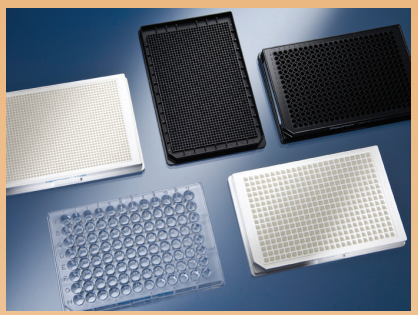
HUMAN HEALTH

ENVIRONMENTAL HEALTH

MICROPLATES DESIGNED FOR YOUR APPLICATION



Microplates Guide

PerkinElmer®
For the Better

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MICROPLATES DESIGNED FOR YOUR APPLICATION

Figure 1. EnSight™ Multimode Plate Reader offering Corning® Epic® Label-free Technology and high throughput cell imaging capabilities.

Drawing on many years of experience and in-depth knowledge, PerkinElmer offers microplates for almost every application and throughput. They are the very same microplates we use to develop and validate our instruments and reagents, providing optimal results from your Alpha, TR-FRET, fluorescence, luminescence, absorbance, cell culture, label-free, microfluidic, radiometric, or high content screening assays. We also provide plates and other consumables for our Next-Generation Sequencing sample prep stations.

All of our microplates are manufactured using the highest quality plastics. They deliver important benefits such as low background, optimum light transmission and little or no crosstalk. We also provide custom coating, barcoding and other specialized services to meet your needs.

We have designed many innovative and popular microplate technologies, including our FlashPlates™ and LumaPlates™ for specialized radiometric detection assays and AlphaPlates™ for optimal signal detection in AlphaLISA® assays. We continue to develop new microplates such as the CellCarrier™ Ultra plates for the highest quality cellular imaging from high content screening systems like the Opera®, Opera Phenix™ and Operetta®.

Our microplates are optimized to work well in high throughput settings:

- Footprint dimensions meet the SBS industry standard, guaranteeing compatibility with microplate-based instrumentation.
- Pinch bar design facilitates manual and automated processing using robotic systems
- Bulk packaging formats are available, reducing assay preparation time.

So whether you are detecting sensitive fluorescence readouts at high-throughput, running luminescence or absorbance assays, radiometric or label-free assays, imaging cells with high content imaging systems or preparing samples for next generation sequencing, PerkinElmer has the microplate that meets your needs.

Fluorescence Assays

Figure 2. EnVision Multilabel Plate Reader.

In a typical fluorescence assay, a chemical or dye-based fluorophore is excited by light at a given wavelength and the resulting fluorescent signal emitted is measured using a plate reader, such as PerkinElmer's VICTOR™ or EnVision® Multilabel Plate Readers, EnSpire® or EnSight™ Multimode Plate Readers, or ViewLux® uHTS Microplate Imager. Types of fluorescence assays include fluorescence intensity (FI), fluorescence polarization (FP), FRET (Forster resonance energy transfer), fluorescent calcium flux assays, TRF (time-resolved fluorescence assays, including DELFIA), and TR-FRET (time-resolved FRET, including LANCE®).

Considerations When Choosing a Plate for Fluorescence Assays

- **Crosstalk** – Opaque-walled plates are recommended to prevent crosstalk between wells and are essential for reading fluorescence.
- **Plate density** – As well number increases (from 96- up to 1536-well), total volume, signal and cost per well decreases.
- **Black vs. white plates** – White plates reflect light resulting in higher raw signals and black plates tend to quench light. However, black plates are generally recommended for fluorescence assays as they provide higher signal-to-noise values (SNR/Z') when signals are high enough that they would result in cross-talk between wells in white plates. Additionally, our specially formulated gray plates are an option when signals and cross-talk are somewhere in between.
- **General fluorescence assays** (FI, FP, FRET) use fluorophores such as fluorescein, rhodamine, coumarin and others that have relatively short half-lives. Black plates are recommended to reduce background autofluorescence.
- **Time-resolved fluorescence assays** use longer half-life fluorophores such as Europium chelates and incorporate a "lag/delay time" after exciting thus diminishing background autofluorescence, so white plates are usually recommended.
- **Special treatments** may be needed to promote high to medium binding (HB and MB) of antibodies and other biomolecules to the well surface.
- **Cell-based assays** may require culturing cells in the assay plate for a few minutes, several days or weeks prior to reading fluorescence signals. For longer culture periods, sterile, tissue culture-treated (TC) plates are recommended.
  - **Adherent cells** – Sterile microplates are TC-treated to promote attachment for strongly-adherent cells. Poorly adherent cells may require one of our special coatings (such as PDL or collagen) to optimize cell adhesion.
  - **Suspension cells** do not require special coatings and are generally performed in standard sterile plates.
  - **Clear bottom vs. opaque** – Opaque-walled plates with clear bottoms allow microscopic visualization of adherent cells to monitor confluency and other parameters that can affect cellular responses. Clear bottoms are not typically needed for suspension cell assays.

Microplates for Fluorescence Assays

OptiPlates™ are standard, highly-versatile microplates offered in solid black, gray or white color with no transparency (top read only) with optional treatment to promote protein binding (HB), and are available in 96-, 384- and 1536-well formats. (Catalog #'s on page 16).

Figure 3. OptiPlate in a 384-well format treated to promote high binding.

ProxiPlate™ microplates are shallow-well plates designed for low-volume assays where the bottom of the well is raised to position the surface of the liquid in each well as close as possible to a top-reading detector, resulting in higher signal. These solid, opaque plates are offered in black or white in 96-well format and black, white or gray in 384-well (Plus) format. For low-volume cellular assays, sterile, TC-treated ProxiPlate Plus TC microplates are offered in a 384-well format. (Catalog #'s on page 16).

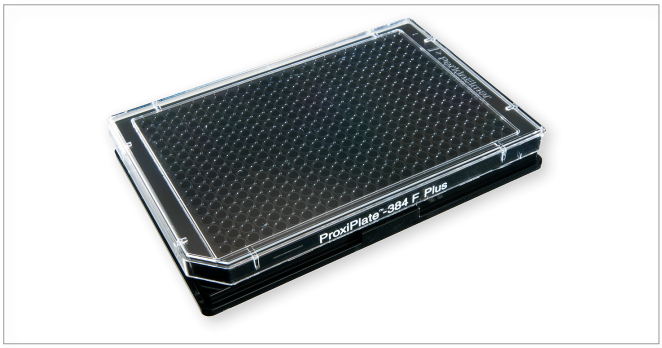


Figure 4. ProxiPlate Plus TC microplate with Lid in a 384-well format.

½ AreaPlates™ are special opaque plates designed to facilitate pipetting of low assay volumes in a 96-well format with wells spaced to mimic standard 96-well plates and the diameter of each well reduced to allow typical assay volumes of 40-50 µL. Available in black or white. (Catalog #'s on page 14).

Figure 5. ½ AreaPlate in a 96-well format.

DELFIA™ Yellow Plates are semi-translucent 96-well yellow plates with high protein binding affinity developed to have very low background autofluorescence to give optimal sensitivity in DELFIA TRF assays, especially when multiplexing with more than one lanthanide (e.g. Europium and Terbium chelates). DELFIA clear plates are also an option for bottom-reading instruments and come in 96-well format as a frame with eight strips of 12-wells that snap into the frame. Available in a variety of coatings. (Catalog #'s on page 15).

CulturPlates™ are sterile, TC-treated and recommended for use with adherent or suspension cells. They are solid, opaque plates that come in black or white and must be read in top-reading plate readers. They are available in 24-, 96-, 384- and 1536-well formats. (Catalog #'s on page 15).

Figure 6. CulturPlate in a 1536-well format.

CellCarrier™ plates are sterile, TC-treated and have a clear-bottom base with opaque black or white frame. They have been specially designed for high content screening (see page 9) and may also be useful in fluorescence assays. They are available in black 96-, 384- and 1536-well formats and white 96-well format. (Catalog #'s on page 14).

ViewPlates have a clear-bottom base with an opaque frame and are designed for microscopic visualization. They are ideal for multimodal analyses of cellular imaging and fluorescence assays in the EnSight Multimode Plate Reader. We offer ViewPlates in black or white with a variety of plate treatments such as untreated for biochemical assays and TC-treated, Collagen-, or PDL-coated for cellular assays. They are available in and 96-, 384-, and 1536-well formats. Additionally, we offer white $^{1}/_{2}$ Area 96-well plates. (Catalog #'s on page 18).

Figure 7. ViewPlate in a 96-well format with cover.

For opaque-walled, clear-bottomed plates with 96-wells or less, we also offer **IsoPlates™** and **VisiPlates™** (see descriptions on pages 6-7); (Catalog #'s on pages 15 and 18).

BackSeals (black or white) can be applied to plates with clear bottoms to convert them functionally to opaque plates. (Catalog #'s on page 21).

Luminescence Assays

Luminescence assays generate a luminescent signal (in the form of light or photons) via a chemical reaction and are measured using a plate reader equipped to measure luminescence, such as PerkinElmer's EnSight, EnSpire, EnVision, ViewLux, or VICTOR systems. In general, light collected from luminescent assay measurements is not restricted to particular wavelengths. In most luminescent assays, signal from all of the photons produced by the assay is recorded by the PMT (photo-multiplier tube), CCD (charge coupled device), or other detector within the plate reader. Examples include PerkinElmer's AlphaScreen® and AlphaLISA®, ATPlite™ assays, britelite™ assays, steadylite™ assays, neolite™ assays, other luciferase-based assays, AequoScreen® assays, PhotoScreen™ assays and luminescent calcium flux assays and chemiluminescent ELISAs.

