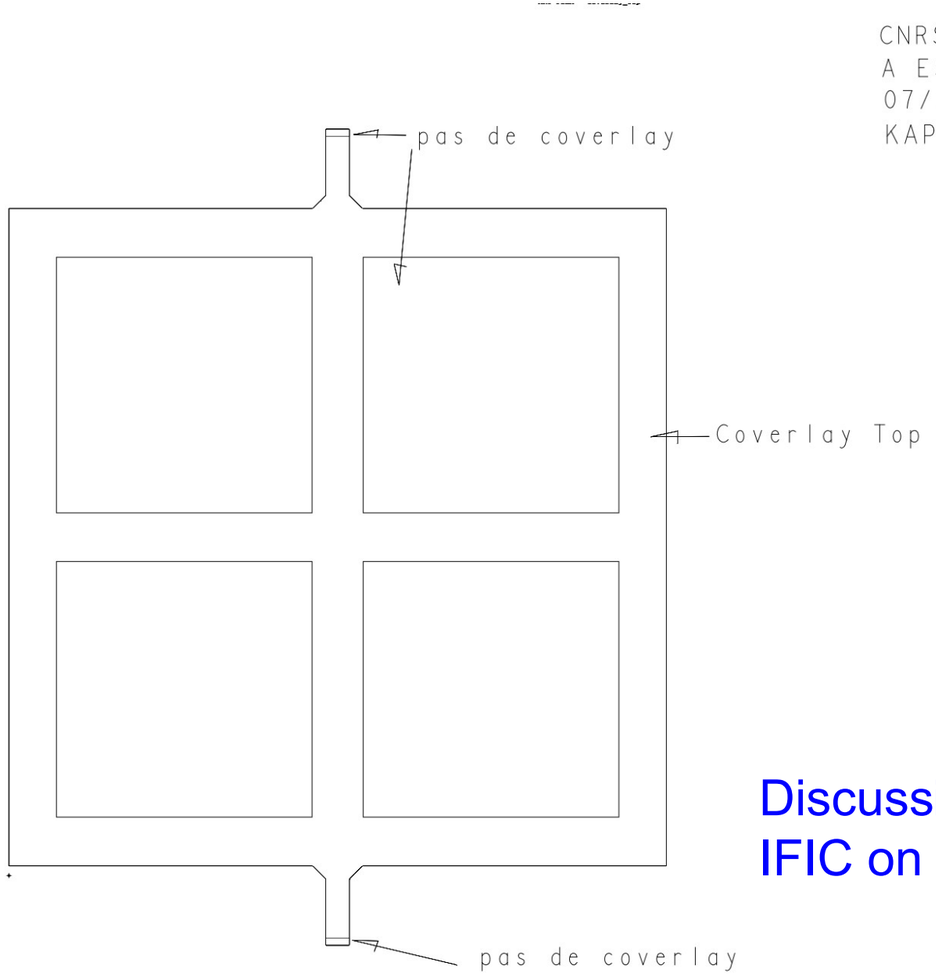
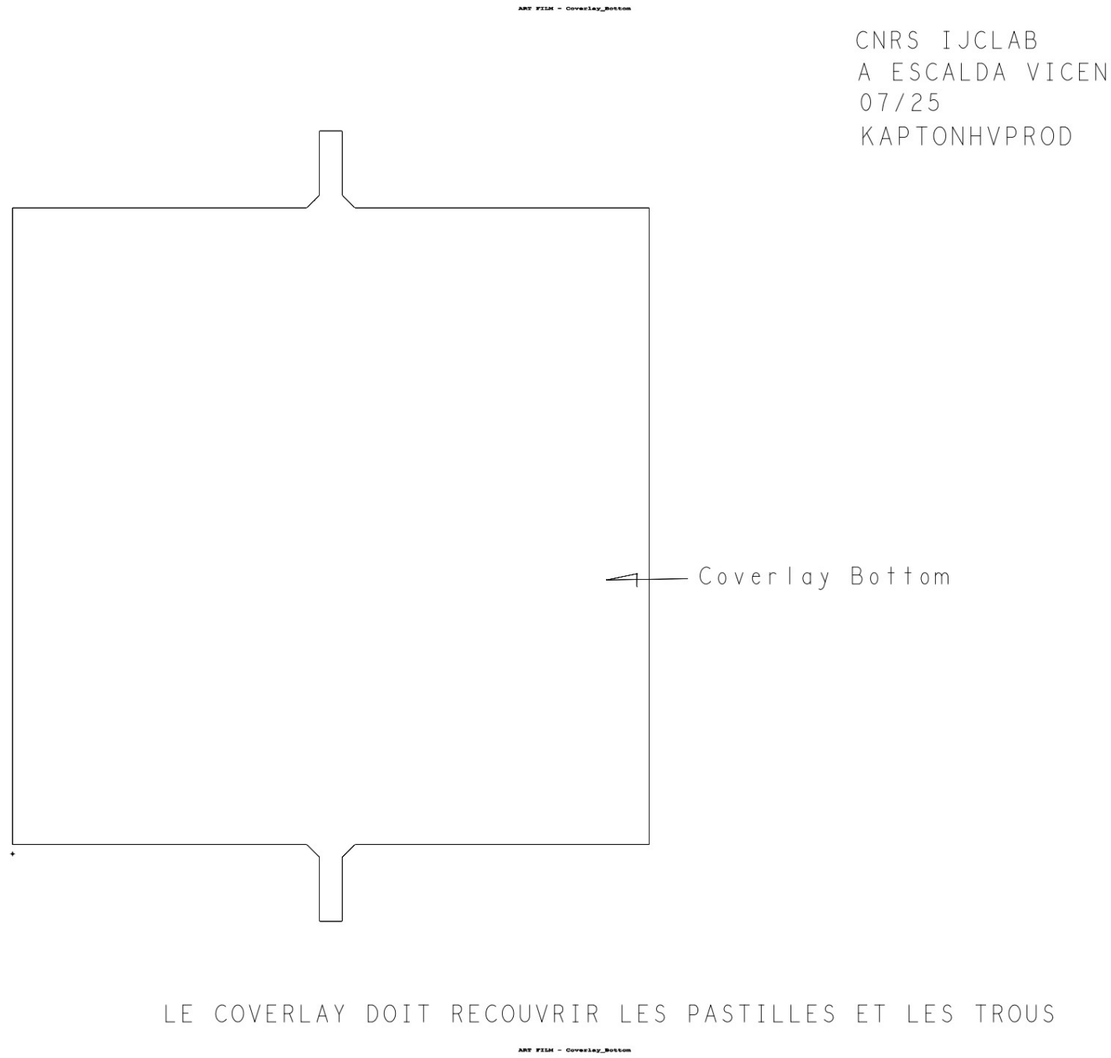
