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SensoPlate™: Glass Bottom Microplates (24, 96, 384, 1536 Well) for High Performance Detection

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Poster

Greiner Bio-One and Aventis Pharma have co-developed a full set of unique glass bottom microplates (24, 96, 384, 1536 well). The glass bottom plates incorporate high quality optical glass with a thickness of 175 µm bonded to the parent plastic microplate. All plates comply to the standardized microplate footprint and provide superior quality in applications where low autofluorescence and optical clarity are required. At the time, these plates are available in opaque black for high-resolution imaging, sensitive fluorescence and confocal microscopy applications, like fluorescence correlation spectroscopy (FCS) and single molecule detection.

In recent years, FCS has become an attractive analytical tool for the investigation of biomolecular applications. The combination of modern confocal optics, new dyes as efficient fluorescent probes, sensitive PMTs, and fast data processing made FCS suitable for real time dynamics of single molecules in femtoliter volumes, close to the size of a common bacterial cell. This method has found its way as a tool for basic research as well as for industrial applications such as drug screening.

Applications like FCS and confocal microscopy require high quality glass bottom plates with superior planarity. The new SensoPlates™ have a bottom flatness of less than 70 µm. The black frame of the SensoPlate™ consists of low autofluorescence, black opaque polystyrene to minimize light reflection and scattering. The glass bottom enables high transmittance and optical clarity for wavelengths from 350 up to 1000 nm.

Adhesives applied to glass bottom plates show different autofluorescence signals, as measured with TECAN *Ultra*®. With the adhesive chosen for the assembly of SensoPlate™ the autofluorescence signal is reduced in comparison to µClear® plates. The fluorescence signal of a dilution of calcein in a

1536 well glass bottom SensoPlate™ is improved in comparison to a plastic bottom µClear™ plate, as measured with TECAN *Spectra Fluor*® and with WALLAC *Victor2*®.

The biocompatible and medical grade adhesive applied provides strong and tight joints in water, PBS buffer and DMSO media between -10°C and 50°C.

With the advent of SensoPlate™ a full set of glass bottom microplates (24, 96, 384, 1536 wells) is now available with high planarity, high optical clarity and low autofluorescence. The plates have already demonstrated its superior performance in selected applications.