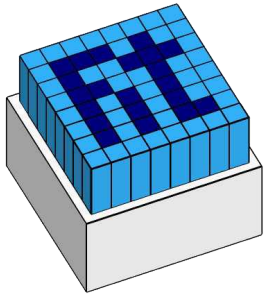
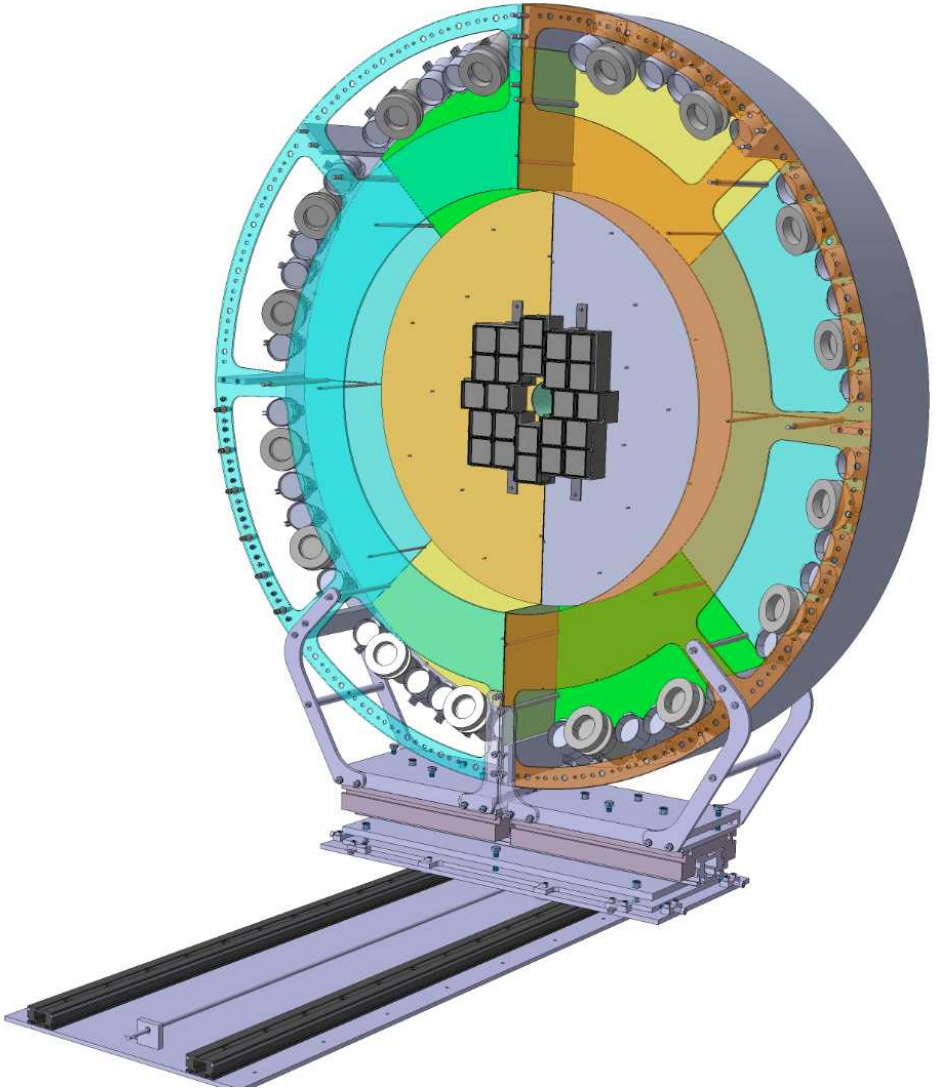


