

ECAL-P mechanics: status and plans

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LUXE ECAL-P meeting 24-JAN-2024

- Got funding for the prototype and 3 tungsten plates !
- Looking for promising tungsten supplier(s)
- Finalizing feed-back ideas after WSI meeting: Faraday cage, ...
→ to be presented in Valencia in February

- 30 kzl (about 8 kEuro) form “Rector’s Reserve”,
delivery time: 30 September 2024
- sufficient funds for most important components:
 - mechanical main frame
 - combs
 - few T-frames / PCB and sensors support (6 pc. ?) [for test in Kraków and Valencia]
 - lowering/lifting mechanism
- supplement salary for the workshop engineers/technicians
- 3 tungsten plates... (see next page)

- renewed inquiry for new dimensions: $555 \times 100 \times 3.5 \text{ mm}^3$ and 50 microns tolerances on thickness and flatness
- got offers from 3 companies (Shan waiting from 4th):
 - XIAMEN HONGLU (China) (known to us after visiting Zeuthen) claims 50 microns precision for 6mm thick plates for ITER Tokamak
 - Beijing ATM (China) (no external references so far...)
 - WOLFTEN, Wrocław (Polish dealer, tungsten from China, producer is “trade secret”...) → in the process of clarifying more technical details

All of them claim now the ability to obtain 50 microns precision... !?

- prices per plate in US dollars (incl. 23% VAT, and EU import tax 6%):
650 \$ (Beijing) < 915 \$ (WOLFTEN) < 1050 \$ (XIAMEN)
- WOLFTEN is much easier “to handle” by our public procurement department
- Beijing ATM a bit “dumping” price...

Pilot bunch of 3 tungsten plates

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Unfortunately this was the status till last hour...

Just before the meeting I got the e-mail that WOLFTEN's supplier can guarantee only 200 microns precision on flatness

- new tungsten dimensions: dX: 550 \rightarrow 555 mm
more space for (still unknown) sensor-sensor gaps
- Faraday cage
- patch panel for cables and clock distribution, etc...
- Aluminum window for beam
- optical (in)transparency of the cage
- new mounting of sensor support CFrame and kaptons (holes in kaptons)
- electric grounding

\rightarrow to be presented in Valencia