Considerations When Choosing a Plate for Luminescence Assays

- **Crosstalk** – Opaque-walled plates prevent crosstalk between wells.
- **Black vs. white vs. gray plates** – White plates reflect light and black plates tend to quench light, resulting in lower raw signals. Black plates can provide higher signal-to-noise values when luminescence is so high that it causes greater background or crosstalk through white plate wells. Gray plates are designed to give low background and reduced phosphorescence while maintaining high signal.
- **Background phosphorescence** – Black plates exhibit less phosphorescence than white but can result in more signal quenching. White plates can be "dark-adapted" by shielding them from light for up to 10 minutes prior to reading the plate.
- **AlphaLISA and AlphaScreen** assays exhibit very bright luminescence signals that can still bleed through wells in white plates so we developed special, light gray AlphaPlates. Black plates are generally *not* recommended for Alpha assays.
- **Cell-based luminescence assays**, such as ATPlite and assays using Aequoscreen cell lines may necessitate clear-bottomed plates for viewing cells, such as our white TC-treated ViewPlates or CellCarrier plates.
- **Plate-seals** – To prevent evaporation during incubation or a luminescent plate read, we offer a variety of adhesive TopSeals that adhere to and seal our microplates (for options see page 21).

Microplates for Luminescence Assays

AlphaPlates are light gray microplates specially designed to reduce crosstalk in AlphaLISA and AlphaScreen assays. Available in 384- and 1536-well formats and as a shallow-well 384-well plate (Catalog #'s on page 14).

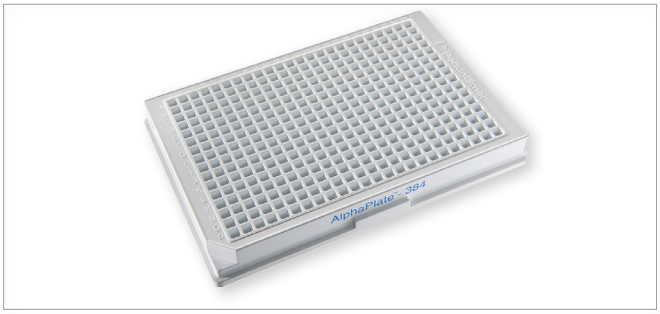


Figure 8. AlphaPlate in a 384-well format.

White **OptiPlates** are generally used for luminescence assays unless cross-talk is high, facilitating the need for gray plates. We then recommend trying our gray OptiPlates or ProxiPlates (HS for High Sensitivity) which contain 5 times more pigment than AlphaPlates (Catalog #'s on page 16).

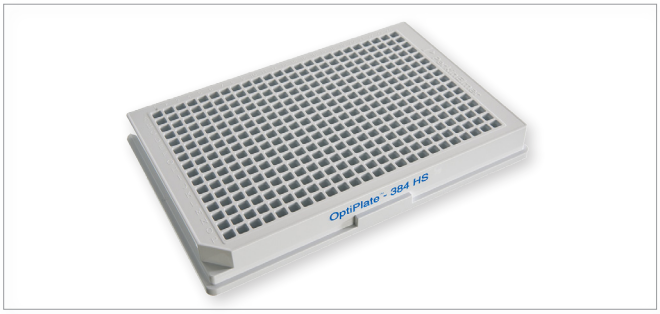


Figure 9. High sensitivity (gray) OptiPlate in 384-well format.

½-AreaPlates are recommended for low assay volumes in a 96-well format and are compatible with standard Alpha protocols (see description on page 5); (Catalog #'s on page 14).

ProxiPlates are shallow-well, opaque plates suitable for maximizing signal while lowering assay volume (see description on page 4); (Catalog #'s on page 16).

CulturPlates are suitable for most cell-based luminescence assays not requiring cellular visualization. **CellCarrier** and **ViewPlates** are suitable for use with adherent cells when microscopic viewing is necessary (Plate descriptions on page 5); (Catalog #'s on pages 14 and 18).

IsoPlates have clear bottoms with opaque wells like ViewPlates, but are made by molding 96-clear wells, then molding a black or white frame around the clear wells. This makes the color extend to the same depth as the well base, reducing crosstalk in bottom reading assays. **B&W Isoplates** are also an option for assays which require amplification of signal and reduced crosstalk but not visualization. These plates have black frames with white, opaque wells. Available in 96-well format with a variety of treatment options. (Catalog #'s on page 15).

VisiPlates are clear-bottomed plates with white or black wells and are TC-treated for adherent cell attachment. They are similar to ViewPlates and IsoPlates but only available in 24-well format. (Catalog #'s on page 18).

Absorbance/Colorimetric Assays

Absorbance and colorimetric assays detect or quantitate the amount of a reagent or chromogenic substrate by measuring the light absorbed by the reagent or reaction product at a characteristic wavelength. Examples of absorbance assays include colorimetric ELISAs and ELAST ELISA (such as PerkinElmer's Alliance P24 Antigen kits), assays that use chromogenic substrates (such as BCIP, DAB, 4CN, and Fast Red) and Bradford assays. PerkinElmer's VICTOR, EnSpire, EnSight and EnVision microplate readers are equipped to measure absorbance in the UV and visible spectral ranges (230 – 1000 nm).

Considerations When Choosing a Plate for Absorbance Assays

- **Absorbance wavelength and plate spectral properties** – Assays measuring absorbance in the visible light range (400-900 nm) can be run in clear-bottom polystyrene (PS) plates, such as our SpectraPlates™.
- **Crosstalk** is a consideration in higher density plate formats when absorption from neighboring wells interferes with measurement of the well-of-interest, and indicates the need to use clear-bottomed opaque plates.
- **Special treatments** may be desired for coated-plate assays such as colorimetric ELISAs to promote high binding (HB) of antibodies and other biomolecules to the well surface.
- **Cell-based absorbance assays** may require TC-treated, sterile plates to promote cellular adhesion. Less strongly adherent cells may require a coating such as PDL or collagen.
- **Plate reader configuration** – Bottom-reading plate readers require clear-bottomed microplates.

Microplates for Absorbance Assays

SpectraPlates are transparent polystyrene plates that can be used for either top-reading or bottom-reading microplate readers and are suitable when microscopic visualization is required to check cells. SpectraPlates have a medium binding (MB) affinity and are specified for assays that do not require anchoring of cells or other reagents to the surface of the plate. HB treated plates allow passive, direct coating of antibodies, proteins and other biomolecules using standard plate coating procedures. TC-treated SpectraPlates come with clear lids and are available in 96-, 384-, 1536-well, and shallow 384-well formats. (Catalog #'s on page 17).

Figure 10. SpectraPlate in a 96-well format.

Figure 11. Shallow-well SpectraPlate in a 384-well format.

ViewPlates are white or black plates with clear-bottoms that come in a variety of coatings and formats. They are only recommended in colorimetric assays when reducing crosstalk is necessary. (See further description on page 5 and Catalog #'s on page 18).

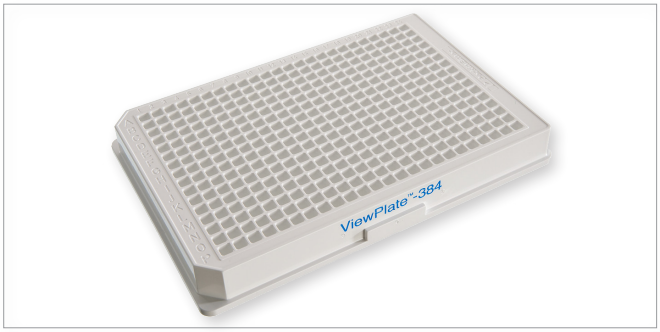


Figure 12. White ViewPlate in 384-well format.

IsoPlates that are clear-bottomed are also an option as an alternative to ViewPlates and if a 96-well format is desired (See further description on page 6 and Catalog #'s on page 15).

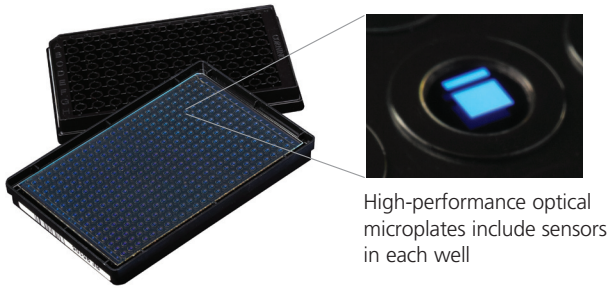
Label-free Assays

Our label-free microplates have been designed for use with the Corning® Epic® Label-free Technology. This optical technology measures changes in mass within an immobilized layer of biomolecules, or changes in mass distribution within cells in a cellular assay, by monitoring small changes in the wavelength of reflected light on the surface of a biosensor.

Figure 13. EnSpire Multimode Plate Reader with Corning® Epic® Label-free Technology detects both labeled and label-free assays.

Label-free microplates are ANSI/SBS standard black plates with clear bottoms containing a patented optical biosensor integrated into each well, an integral component of the EnSpire and EnSight label-free detection technology.

Highly Sensitive Microplates for Highly Effective Research



High-performance optical microplates include sensors in each well

Figure 14. Label-free microplates.

Label-free Cellular microplates are designed for use with the EnSpire and EnSight Multimode Plate Readers with Label-free Technology. They are available either uncoated or coated with fibronectin. Uncoated cellular microplates are tissue-culture compatible and enable the attachment and normal growth of adherent cells. The fibronectin coating enables the attachment and growth of weakly adherent cells or cells seeded using a low serum concentration. Fibronectin is an extracellular matrix glycoprotein used mainly for culturing endothelial cells and fibroblasts.

Label-free Biochemical microplates are used for measurement of biochemical label-free assays with the EnSpire and EnSight Multimode Plate Readers with Label-free Technology. They are offered as either amine coupled/pre-activated or high sensitivity/user-activated. The sensors within the pre-activated biochemical microplates are coated with an amine-coupling surface chemistry based on polymeric maleic anhydride groups, that enables covalent attachment of protein targets via primary amine groups. The high sensitivity assay microplate is activated by the user and each sensor is coated with a proprietary maleic anhydride polymer surface which presents a high quantity of carboxylic acid groups in a hydrophilic environment, increasing target immobilization.

(Catalog #'s for all label-free microplates are on page 19).

The EnSight Multimode Plate Reader offers well-imaging, Corning® Epic® Label-free technology, Alpha, LANCE, DELFIA TRF, absorbance, fluorescence and luminescence detection technologies all in one instrument.

