TECHNICAL DESCRIPTION OF THE

SAFETY CABINET

MICROBIOLOGICAL TYPE II

BIOPURE 9/12/16/18

Complies with Standard NF EN 12469

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SUMMARY

I. PRESENTATION

Protection of handling, handler and environment

Objective: Manipulation of pathogenic micro-organisms
Ultra-clean confined area

II. STRUCTURE

1. FRAMEWORK

The BIOÿPURE is made of Coplast type expanded PVC, a perfectly smooth material allowing it to be decontaminated with H^2O^2 and/or peracetic acid. It has an electric tilted visor and glass side walls for greater comfort of use. The interior and its work surface (in several parts) in 304L stainless steel add comfort and safety to this workstation.

The whole is rigid and insensitive to all deformations and alterations.

The BSCconsists of a negative pressure plenum preventing any leakage to the outside, it isolates and protects the working volume.

2. WORK PLAN

The work surface is removable, divisible and made of 304L stainless steel (photo opposite).

Option: 316L stainless steel worktop, perforated, addition of a marble…

3. FRONT SUCTION GRILLE

In front of the work surface, the suction grille is integrated into the work surface and removable. It is made of perforated 304L stainless steel and profiled so as to create a zone of high depression perfectly delimited in relation to the handling zone; called “guard vein”.

Its inclination guarantees perfect ergonomics.

4. RECEPTACLE

A receptacle is located under the work surface. It is fixed and made of Coplast type expanded PVC. It allows you to collect accidental spills of liquids. Which makes cleaning easier. Access to the receptacle is done by lifting the work surface.

Option: 316 L stainless steel receptacle

5. LIGHTING

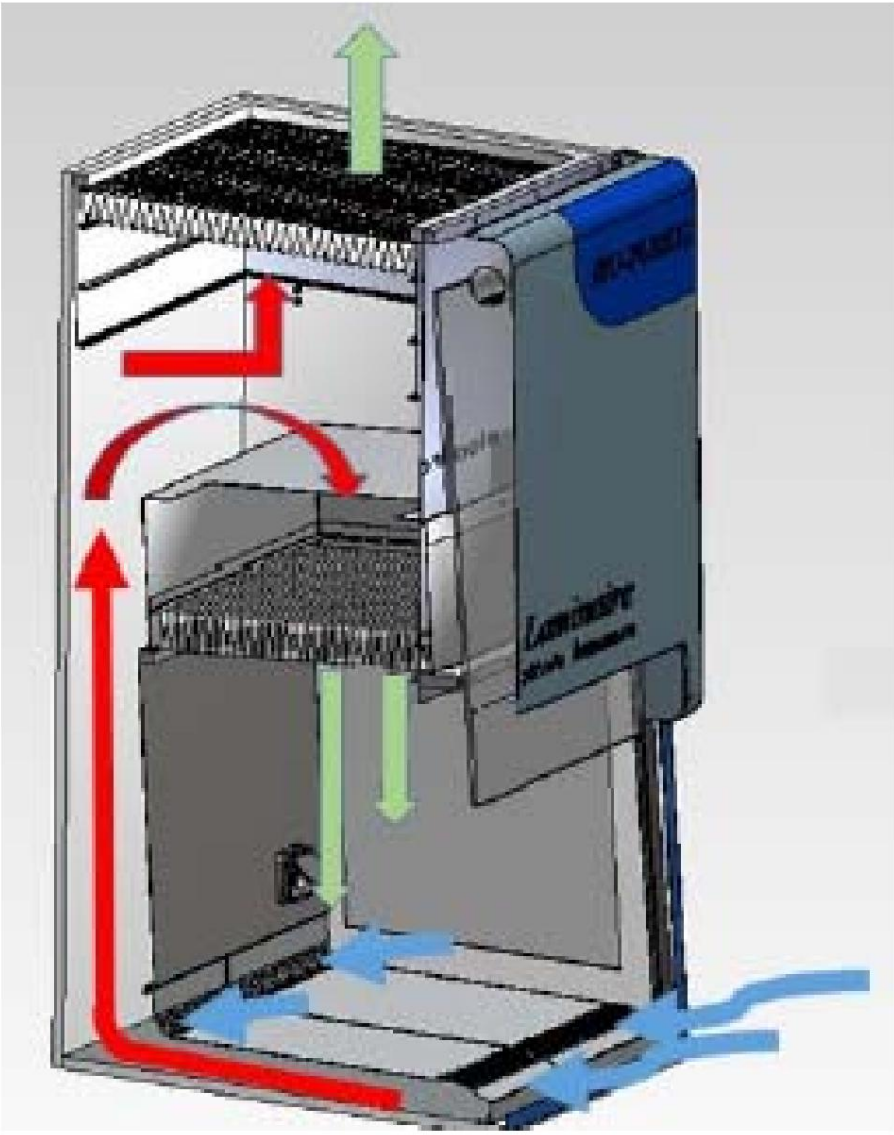
Lighting is provided by LED strip placed outside the working volume, this allows the insulation of all electrical components according to standard EN 12469. Illumination
level greater than 750 lux on the work surface.

