

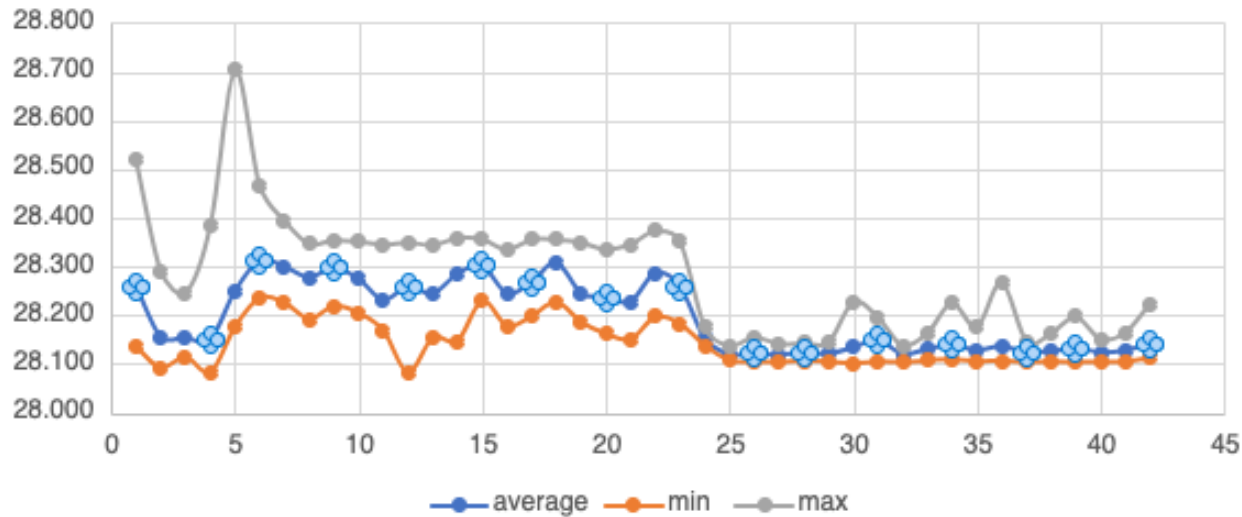
Update from HiDRA project

G. Gaudio, R. Santoro
on behalf of HiDRa group

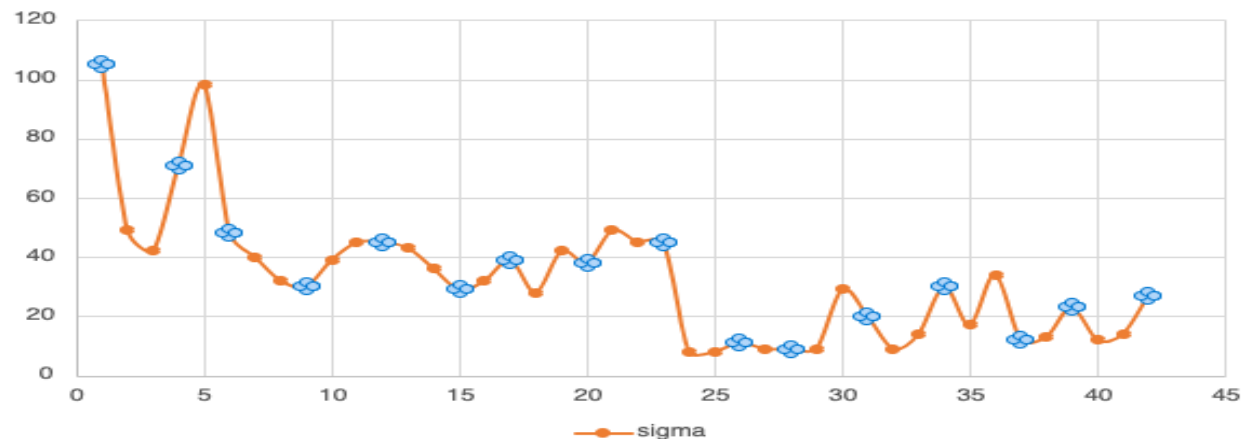
