



## CannabisSFE - 3x1

### Rapid Liquid CO<sub>2</sub> Extraction of Hemp and Cannabis



- 3 x 1 Liter CO<sub>2</sub> Extraction System
- Powerful Liquid CO<sub>2</sub> Pumping System
- CO<sub>2</sub> Flow Rates to 200 mls/min (176 grams/min)
- Extractions up to 10,000 psi (689 Bar, 69 MPa)
- Able to Perform Supercritical and Subcritical Extractions
- ASME Code Designed Vessels and Components
- Meets Current GMP Standards
- Optional CO<sub>2</sub> Recycle

◀ CannabisSFE - 3x1 Extraction System

The CannabisSFE 3x1 Extraction System offers cascade mode of operation. This design allows the system to process biomass quickly with minimal maintenance and downtime. Built as a midrange system, the CannabisSFE 3x1 offers processing flexibility for both subcritical and supercritical CO<sub>2</sub> extractions.

High flowrates of liquid CO<sub>2</sub> rapidly extract THC, CBD and Terpenes from Cannabis and Hemp. Within a compact footprint are 3 one 1-liter processing vessels, and a powerful liquid CO<sub>2</sub> pumping system. This system delivers flow rates up to 200mls/min (176 grams/min) of liquid CO<sub>2</sub>.

Configured to operate in cascade mode, the CannabisSFE 3x1 maximizes throughput efficiency by processing through two vessels concurrently, while the third is being prepared.

The net result is 2.5 pounds (1135 grams) of biomass extracted per hour. The cascade process is repeated until stopped by the operator.

The CannabisSFE 3x1 design is simple, easy to use, and reliable. The system can be run 24/7 with consistent results and minimal downtime.

Our extractors are developed with over 25 years of experience in building supercritical CO<sub>2</sub> extractor systems to serve the pharmaceutical industry, government agencies, and university researchers. We understand the need for quality and safety and performance.

System	Feedstock Processed Per Hour	Feedstock Processed Per Hour	CBD Oil Extracted Per Hour	THC Oil Extracted Per Hour
CannabisSFE 3x1 Liters	2.5lbs/1.13kg	1,135 grams	79 grams	204 grams

Assumes high quality dry Trim and Flowers

# Expanded System Specifications

**Pump:** Efficient CO<sub>2</sub> pumping with pneumatic liquid CO<sub>2</sub> pump and pre-chiller

**Liquid CO<sub>2</sub> Flow Rates:** Up to 200mls/min (176 grams/min) liquid CO<sub>2</sub>

**Maximum Operating Pressure:** 10,000 psi (689 Bar, 69 MPa).

**Pressure Display:** Pressure gauges for the processing vessel/Air Supply, and Collection Vessel

**Temperature Range:** Ambient to 120°C (able to perform supercritical and subcritical extractions).

**Temperature Precision:** +/- 0.5°C.

**Temperature Displays:** PID Logic Controllers/Panel mounted. Displays internal vessel temperature, Preheater Temperature, and Back Pressure Regulator Temperature.

**Restrictor Valve:** Extractor pressure/outflow controlled by Back Pressure Regulator, heated up to 120°C; resistant to blockage (factory set to 80°C).

**Integrated Chiller Assembly:** The integrated chiller cools the liquid CO<sub>2</sub> from the delivery tank. The chilled CO<sub>2</sub> is then delivered directly to the supercritical fluid pump. Proper cooling of the CO<sub>2</sub> before it arrives at the pump ensures that the CO<sub>2</sub> is pumped in an efficient manner that eliminates cavitation to achieve the pressures and flow rates required for supercritical fluid extraction processes.

**Sample Extraction Vessel:** Accommodates 3 Process vessels of 1000mls.

**Collection Vessel:** Externally mounted for ease in extract removal

**Preheater and Extractor Temperature Control:** High-efficiency electric CO<sub>2</sub> heat exchanger to raise temperature to up to 120 °C +/- 1.0 °C. The extractor actively heated with band heater to accelerate vessel warming at startup.

**Over-Pressure Safeguards:** Rupture disc assemblies on pump, processing vessels, and collection assembly.

**Instrument Control:** Vessel and preheater temperature controlled by PID Logic Controllers. Displays Preheater, Processing Vessel and Back Pressure Regulator Temperature.

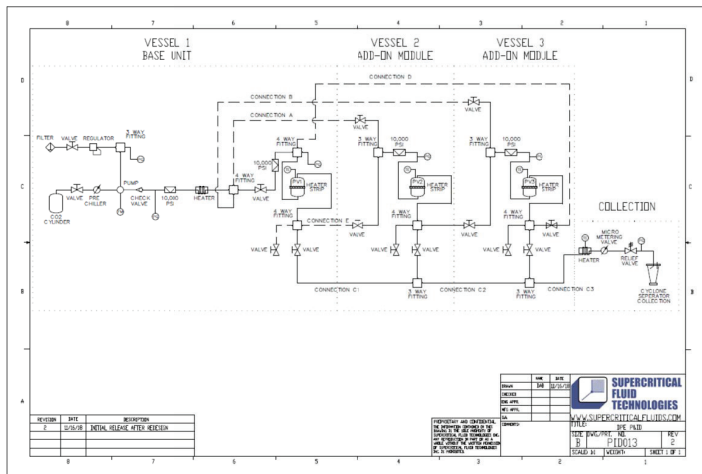
**CO<sub>2</sub> Ventilation:** CO<sub>2</sub> vented to an outside vent or connected to the Optional Recycle System

**Dimensions:** Compact Design (73" L x 43" W x 52" H)

**Power Requirements:** CannabisSFE 3x1 extractor will require 20 Amps of 230V single phase.

**ASME Code:** compliant design, vessels, and components

**GMP:** Meets current GMP standards



CannabisSFE 3x1 Liter Extraction System Flow Diagram



CannabisSFE - 3x1 CO<sub>2</sub> Optional Recycle