6. INCLINED VISOR

Access to the work area will be partially blocked during handling by a clear transparent TRIPLEX laminated glass panel sliding vertically between two slides (controlled by the operation of the hood). This visor, with an inclination
of 6%, has a fixed opening height of 240 mm ensuring the passage of the arms.

III. OPERATING PRINCIPLE – SAFETY

1. PRINCIPLE DIAGRAM



Dimensions (mm)	BIO-PURE 9		BIO-PURE 12		BIO-PURE 16		BIO-PURE 18	
	Utiles	Hors tout	Utiles	Hors tout	Utiles	Hors tout	Utiles	Hors tout
Largeur	915	953	1220	1258	1525	1563	1830	1868
Hauteur	590 à 620	1400	590 à 620	1400	590 à 620	1400	590 à 620	1400
Profondeur	600	790	600	790	600	790	600	790
Puiss Cons.(W)	130 W		190 W		250 W		360 W	
Puiss. Max (W)	800 W		800 W		1200 W		1200 W	

Hauteur hors tout sur piètement standard 2120 mm (Plan de travail à 800 mm - +30 mm avec option roulettes).

2. OPERATING PRINCIPLE

A flow of ultra-clean class ISO 5 air (ISO 14644ÿ1 standard) is pulsed through a first HEPA H14 filter, thus sweeping the working volume vertically from top to bottom in order to avoid any contamination of the ambient air. This flow ensures **protection from any manipulation** within the enclosure.

All of this air flow is recycled by passing under the worktop and into the rear wall of the PSM.

The extracted flow is done through a HEPA H14 filter ensuring the containment of **contaminating agents, and therefore protection of the environment.**

The quantity of air rejected is compensated by the suction of an equivalent volume of air through the front grille of the work surface. This suction, called “guard vein”, creates a dynamic barrier between the handling and the operator, and prohibits any risk of contamination to the outside. The frontal speed is greater than or equal to 0.4m/sec and **ensures the protection of the manipulator.**

3. SECURITY

In order to ensure the greatest safety of handling, this hood is equipped with fully automatic regulation which makes it possible to maintain constant flow rates regardless of the state of clogging of the filters. The control panel display shows the life of the HEPA filters (100% = new filter). An audible and visual signal indicates the need to change the HEPA filters.

An alarm system linked to the visor can warn the user if the position of the latter is not correct. (CF. §3. Of chapter VI)

4. ELECTRIC INCLINED VISOR

The full opening of the visor allows the introduction of bulky equipment and the cleaning of the enclosure. An audible and visual alarm indicates that the regulatory position is not respected. Three
other ice positions are possible:

- ÿ Fully open position (alarm active)
- ÿ Completely closed position (standby or off position)
- ÿ Intermediate position (alarm active)

Ease of cleaning:

- The visor can be raised to the high position by lifting the cover (opening on jacks see plan), this allows the interior cleaning of the visor.

5. AUTOMATIC FLOW SPEED REGULATION

The air speed at the HEPA filter outlet is maintained, regardless of the state of clogging of the filters thanks to flow management by programmable microprocessor (ECM technology) integrated into the fan.

6. SOUND LEVEL

The sound level complies with the requirements of standard EN 12 469 (< 55 dBA)

7. POWER SUPPLY

The power supply is mono 230 V + T - 16A - 50 Hz.

8. STORAGE AND TRANSPORT:

If PSM is stored, it is imperative to film the hood and store it in a place protected from climatic variations and respecting the conditions stipulated below. If the PSM must be transported, it must not suffer any shock. We remind you that in the event of handling pathogens, prior decontamination is mandatory.

9. CONDITIONS OF USE

The following environmental conditions must be respected for proper operation of your PSM: Ambient temperature:
from + 5°C to + 40°C. Humidity: 30% to 95%.

The PSM must not be installed near an open window, under an air vent or a draft (see installation diagram according to INRS recommendations)

IV. HEPA FILTRATION

The PSM is equipped with panel type HEPA filters (on supply and discharge), with a minimum efficiency of 99.995% MPPS Effiency (according to EN 1822, classification H14) guaranteeing an ultra clean laminar flow class ISO 5 according to the ISO 14644 standard. 1.

