Introduction

System design fume cupboard units

Representation of the functional levels

1. Level for functional space
   Stand tripod holder
2. Level for electronical service outlets (option)
   Internal sockets, switches outside
3. Level for mechanical service outlets
   Arrangement of fittings possible in each slot at every 75 mm distance points
4. Level for electrical sockets and front control valves
5. Level of storage space
   Integration of under bench cupboards/devices/waste disposal possible

Fume cupboard systems

Experiment in safety.

Introduction

Fume cupboard systems

One of the most important pieces of safety equipment in laboratories is the fume cupboard. Therefore, the requirements defined for this device are based on DIN EN 14175.

To comply with the safety function, and thus the preservation of safety, the exhaust airflow is an important criteria. The retention of pollutants (airborne contaminants) inside the fume cupboard, and the resistance to external air flow, that could interfere with the fume cupboard, depends by enlarge on the extraction volume. The further the sash is opened, the stronger the retention of the fume cupboard is impaired. Based on these considerations, in addition to the static, the dynamic behaviour in a resistance test is required, as proof according to DIN EN 14175. Here, a parasitic airflow is created near the fume cupboard to evaluate the stability of the inflow and the retention potential of the fume cupboard.

DELTA 30 fume cupboards, with its comprehensive variety of models fulfil the requirements of DIN EN 14175 in its full topics with the best values. The exhaust system has optimized extraction zones in the rear panel, which are very easy to disassemble for cleaning purposes, ensuring ideal air flow and ventilation. The hood interior offers a large useable area. The overall construction optimises air Flow without disturbing it. Optimal usability, and maximum safety at work: the decisive factors for our fume cupboards.

Our range:

- Bench-mounted fume cupboard
- Low ceiling bench-mounted fume cupboard
- Low level fume cupboard
- Walk-in fume cupboard
- Filter fume cupboard
- Radio-isotope fume cupboard
- Special purposes fume cupboard
- DELTAcare fume cupboard
- EX-fume cupboard

Product benefits

Fume cupboard systems

- Fume cupboard tested, and certified according to DIN EN 14175
- Optimized airborne contaminants retention capacity, offering low exhaust flows at the same time
- Maximum usable work space, due to extra-narrow fume cupboard sides
- Maximum visibility through the use of standard skylight glazing
- Bench-tops and interior surfaces, as required
- Bench-top with moulded, flow-optimizing front rim
- Exhaust system, with optimized air intake zones for a full-surface extraction of the work surface
- Ergonomically designed sash handle bar for easy one-handed operation twist-lock release mechanism
- Maintenance friendly thanks to large inspection panel, easy-to-disassemble internals and the table top simple to replace
- Modules with splash protection
- Electric panels on either side of the interior
- Dense population, no overlap of the service outlet and tripod level
- Standard battery-backed air-monitoring unit with IR interface
- Integrated function control panel at eye level in the pilaster, optionally with a graphical OLED display functional monitoring of the main operating and status information of the fume hood are displayed (e.g. volume flow, inflow, error and operating messages)
- Support tripod holder on the rear panel
- Optional: Standard Base / Acid cabinet or safety storage cabinet
- Wide range of accessories, and options such as an automatic motorized sash drive, fume cupboard control (with integrated web server and ECO-efficiency indicator, by averaging, in comparison with other linked laboratory fume cupboards the energy consumption of the individual device)

- The PROTECT-model completes the DELTA 30 system of laboratory fume cupboards, providing maximum energy efficiency and user safe system
- The innovative, active supportive flow technology, induces and stabilizes the inflowing air
- Fume cupboards of the conventional type require an air extraction 50% greater than the PROTECT- model
- The reduced energy consumption, means correspondingly low operating costs at the same high level of safety
- Active monitoring of the air-injection system
- Worktop with adapted air flow profile over the entire work surface width
- Both side pilasters with added air injection

DELTAguard
PROTECT

- 50%

Higher energy efficiency – lower operating cost.
Sustainability that pays off.

Equipped with the advanced technology PROTECT fume cupboards use 33% less air than conventional fume cupboards for safe operation, and thus enable cost-effective laboratory operation. Thus, the investment is recovered with the PROTECT system, just by the savings in energy costs (supply air flow rate) and the investment costs for a smaller scale building ventilation system within a short time. With the supportive air injection, we rely on innovative DC motor technology. DC fans consume significantly less energy, operate very quietly, and at the same time generate less heat than traditional AC motors. The PROTECT fume cupboard system, with active flow technology support increases the protection level, making it one of the world's safest, and at the same time most economical laboratory fume cupboards.

