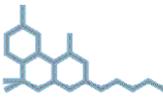


PREMIUM



VKS 125

WIPED-FILM SHORT PATH DISTILLATION SYSTEM

ROOT 
SCIENCES

VKS 125

Key Features

- **Throughput Capability:** Typically 15 L/h, Maximum of 20 L/h
- **Optimal Yields and Potency:** Finished distillate contains up to 99.85% total cannabinoids
- **Fully Jacketed System:** Heated from start to finish, negating the use of heating tape or heat guns to keep product moving through the system
- **True Continuous Feed:** Integrated pumps for precise operator control over feed and discharge rates, allowing for true continuous operation, dispensing finished product to atmosphere
- **GMP Ready:** Optional GMP package includes FAT, SAT, IQ, OQ - Equipment can be further customized according to your URS to meet any local or international GMP requirements
- **High Volume Processing:** System designed for processors with high throughput requirements, frequently paired with extraction systems processing up to 1 metric ton per day
- **Mass Flow Meter Upgrade:** Optional sensor precisely detects feedstock flow rate to account for fluctuations in crude oil properties which can affect distillation efficiencies at this scale
- **Expert On-Site Training:** Instructions for operation of equipment and proprietary parameters for producing distillate are included with purchase
- **Service and Maintenance:** Root Sciences offers professional maintenance, cleaning, and technical services to keep your equipment in top operational condition



What is Molecular Distillation?

Molecular distillation is a technique used to purify compounds, such as cannabinoids, through a thermal separation process. This process utilizes a deep vacuum to reduce the boiling point of the desirable components, fractionating substances based on their boiling points.

Wiped-film distillation utilizes wipers or rollers to spread the feed-stock into a thin film on the evaporator, which greatly increases the surface area and decreases the residence time (or how long the crude oil is exposed to high temperatures). By using an internal condenser, the distilled vapor travels a short path before condensing, enabling efficient operation with little waste and minimal thermal degradation. This entire process operates in a continuous manner to enable rapid, repeatable, and scalable production. With a low operating cost, high throughput, and unbeatable reliability, wiped-film distillation has become the most popular method of purifying crude extracts to produce high potency concentrates.

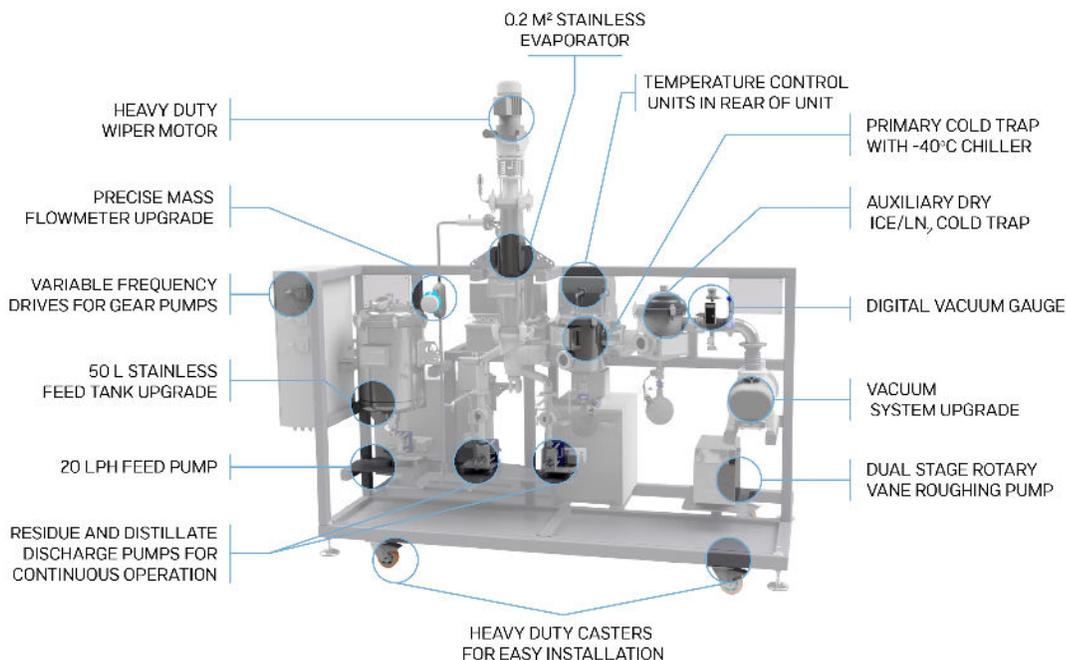
High quality distillate is required for a variety of top shelf end-products, such as vape cartridges, edibles, and dabbables. This form of distillation is also the preferred method for producing a variety of isolates, including CBD and CBG.

Wiped-Film Short-Path Distillation Equipment

Root Sciences' wiped-film molecular distillation plants are specifically intended for the processing of cannabis and hemp crude oil, with honest and accurate throughput/yield rates reflecting that.

Designed and manufactured in Germany, the VKS 125 is one of the largest commercial cannabis distillation units on the market.

Highly customizable, this unit can be tailored with options such as integrated sensors, advanced controls, and multiple distillation stages.



DISTILLATION

ROI / Payback Period

Material	Cannabis	Hemp	Cannabis	Hemp
Daily Processing Time	8-hour (one shift)		24-hour continuous (three shifts)	
Daily Crude Cost	\$180,000	\$15,600	\$540,000	\$46,800
Daily Distillate Yield	49 L		147 L	
Daily Distillate Value	\$318,000	\$26,600	\$954,000	\$79,800
Payback Period	2 days	25 days	1 day	8 days

Hemp data based on US average prices according to hempbenchmarks.com 2021 spot price index report. Cannabis data based on 80% yield at Washington State I-502 market prices.

Specifications

Maximum Feed Rate	20 L/h
Typical Throughput	15 L/h
Evaporator Surface Area	0.20 m ²
Power Requirements	3Φ 230 V, 60 Hz 3Φ 460 V, 60 Hz
Stages	Single
Dimensions (L x W x H)	8.7' x 4.1' x 9.5'
Certification	UL ready (all necessary individual components are UL listed)
Warranty	1 year (excluding glass and vacuum system)
Materials Used	316 stainless steel, borosilicate glass, graphite wiper blocks
Options	50 L Feed vessel, Separate heater for residue discharge arm, Degassing stage, Additional distillation stages, Vacuum system upgrade, GMP package to include IQ, OQ, FAT, SAT, Heated transfer hose to connect multiple units in series



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About Root Sciences

Root Sciences is the global leader in the distribution of equipment and support services for processing facilities in the cannabis and hemp industries, providing premium extraction, distillation and other post-processing technologies as well as business planning and lab/facility design and consulting services. However, we are in the unique position of being much more than an equipment distributor. Backed by years of hands-on experience in both growing and processing, our collective knowledge as a team of seasoned practitioners and process engineers is unmatched in the industry.

For Root Sciences, the sale is just the beginning, as we aim to nurture a long-term partnership with all of our clients. After delivering and installing equipment, our training and after-sales support is where we really add value. This is where Root Sciences' in-house knowledge and experience becomes so crucial, as we will have everything set up and running efficiently on day one. Furthermore, we are always just a phone call or an email away whenever support is needed. We also offer extended service and maintenance packages to keep your equipment in top condition and minimize the risk of downtime for your operations. As your partner, we have your back.