

**Optic Head**

Depth of Resolution	2 mm at 3% peak signal
Sensitivity	0.1 ng/ml fluorescein (3X background fluctuations)
Reproducibility	5% with solutions < 5 ng/ml 3% with solutions > 5 ng/ml

**PC-Compatible Computer**

Monitor  
Printer

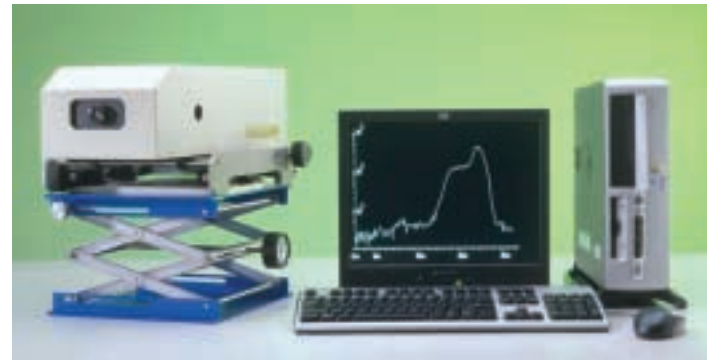
**Fluorotron Accessories:** The Fluorotron is supplied with a cuvette holder and two cuvettes which adapt to the optical head for measuring the concentration of fluorescein in blood plasma samples.

**Options:** Anterior Chamber Adapter magnifies the scan for detailed work in the anterior chamber and lens.  
Small Animal Adapter allows measurement of animals with small pupils like rats.

# Fluorotron™ Master Windows Software Edition

*Measurement and analysis efficiency from start to finish.*

- Automatic Scheduling Option
- “Smart Scanning”
- “Instant” Analysis
- Multiple Protocols

