

PEF Pilot Sterilization System with two chambers WT-2xPEF-P1

for juices, creams and solid foods, with customized and broad scalable features:



Mechanical parts:

2: batch vessel: 3: magnetic pump w. adjustable speed, 4-drain valve, 5: coax vortex type PEF chamber for liquids; 6: flat round PEF chamber for solid or cream samples; 6A (not shown) - its replacement with the second coax chamber, operating at same or another pulsing; 7: flow meter 5-500l/h, 8: flow distributor by valves 9, 10 to the batch 2 or to nozzle 11 for its external collection for a flow-through processing.

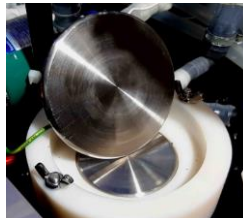
PEF chambers for liquids:

coaxial with the active length of 250 mm & 3.5 to 5 mm gap, vortex type flow inside;

For solid samples, creams, some powders:

a flat round chamber for samples with up to 140mm diameter, 4-24mm thick.

It is also for PEF juice/colors extractions from plant cells. Chambers are from a food grade polished stainless steel, insulators - a food grade white Polyamide.



We offer evaluation tests with this pilot.

1: Control panel:

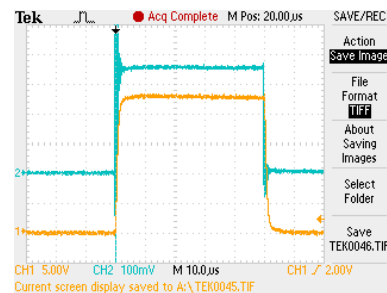
Allows to select pulse properties from very broad parameters from its control panel:



- Pulse rates in Hz: 4, 20, 100, 500, 4-125;
- Pulse lengths in μ s: 2,5, 5, 10, 50, 2,5-20;
- Selectable time for pulsing: 1s-9h;
- Applied HV: 1-25kV with electrical fields in each PEF chamber up to 50kV/cm;
- Applied power: up to 2kW.

Pulse shapes:

- positive rectangular, fronts of ca.1 μ s;
 - Flatness: ca. 1% at 5 μ s, ca.5% at 50 μ s;
 - pulse controls: by a digital scope (provided).
- Yellow trace: voltage for 23kV pulses, green trace: current of 9,3A at 50 μ s flat pulses:



PEF sterilize bacteria by its stretching up to its ruptures by strong electrical fields ca. 20- 50kV/cm delivered by sharp square pulses. Inactivation of juices could reach 4-6 logs at 250l/h or 2-3 logs at 500 l/h.

Maintenance:

Easy to flash the whole system, major parts are sold on the open market. Silicon hoses can be easily replaced after changing juices/liquids.

The system dimensions:

W-79cm, H-100cm plus 7cm wheels with stoppers; B-59cm; Weight =ca. 80kg.

Electrical: 1 phase 230VAC, 12A, 2kW, EU plug.

Convenience and safety:

Chambers are interlocked and switching from one to another takes 1 min. Easy to use.

Cost-effective system for a small production or for R&D.