The TimeMaster™ TM-11/2005 is a unique phosphorescence lifetime spectrometer from Photon Technology. The TM-11/2005 combines the high performance and flexibility of PTI's modular “Open Architecture” design with excellent sensitivity and highest ease-of-use factors in the industry. Together with PTI's FeliX32™ software, that is powerful and also easy to use, they make the TM-11/2005 an instrument that will meet your highest demands and be welcomed in a multiple-user environment as well. So, whether you are just starting out, or an experienced spectroscopist, the TM-11/2005 is designed to meet all of your needs!

**Outstanding Benefits…**

★ Modular design for easy expansion of system capabilities  
★ High sensitivity (use less precious sample)  
★ Be productive quickly (PTI installs the TM-11/2005 for you)  
★ Full software control over gate position and width  
★ Steps as small as 20 ns  
★ Complete lifetime analysis software with 8 kinetic models and deconvolution  
★ Powerful (complete, comprehensive software and a variety of accessories for your most demanding measurements)  
★ Nonlinear timescale data acquisition protocols (extract vastly different decay times in one experiment)

**…In a Variety of Applications:**

★ Protein structure/function studies  
★ Phosphorescence lifetimes  
★ Phosphors and inorganic materials  
★ Electroluminescent materials  
★ Lifetime-Based Oxygen Sensing  
★ Doped crystals  
★ Triplet state exciplexes  
★ Lanthanide luminescence  
★ Metal-ligand complexes  
★ Room-temperature phosphorescence  
★ Slow rotational correlation times (optional polarizers required)
### Sample Compartment:

- Model MP-1 QuadraCentric (L-format, dual-L-format or T-format)
- Excitation and emission filter holders (filters not included)
- Quartz excitation/emission lenses (f/1.3)
- Lid-activated emission port shutter
- Thermostatable 10 x 10 mm cuvette holder (external bath not included)
- Motorized sample stirrer
- Injection port
- Gas purgeable

### Emission Monochromator:

- Model 101M computer-controlled QuadraScopic monochromator
- Czerny-Turner optical configuration
- 200 mm focal length, f/4 aperture ratio
- Continuously adjustable bi-lateral slits
- 1200 l/mm grating 400 nm blaze
- Gas purgeable

### Basic Specifications:

**Data Acquisition Characteristics**

Measurable lifetime range: 600 ns - seconds

**Laser Illuminator**

- Wavelength range: 360 to 990 nm (depending on dye used)
- (235 to 345 nm with optional frequency doubler)
- Bandwidth: 0.04 nm
- Pulse width: 800 picoseconds
- Peak power: 275 KW at 5 Hz
- Pulse energy: 220 microjoules per pulse at 500 nm, 5 Hz
- Repetition rate: 1 to 20 Hz

**Emission Monochromator**

- Wavelength range: 180 nm to 24 microns, continuously tunable
  (useful detection wavelength range dependent on grating and photomultiplier tube)
- Bandwidth: 0 to 25 nm, continuously variable
- Resolution: 0.2 nm
- Accuracy: +/-0.5 nm
- Reciprocal linear dispersion: 4 nm/mm
- Throughput: 60% at 400 nm
- Stray light: <0.02% two bandwidths from 365 nm Hg line

### Optional Accessories:

- Peltier Sample Heater/Cooler - with Rapid Temperature Control
- 4 Position Turret
- Near IR Detection
- Cooled PMT Housing
- Solid Sample Holder
- Powder Sample Holder
- Liquid Nitrogen Dewar
- Coverslip Holder
- Stopped Flow Accessory
- Microcuvette
- Cooled PMT Housing
- Dual Emission (T-format)
- Fiber Optic Couplings
- Spectrofluorometry Upgrade
- Phosphorescence Upgrade
- Fluorescence Microscopy Upgrade
- Fluorescence Imaging Upgrade
- Glan Thompson or Sheet Polarizers
- Dual Pass Monochromators

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