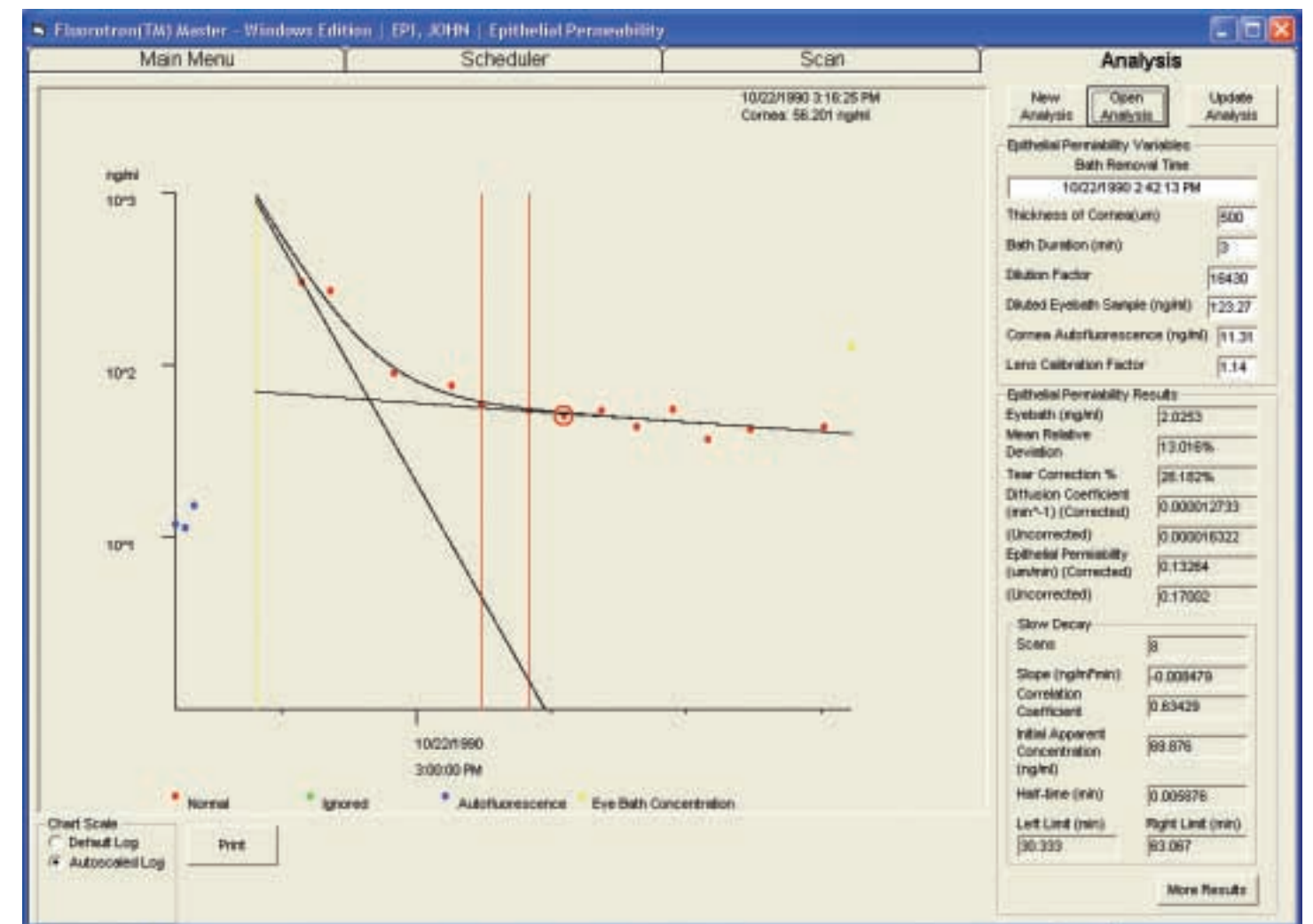


## OcuMetrics

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**OCULAR FLUOROPHOTOMETRY**

Ocular fluorophotometry is the established method for quantitating endogenous and exogenous fluorophores in the eye. By measuring the concentration profile of the tracer fluorescein within the ocular cavity, the dynamics of intraocular diffusion and elimination can be accurately monitored. The resulting determinations provide indications of the physiological and pathological state of the retinal vasculature, the pigmented epithelium, the choroid, and the ciliary processes. Elimination rates of tracer fluorescein are also used to calculate tear turnover, aqueous turnover, endothelial permeability and epithelial permeability. Lens and cornea autofluorescence are also studied as they correlate to ocular and systemic pathologies. Fluorophotometry is a successfully employed research tool in both laboratory and clinical settings.

