

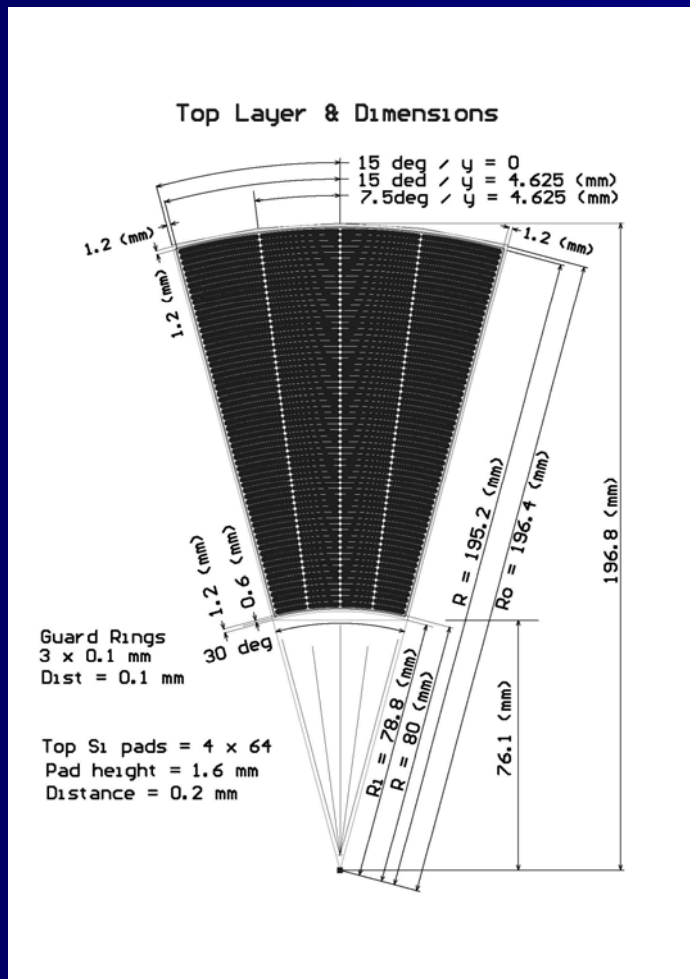
# Silicon Sensors for LumiCal Status

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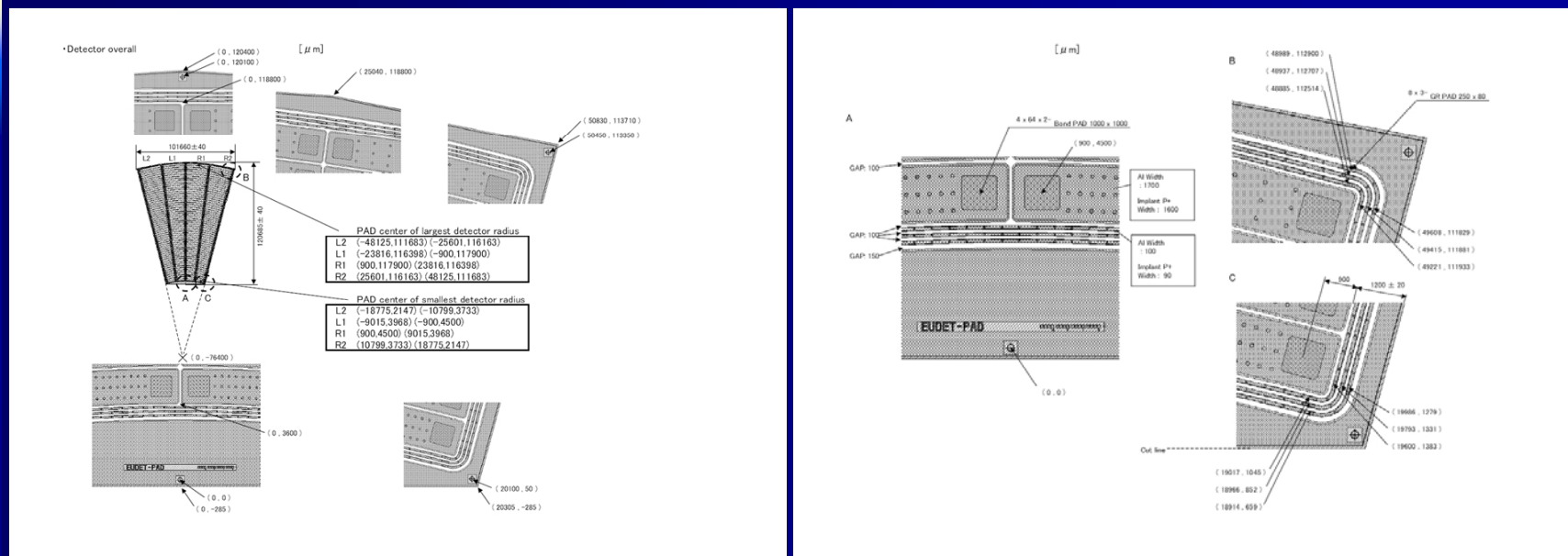


# Sensor Prototype



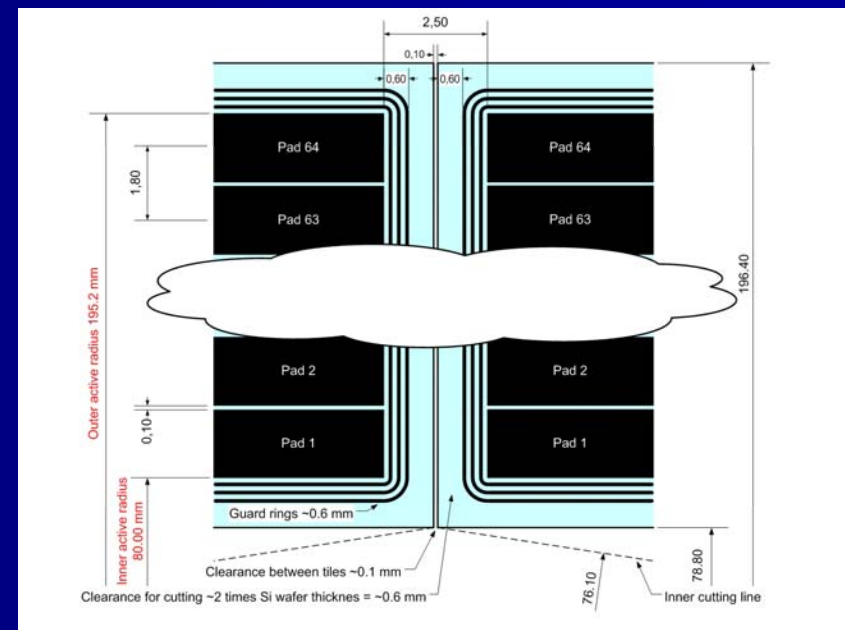
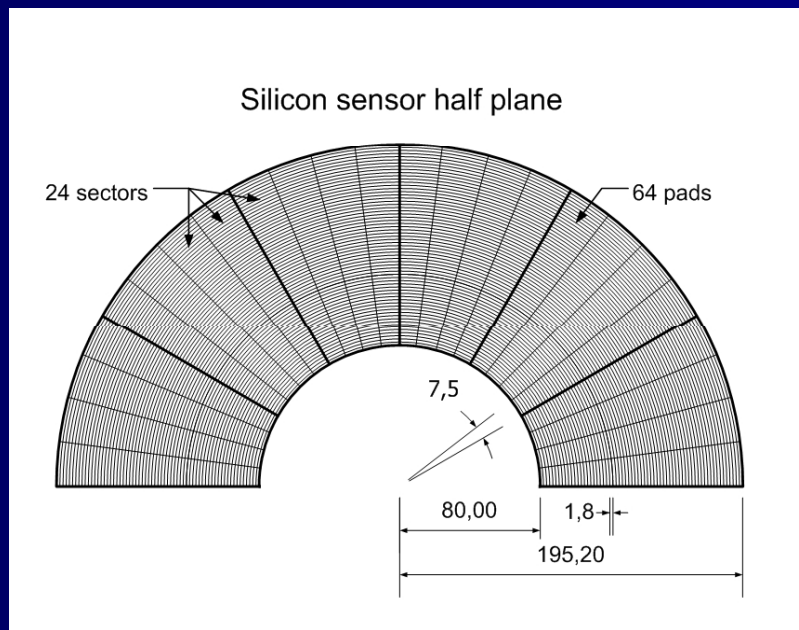
- Masks for prototypes ready in Hamamatsu (~20 k€) and will be kept for 3 years without add. costs.
- Sensors order near to submit (~900 €/tile if 40 pcs. ordered).
- Separate orders.