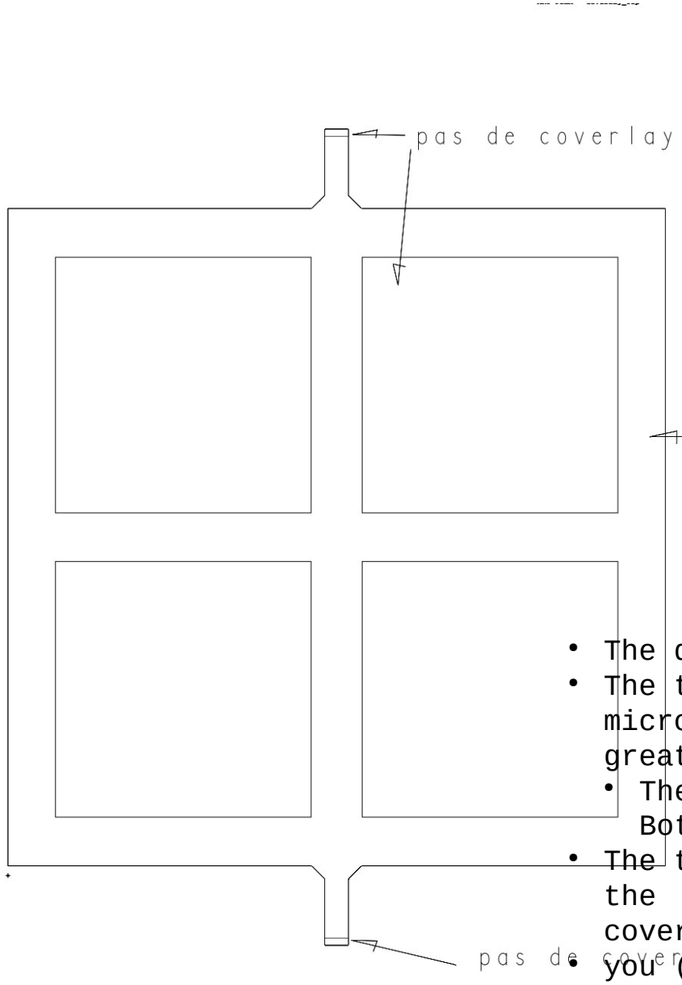
HV Kapton

