



SepaBean™ Family

Discover our flash
chromatography
machines.



Simplify your purification, maximize your efficiency!

Santai Science Inc.

Introduction

Introduction

Welcome to “SepaFlash™ machines Brochure”, your comprehensive guide to Santai Science’s advanced chromatography technologies. This brochure showcases our innovative flash chromatography equipments designed to enhance purification efficiency and reliability.

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Explore the Santai Science Portfolio



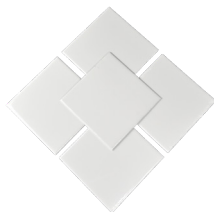
Explore the Santai Science Portfolio

At Santai Science, we take pride in offering a diverse portfolio of advanced separation and purification solutions tailored to meet the evolving needs of scientists and professionals worldwide. From innovative chromatography systems to high-performance consumables, our products are designed to deliver precision, efficiency, and reliability. Browse below to discover how our cutting-edge technologies can empower your research and applications.

SepaBean™ machines & SepaFlash™ Columns

Product Line	SepaBean™ machines	SepaFlash™ FP LT-ELSD	SepaFlash™ Columns
Picture			
Description	<p>SepaBean™ machines deliver efficient and user-friendly flash chromatography solutions for diverse applications.</p> <p>Available Models:</p> <ul style="list-style-type: none"> • SepaBean™ machine U • SepaBean™ machine T • SepaBean™ machine • SepaBean™ machine 2 • SepaBean™ machine L 	<p>The SepaFlash™ FP LT-ELSD is a low-temperature evaporative light scattering detector, ideal for non-chromophoric analytes like carbohydrates, lipids, and polymers. It ensures high sensitivity, low noise, and optimal detection of thermally unstable compounds, compatible with all SepaBean™ models.</p>	<p>SepaFlash™ columns deliver precise, durable, and efficient purification for diverse chromatography applications.</p> <p>Available Series:</p> <ul style="list-style-type: none"> • SepaFlash™ Standard • SepaFlash™ Large Size • SepaFlash™ HP, Bio & Bonded • SepaFlash™ iLOK™ & iLOK™-SL • SepaFlash™ iLOK™ Large-Size

Other SepaFlash™ Products

Product Line	SepaFlash™ Ultra-Pure Bare Silica Gels	SepaFlash™ Ultra-Pure Bonded Silica Gels	SepaFlash™ TLC Plates
Picture			
Description	<p>SepaFlash™ Ultra-Pure bare silica gels in bulk provide high-quality phases for chromatography, available in both irregular and spherical shapes.</p> <p>With particle sizes ranging from 10 µm to 200 µm and pore diameters from 50 Å to 300 Å, these silicas meet diverse application needs. They are offered in convenient 1 kg, and 25 kg containers.</p>	<p>SepaFlash™ Ultra-Pure bonded silica gels offer versatile chromatography solutions in irregular or spherical shapes, with particle sizes from 10 µm to 40 - 75 µm and pore diameters of 50 Å to 300 Å.</p> <p>Available in reversed phase, normal phase, ion-exchange, HILIC, and alumina phases.</p>	<p>SepaFlash™ TLC plates are manufactured with high-quality media to match the sorbents in SepaFlash™ flash columns. This alignment ensures greater reproducibility in method development.</p> <p>Available with aluminum and glass backings, these plates come in a wide range of sizes from 2.5 x 7.5 cm to 20 x 20 cm, supporting both analytical and preparative chromatography needs.</p>



About Santai

Discover Santai Technologies

Founded in 2004, Santai Technologies is a leading technology company dedicated to advancing separation and purification tools. With over 20 years of expertise, we have become a trusted partner for professionals and scientists across the pharmaceutical, biotechnology, fine chemicals, natural products, and petrochemical industries.

Santai is renowned worldwide for its outstanding flash chromatography instruments and consumables, setting new benchmarks for efficiency, precision, and reliability in the global market.



SANTAI

Santai: 20 Years of Innovation in Chromatography

For two decades, Santai has been a leader in chromatography innovation, providing for scientists worldwide. With our advanced SepaBean™ machines and SepaFlash™ innovation and quality, continually empowering researchers with more effective pur

Santai Technologies was founded to develop separation and chromatography solutions.



2004

2005

The SepaFlash™ HP Series has been launched, offering enhanced pressure resistance.



2009

2013

The SepaFlash™ and SepaFlash™ have been launched.



2015



The SepaFlash™ Standard Series was launched, leveraging proprietary packing technology for enhanced performance.



The SepaFlash™ iLOK™ has been launched, providing the convenience of manual assembly and flexible sample loading options.



Santai was recognized as "High-tech Enterprise".

The SepaBean™ was launched, providing advanced chromatography networking capabilities.



About Santai Science

Established in 2018 as a sister company of Santai Technologies, Santai Science is headquartered in Montreal, Canada. Its core mission centers on the commercialization of cutting-edge separation and purification tools, including product demonstrations and specialized services.

Santai Science also plays a vital role in providing customer training, delivering technical support, and managing order processing and shipment directly from its Montreal office.

Our Extensive Global Reach

Santai operates and maintains warehousing services across America, Asia, India, and Europe. This strategic global presence ensures that our products and services are readily accessible and efficiently delivered to clients around the world.

cutting-edge solutions that streamline purification processes
columns enhancing efficiency, we remain committed to
purification technologies.



Standard Size 3 kg
Bonded Series
hed.



Santai Science was founded in
Canada, alongside the
iLOK™-SL flash column with
15 % free space for solid loading.



The iLOK™ Large Size empty
columns (800 g to 7 kg) were
launched, together with new
product lines like bulk silica gels
and TLC plates.



2016

2018

2021

2022

2024-2025

ise”
an™ machine was
as a unique flash
aphy system with
ilities and built-in
intelligence.



The SepaBean™ machine L was
launched, featuring large 5 kg and
10 kg flash columns designed for
the pilot-scale market.



Generation



The 2nd generation SepaBean™
machine is launching, offering
enhanced performance.



SepaBean™ machines - Redefining Flash Chromatography Excellence

Tailored Solutions for Every Laboratory and Scale-Up Need

Santai Science's SepaBean™ machines are designed to provide unparalleled flexibility, reliability, and precision for all purification tasks. Whether you are developing methods in the lab or scaling up for production, these systems deliver performance and ease of use at every step.

Key Features

Flexible Flow Rate Options

Ranging from 1 mL/min to 1,000 mL/min to handle a variety of applications.

Robust Pressure Capabilities

Supporting up to 1,450 psi (99.9 bar), for even the most demanding separations.

Versatile Column Compatibility

From 4 g to 10 kg, ensuring adaptability for both small and large-scale operations.

Wireless Control

With iPad® integration and flexible wireless control, the system offers enhanced convenience and mobility, making it ideal for light-sensitive separation experiments or operations within isolators.

Comprehensive Detection Options

Including 200 - 400 or 200 - 800 nm UV, UV/Vis, and optional ELSD, to cover a wide range of compounds.

Innovation You Can Trust

With over two decades of expertise in chromatography, Santai Science delivers cutting-edge technology in every SepaBean™ machine. Designed for simplicity and efficiency, these systems empower researchers to achieve superior results while saving time and resources.



Overview Design of SepaBean™ machines

Power failure recovery



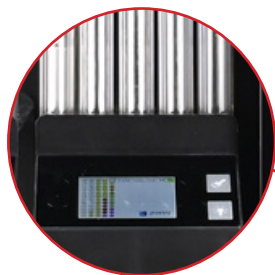
The software's power-off recovery feature minimizes losses from unexpected power failures.

Binary gradient with two or four lines with real-time monitoring of solvent level

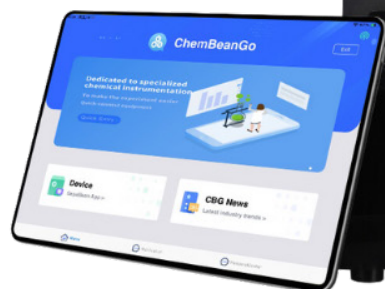
Emergency stop button for extra safety protection

Online full wavelength scanning

Built-in automatic fraction collector



Tube racks with an LCD display enable easy fraction monitoring.



Built-in feature of separation method recommendation



The software's database recommends optimal separation methods, boosting efficiency.

21-CFR Part 11 compliance



The FDA-compliant software (21-CFR Part 11) ensures suitability for pharmaceutical R&D and laboratories.

Local network data sharing



Instruments network locally for seamless data sharing and resource optimization.



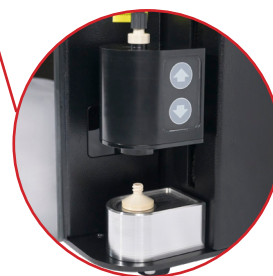
Built-in air pump to purge the residual solvents



Auxiliary column holder



Smart column holder for easy operation



The touchpad-equipped holder auto-secures flash columns for ease of use.



Simplifying Method Development

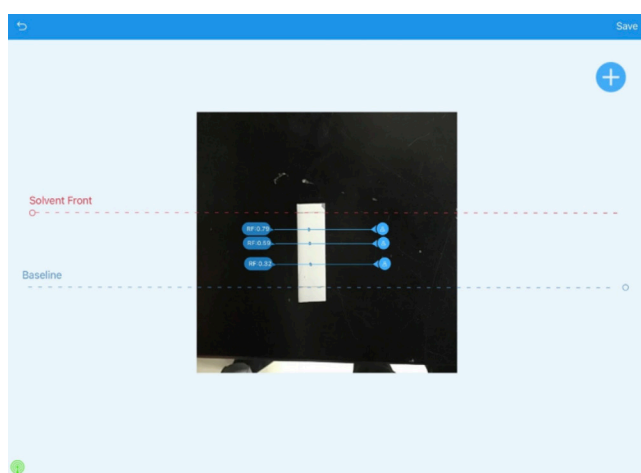
TLC-to-Gradient

The SepaBean™ machine's control software now includes a powerful TLC-to-Gradient feature, streamlining the entire sample preparation process. By simply inputting TLC data and sample loading amounts, the software automatically recommends the appropriate flash column and generates an optimized elution gradient. This innovation significantly accelerates workflows and enhances overall efficiency.

Step 1: TLC Rf Values

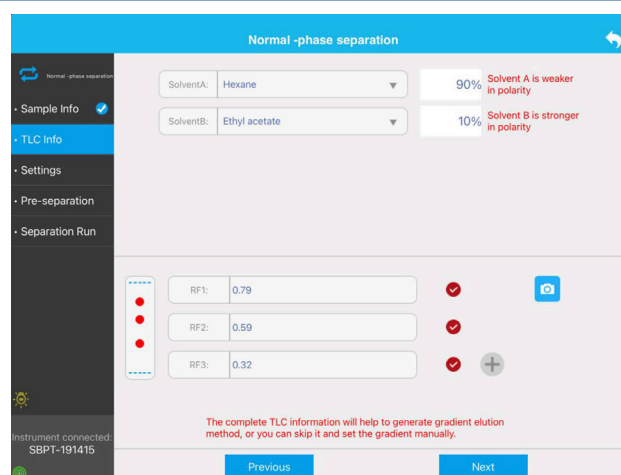
Method 1: Using a Picture of the TLC

Click the camera icon to capture or select an image for Rf values. Adjust the solvent front and baseline manually. Selecting an Rf value auto-generates a gradient curve, or configure it manually.



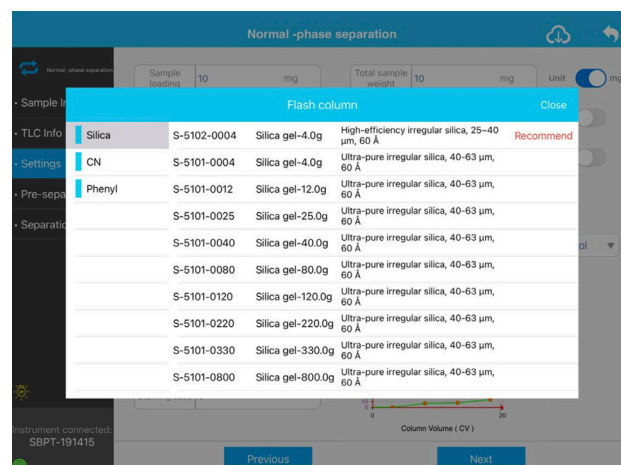
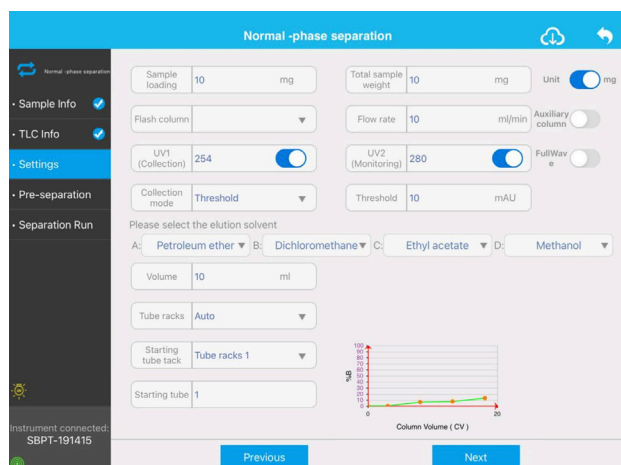
Method 2: Input Manually the Rf Values

Enter Rf values for target or impurities; the TLC graphic updates accordingly.



Step 2: Chromatography Run

In the settings tab, input key parameters for Flash method development. The software suggests a column based on sample weight or allows manual selection. Click the arrow to view recommendations and available columns.



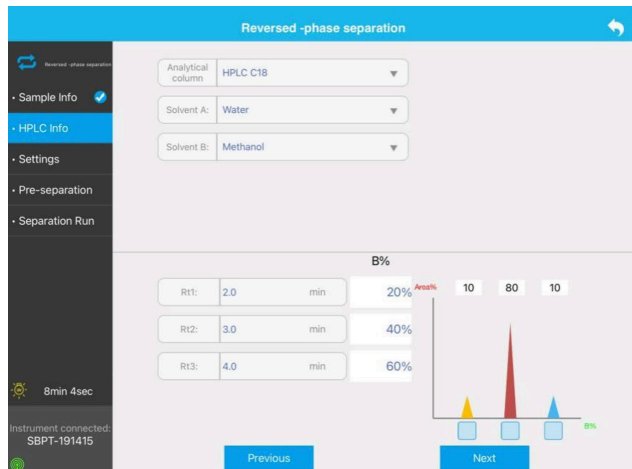
HPLC-to-Gradient

High-performance liquid chromatography (HPLC) depends on precise elution gradients for accurate separation. Modern systems now automate gradient design by leveraging HPLC analysis data to recommend an optimized flash chromatography method as a starting point.

Step 1:

Enter the Analytical HPLC Data

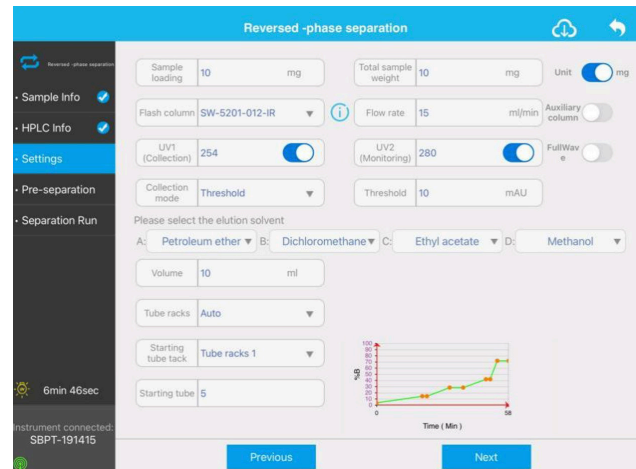
Enter the analytical HPLC data, including the sample retention time, the percentage of Solvent B at the elution point of a specific component, and the peak areas of both the target product and primary impurities.



Step 2:

Recommended Flash Chromatography Method

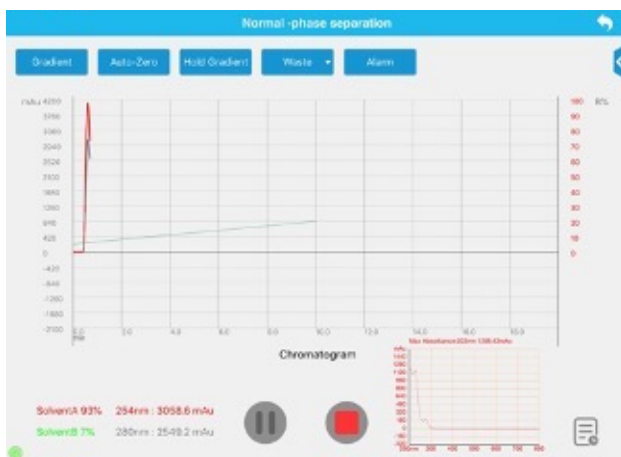
The system will automatically generate the appropriate elution gradient based on this information.



DAD Online Full-Wavelength Scanning

Enables Effortless Identification of the Optimal Detection Wavelength

The real-time display of the full wavelength spectrum helps users easily identify the optimal absorption wavelength for their sample, enhancing detection sensitivity while minimizing sample loss during analysis.



Santai Science Worry-Free Package



Our Promise

Maximize uptime, reduce costs, and enjoy peace of mind with our comprehensive **Worry-Free Package** service and support plan.

Key Features

Flexibility in Enrollment

Add the **Worry-Free Package** when you purchase your SepaBean™ machine or at any point afterwards.

Choose From Two Options

A 3-year or 5-year worry-free package tailored to your needs. Plus, benefit from 4 fully covered returns per year within Canada or 2 fully covered returns per year for the USA, courtesy of Santai Science.

No-Cost Repairs or Replacements

If your equipment isn't functioning properly, send it back at our expense for a prompt repair or a free replacement.

Genuine Repairs by Experts

When you choose this option, our expert engineers will restore your equipment using 100 % original manufacturer parts, ensuring top-quality performance.

Free Unlimited Technical Support and Training

Connect with our dedicated team anytime via email or phone for expert troubleshooting, guidance, and personalized training to ensure seamless operation.



Beyond Standard Service Plans - A Dedicated Partner To Support You.



Stay on Budget

Unexpected repair costs are covered, keeping your budget intact no matter when issues arise.



Minimize Downtime

Keep your lab running seamlessly. With our **Worry-Free Package**, you can trust that repairs or replacements will be handled quickly and efficiently.



Peace of Mind

Use your machine knowing you're protected. Regardless of where your equipment is, our skilled engineers will handle the repairs.



Increase Productivity

Our service ensures minimal delays, so you can focus on your work without worrying about repair wait times.



What Sets the Santai Science Worry-Free Package Apart?

Comprehensive Benefits

❑ Cost Effective

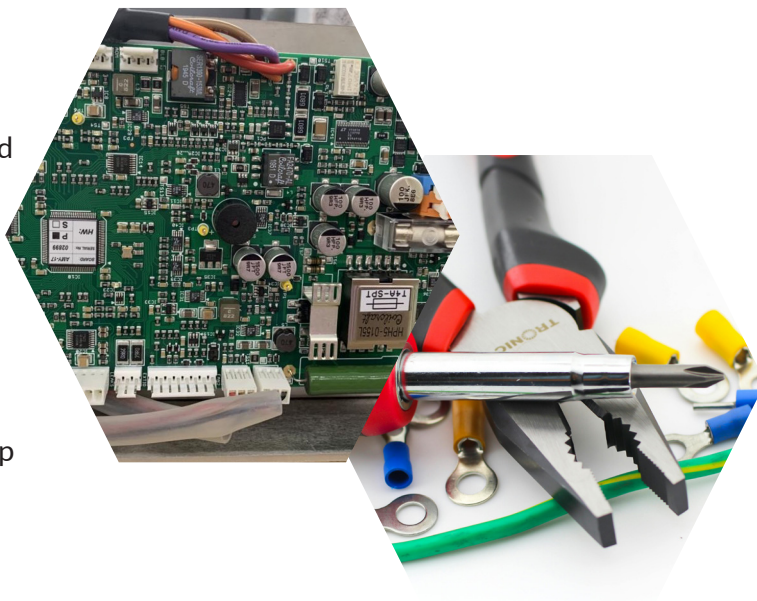
Save thousands by avoiding unexpected repair and replacement costs.

❑ Effortless Process

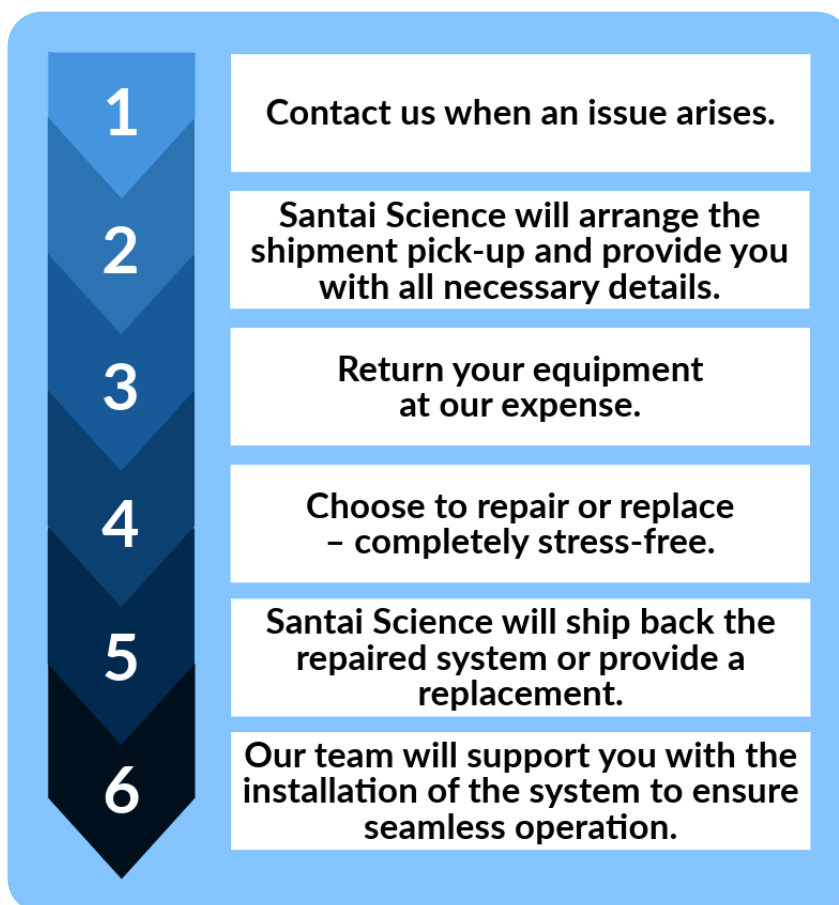
Return equipment at our expense for repairs or replacements - no logistical challenges.

❑ Reliable Support

Unlimited access to technical support ensures help is always a call away.



How It Works



**Don't Let Downtime Disrupt Your Research and
Protect Your Investment Today!**

Contact support@santaiscience.com to sign up or learn more about it.



SepaBean™ machine U

Product Overview

The SepaBean™ machine U, an entry-level model, offers an intuitive and versatile solution for chromatography with the full capabilities of SepaBean™ control software. Designed to handle everyday separation and purification tasks, this affordable system efficiently meets the demands of both normal and reversed phase separations, providing reliable performance for users of all experience levels.

Key Features




- **Cost Effective Solution**
Provides high-quality purification solutions within budget.
- **Wireless Control and Operation**
Allows remote control via mobile devices, ideal for light-sensitive or isolated experiments.
- **Easy Flash Method Development**
Optimizes and transfers separation conditions from HPLC and TLC for efficient, scalable purification.
- **Optional ELSD Detector**
Optional ELSD expands detection capabilities to cover a wider range of sample types, including non-UV-active compounds.

Equipment Specifications

Characteristics	Specifications
User Interface	4.3 inches screen (≈ 10 cm)
Control Device	Wireless operation through iPad®
Flow Rate Range	• Model U100: 1 - 100 mL/min • Model U200: 1 - 200 mL/min
Maximum Pressure	• Model U100: 100 psi (6.9 bar) • Model U200: 200 psi (13.8 bar)
Detectors	• DAD 200 - 400 nm UV Detector • DAD 200 - 800 nm UV/Vis Detector • ELSD Universal Detector (optional)
Spectral Display	Single, dual, or all-wavelengths
Pumping System	Maintenance free ceramic pump
Number of Solvents	Binary gradient, two (2) solvents
Gradient Types	Isocratic, linear, and step gradients
Column Sizes	4 g - 330 g, up to 1.6 kg with adapters
Sample Loading Capacity	4 mg - 160 g



Main Characteristics

	Model U100	Model U200
		
Maintenance Free Pump	Two Solvent Lines	Maximum Flow Rate (mL/min) & Pressure Resistance (psi)

Characteristics	Specifications
Air Pump Module	Included (to purge solvent residues)
Certification	CE
21-CFR Part 11 Compliance	The control software meets FDA requirements for system safety
Collection Module	LCD display for intelligent identification of test tube racks
Fraction Collection	All, waste, threshold, slope, or time
Fraction Collector	• 13, 15, 16, 18, or 25 mm tubes • French square 250 or 500 mL bottle or large collection bottle (optional)
Safety Configuration	Intelligent liquid and pressure alarm
Sample Injection	Liquid and solid sampling
Smart Column Holder	Suitable for 4 to 330 g flash columns
Dimensions (W x D x H)	44 x 46 x 54 cm (17.3 x 18.1 x 21.3 in)
Weight	30 kg (66 lbs)

SepaBean™ machine T

Product Overview

The SepaBean™ machine T, our best-selling model, offers all the features of the SepaBean™ App, including wireless control and operation. This cost-effective system features a four-line binary gradient that supports any two-solvent combination, with the option to add a third solvent as a modifier (up to 15 %). An optional ELSD detector is available to expand detection capabilities to a broader range of sample types.

Key Features

- **Cost Effective Solution**
Provides high-quality purification solutions within budget.
- **Wireless Control and Operation**
Allows remote control via mobile devices, ideal for light-sensitive or isolated experiments.
- **Easy Flash Method Development**
Optimizes and transfers separation conditions from HPLC and TLC for efficient, scalable purification.
- **Optional ELSD Detector**
Optional ELSD expands detection capabilities to cover a wider range of sample types, including non-UV-active compounds.



Main Characteristics



Maintenance Free Pump



Four Solvent Lines



200
Maximum Flow Rate (mL/min) & Pressure Resistance (psi)

Equipment Specifications

Characteristics	Specifications
User Interface	4.3 inches screen (≈ 10 cm)
Control Device	Wireless operation through iPad®
Flow Rate Range	1 - 200 mL/min
Maximum Pressure	200 psi (13.8 bar)
Detectors	<ul style="list-style-type: none">• DAD 200 - 400 nm UV Detector• DAD 200 - 800 nm UV/Vis Detector• ELSD Universal Detector (optional)
Spectral Display	Single, dual, or all-wavelengths
Pumping System	Maintenance free ceramic pump
Number of Solvents	Four (4) solvents in binary mode with any combination of two (2) solvents, plus a third (3 rd) solvent as a modifier
Gradient Types	Isocratic, linear, and step gradients
Column Sizes	4 g - 330 g, up to 1.6 kg with adapters
Sample Loading Capacity	4 mg - 160 g

Characteristics	Specifications
Air Pump Module	Included (to purge solvent residues)
Certification	CE, cTUVus
21-CFR Part 11 Compliance	The control software meets FDA requirements for system safety
Collection Module	LCD display for intelligent identification of test tube racks
Fraction Collection	All, waste, threshold, slope, or time
Fraction Collector	<ul style="list-style-type: none">• 13, 15, 16, 18, or 25 mm tubes• French square 250 or 500 mL bottle or large collection bottle (optional)
Safety Configuration	Intelligent liquid and pressure alarm
Sample Injection	Liquid and solid sampling
Smart Column Holder	Suitable for 4 to 330 g flash columns
Dimensions (W x D x H)	40 x 40 x 62 cm (15.7 x 15.7 x 24.4 in)
Weight	39.2 kg (86 lbs)



SepaBean™ machine 2

Product Overview

The SepaBean™ machine 2 is an advanced medium-pressure chromatography model with a higher flow rate of 300 mL/min and up to 500 psi (34.5 bar) backpressure tolerance. The system features a four-line binary gradient accommodating any two-solvent combination, with an option to add a third solvent as a modifier up to 15 %.

Key Features

- **Higher Flow Rate and Backpressure**
Achieves 300 mL/min flow rate and 500 psi (34.5 bar) for faster and tougher separations.
- **Wireless Control and Operation**
Allows remote control via mobile devices, ideal for light-sensitive or isolated experiments.
- **Easy Flash Method Development**
Optimizes and transfers separation conditions from HPLC and TLC for efficient, scalable purification.
- **Optional ELSD Detector**
Optional ELSD expands detection capabilities to cover a wider range of sample types, including non-UV-active compounds.

Equipment Specifications

Characteristics	Specifications
User Interface	4.3 inches screen (≈ 10 cm)
Control Device	Wireless operation through iPad®
Flow Rate Range	1 - 300 mL/min
Maximum Pressure	500 psi (34.5 bar)
Detectors	• DAD 200 - 400 nm UV Detector • DAD 200 - 800 nm UV/Vis Detector • ELSD Universal Detector (optional)
Spectral Display	Single, dual, or all-wavelengths
Pumping System	High accuracy dual-piston pump
Number of Solvents	Four (4) solvents binary with any combinations of two (2) solvents
Gradient Types	Isocratic, linear, and step gradients
Column Sizes	4 g - 330 g, up to 1.6 kg with adapters
Sample Loading Capacity	4 mg - 160 g



Main Characteristics



Dual-Piston Pump



Four Solvent Lines



Maximum Flow Rate (mL/min)



Pressure Resistance (psi)

Characteristics	Specifications
Air Pump Module	Included (to purge solvent residues)
Certification	CE
21-CFR Part 11 Compliance	The control software meets FDA requirements for system safety
Collection Module	LCD display for intelligent identification of test tube racks
Fraction Collection	All, waste, threshold, slope, or time
Fraction Collector	• 13, 15, 16, 18, or 25 mm tubes • French square 250 or 500 mL bottle or large collection bottle (optional)
Safety Configuration	Intelligent liquid and pressure alarm
Sample Injection	Liquid and solid sampling
Smart Column Holder	Suitable for 4 to 330 g flash columns
Dimensions (W x D x H)	44 x 46 x 63 cm (17.3 x 18.1 x 24.8 in)
Weight	48 kg (106 lbs)

SepaBean™ machine

Product Overview

The SepaBean™ machine, the standard version, offers all the features of the SepaBean™ App, including wireless control and operation. This model features a four-line binary gradient that supports any two-solvent combination and enables high pressure mixing. An optional ELSD detector is available to enhance detection for a broader range of sample types.

Key Features

- Standard Version with All Features**
 Provides high-quality purification solutions with a high pressure mixing.
- Wireless Control and Operation**
 Allows remote control via mobile devices, ideal for light-sensitive or isolated experiments.
- Easy Flash Method Development**
 Optimizes and transfers separation conditions from HPLC and TLC for efficient, scalable purification.
- Optional ELSD Detector**
 Optional ELSD expands detection capabilities to cover a wider range of sample types, including non-UV-active compounds.



Main Characteristics



Maintenance Free Pump



Four Solvent Lines



Maximum Flow Rate (mL/min) & Pressure Resistance (psi)





Equipment Specifications

Characteristics	Specifications
User Interface	4.3 inches screen (≈ 10 cm)
Control Device	Wireless operation through iPad®
Flow Rate Range	1 - 200 mL/min
Maximum Pressure	200 psi (13.8 bar)
Detectors	<ul style="list-style-type: none"> • DAD 200 - 400 nm UV Detector • DAD 200 - 800 nm UV/Vis Detector • ELSD Universal Detector (optional)
Spectral Display	Single, dual, or all-wavelengths
Pumping System	Maintenance free ceramic pump
Number of Solvents	Four (4) solvents binary with any combinations of two (2) solvents, high pressure mixing
Gradient Types	Isocratic, linear, and step gradients
Column Sizes	4 g - 330 g, up to 3 kg with adapters
Sample Loading Capacity	4 mg - 300 g

Characteristics	Specifications
Air Pump Module	Included (to purge solvent residues)
Certification	CE
21-CFR Part 11 Compliance	The control software meets FDA requirements for system safety
Collection Module	LCD display for intelligent identification of test tube racks
Fraction Collection	All, waste, threshold, slope, or time
Fraction Collector	<ul style="list-style-type: none"> • 13, 15, 16, 18, or 25 mm tubes • French square 250 or 500 mL bottle or large collection bottle (optional)
Safety Configuration	Intelligent liquid and pressure alarm
Sample Injection	Liquid and solid sampling
Smart Column Holder	Suitable for 4 to 330 g flash columns
Dimensions (W x D x H)	40 x 40 x 62 cm (15.7 x 15.7 x 24.4 in)
Weight	48 kg (106 lbs)



Comparison Chart of Small-Scale SepaBean™ machines

Characteristics	SepaBean™ machine U (Entry-level)	SepaBean™ machine T (Cost effective & best-seller)	SepaBean™ machine (Standard version)	SepaBean™ machine 2 (Medium pressure)
Model				
Description	Entry-level model designed to handle everyday separation and purification tasks.	Best-selling model, offering a highly cost-effective solution for efficient chromatography.	The standard version featuring a high pressure mixing.	Medium-pressure model with a flow rate up to 300 mL/min and 500 psi (34.5 bar) tolerance.
Control Device	4.3 inches screen (≈ 10 cm) with wireless operation through iPad®			
Flow Rate Range	• U100: 1 - 100 mL/min • U200: 1 - 200 mL/min	1 - 200 mL/min		1 - 300 mL/min
Maximum Pressure	• U100: 100 psi (6.9 bar) • U200: 200 psi (13.8 bar)	200 psi (13.8 bar)		500 psi (34.5 bar)
Detectors	• 254 nm fixed wavelength (other wavelengths in option) • DAD 200 - 400 nm UV Detector • DAD 200 - 800 nm UV/Vis Detector • ELSD Universal Detector (optional)			
Spectral Display	Single, dual, or all-wavelengths (variable UV and UV-Vis)			
Pumping System	Maintenance free ceramic pump			High accuracy dual-piston pump
Number of Solvents	Binary gradient, two (2) solvents	Four (4) solvents binary with any combinations of two (2) solvents, third (3 rd) solvent as modifier	Four (4) solvents binary with any combinations of two (2) solvents, high pressure mixing	Four (4) solvents binary with any combinations of two (2) solvents, third (3 rd) solvent as modifier
Gradient Types	Isocratic, linear, and step gradients			
Column Sizes	4 g - 330 g, up to 1.6 kg with adapters		4 g - 330 g, up to 3 kg with adapters	4 g - 330 g, up to 1.6 kg with adapters
Sample Loading Capacity	4 mg - 160 g		4 mg - 300 g	4 mg - 160 g
Air Pump Module	Included (to purge solvent residues)			
Certification	CE	CE, cTUVus	CE	
21-CFR Part 11 Compliance	The control software meets FDA requirements for system safety			
Collection Module	Two collection tube racks with LCD display for intelligent identification of tubes			
Fraction Collection	All, waste, threshold, slope, or time			
Fraction Collector	• Standard tubes (13, 15, 16, 18, or 25 mm) • French square 250 or 500 mL bottle or large collection bottle (optional)			
Safety Configuration	Intelligent liquid and pressure alarm			
Sample Injection	Liquid and solid sampling			
Smart Column Holder	Suitable for 4 to 330 g flash columns			
Dimensions (W x D x H)	44 x 46 x 54 cm (17.3 x 18.1 x 21.3 in)	40 x 40 x 62 cm (15.7 x 15.7 x 24.4 in)	40 x 40 x 62 cm (15.7 x 15.7 x 24.4 in)	44 x 46 x 63 cm (17.3 x 18.1 x 24.8 in)
Weight	30 kg (66 lbs)	39.2 kg (86 lbs)	48 kg (106 lbs)	48 kg (106 lbs)

SepaBean™ machine L

Product Overview

The SepaBean™ machine L is an advanced system designed for large-scale purification with a high flow rate of up to 1,000 mL/min, providing effortless scalability and user-friendly operation. It allows seamless transitions from lab-scale experiments to pilot-scale production. The anti-static design ensures enhanced safety and reliability, while the optional sample loading module increases productivity by efficiently handling large sample volumes.

Key Features

- **Higher Flow Rate and Loading Capacity**
High flow rate (1,000 mL/min) model designed to handle high-volume samples of up to 1 kg in a single run.
- **Wireless Control and Operation**
Allows remote control via mobile devices, ideal for light-sensitive or isolated experiments.
- **Easy Flash Method Development**
Optimizes and transfers separation conditions from HPLC and TLC for efficient, scalable purification.
- **Optional ELSD Detector**
Optional ELSD expands detection capabilities to cover a wider range of sample types, including non-UV-active compounds.

Equipment Specifications

Characteristics	Specifications
User Interface	4.3 inches screen (≈ 10 cm)
Control Device	Wireless operation through iPad®
Flow Rate Range	50 - 1,000 mL/min
Maximum Pressure	• Model 1000LP: 150 psi (10.3 bar) • Model 1000MP: 1,450 psi (99.9 bar)
Detectors	• DAD 200 - 400 nm UV Detector • DAD 200 - 800 nm UV/Vis Detector • ELSD Universal Detector (optional)
Spectral Display	Single, dual, or all-wavelengths
Pumping System	High accuracy dual-piston pump
Number of Solvents	Four (4) solvents binary with any combinations of two (2) solvents
Gradient Types	Isocratic, linear, and step gradients
Column Sizes	800 g - 10 kg
Sample Loading Capacity	8 g - 1 kg



Optional Sample Loading Module and Fraction Collector



Main Characteristics



Dual-Piston Pump



Four Solvent Lines



Maximum Flow Rate (mL/min)



Pressure Resistance (psi)

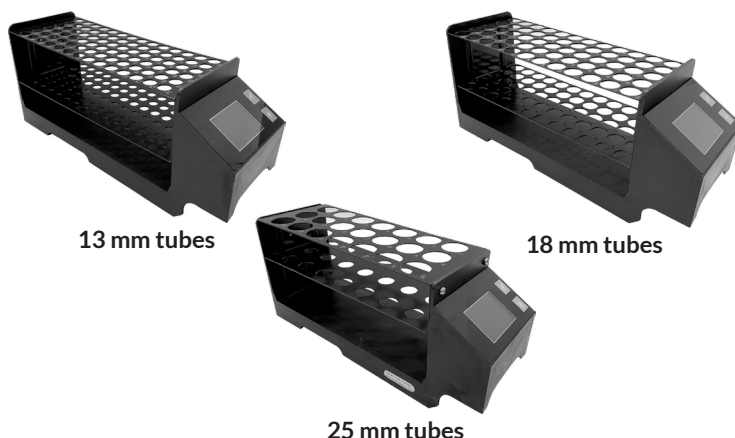
Characteristics	Specifications
Certification	CE
21-CFR Part 11 Compliance	The control software meets FDA requirements for system safety
Fraction Collection	All, waste, threshold, slope, or time
Fraction Collector	Optional collection module, with 8 collection channels
Safety Configuration	Intelligent pressure alarm
Sample Injection	Optional sample loading pump module, 100 and 200 mL/min options available
Column Holder	Suitable for 800 g to 3 kg flash columns, additional column holder for 5 and 10 kg column (optional)
Dimensions (W x D x H)	33 x 57 x 56 cm (13.0 x 22.4 x 22.0in)
Weight	40 kg (88 lbs)



Accessories for SepaBean™ machines

Fraction Collector

All SepaBean™ machines except the L model, feature a fraction collector with tube racks and LCD displays, enabling easy tracking of collected fractions. Racks are available for 13, 15, 16, 18, and 25 mm tubes. Optional accessories include 250 mL and 500 mL French square bottles, along with larger collection bottles for added flexibility.



The optional fraction collector for SepaBean™ L is equipped with 8 built-in collection channels, designed to enhance workflow efficiency. With its precise and flexible design, it integrates seamlessly with the system, ensuring accurate fraction collection and reliable performance for various purification needs.