# Detailed design of the masks



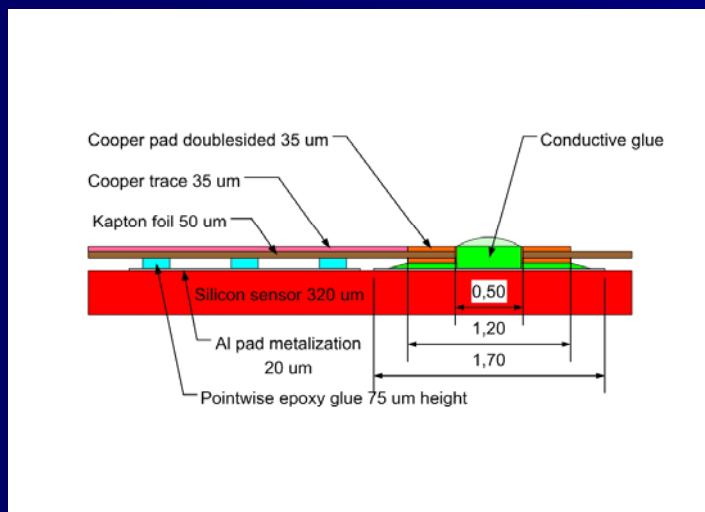
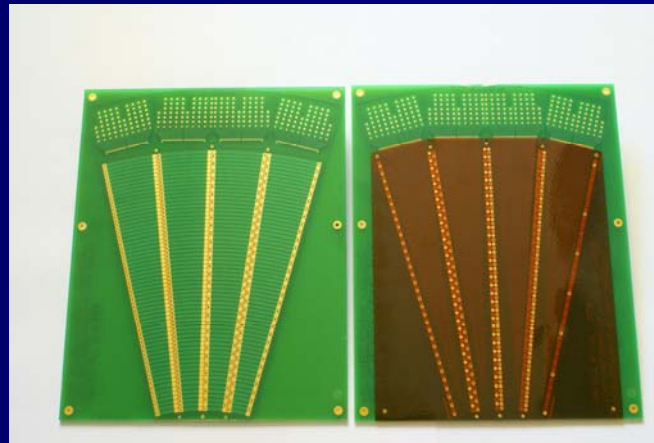
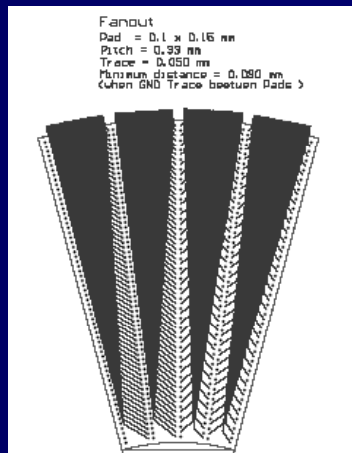
- N-type silicon, p<sup>+</sup> strips, n<sup>+</sup> backplane,
- Crystal Orientation <100>
- 320  $\mu\text{m}$  thickness  $\pm$  15  $\mu\text{m}$
- Strip pitch: 1800  $\mu\text{m}$
- Strip p<sup>+</sup> width: 1600  $\mu\text{m}$
- Strip Al width: 1700  $\mu\text{m}$

# Sensor half plane



- 6 tiles of 4 sectors on one half plane
- 6 inch wafers
- MC simulations of the gap = OK

# Fan out



- Wire bonding not possible.
- Dummy 'sensor'.
- Searching for right conductive glue.

# Summary

- Sensor prototypes hopefully will be ready by the end of this year (depend on 'speed' of administration).
- We have agreed with Hamamatsu to have separate orders based on one masks design (already paid) and counted as one order (price dependence on amount of tiles ordered).
- Hamamatsu has reserved for us some (more than 40) silicon tiles from silicon factory.
- We have to find better factory to produce fan out on Kapton foil.
- Searching for the proper electrically conductive glue is a crucial point.