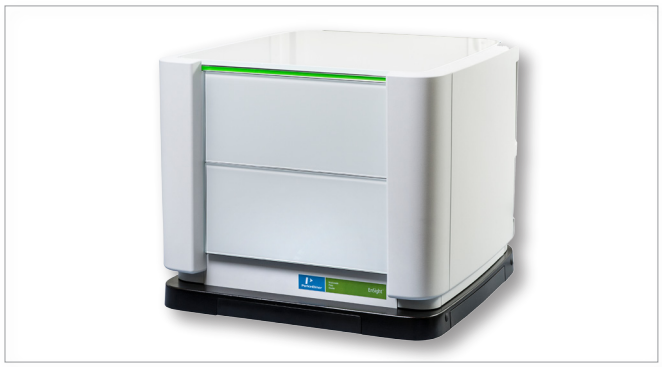


Figure 15. EnSight Multimode Plate Reader offering well-imaging alongside labeled and label-free detection technologies, on a single benchtop platform.

We recommend using our white **ViewPlates** or **CellCarrier** plates when combining well-imaging with luminescence measurements on the EnSight system. Black ViewPlates and CellCarrier plates are recommended for combining imaging with fluorescence measurements. Additionally, with the EnSight reader, cellular assays can be imaged directly in **Label-free Cellular** plates before and after measuring cells' label-free responses.

Microplates for High Content Screening

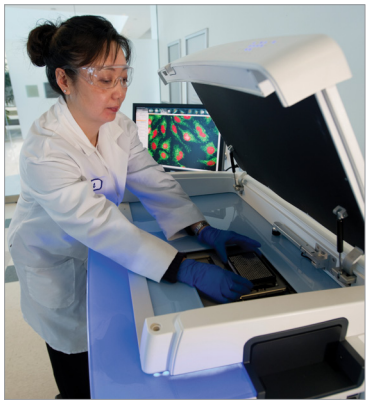


Figure 16. Operetta High Content Imaging System.

High Content Screening (HCS) and High Content Analysis (HCA) are imaging-based multi-parametric analysis at the single-cell level and are used in a broad range of applications, including target identification, primary and secondary screening, safety assessment, and systems biology. Imaging cultured cells using high resolution fluorescence and brightfield microscopy at high-throughput with, for example, the Operetta High Content Imaging System or Opera Phenix High Content Screening System requires the use of high-quality microplates. Better microplates mean better images and higher quality data.

Considerations When Choosing a Plate for HCS

- **Crosstalk** between wells is a common concern in fluorescence imaging, so black plates with clear bottoms are recommended for most HCS assays.
- **Bottom thickness** – The thinner the well bottom, the shorter the working distance and higher the numerical aperture (NA) of the objective that can be used, allowing for more highly magnified, sharper images.
- **Planarity** – The more planar (flat) the bottom, the more even the focus across the well. Thicker plastic (PS) bottoms tend to be more rigid (and planar) but lower magnification must be used.
- **Glass vs. plastic bottom** – Glass exhibits excellent optical properties and planarity, but is less suited for cell culture as it usually must be coated to promote adherence and growth.
  - **Cyclic olefins** have glass-like optical properties and better transparency in the near UV range than PS and are used in the CellCarrier Ultra plates
- **Plate format**
  - **96-well plates** are easier to pipette and better suited to long-term live cell applications due to less evaporation. However, more volume means higher cost per well and most 96-well plates with thin PS bottoms have insufficient planarity for higher magnification imaging.
  - **384-well plates** have the advantage of lower cost per well and good planarity but are harder to manually pipette and the use of an automated liquid handler is recommended.
  - **1536-well plates** are the most cost-efficient (per well) but require an automated liquid handler for assay preparation.

Microplates for High Content Screening

For most HCS assays, black plates with a clear, flat, low profile PS or glass-bottom for cell culture are suitable. **ViewPlates** are suitable for most HCS applications and available in plastic or 96-well, glass-bottom (GB) varieties. Our **CellCarrier** microplates were developed and validated for use with the Operetta and Opera systems. (Plate descriptions on page 5 and Catalog #s on pages 14 and 18).

CellCarrier Ultra microplates are specially designed for high content screening with high NA and water immersion objectives. They are black cyclic olefin microplates with optically clear, cyclic olefin foil bottom (188 µm thick) and an ultra-low plate bottom height (200 µm) for better access to outer wells when using high NA and water immersion objectives. They have corner spacers and new design, low profile polystyrene lids that allow for better plate stacking while minimizing evaporation. They are tissue-culture treated, e-beam irradiated, and are available in a 384-well format.

Figure 17. CellCarrier Ultra in a 384-well format.

Table 1. Specifications of Microplates for High Content Screening Applications

	ViewPlate-96	GB ViewPlate-96	CellCarrier-96	ViewPlate-384	CellCarrier-384	CellCarrier-384 Ultra
Well area (mm^2)	33	28	34	10.9	10.7	10.6
Working Volume (µL)	50 - 300	50 - 250	25 - 340	10 - 100	10 - 100	25 - 100
Max Volume (µL)	360	300	390	135	130	145
Bottom Material	PS, TC-treated	Glass	PS, TC-treated	PS, TC-treated	PS, TC-treated	Cyclic Olefin, TC-treated
Thickness of bottom (µm)	760	175	190	190	190	188
Bottom Height (distance from well bottom to plate bottom in mm)	2.47	0.3	3.31	2.9	0.3	0.2
Refractive index of bottom	1.58	1.51	1.58	1.58	1.58	1.53
Product numbers (see page #)	Page 18	Page 19	Page 14	Page 19	Page 14	Page 14
Packaging	Sterile with lid	Sterile with lid	Sterile with lid	Sterile with lid	Sterile with lid	Sterile with lid

More plate specifications listed on pages 26-27. Technical drawings available on request from Global.TechSupport@PerkinElmer.com

Microplates for Radiometric Assays (Scintillation Counting)

PerkinElmer offers the complete solution for your radiometric assay needs. Assays using radiochemicals can be run in various high-throughput formats, including filtration assays (^{3}H-incorporation and radioligand-binding assays), liquid scintillation counting and scintillant coated-plate assays (LumaPlates), and proximity assays (using SPA beads, FlashPlates, ScintiPlates™ or CytoStar-T® plates). Whether you are reading samples using the TopCount NXT™ or MicroBeta^{2}™ Plate Counter or ViewLux® for ultra-HTS of SPA assays, we offer the ideal microplate for your radiometric assays.

Figure 18. Left: TopCount NXT Microplate Scintillation Luminescence Counter; Right: Microbeta^{2} Plate Counter.

Microplates for Liquid Scintillation Counting Assays

Flexible PET plates are designed for use with plate cassettes and frames in the MicroBeta. They are made of clear polyethylene-A or polyethylene-G plastic, printed with grid lines to prevent crosstalk, chemically resistant to all DIN-based cocktails, and suited for all general LS applications. Available in 24- and 96-well formats. (Catalog #'s on page 20).

Figure 19. Flexible PET plate in a 24-well format.

PicoPlates™ are white, opaque (solid-colored) plates designed for use in PerkinElmer's TopCount instrument. These plates are made of Barex for chemical resistance and must be read on top-reading instruments. Available in 24- or 96-well formats. (Catalog #'s on page 20).

LumaPlates are white with a bed of solid scintillant coated on the well bottom, eliminating the need to add LSC cocktail. LumaPlates are recommended for use with HPLC or ultraPLC fraction analysis in metabolic studies and ^{51}Cr release assays. Available in 96-well (shallow or deep-well) and 384-deep-well format. (Catalog #'s on page 20).

Other plates that may be used are untreated **OptiPlates, Isoplates** and **VisiPlates** (See complete descriptions on pages 4 and 6 and Catalog #'s listed on pages 15, 16 and 18).

Microplates for Filtration Assays

We offer glass fiber **UniFilter** plates for filtration assays with GF/B (690 µm thick, 1 µm sample retention) or GF/C (260 µm, 1.2 µm sample retention) filters. UniFilter plates are available with PEI coating (see glossary for description) and in 96-well format. We also offer a 96-well **Harvest Plate** with GF/C filter that is used in conjunction with a Tomtec Mach IIIW automatic harvester. (Catalog #'s on page 20).

Figure 20. UniFilter Plate in a 96-well format with GF/B filter built-in.

Alternatively, filtermats can be placed into cassettes compatible with the detection instrument and used with the FilterMate™ Universal Harvester or in the **OmniFilter Plate Assembly** (For part numbers of these components, see page 21).

Figure 21. OmniFilter plate assembly.

Specialized Microplates for Scintillation Proximity Assays

FlashPlates are white, opaque plates that contain a scintillating coating on the interior of each well and are for use in solid-phase biochemical and cell membrane-based assays. When a radioactively-labeled molecule binds to an assay component captured to the well wall, its energy interacts with the scintillant coating to produce a light signal read by top-reading instruments. FlashPlates are offered uncoated or with a variety of pre-coated surfaces (SA, WGA, etc.) in either 96- or 384-well formats. (Catalog #'s on page 19).

Figure 22. FlashPlate in a 384-well format.

ScintiPlates are white-walled, clear-bottomed plates with scintillant embedded into the plastic intended for use in coated-plate assays and can be used for bottom-reading or coincidence measurements. ScintiPlates are offered as untreated, TC-treated, or streptavidin-coated and come in 96-well format. (Catalog #'s on page 20).

Figure 23. ScintiPlate in a 96-well format.

CytoStar-T plates are sterile, TC-treated, clear-bottomed, white-walled microplates recommended for cell-based radiometric detection assays. The planar, transparent base of each well is composed of a homogeneous mixture of scintillants and polystyrene that allows for the observation of cell growth. Radioisotopes brought into proximity with the well base through cell uptake or interaction react with the scintillant to produce a light signal. Available in 96-and 384-well formats. (Catalog #'s on page 19).

Microplates for SPA Bead Assays

The use of white plates or white-walled, clear bottom plates is recommended for SPA bead-based assays. **OptiPlates, ProxiPlates,** untreated **Isoplates,** and **VisiPlates** are all good options for assays with SPA beads (see descriptions on pages 4 and 6); (Catalog #'s on pages 15, 16 and 18).

Automated Liquid Handling

Optimize the performance of your Automated Liquid Handling Workstation with our microplates. Our extensive portfolio of microplates are well-suited for use with our platforms such as the JANUS® Automated Workstations (including JANUS BioTx Pro and Pro Plus Workstations and NGS Express™), Sciclone® NGS and G3 Workstations and Zephyr® Automated Liquid Handlers, including Zephyr SPE.

Figure 24. Automate small scale protein purification with the JANUS BioTx Pro Workstation.

Microplates for Next Generation Sequencing with Sciclone NGS

All the consumables you need for running next generation sequencing sample preparation workflows on our Sciclone NGS workstation are available directly from PerkinElmer.

Microplates and Accessories for NGS Sample Prep*

Description	Pcs	Prod No.
Polypropylene (PP) deep-well storage plate, 96 x 2 mL square well, V-bottom	25	6008880
PP deep-well reservoir, 12 column, V-bottom, 21 mL	25	6008700
Universal Microplate Lid	100	6000030
Hard-Shell thin-wall 96-well skirted PCR plate (blue)	50	6008870
PP deep-well storage block, 96 x 1 mL, round bottom	100	6008900
PP low-volume microplate, 384 x 35 µL, round bottom	50	6008890
TopSeal adhesive seal for PCR plate	100	6050174
StorPlate-96 V, PP storage plate, 96 x 450 µL, V-bottom	200	6008299

Also available as Consumable Kits for running 96 samples through single run, 2-day and 4-day Sciclone NGS/NGSx workflows, intended for use with various reagent platforms. For more information, go to* ***www.perkinelmer.com/NGS*

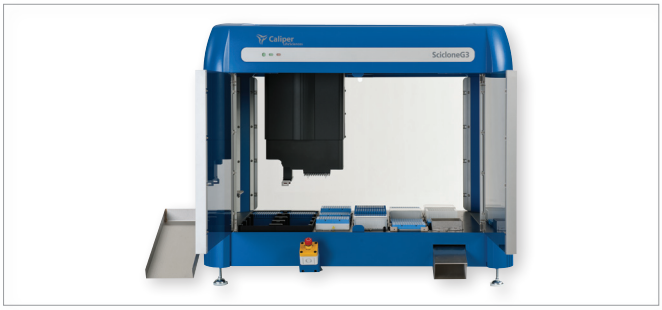


Figure 25. Sciclone NGS workstation.

Microplates to Use With Our LabChip Microfluidic Instruments

PerkinElmer offers plates for use with our LabChip® GX, GXII, and EZ Reader microfluidic instruments. The default settings in these instruments are pre-set for these plates so you can get started right away.

Recommended for Use with the LabChip GX and GXII

Description	Pcs	Prod No.
Hard-shell thin-wall 96-well skirted PCR plate (blue)	50	6008870

Figure 26. LabChip GX system.

Recommended for Use with the LabChip EZ Reader

Polypropylene microplates are recommended for enzymatic assays analyzed in our LabChip EZ Reader since proteins and peptides that are sipped up by our microfluidic chips tend to stick to polystyrene. Our 384-well V-bottomed **StorPlates™** are the recommended microplates for these assays.

Description	Pcs	Prod No.
Polypropylene 384-well V-bottomed StorPlates	5	6008591
	50	6008590
	200	6008598

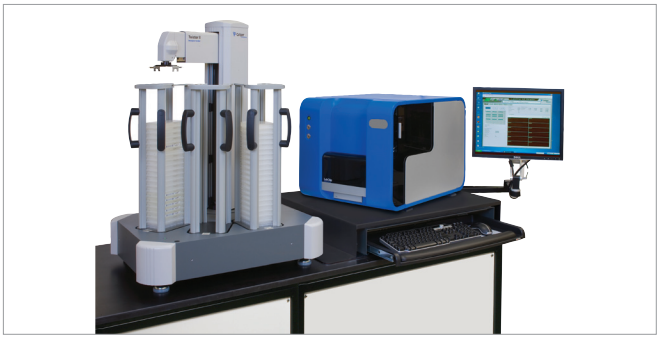


Figure 27. LabChip EZ Reader with Twister II microplate handler.

Microplates for Compound Storage

Plates used for compound storage need to be resistant to the types of solvents that may be used to preserve chemical libraries. PerkinElmer offers 96-well and 384-well polypropylene (PP) **StorPlate** storage plates for compound storage. Polypropylene is both resistant to the solvents used in compound storage and suitable for use at temperatures down to -80 °C. These plates are offered with a variety of options, including U-bottom and V-bottom wells, and to deep-well plates for higher volumes. (Catalog #'s on page 17).

All StorPlates are supplied DNAse, RNAse and pyrogen free and support certification is available on request (contact Global.TechSupport@PerkinElmer.com).

StorPlates can be used in conjunction with StorMat sealing mats, composed of research-grade silicone. **StorMats** are pierceable and self-sealing, preventing the evaporation of volatile organic compounds (VOCs), aerosols and pathogens into the immediate environment during the automation process. An alphanumeric grid system on each is highly visible and enables easy sample identification (Catalog #'s on page 21).

The 96-well deepwell StorPlates can be used for multi-channel pipetting. For example, to prepare a few working solutions to be pipetted into multiple wells within another microplate, you can prepare your working solutions or serial dilutions in a StorPlate. Due to the shape of the bottom of the StorPlate wells, relatively little volume is wasted when pipetting from these plates into another assay plate. Finally, StorPlates have similar dimensions to standard 96-well or 384-well plates, therefore, most multi-channel pipettors can easily fit the plates for solution transfer.

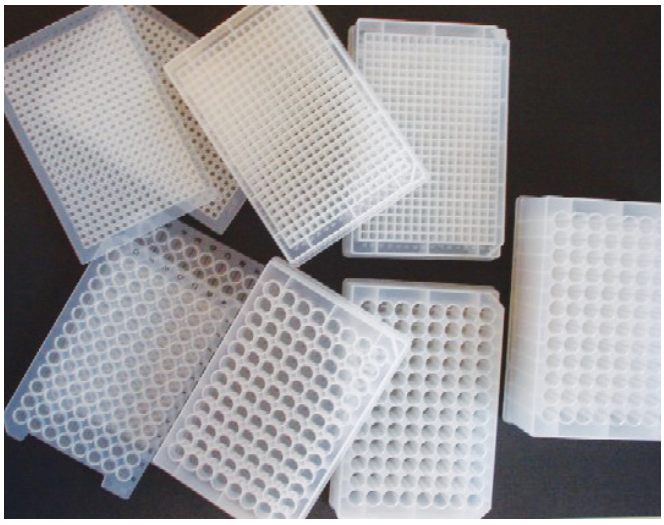


Figure 28. Compound storage pages.

Custom Microplate Services

PerkinElmer offers a range of custom microplate services, including:

- Bulk ordering and special packaging
- Fast and flexible plate barcoding
- Biological plate coating (including poly-D-lysine, collagen, gelatin, streptavidin coating, antibody coating, and other coatings on request)
- Custom tissue culture-treatment
- Custom high protein binding treatment
- Custom sterilization of microplates
- Other microplate treatments

If you are interested in custom microplate services, please contact our custom services team: www.perkinelmer.com/custommicroplates

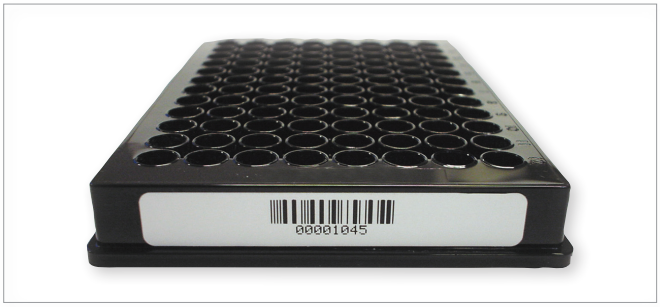


Figure 29. Barcoded plate.

Microplates for Fluorescence, Luminescence, Absorbance and High Content Screening Assays

Table is organized alphabetically by name and then by treatment, color, format, and finally pack size.
All plates are polystyrene unless otherwise stated.

Microplate Name	Color	Description/Treatment	Format (# wells)	Pack Size	Product #
AlphaPlate	Light gray	Alpha Technology compatible plates	384	50	6005350
				200	6005359
AlphaPlate	Light gray	Alpha Technology compatible plates	1536	50	6004350
AlphaPlate	Light gray	Alpha Technology compatible plates, HB (high protein binding affinity)	384	50	6057690
				200	6057699
AlphaPlate (SW)	Light gray	Alpha Technology compatible plates, Shallow Wells (like ProxiPlate)	384	50	6008350
				200	6008359
½AreaPlate	White	Opaque, half-area, untreated	96	50	6005560
				200	6005569
½AreaPlate	Black	Opaque, half-area, untreated	96	50	6005540
				200	6005549
½AreaPlate	White	HB, Opaque, half-area	96	50	6057890
CellCarrier	Black, Clear	TC-treated, Sterile with Lids, Black frame, clear bottom, low bottom height	96	40	6005550
				160	6005558
CellCarrier	Black, Clear	TC-treated, Sterile with Lids, Black frame, clear bottom, low bottom height	1536	20	6004550
				80	6004558
CellCarrier	White, Clear	TC-treated, Sterile with Lids, White frame, clear bottom, low bottom height	96	40	6005510
				160	6005518
CellCarrier	Black, Clear	PDL-coated with Lids, Black frame, clear bottom, low bottom height	96	40	6005450
				160	6005458
CellCarrier	Black, Clear	PDL-coated with Lids, Black frame, clear bottom, low bottom height	1536	10	6004580
CellCarrier	Black, Clear	COL-coated with Lids, Black frame, clear bottom	96	40	6005920
				160	6005928
CellCarrier	Black, Clear	COL-coated with Lids, Black frame, clear bottom	1536	10	6004920
CellCarrier Ultra	Black, Clear	TC-treated, Sterile with Lids, Black frame, clear bottom, ultra low bottom height	384	50	6057300
				160	6057308
CellCarrier Ultra	Black, Clear	PDL-coated, Sterile with Lids, Black frame, clear bottom, ultra low bottom height	384	40	6057500
				160	6057508
CellCarrier Ultra	Black, Clear	COL-coated, Sterile with Lids, Black frame, clear bottom, ultra low bottom height	384	40	6057700
				160	6057708

