

REVELERIS[®] X2

FLASH Chromatography System

The Next Generation in Innovation

Confidence

Flexibility



Simplicity

- Flash System
- Flash Cartridges
- Service and Support

GRACE

Materials Technologies

Discovery Sciences

Changing the Game

Grace revolutionized flash chromatography in 2009 with the introduction of the Reveleris® flash chromatography system, the first system with integrated ELSD detection. This allowed synthetic chemists to see everything in their sample, helped improve productivity and increased the purity of their target molecules. The impact on the flash marketplace has been profound. The Reveleris® flash chromatography system received several major industry accolades including an R&D 100 award and an IBO Industrial Design award. In 2012, we were granted four U.S. Patents for the innovative technology in the Reveleris® flash systems, further confirming our technological leadership in the field of flash chromatography. We have applied our expertise and innovative patented and patent pending technologies to develop the **NEW** next generation Reveleris® X2 Flash Chromatography System.



A Complete Solution for Flash Chromatography

Flash System

- Collect synchronized fractions from up to four integrated UV and ELSD detector signals
- Selectable sensitivity isolates more compounds from complex mixtures from low mg to kg levels
- Purify products faster with simple setup and operation

Unique and powerful RevealIX™ detection technology lets you see components that up until now may have been invisible, helping to result in maximum purity and recovery in minimum time.

Flash Cartridges

- Increased loading capacity
- Durable 200psi* design
- Superior resolution with ultra-pure 40µm silica
- Available in silica and multiple bonded phases

Reveleris® flash cartridges are the only cartridge designed by a silica expert for ideal chromatographic results. For maximum performance, use Reveleris® flash cartridges with the Reveleris® X2 flash system.



On-site Service and Support

- Preventative maintenance program
- On-site personalized service
- Service contract options
- Global infrastructure, local expertise

Our global team of knowledgeable and experienced technical support specialists deliver best-in-class customer care. In order to help ensure the on-going performance of your instrument and to maximize the value of your investment, Grace provides a comprehensive range of maintenance and repair options, including service plans.



Reveleris® Flash Cartridges

Get the most out of your flash purifications by choosing Grace® Reveleris® Flash cartridges, the only flash cartridges designed by a silica expert for optimal chromatographic performance.

- Auto-recognition on the Reveleris® X2 flash system
- Silica optimized for flash applications
- High capacity cartridges improve results and reduce costs

The silica packed in Reveleris® flash cartridges is specifically designed to increase cartridge efficiency and therefore resolution of closely eluting compounds, in some cases greater than two times better resolving power over typical packings. Greater efficiency enables more peaks to be baseline resolved and results in increased sample purity as well as decreased fraction volumes. Additionally, by increasing sample loads on a given cartridge size with elevated pressure capability, sample throughputs and yields increase and overall purification costs are lowered.

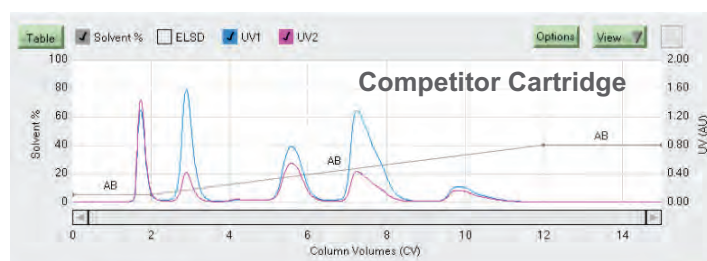
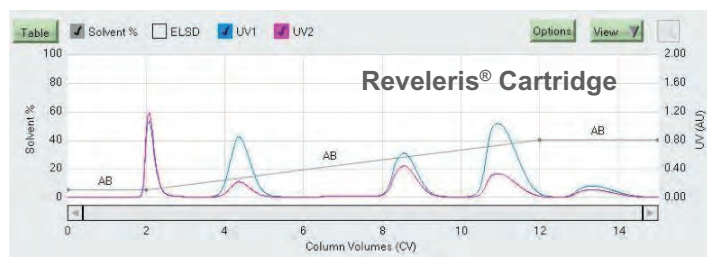


For maximum performance use Reveleris® flash cartridges with the Reveleris® X2 flash system.

Better Performance with Reveleris® Flash Cartridges

While silica is the most popular choice for flash applications, other chemistries bring unique separation capabilities that can help resolve complex samples.

Reveleris® cartridges resolve five components in an aniline text mixture better than a competitor's premium cartridge.



The Reveleris® cartridge's silica selectivity and optimized packing techniques result in higher purity fractions and higher loading capacity, reducing the overall cost per sample.

| Chemistry | Ideal For |
|----------------------|--|
| Silica | Conventional applications, polar compounds |
| Reversed-Phase (C18) | Non-polar compounds |
| Amino | Better peak shapes with polar and basic compounds; ideal for carbohydrates |
| Diol | Alternate selectivity for a variety of polarity types; ideal for lipids |

Reveleris® Silica Cartridges (up to 200psig*)

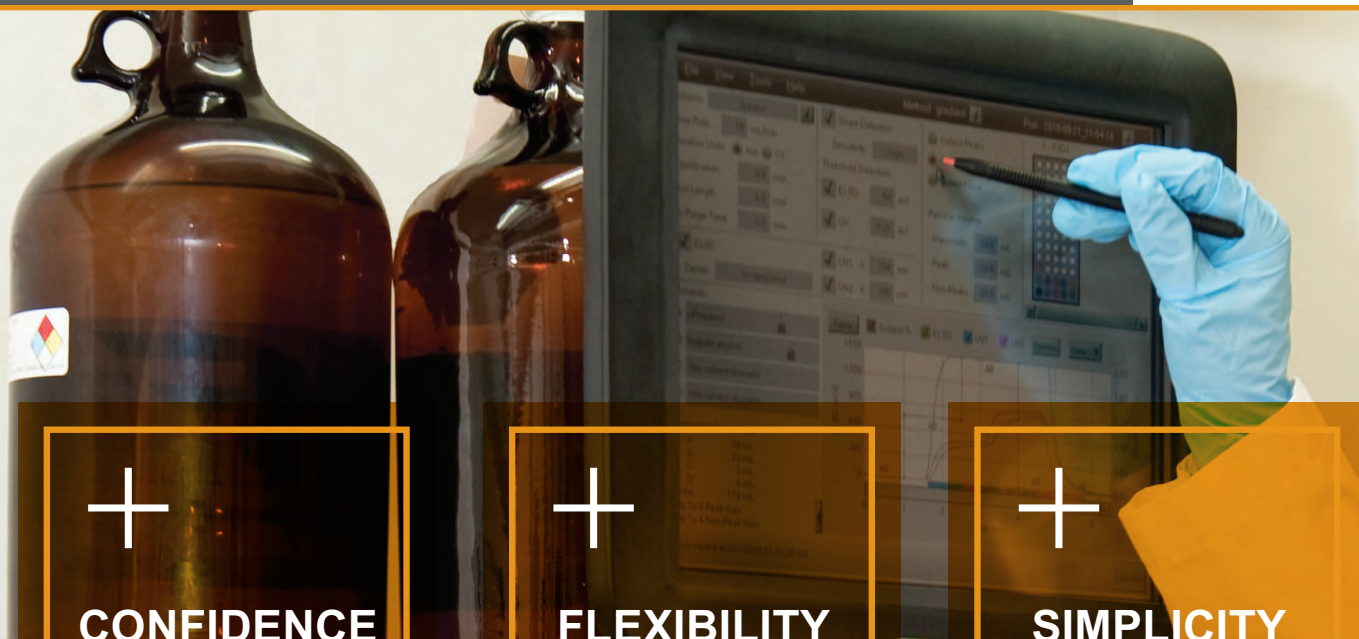
| Cartridge Size | Qty. | Part No. |
|----------------|------|----------|
| Silica 4g | 20 | 5146130 |
| Silica 12g | 20 | 5146131 |
| Silica 24g | 15 | 5165730 |
| Silica 40g | 15 | 5146132 |
| Silica 80g | 12 | 5146133 |
| Silica 120g | 10 | 5146134 |
| Silica 220g* | 6 | 5165750 |
| Silica 330g* | 4 | 5146135 |

Reveleris® Bonded Flash Cartridges (up to 200psig*)

| Cartridge Size | Qty. | Amino Part No. | Diol Part No. | C18 Part No. |
|----------------|------|----------------|---------------|--------------|
| 4g | ea | 5157330 | 5157335 | 5152990 |
| 12g | ea | 5157331 | 5157336 | 5152103 |
| 40g | ea | 5157332 | 5157337 | 5152104 |
| 80g | ea | 5157333 | 5157338 | 5152105 |
| 120g | ea | 5157334 | 5157339 | 5152991 |
| 330g* | ea | — | — | 5164430 |

*220g and 330g cartridges have a pressure rating of 100 psi.

Reveleris® X2 Flash Chromatography System



CONFIDENCE

FLEXIBILITY

SIMPLICITY

1 Maximize purity and recovery of your target with RevealX™ Detection Technology

- Synchronized detection and fraction collection from up to four detector signals (ELSD/UV/Vis)
- Detects the widest range of compounds
- Maximizes recoveries by directing only 50ul/min or less of your sample to ELSD

RevealX™ Detection Technology

- Simplifies Fraction Collection
- Reduces Post Purification Work
- Maximizes Recovery of Target Molecules

The patented RevealX™ detection technology combines multiple detector signals to optimize the timing of fraction collection. It synchronizes the signals from up to four different detectors, including ELSD, optimizing the number of fractions and ensuring maximum purity. The integrated detector signals and advanced signal processing recognize peaks and collect previously undetected compounds.

2 Purify a broad range of sample types with selectable high/low detection sensitivity

- Detect chromophores, nonchromophores, and visible sample components from mg to kg quantities
- Purify complex samples from discovery through process R&D
- Easily switch between normal phase and reversed-phase applications

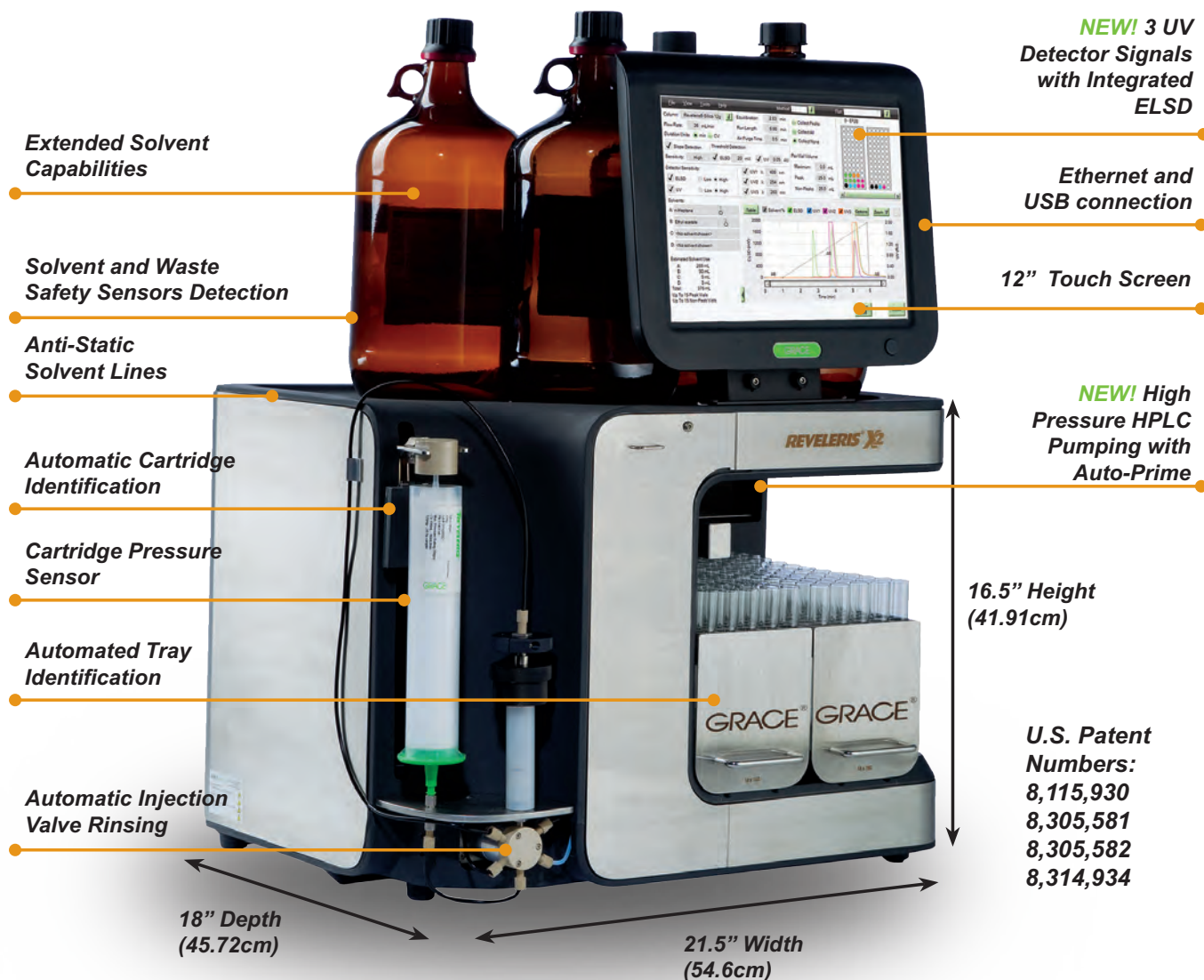
3 One-screen programming and run control with intuitive Windows® interface, accelerates system set-up