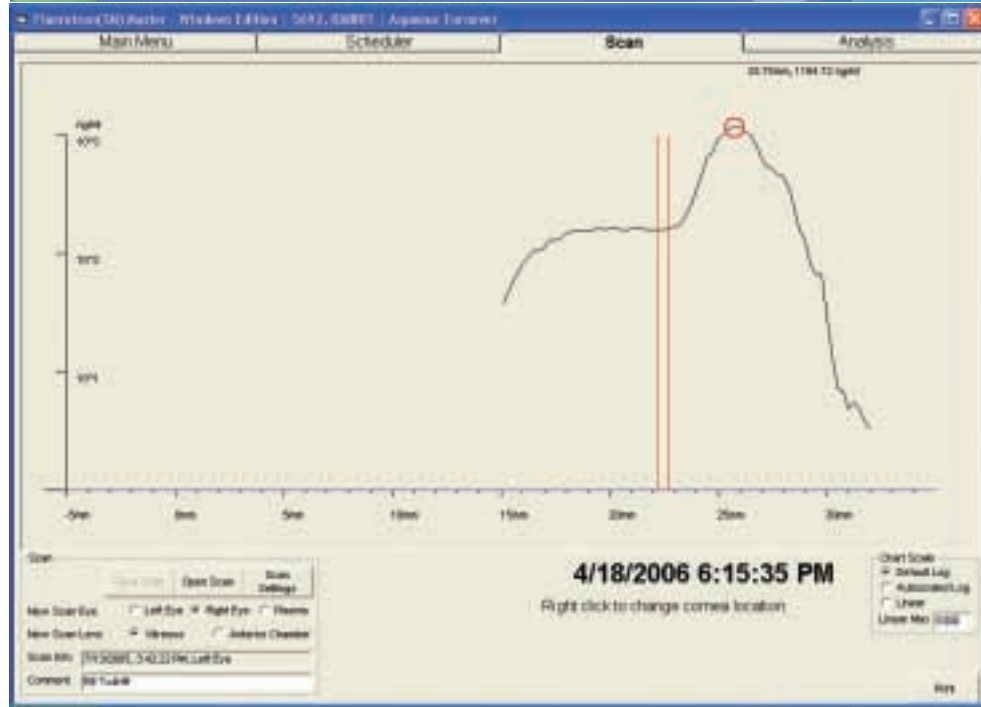
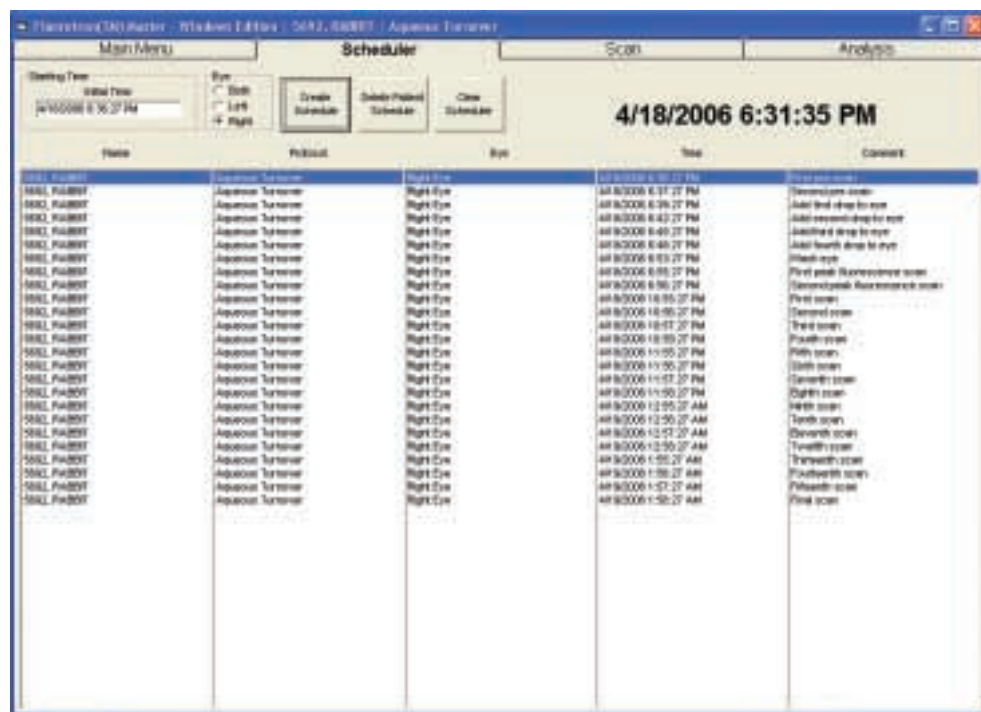
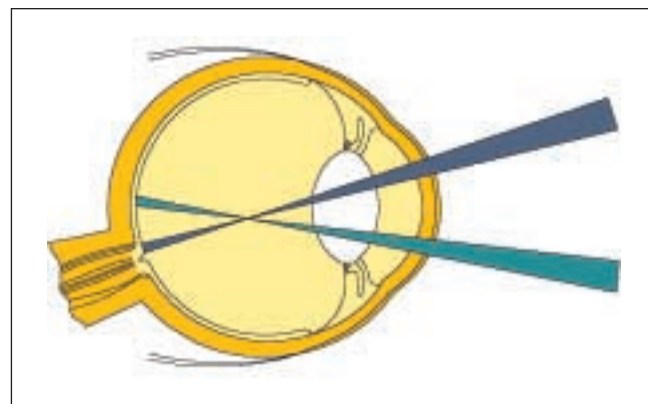
**THE FLUOROTRON MASTER AND FLUOROPHOTOMETRY**

