

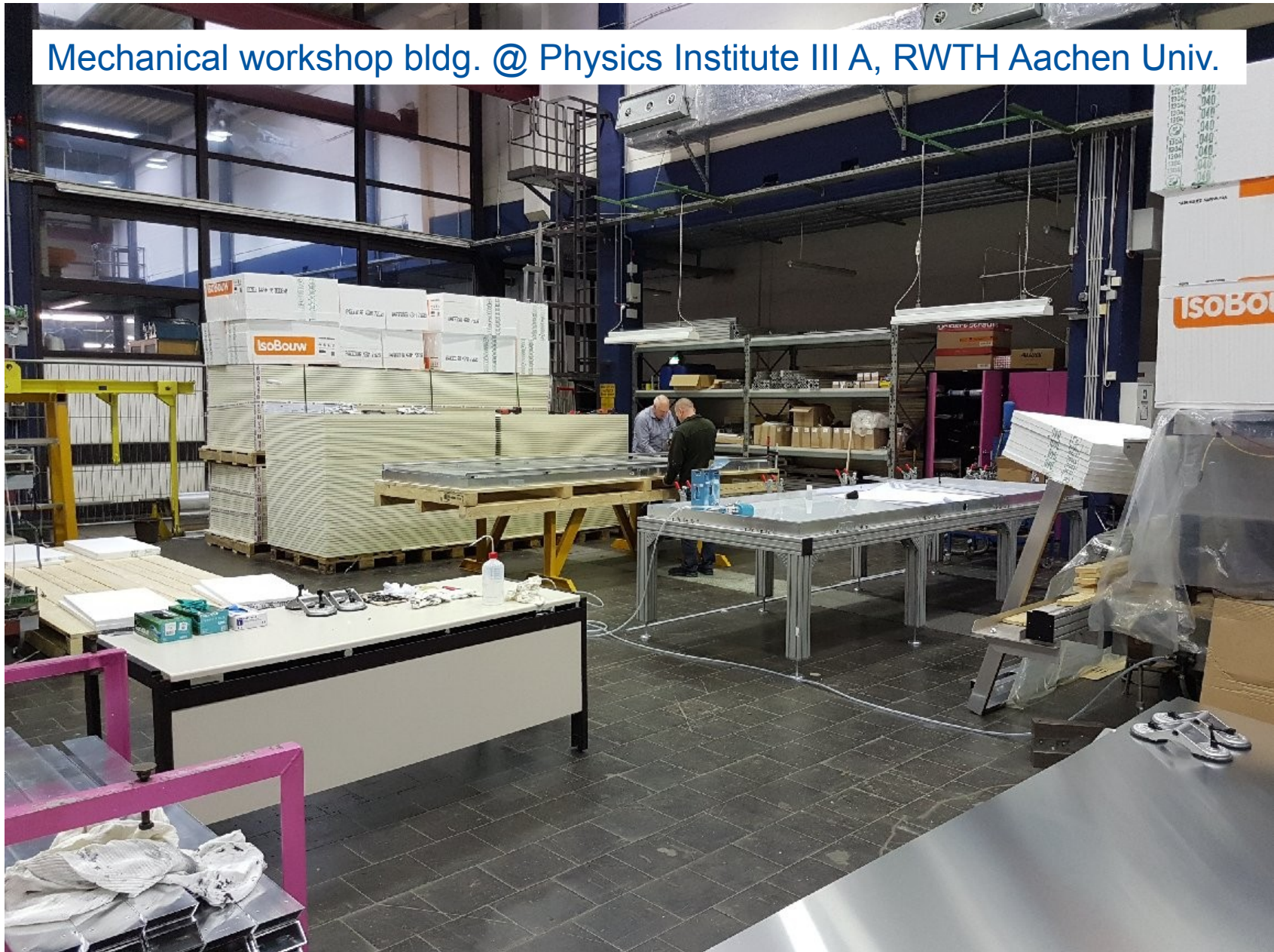
Assembling SSDs in Aachen



Barthel Philipps & Radomír Šmída
for the Aachen group



Mechanical workshop bldg. @ Physics Institute III A, RWTH Aachen Univ.