- Quickly modify run parameters on a large 12" touch screen display
- Edit gradients in real time, using click and drag or table
- Auto-recognition of cartridges and trays reduces set-up time, and the risk of potential errors



RevealX™ detection technology identifies more and enables combined fraction triggering.

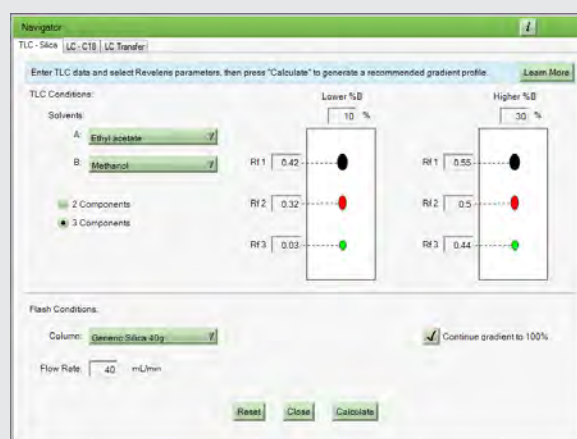
The Next Generation Flash System



Reveleris® X2 Navigator™ Software

The powerful Reveleris® X2 Navigator™ software improves efficiency and productivity by simplifying method optimization taking the guesswork out of interpreting your TLC or HPLC scouting runs. The patent pending algorithm lets you choose to optimize for fastest run time or highest recovery, and also warns if your compound will be difficult to separate with the selected solvents.

The Reveleris® X2 Navigator™ software is an optional feature designed to enhance your Reveleris® X2 System. Please contact us for information about including the software with your original purchase, or adding it to your system later.



The Reveleris® X2 Navigator™ software simplifies method optimization, improving efficiency and productivity.

Reveleris® X2 System Ordering Information

Included with the system

- (2) 18x150mm Fraction collection trays
- (1) 3g Adjustable solid loader plunger
- (1) 3g Filled solid loader
- All required solvent tubing, filters and accessories
- Installation hardware
- Performance documents

| Description | Part No. |
|---|----------|
| Reveleris® X2 Flash Chromatography System | 5164931 |
| Reveleris® X2 Flash Chromatography System UV/Vis Optional Upgrade | 5167301 |
| Reveleris® X2 Navigator™ Software Optional Upgrade | 5156620 |

Contact Us to Request
a Demo or for More Information



Reveleris® X2 System Accessories

Fraction Collection Trays

| Description | Qty. | Part No. |
|---------------------------|------|----------|
| 12x75mm | 2 | 5148872 |
| 13x100mm | 2 | 5148874 |
| 16x150mm | 2 | 5148875 |
| 18x150mm | 2 | 5148885 |
| 25x150mm | 2 | 5148886 |
| For French Square Bottles | ea | 5148873 |

