

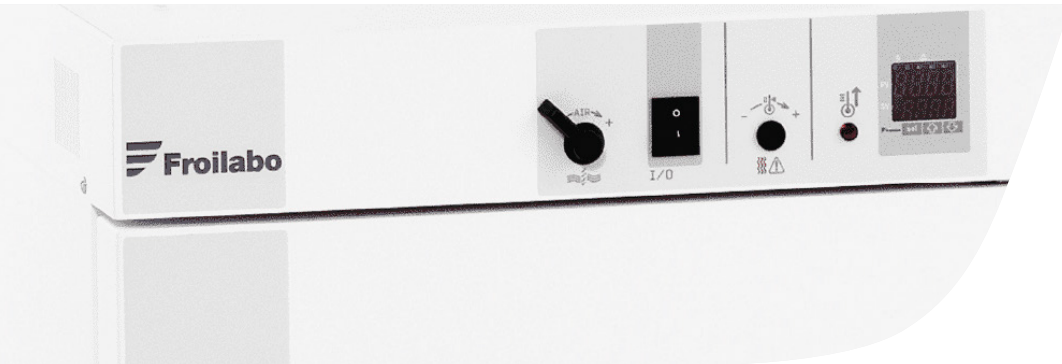
PRECISE AND HOMOGENEOUS  
**LAB OVENS**

 **Froilabo**



# LAB OVENS FOR A VARIETY OF APPLICATIONS

Froilabo offers a wide range of ovens to meet most laboratory applications. Ovens are used for drying, heating, resistance testing, and any other thermal tests or treatments requiring high precision.



Energy efficient with fast heat-up and temperature recovery on door opening.

Easy to clean with flat internal stainless steel panels.



### Cost effective

Component standardization and heating power variation offer you an excellent price performance ratio without compromise on quality, security and accuracy.



### Perfect homogeneity

Temperature homogeneity is achieved using a convection fan which saves time during heat-up, even with a full load. Flat internal stainless steel walls and two door seals reduce heat conduction to the door.



### Energy efficient

Fast recovery time after door opening, low nominal power demands and high quality insulation contribute towards reduced operating costs.



### High safety standard

All our ovens are tested to meet electrical safety standard IEC EN 60335-1, which provides additional security for laboratories.



### Sample safety

Your sample safety is assured due to alarm fittings and a hands-free door closing functionality.



### Quick close door

Fast sample retrieval and quick close oven doors, limiting the introduction of air into the chamber and preventing contamination of the remaining samples.



### Robust & durable

Froilabo's ovens are robust and durable due to their unique design and strong manufacturing materials. Thanks to their simple architecture and programmable regulators, they are easy to use.

# AP

## Air Performance Range

### Speed, precision and homogeneity

The Air Performance oven range has been developed to comply with all applications requiring speed, precision and homogeneity. It is specifically well adapted for drying, thermal tests and sterilisation. The high efficiency fan will allow you to save precious time.

Safe, hands-free door closing and 24 month warranty.



#### BENEFITS OF THE AIR PERFORMANCE RANGE (AP)

- Temperature range: ambient +10°C to +250°C (50°F to 482°F)
- Turbine ventilation ensuring stability and excellent temperature uniformity (<1°C at 158°C)
- Volumes of 60 to 240 Litres
- Control by PT 100 ohm probe
- PID logic regulator
- Timer : 99h 59min
- Chamber heating by convection, no risk of conduction or radiation (air inlet at temperature setpoint)
- Dual digital display of the oven setpoint temperature & actual temperature (0.1° precision)
- Simplified control panel
- Adjustable air entry (from 0 to 100%)
- Visual alarm
- Hands free door closing
- 2 anti-tip stainless steel wire shelves included (AP60: 1)
- Easy clean stainless steel inner chamber (flat surface, removable shelf holders)
- Stackable units (AP60, AP120)
- Conforms to **EN60068-3-11**
- Adjustable over temperature security device Class II as defined in the European norm **NF EN61010-2-010** (equivalent to DIN3.1)
- Individual quality control certificate
- 24 month warranty

Recessed door handle to allow safe access with no snagging points.