LIST OF MICROPLATES, DESCRIPTIONS AND PRODUCT NUMBERS

Microplate Name	Color	Description/Treatment	Format (# wells)	Pack Size	Product #
CulturPlate	White	White, Opaque, Sterile with Lids	24	50	6005168
CulturPlate	White	White, Opaque, Sterile with Lids *200 pack size is without Lids	96	50	6005680
				160	6005688
				*200	6005689*
CulturPlate	White	White, Opaque, Sterile with Lids *200 pack size is without Lids	384	50	6007680
				160	6007688
				*200	6007689*
CulturPlate	White	TC-treated, Sterile with Lids	1536	50	6004680
				80	6004684
CulturPlate	Black	Black, Opaque, Sterile with Lids *200 pack size is without Lids	96	50	6005660
				160	6005668
				*200	6005669*
CulturPlate	Black	Black, Opaque, Sterile with Lids *200 pack size is without Lids	384	50	6007660
				160	6007668
				*200	6007669*
CulturPlate	Black	TC-treated, Sterile with Lids	1536	50	6004660
				80	6004664
DELFIA	Clear	Strip-well, 8 strips x 12 wells	96 (8x12)	60	1244-550
DELFIA	Clear	Streptavidin-coated, Strip-well	96 (8x12)	10	4009-0010
DELFIA	Clear	Anti-mouse IgG-coated, Strip-well	96 (8x12)	10	4007-0010
DELFIA	Clear	Anti-rabbit IgG-coated, Strip-well	96 (8x12)	10	4008-0010
DELFIA	White	Streptavidin-coated white plate	384	10	CC11-H10
DELFIA	Yellow	Uncoated, HB affinity, yellow translucent plate	96	60	AAAND-0001
DELFIA	Yellow	Streptavidin-coated yellow plate	96	10	AAAND-0005
DELFIA	Yellow	Anti-rabbit IgG-coated	96	10	AAAND-0004
DELFIA	Yellow	Anti-sheep IgG-coated	96	10	CC33-1210
IsoPlate	Black, Clear	Untreated, Black Frame, clear bottoms	96	50	6005020
				200	6005029
IsoPlate	White, Clear	Untreated, White Frame, clear bottoms	96	50	6005040
				200	6005049
IsoPlate (B&W)	Black, White	Untreated, B&W = Black Frame, white wells (opaque bottoms)	96	50	6005030
				200	6005039
IsoPlate	Black, Clear	HB, Black Frame, clear bottoms	96	50	6005570
				200	6005579
IsoPlate	White, Clear	HB, White Frame, clear bottoms	96	50	6005590
				200	6005599
IsoPlate (B&W)	Black, White	HB, B&W = Black Frame, white wells (opaque bottoms)	96	50	6005580
				160	6005589
IsoPlate	Black, Clear	TC-treated with Lids, Black Frame, clear bottoms	96	50	6005050
				160	6005058
IsoPlate	White, Clear	TC-treated with Lids, White Frame, clear bottoms	96	50	6005070
				160	6005078
IsoPlate (B&W)	Black, White	TC-treated with Lids, B&W = Black Frame, white wells (opaque bottoms)	96	50	6005060
				160	6005068

LIST OF MICROPLATES, DESCRIPTIONS AND PRODUCT NUMBERS

Microplate Name	Color	Description/Treatment	Format (# wells)	Pack Size	Product #
OptiPlate	White	Untreated, White, Opaque	24	100	6005186
OptiPlate	White	Untreated, White, Opaque	96	50	6005290
				200	6005299
OptiPlate	White	Untreated, White, Opaque	384	50	6007290
				200	6007299
OptiPlate	White	Untreated, White, Opaque	1536	50	6004290
OptiPlate	Black	Untreated, White, Opaque	96	50	6005270
				200	6005279
OptiPlate	Black	Untreated, Black, Opaque	384	50	6007270
				200	6007279
OptiPlate	Black	Untreated, Black, Opaque	1536	50	6004270
OptiPlate	White	HB	96	50	6005500
				200	6005509
OptiPlate	White	HB	384	50	6005620
				200	6005629
OptiPlate	White	HB	1536	50	6004620
OptiPlate	Black	HB	96	50	6005320
				200	6005329
OptiPlate	Black	HB	384	50	6005520
				200	6005529
OptiPlate	Black	HB	1536	50	6004520
OptiPlate	Gray	Untreated, HS (high sensitivity)	96	50	6005330
				200	6005339
OptiPlate	Gray	Untreated, HS	384	50	6005310
				200	6005300
OptiPlate	Gray	Untreated, HS	1536	50	6004360
ProxiPlate	White	Untreated, Opaque, Shallow well	96	50	6006290
				200	6006299
ProxiPlate plus	White	Untreated, Opaque, Shallow well	384	50	6008280
				200	6008289
ProxiPlate plus	White	TC-treated, Sterile with Lids Opaque, Shallow well *200 pack size without lids	384	50	6008230
				160	6008238
				*200	6008239
ProxiPlate plus	Gray	HS (high sensitivity, low background) Opaque, Shallow Well	384	50	6008270
				200	6008279
ProxiPlate	Black	Untreated, Opaque, Shallow well	96	50	6006270
				200	6006279
ProxiPlate plus	Black	Untreated, Opaque, Shallow well	384	50	6008260
				200	6008269
ProxiPlate plus	Black	TC-treated, Sterile with Lids Opaque, Shallow well *200 pack size without lids	384	50	6008210
				160	6008218
				*200	6008219

LIST OF MICROPLATES, DESCRIPTIONS AND PRODUCT NUMBERS

Microplate Name	Color	Description/Treatment	Format (# wells)	Pack Size	Product #
SpectraPlate	Clear	MB	96	50	6005640
				200	6005649
SpectraPlate	Clear	MB	384	50	6007640
				200	6007649
SpectraPlate	Clear	MB	1536	50	6004640
SpectraPlate	Clear	HB	96	50	6005600
				200	6005609
SpectraPlate	Clear	HB	384	50	6007500
				200	6007509
SpectraPlate	Clear	HB	1536	50	6004500
SpectraPlate	Clear	TC-treated, Sterile with Lids *200 pack size without lids	96	50	6005650
				160	6005658
				*200	6005659
SpectraPlate	Clear	TC-treated, Sterile with Lids *200 pack size without lids	384	50	6007650
				160	6007658
				*200	6007659
SpectraPlate	Clear	TC-treated, Sterile with Lids	1536	50	6004650
				80	6004654
SpectraPlate (SW)	Clear	MB, Shallow well	384	50	6008640
				200	6008649
SpectraPlate (SW)	Clear	TC-treated, Shallow well Sterile with Lids	384	50	6008650
StorPlate	Natural	U-shaped, Round bottom, 450 µL vol PolyPropylene	96	50	6008190
				200	6008199
StorPlate	Natural	V-shaped bottom, 450 µL vol PolyPropylene	96	50	6008290
				200	6008299
StorPlate	Natural	1.1 mL Deepwell, U-shaped round bottom, PP	96	100	6008390
StorPlate	Natural	2.0 mL Deepwell, U-shaped round bottom, PP	96	50	6008490
StorPlate	Natural	V-shaped bottom, 120 µL volume, PP	384	50	6008590
				200	6008598
StorPlate	Natural	V-shaped bottom, 240 µL Deepwell, PP	384	50	6008690

LIST OF MICROPLATES, DESCRIPTIONS AND PRODUCT NUMBERS

Microplate Name	Color	Description/Treatment	Format (# wells)	Pack Size	Product #
ViewPlate	Black, Clear	Untreated, Black frame, clear bottom	384	50	6007470
ViewPlate	Black, Clear	Untreated, LoBase black frame, clear bottom	1536	60	6004470
ViewPlate	White, Clear	Untreated, White frame, Clear bottom	384	50	6007490
ViewPlate	White, Clear	Untreated, White frame, Clear, LoBase bottom	1536	60	6004490
ViewPlate	Black, Clear	TC-treated with Lids, Black, Clear bottom *This size comes with Backseals	96	50*	6005182
				50 (10 packs of 5)	6005225
ViewPlate	Black, Clear	TC-treated with Lids, Black, Clear bottom	384	40	6007460
ViewPlate	Black, Clear	TC-treated, Sterile with Lids, LoBase Black frame, clear bottom	1536	40	6004460
Viewplate	White, Clear	TC-treated with Lids, White frame, clear bottom	96	50	6005181
ViewPlate	White, Clear	TC-treated with Lids, White frame, clear bottom	384	40	6007480
ViewPlate	White, Clear	TC-treated with Lids, LoBase White frame, Clear bottom	1536	40	6004480
ViewPlate	Black, Clear	PDL-coated with Lids, Black frame, clear bottom	96	40	6005710
ViewPlate	Black, Clear	PDL-coated with Lids, Black frame, clear bottom	384	40	6007710
				160	6007718
ViewPlate	Black, Clear	PDL-coated with Lids, Black frame, clear bottom	96	40	6005710
ViewPlate	Black, Clear	PDL-coated with Lids, Black frame, clear bottom	384	40	6007710
				160	6007718
ViewPlate	Black, Clear	PDL-coated with Lids Black frame, clear bottom	1536	10	6004710
ViewPlate	Black, Clear	COL-coated with Lids, Black frame, clear bottom	96	40	6005810
				160	6005818
ViewPlate	Black, Clear	COL-coated with Lids, Black frame, clear bottom	384	40	6007810
				160	6007818
ViewPlate	Black, Clear	COL-coated with Lids, Black frame, clear LoBase bottom	1536	10	6004810
ViewPlate (GB)	Black, Glass	TC-treated with Lids, Black frame, clear glass bottom	96	40	6005430
ViewPlate (GB)	Black, Glass	PDL-coated with Lids, Black frame, clear glass bottom	96	8	6005530
ViewPlate (GB)	Black, Glass	COL-coated with Lids, Black frame, clear glass bottom	96	8	6005720
ViewPlate (½ Area)	White, Clear	TC-Treated with Lids, White frame, clear bottom, ½ Area Microplates	96	40	6005760
				160	6005768
VisiPlate	White, clear	Untreated White frame, clear bottom	24	17	1450-601
				68	1450-602
VisiPlate	White, clear	TC-treated, Sterile with Lids, White frame, clear bottom	24	14	1450-603
				56	1450-604
VisiPlate	Black, clear	TC-treated, Sterile with Lids, Black frame, clear bottom	24	14	1450-605
				56	1450-606

