Tri-Carb 4810 TR liquid scintillation counter

Description

The Tri-Carb® 4810 TR liquid scintillation counter is ready to go for basic research and CPM/Direct DPM applications.

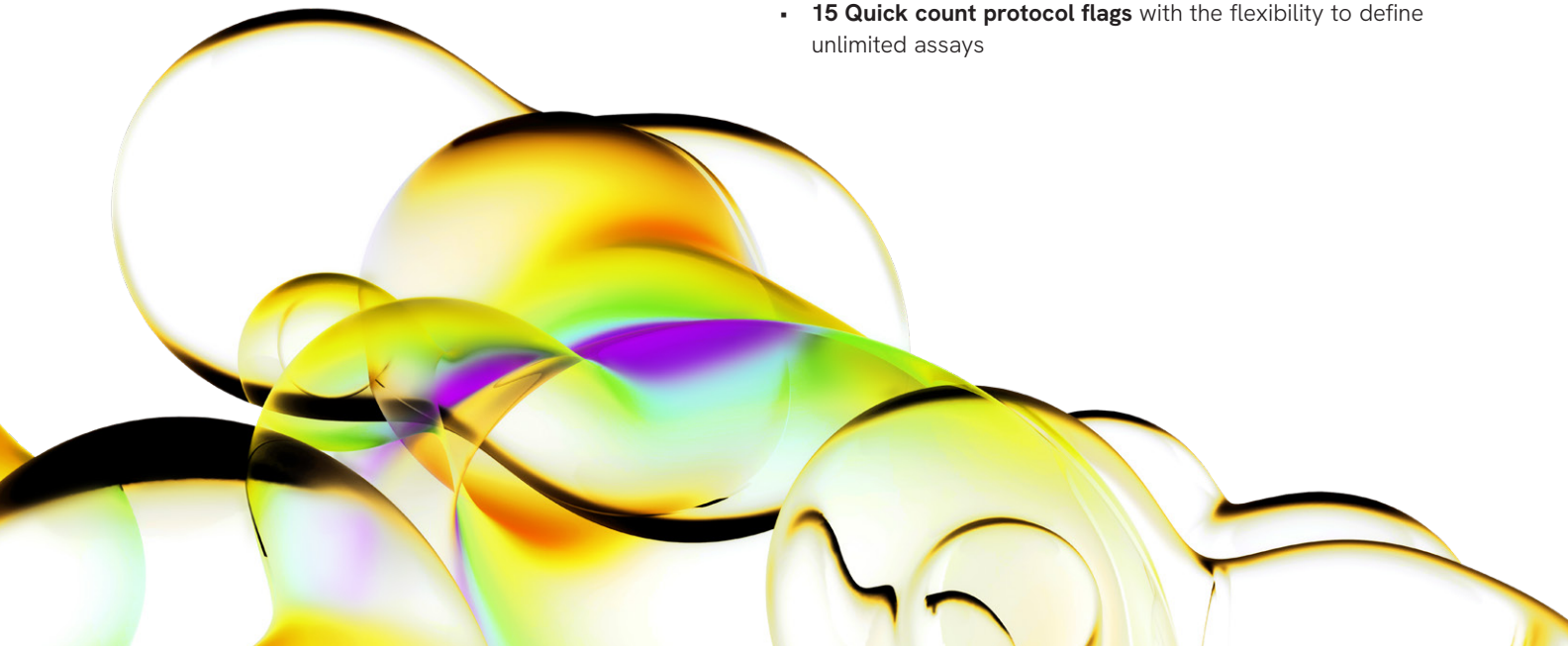
Exclusive standard features

- **TR-LSC (Time-resolved liquid scintillation counting)** for high sensitivity, low background liquid scintillation counting
- **QuantaSmart™ software** a robust multitasking, easy networking environment with unlimited assays in a secure multiuser environment
- **SpectraWorks 2** spectral analysis package that determines optimal counting regions, and calculates figure of merit automatically
- **Auxiliary Spectrum memory** stores rejected events for future analysis
- **Bi-directional sample conveyer** with a capacity of up to 408 (20 mL vials) or 720 (4 or 7 mL vials)
- **Operational-status LED indicator** for clear assay status updates at a glance

Additional standard features

- **Direct DPM** determines single-label DPM in any cocktail without the use of quench standards
- **Luminescence detection reporting** percent luminescence is flagged on printout to alert user of possible sample problems
- **15 Quick count protocol flags** with the flexibility to define unlimited assays

Tri-Carb 4810TR



- **Fold-away ergonomic arm** adaptable to enter data either sitting or standing
- **Built in computer** with Windows 10 Operating system
- **Date and time clock** provides real time display and time-stamped printouts; battery supported
- **Anti-jam recovery** protects samples, vials and the counting system from damage if obstructions occur
- **Automatic power-fail recovery** restarts counting when power is restored and the instrument has reinitialized itself
- **Positive sample identification** provides protocol number, cassette number, sample number, user-selectable printout and data file storage for the counting time and date on each sample
- **Multi-parameter linear multichannel analyzer (MCA)** offers an extended dynamic quench range and provides multi-parameter spectrum analysis to correct for luminescence, color quenching and background radiation
- **133Ba Low energy external standard source and tSIE** (transformed Spectral Index of External standard) eliminates the need for repeat counting of the external standard and negates the effect of isotope on quench monitoring accuracy and precision
- **AEC (Automatic efficiency control)** corrects for differential quenching effects in multi-label samples. The low energy spectrum of the external standard ensures accurate tracking of ^{3}H, ^{14}C and other low energy sample spectra over a very wide quench range
- **Precount delay** permits dark adaptation of samples before counting
- **Coincidence resolving time** enables optimized counting for a variety of liquid, solid, or bead based scintillators
- **Spectral unfolding** separates and displays the individual radionuclide spectra of dual label samples in color analysis of sample spectrum (requires color-corrected dual label DPM option)
- **3D (Three-dimensional) spectral mapping** displays in color the quench standard spectra together with the spectrum of the unknown for single label DPM counting (requires color-corrected dual label DPM option)
- **SpectraBase counting and data management system** provides counting and storing of complete spectra
- **Decay computations** automatically calculates decay corrected DPM values for commonly used radionuclides
- **Group PrioStat™ interrupt mode** prioritizes counting status and automatically restores the interrupted protocol
- **Background subtraction** calculated by sample, entered value or stored IPA background spectrum
- **SIS (Spectral index of sample)** determines counting efficiency by analysis of sample spectrum
- **Programmable single photon counting** enables luminescence assay counting with optimized signal-to-background ratios to overcome problems associated with excessive luminescence
- **Preset time and preset error coincidence termination** optimizes counting accuracy in three counting regions
- **Automatic spectrum plot** allows spectral documentation per sample
- **Sample screening** screens numeric fields on several criteria including background levels, a hard number or within a range of activities or values
- **Printed header** contains instrument serial number, user ID, and drive and path of all electronic stored data for GLP compliance
- **Password protection** prevents unwanted changes to saved assays
- **Half-life** Correction adjusts for decay to any date and time
- **Unit conversion** activity can be reported in becquerels, microcuries, or picocuries
- **Auto QA (Automatic quality assurance)** automatically prints reports for backgrounds, efficiencies, E^2/B, and Chi- square values, results can be transmitted via RS-232 for archiving.
- **Percent of standard** calculations compared to single, dual or triple label samples
- **Automatic processing** provides automatic, protocol specific data processing from count data to final results requiring no exporting of data to off board storage devices or computers
- **Independent output formatting,** provides flexibility in customizable data reporting for each protocol. Electronic data can be saved to disk in ASCII, RTF, or Microsoft® Excel® compatible format
- **Computer-aided diagnostics** to verify all system functions
- **Sample worklist** enables entry, editing and review of work lists for each assay

Option package

- **Basic plus package** includes Replay to reanalyze sample counts without recounting samples and Varisette sample cassettes for intermixing vial sizes without special adapters
- **S/D labeled DPM package** includes Varisette sample cassettes, *Single/Dual* labeled color-corrected DPM to determine absolute activity levels, and Luminescence Correction to improve data accuracy and obtain quicker results

Other options

- **Small Vial** Caps, vials, cocktail, and trays to accommodate 4-7 mL vial usage
- **Large Vial** Caps, vials, cocktail, and trays to accommodate 20 mL vial usage
- **Printer** ink jet or laser jet
- **Instrument utility cart** functionally designed general purpose laboratory cart that supports any Revvity bench top system

Physical data

Dimensions	Height: 18.5 (47 cm) Width: 40.5 (103 cm) Depth: 32 in (81 cm)
Weight	477 lb (217 kg) Shipping Weight approximately 700 lbs (318 kg)
Electrical requirements	100-240Vac 50/60 HZ 3- prong grounded plug
Power consumption	<200VA
Environmental	Operating ambient temperature 15 to 32 °C (59-90 °F) Operating relative humidity 30% to 85%

Factory performance minimum

Energy range	0-2,000 Kev	
Efficiency normal count mode (Minimum acceptable)	^{3}H	0 - 18.6 keV 63%
	^{14}C	0 - 156 keV 95%
Observed background, Normal count mode (Average)	^{3}H	0 - 18.6 keV 17 CPM
	^{14}C	0 - 156 keV 26 CPM
Figure of Merit (E^2/B), Normal Count Mode	^{3}H	1 - 18.6 keV 180
	^{14}C	4 - 156 keV 360

Note: The efficiencies, backgrounds, and E^2/B values for the normal count mode were determined using Revvity sealed large vial glass standards set P.N. 6008500 verified with NIST standard activity.

Safety, Radiated emissions and immunity: The Tri-Carb 4810TR has been tested and approved for safety, radiated emissions and immunity according to the standards of UL, IEC61010 and CE.

In the U.S.A. the UL approval satisfies the requirements of 29CFR 1910.399.

Revvity, Inc.
940 Winter Street
Waltham, MA 02451 USA

(800) 762-4000
www.revvity.com