



# **captair<sup>®</sup> flex<sup>™</sup>**

Mobile Ductless fume hoods with modular filtration column



Compliant with the new AFNOR NF X 15-211 : 2009 standard requirements



Designed for the protection of the user,  
the environment and your budget

Because all laboratories are concerned by risk prevention, Erlab® and its 40 years of experience as a world leader in the field of molecular filtration has concentrated all its expertise and introduces a new generation of non ducted mobile filtration fume enclosures named captair® Flex™.

Based on a new modular design, the captair® Flex™ range ensures optimal operator protection by being able to adapt itself to the handling of liquid and solid toxic chemicals, separated or combined, in laboratories and clean rooms.

Captair® Flex™ offers unprecedented flexibility by fulfilling the environmental and economic needs of our modern world.





### **A flexible / adaptable solution**

Flex™ technology : Modular filtration column adaptable to your handlings and your environment.

Solid and liquid handlings, individually or together.

Enclosures dimensions from 80° cm to 1.80 m

### **A cost-cutting solution**

Very low energy consumption

Easy installation and relocation, immediate availability

Reduces infrastructure, set up and running costs

### **A safe solution**

Compliant with the NF X 15-211 : 2009 standard  
and tested according to the  
ASHRAE 110 : 1995 standard

ESP® - Erlab Safety Program:  
a long lasting user protection solution

### **An environment-friendly solution**

No emission of harmful pollutants into the atmosphere

### **A proven solution**

Resulting from 40 years of research in our laboratory,  
the industry's only R&D lab dedicated  
to filtration research.

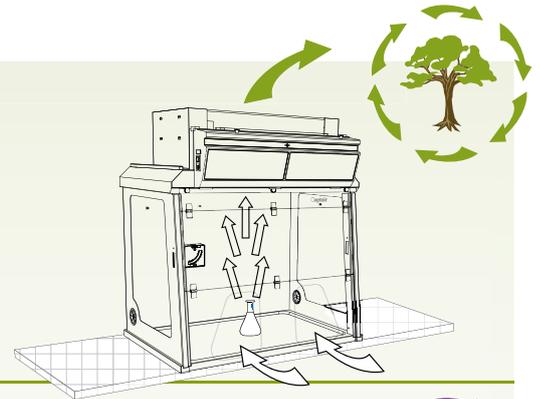
# The environment at the heart of your laboratory

Filtration technologies used in the design of captair® Flex™ non ducted filtration fume hoods enable to protect laboratory users, reduce carbon footprint, while drastically lowering infrastructure set-up and running costs.

An independent study\* has shown that the contribution brought by the use of ducted fume hoods with regards to the overall energy consumption in laboratories is far from being negligible. In fact, each ducted fume hood would be responsible for consuming 3.5 times more energy than the average size home. The numerous advantages offered by captair® Flex™ filtered enclosures enable to reduce your carbon footprint while achieving true energy savings.

## Protect the environment

Since no ductwork is required, a captair® Flex™ filtered enclosure totally eliminates the direct discharge of pollutants into the atmosphere and therefore contributes to the protection of the environment. Furthermore, a captair® Flex™ filtered enclosure does not generate any pollution linked to energy production unlike a traditional ducted fume hood.



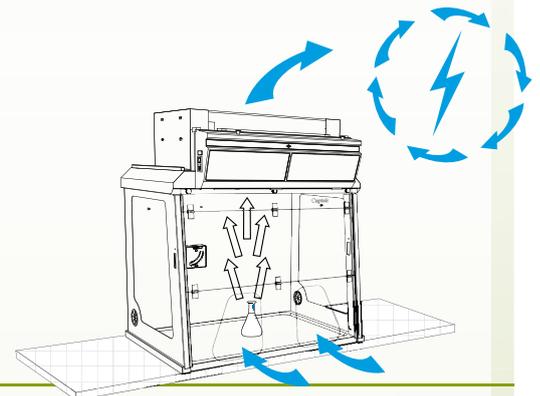
## Eliminate installation costs

The installation of a captair® Flex™ filtered enclosure is quick and easy. There is no need for a ductwork linked to an air supply / air extraction system, in comparison to traditional ducted systems. A single electrical outlet is all that is needed to make it work, its setting up can be realized at any time, without any complex forward planning. Do not hesitate to compare this cost to that of a traditional ducted fume hood.



## Achieve significant energy savings

Ductwork air balance is essential to the proper operation of a traditional ducted fume hood however, it is also the source of very important energy consumption. In fact, captair® Flex™ filtered enclosures do not generate any energy costs associated with the use of expensive extraction systems or conditioned air supplies. Operational costs remain at a minimum even when taking into account filter changes.



## Benefit from the use of an immediately available unit, easy to relocate.

Captair® Flex™ filtered enclosures can be moved depending on the protection needs of the laboratory and can be easily relocated without disturbing room air balance.



\*Mills E., Sartor D. (2005), Energy use and savings potential for laboratory fume hoods. "Lawrence Berkeley National Laboratory". Elsevier, Energy 30 1859-1864.

