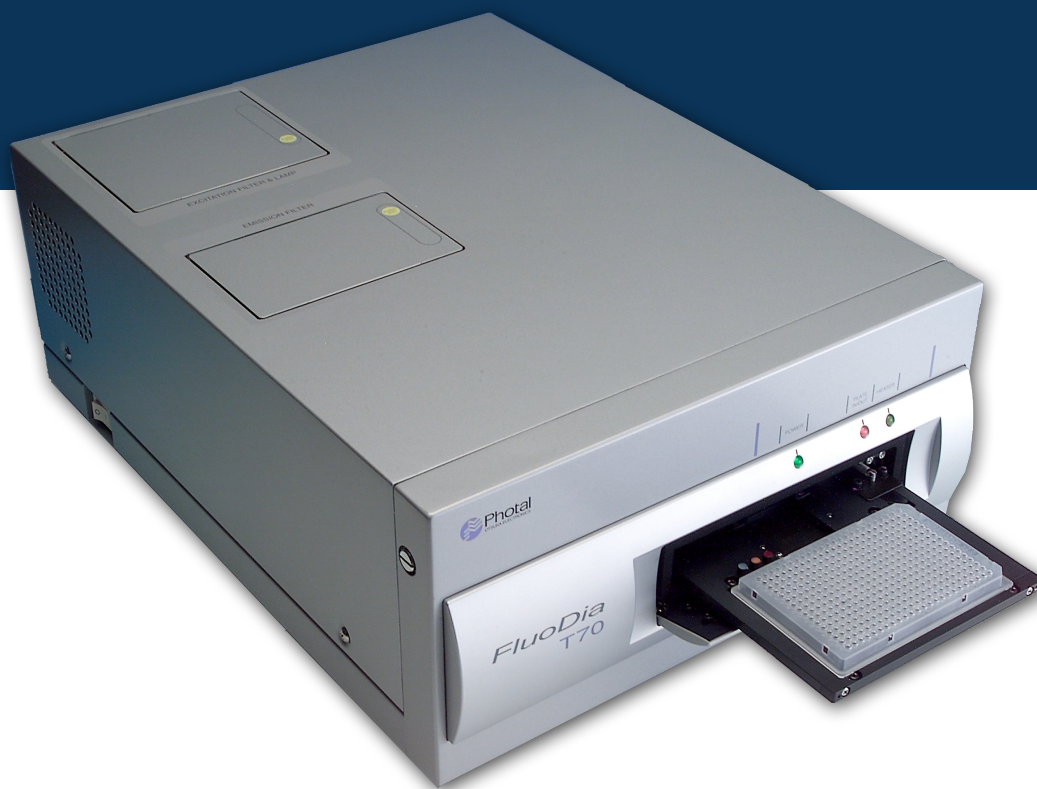


FluoDia T70

High Temperature Fluorescence Plate Reader



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When Photon Technology International joined hands with Otsuka Electronics Co. Ltd, Japan, the combination of PTI's expertise in fluorescence instrumentation and Otsuka's expertise in manufacturing microplate reader brought to market our FluoDia T70 High Temperature Microplate Reader.

The FluoDia T70 is a filter-based high temperature fluorescence

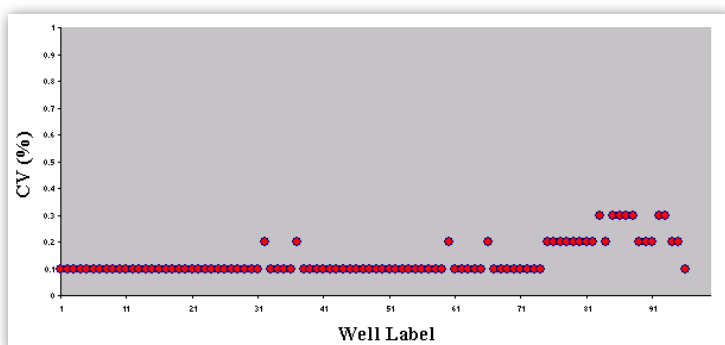
microplate reader dedicated to fluorescence intensity measurements. Every effort has been made to make it one of the most sensitive plate readers with the best reproducibility, homogeneity and widest dynamic range available. It is capable of detecting the smallest difference among large amounts of samples, which is the main reason for using a microplate reader.