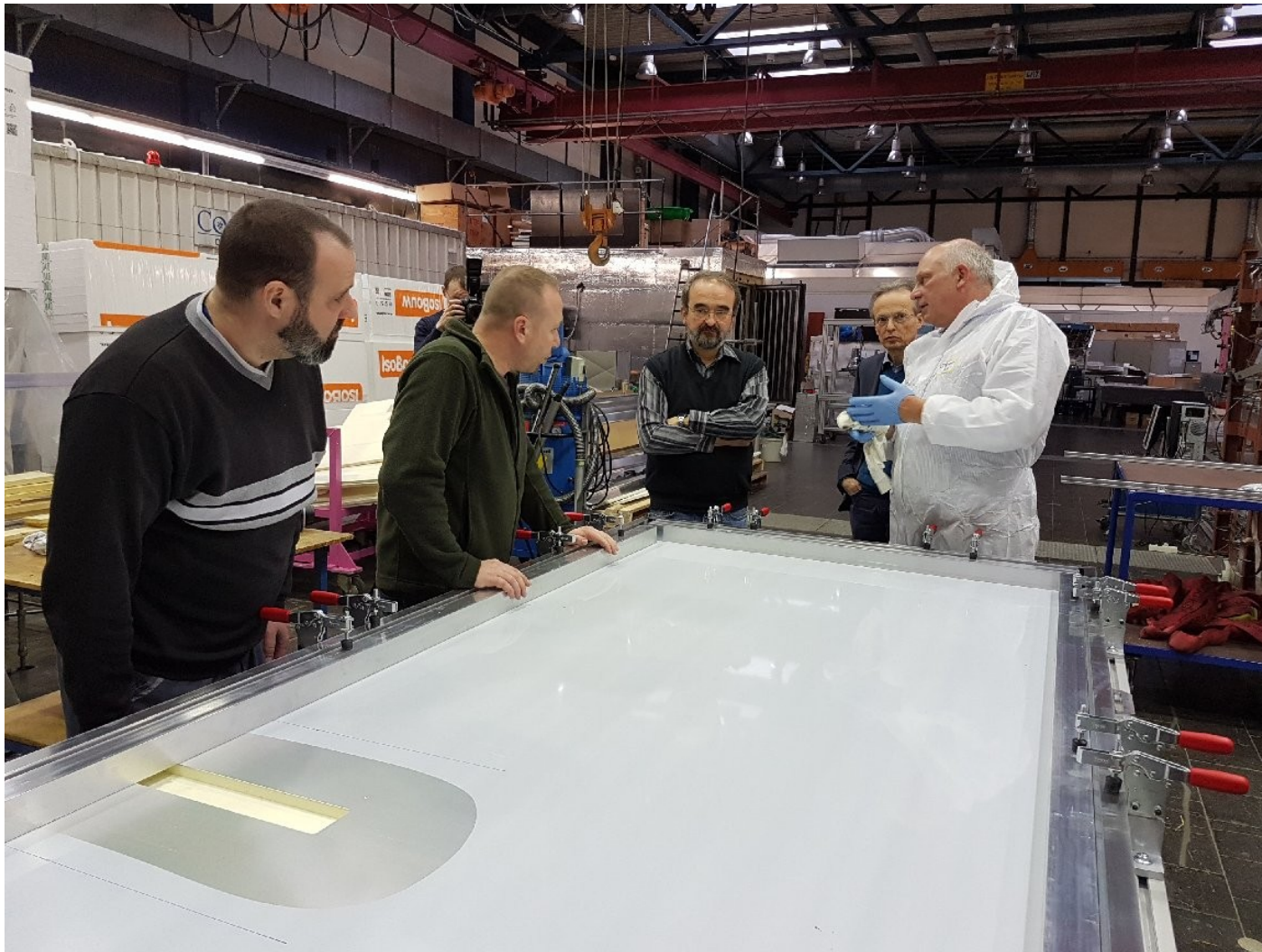


Place



People

People: R. Kupper, B. Philipps and S. Schumacher, one voluntary assistant (?)





Material and tools

Goal: 135 SSDs in three 40-foot containers

Panels: 135

Long / short beams: 275 / 275

Corner inserts: 560

Top sheets: 135

U bars: 100

PMT tubes: 45

PMT flanges: 45

Scintillator bars: 5 boxes

Fibers: 19 km (and another on its way)

Cookies: 45

Routers: one box

Small parts



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Long / short beams: 275 / 275

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Small parts

Tools for assembling:

table for assembling a frame,
tilting table,
motorized wheel for filters,
cookie holder,
etc.



Assembling time

One production line

Built a frame:

assembly and time to glue: approx: 3 h,
waiting for glue curing: 24 h

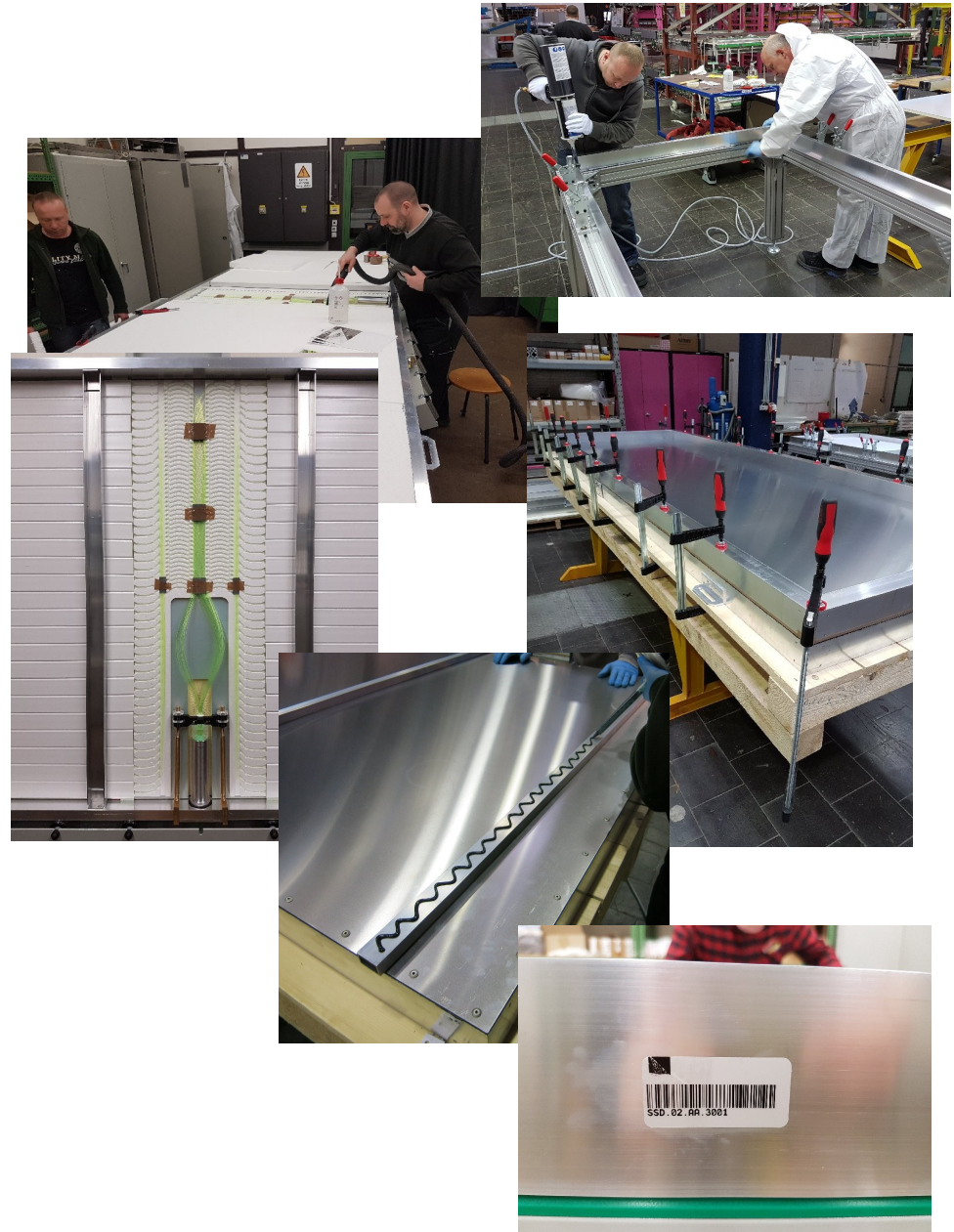
Inner parts:

assembly inner parts, melting fibers,
gluing a cookie: approx: 4.5 h,
curing time: 24 h

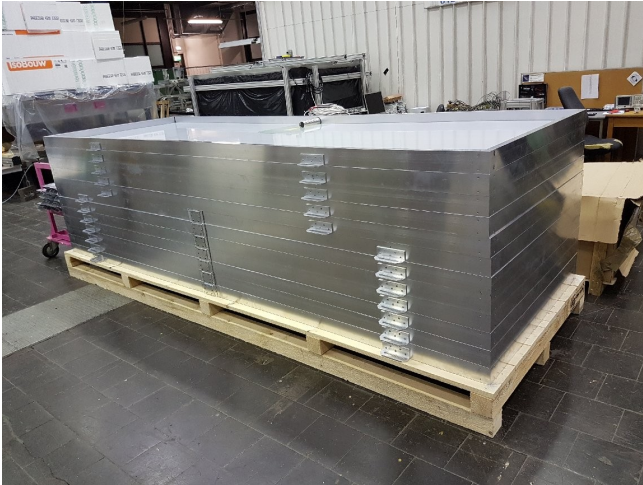
Closing detector:

put foam in, place and glue top sheet:
approx 2.5 h,
waiting for glue curing: 24 h

riveting the top sheet, gluing and riveting
roof supports: 2.0 h,
waiting for glue curing: 24 h