V0+ detector PRR

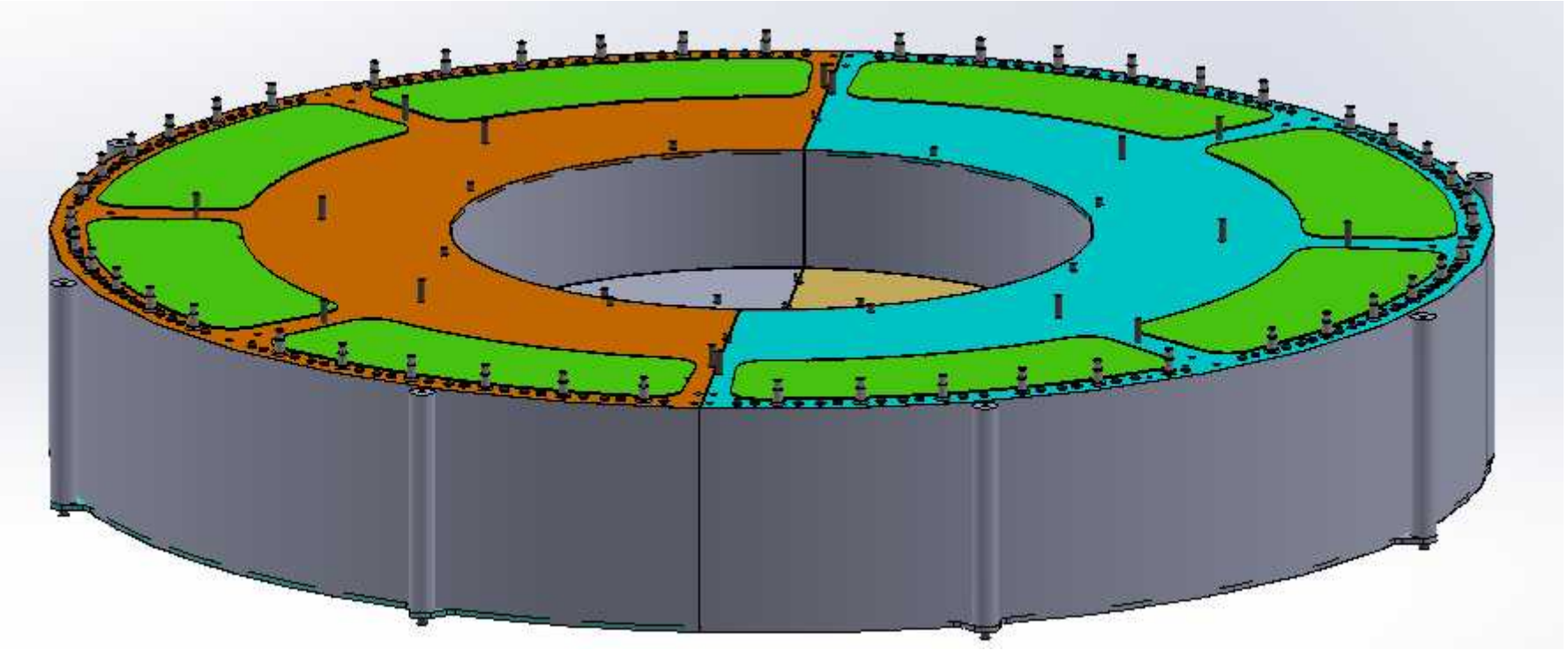
Varlen Grabski
on behalf of FIT

Updated: 2018/12/07

V0+ Integration



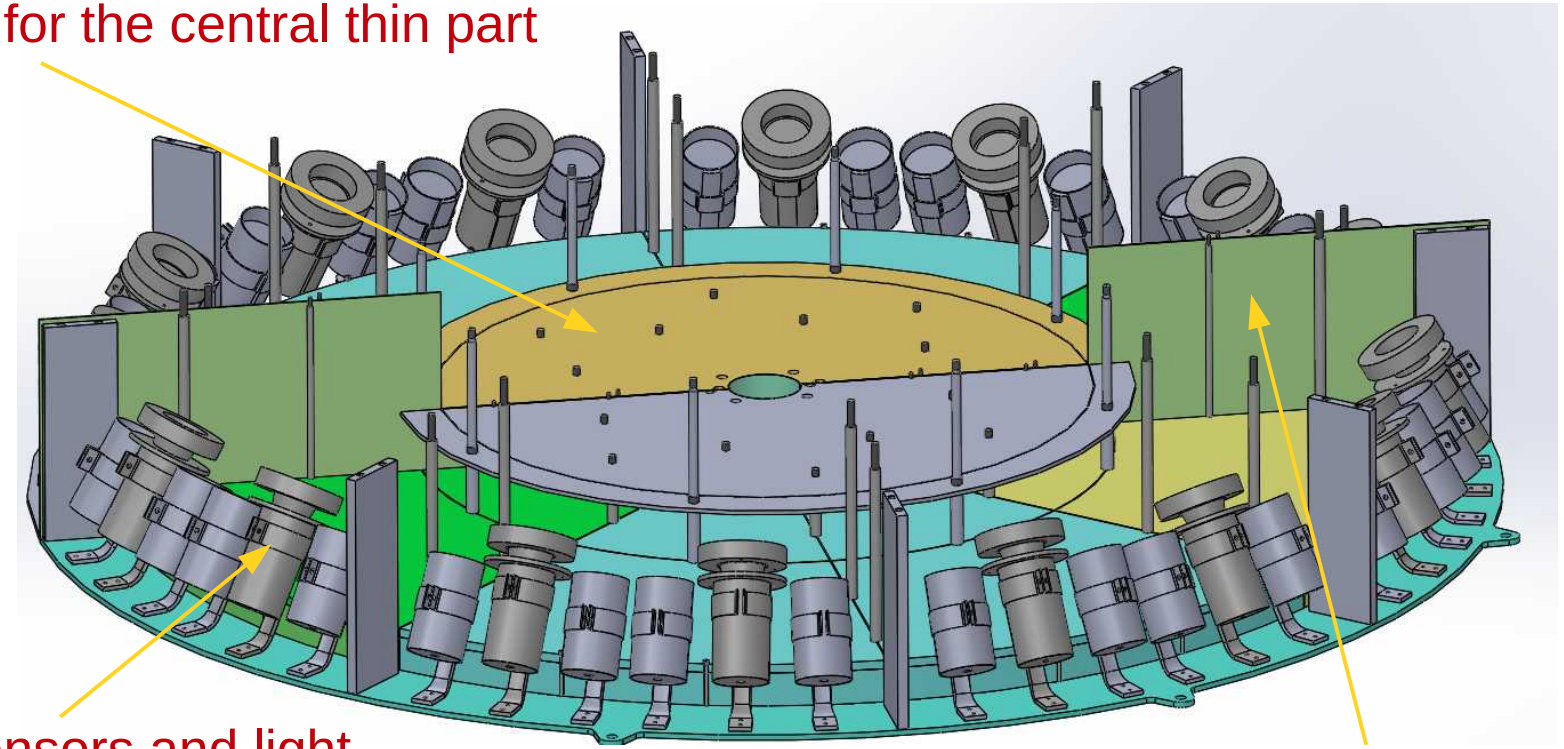
Detector Design



EDR Mechanical Design

Isometric view with photosensors and some covers

Covers for the central thin part



Photosensors and light guide plastic supports. Only for the largest cells we need light guides