Features

Highest Reproducibility & Homogeneity:

This is the ability of the plate reader to give the same reading across the whole plate regardless of the position on the plate, and the time the measurement was done, i.e. no inaccuracy due to equipment. High Reproducibility and Homogeneity make it possible for FluoDia T70 to monitor minor changes in signals that would otherwise be considered as the standard deviation of the machine.

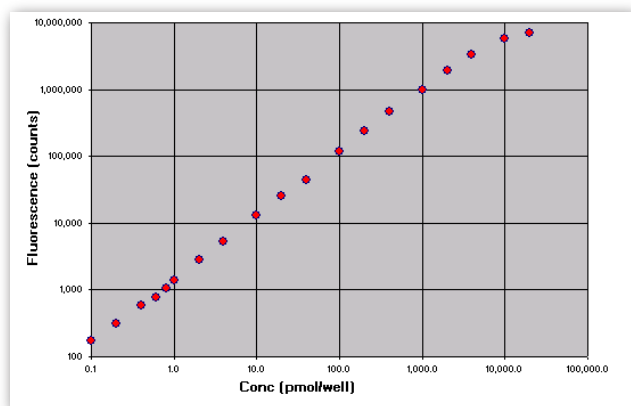
Reproducibility



Widest Dynamic Range:

Allows us to effectively measure signal from $1-10^7$ counts, which is very important for the successful running of High-Through Screening (HTS).

Linearity



Extreme Sensitivity:

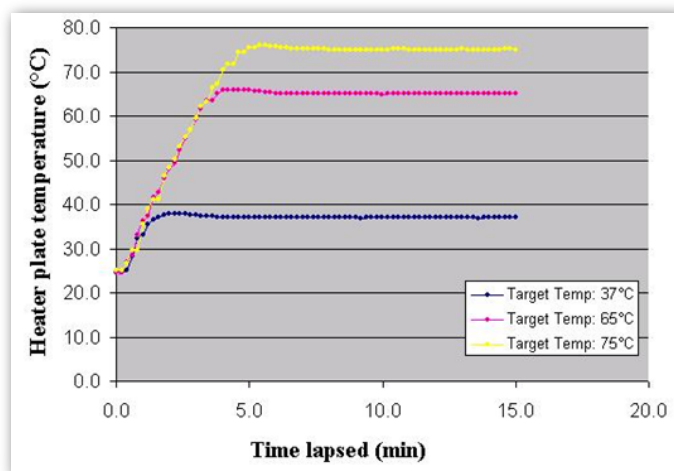
FluoDia T70 can detect as low as 2.4 fmol/well of sodium fluorescein.

Temperature Control:

The exclusive heating plates allow for accurate temperature control with an accuracy of $\pm 0.3^\circ\text{C}$ and homogeneity of $\pm 0.3^\circ\text{C}$ across the plate. All heated sample stage allows accurate temperature control from $\text{RT}+5^\circ\text{C}$ to 75°C , with the possibility of operating in a cold environment (such as a cold room) if lower temperature is required.

Three ways to control temperature including temperature stepping, makes it an idea instrument for temperature controlled kinetic measurements such as Thermal Shift assay, Invader assay, ThermoFluor[®]* et al.

Control of Heater Temperature



Features Continued

Automatic Sensing of Well-center:

Allows data to be collected at the same center for every sample.

Multiple points/well measurement:

Allows the user to choose the number of points to be measured per well when using bigger well plates (6, 12, 24 and 48) and guarantees the accuracy of measurements.

Barcode Reading Capability

User-friendly Software:

Complies with FDA21 CFR part 11

Dual wavelength measurement:

Ideal for FRET

Sample Mixing:

Software controls the mode, time and velocity.

