

SensoPlate™

Glass Bottom Microplates

The research of biomolecular processes on the level of single molecules and in volume ranges equivalent to the size of a single bacterium is of immense importance, both in basic research and in industrial high-throughput screening. The combination of modern confocal optics, new fluorescent dyes, sensitive photomultipliers and improved data processing has revolutionised the technique of fluorescence correlation spectroscopy (FCS) (Fig. 1). Over the past few years this has led to its widespread application, and alongside the technological advances in hardware development, Greiner Bio-One worked hand-in-hand with customers and instrument suppliers to develop the glass bottom microplates. These better satisfy the requirements of fluorescence correlation spectroscopy with regard to optical clarity and deformation when compared to standard polystyrene plates.

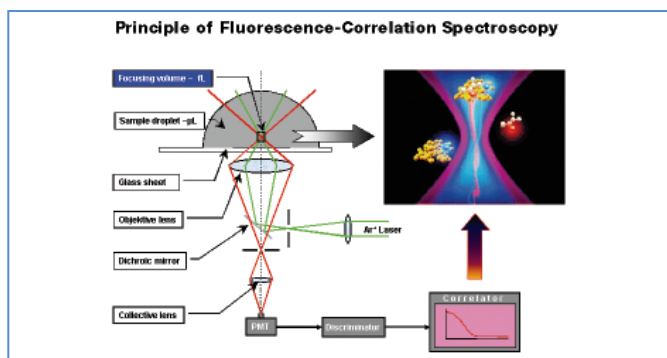


Figure 1:
The principles of fluorescence correlation spectroscopy

The **SensoPlate™** family was developed in a complete product line consisting of 24, 96, 384 and 1536 well glass bottom formats. All plates consist of an optically clear borosilicate glass bottom with a light path of 175 +/- 15 µm and a black polystyrene frame. The glass bottom allows transmission measurements in the wavelength range above 350 nm. For mounting the glass bottom plates an adhesive with the lowest possible autofluorescence is used.

In addition to fluorescence correlation spectroscopy, microscopic applications such as confocal microscopy are a potential area of application for glass bottom microplates. The 175 µm thick glass bottom of the **SensoPlate™** is equivalent to the light path of standard coverslips. The **SensoPlate™** family is available sterile with lid but should be tested for their suitability for cell culture before application. For sensitive or transformed cell lines pre-coating with an extracellular matrix such as Poly-Lysine or Collagen is recommended. 4 % formaldehyde is recommended for fixing cells.

The footprint of all glass bottom microplates is conform to the ANSI 1-2004 standard (Fig. 2). For further information please visit our website: www.gbo.com/bioscience/technical_information.

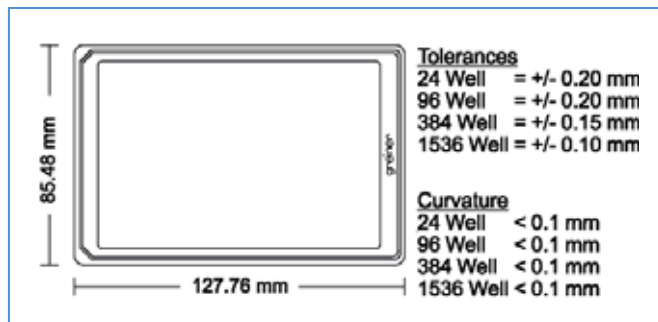


Figure 2:
Footprint and tolerances of SensoPlate™ and SensoPlate™ Plus

In-process-controls and constant quality monitoring ensures minimum surface deformation (< 0.1 mm).

The **SensoPlate™ Plus** glass bottom microplates were developed in collaboration with Evotec Technologies GmbH for optical applications in High-Content Screening. They are characterised by an improved geometry, which enables interference-free measurements and also microscopy over the whole surface of the bottom of a microplate (Fig. 3 and 4). The short distance of 0.3 mm between the external well bottom (underside) and microplate skirt bottom facilitates changing objectives during microscopy and imaging perimeter wells without hindrance. The **SensoPlate™ Plus** is available non-sterile without lid in 384 well and 1536 well format.

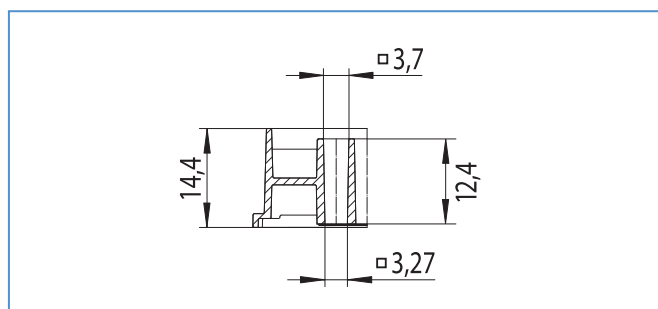


Figure 3:
Well profile: 384 well SensoPlate™ Plus
Total volume: 145 µl
Working volume: 10 – 130 µl

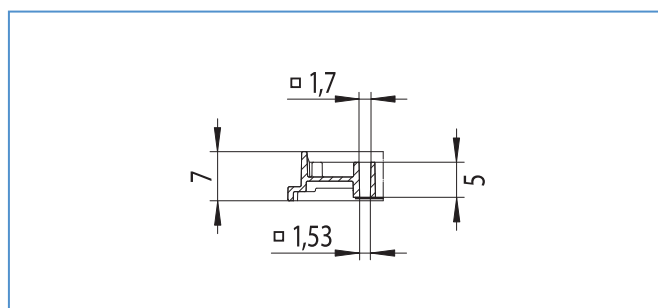


Figure 4:
Well profile: 1536 well SensoPlate™ Plus
Total volume: 13 µl
Working volume: 3 – 10 µl