Covers for separation sides

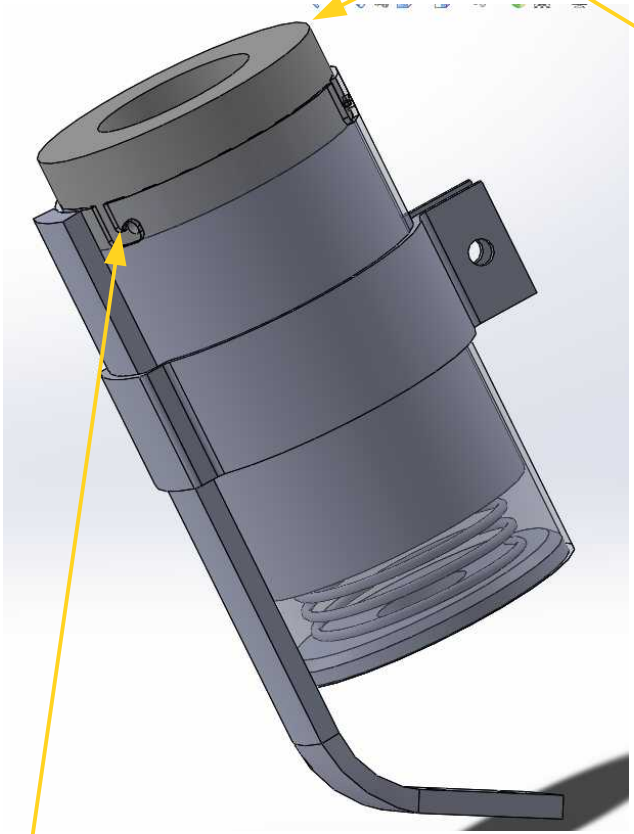
Design elements changes since EDR

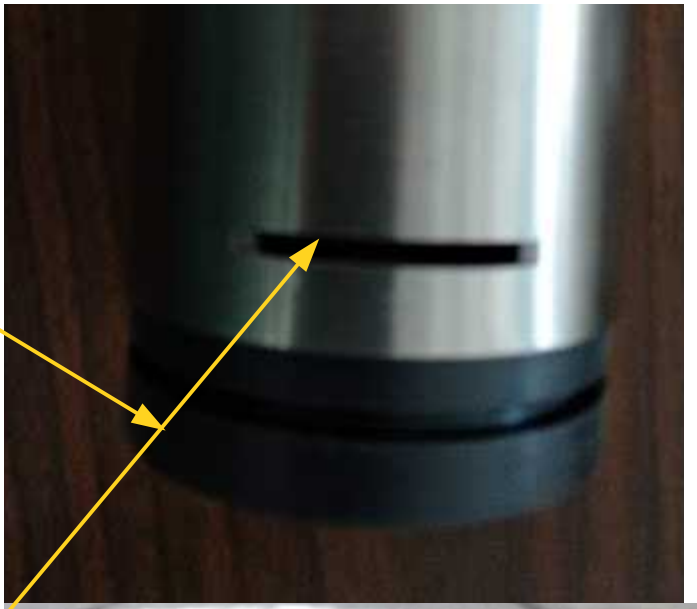
- **Magnetic field requiring specific orientation of the photo-sensor;**
- **New bundle quick connector and lock system**
- **Other possible small changes in mechanical design(see I.G. Bearden presentation)**

