

# Tetra Pak® Cooling Tower

For more delicate flavour



## APPLICATION

Tetra Pak® Cooling Tower is an advanced, highly automated unit used for cheese curd washing and cooling in the cottage cheese lines. It is best suited in medium and high-capacity lines and when high pH is expected in final product.

## HIGHLIGHTS

- Effective cheese curd washing
- Minimal operating cost
- High hygiene level
- Completely automated/controlled process
- Gentle product treatment
- Minimal product losses

## WORKING PRINCIPLE

Tetra Pak® Cooling Tower is working in batch cycles. The operation is divided into five steps:

- Filling
- Washing
- Cooling
- Emptying
- Cleaning-in-place (CIP)

Production starts by filling the unit with curd and water mixture through inlet at the bottom of the tower. When all the product is pumped in a pasteurized water starts to flow into the tower via multiple inlets around the base and sides creating uniform upward stream of the water. Curd remains inside at the same time. Water surpluses are overflowing through the perforated screen installed at the top of the tower. This enables lowering lactic acid and lactose concentration in the curd by means of osmosis and convection. Cheese maker is taking pH measurement by using sampling valve to decide when to finish the washing phase.

During cooling, the cold water circulates between the tower and the cooling module. When the temperature setpoint is reached the emptying process starts. Cooling and emptying steps are performed automatically based on recipe parameters.

## STANDARD FEATURES

### TOWER MODULE

- Housing made of AISI 304/304L stainless steel
- Adjustable legs
- Manway
- Sight glass with lamp
- Sampling valve
- Water draining sieve
- CIP nozzles with interconnecting pipe work
- Control panel in stainless steel including process controller (PLC) with integrated safety function, solenoid valves, touch panel and variable frequency drivers, etc.
- Prewired and tested sensors including temperature probes, pressure transmitters, etc.
- Safety system
- Pneumatic, remote-controlled sanitary valves
- Operating platform

### COOLING MODULE

- Tetra Pak Plate Heat Exchanger
- Technological water circulation piping
- Centrifugal circulation pump
- Set of automatic shut-off and regulating valves

### OPTIONS

- Sterile air system

## TECHNICAL DATA

### CONTROL SYSTEM

The Tetra Pak Cooling Tower is controlled by an Allen Bradley or Siemens PLC. This is fitted onto the frame of the equipment.

The Tetra Pak Cooling Tower is pre-programmed to communicate with Tetra Pak® PlantMaster or other supervisory systems.

### CAPACITY

Volume (m <sup>3</sup> )	Max amount of curd (kg)
5	1 800
7,5	2 500

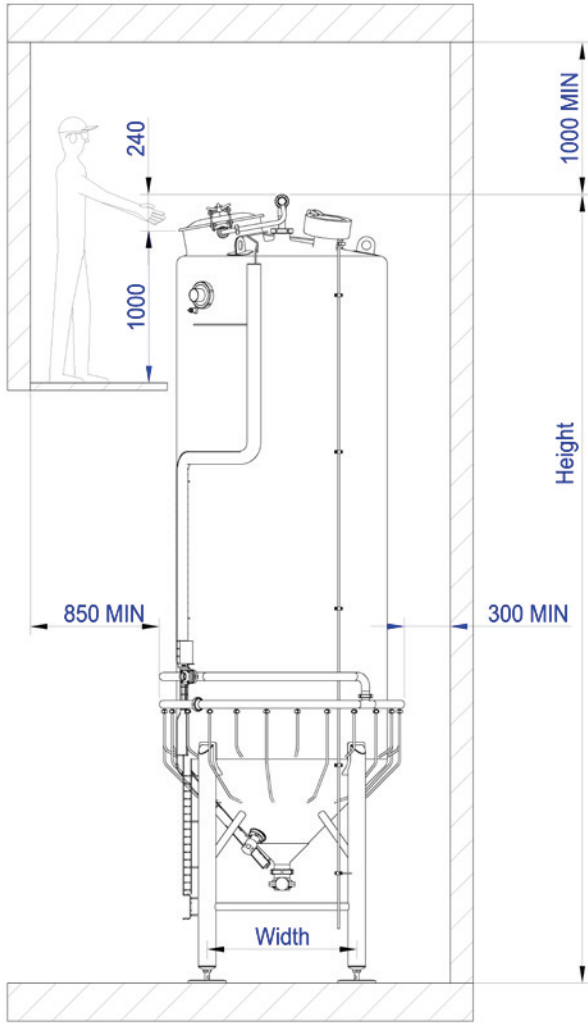
### CONSUMPTION DATA (18 000 L)

CIP	20 000 l/h, 2 bar g
Electrical power	3 kW, 400 V, 50 Hz
Technological, pasteurized water	15 m <sup>3</sup> /h, 3 bar, 4-6 °C
Ice water	20 m <sup>3</sup> /h, 3 bar, 2-3 °C

## DIMENSIONS AND LAYOUT

Volume	Diameter	Width	Height	Weight net	Weight gross
5 m <sup>3</sup>	1 610 mm	990 mm	5 180 mm	640 kg	5 600 kg
7,5 m <sup>3</sup>	2 040 mm	1 360 mm	5 180 mm	700 kg	7 950 kg

Tower module – side view



Cooling module – top view