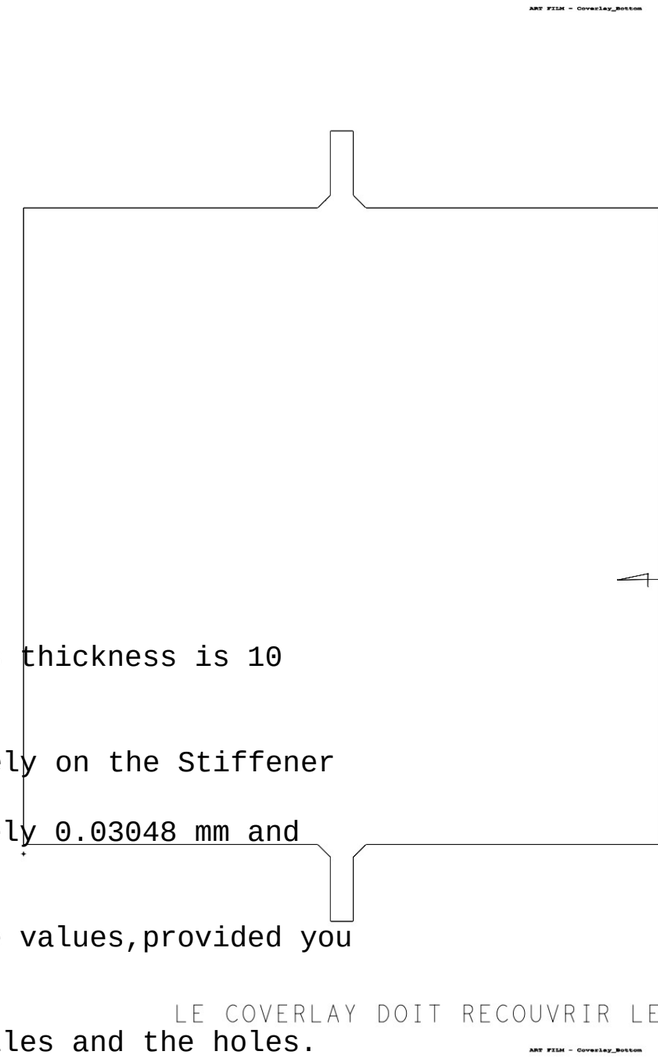


Discussion on specs with IFIC on July 30th



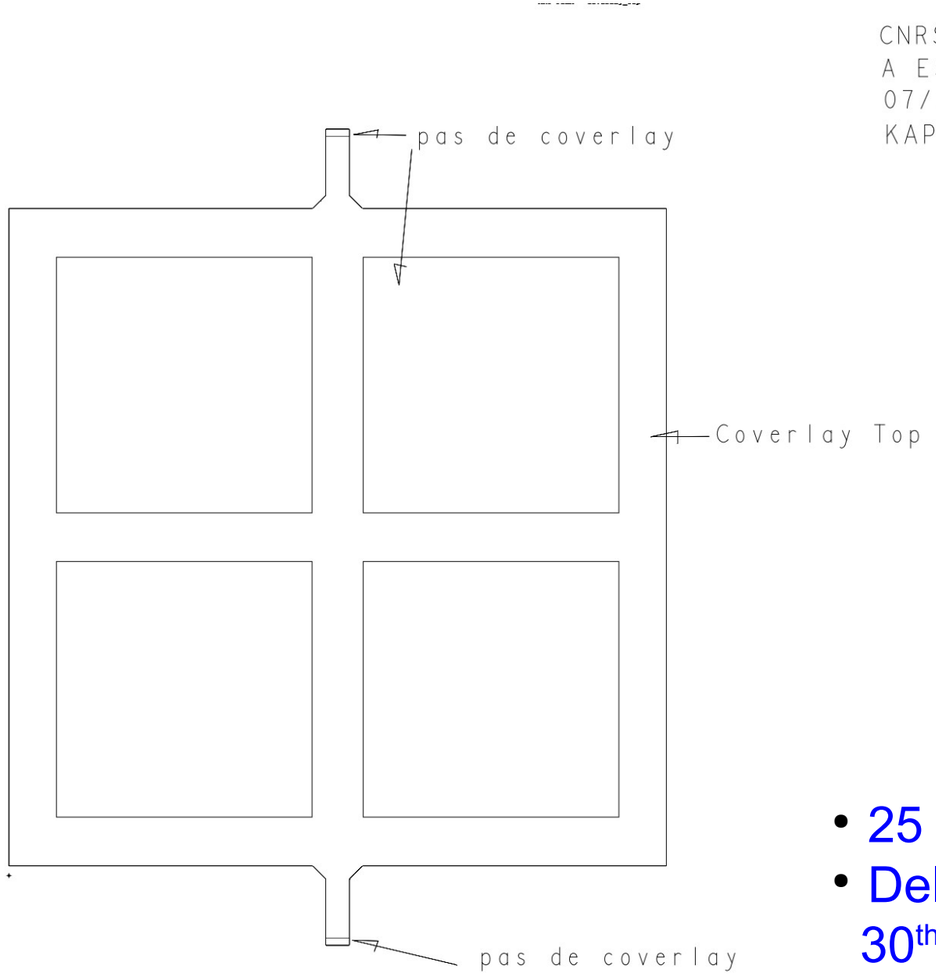
HV Kapton



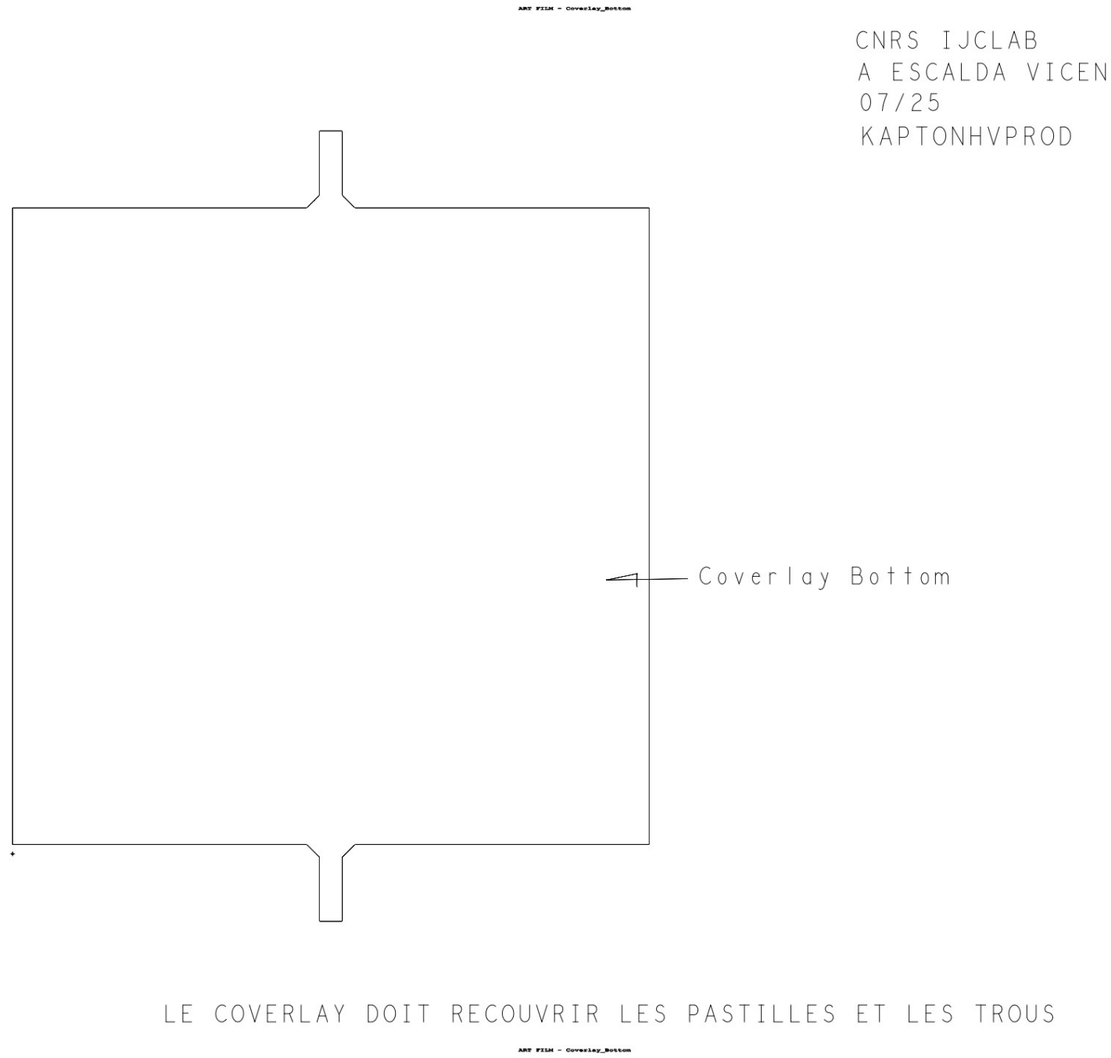


- The dimension is 180 x 223.5mm
- The total thickness is 0.31mm ± 0.01, this thickness is 10 microns
  greater than the old version from 2021.
  - These 10 microns will be added exclusively on the Stiffener Bottom.
- The thickness of the copper is approximately 0.03048 mm and the
  coverlay approximately 0.02 mm
- you (Tecnomaster) are free to refine these values,provided you respect a total thickness of 0.31 mm.
- Class 2 is correct.
- IMPERATIVE: Coverlay must cover the pastilles and the holes.

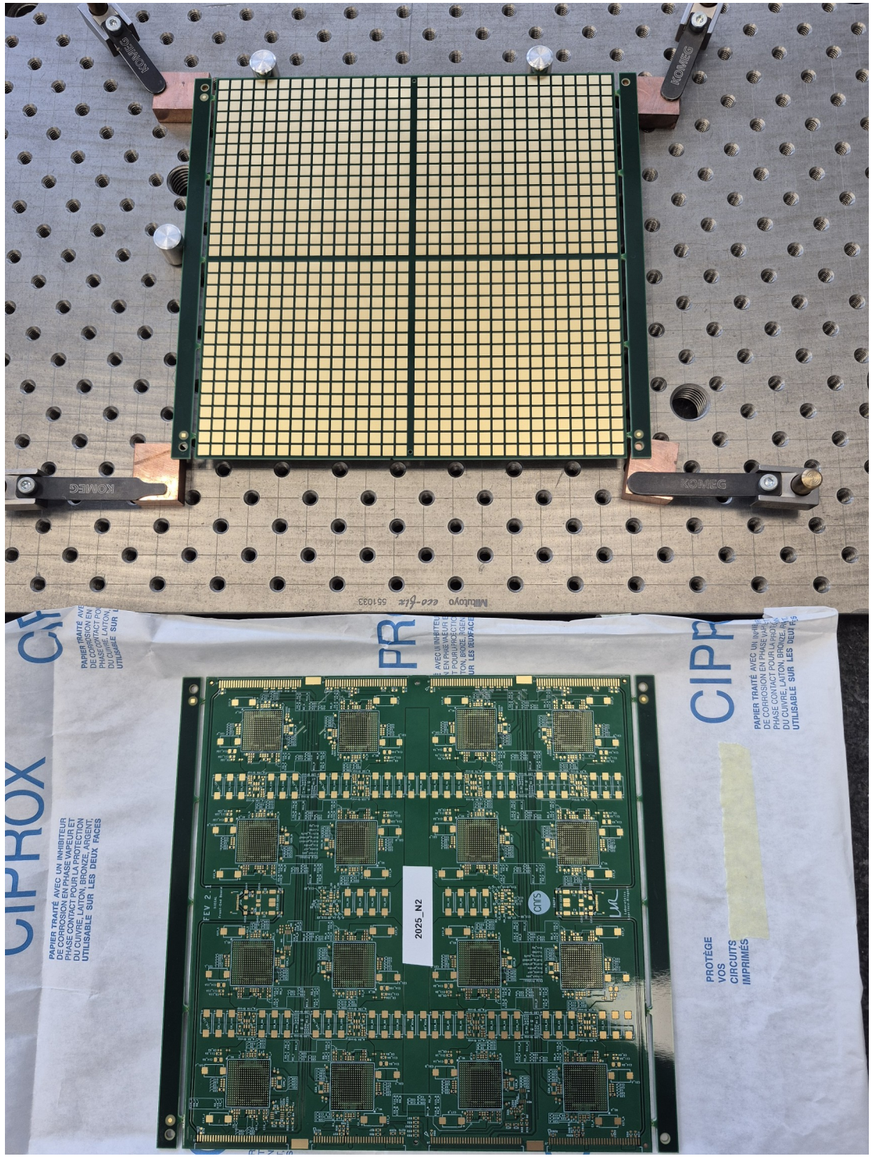
HV Kapton



- 25 Kaptons ordered
- Delivery expected 30th of October

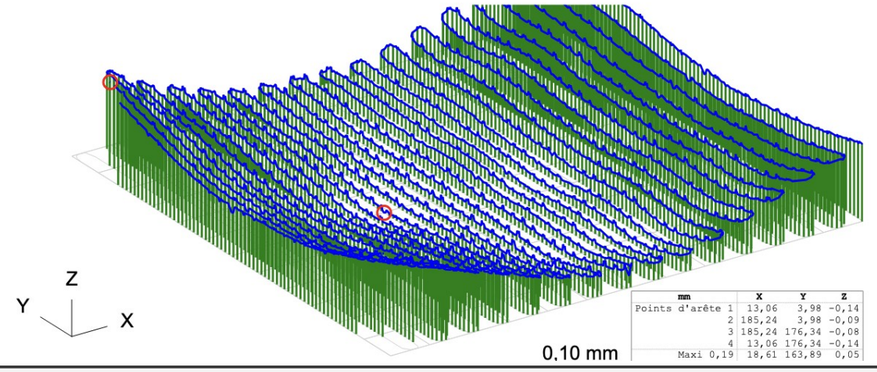


Metrology of PCBs before cabling



Nom	Valeur mesurée	Valeur nominale	+Tol	-Tol	Ecart +/- Min	Max
Valeur Z_Plan1	-0,1804	0,0000			-0,1804	
		Plan1	0,1904	0,0417	-0,0613	0,1292
Planéité1	0,1854	0,0000	0,2000	0,0000	0,1854	
		Plan1	0,1854	0,0513	-0,0927	0,0927