# An ergonomic design

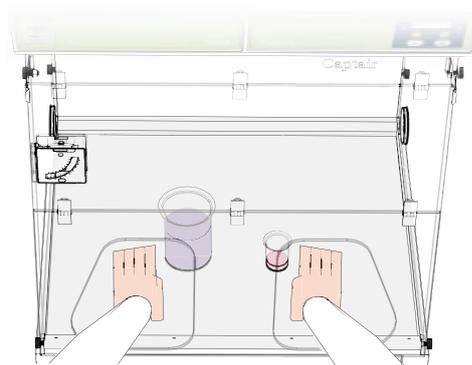
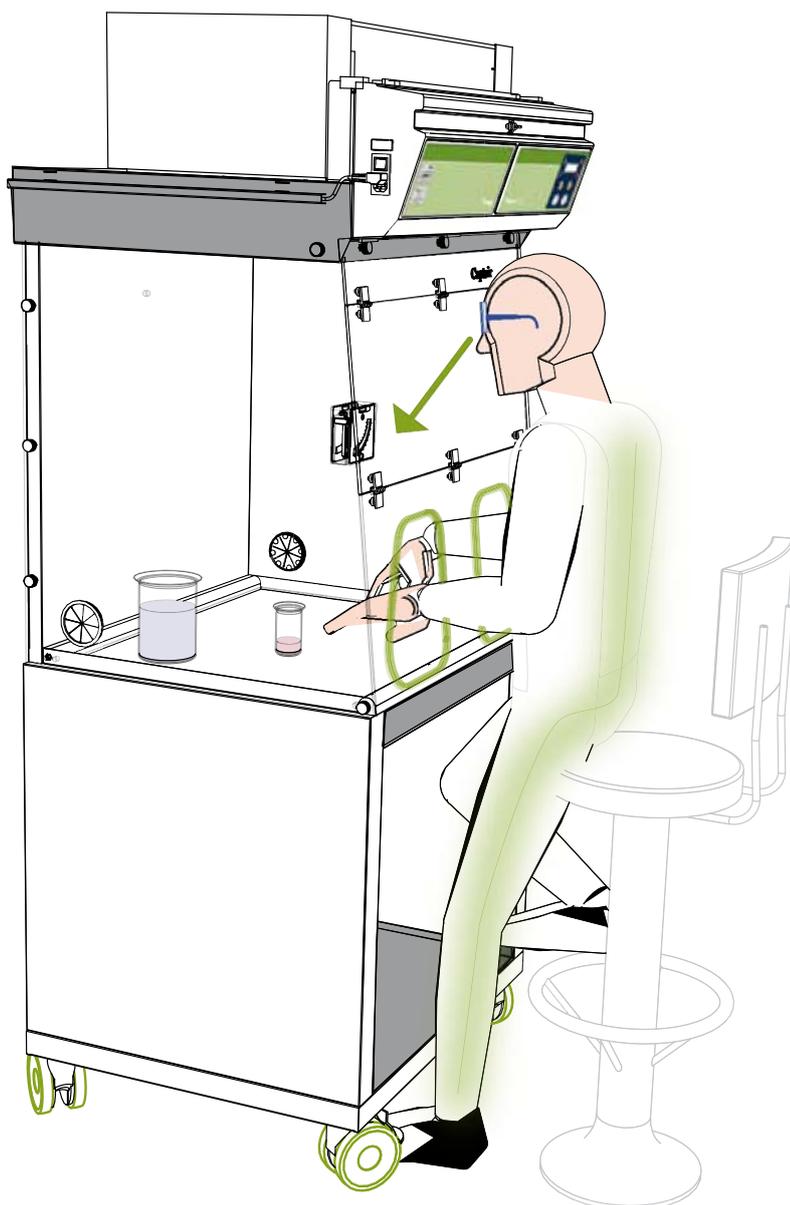
With more than 90 000 captair® units sold worldwide, we have acquired an experience enriched by our customers which has allowed our designers to create with this new captair® Flex™ range a better ergonomic work station solution, superior chemical handlings while offering a significant improvement in safety, functionality & comfort in the daily use and maintenance of these new enclosures.

## Enclosure dimensions

A wide choice of enclosures with widths starting from 80 cm to 180 cm, offering a compact size and reduced depth and other models with a larger width and depth for specific applications. They allow to perform the most common manipulations even when taking into account large instrumentations and are easy to integrate in your laboratories.

## Visibility

The acrylic panels offer an excellent visibility of the chemical handlings performed within the enclosure. The different types of lighting offer a great functional flexibility to the users.



## Front panel openings

The arm openings, oblong, trapezoid or total, are designed to allow the operator to easily maneuver within the entire perimeter of the enclosure, and to have an easy access to all inserted elements. The central shield, in the oblong openings version, protects the user against chemical spills.

## Set up

The advanced design of the captair® Flex™ fume hoods makes the set up and service operations easy. Ready to be installed, all components are easy to assemble and need very few tools.

## Working position

The design of the new captair® Flex™ fume hoods allows the user to work in sitting or standing position without getting tired. The work surfaces with rolled edge provide an area to rest forearms comfortably and the enclosure angled front sash offers the operator a comfortable working position.

## Noise level

The low dbA (noise) level produced by the captair® Flex™ filtered enclosures allows the user to keep his full attention on the scientific work to be performed without hearing discomfort to himself or the laboratory staff.

# Filtration technologies

Patent pending

## Air pollutants in your laboratory

*Gaseous or solid chemicals represent an inhalation risk to the health of the laboratory operator. The Health Authorities have established concentration thresholds that should not be exceeded in any case, and that are defined by the occupational exposure limit values (OEL), expressed in part per million (PPM).*

*The harmful presence of these pollutants linked to their daily manipulation imposes on all*

*laboratories to take prevention and protection measures according to the regulations in force. For more than 40 years Erlab® has mastered molecular filtration and has developed Flex™ technology which delivers by combining molecular & particulate HEPA filtration a global protection solution for the most common handlings performed in multiple laboratories regardless of their environment or field of activity.*

## Molecular filtration technology: super activated carbon

Derived from military gas mask technology, super activated carbon allows the trapping of noxious and odorous molecules emitted during chemical handlings. The phenomenon when the liquid or gaseous molecules are trapped on the solid surface of the super activated carbon is then called adsorption.