25.09.2024 DRCal meeting

Prototype Construction

Planarity measurement



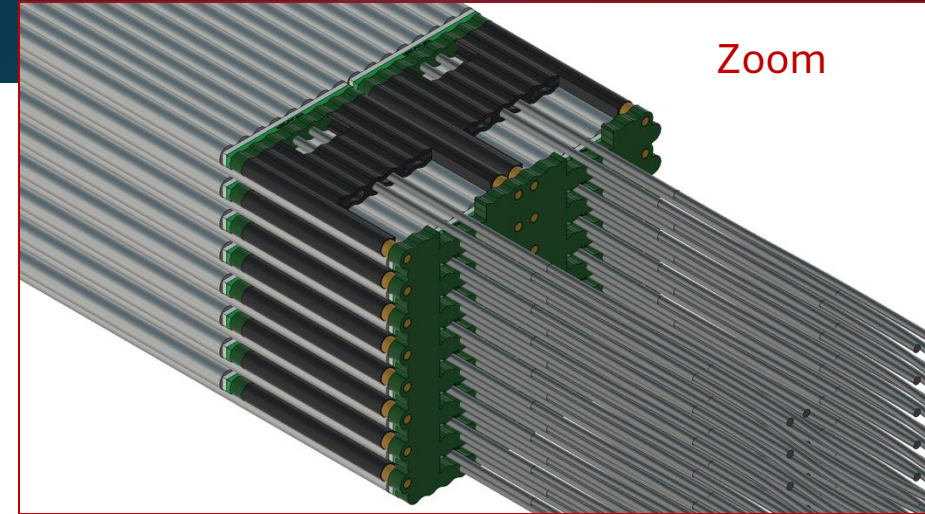
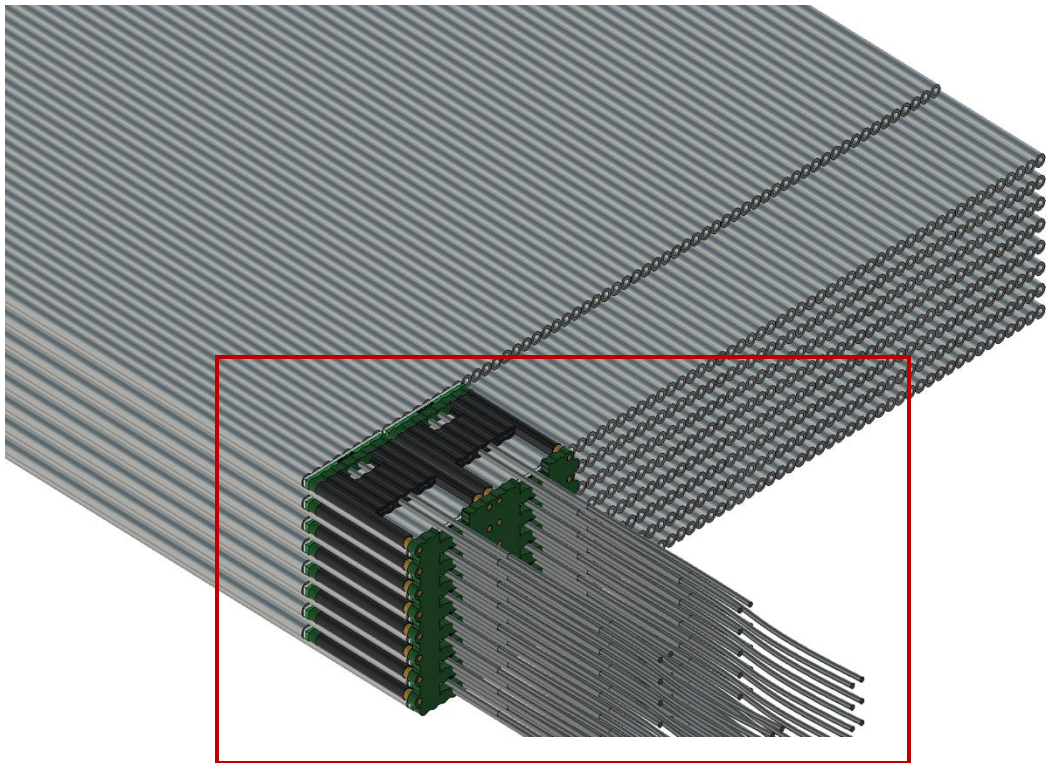
sigma



