

TLC-Scan

GMP compliant radio-TLC scanner

TLC-Scan is a GMP compliant and versatile, cost-efficient radio-TLC scanner for the reliable detection of radioisotope



Technology

TLC-Scan is a versatile TLC scanner for the reliable detection of radioisotopes on narrow strips and plates. The system is ideal for routine quality control of ^{68}Ga , ^{18}F (including FDG), $^{99\text{m}}\text{Tc}$ and ^{123}I radiopharmaceuticals and others. TLC Scan has two independent channels, one for TLC, one for HPLC application, which can be connected to all available detectors each.

The TLC strip loaded with the sample is placed on a stage which is moved under the fixed radiodetector to record the chromatogram.

The second channel can be used for radiodetection in combination with all common HPLC systems. Depending on the nuclide the optimal detector can be selected from a broad selection of interchangeable scintillator / photomultiplier detectors for measurements of most isotopes including ^{68}Ga , ^{18}F , ^{125}I , ^{131}I , $^{99\text{m}}\text{Tc}$, ^{90}Y , ^{177}Lu , ^{64}Cu and ^{111}In .

Several scan speeds allow detectors to measure a wide range of activities from 10 nCi to 100 μCi (370 Bq - 3.7 MBq) depending on the detector choice. Analog and digital signals are provided for interfacing TLC-Scan with existing chromatography data systems. The included RaPET Chromatography Software can be used for data acquisition and report generation.

Applications

- Routine quality control of radiopharmaceuticals containing ^{68}Ga , ^{177}Lu , ^{90}Y , ^{18}F , $^{99\text{m}}\text{Tc}$, ^{123}I and other
- TLC of radiopharmaceuticals labeled with gamma, high energy beta and positron emitters for R&D
- In-process TLC analysis of reaction mixtures

RaPET Chromatography Software

RaPET Chromatography Software is a comprehensive chromatography data collection and analysis package. This evaluation software is very reliable and

easy-to-use. It consists of a GMP database ensuring GMP compliant documentation and also adhering to 21 CFR part 11.

Features and Benefits

- Easy-to-use system with maximum flexibility and automatic positioning system
- Control via PC or Bluetooth using Android-based devices
- Compatible with existing chromatography systems utilizing analog output of the TLC-Scan
- Wide range of detectors available for various applications
- Capable of operating two detectors simultaneously for different applications or in coincidence mode (radio-HPLC mode)
- Variable scan speeds
- Easy system set-up and maintenance
- All parameters, such as threshold (for background, energy window, lower and upper discrimination), high voltage, integration time and plate length are accessible and modifiable

Optional: TLC-Scan including Multi Channel Analyzer

As an additional feature Eckert & Ziegler offers the TLC-Scan equipped with a Multi Channel Analyzer (MCA) and the appropriate NaI detector in spectroscopy quality to cover a range of 30 - 1500 keV. The detector is installed inside the device with an extra lead shielding.

Inputs

Up to two PMT-based radiodetectors or up to two diode radiodetectors and two analog channels

Outputs

Up to two analog rate signals (ranges of 10 mV, 100 mV, 1 V, 5 V) with 12-bit resolution, up to two TTL pulse outputs

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Detectors

The TLC-Scan uses specially configured photomultiplier based detectors to detect gamma, high energy positron or beta emitters at both high and low levels of activity. Background interference is reduced with fully variable energy window settings. The following radio-TLC detectors are available:

| Type | |
|---------|---|
| FC-3100 | Nal/PMT based detector is a low energy gamma (10 – 60 keV) detector used primarily for ^{125}I . |
| FC-3200 | Nal/PMT based detector is a high energy gamma (60 - 1500 keV) detector used in most nuclear medicine applications. |
| FC-3600 | Plastic Scintillator/PMT based detector is ideal for the detection of high energy beta and positron emitters such as ^{32}P , ^{90}Y , ^{18}F , ^{11}C , ^{13}N . (> 30 keV) |

Technical Specifications

Dimension: 356 x 197 x 445 mm (W x D x H)

Weight: 11.9 kg / 19.0 kg (with MCA)

Upgrade your TLC-Scan to a radio-HPLC detection system

The TLC scan can be operated as TLC scanner and radio-HPLC detector simultaneously. Any combination of diode and PMT detectors and any HPLC System can be connected to the TLC-Scan for radio-HPLC. By this you can easily upgrade your TLC-Scan to a complete TLC and HPLC solution.

Check our HPLC-Scan fact sheet to learn more about the available radio-HPLC detectors, detector holders and flow cells.

Figure shows an example of a complete TLC and HPLC solution:

