

The SLS 2.0 button BPM

The upgrade of the Swiss Light Source (SLS), called SLS 2.0, involves, among other things, a complete replacement of the storage ring, which started in September 2023 and is currently nearing completion. The commissioning of the new ring is scheduled to begin next January.

In the approximately 290 meters of circumference of the new ring, 134 button BPMs have been placed, having, like the rest of the vacuum chamber, much smaller cross section.

The button pickup was designed using borosilicate glass as a dielectric insulator and features an original solution that allows suppression of the trapped mode TE₁₁.

The entire production (over 900 units including spares and prototypes) was carefully supervised, tested, and measured. To minimize the electrical offset of the BPMs, the buttons were sorted according to their measured transfer impedance, thus limiting the effects due to dimensional tolerances.

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