

FOR CELL BASED HIGH CONTENT SCREENING

The Vision Plate™ has been designed for high content screening (HCS) assays in drug development and related areas. It is also suitable for homogeneous assays employing fluorescence intensity, FRET and TR-FRET where measurements are bottom-read. This high quality optical base plate assures the necessary accuracy and consistency for automated high throughput systems, generating optimum signal to noise ratios. Using state-of-the-art manufacturing technology 4titude® have developed a product which offers several key advantages to the end user.

Benefits

- 150µm and 700µm polystyrene base options
- Optimum signal-to-noise ratios
- Reduced autofluorescence
- Good cell adherence
- Also suitable for homogeneous assays
- Cyto-toxic free
- Leak free
- SBS format
- Barcoding options available
- Wicking and bubble formation eliminated

Laser Welding Technology

4titude's® Vision Plates™ are assembled using unique patented laser welding technology. The use of localised welding heat dramatically reduces base film distortion during production. This improves base flatness, which in turn reduces instrument auto-focusing time.



Cell Based Screening

Optical Quality of the Polymer Film



The clear base component of our Vision Plate™ demonstrates superior properties in terms of optical clarity (low absorbance and high transmission), low background fluorescence and consistency of material thickness.

The latest extrusion technology is used for manufacturing an ultraclear base of 150µm in thickness to provide optimum results with confocal microscopy and laser based detection systems.

Variation across the plate is minimised so that the time needed for complex screening applications can be reduced dramatically. In addition, cell plate types are available with a 700µm moulded base. This feature further improves the plate flatness and is critical for certain confocal readers, such as the IN Cell 3000.



Autofluorescence Intensity

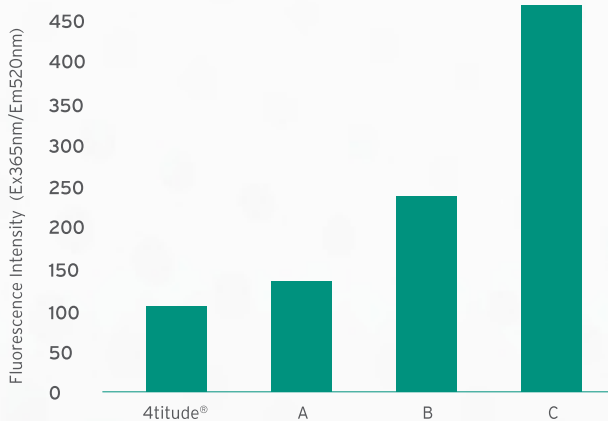


Figure 1: Graph to show the intensity of autofluorescence of 4titude®'s Vision Plate™ compared to leading brand competitors A, B & C

Reduction of Autofluorescence

4titude®'s Vision Plates™ are assembled using unique patented laser welding technology which reduces autofluorescence and does not inhibit cell growth. Other competitors assemble clear base microplates by gluing a clear film to the frame or heat-welding the components together. Both techniques can cause problems with cell growth and the subsequent microscopic or fluorometric analysis.

Heat welding of the two plate components under high pressure results in autofluorescence at the well edges called "halo effect". Gluing uses organic solvents within the adhesives, which can also cause autofluorescence. These solvents can also have cytotoxic effects, which may lead to inhibition of cell growth or even cell death. Additionally, incomplete glue lines or weld lines often result in well-to-well leakage.



Figure 2: Vision Plate™ 384 showing ripple-free bonding of frame and base



Figure 3: Competitor's plate showing areas with no adhesive

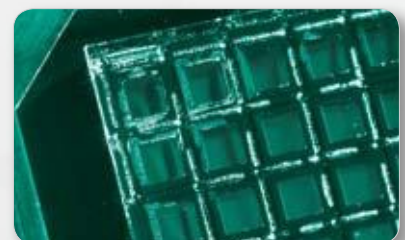


Figure 4: Competitor's plate showing adhesive ingressing into plate wells.