1. FILTRATION

The PSM is equipped with 2 ventilation/filtration systems: A supply system and a discharge system.

a) Supply and rejection filters

Very high efficiency H14 type filters designed for the filtration of ultra fine particles. HEPA filters meet the requirements of the EN 1822 standard:

- Bonded fiberglass media
- Protective grid in epoxy painted steel. - Class H14,

their minimum efficiency is 99.995% MPPS Effiency guaranteeing an ultra clean laminar flow of ISO class 5 according to the ISO 14644ÿ1 standard at the filter outlet.

2. MAINTENANCE OF FILTERS:

These two filters are mounted on the enclosure by clamping, which facilitates their replacement.

The HEPA filters are accessible from the front of the PSM:

- Through the cover located on the front

The display on the control panel shows the progress of the life of the HEPA filters. An audible and visual signal indicates the need to change the filters.

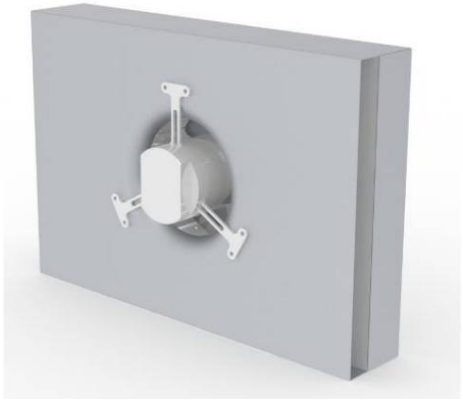
The aeraulic principle instantly guarantees watertightness.

V. VENTILATION

The PSM is equipped with an ECM regulation system to guarantee a constant flow despite the clogging of the HEPA filters and a low noise level.

The whole thing is protected according to electrical safety standards. The grounding of all electrical parts and all electrical masses follows regulations

The on-board electronics allow simplified management of information linked to alarms and possible breakdowns. The **automatic regulation of the constant flow rate** is done, by simple programming, using a **microprocessor** which analyzes three parameters (intensity, torque, engine speed) to find the balance point corresponding to the requested flow rate in relation to the pressure loss.



DF 280 ECM fan

Benefits

- The speed of the flow will be maintained over time, whatever the state of clogging filters.
- Low consumption: reduced by 30 to 40% compared to conventional fans - No probe (speed or pressure) to regulate the flow: no calibration problem linked to variations in measurements or climatic changes (temperature, pressure, hygrometry) to which the probes are sensitive.
- Very high precision
- Low noise level, ventilation systems are equipped with sound traps

Energy saving

- Thanks to its very high efficiency of 80% for a continuously powered fan (compared to 40% for a conventional asynchronous motor fan), it consumes 3 times less energy than an old generation PSM (1995ÿ2010)
- Low temperature rise

a) Ventilation

This station is equipped with 2 high-efficiency variable centrifugal fans mounted on shock absorbers. The ECM version guarantees a constant flow rate despite the clogging of the HEPA filters and a low noise level.

All motors are protected according to electrical safety standards. The earthing of all electrical parts and all electrical masses follows regulations.

b) Regulation of Flow Speed

The air speed is constant, regardless of how clogged the filters are. To do this, an automatic regulation system compensates for clogging by increasing the blowing flow rate. Thus, the air speed at the outlet
of the HEPA filters is maintained thanks to flow management by programmable microprocessor (ECM technology) integrated into the fan: Operator **and handling** protection This makes it possible to maintain the desired
ISO 5 class (according to standard ISO 14644 – Speed between 0.25 m/s and 0.50 m/s) in the working volume.

VI. CONTROL PANEL

1. PRESENTATION

2. ORDERS

On/ Off: Switching the hood on or off, i.e. the ventilation, and all the functionalities. Allows you to exit a menu or submenu or
cancel an action

Sleep: Switching from normal mode to sleep mode and vice versa

: Raising – lowering the visor
Used to navigate through the menu, select a choice or scroll through the alphabet. Simultaneously pressing the
2 buttons for 2 seconds allows the system to be reset

: "Enter" button. Allows you to enter a menu, a submenu or
validate an action or choice.

Lighting: Main lighting on/off.

UV (option): On Off the UV lamp (option).

Free Contact: Opens and closes a free contact on the power card intended to connect an accessory (solenoid valve, electrical outlet, etc.)

3. ALARMS

The **alarm messages,** coupled with an **audible alarm,** warn the user of an anomaly during handling and thus prohibit prolonged use in the event of incorrect flow.

The different alarm messages displayable on the "flower" board are:

Clogging alarm: When the HEPA filter is clogged, the alarm sounds and the message "Clogged Filter" appears.