EnSpire Label-free Microplates

Microplate Name	Color	Description/Treatment	Format (# wells)	Pack Size	Product #
EnSpire-LFC	Black	Uncoated for Label-Free Cellular Assays	96	2	6055400
				8	6055408
EnSpire-LFC	Black	Fibronectin-coated, for Label-Free Cellular Assays	96	2	6055420
				8	6055428
EnSpire-LFC	Black	Uncoated for Label-Free Cellular Assays	384	2	6057400
				8	6057408
EnSpire-LFC	Black	Fibronectin-coated, for Label-Free Cellular Assays	384	2	6057420
				8	6057428
EnSpire-LFB	Black	Amine coupled, pre-activated For Label-Free Biochemical Assays	384	2	6057410
				8	6057418
EnSpire-LFB	Black	High sensitivity, user-activated, For Label-Free Biochemical Assays	384	2	6057460
				8	6057468

Scintillating Microplates For Radioisotopic Assays

Microplate Name	Color	Description/Treatment	Format (# wells)	Pack Size	Product #
CytoStar-T	White, clear	TC-treated, Sterile with Lids, Scintillating	96	5	RPNQ0162
				100	RPNQ0163
CytoStar-T	White, clear	TC-treated, Sterile, Scintillating	384	5	RPNQ0165
				50	RPNQ0166
FlashPlate	White	Basic scintillant-coated plate	96	5	SMP200E001PK
				50	SMP200001PK
				100	SMP200J001PK
FlashPlate	White	Basic scintillant-coated plate	384	5	SMP400E001PK
				20	SMP400001PK
				100	SMP400J001PK
FlashPlate	White	Phospholipid coated FlashPlate **Note – Can Custom Coat*	96	5	SMP108001PK
				20	SMP108A001PK
FlashPlate	White	Streptavidin-coated **Note – Can Custom Coat*	96	2	SMP410001PK
				10	SMP410A001PK
				100	SMP410J001PK
FlashPlate	White	Streptavidin-coated **Note – Can Custom Coat*	384	5	SMP103001PK
				20	SMP103A001PK
				100	SMP103J001PK
FlashPlate	White	WGA-coated	96	5	SMP105001PK
				20	SMP105A001PK
FlashPlate Assay Kit	White	Adenylyl Cyclase Activation Assay System	96	5	SMP004A001KT
Flashplate Assay Kit	White	Cyclic AMP Assay System	96	5	SMP001A001KT

Scintillating Microplates For Radioisotopic Assays Continued

Microplate Name	Color	Description/Treatment	Format (# wells)	Pack Size	Product #
LumaPlate	White	Shallow well (100 µL), Scintillant-coated	96	100	6006633
LumaPlate	White	Deep well (300 µL), Scintillant-coated	96	50	6005630
LumaPlate	White	Deep well (60 µL), Scintillant-coated	384	50	6007630
Scintiplate	White, clear	Untreated White frame and clear scintillating well	96	50	6005340
				200	6005349
Scintiplate	White, clear	TC-treated, Sterile with Lids White frame and clear scintillating well	96	50	6005390
				160	6005398
Scintiplate	White, clear	Streptavidin-coated White frame and clear scintillating well	96	10	1450-551

Solvent-Resistant Microplates for Isotopic Assays using Liquid Scintillation Cocktails in TopCount®

Microplate Name	Color	Description/Treatment	Format (# wells)	Pack Size	Product #
PicoPlate-24	White	Solvent-resistant Barex®	24	100	6005163
PicoPlate-96	White	Solvent-resistant Barex®	96	100	6005162

Solvent-Resistant Flexible Microplates for Isotopic Assays using LSC in MicroBeta®

Microplate Name	Color	Description/Treatment	Format (# wells)	Pack Size	Product #
Flexible-24	Clear	Clear, PETA, flat-bottom	24	25	1450-402
Flexible-24, Heat sealable	Clear	Clear, PETG, flat-bottom	24	25	1450-408
Flexible-96	Clear	Clear, PETG, round-bottom	96	25	1450-401
Support Frame		Support Frame for 24- & 96-well Flexible Plates	24 / 96	25	1450-481

Plates with Glass Fiber Filters for Radioligand Binding Assays

Microplate Name	Color	Description/Treatment	Format (# wells)	Pack Size	Product #
UniFilter	White	GF/B filter, Barex®, Shallow well	96	50	6005177
UniFilter	White	GF/C filter, Barex®, Shallow well	96	50	6005174
Unifilter	White	PEI-Coated, GF/B, Barex®, Shallow well	96	50	6005277
Unifilter	White	PEI-Coated, GF/C, Barex®, Shallow well	96	50	6005274
Harvest Plate	White	GF/C filter, Standard well size	96	50	6051450

Plate Seals

Product Description	Color	Pack Size	Product #
TopSeal-A, self-adhesive seal for 24-well microplates	Clear	100	6005198
TopSeal-A, self-adhesive seal for 96-well microplates	Clear	100	6050195
TopSeal-A Classic, self-adhesive seal for 384-well microplates	Clear	100	6050184
TopSeal-A, self-adhesive seal for 384-well microplates	Clear	100	6005250
TopSeal-B, self-adhesive seal for PCR plates	Clear	100	6050174
TopSeal-S, heat seal for polystyrene plates	Clear	100	6050192
AlphaSeal, self-adhesive opaque TopSeal for Alpha Assays	Black	100	6050173
BackSeal, adhesive bottom seal for 96/384-well plates	White	55	6005199
BackSeal, adhesive bottom seal for 96/384-well plates	Black	55	6005189
Permanent Sealing Tape	Clear	100	1450-461
Removable Sealing Tape	Clear	100	1450-462
Sealing StorMats – for sealing polypropylene StorPlates for compound storage			
StorMat-96, silicone, reusable mats for 96-well StorPlates	White	50	6008096
StorMat-384, silicone, reusable mats for 384-well StorPlates	White	50	6008384

Microplate Lids

Product Description	Color	Pack Size	Product #
Lid for 96-well plate, non-sterile	Clear	200	6005617
Lid for 96-well plate, sterile	Clear	200	6005619
Lid for 384-well and 1536-well plate, non-sterile	Clear	200	6007617
Lid for 384-well and 1536-well plate, sterile	Clear	200	6007619
Universal Lid for CellCarrier plates, sterile	Clear	200	6000029
Universal Lid, non-sterile	Clear	200	6000030
Lids for stacker operation in PerkinElmer's miniTrak, plateTrak or PlateStak			
Sterile lid with spacers for improved airflow	Clear	200	6000020
Sterile lid with spacers	Black	200	6000022
Non-sterile lid with spacers	Black	200	6000023
Sterile lid without spacers	Clear	200	6000024
Sterile lid without spacers	Black	200	6000026
Non-Sterile lid without spacers	Clear	200	6000025
Non-Sterile lid without spacers	Black	200	6000027

Filter Plate Assemblies and Adapters for Counting Millipore® MultiScreen® Filter Plates

Product Description	Pcs.	Product #
OmniFilter, white, Barex, 96-well	50	6005219
OmniFilter, assembly/disassembly tool	1	6005421
OmniFilter, filter cutting die	1	6005420
OmniFilter, filter cutting template	1	6005226
EasyTab-C, self-aligning filtermats	100	6005422
Standard Glass Fiber Filters	100	6005409
Standard Self-Aligning Glass Fiber Filters	100	6005416
Rigid (RG) Self-Aligning Glass Fiber Filters	100	6005412
MultiScreen® Adapter for TopCount, white 96-well	50	6005178
MultiScreen® Adapter for TopCount, clear 96-well	50	6005183
MultiScreen® Liner for MicroBeta	20	1450-433

Glossary of Terminology and Abbreviations

Abbreviation/Word	Definition	Applies To
BackSeal	Adhesive Seal for converting clear bottom plates to functionally opaque plates. The color should match the color of the plate wells.	Clear bottom plates
COL, collagen	Collagen (rat tail, type 1) coating on microplates. (Other collagen types available as a Custom.)	Culturing of cell types that need added extracellular matrix coating to adhere
F, Fluorescence	Black-colored microplates used when high fluorescence signal results in cross-talk between wells	Our Black PS plates
GF/B	Glass Fiber Filter type B (thickness is 680 µm, 1 um sample retention)	Radiometric Filtration Assays
GF/C	Glass Fiber Filter type C (thickness is 260 µm, 1 um sample retention)	Radiometric Filtration Assays
HB, High Binding Affinity	Plate treatment that allows for high levels of protein binding to the well surface.	Protocols requiring direct passive coating of antibodies or other biomolecules
HS, High Sensitivity	Gray-tinted plates in the OptiPlate and ProxiPlate product families that are approximately five times darker than AlphaPlates.	Luminescence assays with increased cross-talk; OptiPlates and ProxiPlates
MB, Medium Binding Affinity	Untreated plates that allow for mid-levels of protein binding	Coated plate assays such as ELISA
PL,PDL, PLL	Poly-lysine, Poly-D-lysine, or Poly-L-lysine coating	Culturing of cell types that need added extracellular matrix coating to adhere
PEI, polyethyleneimine	A cationic polymer coating that neutralizes the negative charge of glass fiber filter plates and is used to minimize non-specific ligand binding or to facilitate cell attachment.	Radiometric, SPA assays, etc.
PETA, PETG	Polyethylene-A or -G plastic microplates, resistant to DIN-based scintillation cocktails.	Flexible microplates, Radiochemical assays
PP, polypropylene	Plastic used to make sturdier plates that withstand harsher chemicals; less "sticky" than PS and often used in enzyme assays	Compound Storage and Enzyme activity assays on our LabChip EZ Reader
PS, polystyrene	Sturdy plastic material used to make most microplates	Most of our plates
SA, streptavidin	Streptavidin coated plates will bind biotinylated antibodies, proteins and other moieties for capture assays.	Coated plate assays such as ELISA, DELFIA, and FlashPlate assays
Sterile	All our sterile plates are also tissue-culture treated.	Tissue Culture plates
SW, shallow-well	Opaque microplates with raised well bottoms creating shallow wells to be used in low-volume assays	ProxiPlates, some SpectraPlates & AlphaPlates; 96 & 384-well formats
TC, Tissue-culture Treated	TC treatment involves exposing a PS microplate to a plasma gas to modify the plastic surface to make it more hydrophilic, thus facilitating attachment of adherent cell types.	Culturing of most adherent cells
TopSeal	Adhesive for Sealing Microplates for temporary or long-term storage to prevent evaporation. Comes in Clear and Black (AlphaSeal)	A variety of HTS assays when a Lid is not indicated
WGA	Wheat germ agglutinin-coating is used to anchor cell membranes to the surface of a plate by interacting with cell-surface sugars/glycoproteins	Radiometric, SPA assays, etc.