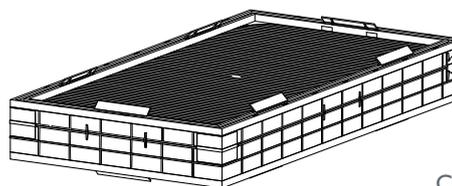
There are 2 types of adsorption for toxics:

Physisorption brings into play weak forces known as « Van der Waals » forces.

Chemisorption or chemical adsorption brings into play binding energies that are much more important.

Erlab® filters are designed to optimize each one of these adsorption reactions in order to trap a large spectrum of pollutants.

Carbon impregnation can, in a case by case basis, improve the adsorption capacities for identified molecular families. For several years, Erlab® has worked in developing impregnated carbon without heavy metals. All agents used for impregnation have been chosen for their very low environmental impact.



Carbon Filter

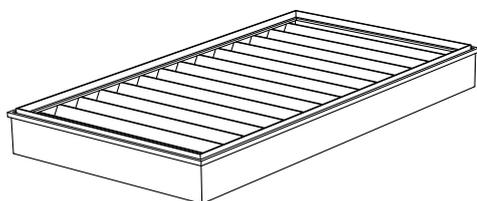
Erlab® selects with great care all carbons used in the design of its molecular filters. The raw material is tested according to the American Standard Test Method (ASTM) which is then qualified according to clearly established result criteria.

The filtering cartridges design therefore guarantees each user of captair® Flex™ filtered enclosures a very high filtration efficiency. Their performance is scientifically proven by tests carried out in accordance with the AFNOR NFX 15-211: 2009 standard, a standard used as a reference in the field of ductless filtration fume hoods (see page 13)

### Types of carbon filters

<b>AS</b>	For organic vapours	<b>F</b>	For Formaldehyde vapours
<b>BE +</b>	Polyvalent for acid and organic vapours	<b>K</b>	For Ammonia vapours

## Particulate filtration technology: H14 HEPA



H14 HEPA filter

This filtration technology enables to trap particles with a diameter greater than 0.1µm with a 99.995% efficiency according to the MPPS test of the EN 1822 standard.

# Flex™ technology

Patent pending

## Modular filtration column

The combination of molecular and particulate filtration technologies allows for the configuration of a single unit in order to meet the protection needs of laboratories.

This has been rendered possible with the design of a one-size filtration cartridge which can be stacked vertically to form a multi-layer filtration column offering various combinations of filtering solutions which represents the major technological breakthrough of the new captair® Flex™ range. This modular filtration column is therefore

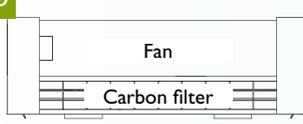
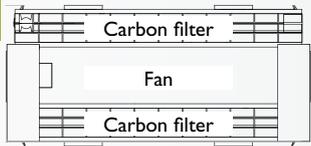
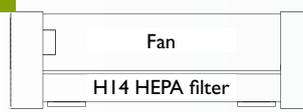
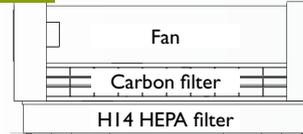
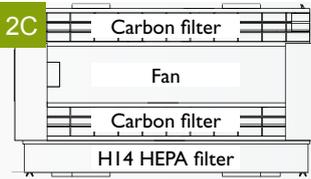
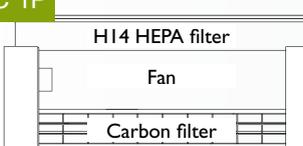
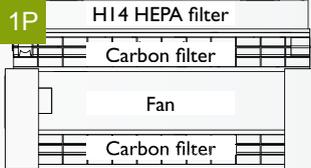
able to easily adapt itself to the needs of laboratories in terms of personnel protection and space requirement.

The different models of the new captair® Flex™ filtration fume hoods can be equipped with 1 to 4 filtration columns offering very high retention capacities.

This innovation from the erlab® R&D laboratory offers unprecedented flexibility, adaptability and energy savings.

A single unit can evolve and be easily assigned to other future applications.

### Manipulated chemicals/ Applications

	<p><b>Liquids</b></p> <p>For dilutions, titrations, extractions, transfers, ...</p>	<p><b>1C</b></p>  <p>Class 2 according to the NF X 15-211 : 2009 standard</p>	<p><b>2C</b></p>  <p>Class 1 according to the NF X 15-211 : 2009 standard</p>
	<p><b>Solids</b></p> <p>For sievings, grindings, weighings, formulations, compressions...</p>	<p><b>1P</b></p> 	
	<p><b>Liquids &amp; solids</b></p> <p>For dissolutions, filtration, extractions, ...</p>	<p><b>1P 1C</b></p>  <p>Class 2 according to the NF X 15-211 : 2009 standard</p>	<p><b>1P 2C</b></p>  <p>Class 1 according to the NF X 15-211 : 2009 standard</p>
	<p><b>Handlings in clean rooms</b></p> <p>Up to class ISO 5 rooms</p>	<p><b>1C 1P</b></p>  <p>Class 2 according to the NF X 15-211 : 2009 standard</p>	<p><b>2C 1P</b></p>  <p>Class 1 according to the NF X 15-211 : 2009 standard</p>

### Guaranteed airtightness of the filtration column

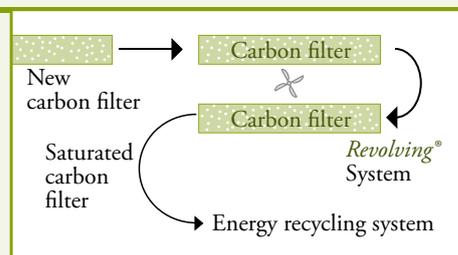
The technical design of the filtering cartridges guarantees users a total airtightness of the filtration column. The vertical stacking of the modular filtration column uses a

gel sealing technology applied on the whole perimeter of the filtering cartridges, which ensures, by gravity, the perfect airtightness of the filtration column.

### The « Revolving Filter » patented system

- Infinite cycle
- 25% increase of the main filter retention capacity
- Significant savings linked to filter replacement costs

When the main filter is saturated the molecules are directed towards the safety filter. The safety filter replaces the main filter when this one has reached its maximum load. A new filter is then installed in the safety position.



Ductless filtration fume hoods with limited space requirement. Enclosures from 80 cm to 160 cm wide. 1 filtration column configured according to the protection needs. Structure of anticorrosion metallic alloy protected by a thermo-hardened anti-acid polymer coating, 6 to 8 mm thick acrylic panels, filtration module made of polypropylene. Tests and Markings CE

## SD 321



### Possible columns configurations



Liquids



Liquids & solids



Handlings in clean rooms



Solids

Class 1 or 2 of the AFNOR NF X 15-211 : 2009 standard

### Dimensions (mm)

External dimensions		
Width	Depth	Height
800	722	1146 mini 1335 maxi
Internal dimensions – without work surface		
Width	Depth	Height
764	640	890

### Technical specifications

Number of columns	1	Total power consumption	45 watts (without lighting)
Number of fans (IP44)	1	Maximum amperage absorbed	1,6 amp.
Air flow	230 m <sup>3</sup> /h	Noise level	52 dbA
Air velocity at the front openings in working position	0,4 to 0,6 m/s	Openings	Oblong
Voltage / Frequency	220V / 50 Hz		

## SD 391



### Possible columns configurations



Liquids



Liquids & solids



Handlings in clean rooms

Class 1 or 2 of the AFNOR NF X 15-211 : 2009 standard

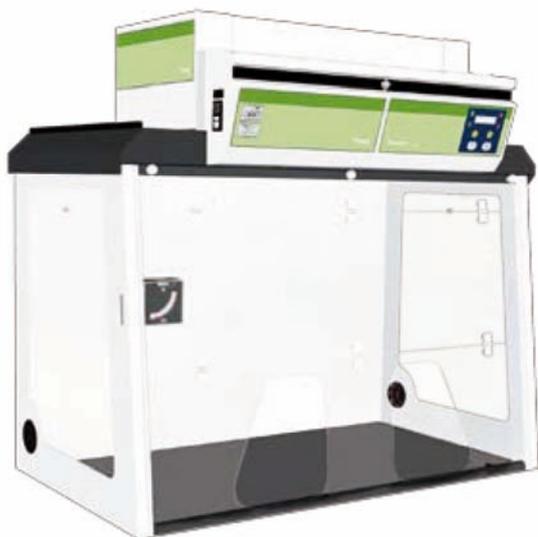
### Dimensions (mm)

External dimensions		
Width	Depth	Height
1000	722	1146 mini 1335 maxi
Internal dimensions – without work surface		
Width	Depth	Height
965	590	890

### Technical specifications

Number of columns	1	Total power consumption	45 watts (without lighting)
Number of fans (IP44)	1	Maximum amperage absorbed	1,6 amp.
Air flow	230 m <sup>3</sup> /h	Noise level	52 dbA
Air velocity at the front openings in working position	0,4 to 0,6 m/s	Openings	Oblong
Voltage / Frequency	220V / 50 Hz		

## SD 481



### Possible columns configurations



Liquids



Liquids & solids



Handlings in clean rooms

Class 1 or 2 of the AFNOR  
NF X 15-211 : 2009 standard

### Dimensions (mm)

External dimensions		
Width	Depth	Height
1274	722	1146 mini 1335 maxi
Internal dimensions – without work surface		
Width	Depth	Height
1240	590	890

### Technical specifications

Number of columns	1	Total power consumption	45 watts (without lighting)
Number of fans (IP44)	1	Maximum amperage absorbed	1,6 amp.
Air flow	230 m <sup>3</sup> /h	Noise level	52 dbA
Air velocity at the front openings in working position	0,4 to 0,6 m/s	Openings	Oblong
Voltage / Frequency	220V / 50 Hz		

## SD 631



### Possible columns configurations



Liquids



Liquids & solids



Handlings in clean rooms

Class 1 or 2 of the AFNOR  
NF X 15-211 : 2009 standard

### Dimensions (mm)

External dimensions		
Width	Depth	Height
1600	722	1146 mini 1335 maxi
Internal dimensions – without work surface		
Width	Depth	Height
1566	590	890

### Technical specifications

Number of columns	1	Total power consumption	45 watts (without lighting)
Number of fans (IP44)	1	Maximum amperage absorbed	1,6 amp.
Air flow	230 m <sup>3</sup> /h	Noise level	52 dbA
Air velocity at the front openings in working position	0,4 to 0,6 m/s	Openings	Oblong
Voltage / Frequency	220V / 50 Hz		

Ductless filtration fume hoods with large internal volume. Enclosure from 100 cm to 180 cm wide. From 1 to 4 filtration columns, configured according to the protection needs. Structure of anticorrosion metallic alloy protected by a thermo-hardened anti-acid polymer coating, 6 mm thick acrylic panels, filtration module(s) made of polypropylene. Tests and Markings CE

**XL 391 - XL 392**



**Possible columns configurations**



Liquids      Liquids & solids      Handlings in clean rooms      Solids

Only available on XL 392

Class 1 or 2 of the AFNOR NF X 15-211 : 2009 standard

**Dimensions (mm)**

External dimensions		
Width	Depth	Height
1000	914	1146 mini 1335 maxi
Internal dimensions – without work surface		
Width	Depth	Height
965	790	890

**Technical specifications**

	XL 391	XL 392		XL 391	XL 392
Number of columns	1	2	Voltage / Frequency	220V / 50 Hz	220V / 50 Hz
Number of fans (IP44)	1	2	Total power consumption	45 watts (without lighting)	90 watts (without lighting)
Air flow	230 m <sup>3</sup> /h	460 m <sup>3</sup> /h	Maximum amperage absorbed	1,6 amp.	3,6 amp.
Air velocity at the front openings in working position	0,4 to 0,6 m/s	0,4 to 0,6 m/s	Noise level	52 dbA	55 dbA
			Openings	Oblong	Total

**XL 481 - XL 482 - 483**



**Possible columns configurations**



Liquids      Liquids & solids      Handlings in clean rooms      Solids

Only available on XL 483

Class 1 or 2 of the AFNOR NF X 15-211 : 2009 standard

**Dimensions (mm)**

External dimensions		
Width	Depth	Height
1274	914	1146 mini 1335 maxi
Internal dimensions – without work surface		
Width	Depth	Height
1240	790	890

**Technical specifications**

	XL 481	XL 482	XL 483		XL 481	XL 482	XL 483
Number of columns	1	2	3	Voltage / Frequency	220V / 50 Hz	220V / 50 Hz	220V / 50 Hz
Number of fans (IP44)	1	2	3	Total power consumption	45 watts (without lighting)	90 watts (without lighting)	135 watts (without lighting)
Air flow	230 m <sup>3</sup> /h	460 m <sup>3</sup> /h	690 m <sup>3</sup> /h	Maximum amperage	1,6 amp.	3,6 amp.	4,8 amp.
Air velocity at the front openings in working position	0,4 to 0,6 m/s	0,4 to 0,6 m/s	0,4 to 0,6 m/s	Noise level	52 dbA	55 dbA	58 dbA
				Openings	Oblong	Trapezoid	total

## XL 632 - XL 633



### Possible columns configurations



Liquids



Liquids & solids



Handlings in clean rooms

Class 1 or 2 of the AFNOR  
NF X 15-211 : 2009 standard

### Dimensions (mm)

External dimensions		
Width	Depth	Height
1600	914	1146 mini 1335 maxi
Internal dimensions – without work surface		
Width	Depth	Height
1566	790	890

### Technical specifications

	XL 632	XL 633
Number of columns	2	3
Number of fans (IP44)	2	3
Air flow	460 m <sup>3</sup> /h	690 m <sup>3</sup> /h
Air velocity at the front openings in working position	0,4 to 0,6 m/s	0,4 to 0,6 m/s

	XL 632	XL 633
Voltage / Frequency	220 V / 50 Hz	220 V / 50 Hz
Total power consumption	90 watts (without lighting)	135 watts (without lighting)
Maximum amperage absorbed	3,6 amp.	4,8 amp.
Noise level	55 dbA	58 dbA
Openings	Oblong	Trapezoid

## XL 712 - XL 713 - XL 714



### Possible columns configurations



Liquids



Liquids & solids



Handlings in clean rooms



Solids

Only available  
on XL 714

Class 1 or 2 of the AFNOR  
NF X 15-211 : 2009 standard

### Dimensions (mm)

External dimensions		
Width	Depth	Height
1800	914	1146 mini 1335 maxi
Internal dimensions – without work surface		
Width	Depth	Height
1765	790	890

### Technical specifications

	XL 712	XL 713	XL 714
Number of columns	2	3	4
Number of fans (IP44)	2	3	4
Air flow	460 m <sup>3</sup> /h	690 m <sup>3</sup> /h	920 m <sup>3</sup> /h
Air velocity at the front openings in working position	0,4 to 0,6 m/s	0,4 to 0,6 m/s	0,4 to 0,6 m/s

	XL 712	XL 713	XL 714
Voltage / Frequency	220 V / 50 Hz	220 V / 50 Hz	220 V / 50 Hz
Total power consumption	90 watts (without lighting)	135 watts (without lighting)	180 watts (without lighting)
Maximum amperage	3,6 amp.	4,8 amp.	6,4 amp.
Noise level	55 dbA	58 dbA	61 dbA
Openings	Oblong	Trapezoid	total

# Standard equipments

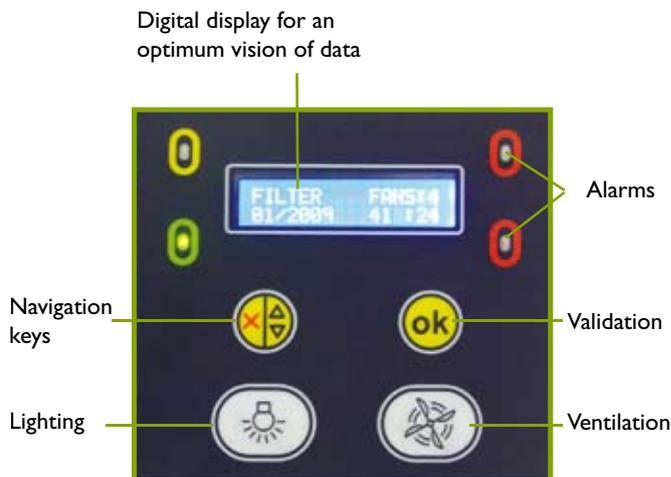
## Control panel : Flow monitor – Programmable timer

### Flow monitor

This device monitors the air flow and warns the user through a visual and audible alarm in case of fan failure.

### Programmable Timer

This timer counts down the running hours of the unit and informs the user every 60 hours about the necessity to perform a saturation detection test of the molecular filter (in compliance with the AFNOR NF X 15- 211: 2009 standard requirements)



## Sampling port



It allows taking an air sample from the detection chamber in the filtration module in order to check the molecular filter saturation level, with the help of colour coded tubes (not supplied).