These fume cupboards are available as PROTECT models with active flow technology support:

- Bench-mounted fume cupboard
- Low ceiling bench-mounted fume cupboard
- Low level fume cupboard
- DELTAcare fume cupboard

DELTAPROTECT
energy saver

[1] Taking a simultaneity of 10% into account, i.e. in the case of 10% of the fume cupboards the sashes are open and in 90% of fume cupboards the shashes are closed.

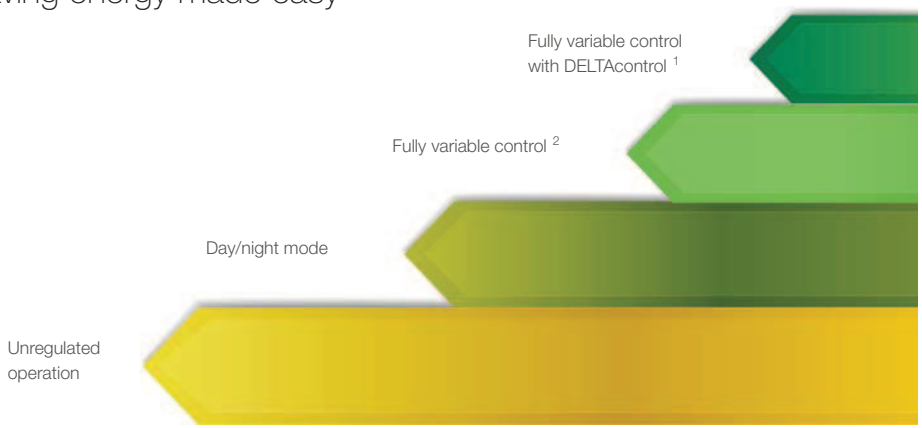
[2] Taking a simultaneity of 40% into account, i.e. in the case of 40% of the fume cupboards the sashes are open and in 60% of fume cupboards the shashes are closed.

- Multipurpose fume cupboard according to EN 14175
- Variant: Fume cupboard for high thermal loads according to EN 14175-7
- For high heat and acidic load and the handling of unsealed radioactive substances, other fume cupboard types are available