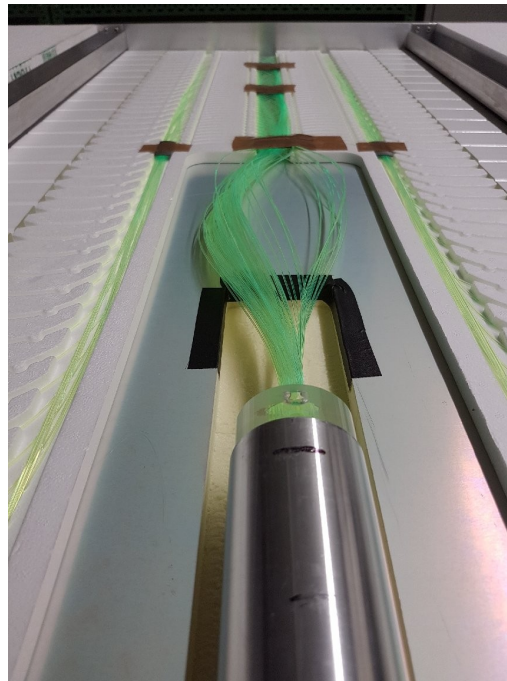


Status report



Frames: 13

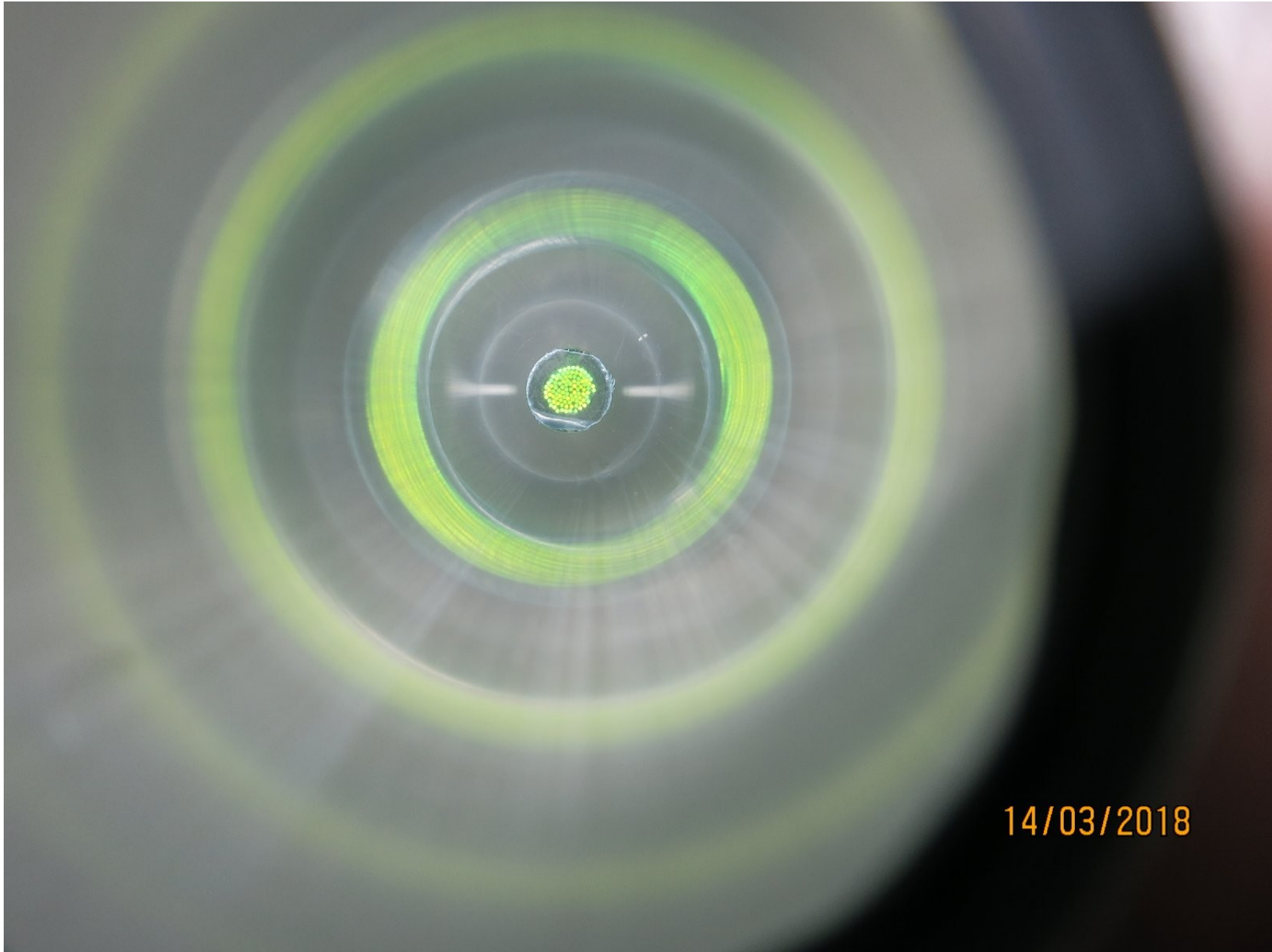
Glued cookie: 1



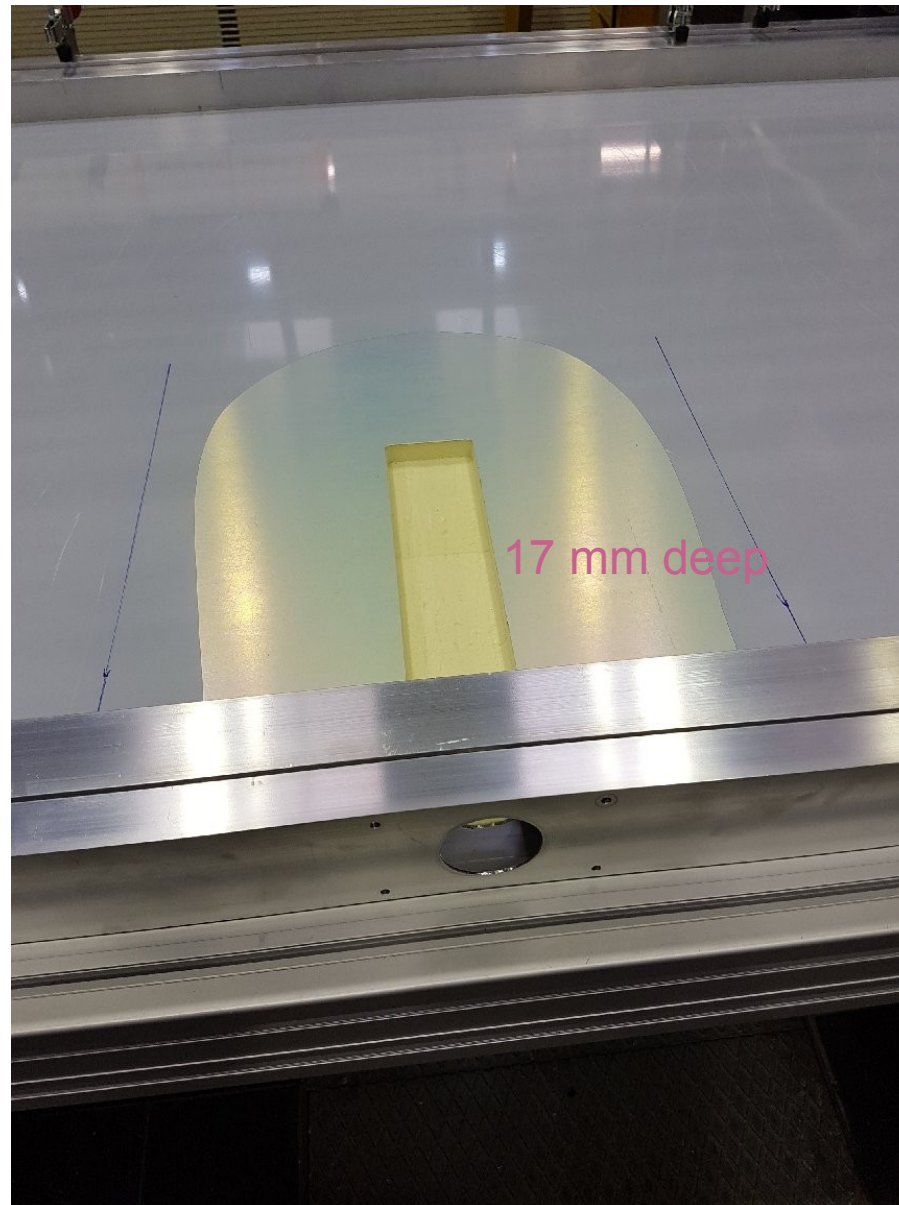