(not installed on units equipped with the optional Molecode S)

## Air Flow meter



It controls permanently the air face velocity which must be between 0.4 and 0.6 m/s (in compliance with the AFNOR NF X 15- 211: 2009 standard requirements)

## Energy ports



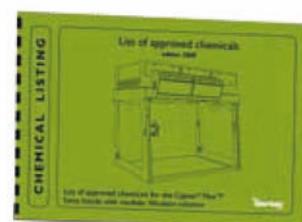
Located on the enclosure side panels, they allow the passage of power cables/ fluid pipes in the enclosure without discomfort for the user.

## Chemical Listing

### List of approved chemicals

This booklet contains an exhaustive list of chemicals, certified by Erlab<sup>®</sup>, that can be handled into the filtering fume hood in the conditions described in the AFNOR NF X 15- 211: 2009 standard.

About 700 chemicals are described including for each one: its name, its formula, its CAS number, its boiling point, its molecular weight, its saturation vapour pressure. This booklet also indicates the filter best adapted for each chemical capture and its retention capacity, the type of filter saturation detection system, the maximum quantity of the chemical that can be introduced within the enclosure and the name of the test laboratory having performed the test linked to the chemical handling.



# Optional equipments

## Work benches and shelves

### Mobicap™\*

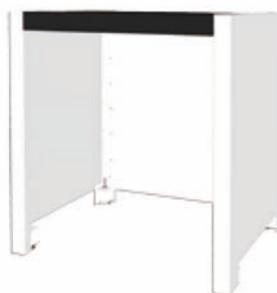
Metallic mobile rolling cart equipped with 4 wheels (2 locking wheels). Allows the safe relocation of a Captair® Flex™ unit.

\*only available on Captair® SD 321 and Captair® SD 391 models



### Benchcap™

Metallic fixed work bench. Equipped with two height adjusting jacks.

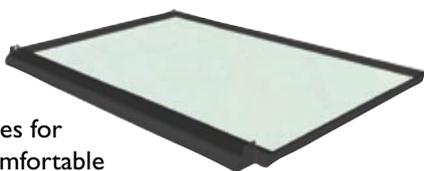


**Metallic adjustable sliding shelf** for Mobicap™ and Benchcap™

## Work surfaces

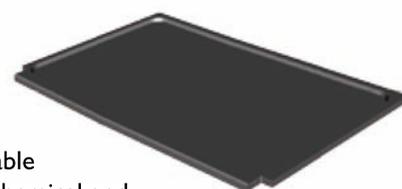
### Work surface 1

Tempered glass plate and metallic spill tray with rounded edges for arm rest and a comfortable working position



### Work surface 2

Work surface with built-in retention tray, in phenolic resin, with ergonomic edges for arm rest and a comfortable working position. High chemical and mechanical resistance. Ideal for accurate weighing operations.



## Lighting



### External lighting

11 Watts – 400 Lux – IP 20. Adjustable, can be attached to either side of the enclosure.



### Internal lighting

18 Watts - 500 Lux - IP68. Compact tubular fluorescent lighting. From 1 to 3 tubes according to models.

## Molecode™ S



### Large spectrum filter saturation detection alarm

(Requirement for class I of the AFNOR NF X 15-211 : 2009 standard)

1 cell located in the detection chamber allows for the automatic detection of filter saturation by solvents.

1 cell in contact with the laboratory environment indicates ambient air pollution levels.

## Back panel access door

Metallic.

Located on the enclosure back panel, allows for an easy rear access to heavy and bulky instrumentations. Ideal for maintenance operations.

(Only available on Captair® Flex™ XL)



## Transparent back panel

In acrylic. Offers a 360 degree visibility in the enclosure and optimizes luminosity.



# The AFNOR NF X 15-211 : 2009 standard

Appointed by the AFNOR, the Union de Normalisation de la Mécanique (UNM), composed of a college of experts (INRS, national organizations, professional syndicates), has established the **AFNOR NF X 15-211 : 2009 standard**. This standard applies to filtration fume hoods (also named recirculatory fume hoods or ETRAF) designed for research, analysis, education works,... for all laboratories where chemicals subjected to professional exposure limit values (OEL or TLV) are manipulated. This text imposes performances criteria linked to:

- Filtration efficiency
- Containment efficiency
- Air face velocity

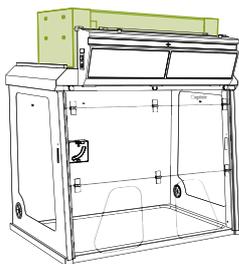
As well as a specific documentation attached with each filtration fume hood.

The classes established by the standard		
Class 1	Class 2	
Filtration fume hood with safety reserve	Filtration fume hood without safety reserve	
one main filtration level and one safety filtration level	One filtration level	

Classification according to filtration type		
	Denominations according to the NF X 15 211:2009 standard	Denominations equivalence for the erlab® products
Particles filtration*	Type P	Type P
Vapours filtration**	Type V	Type C
Particles and vapours filtration**	Type PV	Type PC

\* :The particulate filter must be at least of H14 type according to the NF EN 1822-1 standard  
 \*\* :The filters for vapours must be submitted to two successive performance tests with Cyclohexane and Isopropanol for the filters designed to retain Volatile Organic Compounds (VOC). Another test for the acid vapours is carried out with Hydrochloric acid.



## Filtration efficiency

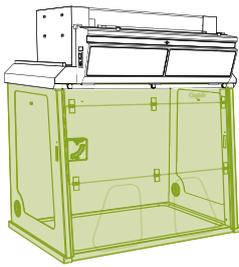
It is defined by the filter capacity to retain noxious molecules manipulated within the enclosure and qualifies the quality of the recirculated air at the filter exhaust.