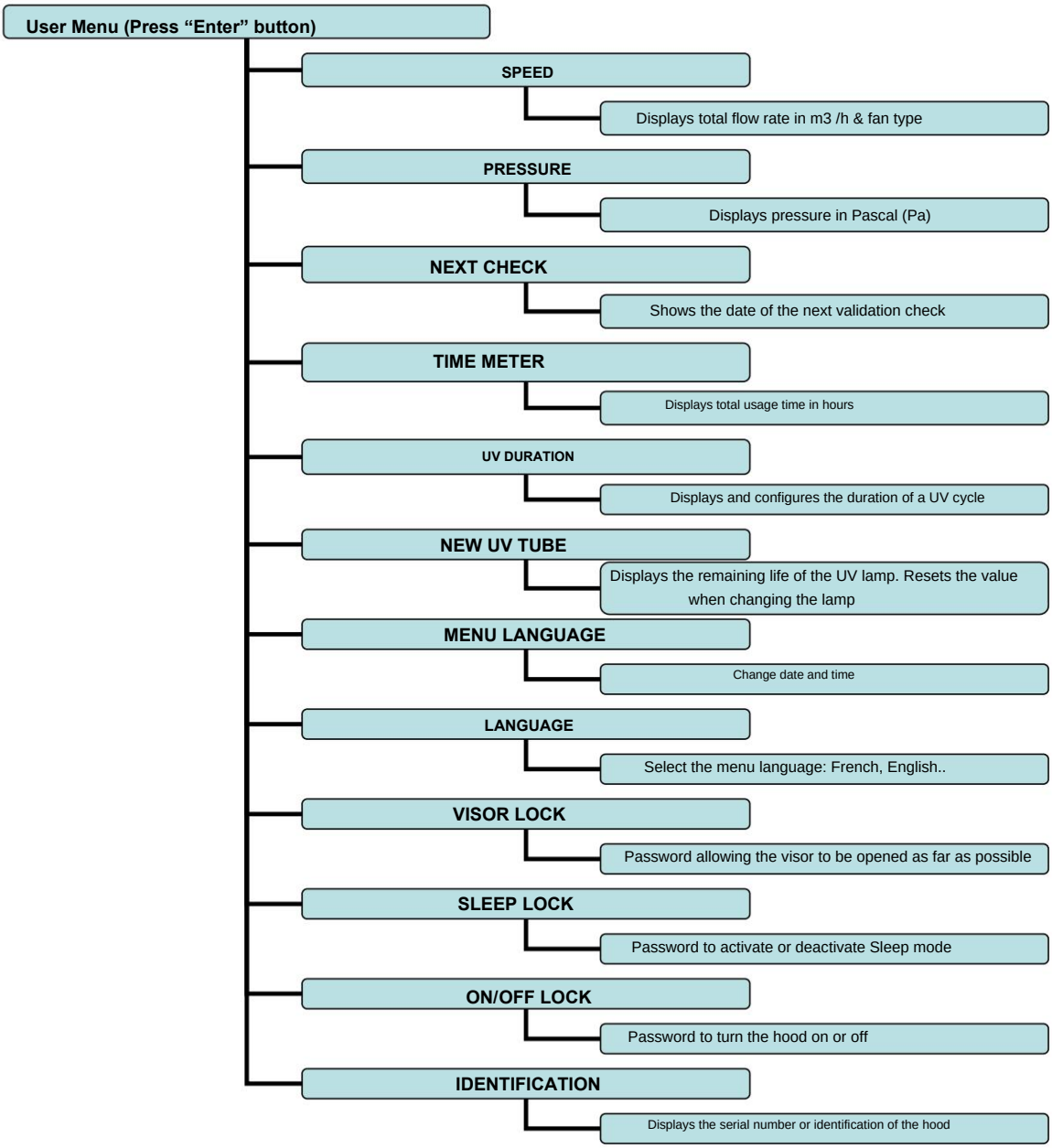
Incorrect Flow Alarm: If the flow speed is outside the normal range, the alarm sounds and one of the following messages appears: "Speed too low" or "Speed too high" or "Front speed too low".

Visor Alarm: As soon as the visor is no longer in the normal working position, the alarm
rings.

Ventilation Alarm: If the fan is out of service, the alarm sounds and the message "Ventilation Fault" appears.

Validation Alarm: If the hood validation date has passed (based on a period of one year), the message "expect check" appears. (There is no audible alarm.)

4. USER MENU: ORGANIZATIONAL CHART



VII. STANDARD EQUIPMENT

The microbiological safety station has the following equipment as standard:

ÿ 2 230 V + T sockets, 16 A, 50 Hz

ÿ LED lighting, located outside the working volume, and easily accessible.

