

Liffo.PRO
TECHNICAL SHEET





Liffo.Pro is a compact and intelligent robotic mini kitchen designed to automate the scalable preparation of hot dishes, including first courses, main dishes, and desserts.

The system integrates Artificial Intelligence, precision sensors, active cooling, and high-efficiency induction, enabling the autonomous and repeatable execution of complex recipes.

Liffo.Pro ensures process standardization, consistent product quality, and operational scalability in professional environments.

1.1 Dotazione standard

Liffo.Pro is supplied with the following components:

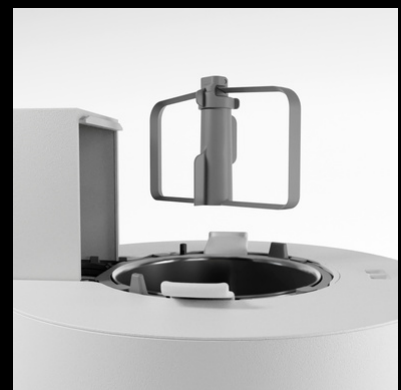
- 2 stainless steel tri-metal pots (4 liters each)
- Bluetooth-connected digital scale
- 7" touchscreen display
- 16 ingredient containers
- 2 stirring paddles
- Bluetooth and Wi-Fi connectivity
- IOS and Android app
- Smart Lid equipped with an integrated camera for ingredient recognition and remote monitoring



4-liter tri-ply stainless steel pot



Ingredient containers



Stirring paddle



1.5-liter integrated tank



7" touchscreen display



Lid with integrated camera

1.2 General Technical Features

Liffo.Pro does not require a direct connection to the water supply: it is equipped with a 1.5-liter internal tank used during the cooking cycle.

The cooking system uses a paddle for automatic ingredient stirring.

Cooking is performed through electromagnetic induction, while ingredient cooling is managed by a compressor-based refrigeration unit.

Liffo.Pro has an average weight of 30 kg.

For proper operation, Liffo.Pro must be protected from weather conditions such as rain or direct sunlight exposure.



2. Cooling Unit and Induction System

2.1 Cooling Unit

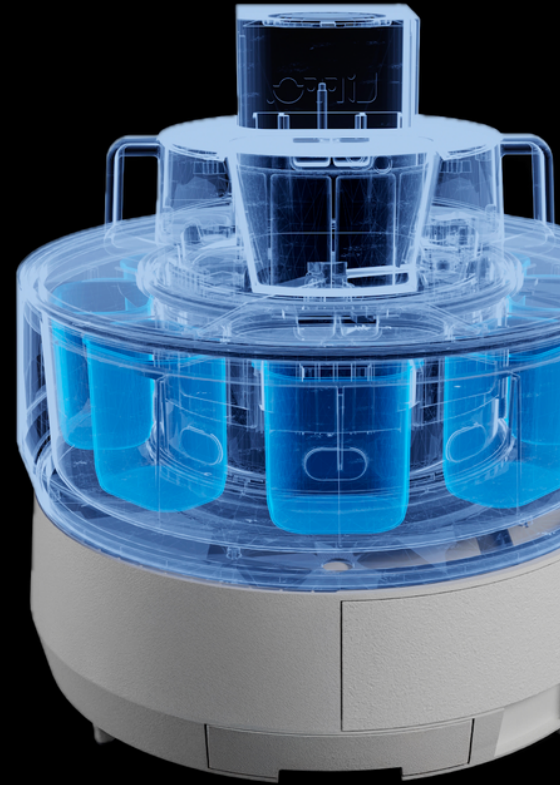
Liffo.Pro is equipped with a dedicated cooling unit designed to chill the ingredients stored in the appropriate containers.

The refrigeration system does not involve the pot located in the central compartment.

2.1.1 Type and Operation

The system uses a compressor-based refrigeration cycle powered by R600a refrigerant gas. It cools 7 out of the 8 ingredient containers (the one located under the lifter is not cooled).

Activation occurs only in programmed mode and does not start if cooking begins immediately. The cooling system is intended for pre-chilled or room-temperature ingredients, not for products at high temperatures (recently cooked).



Cooling can last up to 24 continuous hours.

POWER CONSUMPTION	Maximum power consumption: 60 W
COOLING CAPACITY	81.8W @ 3800 rpm (ASHRAE LBP)
COP (COEFFICIENT OF PERFORMANCE)	1.45 @ 3800 rpm (ASHRAE LBP)

2.2 Induction System

Liffo.Pro uses electromagnetic induction technology, similar to standard cooktops, to generate heat efficiently and with precise control.

2.2.1 Type and Operation

An induction coil generates a variable magnetic field that induces electric currents in the bottom of the pot, heating the metal directly.

Temperature is regulated by a high-precision PID control system ($\pm 2^{\circ}\text{C}$) through thermocouples positioned at the base of the pot.

Additionally, a separate electric heating element is located beneath the lifter of the ingredient containers. This element is used to heat the contents of the eighth container, which, unlike the others, is not connected to the cooling system, as explained in paragraph 2.1.1.



MAXIMUM TEMPERATURE	180 °C
RATED POWER	1700W
AVERAGE POWER	800 W ***
THERMAL TRANSFER EFFICIENCY	Between 80% and 90%

*** Data calculated over a 30-day period as the average of all recipes prepared by different robots.

WATER HEATER POWER CONSUMPTION	1200W
MAIN INDUCTION UNIT	1000W *
STIRRING PADDLE MOTOR	300 W peak power**
ACTIVE LID	25W
SECONDARY CONTAINER HEATER	100W
PADDLE SPEED	15-600 rpm
PADDLE MOTOR TORQUE	5 Nm (Starting torque: 10 Nm)

* The induction power is limited when operating simultaneously with the water heater and reaches its rated value only when the water heater is not active.

** Under standard operation, the stirring paddle motor consumes between 50 W and 100 W.

NOperating notes:

- The induction and refrigeration systems never operate simultaneously.
- The maximum power of 1700 W is not the arithmetic sum of all component consumptions but represents the total peak load managed by the power board under maximum operating conditions.

3. Materials

3.1 Certifications and Compliance

Food-grade certified materials have been selected both for parts in direct contact with food ingredients (e.g., pot, tank, paddle, ingredient containers) and for parts in indirect contact (e.g., lid).

- MOCA (Materials and Objects in Contact with Food) compliance guaranteed.
- Compliant with EU Regulation 10/2011 on food-grade plastics.
- CE marking (European Conformity).

3.2 Plastic Materials Details

PPSU	Paddle, shaft, front cap, pot handles, recording cover, lid
PK	Splash guard, steam duct, rear shell
TIRAN	Water tank and lid
NBR	Rubber partitions
PP+T	Container supports
ABS	Housing

3.3 Metal and Other Materials Details

AISI 304 (INTERNAL) / AISI 430 (EXTERNAL)	Pot
AISI 430	Ingredient containers
TEMPERED GLASS	Screen