Microplates by Application and Instrument

Method	Application	Assay Type	PerkinElmer Instrument	Recommended Microplates
Fluorescence	FRET	LANCE, LANCE Ultra	VICTOR, EnVision, EnSpire and EnSight, ViewLux	OptiPlate, ProxiPlate, ½Area Plate, CulturPlate
	TRF	DELFIA	VICTOR, EnVision, EnSpire and EnSight, ViewLux	DELFIA Yellow, Strip-well plate, OptiPlate HB
	Polarization	N/A	VICTOR, EnVision, ViewLux	OptiPlate F, ProxiPlate F
	High Content Confocal Imaging	ICC with Tyramide Signal Amplification (TSA); In Vivo Reagents for HCS	Operetta, Opera, and Opera Phenix	CellCarrier, ViewPlate
	Cytometry	Brightfield and Fluorescence Cell Counting & Viability, Cell confluency, etc.	EnSight	ViewPlates, CellCarrier
	Microfluidic MSAs	Enzyme activity assays & binding reactions- sipped, separated & detected on a microfluidic chip	LabChip EZ Reader, LC3000	384-well StorPlates
Label-Free	Assays	Cellular Label-Free Assays	EnSpire & EnSight with Label Free	EnSpire-LFC
		Biochemical Label-Free Assays	EnSpire & EnSight with Label Free	EnSpire-LFB
Luminescence	Assays	AlphaLISA, AlphaScreen & AlphaScreen SureFireTM	EnVision, EnSpire, EnSight	AlphaPlate, OptiPlate, ProxiPlate, ½Area Plate, CulturPlate
		steadylite plus, britelite Plus, ATPlite and ATPlite 1Step	EnVision, EnSpire, EnSight, VICTOR, ViewLux, LumiLux, TopCount, MicroBeta	OptiPlate, CulturPlate ViewPlate TC
		AequoZen and AequoScreen (Aequorin)	LumiLux, VICTOR, MicroBeta JET, EnVision, EnSpire, EnSight	OptiPlate, CulturPlate, ViewPlate
Colorimetric	Absorbance	ELISA	EnVision, EnSpire, EnSight, VICTOR, ViewLux	SpectraPlate, ViewPlate, (clear-bottom) Isoplate
Radiometric	Filtration Assays	Receptor Binding, Cell Harvesting, 3H Thymidine, DNA binding/ hybridization	Filtermate Harvester, TopCount	UniFilter, OmniFilter, Harvest Plate
	Isoptopic Assays	Solid-Phase Radiobinding	MicroBeta, TopCount	FlashPlate, CytoStar-T, ScintiPlate (MB)
		Scintillation Proximity Assay (SPA)	TopCount	OptiPlate, ProxiPlate
			MicroBeta	VisiPlate, Isoplate
		Solid Scintillation (HPLC fraction, ^{51}Cr Release)	TopCount	LumaPlate, CytoStar-T
		Liquid Scintillation Counting	TopCount	OptiPlate
			MicroBeta	VisiPlate, Isoplate
		Isotopic samples containing highly polar organic solvents	TopCount	PicoPlate
			MicroBeta	Flexible Plate
Sample Prep	NGS	Next Gen Sequencing Prep	Sciclone and Janus NGS Express Automated Liquid Handlers	See Page 11

Microplate Quick Reference Guide

	24	96	384	1536	Black	White	Gray	TC	Fluor	Lumi	ELISA/ Abs	HCS	Rads	Label-free
½ AreaPlate		✓			✓	✓			✓	✓				
AlphaPlate			✓	✓			✓ (4)			✓				
CellCarrier		✓	✓	✓	✓	✓ (6)		✓	✓	✓ (6)		✓		
CellCarrier Ultra			✓		✓			✓				✓		
CulturPlate	✓ (1)	✓	✓	✓	✓	✓		✓	✓	✓				
CytoStar T		✓	✓			✓		✓					✓	
DELFIA		✓ (5)	✓ (1)			✓ (2)			✓		✓ (2)			
FlashPlate		✓	✓			✓							✓	
Flexible	✓	✓											✓	
IsoPlate		✓			✓	✓		✓	✓	✓			✓	
Label-free		✓	✓		✓			✓	✓					✓
LumaPlate		✓	✓			✓							✓	
OptiPlate	✓ (1)	✓	✓	✓	✓	✓	✓		✓	✓	✓			
PicoPlate	✓	✓				✓							✓	
ProxiPlate		✓	✓		✓	✓	✓	✓	✓	✓				
ScintiPlate		✓				✓		✓					✓	
SpectraPlate		✓	✓	✓				✓			✓			
StorPlate		✓	✓											
UniFilter	✓	✓				✓							✓	
ViewPlate		✓	✓	✓	✓	✓		✓	✓	✓		✓ (3)		
VisiPlate	✓				✓	✓		✓	✓	✓	✓		✓	

(1) White only (2) Also clear and yellow (3) Black only (4) light gray (5) Also available as 8x12 strips (6) 96-well white only

Microplate Surface Properties

	MB	HB	PDL	TC	Collagen
Treatment	None	Gamma Irradiated	PDL	Plasma	Collagen
Charge	(-)	(-)	(+)	(-)	(+)
Binding capacity	220 ng/cm^2	600 ng/cm^2	N/A	N/A	N/A
Binding Interaction	Hydrophobic	Hydrophobic & Ionic	Hydrophilic & Ionic	Hydrophobic & Ionic	Hydrophobic & Ionic
Sample Properties	Large biomolecules > 20 KD with large or abundant hydrophobic region[s]	Medium to large biomolecules > 10 KD that are positively charged with or without hydrophobic regions	Enhances cell attachment and binding	Allows cell attachment and binding	Enhances cell attachment and proliferation
Applications	• Homogenous & heterogenous assays • General purpose (dilutions, etc.) • Colorimetric assays (protein quantification) • AVOID: cell-based assays	• Heterogeneous assays • ELISA (perfect for immobilizing antibodies)	• Used for difficult to attach cells • Helps cells stay attached during wash steps • HEK293 cells	• Assays using adherent cell lines • CHO Cells *Note: Gamma irradiated (to sterilize)*	Keratinocytes & Hepatocytes

Microplate Chemical Compatibility Chart

This Chemical Compatibility Chart is only to be used for general guidelines of solvent compatibility. As there are many factors that can affect the behavior of solvents such as temperature, concentration, exposure duration, pressure, etc., it is recommended to perform testing under your own conditions.

Solvent	PS	PETG	PP
2-Butanol	+/–		+
2-Propanol	+/–		+
Acetic Acid, 5%	+	+/–	+
Acetic Acid, 50%	+/–	–	+
Acetic Acid, Glacial	–	–	+
Acetic Acid, Anhydride	–		+/–
Acetone	–	–	+
Acetonitrile	–		–
Acrylonitrile	–		+/–
Allyl Alcohol	+/–		+
Ammonia	+/–		+
Ammonia, 25%	+		+
Ammonium Hydroxide, 30%	+/–	–	+
Ammonium Hydroxide, 5%	+	+/–	+
Ammonium Salts	+/–		+
Amyl Alcohol	+/–		+
Aniline	–		+/–
Arsenic Acid	+	+	
Benzaldehyde	–		+
Benzene	–	–	–
Benzoic Acid, Sat	+/–		+
Benzyl Alcohol	–	–	–
Boric Acid	+	–	+
Bromine	–	–	–
Butyl Acetate	–		+/–
Calcium Hydroxide	+/–		+
Calcium Hypochlorite	+/–		+
Carbon Disulfide	–		–
Carbon Tetrachloride	–	–	+/–
Chlorine Water	–		+/–
Chlorine, 10%, Moist	–		+/–
Chlorine, 10%, Air	–		+/–
Chlroine, Wet Gas	–		–
Chloroacetic Acid	+/–		+
Chlorobenzene	–		–
Chloroform	–		–
Chromic Acid, 10%	+		+
Chromic Acid, 50%	–		+/–
Citric Acid, 10%	+		+
Cyclohexane	–	–	–
Cyclohexanone	–	–	–
Decahydronaphthaline	–		+/–
Diacetone	–		+/–
Diethyl Benzene	–		–
Diethyl Ether	–		–
Diethyl Ketone	–		+/–
Diethylene Glycol	+/–		+
Dimethyl Acetamide	–		+
Dimethylformamide	–		+
Dimethylsulfoxide (DMSO)	+	–	+
Dioxane	–		+/–
Ethanol, 40%	+/–		+
Ether	–		–
Ethyl Acetate	–	–	+
Ethyl Alcohol	–		+