PMTs are parallel to the magnetic field

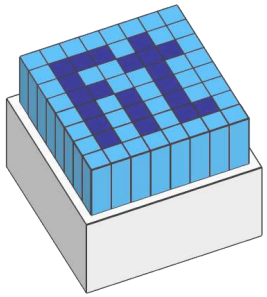
Photosensor holding support

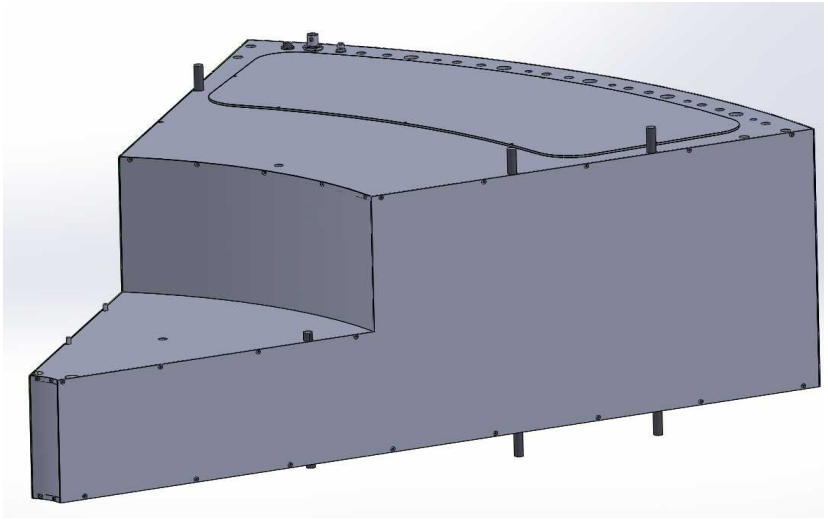
Bundle holder

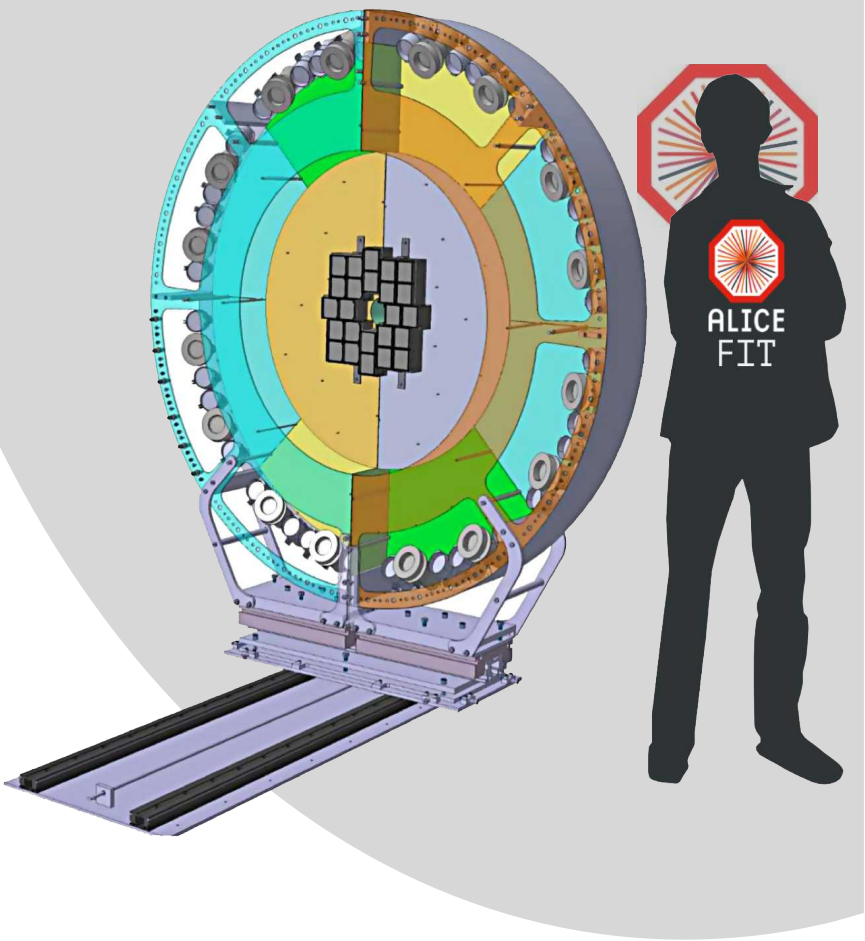


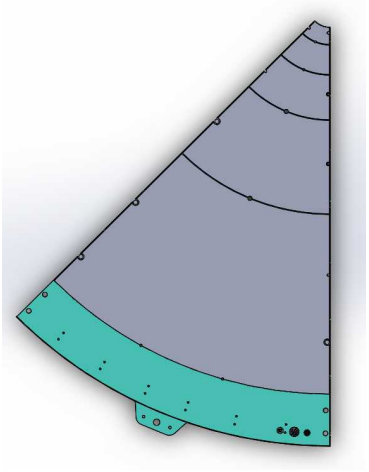


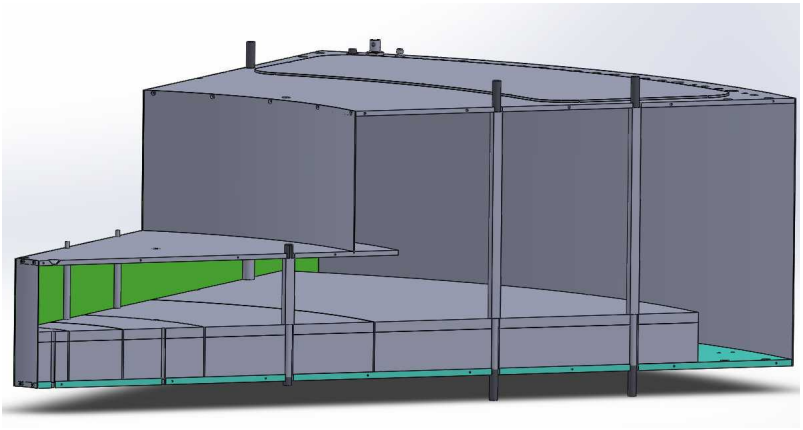
Quick-connector to hold bundle with PMT

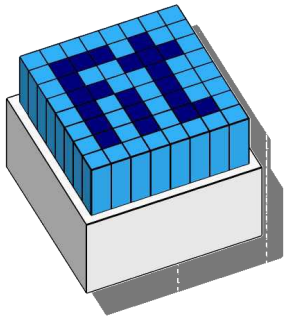





ALICE
FIT



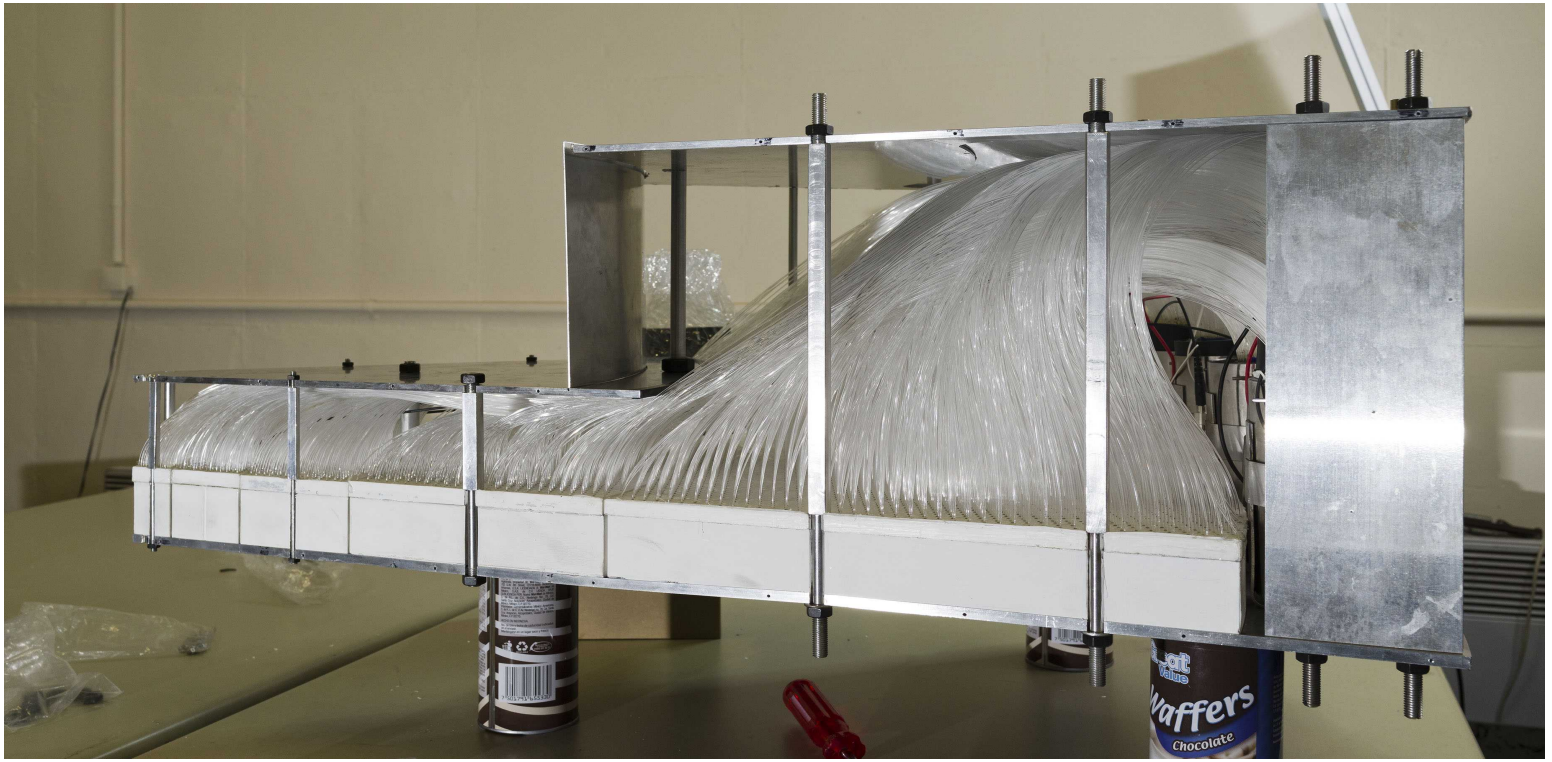




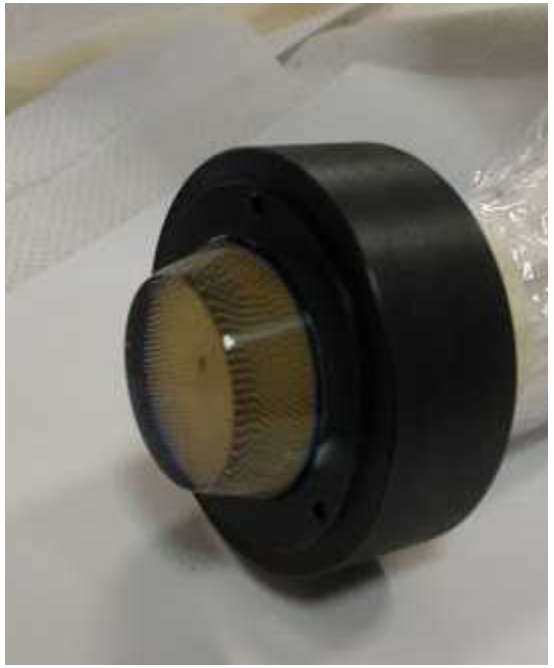
Sector prototype construction

- **Mechanical design;**
- **Scintillators**
- **Fibers**
- **Bundles and light guides**
- **Photosensor protection tubes and holding systems;**

Mechanical base and PMT protection supports

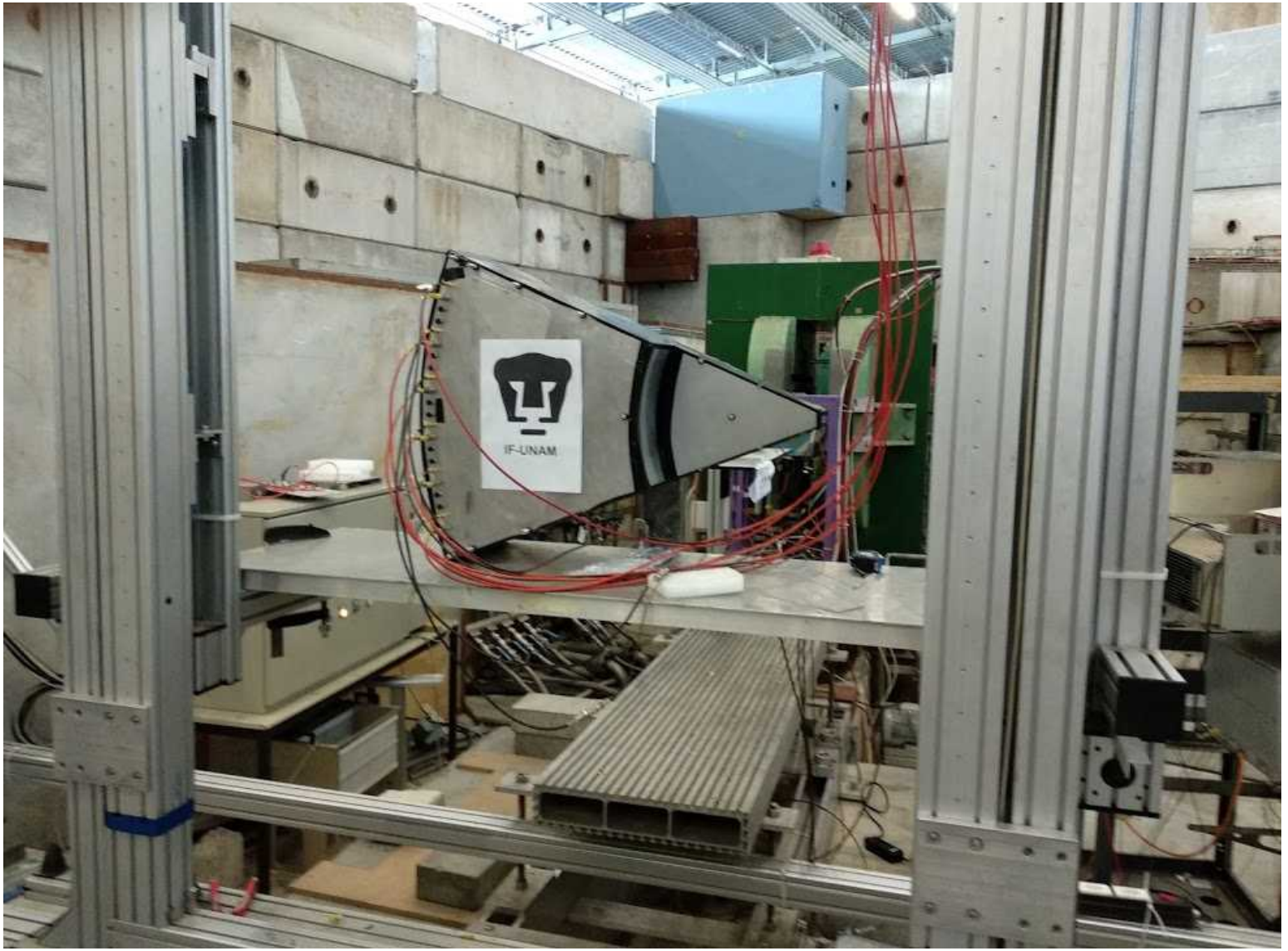


Bundles and light guides

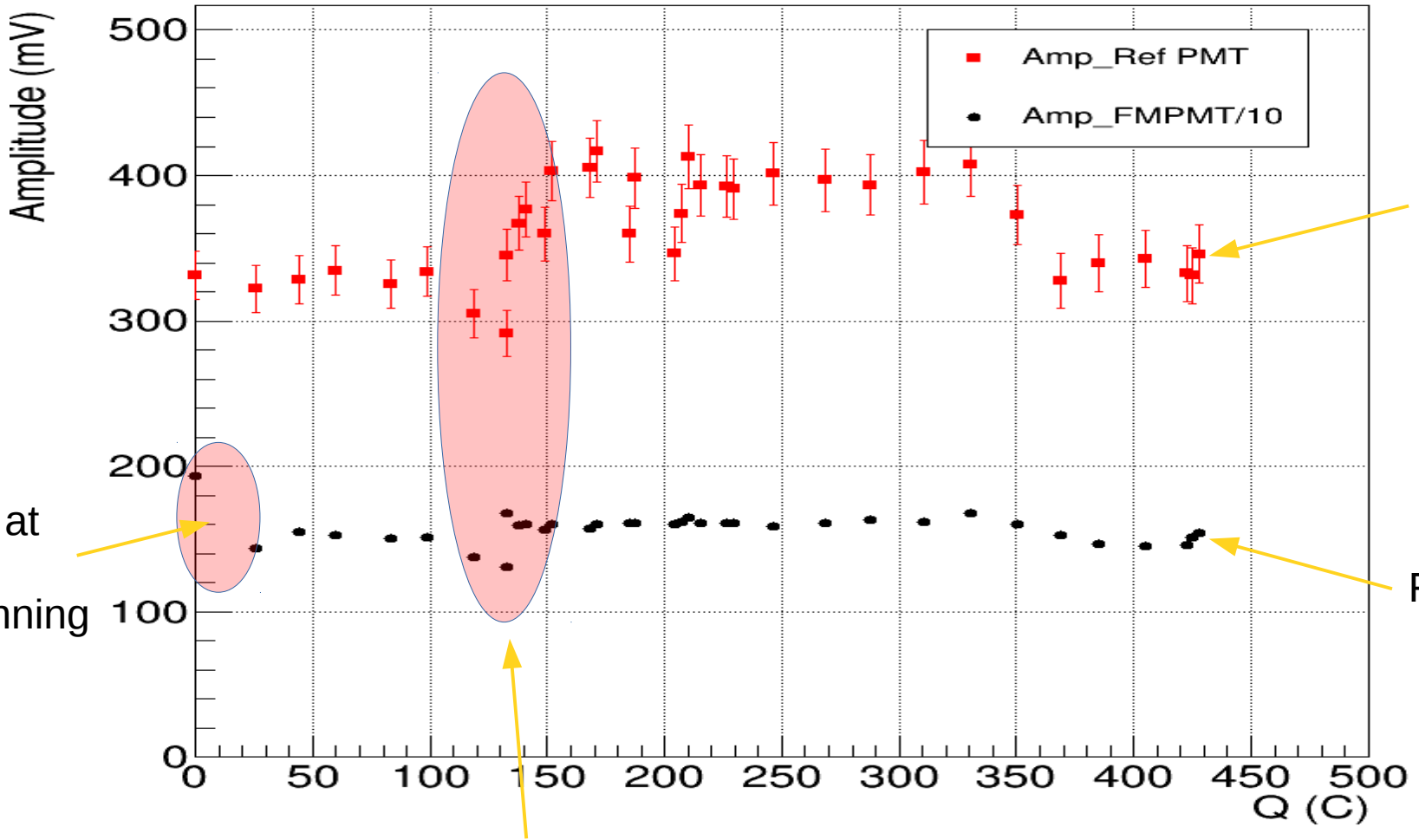


The bundle and the light guide for ring 4 after polishing

Sector prototype in T10



Results for Amplitudes



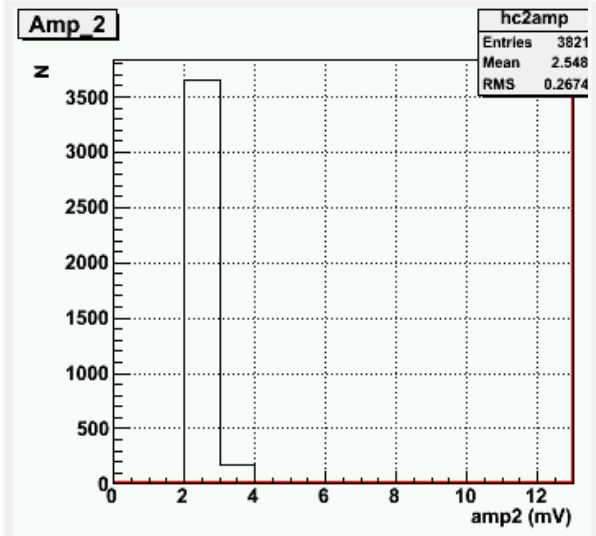
Ref. PMT

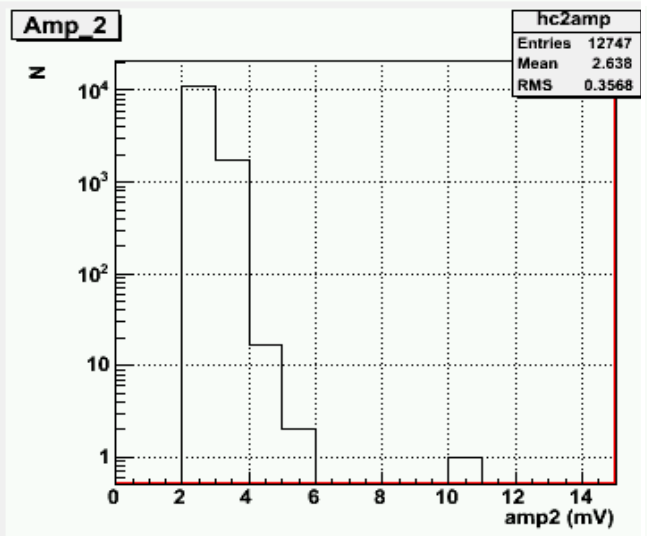
25% at the beginning

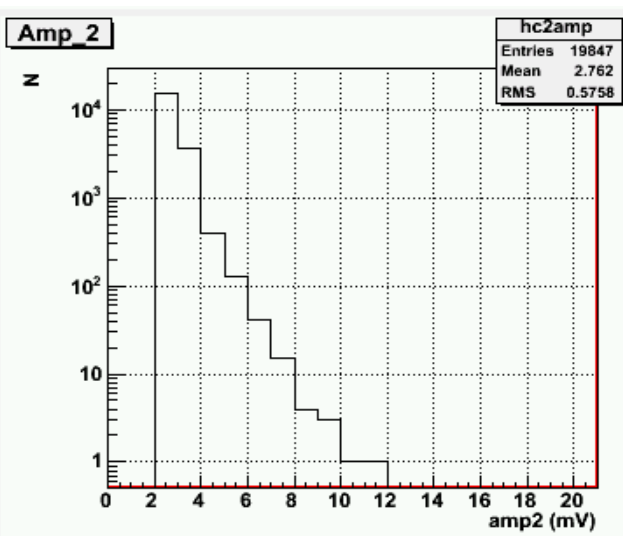
Fine mesh

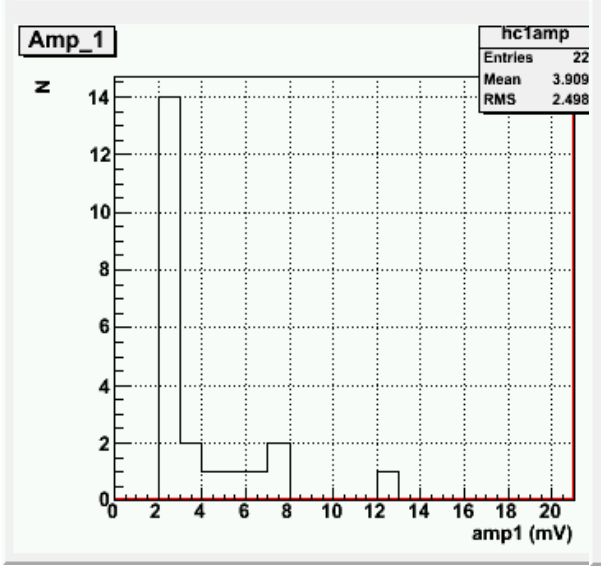
After 10 days stop

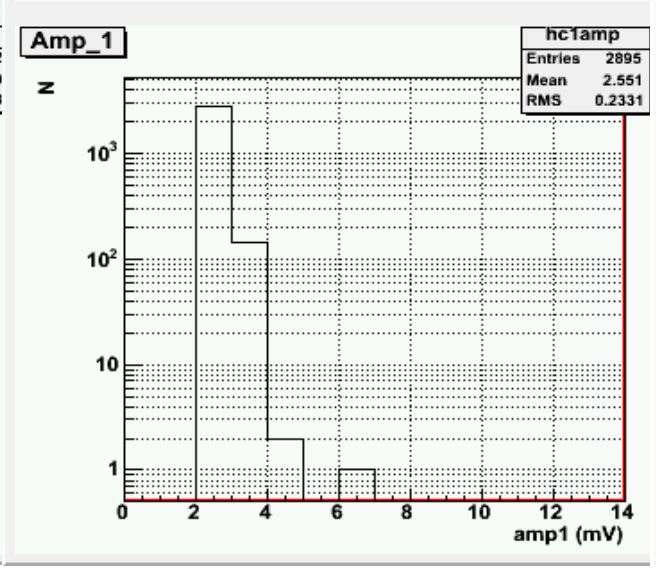
Afterpulses

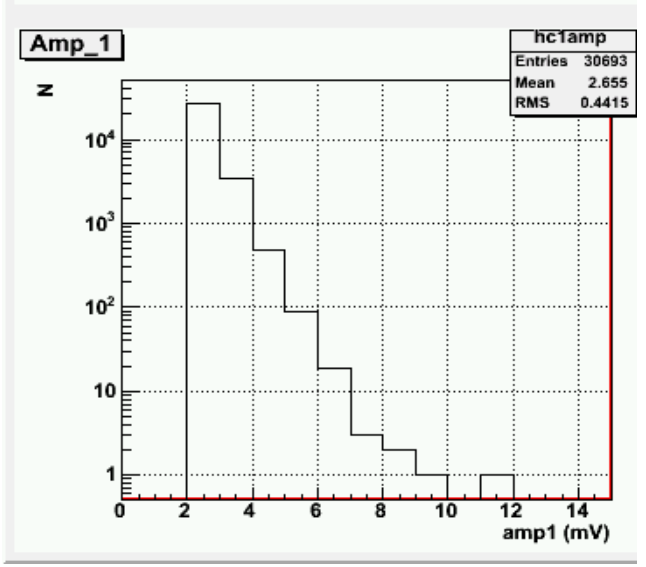












1000V 5V 1 ap per 5000s
Above 2mV threshold

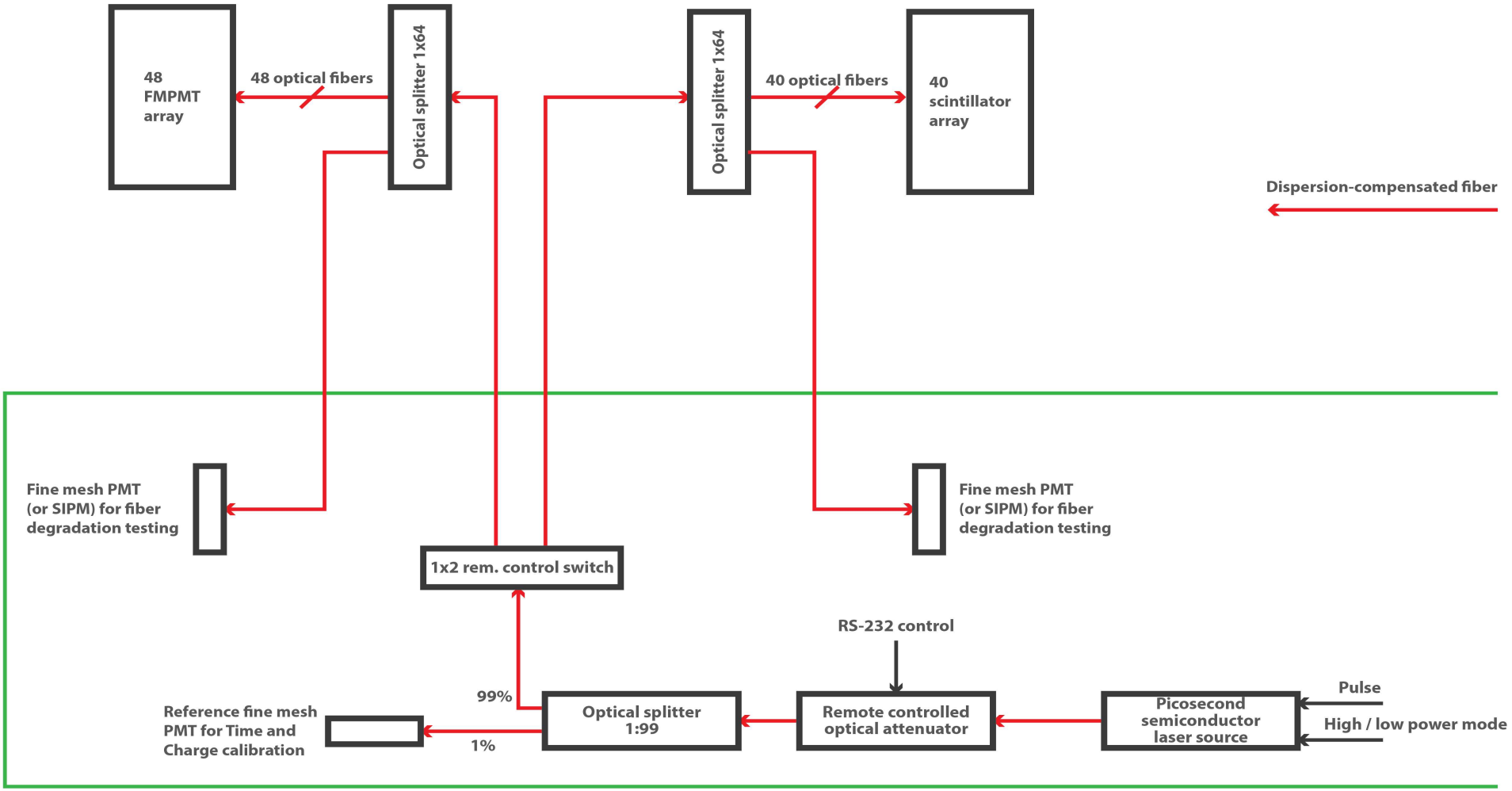
1100V 5V 1 ap per 30000s
Above 4mV threshold

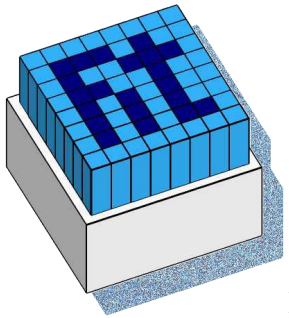
1200V 5V 1 ap per 150s
Above 4mV threshold

100000 main signals

Laser calibration system

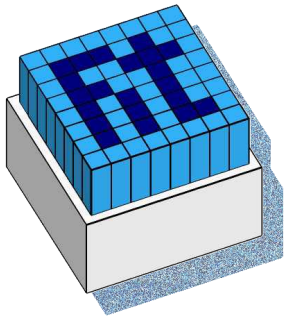
Laser calibration system (v0+)





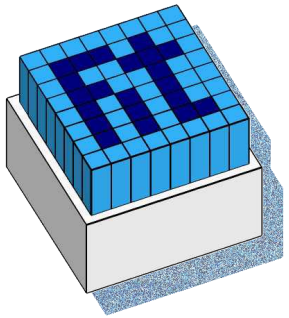
Production Organization and Work-flow

- **Fiber cutting – October 2018 (IFUNAM);**
- **Fiber support fabrication – November 2018 – January 2019(IFUNAM);**
- **Scintillator cutting – November 2018 - March 2019 (IFUNAM);**
- **Scintillator painting – November 2018 - March 2019 (IFUNAM);**
- **Fiber support painting – January – February 2019(IFUNAM);**
- **Holes on fiber support – January – February 2019 (IFUNAM);**
- **Gluing Fibers in support holes – January – March 2019 (IFUNAM);;**
- **Bundle gluing – February- March 2019 (IFUNAM);;**
- **Bundle and support polishing – February- April 2019 (IFUNAM);**



Production Organization and Workflow

- **Light guide fabrication – April – May 2019 ((SMI Vienna or IFUNAM)**
- **Mechanical support fabrication – February – March 2019 (Niels Bohr Copenhagen, see I.G. Bearden presentation)**
- **Mechanical support tool fabrication – January – August 2019 (Niels Bohr Copenhagen see I.G. Bearden presentation) ;**
- **Connector purchases – November 2018;**
- **Photo-sensor connector preparation – January 2019-July 2019 SMI or CERN;**
- **Photo-sensor preliminary tests – January 2019 - July 2019 SMI or CERN;**



Production Organization and Workflow

- **Detector assembly – September– October 2019 at CERN;**
- **Detector laboratory tests – October-November 2019 at CERN;**


Muchas Gracias