

## Scintillating screens issues at the European XFEL

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The European XFEL uses scintillating screens and wire scanners for the transverse beam profile measurements. Mostly there are the scintillating screens (more than 70 along the machine). Nevertheless there are two issues observed during the machine operation.

The first one is an observation of beam shapes with an intensity drop in the center, which reminds OTR but it's not it according to the optics geometry. First investigations revealed that the problem is in the scintillator screen material itself and it's related to the so-called non-proportionality of scintillators. Thus there are further ongoing investigations on scintillator materials and their features in DESY.

The second one appeared on the of-axis screens. The screens are dedicated to the online beam profile measurements and to the measurements with a TDS located right before the screens. In the measurements a single bunch of the bunch train is kicked on the screens to investigate it. The issue is that the bunch kicked on the screen provokes ionization and charges the screen as a consequence. The next bunches of the bunch train passing by the scintillating screen feel the Coulomb force and deflect. The effect of the deflection is immediately observed at the drop of the SASE level.

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