

20/20ⁿ 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: 3×10^{-18} moles ATP or 1×10^{-21} moles Luciferase
Linear Dynamic Range: >8 logs
Read Type: Glow, Flash, Kinetic, Repeat
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 °F (15 - 40 °C)
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 μ l

Dual Auto Injector System (Optional) Order Instrument P/N: 2030-002

Number of Injectors: Two injectors
Dispense Volume Range: Selectable between 25 - 300 μ l

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 μ l 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 the most up-to-date specifications, visit www.turnerbiosystems.com

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20/20ⁿ

Single Tube Luminometer

Overview

The 20/20ⁿ Luminometer is designed to provide ultra-high performance for bioluminescent and chemiluminescent assays. In addition to high performance, the 20/20ⁿ 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 20/20ⁿ 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 20/20ⁿ has a detection limit of 1×10^{-21} moles of luciferase, making it one of the most sensitive tube luminometers available.

With greater than 8 logs of linear dynamic range, the 20/20ⁿ Luminometer can measure both dim and bright samples without dilution. The extended dynamic range of the 20/20ⁿ 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 20/20ⁿ 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 20/20ⁿ 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 20/20ⁿ 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 microfuge 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 20/20ⁿ functionality to common fluorescence applications.

Fluorescence Detection

Optional Fluorescence Modules add functionality to the 20/20ⁿ. The modules are designed to measure the most common fluorescence applications using excitation wavelengths in the near UV or Blue light range. The Fluorescence Modules provide sensitive fluorescence measurements of DNA, RNA, or protein quantitation dyes.



Fluorescence Modules	Typical Fluorophores
UV (Ex 365 nm, Em 440 - 470 nm)	Hoechst dye, 4-methyl-umbelliferone (4-MU)
Blue (Ex 460 nm, Em 515 - 575 nm)	EGFP, rAcGFP, PicoGreen®, RiboGreen®, Fluorescein, Quant-iT™ Protein

Luminescence Light Standard

The 20/20ⁿ Luminometer Light Standard provides an external control to verify the performance of the 20/20ⁿ 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.



Flexible Sample Compartment

The 20/20ⁿ accommodates 1.5 ml microfuge 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.



Lid Start

Adjust settings to start measurement immediately after the lid is closed.

Single or Dual Auto Injectors (Optional)

Injectors dispense fluids from 25 - 300 μ l and enable detection of flash-based luminescence or two-reporter assays. Completely visible plumbing allows inspection of tubing and tips during flushing and priming.

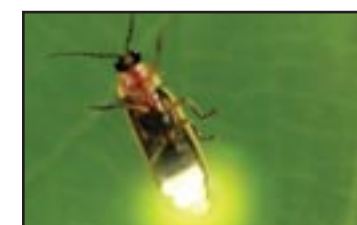
Touch Screen

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



Detection Modes

Luminescence



Fluorescence (optional)



Luminescence Applications

- Dual Reporter Assays
- Cell Viability/ATP Assays
- Kinetics Assays
- Intercellular Ca²⁺ Assays
- Immunoassays

Fluorescence Applications

- DNA/RNA Quantitation
- Protein Quantitation
- Gene Expression

Data Handling

The 20/20ⁿ 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.