#### MODELS AVAILABLE

220-230V / 50Hz	60 L	120 L	240 L
Air Performance, plain door	AP60	AP120	AP240
Air Performance, viewing door	AP60PV	AP120PV	AP240PV

110V and 50-60Hz version available.

# AE

## Air Expert Range

### Greater Oven Control

Based on the Air Performance range, additional functions allow users greater oven control whilst still offering great value.

Programme the Air Expert to perform different temperature cycles.



#### BENEFITS OF THE AIR EXPERT RANGE (AE) IN ADDITION TO AP SPECIFICATION

- Adjustable fan speed (25 to 100%)
- Audible alarm
- Cable entry ports to enable validation and calibration of the oven
- Programmable controller with 16 settings to enable temperature cycle up to 8 temperatures and 3 different cycles
- RS485 port for data transfer.  
Optional software and cable to be ordered separately
- 2 anti-tip stainless steel shelves included
- Individual quality control certificate
- 24 month warranty



#### MODELS AVAILABLE

220-230V / 50Hz	60 L	120 L	240 L
Air Expert, plain door	AE60	AE120	AE240
Air Expert, viewing door	AE60PV	AE120PV	AE240PV

110V and 50-60Hz version available.

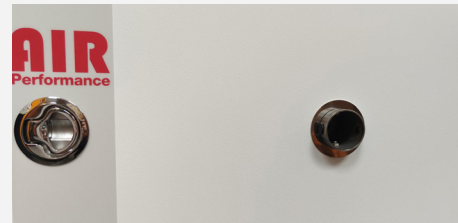


### Indus (option)

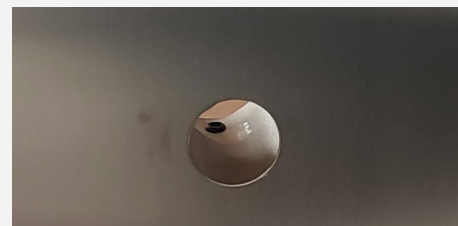
The AP and AE are both available with the optional Indus, an adjustment valve designed to evacuate humidity in a natural way.

#### BENEFITS OF THE INDUS

- Available for Air Performance and Air Expert ranges
- Identical construction and interface except for an additional air inlet on the front
- Forced air extraction from the rear of the enclosure
- Available in 3 volumes : 60 L, 120 L & 240 L
- Better drying performance, due to humidity exhaust
- Greater air renewal
- Long life duration without corrosion



Air inlet duct



Inside view of the stainless steel door

# AP LARGE VOLUME

Air Performance 414 L and 714 L

## When you need the additional volume

The same speed, precision and homogeneity as the Air Performance but with an increased volume. 2 sizes available.



### BENEFITS OF THE AIR PERFORMANCE LARGE VOLUME RANGE

- Temperature range: ambient +10°C to +250°C (50°F to 482°F)
- Turbine ventilation ensuring stability and excellent temperature uniformity (<1°C at 158°C)
- Volumes of 414 and 735 Litres
- Control by PT 100 ohm probe
- PID self regulating and self-adaptive programmable controller
- Timer : 99h 59min
- Chamber heating by convection, no risk of conduction or radiation (air inlet at temperature setpoint)
- Dual digital display of the oven setpoint temperature & actual temperature (0.1° precision)
- Simplified control panel
- Adjustable air entry (from 0 to 100%)
- Visual alarm
- Hands free door closing
- Easy clean stainless steel inner chamber (flat surface, removable shelf holders)
- Conforms to **EN60068-3-11**
- Adjustable over temperature security device Class II as defined in the European norm **NF EN61010-2-010** (equivalent to DIN3.1)
- Individual quality control certificate
- 24 month warranty

Available in volumes of 414 litres or 735 litres



### MODELS AVAILABLE

380V / 50Hz	414 L	735 L
Air Performance large volume	AP414	AP714

230V and 50Hz version available on model AP414.