Solvent	PS	PETG	PP
Ethylbenzene	–	–	–
Ethyl Benzoate	–		+/–
Ethyl Chloride	–		–
Ethylene Chloride	–		–
Ethylene Glycol	+	+	+
Fatty Acids	+	+/–	+
Formaldehyde, 40%	–		+
Formaldehyde, 10%	–		+
Formalin, 10%	–		+
Formalin, 40%	–		+
Formic Acid, 100%	–		+
Formic Acid, 85%	–		+
Formic Acid, 50%	–		+
Glutaraldehyde	+	+/–	+
Glycerine	+		+
Hexane	–	+	+/–
Hydrobromic Acid, 50%	–		+
Hydrochloric Acid, 36%	–		+
Hydrochloric Acid, 5%	+		+
Hydrogen Peroxide, 30%	+	+	+
Hydrogen Peroxide, 3%	+	+	+
Isobutanol	+/–		+
Isopropanol, 100%	+		+
Isopropyl Acetate	–		+/–
Lactic Acid, 90%	+/–	–	+
Mercury	+		+
Methanol, 100%	–	+/–	+
Methyl Acetate	–		+/–
Methyl Ethyl Ketone	–	–	+/–
Methyl Propyl Ketone	–	–	+/–
Methylene Chloride	–	–	–
Nitric Acid, 25%	–		–
Nitric Acid, concentrated	–	–	–
Nitrobenzene	–	–	–
Oxalic Acid, 10%	+	+	+
Phenol, 50%	–	–	–
Phosphoric Acid, 85%	+/–		+
Potassium Hydroxide, 25%	+/–		+
Potassium Permanganate	+/–		+
Propane Gas	–	–	–
Proprionic Acid	+/–		+
Propylene Glycol	+		+
Pyridine	–	–	–
Sodium Hydroxide, 1%	+	+	+
Sodium Hydroxide, 10%	+	+	+
Sodium Hydroxide, 50%	+	–	+
Stearic Acid	+		+
Sulfur Dioxide	–		–
Sulfuric Acid, concentrated	–		–
Tartaric Acid	+/–		+
Tetrahydrofuran	–		+/–
Toluene	–	–	–
Trichloroethylene	–		–
Urea	+		+
Xylene	–		–

\+ Suitable for use with solvent.
+/– Effects occur with exposure. Testing should be performed to ensure compatibility.
– Not recommended for use.

PS = polystyrene
PP = polypropylene
PETG = polyethylene G (Flexible microplates)

Microplate Specifications

Plate	# Wells	# Rows	# Cols	Well Volume (µL)		Plate dimensions (mm)			Well Dimensions (mm)		Well Offset (mm)		Well–to–Well
				Total	Working	Height	Length	Width	Diameter‡	Depth	A1 to Top	A1 to Side	Spacing (mm)
½AreaPlate	96	8	12	180	40 – 160	14.40	127.76	85.48	5.0	11.50	11.24	14.38	9.00
AlphaPlate	384	16	24	112	24 – 90	14.40	127.76	85.47	3.65	10.45	8.99	12.14	4.50
AlphaPlate Shallow Well	384	16	24	28	10 – 20	14.35	127.76	85.48	3.30	5.30	8.99	12.13	4.50
AlphaPlate	1536	32	48	12	4 - 10	14.35	127.76	85.48	1.70	4.80	7.84	10.96	2.25
CellCarrier *	96	8	12	392	80 – 350	14.40	127.76	85.48	6.58	10.90	11.24	14.38	9.00
CellCarrier *	384	16	24	105	25 – 90	14.40	127.76	85.48	3.27	12.40	8.99	12.13	4.50
CellCarrier *	1536	32	48	12	4 – 10	7.00	127.76	85.48	1.53	5.0	7.87	11.01	2.25
CellCarrier Ultra*	384	16	24	145	25 - 100	14.35	127.76	84.48	3.26	13.1	8.99	12.13	4.50
CulturPlate	24	4	6	2390	0.5 – 2.39 mL	18.70	127.80	85.60	14.00	16.10	11.92	12.41	20.60
CulturPlate	96	8	12	400	80 – 350	14.60	127.76	85.47	7.15	10.80	11.24	14.38	9.00
CulturPlate	384	16	24	112	24 -90	14.40	127.76	85.47	3.65	10.45	8.99	12.14	4.50
CulturPlate	1536	32	48	12	4 - 10	14.35	127.76	85.48	1.70	4.80	7.84	10.96	2.25
CytoStar-T	96	8	12	350	100 – 250	14.22	127.76	85.47	6.86	10.67	11.23	14.35	9.00
CytoStar-T	384	16	24	105	25 – 90	14.22	127.76	85.47	3.63	11.43	8.99	12.12	4.5
DELFIA yellow	96	8	12	350	100 – 200	14.40	127.76	85.48	6.97	11.40	11.30	14.30	9.00
DELFIA Stripwell	96	8 strips	12 wells	350	100 - 200	14.10	127.76	85.47	7.00	9.00	9.10	14.30	9.00
DELFIA white	384	16	24	112	24 - 90	14.40	127.76	85.47	3.65	10.45	8.99	12.14	4.50
FlashPlate	96	8	12	400	100 – 200	14.60	127.76	85.47	7.15	10.80	11.24	14.38	9.00
FlashPlate	384	16	24	112	25 - 50	14.40	127.76	85.47	3.65	10.45	8.99	12.14	4.50
Flexible PET plates	24	4	6	1400	0.5 – 1.0 mL	14.0	128.0	86.0	12.30	12.40	16.00	19.30	18.00
Flexible PET plates	96	8	12	400	100 - 300	14.0	128.0	86.0	6.60	12.30	11.70	14.90	9.00
IsoPlate	96	8	12	370	80 - 350	14.70	127.60	85.60	6.50	11.45	11.30	14.30	9.00
Label-free	96	8	12	209	50 - 100	14.22	127.76	85.48	4.50	11.78	11.24	14.38	9.00
Label-free	384	16	24	82	15 – 50	14.22	127.76	85.48	2.82	10.92	8.99	12.13	4.50
LumaPlate	96	8	12	100	50 - 90	14.45	127.76	85.47	7.15	3.25	11.24	14.38	9.00
LumaPlate Deepwell	96	8	12	400	50 – 380	14.60	127.76	85.47	7.15	10.80	11.24	14.38	9.00
LumaPlate Deepwell	384	16	24	105	25 – 50	14.40	127.76	85.47	3.65	10.45	8.99	12.14	4.50

* Detailed dimension for use in HCS with our Opera/Operetta systems can be found here: www.perkinelmer.com/askmicroplates

‡ Diameter listed is for the functional part of the well - the Top of the well for Opaque plates and the bottom well diameter for clear-bottom plates.

Microplate Specifications Continued

Plate	# Wells	# Rows	# Cols	Well Volume (µL)		Plate dimensions (mm)			Well Dimensions (mm)		Well Offset (mm)		Well–to–Well
				Total	Working	Height	Length	Width	Diameter‡	Depth	A1 to Top	A1 to Side	Spacing (mm)
OptiPlate	24	4	6	2390	0.5 – 2.20 mL	18.70	127.80	85.60	14.00	16.10	11.92	12.41	20.60
OptiPlate	96	8	12	400	80 – 350	14.60	127.76	85.47	7.15	10.80	11.24	14.38	9.00
OptiPlate	384	16	24	112	24 – 90	14.40	127.76	85.47	3.65	10.45	8.99	12.14	4.50
OptiPlate	1536	32	48	12	4 – 10	14.35	127.76	85.48	1.70	4.80	7.84	10.96	2.25
PicoPlate	24	4	6	1800	0.5 – 1.70 mL	18.70	127.80	85.60	14.00	9.40	11.59	12.01	20.28
PicoPlate	96	8	12	400	80 – 350	14.60	127.80	85.60	7.00	11.30	11.40	14.50	8.99
ProxiPlate	96	8	12	100	50 – 90	14.45	127.76	85.47	7.15	3.25	11.24	14.38	9.00
ProxiPlate	384	16	24	28	10 – 20	14.35	127.76	85.48	3.30	5.30	8.99	12.13	4.50
ScintiPlate	96	8	12	370	80 - 350	14.70	127.60	85.60	6.50	11.45	11.30	14.30	9.00
SpectraPlate	96	8	12	400	80 - 350	14.60	127.76	85.47	7.15	10.80	11.24	14.38	9.00
SpectraPlate	384	16	24	105	25 – 90	14.40	127.76	85.47	3.65	10.45	8.99	12.14	4.50
SpectraPlate	1536	32	48	12	4 – 10	14.35	127.76	85.48	1.70	4.80	7.84	10.96	2.25
StorPlate U-bottom	96	8	12	450	80 – 350	14.35	127.75	85.48	3.50	11.43	11.20	14.38	9.00
StorPlate V-bottom	96	8	12	450	80 - 350	14.35	127.60	85.48	3.50	12.43	11.20	14.38	9.00
StorPlate DW (1.1mL)	96	8	12	1100	0.2 – 1 mL	27.00	127.70	85.60	8.50	24.50	11.30	14.30	9.00
StorPlate DW (2mL)	96	8	12	2000	0.2 – 1.9 mL	44.00	127.70	85.80	8.50	41.50	11.30	14.30	9.00
StorPlate V-bottom	384	16	24	120	25 – 110	14.35	127.75	85.45	square	11.85	8.99	12.13	4.50
StorPlate DW V-bottom	384	16	24	240	25 - 230	24.75	127.75	85.48	square	22.31	8.99	12.13	4.50
UniFilter	24	4	6	600	200 – 600	18.70	127.80	85.60	14.00	4.35	11.59	12.01	20.50
UniFilter	96	8	12	150	80 – 150	14.60	127.80	85.60	6.96	3.20	11.35	14.45	8.99
Glass-Bottom ViewPlate	96	8	12	300	50 -200	11.60	127.75	85.34	6.00	11.35	11.30	14.30	9.00
ViewPlate	96	8	12	350	80 -200	14.61	127.81	85.65	6.10	11.40	11.30	14.30	9.00
ViewPlate	384	16	24	135	25 – 100	14.40	127.76	85.48	3.30	11.50	8.99	12.13	4.50
ViewPlate	1536	32	48	12	4 - 10	10.40	127.76	85.48	1.53	5.00	7.87	11.01	2.25
½Area ViewPlates	96	8	12	190	15 - 175	14.40	127.76	85.48	4.38	11.50	11.24	14.38	9.00
VisiPlate	24	4	6	3200	0.5 – 3 mL	20.00	127.80	85.90	14.00	18.35	16.20	19.30	17.90

‡ Diameter listed is for the functional part of the well - the Top of the well for Opaque plates and the bottom well diameter for clear-bottom plates.

For our most up-to-date catalog of products: www.perkinelmer.com/microplates
For more detailed technical and assay information, www.perkinelmer.com/askmicroplates

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