	Class 1	Class 2
Normal operation phase	Emissions concentration at the filter exhaust must be lower than 1% of the TLV	
Detection phase	The concentration at the filter exhaust must be lower than 1% of the TLV, and the automatic saturation detector must warn the user	The concentration at the filter exhaust must be lower than 50% of the TLV
Safety operation phase	The concentration at the filter exhaust must be lower than 50% of the TLV ; its duration must not be lower than 1/12 of the normal operation phase duration.	

The retention capacities recorded during the tests performed on our filters demonstrate the technical performance developed by ErLab®. These results ensure a very high protection level to the Captair® Flex™ users.

Example of test carried out on a Captair® Flex™ XL 714, equipped with BE+ filters in class 1

Isopropanol	Cyclohexane	HCL (35%)
2250 gr	3204 gr	7862 gr



## Containment efficiency of the enclosure

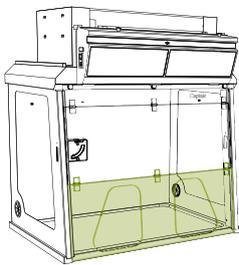
**It is defined by the fume hood capacity to maintain chemical vapors or particles within the enclosure without any propagation in the laboratory environment.**

To prove this efficiency, a test is carried out following the protocol described in the standard.

SF<sub>6</sub> (Sulfur Hexafluoride) tracer gas emissions are made into the enclosure. A grid composed of sensors is placed in front of the working openings. Some samplings are done at the grid. Based on the emitted gas concentration and the samplings done (which will allow the determination

of an average operator exposure to this tracer gas), it is possible to determine a containment performance level of the filtration fume hood.

The containment threshold specified by the NFX 15-211:2009 standard imposes a maximum concentration of 0.1 ppm of SF<sub>6</sub> gas at the measuring points on the grid.



## Air face velocity

**It represents the fume hood capacity to create a dynamic barrier between the operator and the handling.**

For filtration fume hoods with fixed front panel, the air face velocity at any point of the front openings must be between 0.4 and 0.6 m/s. They must be equipped with a permanent monitoring system for the air face velocity which also acts as a real time containment indicator.

## Documentation

**Filtration fume hoods must be delivered with a booklet containing an exhaustive list of chemicals, certified by the manufacturer, that can be handled into the filtering fume hood in the conditions described in the AFNOR NF X 15-211:2009 standard. The following information must be indicated in the booklet for each chemical listed:**

- The chemical name, its formula, its CAS number, its boiling point, its molecular weight, its saturation vapour pressure
- The appropriate filter reference and its retention capacity during the normal operation phase
- The type of saturation detection system for the filter(s)
- The maximum quantity of the chemical that can be introduced within the enclosure
- The name of the test laboratory having performed the test



**Erlab® has created its own booklet called the CHEMICAL LISTING. This booklet contains a list of approved chemicals indicating analysis data for about 700 molecular substances commonly used in laboratories. This booklet is delivered with each unit and complies with the requirements of the AFNOR NF X 15-211:2009 standard.**

Every Erlab® filtration fume hood is in compliance with these safety criteria.

## The international standards

Erlab® products are in compliance with the following standards which guarantee your total protection.

France : AFNOR NF X 15-211 : 2009

USA : ANSI/AIHA Z9.5  
ASHRAE 110 : 1995

## A long-lasting commitment by erlab® to the safety of the operator

*An essential part of user safety, our laboratory mission is to assess the interactive behavior of molecules and their interactive effect with the Flex™ filtration technology. Based on this scientific investigation, your E.S.P.® specialist will recommend the most appropriate unit, define the adapted filtration column and the enclosure design and ensure a complete protection to the user. After installation, your E.S.P.® specialist will provide you with a constant monitoring of the unit regarding the handlings performed.*

1

### The service:

#### **Determine the most appropriate filtering fume hood for total safety during your handlings**

Assisted by an E.S.P.® agent, you complete the investigation questionnaire, which precisely describes your intended chemical handlings. Our validation laboratory specialists will recommend the appropriate filtration fume hood and filter type. Personalized advice and accurate answer within 48 hours. A certificate validating the handling is supplied: real commitment of the manufacturer to the safety of the operator.