Suitable for all DELTA 30 fume cupboard types

DELTAcontrol

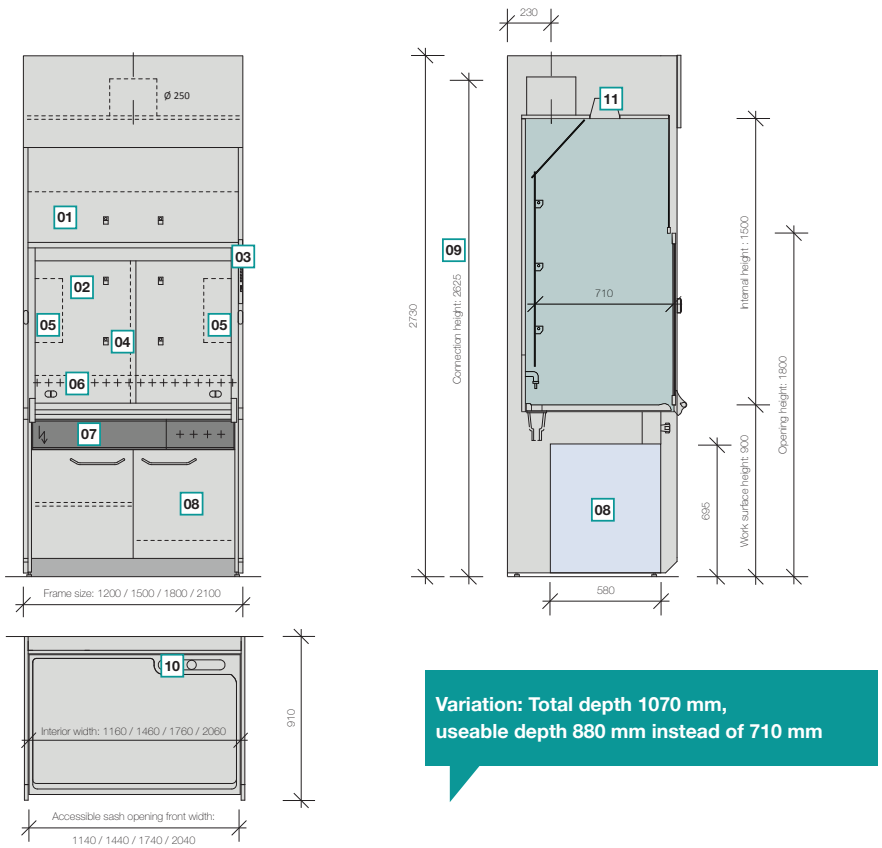
Saving energy made easy



COMPARISON OF ENERGY SAVING OPTIONS

- Controlled air volume, corresponding to the free inflow in vertical, horizontal or combined sash opening
- Maintenance-free and self-cleansing measuring system with little loss of pressure, optional Venturi measuring system
- Energy saving, and improving work safety, without restricting usability
- Complete system solution from one source; all exhaust air, supply air, drive and control components are coordinated to achieve an optimized and energy-efficient room air balance
- Graphical functional monitoring display with optional OLED display and ECO energy efficiency indicator
- Fast and reliable microprocessor controls, with simple integration into a buildings management system, via BACnet, LON or Modbus technology or conventionally via analogue signals
- Quick and easy set-up
- Visualisation of system data via PC with a web browser or tablet computer possible
- Fail-safe, proven path and incoming air flow sensor for stable and quick set point
- Emergency button V-max, to increase exhaust air volume flow in the event of an accident, regardless of the sash opening
- Automatically closing sash to increase the protection and energy optimization, with motion detector, to monitor the work area and initiate the closing process (UP/DOWN button integrated in control panel)
- Light barrier for obstacle detection when closing the sash
- Optional footswitch

Fume cupboard systems | 1.1 DELTAguard bench-mounted fume cupboard



Variation: Total depth 1070 mm, useable depth 880 mm instead of 710 mm

- 01 Upper part glazed with fixed screen or optionally 2 cross slides
- 02 Option: sash with 3/4 cross slides
- 03 Fume cupboard functional monitoring display
- 04 3 series of tripod rod holders
- 05 Option: Internal sockets, switched from the outside
- 06 Service fitting points
- 07 Aluminium duct with electrical service outlets and front control valves
- 08 Option: Under bench cabinet or safety store cabinet
- 09 Option: Fume cupboard controller (damper and high-speed actuator) 2820 mm Connection height
- 10 Option: Drip cup
- 11 Lighting

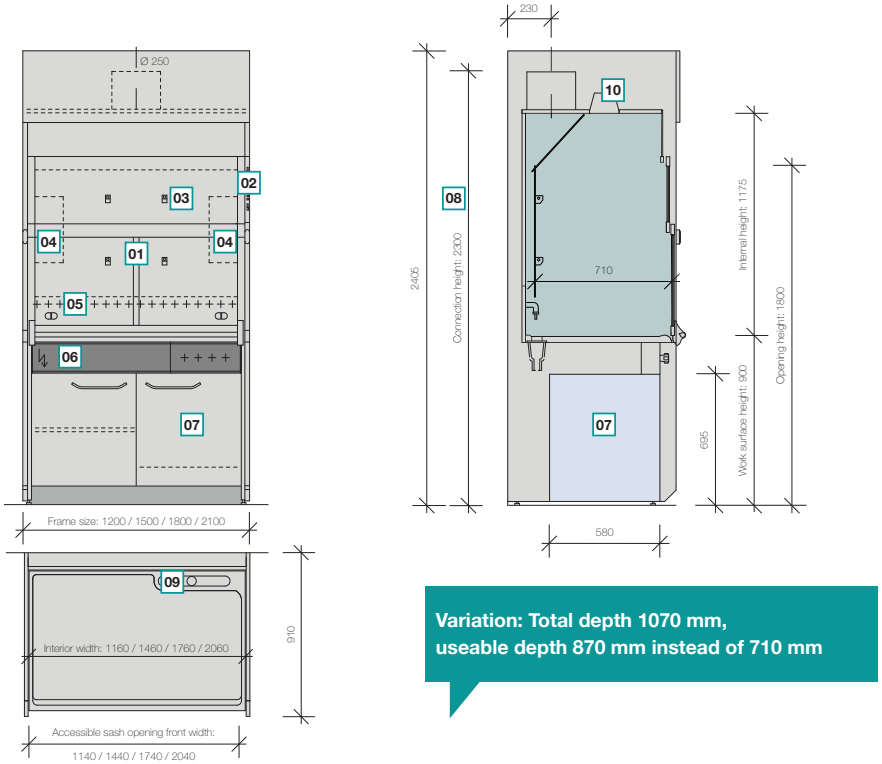
Fume cupboard systems | 1.2 DELTAguard low ceiling bench-mounted fume cupboard