ÿ Motorized and lifting visor

ÿ Pre-equipped for gas passage

ÿ Input socket for generator and sampling socket

VIII. AVAILABLE OPTIONS

Other optional equipment is available:

1. BASE

Epoxy painted steel base on jacks or casters

2. TAP (FLUID PASSAGE (AIR, GAS) WITH TAP)

Optional: gas tap and/or vacuum tap can be integrated into the side walls.

3. UV LAMP

UV lamp integrated into the bottom of the PSM.

4. WORK PLAN

Other worktops are possible: 316L stainless steel, perforated…

5. ADDITIONAL POWER SOCKET

Additional power socket on the right or left

6. CONNECTION TO THE OUTSIDE

Connection possible to the outside (excluding duct network supply). *Consult us*

7. ACTIVE CARBON FILTER

Activated carbon filter installed on discharge. *Consult us*

8. WASTE SAS

SAS integrated into a wall.
Consult us

9. WEIGHING MARBLE

Weighing marble integrated into the worktop.
Consult us

10. OTHER OPTIONS ON REQUEST

Integrations, wall cutting… *Contact us*

IX. SERVICES

1. DELIVERY OF LAMINAR ADS

ÿ Supply of PSM

ÿ Packaging, shipping and installation on site

ÿ Electrical connection of the hood to a power outlet on standby

ÿ PSM controls

- Control report

2. EXCLUDING SUPPLY AND WORK

ÿ Installation of ducts, cable and extractors ÿ Connection to our expectations for all fluids (nitrogen, water, evacuation, etc.) ÿ Equipment to be integrated

- …

3. TRAINING (OPTION)

Following installation of the equipment, a training period will be provided for user personnel and technicians. This training will include an equipment use phase, a maintenance phase and the delivery of the user manual.

4. DOCUMENTATION PROVIDED

The following documents are provided upon delivery:

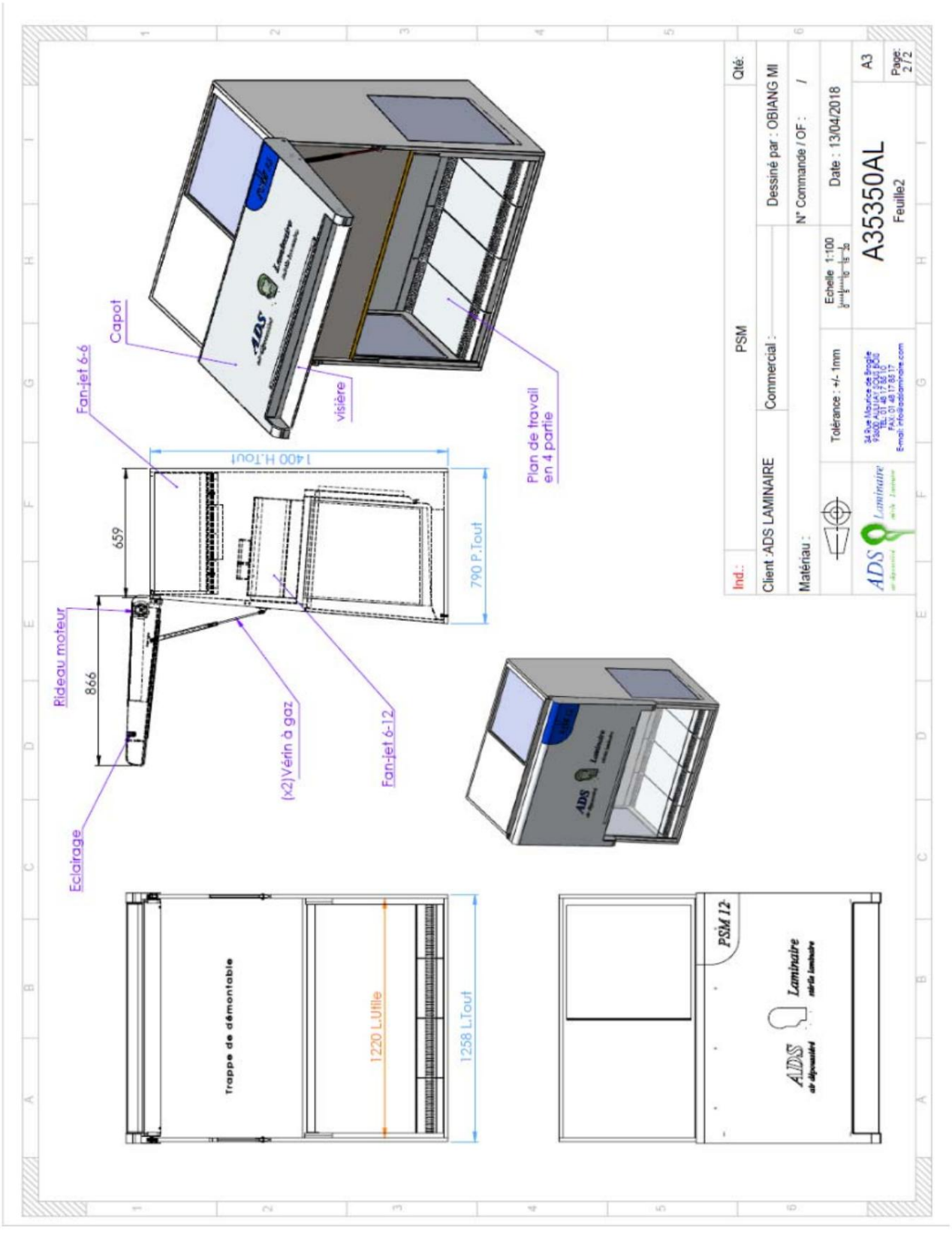
- **Certificate of Conformity • CE certificate**
- **Guarantee Certificate**
- **User manual**

