

# RITA STAR

## $\beta$ RADIOACTIVITY DETECTOR FOR THIN-LAYER-CHROMATOGRAPHY

ULTRA SENSITIVE TLC ANALYZER FOR NUCLIDES  
SUCH AS  $^3\text{H}$ ,  $^{14}\text{C}$ ,  $^{32}\text{P}$ ,  $^{90}\text{Y}$  ...

- VERY HIGH SENSITIVITY
- MANUAL OR AUTOMATIC OPERATION
- 200 X 200 WITH UP TO 80 TRACES SELECTABLE
- LIVE DISPLAY OF MEASUREMENTS



The RITA Star radioactivity thin-layer-chromatography detector is using a linear analyzer detector, which is sensitive over the entire chromatogram trace from the start to the front. The entrance window can be open, for  $^3\text{H}$ -applications, or closed for any  $\beta^-$  or  $\beta^+$  radiation emitting nuclides. Many  $\gamma$ -radiation emitting nuclides are emitting  $\beta$ -radiation as well. The pure  $\gamma$ -emitting nuclides can also be detected because they produce Compton electrons.

RITA Star has two simultaneous sensing electrodes: the delay line determines the location of the counted event; the pulse height of the counting wire is used for the electronic collimation. Thus high energy  $\beta$  radiation can be detected with high resolution using a narrow collimator window. The device can measure automatically many single traces one after the other. The detector is elevated after the end of the measurements and moved automatically to the next trace position. Multi traces can be displayed in 3-dimensional presentation or a 2-dimensional distribution over the entire 200x200mm TLC plate can be calculated and presented. The counting gas consumption is very low. A metal / glass cover closes the RITA Star completely and protects the environment as well as the device itself from electronic frequency emissions.

Additional features are:

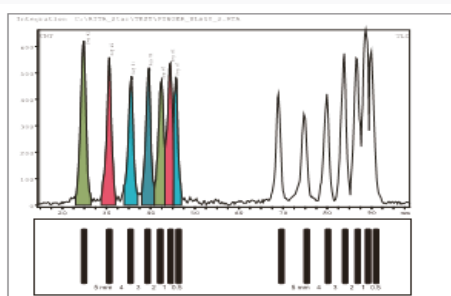
- Open or closed window detection (antistatic protection grid for open window operation)
- 80 traces selectable automatically
- Live display of measurement
- Peak integration, background subtraction
- Limit of detection calculation

#### Technical Specifications

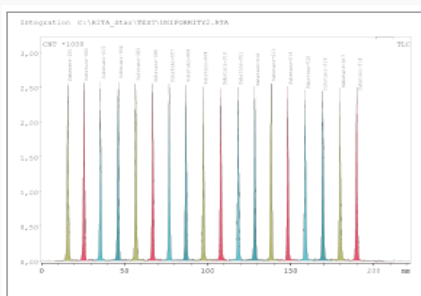
Detector	gas flow proportional counter
Counting gas	P10 (90% Argon, 10% methane), gas consumption 0,1-1 l/min
Detection area	L200xW20mm
Detection window	open for $^3\text{H}$ counting, closed for $^{14}\text{C}$ , $^{32}\text{P}$ , $^{90}\text{Y}$ etc.
Diaphragm	3-20 mm wide, magnetic attach
Resolution	$^3\text{H} < 1 \text{ mm}$ , $^{14}\text{C} < 2 \text{ mm}$ , $^{32}\text{P} < 3 \text{ mm}$
Sensitivity	100 dpm in 10 min
Background	80 dpm / 200 mm
Energy discrimination	electronic collimator
Traces	1 - 80
Display	live, single chromatogram
Evaluation	manual or automatic, peak integration, background subtraction, limit of detection
Power supply	110 - 230 V, 20 VA
Operating conditions	10 - 40 °C, max. 70% r.H.

#### Physical specifications

Dimensions	W700 x H320 x D560mm (W27,55" x H12,59" x D22,04")
Weight	max. 45 kg (99,20 lbs)



Resolution test



uniformity test



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Production: