



Advancing Automation Together

LUMERA™

PROTEIN PURIFICATION SYSTEM

Enhance efficiency, accuracy, and reproducibility in laboratory workflows



SMALL BUT VERSATILE

Compact design. Parallel purification.

Imagine an 8-channel protein purification system compact enough to fit inside a refrigerator, yet capable of running every channel in parallel.

With LUMERA™'s intuitive touchscreen interface, method editing is quick and straightforward. An integrated secondary screen provides real-time UV detection, allowing you to monitor absorbance data as purification progresses.

By maintaining a constant flow rate and precise elution control, LUMERA™ helps improve the quality, consistency, and efficiency of protein purification.



Accelerate your protein purification with LUMERA™

- Parallel Operation • Positive Pressure System • Column Cleaning in Place (CIP) and Regeneration • Column Conditioning/Washing/Elution • Buffer Mixing • Operates Under Temperatures as Low as 4 °C
- 2/6 Fractions per Sample • 1 Waste Channel • Self-Pour and Pre-Packed Columns • 5" Touch Interface • Up to 100 Methods • Real-Time UV Detection • Flowthrough Re-Application • Large Fraction Collection • Up to 9 Buffers • Customizable

Applications

Flexible purification across multiple chromatography modes

Affinity Chromatography

- 6-His IMAC
- GST
- Protein A
- FLAG
- Others

Ion Exchange Chromatography

- Cation or Anion Exchange
- Increasing salt gradient

Hydrophobic Interaction Chromatography

- Decreasing salt gradient

Automated High Throughput Purification System

For Proteins and Other Biomolecules

- Antibody Purification
- Metabolite Profiling
- Antigen and Enzyme Extraction
- Oligonucleotide Purification*

*Application available without UV detection

Sample Loading Options

Standard Sample Rack

LUMERA™ comes with default sample tubing designed for sample volumes up to 50 mL using the system's sample racks.



Extended Tubing

For sample volumes greater than 50 mL, extended tubing is available to draw directly from larger sample containers.

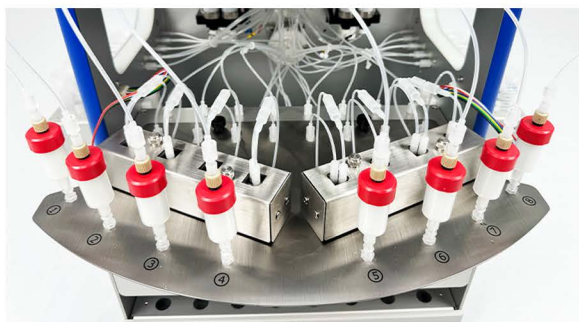


Features

Efficient. Simple. Intelligent.

8-CHANNEL SYSTEM

The LUMERA™ processes 8 samples up to 4 L in parallel. All samples start and finish at the same time. Our patented multi-channel valve has separate flow paths for each sample to eliminate cross-contamination.



SELF-POUR AND PRE-PACKED COLUMNS

Compatible with a variety of column types—custom adapters can be made for non-standard connections.

CUSTOMIZABLE FRACTION COLLECTION TRAY

The LUMERA™ can collect two fractions with 15 and 50 mL tubes, or be configured for 6 x 15 mL fractions.



POSITIVE PRESSURE

The LUMERA™ system uses positive pressure to achieve controlled flow rates and prevent resin drying.

LARGE VOLUME FRACTION COLLECTION

For large volume applications, the system can be configured to collect a single fraction for each channel up to 1 L in volume.

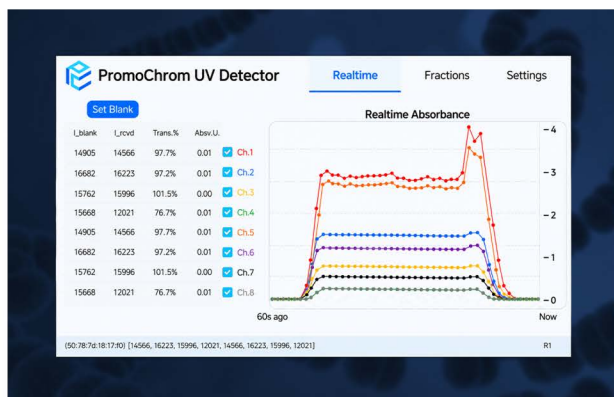
INTUITIVE TOUCH INTERFACE

The LUMERA™ comes with a resistive touchscreen interface that works even under wet conditions. There is no need for an external computer. Sample selection and method editing can be intuitively performed in just a few steps. When running, the screen highlights the current step being run and displays its processed volume and remaining time.



REAL-TIME UV DETECTION

Monitor protein purification as it happens with real-time UV detection displayed on the attached secondary screen. Visualize absorbance data throughout the purification process for better monitoring of elution profiles and collection timing.



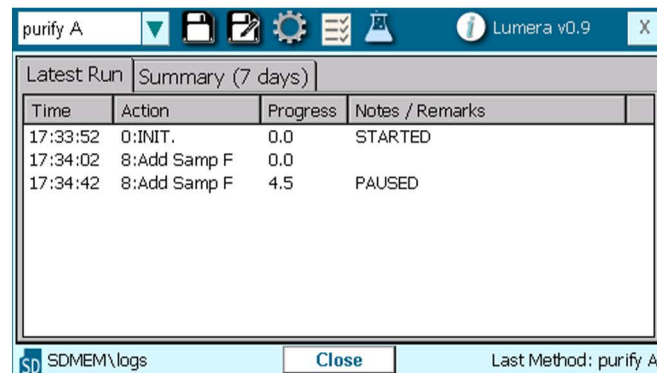
FLOWTHROUGH RE-APPLICATION

Maximize sample recovery with automated flowthrough reapplication. LUMERA™ enables collected flowthrough to be reapplied directly onto the column, helping improve protein capture while reducing manual handling and simplifying repetitive purification workflows.



AUTO-RECOVERY AND LOGGING

The powerful software keeps track of extraction steps performed and can allow users to resume during disruptions such as power failure. Up to 7 days of logs can also be viewed or retrieved.



AIR INTAKE MITIGATION

The LUMERA™ System utilizes pre-column reservoirs that mitigate air introduction into columns, preventing column cracking and ensuring resin uniformity during a purification.

COLD-ROOM COMPATIBLE

The LUMERA™ System's compact design supports operation inside cold rooms or laboratory refrigerators at temperatures as low as 4°C, helping accommodate temperature-sensitive purification workflows.

CORROSION RESISTANT FLOW PATH

A combination of ceramic, PEEK and high-density polyethylene makes the flow path resistant to corrosion and easy to clean.

Multi-Channel Purification

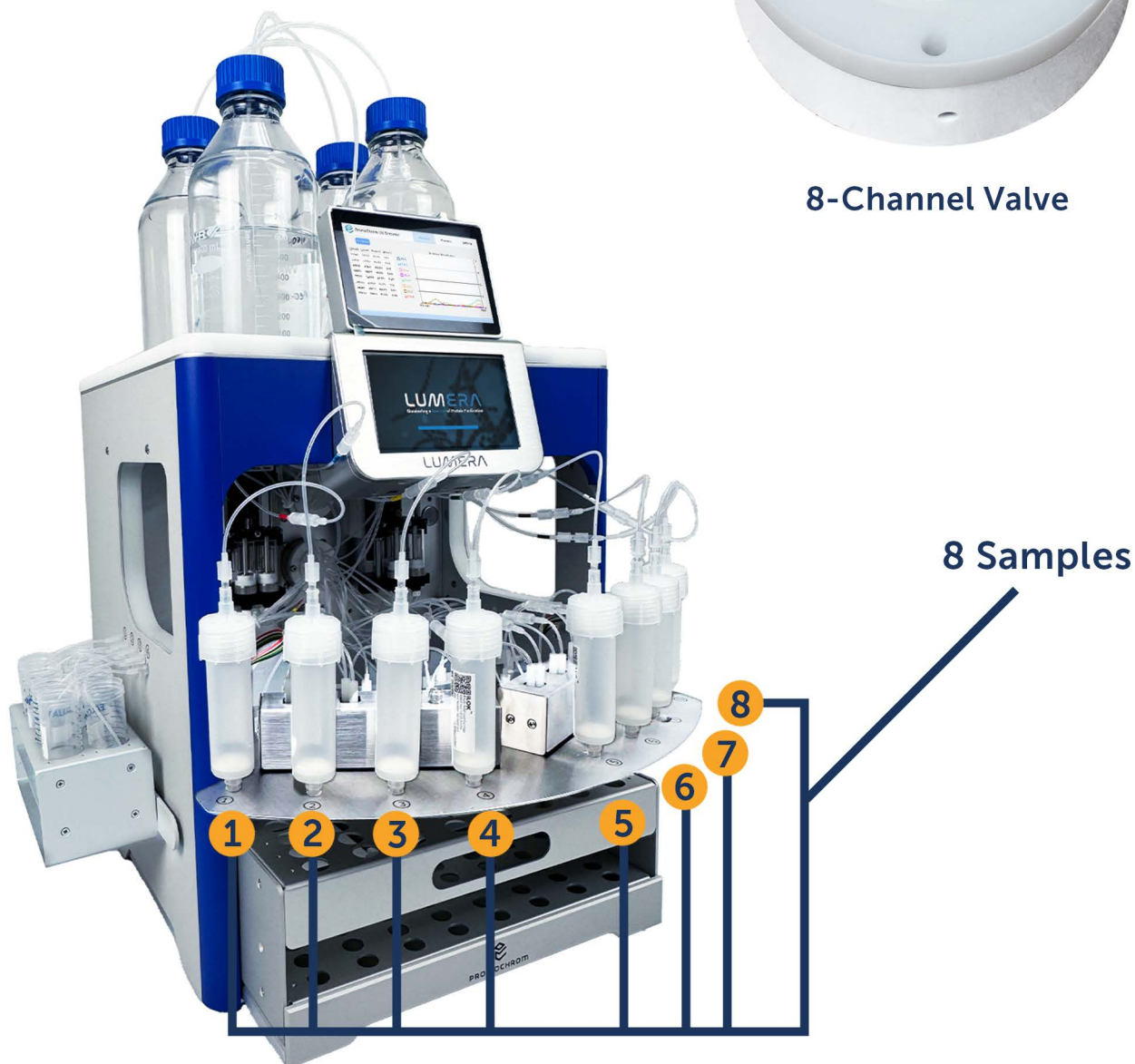
Patented Valve Design to Achieve Complex Liquid Handling

PromoChrom's multi-functional valve shown below is based on our flow-path-integration technique. The function of one such valve is equivalent to several normal stream selection valves and isolation valves.

With 1 stream selection valve and an 8-channel distribution valve, the LUMERA™ can provide isolated flow paths for 8 samples, choose from 9 buffers, and perform buffer mixing.



8-Channel Valve



PROMOCHROM
a Velaris brand

Lumera Purification Example Method and UV Data

The following method is an example of a typical simplified anion exchange workflow on the LUMERA™ system. UV data is visualized by uploading the run log files to the PromoChrom WebApp. For simplified visualization, only channels 1-4 were used for this example.

System: LUM-96T-UVP

Column: 5 mL Anion Exchange Column pre-packed, industry standard

Sample: 650 mg/L bovine serum albumin in water

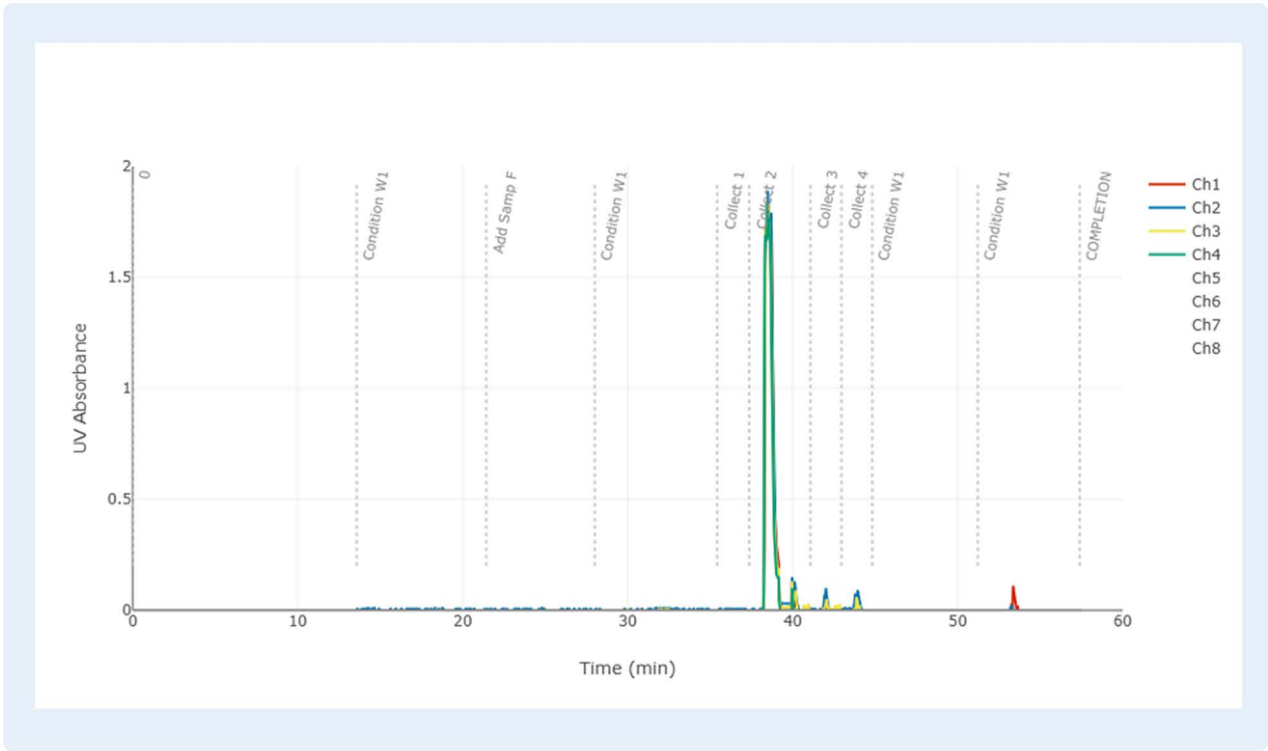
Loading Buffer: 50 mM sodium phosphate buffer, pH 8

Elution Buffer: 50 mM sodium phosphate buffer, pH 8, 1 M NaCl

Method:

Action	Inlet	Inlet 2	Target	Flow Rate	Volume	Note
Condition	Buffer 4		Waste 1	10	30	Condition column with loading buffer
Add Sample F	Sample		Flowthrough	10	25	Flowthrough is collected to check for unbound protein
Condition	Buffer 4		Waste 1	10	30	Wash column with loading buffer
Collect 1	Buffer 4	Buffer 5 (40%)	Fraction 1	5	4	Pre-elution step – clears volume in column
Collect 2	Buffer 4	Buffer 5 (40%)	Fraction 2	5	10	Elution concentration achieved by mixing loading and elution buffer
Collect 3	Buffer 5		Fraction 3	5	5	Full strength elution fraction
Collect 4	Buffer 5		Fraction 4	5	5	Full strength elution fraction
Condition	Buffer 5		Waste 1	10	25	Regenerate column
Condition	Buffer 4		Waste 1	10	25	Condition column

UV Data



Specifications

LUMERA™

No. of Samples	Up to 8 in parallel
No. of fractions	Up to 6 fractions per channel
No. of waste channels	1
No. of buffers	Up to 9
Sample volume	Up to 50 mL with sample racks; > 50 mL with extended tubing
Fraction volume	15-50mL; Up to 1 L in large-volume configuration per channel
Flow rate	0.5 – 50 mL/min
UV wavelength	280 nm
Fluid delivery	Positive pressure
Display	Dual 5" resistive touch
No. of methods	100
Method actions	Column pre-condition/soak/wash, add sample, elution, sample line cleaning, buffer mixing, pause, flowthrough reapplication
Dimensions	42 cm x 51 cm x 46 cm
Weight	17.6 kg (without UV) 19.5 kg (with UV)
Power	1.5 A @ 24 VDC

Ordering Info

PART NO.	DESCRIPTION
LUM-92T	8-channel LUMERA™ Protein Purification System with flowthrough collection and re-application functionality. Supports up to 9 buffers. Constructed with PEEK/Ceramic valve materials. Tubed in PE. 2-fraction tray configuration.
LUM-96T	8-channel LUMERA™ Protein Purification System with flowthrough collection and re-application functionality. Supports up to 9 buffers. Constructed with PEEK/Ceramic valve materials. Tubed in PE. 6-fraction tray configuration.
LUM-92T-UVP	8-channel LUMERA™ Protein Purification System with flowthrough collection and re-application functionality. Supports up to 9 buffers. Constructed with PEEK/Ceramic valve materials. Tubed in PE. Real-time protein concentration monitoring technology via UV absorbance. 2-fraction tray configuration.
LUM-96T-UVP	8-channel LUMERA™ Protein Purification System with flowthrough collection and re-application functionality. Supports up to 9 buffers. Constructed with PEEK/Ceramic valve materials. Tubed in PE. Real-time protein concentration monitoring technology via UV absorbance. 6-fraction tray configuration.

Get in touch!



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Additional information can be found on our website

www.promochrom.com



Ask a Question

Email us with any questions

info@promochrom.com



Call Us

If you require direct assistance, don't hesitate to call us!

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Velaris reserves the right to change the specifications and the appearance of the equipment without further notification.

Version 1.0