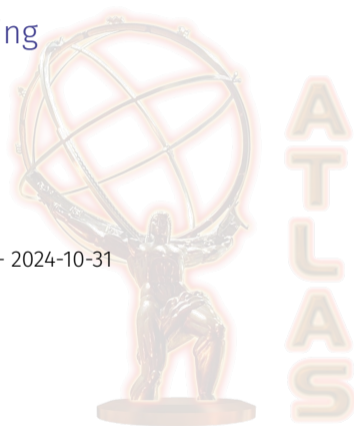


Loading and Testing

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Pixel Luminosity Rings Kick-off — 2024-10-31



Outline

1 Loading

2 Testing

3 Oslo capability



Loading Triplets on Ring

Working assumptions

(See IS Rings procedure)

- Align Triplet using FE fiducial marks
- Pick-up Triplet using custom vacuum head, matching Flex pick-up areas
- Apply thermal adhesive (back-butter) using dispensing robot
- Load on Ring using constrained (hinged) kinematics
- Adhesive thickness set by glass beads

Deviation from Rings

- Interface is inclined wrt to Ring plane
- Should the loading action be **normal** to interface?
- Collision free with simple hinged arm?



Electrical testing

Working assumptions

- Triplets have passed the full electrical tests
- Four Triplets comprising a SP chain connects to one service ring flex PCB

Deviation wrt Rings

- Read-out is with two **stacked** Ring-0.5 service ring flex PCB
- Will impact the possible test/rework points



Loading and Testing in Oslo?

Equipment and Experience

- Large Area Mechanical CMM: Mitutoyo Crysta Apex
- Contributed to the Longeron loading tool prototype
- Some experience with dispensing adhesives
- Extensive experience handling and testing Triplet modules

Needed Upgrades and Developments

- The loading tool must be adapted to the inclined geometry
- Acquire multi-module readout system
- Cooling during testing



References I

- ▶ *ITk PLR Initial Design Review Report*. May 2021. URL: <https://edms.cern.ch/document/2581132/1>.

