Combi*Flash*® Torrent
Large Scale Flash Purification

COMBI*Flash* TORRENT ®

Versatile Large-Scale Flash Purification

Combi*Flash* Torrent® systems from Teledyne ISCO provides the ease of use and high reliability of our Combi*Flash* and Redi*Sep*® product lines in a large, development-scale platform. Packed with time-saving features and controlled by our innovative PeakTrak® software, the Combi*Flash* Torrent accommodates a broad range of injection, detection, and collection requirements. The CombiFlash Torrent can perform either normal phase or reverse phase purifications.

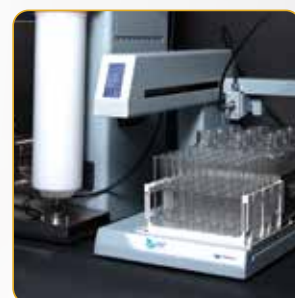| Run up to	Load up to
1 L/min	**300 grams**
BINARY GRADIENT SYSTEM	IN A SINGLE PURIFICATION RUN

Safety
Patented active solvent sensing technology monitors solvent supply and waste levels for true walk-away automation. Pressure and vapor sensors ensure safe operation by stopping the purification when pressure increases or a leak is detected. Fully grounded tubing allows safe operation at high flow rates. Optional air purging of the column after use simplifies disposal.

Versatility
Tailor a system to meet your needs with a variety of sample introduction and fraction handling configurations.

Highly Programmable and Easy to Use
Teledyne ISCO's powerful yet intuitive PeakTrak software—the industry standard in flash chromatography—lets you quickly access and edit every method parameter from one screen.

Fraction collection options
Daisy-chain up to four Foxy® R2 fraction collectors for hundreds of fractions. Choose from a variety of collection containers.

Pair with ReaXus® or PeriXus® pump for liquid sample loading
Pump large volumes of liquid sample using external PeriXus or ReaXus pumps from containers or an open-top cartridge.

Normal phase and reverse phase purifications
Flexible for a wide variety of normal phase and reverse phase purifications, including natural products, peptides and oligonucleotides.

Fractionation valve for targeted collection
Use PeakTrak software to control optional six-port fractionation valve to collect peaks based on detection or within time windows.

Solvent selection valve module
- Allows use of alternate B solvent with changeover programmed into the method or selected during the run.
- Purify with one solvent followed by column wash with an alternate solvent.
- Dedicated port to automatically load samples. PeakTrak can automatically run sequential injections of the same sample without user input.

Peak cutting options
Trigger peak collection via slope, threshold, or time windows. Detect at one, two, or all wavelengths using the internal UV or UV-vis PDA detector. Alternatively add an ELSD or other external detector.

Sample load cartridge
Load low-solubility samples with confidence. Use as a guard column to protect reusable columns.

Error-free RFID detection
Combi*Flash* Torrent recognizes Redi*Sep* columns and automatically selects an optimized purification method. Foxy R2 RFID sensors allow for mixed racks and unlimited fractions with intelligent rack management.

Patented active level sensing
Active level sensing ensures adequate solvent for purifications and prevents waste overflows.

Evaporative Light Scattering Detector (ELSD)
ELSD has self-contained flow splitter pump for minimal sample loss.

Automated six-port injection valve
Enables true walk-away automation of column equilibration, sample loading, purification, column and cartridge air purge, and post-run valve cleaning.

Torrent Specifications

Sample size:	0.5 to 300 grams
RediSep Rf column sizes:	80 grams to 8.6 kilograms
Flow rate:	50 – 1000 mL/min
Maximum pressure:	100 psi (6.89 bar)
Detection:	200 – 400 nm (200 – 800 nm optional) with single, dual, or All-wavelength collection. Accepts external detector input.
Gradient:	Binary, high pressure solvent mixing with linear, step, or isocratic capability. Two solvent inlets.
Gradient accuracy:	<2% full scale from 0.2 to 1.0 liter/min.
Sample injection:	Automated injection with options of solid load cartridges, liquid load, or direct injection.
Controller:	10.4 in (26.7 cm) touchscreen
Software:	On-screen method development and control with PeakTrak software.
Fraction collection:	Up to four fraction collectors, fractionation valve, or manual collection.
Solvent management:	Patented, active level sensing for inlet and waste containers.
Module dimensions:	(W x D x H) 18.5 x 17.9 x 28.1 in (47 x 43.5 x 71.4 cm)
Module weight:	65 lbs (29.5 kg)
Operating voltage:	100 VAC 50 Hz, 117 VAC 60 Hz, 234 VAC 50 Hz
Safety and sample security:	• Static-dissipative tubing throughout • Vapor sensor for internal leak detection • Overpressure sensor • Active solvent and waste level sensing • Audible alarm when user intervention is required
Certification:	CE

RediSep® and RediSep Gold®

Enjoy easy, error-free setups for large purifications with the CombiFlash Torrent. Load methods from RFID technology on Teledyne ISCO's RediSep columns for faster setups and fewer errors.

High performance RediSep Gold columns utilize small, spherical media to provide improved resolution, faster flow rates, and shorter run times, without excessive back pressure. Columns are available in silica, alumina, and functionalized materials such as C18, C18Aq, C8, and amine, and in sizes up to 3 kilograms, with easy-to-use tapered fittings. Reusable columns up to 8.6 kg are also available in any RediSep Gold media for large-scale process purifications.

Selection Information

CombiFlash Torrent® Modules
Fully integrated CombiFlash Torrent modules include fitting adapters for all compatible column and cartridge sizes, and prime tube assembly. Includes two 275 cm (9 ft) braided stainless steel inlet lines and one waste line.

CombiFlash Torrent Module with UV detection, 200 – 400 nm 68-5240-003

CombiFlash Torrent Module with UV-vis detection, 200 – 800 nm 68-5240-004

Sample Injection Options
CombiFlash Torrent Solvent Select Valve 60-5247-026

PeriXus Peristaltic Pump for sample loading onto Torrent. 68-1240-962

PeriXus, Norprene pump tubing Size 16, 50 ft. 02-9071-408

Adjustable Solid Load Cartridge Caps (SLCC)
  25 gram SLCC. 60-5237-048
  65 gram SLCC. 60-5237-044
  260 gram SLCC 60-5247-008
  750 gram SLCC 60-5247-009

Automated Fraction Collection Options
CombiFlash Torrent fractionation valve 60-5247-006

High Flow Foxy R2 fraction collector 68-2130-007

Racks for High Flow Foxy R2 Fraction Collector
Foxy R2 accommodates two racks; mix and match from any below:
  Rack for 16 mm diameter tubes (100) 60-2137-151
  Rack for 18 mm diameter tubes (72). 60-2137-152
  Rack for 25 mm diameter tubes (36). 60-2137-153
  Set of two racks for (18) 480 mL glass bottles.
  Each rack holds 9 bottles. 60-5247-004

  Collection bottles, 480 mL glass, case of 40 60-2137-062

  Preparative rack with 26 ETFE (or ECTFE) funnels
  and 50 feet of $3/8$-inch vinyl FEP-lined tubing 60-2137-162

Detector Option
Model 340CF Evaporative Light Scattering Detector (ELSD) available for preparative chromatography systems with flow rates of 5 mL/min or greater. The Model 340CF features a self-contained flow splitter pump for minimal sample loss. Includes connections for 1/8 inch OD tubing. External nitrogen supply is required 68-5237-062