# OPTIONS & SPECIFICATION

## OPTIONS & CONFORMITIES

### OPTIONS LIST

Stainless steel wire shelf

Stainless steel shelf (480 x 430 mm) with anti-tilt safety

Reinforced stainless steel shelf (480 x 430 mm) with anti-tilt safety

Base without casters for AE120 (H: 150 mm)

Base with 4 casters (Diam: 80 mm, 2 with brakes, total H: 250 mm)

Stacking kit including 2 spacers, a key and an explanatory note

Data recovery software (RS485 cable to USB for PXR4 regulator)

Key door lock

4 casters (Diam: 80 mm, 2 with brakes)

Additional cable entry port 50 mm with sealing plug

Additional Pt 100 Ohms probe + DIN plug for recorder connection

PT 100 Ohms probe, delivered with 3 points COFRAC verification

Electronic recorder 1 way, continuous plot

Variable flow extractor from 0 to 200 m<sup>3</sup> / hour Ø 75 mm

### SUPPLIED WITH

2 shelves

1 power cord

User manual

### CERTIFICATION / CONFORMITIES

Equipment meets the specifications and CE compliant to EN60068-3-11

2014/35/UE – Low voltage directive

2014/30/UE – EMC directive, Class A device

97/23/CE – Under pressure devices

# SPECIFICATIONS

SPECIFICATIONS		AP/AE60	AP/AE120	AP/AE240	AP414	AP714
Temperature Range		Amb +10°C to 250°C				
Temperature uniformity +/- (°C)*	at 70°C	0.7	0.6	0.7	0.8	0.8
	at 150°C	1.5	1.4	1.5	1.7	1.5
	at 250°C	5	5	5	4	4
Temperature stability (°C)		0.2	0.2	0.2	0.3	0.2
Time for temperature elevation (min)**	at 70°C	8	9	10	10	9
	at 150°C	20	30	24	30	26
	at 250°C	38	50	45	60	60
Recovery time after door opening of 30 secs (min)**	at 70°C	1.5	2	2	2	3
	at 150°C	2.5	3	3.5	5	8
	at 250°C	3.5	4	4.5	12	19

ELECTRICAL SPECIFICATIONS	AP/AE60	AP/AE120	AP/AE240	AP414	AP714
IP rating	Front panel IP55				
Power supply	220-230V 50/60Hz 10A			380V 50Hz 16A	
Power (W)	1000	1000	2000	3100	4900

EXTERNAL DIMENSIONS	AP/AE60	AP/AE120	AP/AE240	AP414	AP714
Length (mm)	526	626	626	1130	1130
Height (mm)	640	750	1230	1170	1780
Depth (mm)	579.5	679.5	679.5	855	855
Exterior depth (mm)	26.5	26.5	26.5	26.5	26.5
Side clearance (mm)	100	100	100	100	100
Height (mm) stackable kit	30	30	30	-	-

INTERIOR DIMENSIONS	AP/AE60	AP/AE120	AP/AE240	AP414	AP714
Actual volume (L)	58	118	230	414	735
Length (mm)	400	500	500	990	990
Height (mm)	390	500	980	760	1350
Depth (mm)	370	470	470	550	550
Shelves standard/max (AP)	2/6 (1/6)	2/10	2/18	2/10	2/10
Weight per shelf/total (kg)	20/50	20/70	20/90	35/90	35/90
Shelf dimensions L X D (mm)	380x320	480x430	480x430	480x430	480x430
Empty weight/Gross weight (kg)	39/53	53/69	79/97	200/235	230/265

\* Not including measurement uncertainties, FROILABO procedure : 9 points characterisation according to NFX15-140 norm

\*\* 98% of the value

Testing at an ambient temperature of 25°C and a variation in the supply voltage of +/- 10%

## TECHCOMP GROUP

In addition to Froilabo, Techcomp Europe comprises of the following companies:

