

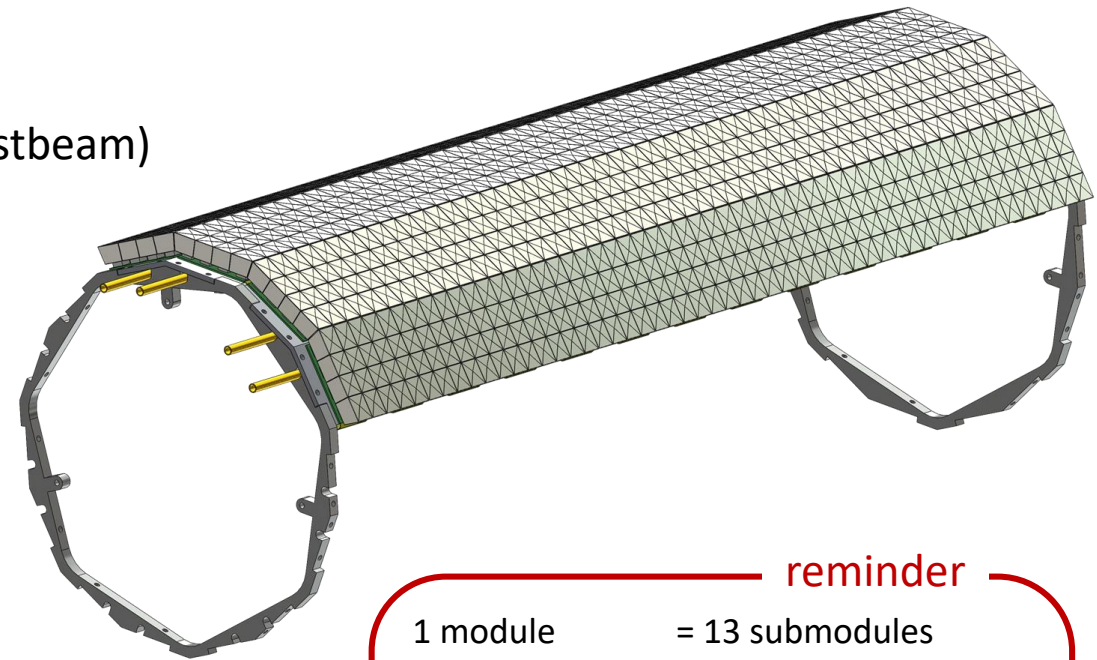
# Tile detector mechanics - status update -

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# Tile detector plans 2020

- goal for this year:
    - **two modules** fully assembled, QA'd and commissioned (testbeam)
    - production and QA chains established in the lab
    - ready for full production
  - mechanics-wise, we need:
    - 832 tiles (416 centre + 416 edge), plus foils for wrapping
    - 832 SiPMs
    - 52 matrix-flex boards
    - two tile module boards (TMB)
    - two cooling plates
    - one set of endrings
    - plus tools to wrap, glue, assemble, ...
- **aiming for assembly in second half of June**



## reminder

1 module	= 13 submodules + 1 TMB
1 submodule	= 2 matrices
1 matrix	= 16 (tiles+SiPMs) + 1 matrix-flex board
1 TMB	= 13 MuTRiGs (+ components)

# Current mechanics status – part I

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- **scintillator**

- in total 10 plates (262 x 36 x 5.5 mm<sup>3</sup>) now at KIP workshop with David Jansen
- first tile production tests last Thursday
  - still some fine-tuning needed
  - finished tiles **expected beginning of June**

- **SiPMs**

- ordered 1000 pieces, **expected in early June** (no delays foreseen by Hamamatsu)

- **matrix-flex board**

- Yonathan implemented some changes (flexprint length & shape)
- waiting for input on TMB mounting holes ↔ avoid conflicts with matrix-flex mounting holes
- planning to order 400 pieces, **expected in early/mid-June**

- **TMB**

- routing of ASICs to connectors finished

**amount:**

for two modules

for two modules

for full detector

for one module

# Current mechanics status – part II

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- **support structure**

- second shortened cooling plate in production at PI workshop, **received yesterday**
  - for tests of flex bending radius
- one set of endrings made from PEI requested from PI workshop, **expected this week**
  - ideally, these are already the final ones
- still needed: two full-length cooling plates
  - waiting for input on TMB mounting holes

- **foils**

- first test series for foil optimisation
- started testing with wrapping tool yesterday
  - it works! now we will fine-tune (servo positions, foil size, stickers, ...)
- need to cut ~5 sheets, **expected by end of May**

- **gluing tools**

- one is ready in the lab, 3 more are in production at KIP workshop

**amount:**

for one station

for two modules

for two modules

# To do (an incomplete list)

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- **lab preparation**

- cleaning and storage
- setting up working stations (mechanics + QA)
- general question: move to cleanroom for (some parts of) production?

- **"shopping"**

- electronics components
  - FPC connectors, temp sensors
  - do we have enough capacitors, resistors, ...?
- gluing materials (glue, nozzles, ...)
- storage solutions
  - I have sth in mind for tiles; what about foils, boards, components, ...?
- more ESR foil sheets
  - we have easily enough for two modules, but not for the full detector

- **testbeam setup preparations**