- Multipurpose fume cupboard according to EN 14175
- Optimized use of space due to an overall height of only 2405 mm
- Synchronously running telescopic sash for ease of use
- For high heat and acidic load and the handling of unsealed radioactive substances separate fume cupboard types are available

Fume cupboard systems | 1.3 DELTAguard low level fume cupboard

- Multipurpose fume cupboard according to EN 14175
- For high heat and acidic loadand the handling of unsealed radioactive substances other fume cupboard types are available.

Fume cupboard systems | 1.2 DELTAguard low ceiling bench-mounted fume cupboard



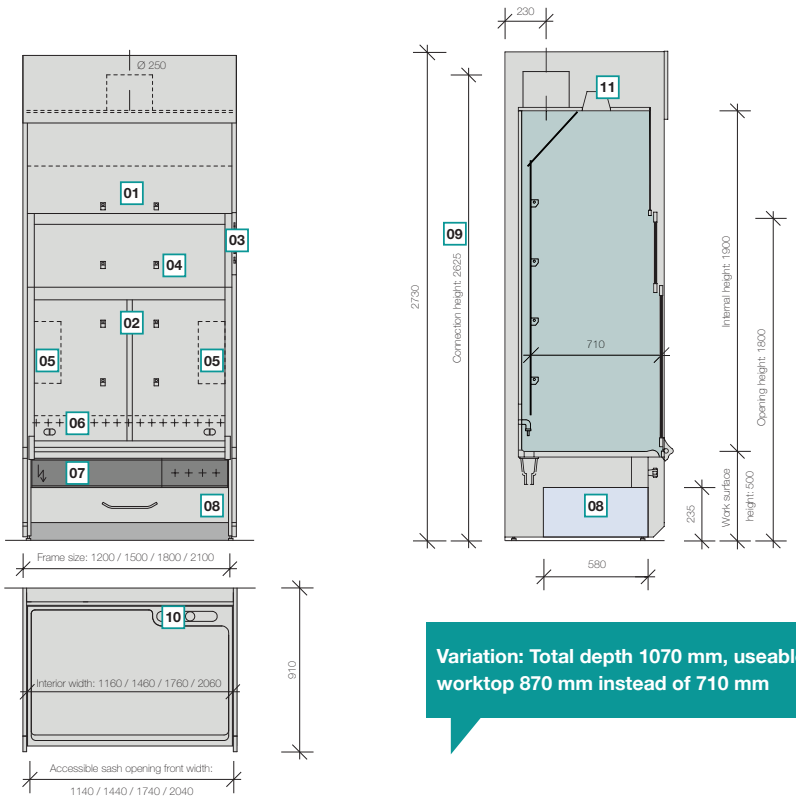
Variation: Total depth 1070 mm, useable depth 870 mm instead of 710 mm

01 Option: Sash with 3/4 cross slides
02 Fume cupboard functional monitoring display
03 2 rows tripod rod holder
04 Option: Internal sockets, switched outside
05 Service fitting points
06 Aluminium duct with electrical service outlets and front control valves
07 Option: Under bench cabinet or safety store cabinet
08 Option: Fume cupboard controller (damper and high-speed actuator) 2495 mm Connection height
09 Option: Drip cup
10 Lighting

Fume cupboard systems | 1.4 DELTAguard walk-in fume cupboard

- Multipurpose fume cupboard according to EN 14175
- For high heat and acidic load and the handling of unsealed radioactive substances other fume cupboard types are available