- Restarted production after Testbeam campaign
- PMT-readout modules
 - 42/70 built; 38/70 completed with fibres
- SiPM-readout modules
 - in the coming weeks building first prototype
 - layout and construction method defined, to be tested

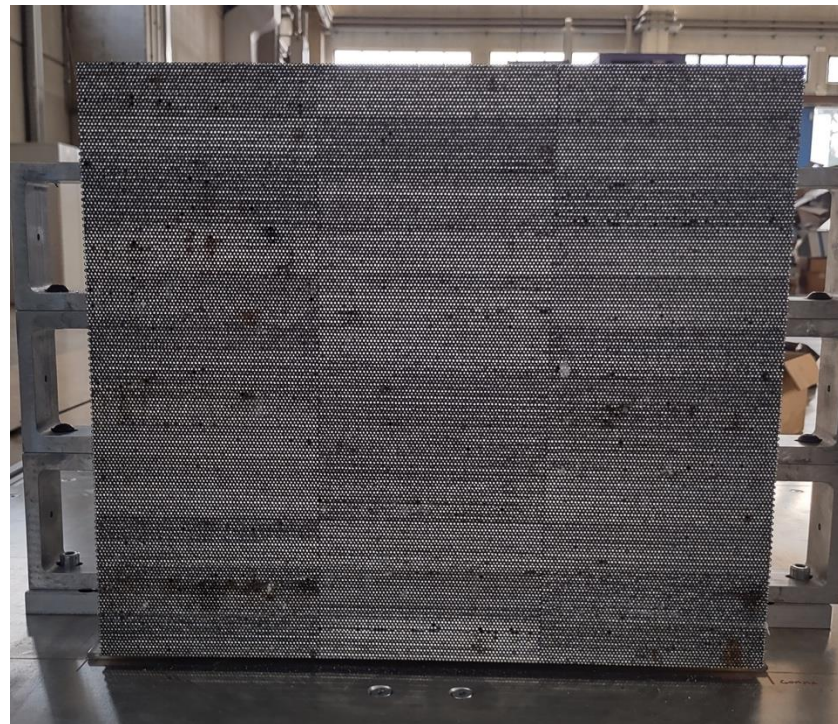
Integration of highly granular modules

Highly granular minimodule



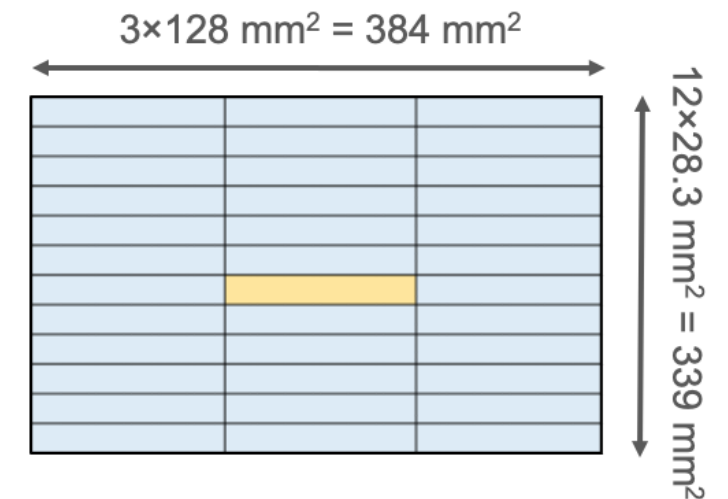
- ❑ Almost all SiPMs needed to equip 10 minimodules are available (the remaining 10% will be delivered by the end of 2024)
- ❑ The design of all pcb and services is completed (FEE boards, patch panels and cables)
- ❑ The full readout chain has been qualified in the lab
- ❑ The assembly strategy with dummy component will be assessed by the end of 2024
- ❑ Production will start at the beginning of 2025

