Update on next "INFN" prototype

Gabriella Gaudio
on behalf of the Pavia Group
September, 7th 2022
Lab for testing and production

Assembly system

Tube Testing Station

G. Gaudio – Dual-readout meeting – 07.09.2022
Tube preparation and handling

Tube are prepared on support tool, and aligned

Plastic plates prepared with double-sided scotch tape: decouple tube in the vacuum system
Tube handling and gluing
Lab for testing and production
Status and outlook

Procurement

- Reference tools for the assembly should arrive from company soon
- Tooling is under finalization in our mechanical shop
- Capillary tubes are expected to be delivered this week (at the custom)

Next steps

- Installation of the tools in the lab and qualification
- QAQC on the capillary tubes
- Assembly test
Backup
Capillary quality

- Quality of capillary procured so far is pretty good
- Relies on capillary tube is enough for good quality module
  - as seen from EM-size prototype
- Simplifying the tooling
- Design feasible for 2.5m long and for large production

![Tublets Outer Diameter](image)

<table>
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<th>outerDiameter</th>
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<th>Mean</th>
<th>Std Dev</th>
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G. Gaudio – Dual-readout meeting – 07.09.2022
Assembling tooling

- Grinding L-shape support, worked with high precision
- Movable shoulder to define module dimensions
- Reference plate for tube staggering
Tube gluing

Positioning of the tube layer on the previous one
Vacuum release and tool released
Detaching the plates with double-sided tapes
Module closure

✧ Repeat until complete the module
✧ only 6 layers done for this tests
✧ Add weight on the top
✧ Leave for glue curing

• Easy and fast procedure
• Scalable to 2.5 m long