The OcuMetrics Fluorotron Master Fluorophotometer is a computerized system for measuring fluorescein within the eye and for processing the data into an easily accessible format. The Fluorotron constructs a fluorescein concentration profile by sequentially focusing on spatially distinct sites along the optical axis (from retina to cornea) of the ocular cavity. The data are processed by computer and displayed graphically. A hard copy can be obtained of both the graphic and the numerical data. By using appropriate protocols, the posterior and anterior sources of leakage can be differentiated. This means that the blood-retinal and blood-aqueous barriers can be independently monitored. The superior optical system offered by the Fluorotron produces accurate, reproducible results, making it the instrument of choice among foremost researchers in fluorophotometry. Additional analysis protocols allow for the measurement of Tear Turnover, Epithelial Permeability, Endothelial Permeability, Lens Autofluorescence, Cornea Autofluorescence, and Aqueous Turnover.

**THE FLUOROTRON SYSTEM**

The Fluorotron system is made up of four major components: the electro-optic system (optic head), computer, display monitor, and printer. The optic head is a fluo-

rophotometer which delivers a specifically focused excitation beam of blue light into the ocular cavity and then receives the resulting fluorescent green light and directs it into a photodetector. By changing the focal plane every 0.25 mm, as many as 149 sequential readings are made along an axis from a



position posterior to the retina to a position anterior to the cornea. The operation of the optic head is controlled by the computer, prompting the operator through the entire procedure. The operator merely aligns the eye and initiates the scan. The scan is then automatically performed and displayed on the screen and printed in graphic and digital forms. Scan and patient data are stored on the computer hard drive. The computer is used to process the data by using the appropriate program.

**Versatile**—Designed for vitreous fluorophotometry, endothelial permeability, aqueous flow studies, and other anterior chamber studies.

**Convenient**—Provides computer storage of data and diffusion profiles for post-examination and future data processing and for comparing changes over time.

**Upgradeable**—Advances in fluorophotometry technology are readily incorporated into the system by changing computer software.

**Accurate**—Computer data processing corrects for *in vivo* artifacts.

**Simple**—All instrumentation operations are easily performed by a technician.

**Self-calibrating**—Automatic, internal calibration system.

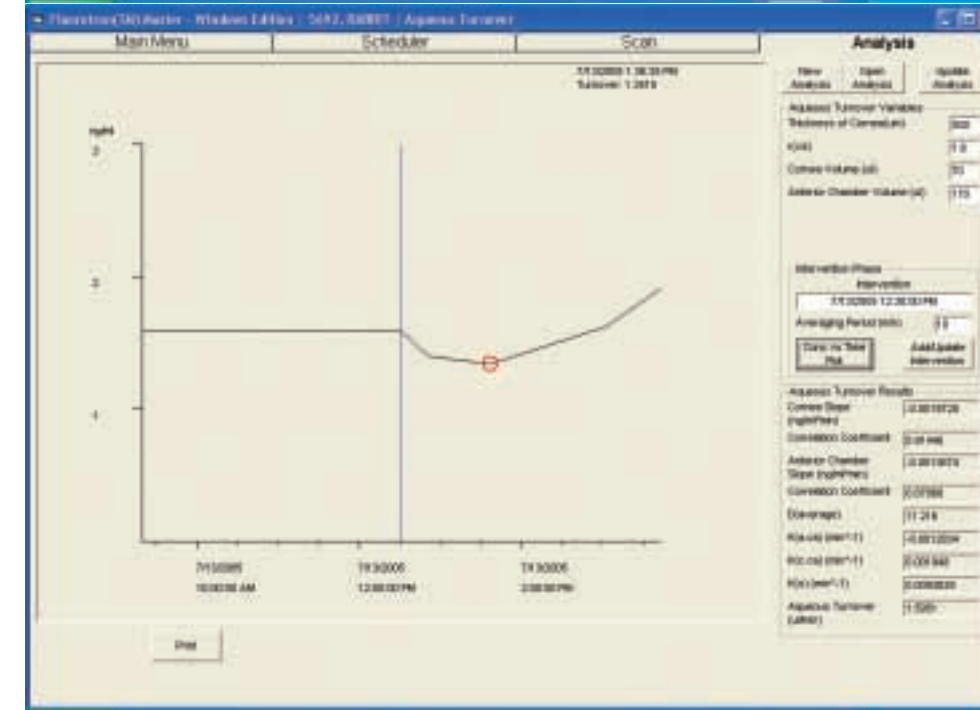
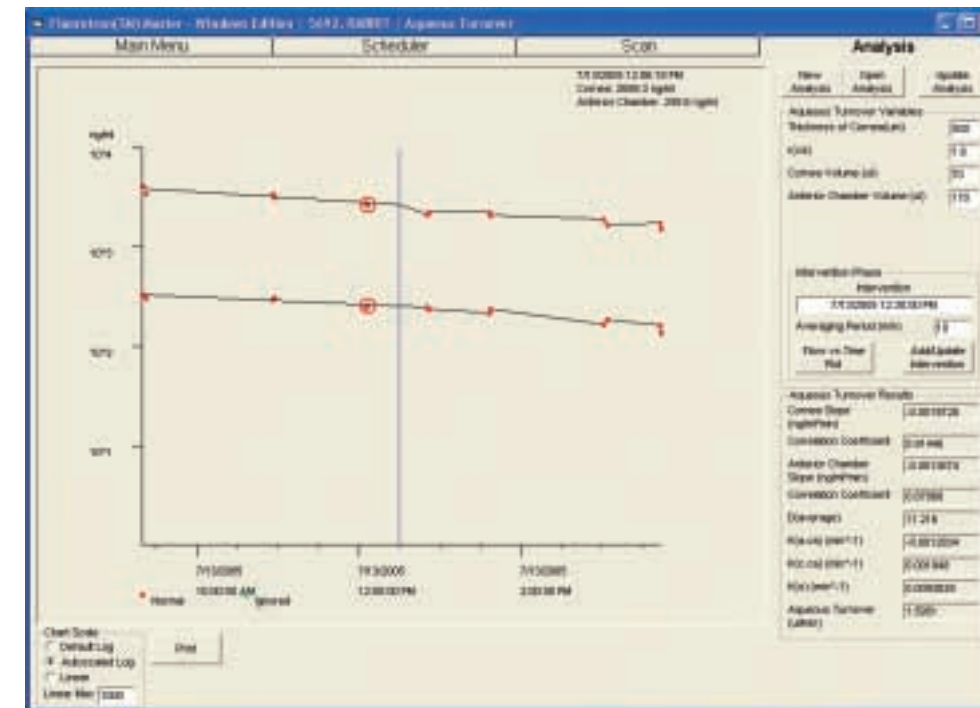
**SCHEDULER**

The Scheduler acts as an assistant to the operator. After a patient and protocol have been selected and a schedule has been created, the Scheduler keeps track of the time of day and will remind the operator to perform the next event when the time for that event arrives. This includes not only scans but also injections, blood sampling, and other protocol related events.

**“SMART SCAN”**

Many Fluorotron protocols do not need a full scan of the eye in order to calculate the correct results. These protocols use “Smart Scanning” to locate the area of interest and to measure only what is most relevant. This can speed up the time required for data acquisition considerably resulting in greater subject comfort and overall efficiency.

Enough context is measured around the area of interest so that the operator



can be assured that the proper features are measured and that the measurements are valid. About a dozen data points are measured for the Epithelial Permeability Protocol versus 149 for a full scan.

**“INSTANT” ANALYSIS**

Landmark recognition is built into the program, so the analysis process is automatic. If the operator decides to edit out a data point or to change an experimental parameter, they merely have to press the on-screen “Update Analysis” button,

and the results are recalculated and displayed in a fraction of a second.

**PROTOCOLS**

- Tear Turnover
- Epithelial Permeability
- Endothelial Permeability
- Lens Autofluorescence
- Cornea Autofluorescence
- Aqueous Turnover
- Blood Retinal Barrier Permeability
- Blood Aqueous Barrier Permeability