5. TELEPHONE SUPPORT

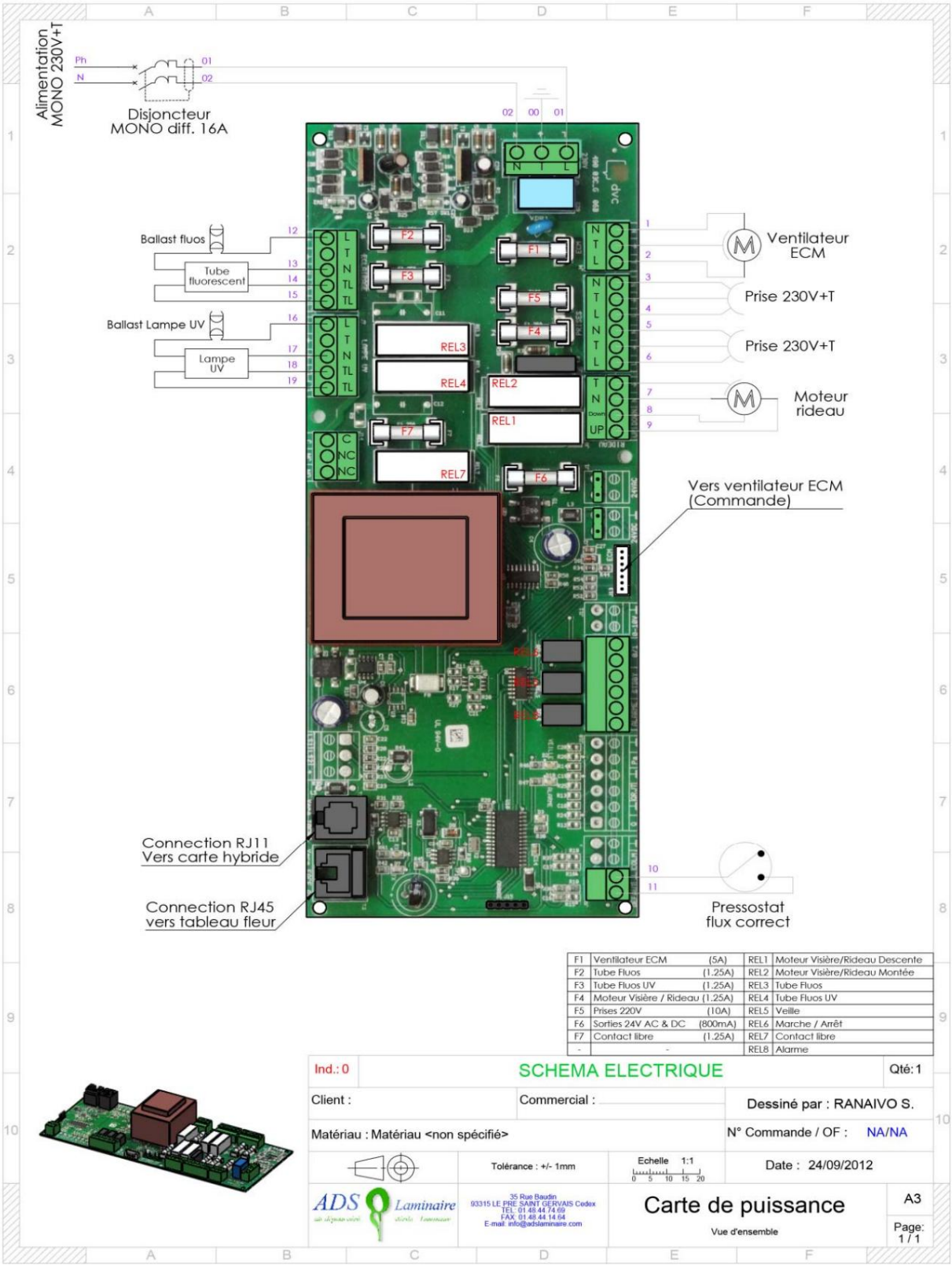
Telephone support opening hours:

- Monday – Thursday: 8 a.m. – 12:30 p.m. and 1:30 p.m. – 6 p.m.
- Friday: 8 a.m. – 12:30 p.m. and 1:30 p.m. – 3 p.m.

X. STANDARD PLAN



XI. WIRING PLAN



XII. PERIODIC VERIFICATION CONTRACT

Concerned about the use of your PSM type enclosure in optimal conditions, we can draw up a Periodic verification contract for you which can be carried out by our after-sales service.

This contract commits our company ADS LAMINAIRE to carrying out inspection and monitoring visits to your hood at periods defined with your establishment, to be mutually agreed.

This maintenance contract includes: - the
travel of our technical service - a particle count in the
work volume to verify compliance with the
ISO class 5 standard ISO 14644ÿ1
ÿ scanning the filter and its joint surface with a particle counter to check
the integrity of the filter plane (test with EMERY 3004 possible as an option)
ÿ speed mapping, and calibration of its display (flower table) ÿ sending of the inspection report

The company ADS LAMINAIRE will repair and/or replace defective parts as well as filtration elements if it deems it necessary, and after agreement, to ensure the proper functioning of the equipment until the next planned passage on the site.
CONTRACT.

We have your maintenance contract at your disposal, do not hesitate to contact your ADS LAMINAIRE representative.

XIII. INTERVIEW

1. PROCEDURE FOR CLEANING THE WORK VOLUME

Microbiological Safety Stations must be cleaned and disinfected after each use.

While cleaning the working volume, leave the PSM in normal operation.

For convenience, the visor can be raised (Attention: depending on the position of the visor, an audible and visual alarm may be triggered).

Preferably use large NON-woven, disposable cloths compatible with class ISO 5 and ISO 4. This type of cloth has the particularity of being large enough not to be sucked up by the PSM during cleaning and of being lint-free or non-linting. relarguant", to **guarantee ISO 5 and ISO 4 class. (Our Utility service is available to advise you and direct you to the best reference)**

Impregnate the cloth with a bactericidal and fungicidal cleaning product. All alcohol-based products are compatible with the hood structure. You can also spray the walls of the enclosure.

Avoid the use of chlorine-based products, such as bleach on all stainless steel parts unless they are very diluted.

Clean all accessible parts using a circular motion with the impregnated cloth. You can access the retention tray by lifting the INOX work surface.

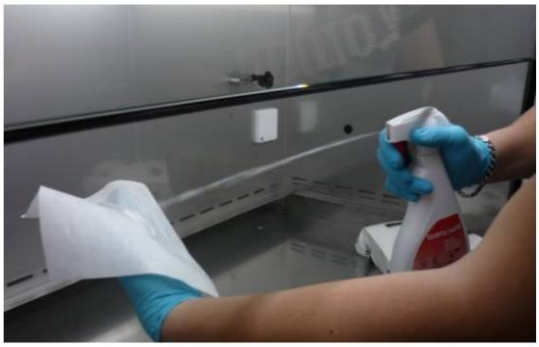
You can also clean the lower half of the visor by accessing it directly from the working volume. You have access to the upper part of the visor by lifting the front cover (NB: a gas spring device is present to keep the cover open).

2. USE PROTOCOL

While cleaning the working volume, leave the PSM in normal operation.

For convenience, the visor can be fully mounted, an audible and visual alarm is triggered.

Clean the retention tray by lifting the work surface.



Spray a disinfectant product on a clean fabric, recommended for cleaning PSM. It is not recommended to spray the product directly on the work surface and walls.

Rub the entire surface of the hood using circular movements. Drying is quick and streak-free. Do not rinse

The use of bleach is strongly discouraged for stainless steel parts.

3. PSM DECONTAMINATION PROCEDURE

Microbiological Safety Posts must be decontaminated:

• Before any maintenance operation (e.g. changing HEPA filters) • Before checking the integrity of the HEPA filters (EMERY test) • Before a change in type of handling • Before moving the station

Decontamination with hydrogen peroxide

Decontamination is done by nebulizing a decontaminant based on hydrogen peroxide and peracetic acid. No neutralization is useful; the residue from the operation is water. (The Fleur type control

panel is programmable for decontamination with hydrogen peroxide)

XIV. MAINTENANCE

As soon as the filter life display drops below the 15% threshold, plan to replace the filters.

Before changing filters, plan for decontamination of the air circuit (contact us for decontamination)

Thanks to very easy access and a simple fixing system, the filters are easily replaceable.

