**20/20<sup>n</sup> Single Tube Luminometer**

**Instrument Specifications (2030-000)**

- **Detection Modes:** Luminescence, Fluorescence (optional)
- **Detector:** Photomultiplier tube (PMT)
- **Spectral Range:** 350 - 650 nm
- **Peak Wavelength:** 420 nm
- **Detection Limit:** 3 x 10<sup>-18</sup> moles ATP or 1 x 10<sup>-21</sup> moles Luciferase
- **Linear Dynamic Range:** 98 logs
- **Sample Format:** 1.5 ml microfuge tubes, 35 mm petri dishes, 12 mm x 50 mm test tubes (optional), minicell vials (optional, Fluorescence)
- **Sample Adapter:** Holds 1.5 ml microfuge tubes, optional 12 mm x 50 mm test tube holder available
- **User Interface:** Touch screen navigation and operation
- **Data Output:** Data displayed on screen or connect to PC (not included) via serial cable to download. Optional thermal printer available
- **External PC Requirements (optional):** Windows 98 or Windows XP
- **Computer Interface:** 100% ASCII format through a 9-pin RS-232 serial cable at 9600 baud rate
- **Power:** 12 V 0.84 A Max
- **Auto Shutoff:** Touch screen hibernates after 15 min of inactivity
- **Dimensions:** 12.92” D x 10.44” W x 8.42” H (32.82 cm D x 26.52 cm W x 21.39 cm H)
- **Weight:** 8.4 lbs (3.81 kg)
- **Operating Temperature:** 60 - 105 ºF (15 - 40 ºC)
- **Warranty:** One year

**Approvals:** CE

**Single Auto Injector System (Optional)**
- **Order Instrument P/N:** 2030-001
- **Number of Injectors:** One injector
- **Dispense Volume Range:** Selectable between 25 - 300 µl

**Dual Auto Injector System (Optional)**
- **Order Instrument P/N:** 2030-002
- **Number of Injectors:** Two injectors
- **Dispense Volume Range:** Selectable between 25 - 300 µl

**Fluorescence Modules Specifications (User Installable)**

- **Light Source:** Wavelength-matched LED
- **Detector:** PMT
- **Wavelength Selection:** Snap-in Fluorescence Modules

**UV Fluorescence Module (2030-040)**
- **Wavelengths:** Ex 365 nm, Em 440 - 470 nm
- **Detection Limit:** 10 ng/ml dsDNA using Hoechst Dye 33258

**Blue Fluorescence Module (2030-041)**
- **Wavelengths:** Ex 460 nm, Em 515 - 575 nm
- **Detection Limit:** 450 pg/ml dsDNA with PicoGreen®

**Linear Dynamic Range:** 5 logs, assay dependent

**Sample Adapter:** 100 - 200 µl minicell vial

**Read Out:** Direct concentration or raw fluorescence

**Calibration:** Single-point calibration

**Discrete Sample Average:** Sample readings averaged over 5 sec to improve accuracy

---

For research use only. Not for use in diagnostic procedures. 20/20<sup>n</sup> is a trademark of Turner BioSystems, Inc. All other trademarks are the sole property of their respective owners.
Overview

The 20/20® Luminometer is designed to provide ultra-high performance for bioluminescent and chemiluminescent assays. In addition to high performance, the 20/20® blends user-friendly operation and a small footprint with flexible purchasing options. The result of this design is an instrument with superior performance that is easy to use, affordable, and can be customized to your lab’s needs.

Superior Performance

The 20/20® Luminometer provides exceptional sensitivity for all luminescent assays. Proprietary circuitry and an advanced photon-counting photomultiplier tube (PMT) produce unmatched signal-to-noise ratios. The 20/20® has a detection limit of 1 x 10^-21 moles of luciferase, making it one of the most sensitive tube luminometers available.

With greater than 8 logs of linear dynamic range, the 20/20® Luminometer can measure both dim and bright samples without dilution. The extended dynamic range of the 20/20® spans the full range of virtually all chemiluminescent and bioluminescent assays, eliminating the need to dilute samples or manage detector-driven gain changes.

Ease of Use

The 20/20® is designed to be put into use straight from the box without the need to read a manual or obtain special training. To achieve this plug-and-play usability, the 20/20® combines a color touch screen with an intuitive user interface. The interface makes running samples and viewing data fast and simple while also maintaining the flexibility needed for advanced or custom protocols.

Versatility

The 20/20® is a versatile addition to any lab. The optional single or dual auto-injectors allow measurement of either flash or glow-type luminescence, while the flexible sample compartment accommodates 1.5 ml microtube tubes, 35 mm petri dishes, and an optional 12 mm x 50 mm test tube adapter. In addition, the bottom reading design allows for very low sample volume measurements. For added functionality, two fluorescent modules are available, expanding the 20/20® functionality to common fluorescence applications.

Flexible Sample Compartment

The 20/20® accommodates 1.5 ml microtube tubes, 35 mm petri dishes, and 12 mm x 50 mm test tubes (with optional adapter). It is also possible to measure the light output from both liquid and solid samples.

Detection Modes

- **Fluorescence (optional)**
- **Luminescence**

Applications

- **Fluorescence Applications**
  - DNA/RNA Quantitation
  - Protein Quantitation
  - Gene Expression
- **Luminescence Applications**
  - Dual Reporter Assays
  - Cell Viability/ATP Assays
  - Kinetics Assays
  - Interleukin Cytokine Assays
  - Immunoassays

Data Handling

The 20/20® stores up to 18 protocols and displays data from the last 20 measurements on the LCD screen. Spreadsheet Interface Software or an optional thermal printer are also available for easy data exporting.

Optional Fluorescence Modules

The Fluorescence Modules provide sensitive fluorescence measurements of DNA, RNA, or protein quantitation dyes.

<table>
<thead>
<tr>
<th>Fluorescence Modules</th>
<th>Typical Fluorophores</th>
</tr>
</thead>
<tbody>
<tr>
<td>UV (Ex 365 nm, Em 440 - 470 nm)</td>
<td>Hoechst dye, 4-methylumbelliferone (4-MU)</td>
</tr>
<tr>
<td>Blue (Ex 460 nm, Em 515 - 575 nm)</td>
<td>EGFP, rAcGFP, PicoGreen® Fluorescein, QuantiFluor® Protein</td>
</tr>
</tbody>
</table>

Luminescence Light Standard

The 20/20® Luminometer Light Standard provides an external reference to verify the performance of the 20/20® Luminometer. Some labs require this additional verification procedure. Reading the light standard before taking measurements is a quick and easy way to ensure quality control over reproducibility, sensitivity, and linearity of the luminometer.

Touch Screen

The touch screen allows simple navigation between screens for setting parameters, storing protocols, and starting runs.