2

### The service:

#### **Certify and secure the usage framework at installation**

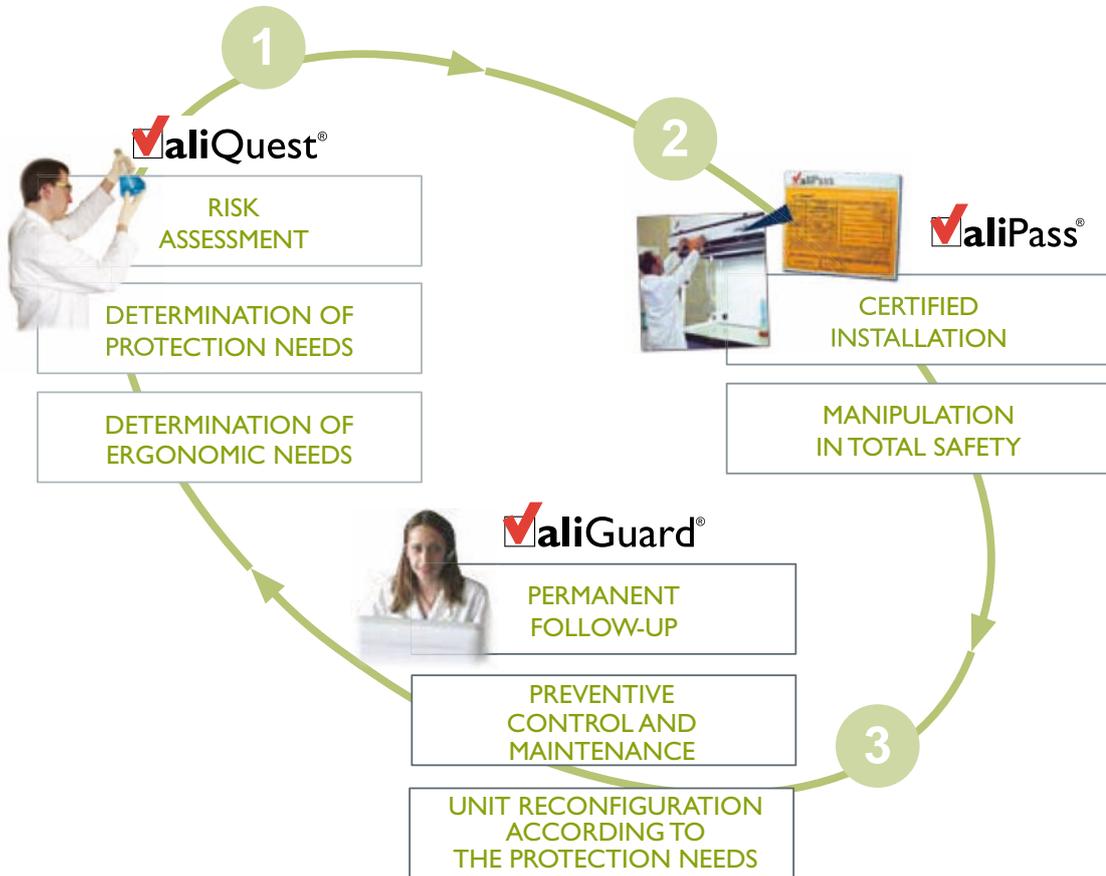
When you receive your Captair® filtering fume hood, a usage certificate will give precise details on the chemicals to be used, the filter type and an estimation of its lifetime expectancy, for which your Captair® filtering fume hood has been validated. This certificate is a permanent reminder to the user or the safety officer of the data relating to their protection.

3

### The service:

#### **A constant monitoring of your filtering fume hood.**

Periodically (about every six months), the E.S.P.® agent will contact you to make sure that you have not changed your handlings and that the filter is still active. The E.S.P.® agent will show you how to perform step by step filter saturation tests and also the procedure for filter replacement. During this contact, if the E.S.P.® agent finds that there is a change in chemical handlings, you will be asked to complete a new questionnaire (see step 1). After review, a new certificate for use (to be placed on the front of the filtering fume hood) naming the approved chemicals will be sent to you to ensure that your chemical handlings are still performed within optimum safety conditions.



Call your ESP® specialist today and configure this unique Captair® Flex™ solution to your requirements.

[www.erlab.com](http://www.erlab.com)

**asura**® Maintenance

The first international network of approved technicians for the maintenance of molecular filtration fume hoods used in laboratories.

The Erlab® asura® department ensures the commissioning and maintenance of your captair® ductless filtering fume hoods.

Asura® gives the necessary training to the operators to ensure the good practices of use of the unit.

Procedures and control protocols according to the reference standards requirements concerning filtration, containment and air face velocity guarantee the durability of the captair® fume hoods and a total protection for the user.



Leader in ecologically safe non-ducted filtering technology

Erlab<sup>®</sup> has spent several decades on the research, design, development and manufacture of cutting-edge laboratory fume hoods

An innovator committed to safety, performance, energy efficiency and sustainability, erlab<sup>®</sup> has remained number one in the world for non-ducted filtering laboratory fume hoods since 1968.

Today – 20 international patents later - erlab<sup>®</sup> is a global leader with:

- Three production units located in North America, France and China totaling 20 000 m2.
- Five corporate locations (USA, France, China, Malaysia, Spain).
- Cutting-edge plastic injection, precision metal, acrylic and filter cartridge manufacturing capabilities.
- A state-of-the-art research and development center including :
  - A research and development director
  - An on-staff PhD in chemistry, physics and microbiology
  - Three chemists with 40+ years of combined experience
  - Three product development technicians
  - A laboratory equipped with an infra-red spectrometer for the SF6 tracer gas measurement and containment tests, mass spectrophotometers, a chromatograph, a test bubble (the only one of its kind in the world), an ASTM control units, over 1 million euro worth of filtration and containment testing equipment in Europe, Asia and North America.

Europe : Erlab<sup>®</sup> S.A.S. (France)



Americas : Erlab<sup>®</sup>, Inc. (USA)



Asia : Erlab<sup>®</sup> Ltd (China)



Erlab<sup>®</sup> develops a range of products relying on more than 40 years of scientific know-how based on the filtration of chemical gases on activated carbon.



A state-of-the art R&D laboratory



Test bubble

# Other products in the captair® range



## Vented filtering storage cabinets

A wide range of filtering storage cabinets to store your noxious and odorous chemicals close to your workstation. Operating 24 hours a day, they contribute to the purification of the laboratory air. Filtration in compliance with the AFNOR NF X 15-211 standard, class 2.



## HEPA filtered enclosures

HEPA filtered enclosure for applications in ultra clean environment. For the protection of the product or the samples against any external contamination. Equipped with a H14 HEPA filter (according to EN 1822-1 standard) for a protection with laminar flow.



## PCR\* workstations

Enclosures offering protection by containment and laminar flow preventing any contaminant intrusion within the working area. Decontamination of the working area by U.V. radiation. Equipped with a H14 HEPA filter (according to EN 1822-1 standard).

\*PCR is a patented process owned by Hoffmann-La Roche AG



## Mobile isolation enclosure for biological investigations

Mobile isolation enclosure for the protection of the samples and the operator. Light, mobile and airtight, it is designed for field investigations and on site sample collection.



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Your distributor