Real-time display:

Real-time display of selected samples in both digital and graphic.

UL and CE certified

Options

Z-axis adjustment:

This optional feature allows user to manually adjust the focal point of the detector in order to achieve the best sensitivity, This feature allows FluoDia T70 to be used in application that usually require a bottom-reading plate reader, such as in the case of cultured adherent cells. It does so with much greater sensitivity than a bottom-reading plate reader.

Filters:

Wide selection of filters cover the whole range between 340 nm to 800 nm

Heater Plate:

Three types of heater plates (flat, 96-well and 384-well) designed for customers using different kinds of microplates.



Applications

Quantitative DNA measurement

- dsDNA
- ssDNA
- PCR products

Quantitative RNA measurement

- mRNA
- tRNA
- rRNA
- siRNA
- Total RNA

Protein

- Quantitative protein measurement
- Enzyme activity assay
- GFP-based assay

Cell based assay

- Live/Dead/Viability/cytotoxicity
- Cell proliferation
- Multi-drug resistance assay
- Phagocytosis
- Cell adhesion assay

Blood samples

- Cholesterol (also for food samples)
- Glucose
- Monoamine oxidase
- Cellulase
- Lipid peroxidation

Specific assays

- Thermal Shift Assay
- Invader[®] assay
- Hydrophobic interaction upon unfolding
- ThermoFluor[®] * assay
- Monitor fibrillogenesis in vitro
- Fluorescence Resonance Energy Transfer (FRET)
- PicoGreen RNA Kit
- RiboGreen RNA Kit
- Respiratory Burst
- Fluorescence ELISA

Specifications

Sensitivity	2.4 fmol/well Fluorescein (15 μ L/well, 200 msec gating time)
Excitation Light Source	50 W quartz halogen lamp
Excitation Wavelength Range	320–830 nm
Excitation Wavelength Selection	Software controlled filter wheel, holds up to 4 filters
Light Guide	Quartz fiber (\varnothing 1.4 mm) & condenser lens
Optics	Top-to-Top, Z-axis adjustment optional
Plate Format	6, 12, 24, 48, 96 and 384 well plates, strip tubes
Emission Wavelength Selection	Software controlled filter wheel, holds up to 4 filters
Dynamic Range	0 - 16, 777, 215 counts
Gating Time	10 msec to 10 sec (increments of 10 msec)
Measurement Time	~ 40 sec (96 wells), ~110 sec (384 wells)
Accumulation	1–100 times/well
Calibration	Automatic calibration using built in solid state fluorescence standards
Sample Mixing	Linear and butterfly mixing. Time and velocity software controlled.
Temperature Control	
Range	Room temperature +5 to 75 $^{\circ}$ C
Accuracy	\pm 0.3 $^{\circ}$ C
Homogeneity	\pm 0.3 $^{\circ}$ C
Heating Stage	Flat heater plate, 96-well or 384-well heater plate, dual P.I.D. control.
Thermal Fuse	Built-in (123 $^{\circ}$ C)
Incubation Method	Temperature stepping, simple incubation or incubation
Temperature Rise Time of Sample <i>(sample volume 40 μL, V shaped 96 well plate)</i>	5 min. without pre-heating; 3 min. if pre-heated at 45 $^{\circ}$ C; 1 min. if pre-heated at 68 $^{\circ}$ C
Detector	Side-on PMT (185–830 nm)
Measurement Method	Photon Counting
Dark Level	$< 3 \times 10^{-4}$ % full scale
Stability	$< 3 \times 10^{-4}$ % full scale/8 Hr
External Communication	USB, RS232C and bar-code reader terminals
Software	FluoDia T70 Master and Slave software
Dimensions	380 x 505 x 200 mm
Weight	Approximately 20 kg
Power Supply	AC 100–230 V, 50/60Hz
Power Consumption	Approximately 250 W (Approximately 330 W with stage heating)
Operational Environment	15–30 $^{\circ}$ C, 30–90% RH (non-condensing)

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