Vision Plate

Improved Cell Adhesion

Polymers such as polystyrene are very hydrophobic and need to be surface treated to increase wettability and to allow for cell adhesion. To introduce the necessary charges to the plastic surface screening plates are commonly undergoing corona treatment or similar low cost modifications. The drawbacks of such treatments are that they are partly reversible and that the density of the charges varies across the surface area, resulting in uneven cell growth and a short shelf life of the products.

4titude® uses a unique low pressure plasma process for treating the plastic surface which produces a more consistent and stable surface. The treatment has been especially designed to improve cell adhesion under difficult conditions (e.g. reduced serum conditions). It is also useful for growing cells with low adhesion properties such as transfected cells overexpressing proteins.

4titude® offers coatings with Collagen 1 and Poly D-Lysin, see ordering information on pages 39-41.

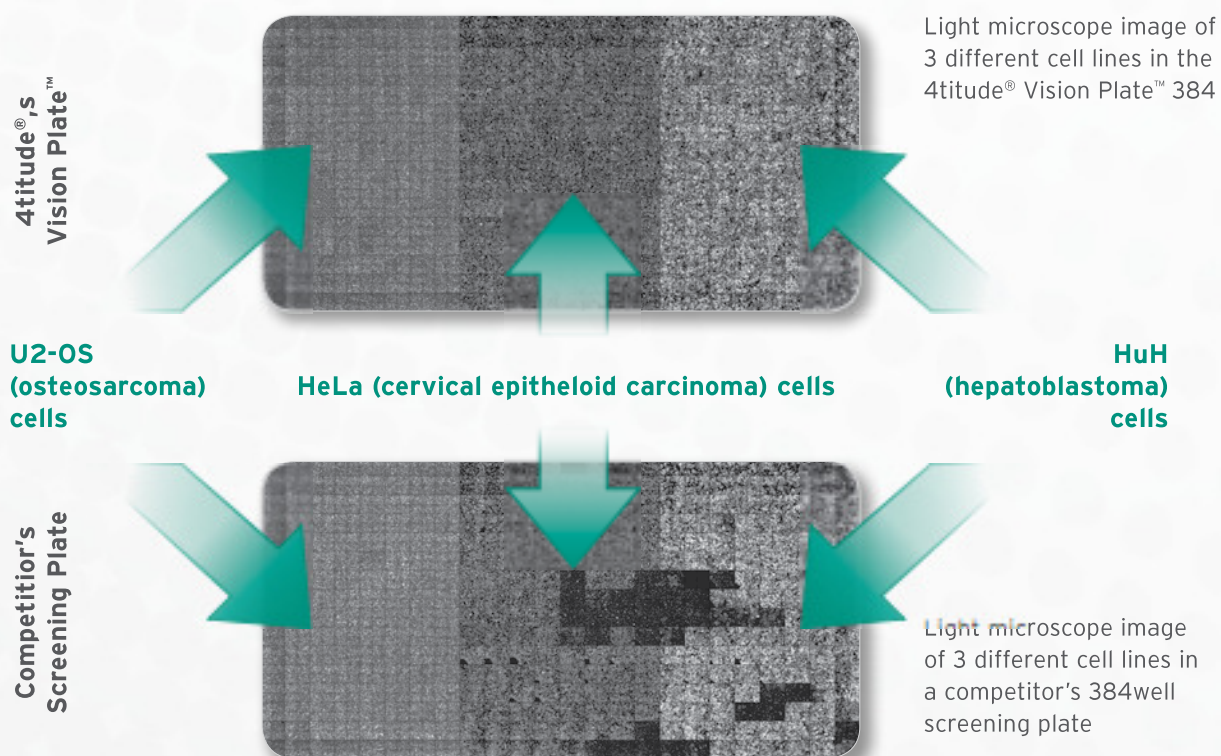
Collagen 1

Collagen 1 is a protein of the extracellular matrix (ECM), an intercellular substance which, *in vivo*, influences adhesion, migration and proliferation among other processes. Collagen 1 is one of the most important ECM proteins for in-vitro cell cultures. Difficult to cultivate cells adhere to Collagen 1 and display positive growth. Collagen 1 can also influence differentiation and morphology.

