

# MULTIFUNCTIONAL PASTEURIZATION PILOT PLANT

Semiautomatic vers. mod. **UPL-M/EV**  
Computer-aided vers. mod. **UPL/EV**



## INTRODUCTION

This pasteurizer is designed to pasteurize liquid foods such as milk, clear juices, etc...

Pasteurization is carried out in a plate heat exchanger; after a holding period, it is followed by a fast cooling in a second plate heat exchanger, to limit the growth of residual microorganisms and the alteration of organoleptic characteristics of products.

If users are not interested in process control issues, it is better to purchase the semiautomatic version mod. UPL-M/EV.

## TRAINING PROGRAM

**This unit enables to deepen the following issues:**

- Product quality versus the following parameters
  - feed flow rate / holding time
  - pasteurization temperature
- PID temperature control by microprocessor controller
- Energy balance
- Plant supervision (only in computer-aided version)

## TECHNICAL SPECIFICATION

- Wheeled framework of AISI 304 stainless steel
- Max. feeding: 100 l/h (higher flow rates on demand)
- 2 plate heat exchangers (pasteurization and cooling) of AISI 316 stainless steel, with exchange surface of 0.1 m<sup>2</sup>
- Centrifugal feed pump of sanitary type with body of AISI 304 stainless steel and maximum flow rate of 1000 l/h
- Variable-area flowmeter of AISI 304 stainless steel, with range of 10 to 100 l/h, accuracy:  $\pm 0.5\%$
- Cylindrical feed tank of AISI 304 stainless steel, mirror polished inside, with capacity of 80 l
- Cylindrical tank of AISI 304 stainless steel, mirror polished inside, with capacity of 80 l, for collecting the pasteurized product
- Tank of AISI 304 stainless steel, with capacity of 80 l, for collecting water/glycol solution
- Cooling circuit for water/glycol solution, including Freon 404a compressor, P = 3.5 kW, condenser, filter, liquid separator, thermostat
- Circulation pump of water/glycol solution with body of AISI 304 stainless steel and maximum flow rate of 2000 l/h
- Plate heat exchanger of AISI 304 stainless steel, for Freon/ water-glycol solution
- Four Pt100 thermoresistances with sheath of AISI 316 stainless steel
- 2 electronic temperature indicators
- 2 thermostats for controlling the cooling temperature of product and of glycol solution

- Microprocessor PID controller for controlling pasteurization temperature
- Electropneumatic converter
- Pneumatic valve of AISI 316 stainless steel,  $C_v = 2.5$ , for controlling the flow rate of hot water
- Connecting lines and valves of AISI 304 and 316 stainless steel
- Switchboard with protection degree IP55 complying with EC standards and including a differential circuit breaker and a schematic diagram of the plant
- Emergency button
- Pneumatic valve of AISI 316 stainless steel,  $C_v = 0.32$ , for controlling feed flow rate (only for mod. UPL/EV)
- Electropneumatic converter, 4 to 20 mA / 0.2 to 1 bar, accuracy:  $\pm 1\%$  (only for mod. UPL/EV)
- Supervision software mod. SW-UPL/EV: this software runs in Windows and it is designed to control ON-OFF signals, analog signals coming from the controller, real-time trend and historical trend (only for mod. UPL/EV)

**Dimensions:** 3200×800×2000 mm

**Weight:** 520 kg

#### SUITABLE FOR PROCESSING:

MILK (table top)	MILK (on castors)	FRUIT	TOMATO	CITRUS	OLIVE	OLEAGINOUS SEED	GRAPE	BREWING	SEAFOOD	LIQUEURS
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#### REQUIRED

##### UTILITIES (PROVIDED BY THE CUSTOMER)

- Power supply: 400 Vac 50 Hz three-phase - 7 kVA (Other voltage and frequency on request)
- Hot water:  $T = 98\text{ }^{\circ}\text{C}$ , maximum consumption of 300 l/h with recovery
- Compressed air: max. consumption 2  $\text{Nm}^3/\text{h}$ ,  $P = 6\text{ bar}$
- Water: occasional consumption

##### ACCESSORIES (NOT INCLUDED)

- Hot water generator mod. SCT01/EV

#### SUPPLIED WITH

THEORETICAL – PRACTICAL –  
EXPERIMENTAL HANDBOOK