Fraction collector for SepaBean™ L model

Sample Loading Module for SepaBean™ L machine

The optional sample loading module for SepaBean™ L streamlines sample introduction with adjustable flow rates and loading times, enhancing efficiency. It supports various sample types and volumes, ensuring precise and consistent loading for optimal purification performance.



Large Size Column Holder for SepaBean™ L machine

The optional column holder for SepaBean™ L is designed to accommodate up to 10 kg flash columns, featuring interchangeable top plate holders installed on the equipment's sides. Each plate is engraved with size markings on the facade for easy identification, providing secure and flexible support for different column sizes during large-scale purifications.



Ordering Information

SepaBean™ machines

The table below highlights all the SepaBean™ machines.

SepaBean™ machine Model	Detector Types		
	Fixed Wavelength (254 nm) DAD UV	200 - 400 nm DAD UV	200 - 800 nm DAD UV/Vis
SepaBean™ machine U100	SPBU1000100-0	SPBU1000100-1	SPBU1000100-2
SepaBean™ machine U200	SPBU2000200-0	SPBU2000200-1	SPBU2000200-2
SepaBean™ machine T with CE Certification	N/A	SPBT02000200-1	SPBT02000200-2
SepaBean™ machine T with cTUVus Certification	N/A	SPBT02000200-1a	SPBT02000200-2a
SepaBean™ machine with CE Certification	N/A	SPB02000200-3	SPB02000200-4
SepaBean™ machine 2	N/A	SPB05000300-1	SPB05000300-2
SepaBean™ machine L 1000LP	SPBL01501000-0	SPBL01501000-1	SPBL01501000-2
SepaBean™ machine L 1000MP	SPBL14501000-0	SPBL14501000-1	SPBL14501000-2

Available Accessories for SepaBean™ machines

The table below presents all the accessories available for SepaBean™ machines.

Item Number	Description
Optional Accessories for SepaBean™ machine L	
MCH-VL1-0035	Manual column holder suitable for 800 g, 1.6 kg, and 3 kg flash column, built-in valves and pipelines of sample load pump and solid sample load
SH-1	Manual column holder for 800 g up to 10 kg flash column
PL100-VL1-0037	Sample-loading module with adjustable flow rate and loading time. Maximum loading velocity is 100 mL/min
PL200-VL1-0038	Sample-loading module with adjustable flow rate and loading time. Maximum loading velocity is 200 mL/min
FC-VL1-0039	Fraction collector, built-in 8 collection channels
Accessories: Fraction Collector Tube Rack	
FCV10239	Tube rack for 13 mm diameter tubes [13 x 150 mm, 84 tubes per rack]
FCV10209	Tube rack for 15 mm diameter tubes [15 x 150 mm, 84 tubes per rack]
FCV10735	Tube rack for 16 mm diameter tubes [16 x 150 mm, 60 tubes per rack]
FCV10210	Tube rack for 18 mm diameter tubes [18 x 150 mm, 60 tubes per rack]
FCV10240	Tube rack for 25 mm diameter tubes [25 x 150 mm, 21 tubes per rack]
Accessories: French Square Bottle Rack Holding 12 Bottles	
FCV10043	250 mL square bottle tray
FCV10042	500 mL square bottle tray
Accessories: Luer Connector Kit for Large Columns (Adaptor)	
BLL-0304	Luer Connector kit for large columns (800 g, 1600 g, 3 kg, and 5 kg)



SepaFlash™ FP LT-ELSD

Low Temperature Evaporative Light Scattering Detector

Product Overview

The SepaFlash™ FP LT-ELSD is a universal low-temperature ELSD for detecting non-chromophoric analytes like carbohydrates, lipids, and polymers. Its low-temp technology ensures high sensitivity and low noise, ideal for thermally unstable compounds. Compatible with all SepaBean™ machines, it enhances complex separations.



Key Features

■ High Sensitivity and Universal Detection

The SepaFlash™ FP LT-ELSD is a mass-type, highly sensitive universal detector tailored for preparative liquid chromatography. It effectively detects a wide range of analytes, including those without chromophoric or electroactive groups, such as carbohydrates, phospholipids, amino acids, fatty acids, steroids, saponins, and polymers.

■ Low-Temperature Technology for Enhanced Performance

Incorporating advanced low-temperature technology, the detector achieves superior sensitivity with significantly reduced noise levels. This makes it ideal for analyzing thermally unstable or semi-volatile compounds.

■ Compatibility with Gradient Elution

Designed to seamlessly integrate with gradient elution methods, the SepaFlash™ FP LT-ELSD delivers consistent and reliable performance across various purification workflows.

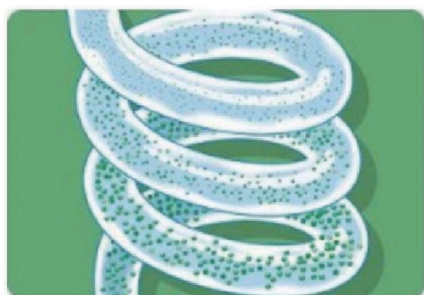
■ Simplified Operation via Remote Control

Featuring a user-friendly design, the system supports remote operation via the SepaBean™/ChemBeanGo app, enabling effortless monitoring and control for enhanced convenience.

How It Works: The Detection Principle

Step 1: Nebulization

The eluent from the column is mixed with an inert gas and passed through the narrow orifice of a nebulizer, producing a uniform mist. This fine mist consists of mobile-phase droplets containing the target compound.



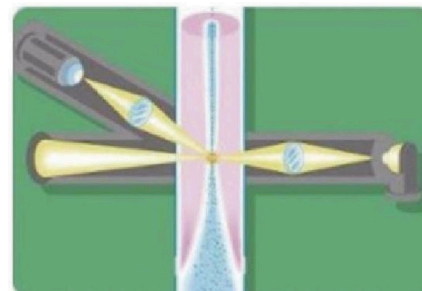
Step 2: Evaporation

The nebulized eluent passes through a heated drift tube, where the mobile phase is evaporated. The solute molecules are isolated from the mist during this process and then directed into the detector's flow cell for analysis.



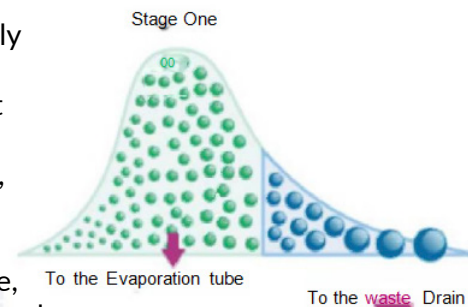
Step 3: Detection

The stream of solute particles enters a flow cell equipped with a light source and a photodiode. The emitted light interacts with the solute particles, and the scattered light is captured by the photodiode, which converts it into an electrical signal for analysis.



Low Temperature Detection

The SepaFlash™ FP LT-ELSD features a unique nebulization cell that selectively removes large droplets, which are harder to evaporate and increase noise. By discarding these droplets, the system operates at lower temperatures without compromising sensitivity (signal to noise ratio). The diagram shows how the nebulization cell filters droplets by size. Larger droplets are removed as waste, allowing only smaller ones to pass through the drift tube.



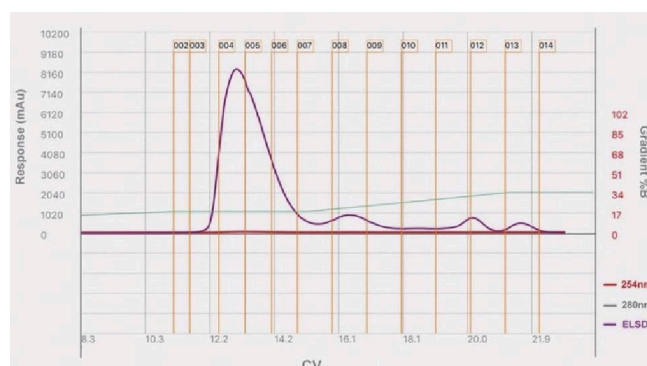
Unlike competitors' ELSDs, which require higher temperatures to reduce noise, this innovative design ensures optimal sensitivity, especially for semi-volatile and thermo-labile compounds. This droplet selection technology enables true low-temperature evaporation and superior performance across all applications.

Application Note

The chemical structure of a pharmaceutical intermediate called 2-oxaspiro[3.3]heptan-6-one is presented below. Due to its lack of UV absorption, this compound cannot be monitored in real-time using a standard UV detector during the flash separation process. However, an ELSD, as a universal detector, effectively meets this requirement.



2-oxaspiro[3.3]heptan-6-one



Parameters	Experimental Procedure	
Instrument	SepaBean™ machine T	
Flash Cartridge	12g SepaFlash™ Standard Series Flash Cartridge (irregular silica, 40 - 63 μm, 60 Å, PN: S-5101-0012)	
Detector	UV: 254 nm, 280 nm SepaFlash™ FP LT-ELSD	
Mobile Phase	Solvent A: Petroleum Ether Solvent B: Ethyl Acetate	
Flow Rate	System: 30 mL/min Split Flow for ELSD: 0.5 mL/min	
Sample Loading	600 mg	
Gradient	CV	Solvent B (%)
	0	0
	11	18
	15	18
	21	34
	24	34

Technical Specifications

Characteristics	Specifications
Detection	Photodiode
Light Source	Blue LED; Built-in Elapsed Time Counter
Temperature Range	Ambient to 100°C
Eluent Flow Rate	100 μL/min to 5 mL/min
Typical Sensitivity	100 ng
Analog Output	0 - 1 Volt
Gas Supply	Nitrogen or Air, 2.0 bar (less than 3 L/min)
Selection & Display	OLED Display and Keypad
System Control	Remote control by SepaBean™ & ChemBeanGo app
Dimension (W x H x D)	250 x 330 x 530 mm
Weight	15 kg (33 lbs)

Ordering Information

Item Number	Description
DMV10212	SepaFlash™ FP low temperature evaporative light scattering detector (LT-ELSD) stand alone
DMV10070	SepaFlash™ FP low temperature evaporative light scattering detector (LT-ELSD) and start kit
DMV10071	SepaFlash™ FP low temperature evaporative light scattering detector (LT-ELSD) start kit only including adapters, flow-splitter valve, and tubing
DMV10782	Nebulizer for SepaFlash™ FP LT-ELSD
DMV11433	Light Source for SepaFlash™ FP LT-ELSD
DMV10779	Glassware for SepaFlash™ FP LT-ELSD
DMV10776	Transparent plastic shield window for SepaFlash™ FP LT-ELSD
DMV11459	Drain tube assembly complete kit including fitting, seal, and tubing
DMV10780	Black plastic nuts (13 & 30 mm) kit, including seals for SepaFlash™ FP LT-ELSD





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Simplify your purification, maximize your efficiency!

Santai Science Inc.

How to Order Santai Science Products

At Santai Science, we take pride in providing our products directly to customers from our Montreal office. Our dedicated team, is here to support your needs every step of the way.

To ensure a smooth ordering process, please include the following details with your order:

- **Company information:** billing and shipping addresses.
- **Order details:** purchase order number or credit card information, item numbers, product descriptions, quantities, and unit of measure.
- **End-user information:** full name, email address, and phone number of the end user.



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You can place an order with our customer service team in French or English, Monday to Friday, between 8:30 AM and 5:30 PM Montreal time (GMT-5).

Phone: +1 514 505 1378

By Email

Orders can be emailed to the following address:

order@santaisci.com

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1. Visit our website at www.santaisci.com and explore our “Online Store” by clicking the tab in the top menu bar or the shopping cart icon on the right-hand side.
2. Browse our product catalog and select the items you wish to order, specifying the desired quantities. Once you’re ready, click on the shopping cart icon to proceed to checkout.
3. You have several options for checkout:
 - Use express checkout with “Shop Pay” or “Google Pay.”
 - Log in to your account, or create one if you’d like.
 - Proceed as a guest.
4. Fill out all the required fields in the form, providing your contact information, selecting your preferred shipping method, and entering your payment details based on the chosen method.
5. Once all the information has been entered, click the “Pay Now” button at the bottom of the page to complete your payment.



Why Choose Santai

At Santai Science, we are committed to empowering your success with our global reach, innovative technologies, and unwavering support. Here's why partnering with us is the right choice for your chromatography needs:

- **Global presence:** Santai Science seamlessly delivers world-class chromatography solutions to customers worldwide, ensuring quality and reliability no matter where you are. No matter where you are, our global presence ensures you receive the quality and reliability you deserve.
- **Innovative solutions for excellence:** elevate your scientific pursuits with our cutting-edge chromatography technologies. Designed with precision and innovation, our solutions empower you to achieve unparalleled results in your research and applications.
- **Unwavering customer support:** your success is our priority. At Santai Science, we go beyond boundaries to provide dedicated, personalized support. Wherever you are, you can count on us to be your trusted partner every step of the way.

Choose Santai Science - because your success drives our innovation.



SepaBean™ Family

machine U

(entry-level)



machine T

(best-seller)



machine

(standard version)



machine 2

(medium pressure)



machine L

(scale-up)



SepaFlash™ Columns

Standard Series



Large Size Series



HP, Bio & Bonded Series



iLOK™ Series

(empty & pre-packed)



iLOK™ - SL Series

(Solid-load cartridges)



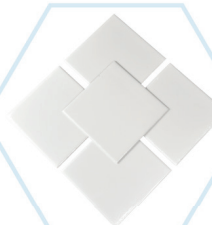
Ultra-Pure Bare Silica Gels



Ultra-Pure Bonded Silica Gels



TLC Plates



Other SepaFlash™ Products



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