Fraction Tubes

| Description | Qty. | Part No. |
|-----------------------------|------|----------|
| 12x75mm | 1000 | 8623413 |
| 13x100mm | 1000 | 8623414 |
| 16x150mm | 1000 | 8623416 |
| 18x150mm | 1000 | 8623410 |
| 25x150mm | 500 | 8623411 |
| 480ml French Square Bottles | 24 | 8623412 |

Method Development TLC Plates

| Description | Size | Qty. | Part No. |
|--------------------------------|-----------|------|----------|
| Silica | 20 x 20cm | 25 | 8621250 |
| Reversed-Phase C18 | 10 x 20cm | 25 | 8625320 |
| Silica Aluminum-backed (UV254) | 20 x 20cm | 25 | 8628490 |
| Silica Aluminum-backed (no UV) | 20 x 20cm | 25 | 8628492 |

NEW Solid Loaders

| Description | Qty. | Part No. |
|---|------|----------|
| Empty Solid Loaders | | |
| Empty 3g | 100 | 5142050 |
| Empty 15g | 100 | 5142051 |
| Empty 40g | 50 | 5147808 |
| Filled Solid Loaders | | |
| Silica 3g | 20 | 5152371 |
| Silica 15g | 16 | 5142034 |
| Silica 40g | 12 | 5147772 |
| Adjustable Solid Loader Plungers | | |
| Adjustable 3g Plunger | ea | 5167302 |
| Adjustable 15g Plunger | ea | 5168541 |
| Adjustable 40g Plunger | ea | 5168534 |
| 3g Frit Insertion Rod | ea | 5162931 |
| 15g Frit Insertion Rod | ea | 5162902 |
| 40g Frit Insertion Rod | ea | 5162901 |

Reveleris® C18 Scout Columns*

| Description | Size | Qty. | Part No. |
|-----------------|-------------|------|----------|
| C18 HPLC Column | 4.6 x 50mm | 3 | 5156381 |
| C18 HPLC Column | 4.6 x 150mm | 3 | 5156382 |
| C18 HPLC Column | 4.6 x 250mm | 3 | 5156383 |

*For use with Reveleris® X2 Navigator™ Software

Reveleris® X2 Flash System Specifications

| | |
|-------------------------------------|---|
| Display | Windows® based graphical LCD touchscreen with full on-screen QWERTY keyboard |
| Data Entry | Touchscreen or USB connection to mouse/keyboard |
| Solvent Delivery System | High pressure pumps (HPLC). 4 Independent channels with up to four solvents in a single run. Auto-switches lines when solvent levels run low. Normal phase and reversed phase solvent compatible |
| Pump Flow Rate | 4-200mL/min. Accuracy +/- 3%, Precision +/- 0.5%. Auto flow reduction at high pressure |
| Maximum Pressure | 200psig |
| Gradients | Linear, step, isocratic. 4 solvent binary. On-screen mid-run gradient adjustment, isocratic hold, pause |
| Sample Injection | Liquid or Solid Sample Modes, Solid Injection: up to 75g |
| Sample Loader Plunger | 3 sizes fitting 15mL, 75mL, 150mL solid loaders |
| Detector Sensitivity | Selectable sensitivity control high or low based on concentration of target compound |
| UV Wavelength Range | 200-500 nm; up to 3 signals. Optional extension to visible wavelengths, UV-Vis 200-850nm |
| Accommodates Cartridge Sizes | 4-330g luer type; up to 1500g with adapter |
| Triggers | Combination of up to 3 UV signals plus ELSD with slope and/or threshold detection |
| Fraction Collection Trays | Holds 5"x12" trays; Auto-tray recognition |
| Power Options | 120/240V, 50/60Hz, 10A |
| Instrument Dimensions | 16.5" H x 21.5" W x 18.0" D (41.91cm H x 54.6cm W x 45.72cm D) |
| Instrument Weight | 60 lbs (27kg) |
| Certifications | CE, TÜV®, ISO® 9001 |
| Warranty | One year limited warranty coverage of parts and labor from date of installation. Additional warranty and service options are available. Contact your local sales representative for more information. |

Grace is a leading global supplier of catalysts, engineered and packaging materials specialty construction chemicals and building materials. The company's three industry leading business segments—Grace Catalysts Technologies, Grace Materials Technologies and Grace Construction Products—provide innovative products, technologies and services that enhance the quality of life.

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