Closed detectors: 3



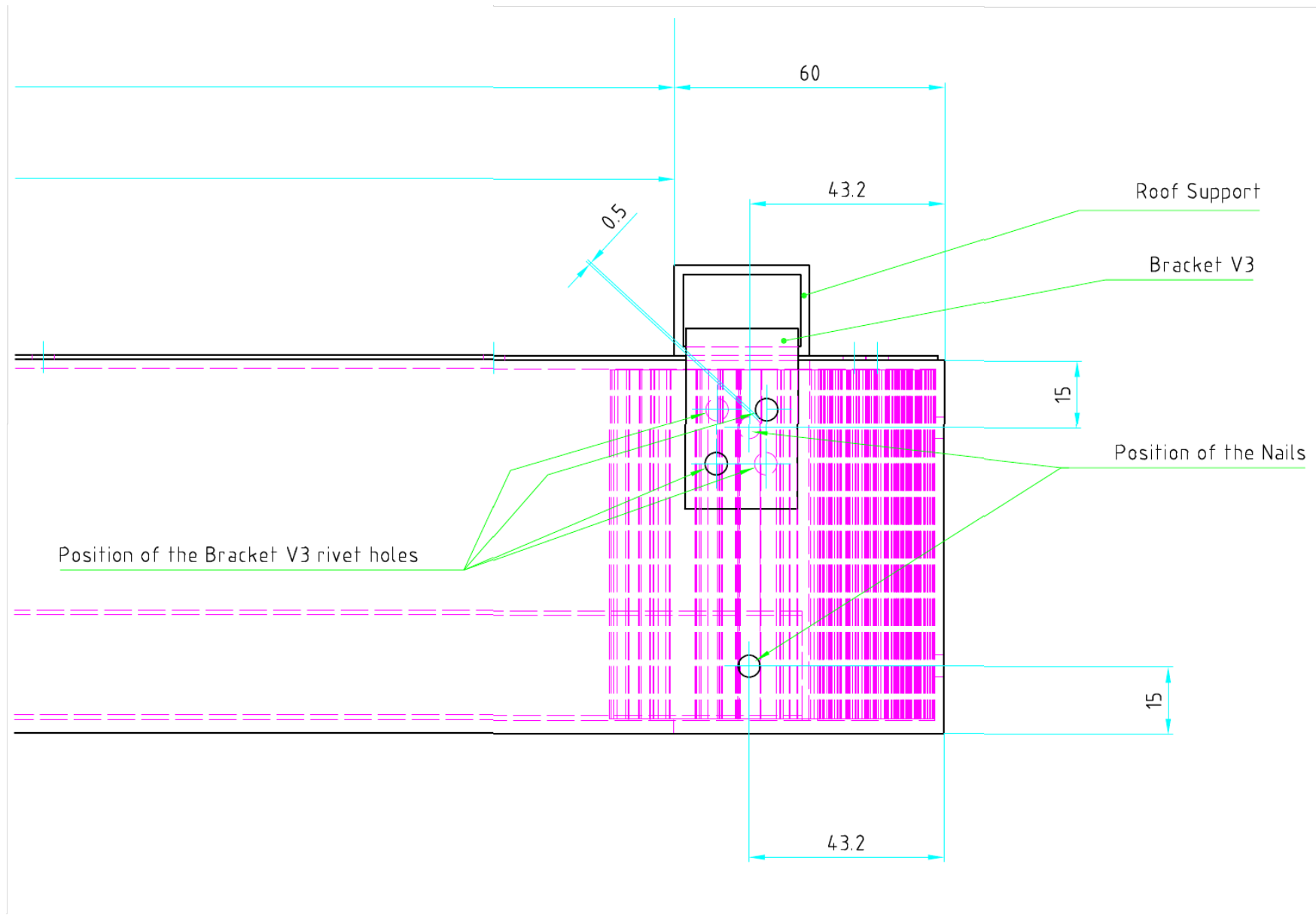
Assembling tricks / issues



Assembling tricks / issues



Assembling tricks / issues



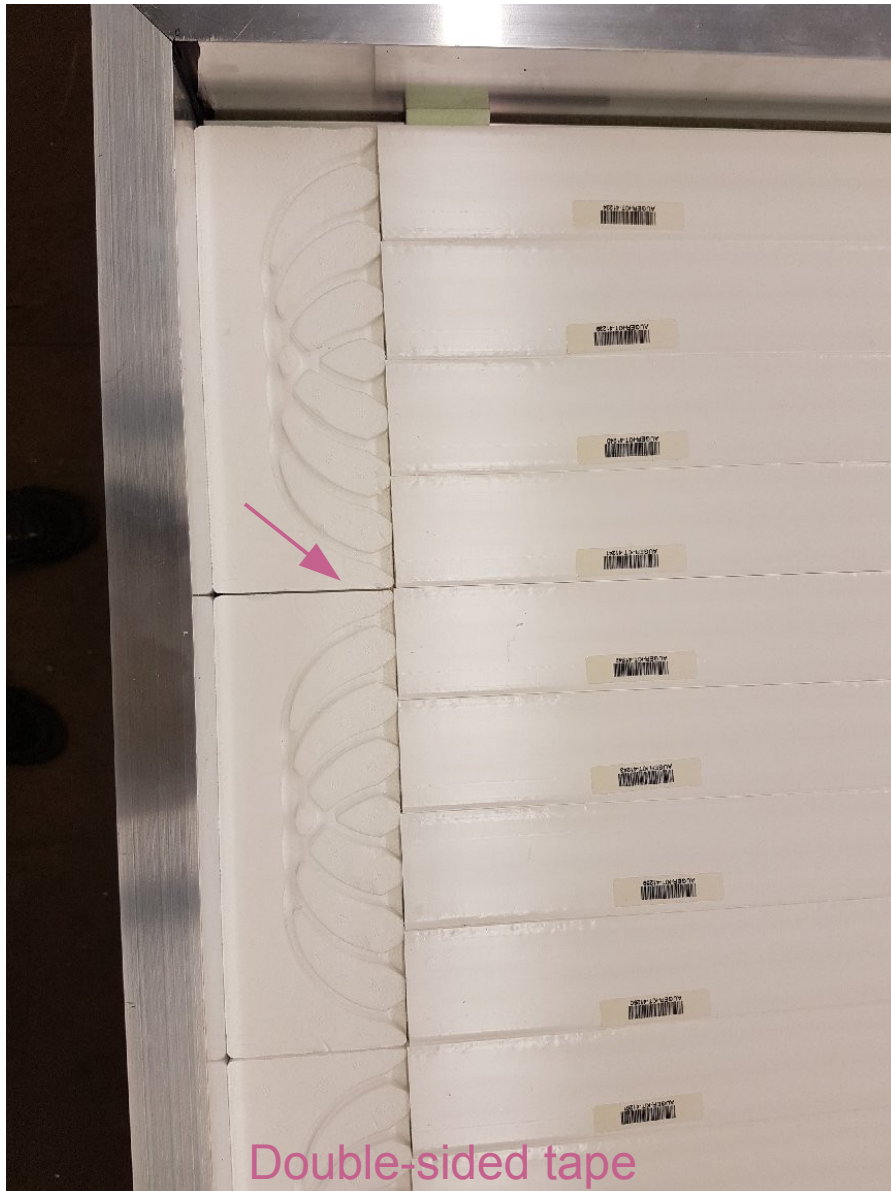
