Flat button BPMs

Pros: simple mech. design, more than 2 times shorter than button BPM, welded feedthroughs, easy cleaning
Cons: not yet tested, possible errors due to e-beam welding and assembly, the absolute accuracy could be worse than a button BPM, custom feedthrough.

FIG. 9. (Color) An IPHI BPM (core, feedthrough, and assemblies) has been built by the French company PMB. The space between electrode and core is 2 mm with a tolerance of ±0.05 mm. The four standard Metaceram 50 Ω feedthroughs are terminated by SMA connectors. During the brazing process the four electrodes have been positioned by using a template to align the axial symmetry.

The beam position can be measured with an absolute accuracy of 180 µm.
BPM Simulation with CST Particle Studio
BPM output signal for 4 mm bunch length

- $\beta = 0.06$
- $\beta = 0.08$
- $\beta = 0.10$
- $\beta = 0.12$
- $\beta = 0.14$
- $\beta = 0.16$
BPM output signal for 4 mm bunch length