

## DESCRIPTION

Programmable water-only extraction (subcritical 25–250 °C with optional supercritical package  $\geq 375$  °C). The Subcritical Water Pilot Extractor is a **research-to-pilot platform for solvent-free extractions using water as the process fluid**. It **supports subcritical water** (pressurized liquid, 25–250 °C) for polarity-tuned extractions and can be configured for subcritical water (<250 °C) for advanced applications. A **programmable** preheater, packed-bed extractor, and back-pressure regulator (BPR) maintain single-phase flow through the bed. An **integrated condenser and triple rotavap** train provide rapid water removal and fraction drying.

## FEATURES

- ✔ **Programmable Temp Steps (25-250 °C)** with recipe control (option:  $\geq 375$  °C SCW package)
- ✔ **BPR & Preheater** for stable single-phase operation, ensuring uniform fluid temperature without the thermal gradients produced by external ovens.
- ✔ **Built-in Fractionation** by temperature window & time; detector-ready (UV/VIS)



*\*Product in development; image & specifications may change.*

## EXTENDED

### PROCESSING POWER

- Flow envelopes:  
 $\geq 300$  mL/min @  $\geq 5,000$  psi  
or  $\geq 1.0$ L/min @  $\geq 3,200$  psi
- **MAWP 7,500 psi** extractor
- **Modular extractor vessels** (standard 2.5L; custom sizes from 0.001L to 2.5L available); packable beds & filter screen.

### PROCESS CONTROL

- **Recipe automation** (batch or semi-cont) with step holds & ramps
- Preheater + extractor thermocouples; T/P/Flow data logging
- **Rapid cooling** using chilled water source
- **BPR control** to maintain liquid phase through the bed
- **Detector-ready** (UV/Vis) with fraction triggers
- **Create and store** an unlimited number of extraction methods.

### GMP COMPLIANCE

- **316/316L wetted path**; polymeric seals rated for temp/pressure
- **21 CFR Part 11-style** audit logs & user roles (option)
- **FAT/SAT, IQ/OQ docs available**; pressure relief & EHS routing

# SPECIFICATIONS

ATTRIBUTE	VALUE
<b>General Specifications</b>	
Dimensions (w/o light mast)	in: L69.5 x W34 x H85.5 (cm: L176.5 x W86.4 x H217.2)
Unit Weight (lbs)	1500 lbs
Sound Pressure (db)	<50
Footprint (sq ft)	22.5
No. of circuits	1 preheater, 1 extractor, 1 condenser
MAWP (hardware)	7,500 psi
Operating envelopes	≤300 mL/min @ ≤5,000 psi; ≤1.0 L/min @ ≤3,200 psi
Temp Range (subcritical)	25-250 °C
Extractor Cell	Vertical orientation; configurable for bottom-to-top or top-to-bottom flow.
<b>Electrical Specifications</b>	
Voltage (VAC)	208-240/480
Phase	1 or 3
Certifications	ETL/UL/cUL listed; CE on request
<b>Preheater / Thermal</b>	
Preheater Type	Resistive
Power (kW)	6 kW Standard; Upgrade to 16 kW for 1 LPM pump
Control	2500.0
Bypass	yes, service & start-up

ATTRIBUTE	VALUE
<b>Pressure &amp; Flow</b>	
BPR Range	up to 5,000 psi
Pumps	water service; Dual Ceramic Piston-type for ≤300 mL/min; PTFE diaphragm high-flow head for 1 L/min
Filtration	inline screen, 100 micron
<b>Detection / Fractionation</b>	
Detector (option)	UV/Vis 190–800 nm with flow cell
Fraction Collection Tanks	Sizes range from 250mL to 10 L
Fraction Collector	multi-port valve; temp/time or detector-triggered; bottle trays
<b>Condensation &amp; Post-Process</b>	
Condenser	shell-and-tube
Water Removal	Fractron or fraction based rotavaps, refractory belt dryer
<b>Automation</b>	
HMI	10–15" touchscreen; recipes, alarms, trend logs
Data	CSV/JSON export; OPC-UA/LIMS (option)
Method Storage Supported	Unlimited Recipe Creation & Storage
<b>Installation, Training, and Warranty</b>	
Duration (months)	12
Quality and Labor	Parts & workmanship

## ALSO AVAILABLE, SOLD SEPARATELY:

#80-9608 | GMP Equip. Commissioning & Training

#80-9606 | GMP Equip. Documentation Package

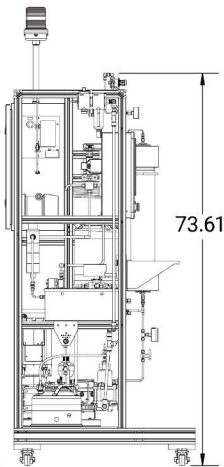
#80-9609 | Maintenance Package (12 months)

**Co-solvent Pump** for delivery of binary extraction eluents.

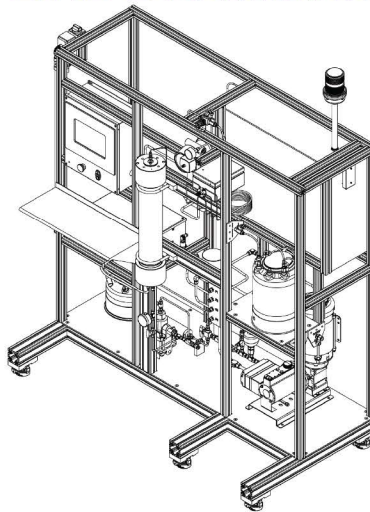
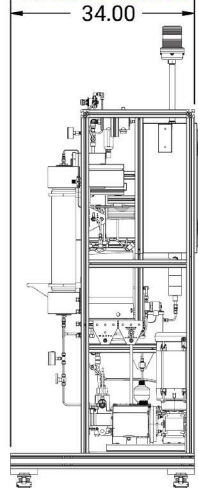
**Multi-sample Configuration**

## LINE DRAWINGS

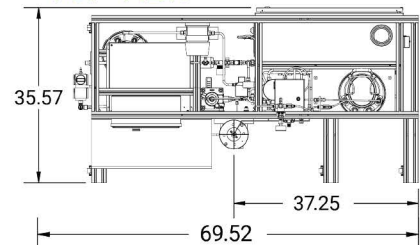
LEFT SIDE



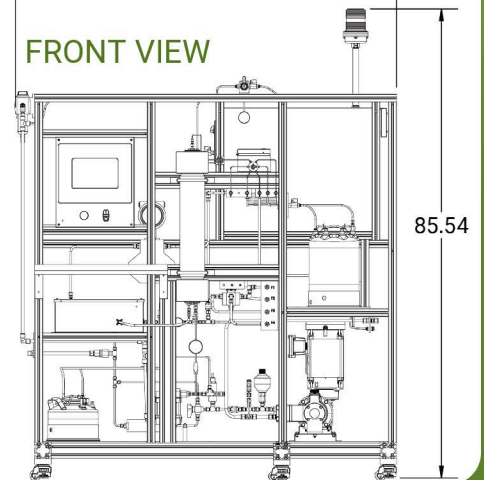
RIGHT SIDE



TOP VIEW



FRONT VIEW



To Order:

**e-H2O, Subcritical Water Extractor #10-0218 (208-240V) 1Φ/3Φ**

**e-H2O, Subcritical Water Extractor #10-0219 (480V) 3Φ**

**UV/Vis Detector Kit + Fraction Trigger**

**Advanced Fraction Collector (Chiller Rack / More Ports)**

