High Efficiency Liquid-Solid Separators

Continuous Filtration with Zero Maintenance



FLOW RATES:

15 - 1,510 US gpm (3 - 343 m³/hr)

For higher flow rates, two or more separators can be manifolded (see page 4)

Maximum Pressure Rating: 150 psi (10.3 bar)
Maximum Fluid Operating Temperature: 180° F (82° C)

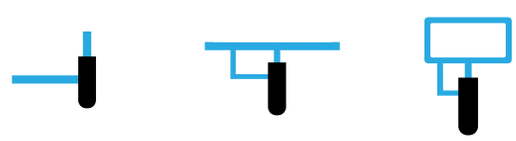
A high efficiency liquid-solid separator that provides the finest filtration using centrifugal action for cooling tower systems; resulting in reduction of maintenance and water consumption.

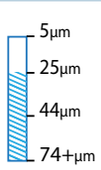
Innovative. Reliable. Effective. Energy Efficient.

eHTX Features and Benefits:

- Filter performance rated to remove up to 98% of all solids 44 micron (325 mesh), 2.6 specific gravity, and larger in a single pass and 99% down to 25 micron (550 mesh) in recirculated systems
- No moving parts to wear out; no barriers or media to change
- Space saving vertical profiles
- Low and steady pressure loss; as low as 2 psid
- Options for zero water loss
- Continuous filtration and no backwashing; periodic automated purging eliminates routine maintenance and messy service routines
- Optional materials of construction and ASME code available
- Improve downstream thermal efficiency of heat transfer surfaces
- eHTX Separators include pressure gauges

FILTRATION APPLICATIONS:

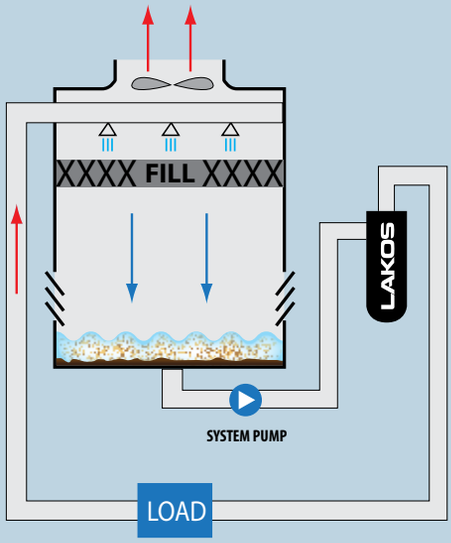


WATER USAGE	SOLIDS METER	MAINTENANCE
		
Zero Water Loss Options Available	Micron Removal µm (microns)	Zero Maintenance

LAKOS FILTRATION SOLUTIONS

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04 85 88 02 75 | separateur@gedo.fr | separateurs.gedo.fr
565 avenue du Prado - 13008 Marseille - France



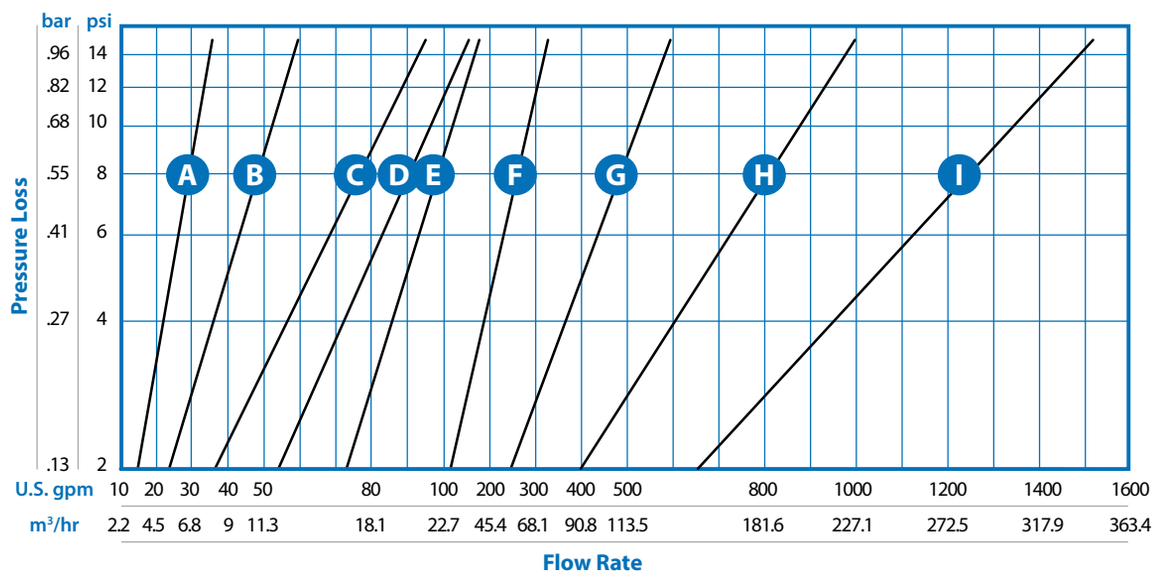
Benefits:

- Filter 100% of flow from the cooling tower to downstream equipment – with zero downtime
- Maintain design heat transfer efficiencies on new and existing equipment
- Significantly extend maintenance intervals for cleaning chiller tubes, plate heat exchangers, compressors, etc.
- Zero filtration maintenance when using LAKOS Controllers and Automated Purge Valves
- Point of use application

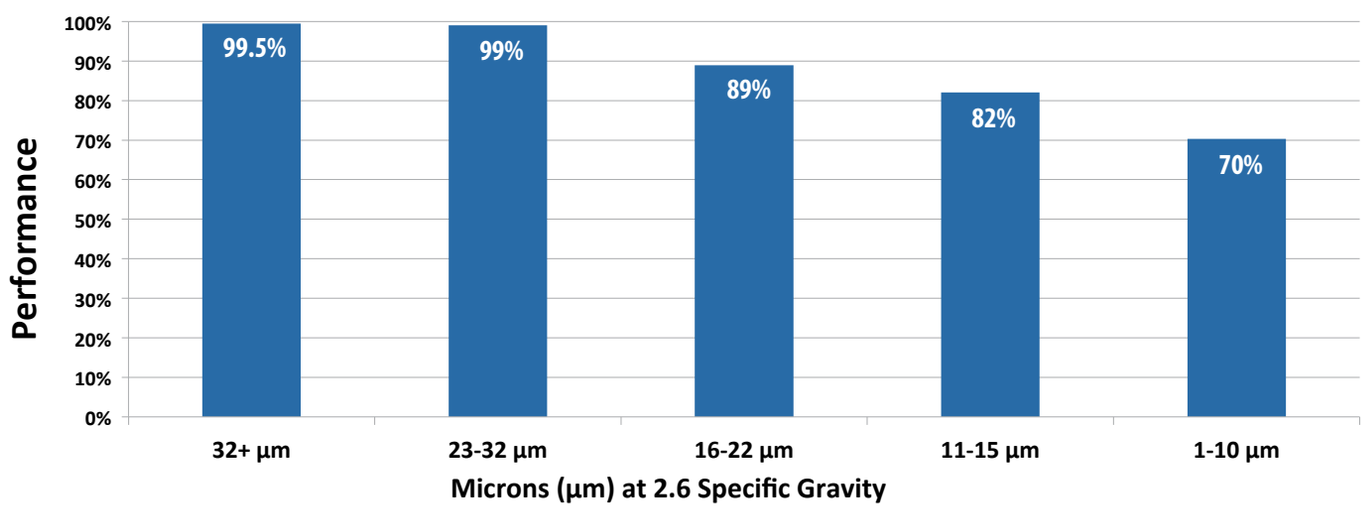
LAKOS Separators & Systems must be installed downstream of the main System Pump. Do not install on the suction side of the main system pump. Flow must be pushed through the separator and not pulled. Consult LAKOS for questions.

Flow vs. Pressure Loss Chart

- A eHTX-0015
- B eHTX-0025
- C eHTX-0040
- D eHTX-0060
- E eHTX-0080
- F eHTX-0140
- G eHTX-0260
- H eHTX-0420
- I eHTX-0650



Solids Removal Chart: *Recirculated flow at 20% Side Stream*

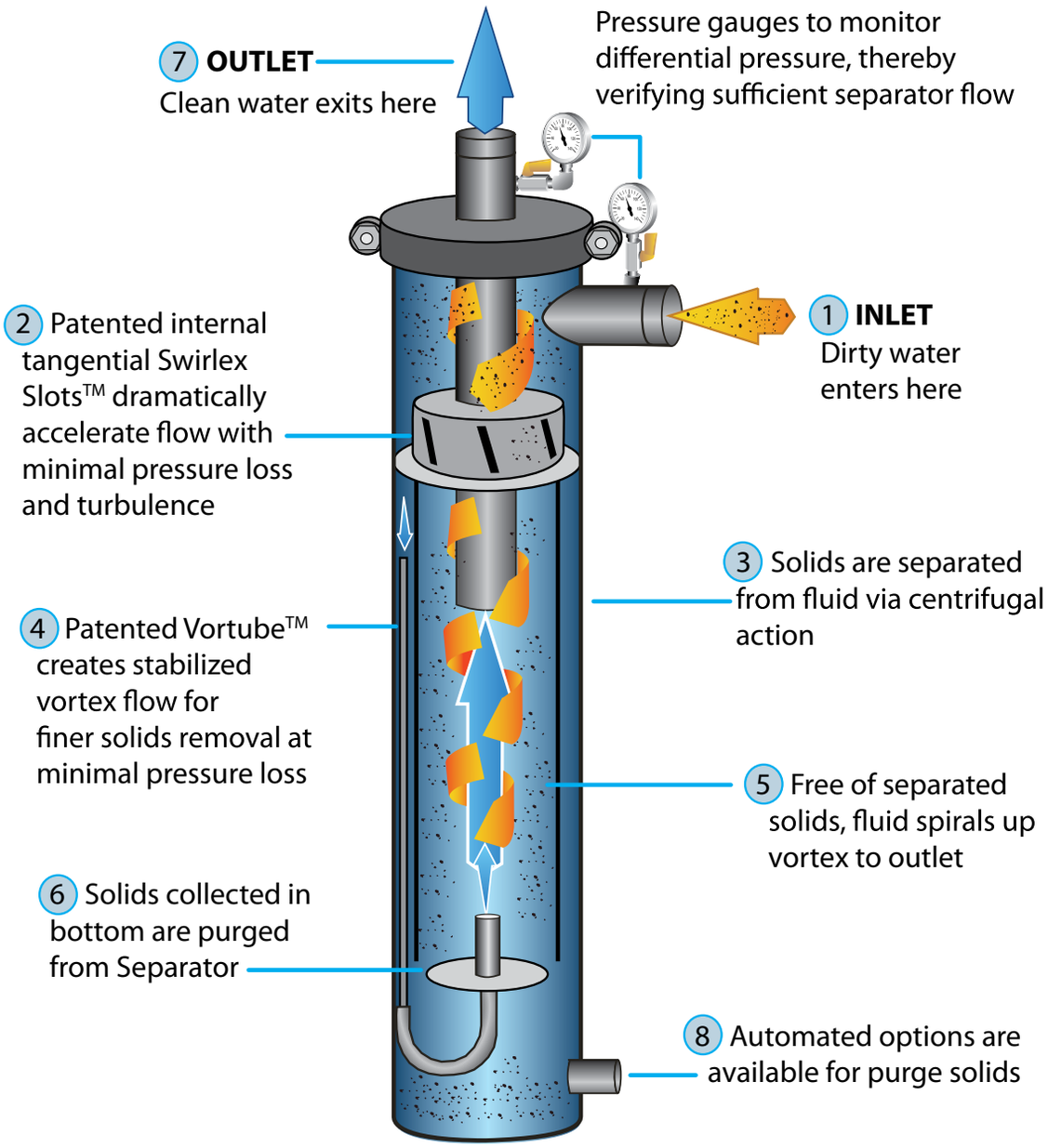


The above efficiency results were based upon 20% side stream within 16 hours. Field results may vary depending on side stream percentage and basin size. Performance results verified by independent testing.

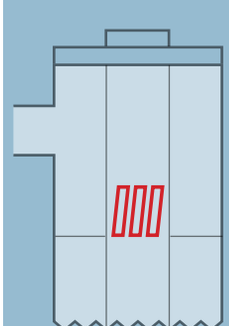
eHTX-0650 separators are not 3rd party tested and may not meet 44 micron removal at 99% efficiency.

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How It Works



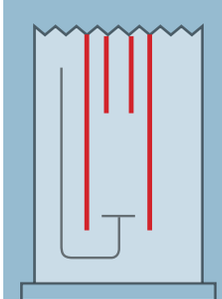
PATENTED SWIRLEX SLOT



2

Patented Swirlex slots dramatically accelerate flow to efficiently magnify separation without increased turbulence and efficiently remove troublesome solids without abrasive wear.

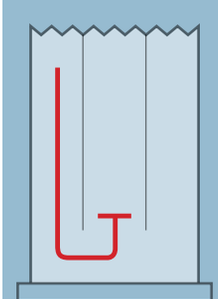
INTERNAL BARREL



3

Proprietary lower vortex stabilization methodology further enhances solids separation.

PATENTED VORTUBE

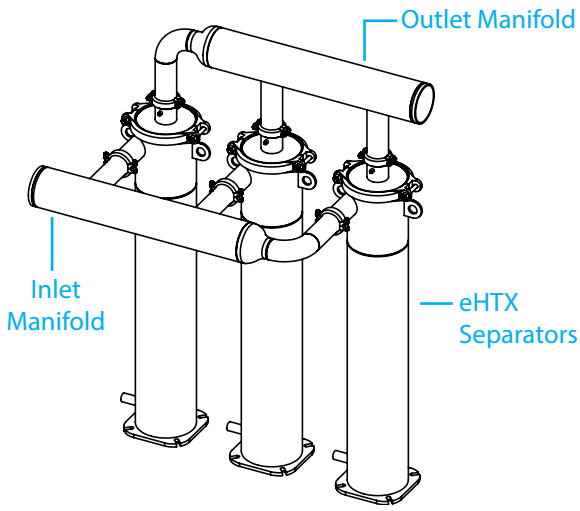


4

Patented Vortube geometry capitalizes on strong pressure gradient present at the center of the vortex to effectively pull finer solids into the collection chamber.

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Higher Flow Rates



Manifolding in Parallel for High Flow Rates

When water system flow rates exceed that of any single LAKOS Separator, manifolding two or more units together can help achieve large flow requirements. LAKOS can assist with separator manifold design and build for high flow rate applications. Manifolding multiple units keeps units smaller, easier to install and provides for future flow rate changes.

Example: Three eHTX-0185 Separators increase flow range to 555 – 1350 US gpm (126 – 307 m³/hr)

Separated Solids Disposal

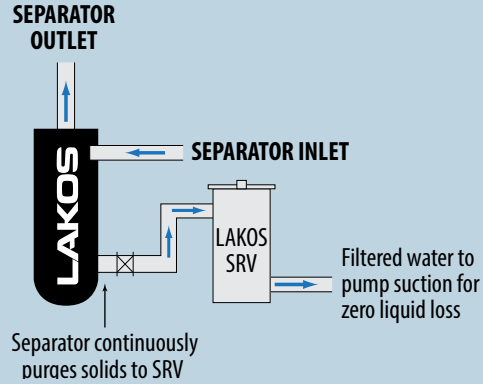
Solids Recovery Vessel (SRV)



SRV-833 SRV-816

Features and Benefits:

- Solids Recovery Vessel (SRV-833) features double capacity to allow for fewer bag change outs; includes two ten micron bags on order
- Lower waste treatment costs, meet waste disposal requirements and greatly reduce chemical loss
- eHTX Separators can purge to either SRV-816 or SRV-833 for separated solids collection
- Optional indicator package to facilitate bag change-outs
- For more information see LAKOS literature LS-622

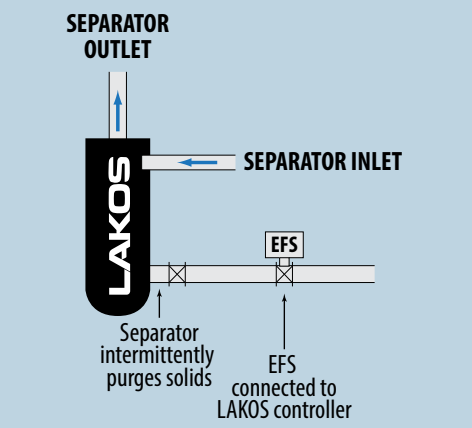


Electric Fail-Safe Valve (EFS)



EFS

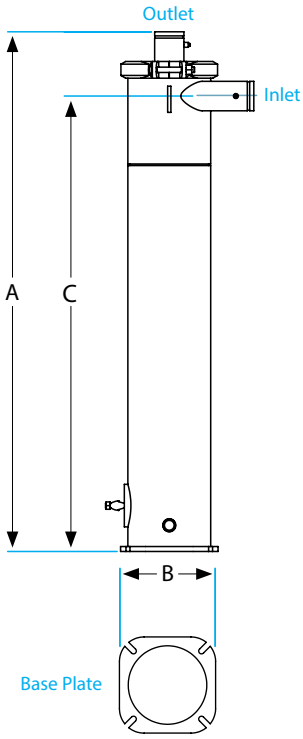
- Battery backup electric fail-safe option automatically closes valve in event of power failure
- Eliminates manual purging
- EFS actuator features an electronic circuit that automatically adjusts the motor speed (depending on torque variations) to keep cycle time constant – maintaining consistent purge durations
- Ability to set both purge duration and interval
- For more information see LAKOS literature LS-913



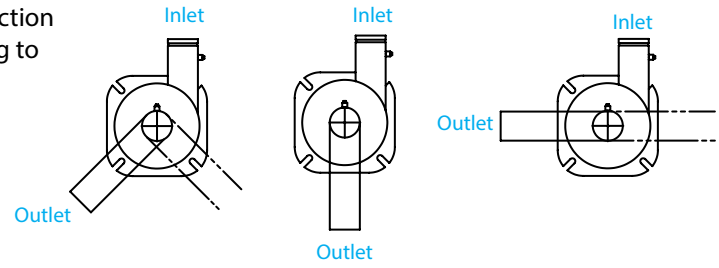
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Models & Dimensions

eHTX Separator



Recommended direction of inlet/outlet piping to control vibration



MODELS AND DIMENSIONS:

Model	A		B		C	
	in	mm	in	mm	in	mm
eHTX-0015-V	31	787	9	229	25	629
eHTX-0025-V	36	914	9	229	30	756
eHTX-0040-V	42	1,067	13	330	36	905
eHTX-0060-V	48	1,219	13	330	41	1,037
eHTX-0080-V	56	1,422	13	330	48	1,230
eHTX-0140-V	73	1,854	15	381	64	1,630
eHTX-0260-V	93	2,362	19	483	83	2,105
eHTX-0420-V	125	3,170	24	610	113	2,861
eHTX-0650-V	157	3,999	26	660	137	3,489

NOTE: eHTX-0420-V and eHTX-650-V are available in low profile configuration. Consult factory for details. Hand-hole included on eHTX-0140 and larger models only.

SPECIFICATIONS:

Model	Flow Range US gpm		Flow Range m^3/hr		Inlet/ Outlet	Purge Size	Solids Collection Capacity		Dry Weight		Weight w/Water	
	low	high	low	high			gal	liters	lbs	kg	lbs	kg
eHTX-0015-V	15	30	3	7	1"	3/4"	.25	.95	97	44	125	57
eHTX-0025-V	25	60	6	14	1-1/4"	3/4"	.25	.95	115	52	148	67
eHTX-0040-V	40	95	9	21	1-1/2"	3/4"	0.6	2.3	184	83	257	117
eHTX-0060-V	60	140	13	31	2"	3/4"	0.6	2.3	221	100	305	138
eHTX-0080-V	80	185	18	42	2-1/2"	3/4"	1.2	4.5	298	135	456	207
eHTX-0140-V	140	325	32	74	4"	1-1/2"	1.7	6.4	486	220	772	350
eHTX-0260-V	260	585	50	133	4"	1-1/2"	3.2	12.1	768	349	1,362	609
eHTX-0420-V	420	950	95	216	6"	1-1/2"	6.5	24.5	1,227	557	2,478	1,128
eHTX-0650-V	650	1,510	148	343	8"	2"	11.5	43.5	1,678	761	3,917	1,777

eHTX-0650 separators are not 3rd party tested and may not meet 44 micron removal at 99% efficiency.

SEPARATED SOLIDS DISPOSAL:

Solids Recovery Models	Solids Collection Capacity	Liquid Retention Capacity
SRV-816	360 cubic inches (6 liters)	5 gallons (19 liters)
SRV-833	732 cubic inches (12 liters)	8 gallons (30.5 liters)

Purge Valve Models	Purge Valve Size
EFS-07 (Electric Fail-Safe Valve)	3/4 inches (19.05 mm)
EFS-15 (Electric Fail-Safe Valve)	1 1/2 inches (38.1 mm)
EFS-20 (Electric Fail-Safe Valve)	2 inches (50.8 mm)
ABV2-07 (Standard Actuated Ball Valve)	3/4 inches (19.05 mm)
ABV2-15 (Standard Actuated Ball Valve)	1 1/2 inches (38.1 mm)
ABV2-20 (Standard Actuated Ball Valve)	2 inches (50.8 mm)

For more information about ABV2 valves, see LAKOS literature LS-239.

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Independent Testing

Filtration Test completed on LAKOS 3" Separator Design Iteration 200/8/12.

The filter assembly was installed with test components defined as follows installed in the following order starting upstream:

1) 3" turbine-type flow meter
2) 20 micron disc filter assembly
3) 4" pipe spool with sand-injection pump
4) 3" spool
5) Separator under test
6) 3" pipe spool
7) 20 micron disc filter assembly

Test Conditions: 200 gpm, 11.4 psi loss

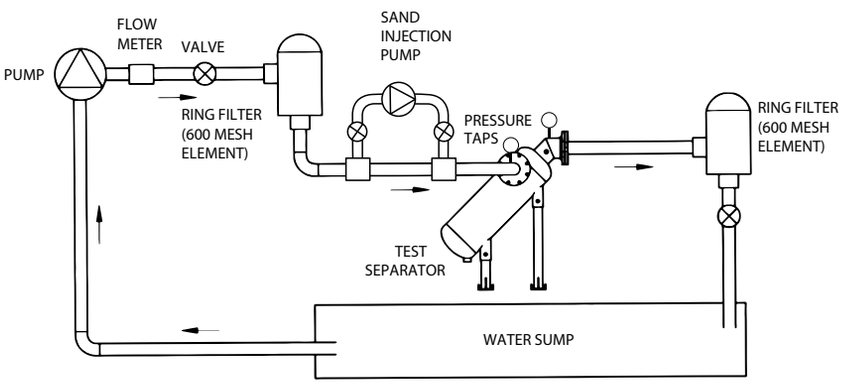
Sample Breakdown (Grams):

45-75 micron: 75.000
Total sample size: 75.000

Recovered grams from downstream filters: 1.001
Filter efficiency: 73.999 / 75.000 = 98.7%

Note: Sand sample: Quartz, Silicon Dioxide by Powder Technology Inc.

Date: August 1, 2012



ICWT International Center for Water Technology

LAKOS Separators have been independently tested and certified by an independent testing agency, the International Center for Water Technology (ICWT), confirming our separators' filtration performance and capability to remove troublesome particle matter from pumped water.

For over 30 years the internationally recognized ICWT/CIT Testing Laboratories have been providing independent, third party testing to a wide range of irrigation and other industries around the world.

ICWT has experience with hydraulics, pumps, filters, and valves. Fluid component testing provides manufacturers, distributors and end-users with accurate performance data for applicability assessment and enable product development. ICWT was recently certified by IAPMO R&T - North America's premier third party certification body for plumbing and mechanical products. More information about the testing agency and testing process can be found at www.californiawater.org.

This test agency is available and approachable to confirm its test methodologies and results.

International Center for Water Technology-
California State University Fresno
5370 North Chestnut Ave., Fresno, CA 93740-0018,
Phone: 559-278-2066, www.californiawater.org



Cleaning chilled water, Axima Belgium



Cleaning city water, Florida USA



Protecting heat exchangers, Nevada USA

LAKOS Separators are manufactured in the USA.

All LAKOS eHTX Separators are warranted for five (5) years from date of delivery.
For detailed warranty information visit http://www.lakos.com

LAKOS products are protected under multiple U.S. and foreign patents and trademarks.
For details contact LAKOS.

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LAKOS is a proud and contributing member of ASHRAE for over 30 years

LS-924H (Rev. 11/24)

LAKOS FILTRATION SOLUTIONS®

1365 North Clovis Avenue
Fresno, CA 93727
www.lakos.com

Tel: (559) 255-1601
info@lakos.com

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