1. SUPPLY AND DISCHARGE FILTERS

1ÿ Accessible through the access hatch above the working volume after lifting the hood
2ÿ Undo the mechanical clamping bars
3ÿ Pull the ventilation system to remove it
4ÿ Remove the filter fan
5ÿ Reinstall the fan on a new filter 6ÿ Install the fan with the new filter in the reverse order.

Lifespan: approximately 3 to 5 years depending on conditions of use.

2. MOTOR FANS

Without special maintenance, the latter remains accessible from the front of the equipment.

3. LED LIGHTING

Direct access to the strip located under the hood.

4. UV LIGHTING (OPTION) Direct access to the rear panel of the worktop.

IMPORTANT

HEPA filter replacement operations must be carried out by a qualified technician and must be followed by an enclosure validation check. In the event of replacement, moving or prolonged shutdown of an enclosure, a validation check must be carried out by a qualified technician before restarting it. Any intervention on a PSM must be done after decontaminating it. The standard procedure is

decontamination with hydrogen peroxide (see previous chapter).

XV. WARRANTY CONTRACT

The BSCpeaker is guaranteed for 2 years parts and labor (in mainland France, BENELUX and Switzerland)foranymanufacturingdefect(excludingconsumables).

CONDITIONS OF APPLICATION OF THE WARRANTY:

ÿ During the warranty period, the customer will benefit from free parts and labor in the event of a breakdown (in mainland France).

ÿ The warranty does not apply to consumables for which renewal is necessary.

ÿ The guarantee is excluded:

ÿ In the event of damage resulting from misuse or lack of maintenance (non-compliance with instructions) or damage resulting from an external cause (theft, water damage, fire, fall, etc., see . your establishment's insurance).

ÿ In the event of external intervention, other than by the company ADS LAMINAIRE during the warranty period.

The PSM is certified in compliance with standard NF EN 12469 (2000). Under no circumstances can ADS Laminaire be held responsible for changes to the standards taken into account at the time of construction of the hood.

3-month warranty on spare parts changed by us during an intervention carried out by our services.

XVI. ANNEX

Fiche techniques COPLAST-AS

SIMONA

Nom commercial: **COPLAST-AS**
Date d'impression: 01.09.2016

Révision: 14.07.2016

	COPLAST-AS
Mise à jour de la fiche de données	14.07.2016
Densité, g/cm³, DIN EN ISO 1183	0,67
Module E à la traction, MPa, DIN EN ISO 527	1100
Résistance au seuil de fluage, MPa, DIN EN ISO 527	18
Allongement au seuil de fluage, %, DIN EN ISO 527	3
Module E à la flexion, MPa, DIN EN ISO 178	1400
Résistance sur éprouvette lisse, KJ/m², DIN EN ISO 179	23
Dureté Shore D (15 s), DIN EN ISO 868	70
Coeff. moyen de dilatation thermique, K⁻¹, ISO 11359-2	0,83 x 10^{-4}
Comportement à la flamme DIN 4102	DIN 4102 B2 normalement inflammable (Evaluation propre sans certificat d'essai), DIN 4102 B1 difficilement ininflammable pour 10 mm sur demande, Agrément général de l'autorité compétente en matière de surveillance des constructions (Allemagne)
Comportement à la flamme NF P 92-501	NF P 92-501 M1 pour 10 mm sur demande
Résistivité superficielle, Ohm, DIN IEC 60093	<= 10^{12}
Température d'utilisation, °C	0 à +60
Innocuité physiologique, BfR	non
Innocuité physiologique, EU	non
Innocuité physiologique, FDA	non

Les indications fournies sont des valeurs indicatives applicables au matériau spécifique, qui peuvent varier en fonction du procédé de transformation et de la fabrication des échantillons. En règle générale, il s'agit de valeurs moyennes tirées de mesures sur des plaques extrudées de 4 mm d'épaisseur. Pour les plaques produites uniquement par moulage par compression, il s'agit en général de mesures effectuées sur des plaques de 20 mm d'épaisseur. Des écarts sont possibles lorsque l'on ne dispose pas de plaques de cette épaisseur. Pour les plaques entoilées, les caractéristiques techniques se réfèrent aux plaques de base non entoilées. Les indications ne peuvent pas être simplement appliquées à d'autres types de produits (p. ex. tubes, joncs pleins) fabriqués dans le même matériau, ni aux pièces transformées. L'aptitude des matériaux pour une utilisation concrète doit être examinée par le transformateur resp. l'utilisateur. Les paramètres techniques sont uniquement une aide à la planification. Ils ne constituent notamment pas des propriétés garanties. Pour plus d'informations, consultez notre Technical Service Center à l'adresse tsc@simona.de.

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