Testbeam Campaign



Main Goals of TB2024:

- Calibration and equalisation procedure
- EM resolution
- Uniformity response
- Tuning G4 simulation
- Attenuation length measurement



Testbeam Campaign

GoodRunListSPS2024

↓ GoodRunListSPS2024

↓ General Info

↓ Pedestal Runs

↓ Pedestal Runs (calorimeter oriented along the beam line)

↓ Pedestal Runs with rotated calorimeter

↓ PMT calibration

↓ Equalisation at 40 GeV (old HV everywhere)

↓ Calibration of T00, OLD HV

↓ Equalisation at 20 GeV

↓ Electron Scans

↓ Electron Energy Scan in T00, OLD HV

↓ Electron Energy Scan in T00, NEW HV

↓ Electron Energy Scan in T00, angle 2°

↓ Electron Energy Scan in T00, angle 3°

↓ Electron Energy Scan in T34 (check linearity for non tapered bases), NEW HV

↓ Electron Energy Scan with calorimeter rotated by 90°

↓ Muon Scans

↓ Muon 160 GeV in the central tower and first ring for (calibration test) OLD HV

↓ Muon Energy Scan in the central tower with NEW HV in T00

↓ Other Muon measurements

↓ Pion Scans

↓ Pion Energy Scan in T00 (NEW+OLD HV)

↓ Pion Energy Scan in T00 with timing information (NEW HV in T00)

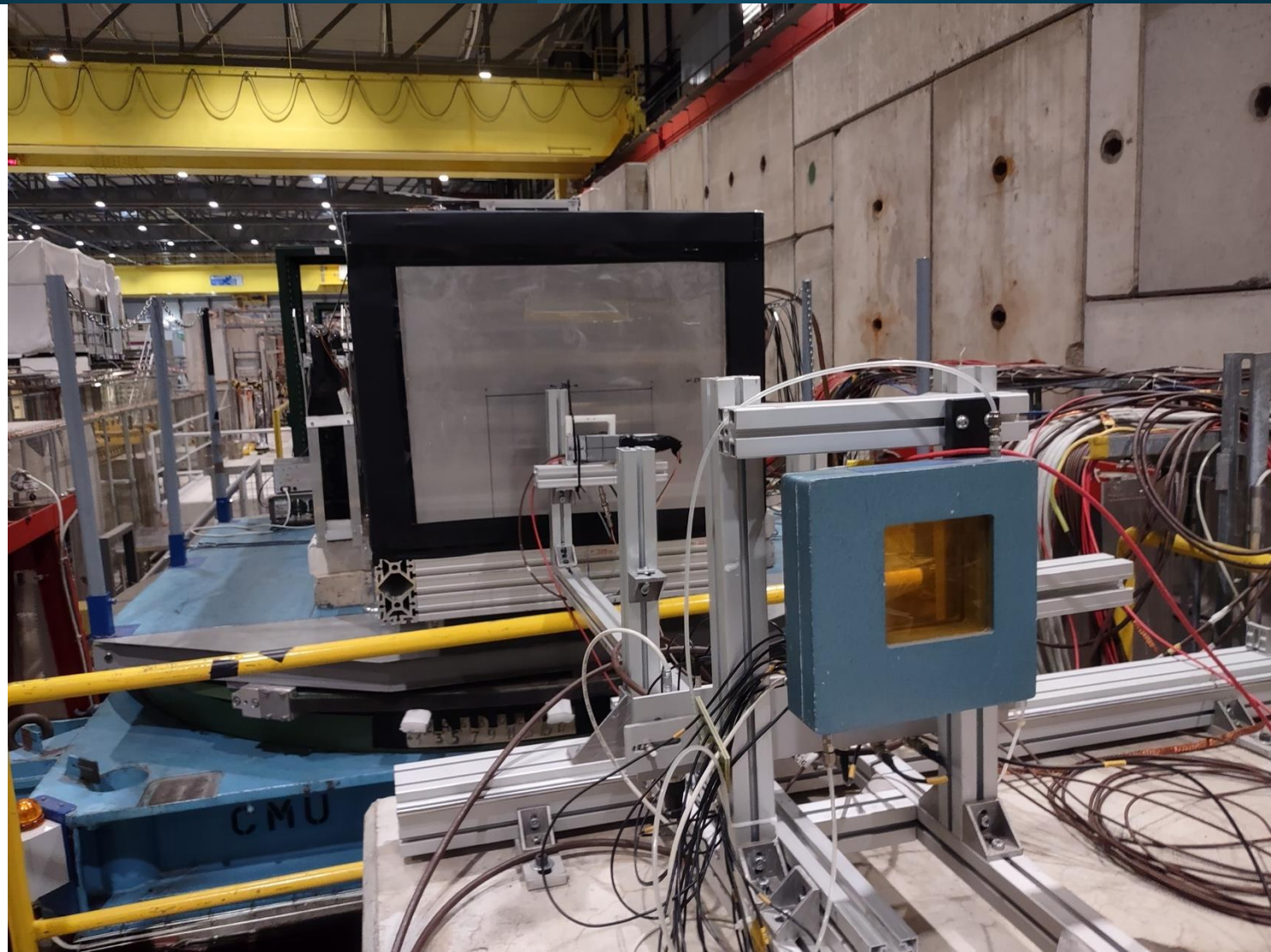
↓ Pion Energy Scan in T45 for pion shower profile

↓ Other Scans

↓ Attenuation Scan

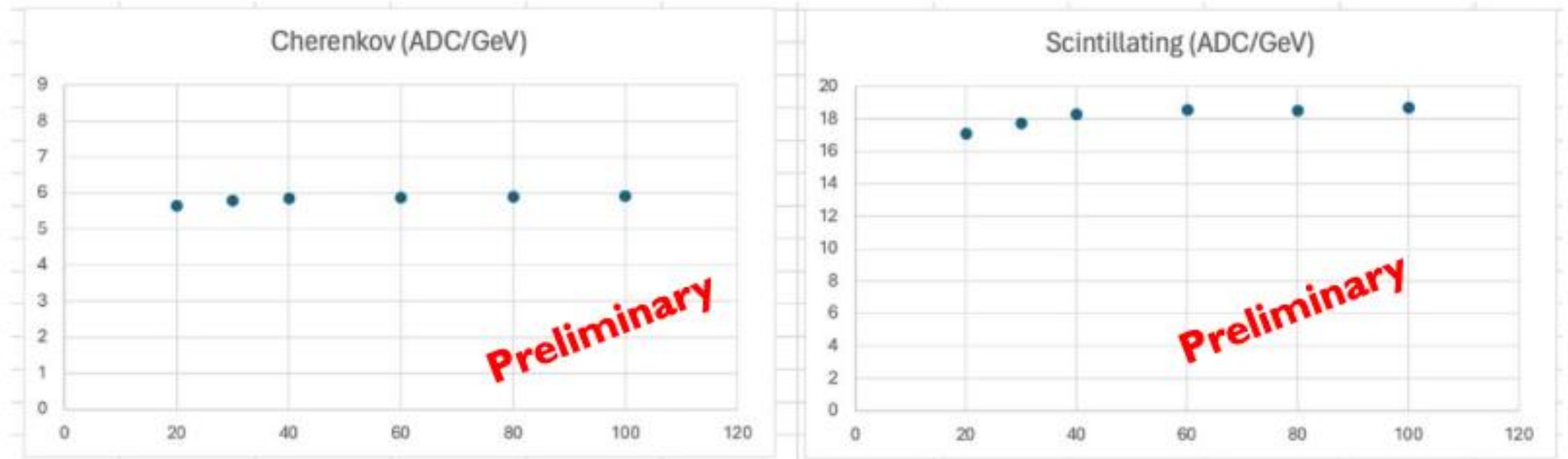
↓ Position Scan in T00

↓ Angular Scan in T00



Testbeam Campaign: Preliminary results

e⁺ energy scan: linearity



Testbeam Campaign: Preliminary results