Poly-D-Lysin

Poly-D-Lysin is a synthetic molecule that improves the adhesion of different cell types to polystyrene surfaces. It can improve cultivation efficiency of individual cell lines especially when serum-free or serum-reduced medium is used, or when experiments such as transfections are performed.

Figures 5: Comparison showing the cell adherence of the 4titude® Vision Plate™ (top) versus a competitor's (bottom)



2000 cells were seeded in each well and incubated for 48 hours to achieve 90% confluency. They were then fixed in PFA and stained with Hoechst nuclear stain, followed by 5 wash steps in a PW384. U2-OS cells stayed adherent in both plates, but the more sensitive HeLa and HuH cells only stayed adherent in all areas of the 4titude® Vision Plate™.

Cell Based Screening

Vision Plate™ 384

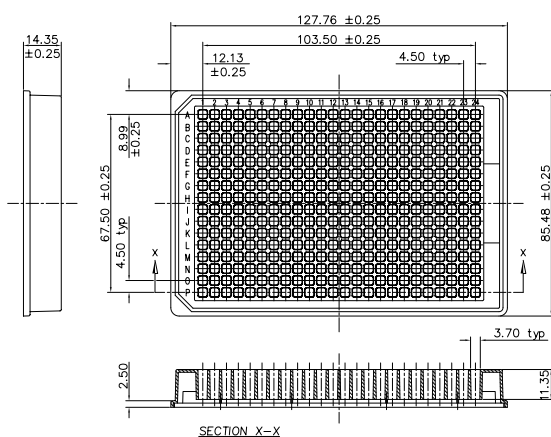
For cell based high content screening



Description

The Vision Plate™ assures the necessary accuracy and consistency for automated high throughput systems, generating optimum signal to noise ratios. Vision Plates™ are assembled using unique patented laser welding technology which reduces autofluorescence and does not inhibit cell growth. Available with 150µm polystyrene base or 700µm which is suitable for use with IN Cell 3000 analysers. 4titude®'s black heat seal is the perfect peelable seal, ideal for fluorescent and other light sensitive assays.

Plate Dimensions



Features

- Optimum signal-to-noise ratios
- Good cell adherence
- Designed for high content screening
- Ideal for homogeneous assays
- 150µm or 700µm polystyrene base
- Available barcoded

Also see

- Vision Plates™ full features list (page 36)
- Black heat seal (pages 52)
- 4s² heat sealer (pages 46 -47)
- Adhesive sealing (pages 42-45)
- Gas permeable moisture barrier seal (page 44)
- Barcoding (page 35)

- + SBS FOOTPRINT
- + TC TREATED OPTION
- + POLY D-LYSIN TREATED OPTION
- + COLLAGEN 1 TREATED OPTION
- + SOLID BASE AVAILABLE
- + IDEAL FOR HEAT SEALING
- + ALPHANUMERIC GRID REFERENCE
- + CLEANROOM PRODUCED
- + CERTIFIED FREE FROM RNASE, DNASE, BACTERIAL & HUMAN GENOMIC DNA

Code	Description	Plates/Case
4ti-0201*	Vision Plate™ 384, black, sterile, TC treated	24 plates with lids
4ti-0202*	Vision Plate™ 384, black, sterile, TC treated	30 plates
4ti-0203*	Vision Plate™ 384, black, sterile	30 plates
4ti-0204*	Vision Plate™ 384, black, non-sterile, untreated	30 plates
4ti-0205	Vision Plate™ 384, Collagen 1 treated, sterile	24 plates with lids
4ti-0206	Vision Plate™ 384, Poly D-Lysin treated, sterile	24 plates with lids
4ti-0264	Vision Plate™ 384, solid base plate, black, non-sterile	100
4ti-0274	Vision Plate™ 384, solid base plate, white, non sterile	100
4ti-0280	Vision Plate™ lid, low profile, without condensation rings, non-sterile	100

700µm ordering code

*Please add /700 to order 700µm base

