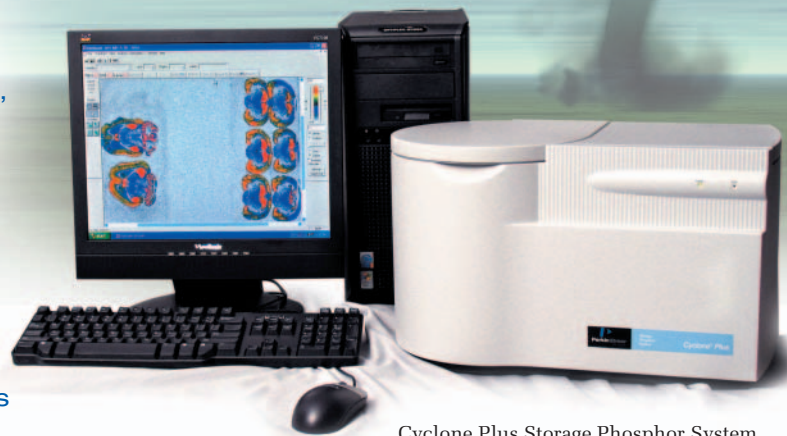


Cyclone Plus Storage Phosphor System

The Only *Personal* Radiometric
Phosphor Imager for Quantitative
Filmless Autoradiography

Perform high resolution filmless autoradiography of gene arrays, electrophoresis gels, blots, thin layer chromatography samples, and tissue sections right on your benchtop with PerkinElmer's Cyclone® Plus Storage Phosphor System.

Our compact, affordable Cyclone Plus imager is fast and easy to use. It provides unsurpassed sensitivity and flexibility for every radiometric imaging application in your lab. A robust USB v2.0 interface assures reliable performance and robust instrument connectivity to the external host PC. For high resolution imaging, Cyclone Plus provides the quantitative images you need for all commonly used radioisotopes, including ^3H , ^{125}I , ^{14}C , ^{35}S , ^{33}P , ^{32}P , ^{18}F , and $^{99\text{m}}\text{Tc}$.



Cyclone Plus Storage Phosphor System

Replace Film Autoradiography with Digitized Phosphor Imaging

To perform phosphor imaging, high efficiency storage phosphor screens replace autoradiography film. The storage phosphor screens capture and store the activity of samples, which are exposed, as with film, in common film cassettes.

Cyclone Plus is designed with state-of-the-art confocal optics and a helical scanning system. The unique light collection optical design captures the signal more efficiently for better sensitivity and a wide linear dynamic range.

The phosphor screens are scanned by the system's laser focused to less than 50 microns, and the latent image is detected by its optics to create a high resolution digitized image with quantitative data in the form of an image file. The image is

displayed on the screen for analysis with OptiQuant™ software and can be printed, exported, and archived for future reference.

Perform Quantitative *In Vitro* Phosphor Imaging of PET Radioligands

The Cyclone Plus storage phosphor system performs filmless autoradiography of thin layer chromatography samples and tissue sections. The Cyclone Plus has been used successfully for *in vitro* imaging of tissue sections, to replace traditional film autoradiography with a more efficient and quantitative method.^{1,2} It is also well suited for TLC of PET radiopharmaceuticals and can accommodate a large range of different size TLC plates.

Key Features & Benefits

- **Easy to use**—convenient benchtop operation, right in your own lab, with direct digitized output to your PC.
- **Highly sensitive**—detects activity with better efficiency than film reducing exposures 10 to 100 times.
- **Linear dynamic range of five orders of magnitude**—enables simultaneous exposures for a wide range of sample activities that can be reported in DPM/mm².
- **Replaces film and toxic developing chemicals**—uses reusable, erasable storage phosphor screens, uniquely suited for different applications.
- **Flexible digitized output**—image or data file can be displayed printed, exported, and archived for future reference.
- **Outputs publication quality images**—provides best results for quantitation of highest resolution autoradiography applications.

Typical Applications

- **Fast, high resolution results for any tritium-labeled samples**—use our Tritium Sensitive Phosphor Screens.
- **In vitro imaging of tissue sections**—replaces traditional film autoradiography with a more efficient and quantitative method for neurobiology studies.^{1,2}
- **Analysis of PET radiopharmaceuticals**—accommodates a large range of different TLC films.
- **Sequencing gels**—accommodated by our long Phosphor Screen sizes.
- **Nucleotide metabolism studies**—TLC of ³²P- and ³³P-labeled ATP or GTP.
- **ADME studies**—using whole body autoradiography.
- **Traditional Northern, Southern and Western blots**—choose NEN® ³²P and ³³P nucleotides and PerkinElmer hybridization transfer membranes.
- **Gene and protein expression studies**—³²P- and ³³P-labeled DNA and ¹⁴C- and ³⁵S-labeled protein 2D gels.

¹ Kumar, J.S. et. al. Synthesis of [O-methyl-¹¹C]1-(2-chlorophenyl)-5-(4-methoxyphenyl)-4-methyl-1H-pyrazole-3-carboxylic acid piperidin-1-ylamide: a potential PET ligand for CB₁ receptors. *Bioorganic & Medicinal Chemistry Letters*. 14 (2004) 2393–2396.

² Strome, E. et. al. Quantitative in vitro phosphor imaging using [³H] and [¹⁸F] radioligands: the effects of chronic desipramine treatment on serotonin 5-HT₂ receptors. *Journal of Neuroscience Methods*. 141 (2005) 143–154.

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System Configuration

| Model | Description |
|---------|--|
| C431200 | Cyclone Plus Storage Phosphor Scanner, no PC, includes OptiQuant software and a choice of carousel |

Storage Phosphor Screens

Not all types of samples required the same type of performance. A variety of screens are available for use with the Cyclone Plus, optimized for different applications.

- **MS (MultiSensitive) storage phosphor screens** are designed for durability, high sensitivity and good resolution. They are available in small, medium and large sizes.
- **SR (Super Resolution) storage phosphor screens** are made from the finest grain phosphor crystals for highest resolution. They are available in small, medium and large sizes.
- **TR (Tritium Sensitive) storage phosphor screens** are uncoated for the detection of tritium. They are available in small and medium sizes.

Ordering Information

| Cat. No. | Description |
|----------|---|
| 7001722 | MS, MultiSensitive Phosphor Screens, Small |
| 7001723 | MS, MultiSensitive Phosphor Screens, Medium |
| 7001724 | MS, MultiSensitive Phosphor Screens, Long |
| 7001485 | SR, Super Resolution Phosphor Screens, Small |
| 7001486 | SR, Super Resolution Phosphor Screens, Medium |
| 7001487 | SR, Super Resolution Phosphor Screens, Long |
| 7001488 | TR, Tritium Phosphor Screens, Small |
| 7001489 | TR, Tritium Phosphor Screens, Medium |

Storage Phosphor Screen Sizes:

Small: 12.5 cm x 19.2 cm (5 in. x 7.6 in.)

Medium: 12.5 cm x 25.2 cm (5 in. x 10 in.)

Long: 12.5 cm x 43 cm (5 in. x 17 in.)

Samples larger than any given screen can be exposed to two screens in the same film cassette, scanned, and then stitched together with OptiQuant software.



Perform quantitative receptor autoradiography.