Assembling tricks / issues



Assembling tricks / issues



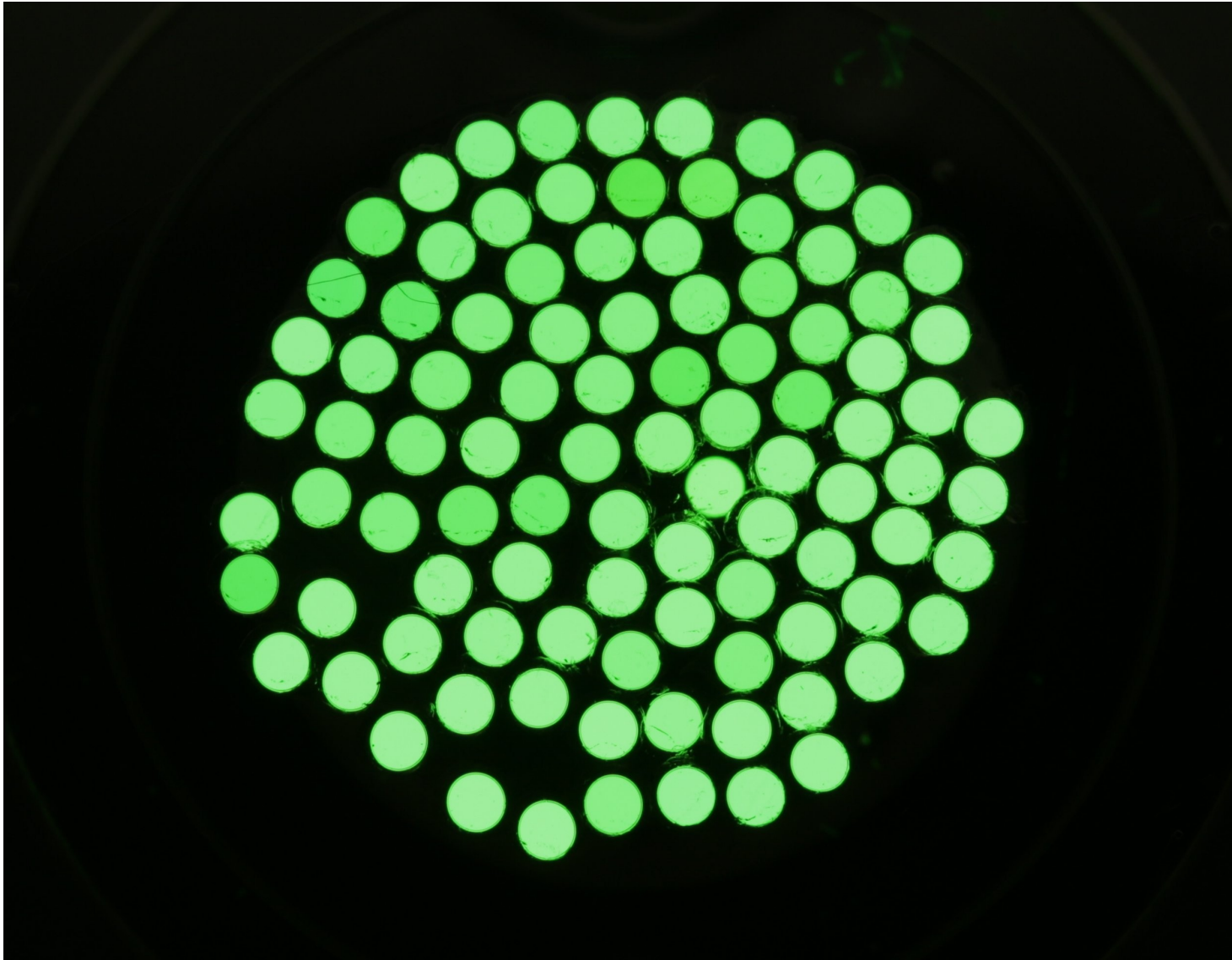
Assembling tricks / issues



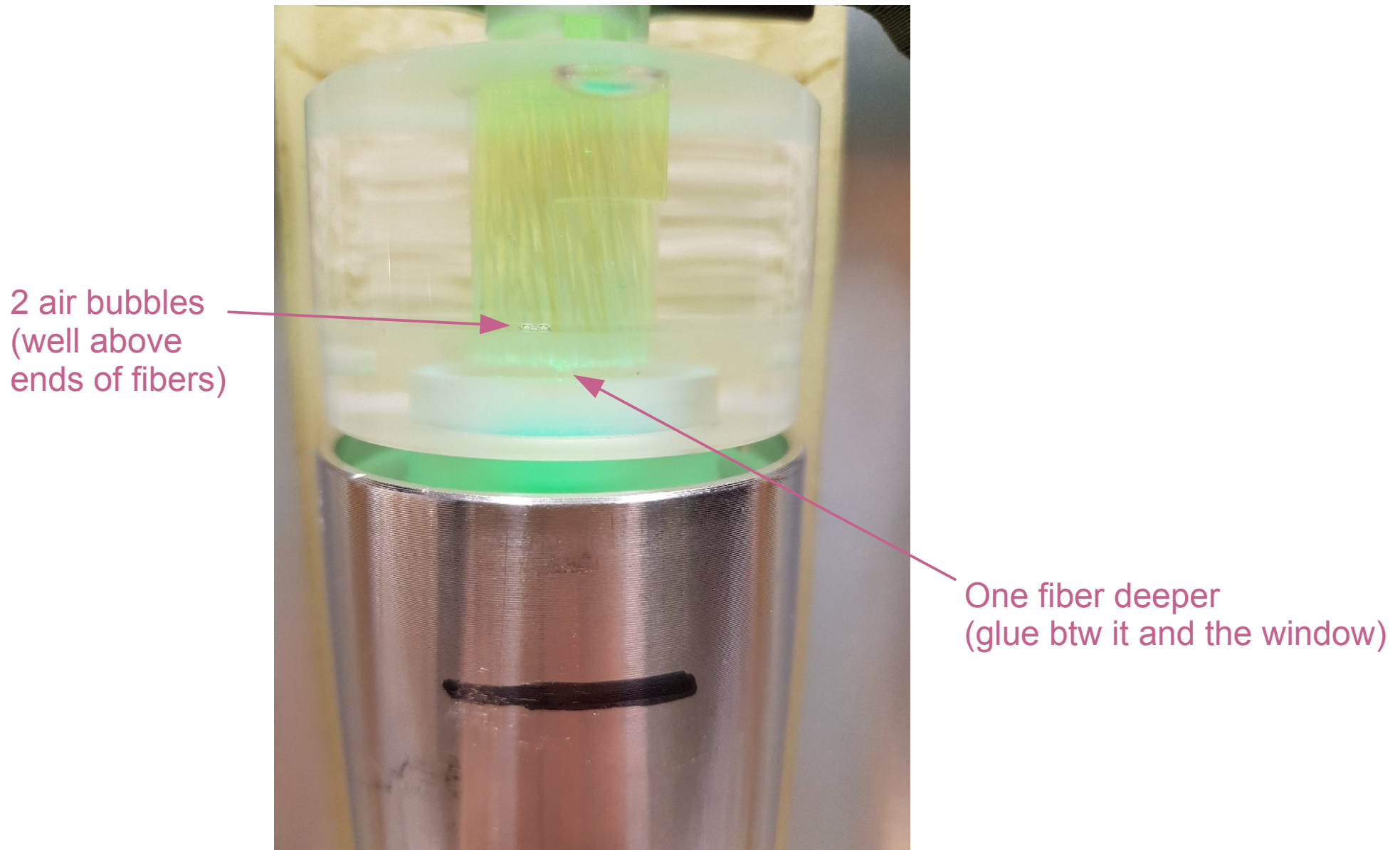
Assembling tricks / issues



Assembling tricks / issues



Assembling tricks / issues



Assembling tricks / issues



Conclusion

Production is going well

First three detectors were completed

Material available for 45 SSDs (i.e. one container)

Realistic production rate: 2 SSDs / week

Work also for the Gas Electron Multiplier of the CMS and various small projects