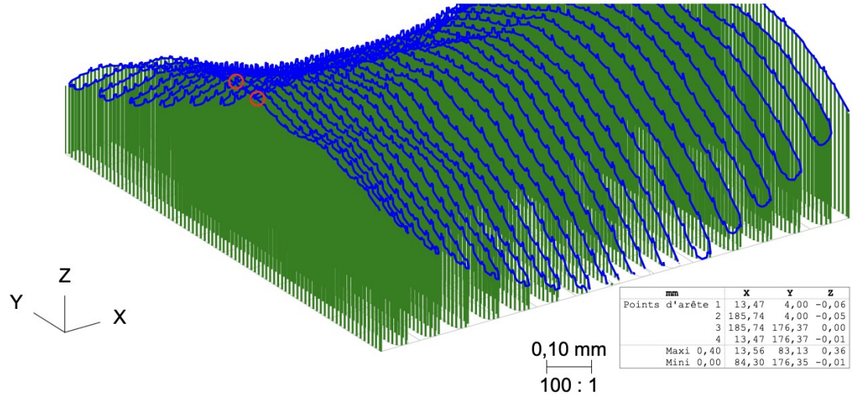
Points	17851
Type de filtre	Pas de filtre
Lc	
upr	
Vmes[mm/sec]	5,00
Rayon palpeur	1,2513
Méthode d'évaluation	Elément minimum



mm	X	Y	Z
Points d'arête 1	13,06	3,98	-0,14
2	185,24	3,98	-0,09
3	185,24	176,34	-0,08
4	13,06	176,34	-0,14
Maxi 0,19	18,61	163,89	0,05

Nom	Valeur mesurée	Valeur nominale	+Tol	-Tol	Ecart +/- Min	Max
Valeur Z_Plan1	0,0000	0,0000			0,0000	
		Plan1	0,4254	0,0896	-0,2489	0,1764
Planéité1	0,3987	0,0000	0,2000	0,0000	0,3987	0,1987
		Plan1	0,3987	0,0950	-0,1994	0,1994

Points	18033
Type de filtre	Pas de filtre
Lc	
upr	
Vmes[mm/sec]	5,00
Rayon palpeur	1,2513
Méthode d'évaluation	Elément minimum



mm	X	Y	Z
Points d'arête 1	13,47	4,00	-0,06
2	185,74	4,00	-0,05
3	185,74	176,37	0,00
4	13,47	176,37	-0,01
Maxi 0,40	13,56	83,13	0,36
Mini 0,00	84,30	176,35	-0,01

A. Thiebault, O. Vitiez

Metrology of PCBs before component mounting

- 17 PCBs from LLR have been measured
  - Shown on previous page are a typical and the worst one in terms of planatiy
- To be quantified more/better with scripts

Next steps at IJCLab

- New computer for DAQ ordered
- PCB, components, ASICs are passed to cabling service
  - N.B. Compontents ordered and delivered end of July
- Characterization of Sensors of the LLR (22) at IJCLab!?
  - Probing machine available (Slot to define)
  - However, operation mode not sure at the moment, manual or semi-automatic?
  - Manual would be painful
  - Fallback: "Remi's box" (as in January)
- Revision carbon plates so that the components can cross
- Goal is to have our equipment ready until end of October
  - In between, creation of ASU passports and/or database tool to follow production
- Afterwards assembly in IFIC
- Then "commissioning" with us
  - We're going to restart the material in the workshop next week
- Removal of adapter cards from the old PCB (see COBS) so that they can be used with new ASUs
- Implementation of TDC reading

Overall Planning

- The goal is a beam test at CERN in 2026
  - Call for beam time open
  - Deadline is 31st of October
  - Proton programme at CERN until end of July 2026
  - A slot in June 2026 might be ideal but would have to be able to accept earlier slot
- ASU production and commissioning should start latest beginning of December

Backup

HV Kapton

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