Fume cupboard systems | 1.3 DELTAguard low level fume cupboard



Variation: Total depth 1070 mm, useable depth worktop 870 mm instead of 710 mm

01 Upper part glazed fixed screen or optional 2 cross slides

02 Option: sash with 3/4 cross slides

03 Fume cupboard functional monitoring display

04 4 rows tripod rod holder

05 Option: Internal sockets, switched outside

06 Service fitting points

07 Aluminium duct with electrical service outlets and front control valves

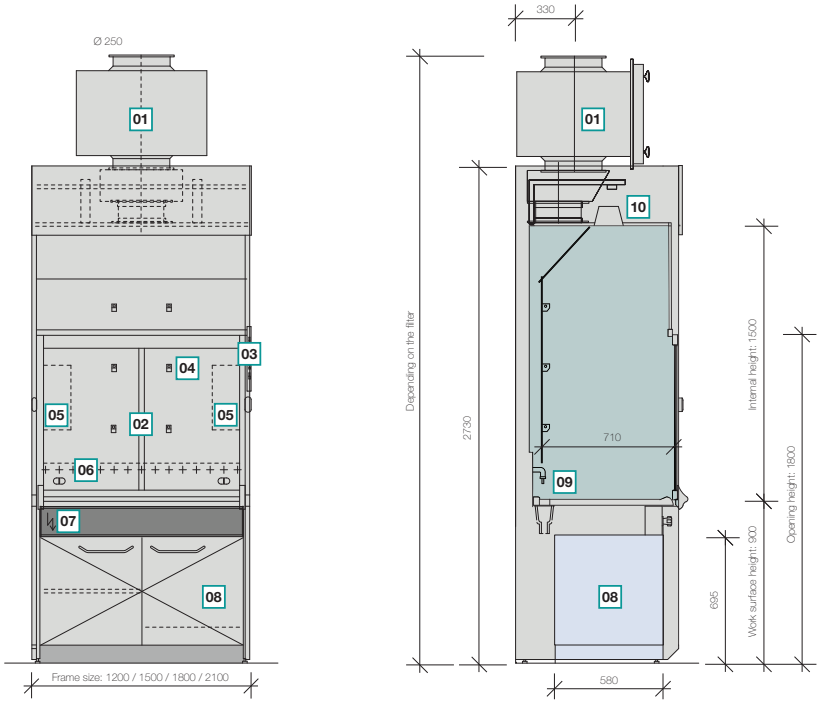
08 Option: with base cabinet

09 Option: Fume hood controller (damper and high-speed actuator) 2820 mm Connection height

10 Option: Drip cup

11 Lighting

Fume cupboard systems | 1.5 DELTAguard filter fume cupboard

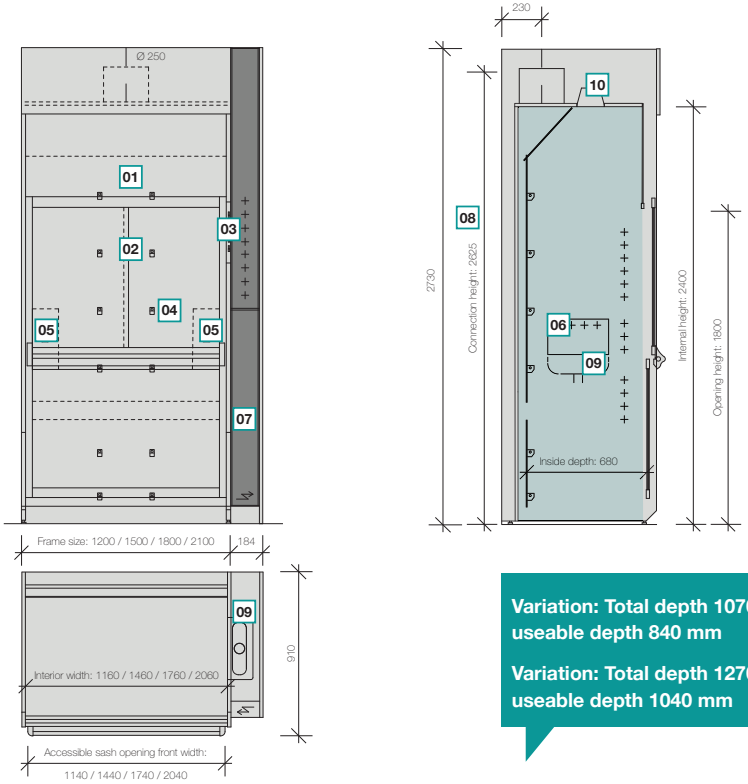


Variation: Overall depth 1070 mm, Useable depth working surface 880 mm instead of 720 mm

01 Filter
02 Option: sash with 3/4 cross slides
03 Fume cupboard air functional monitoring display
04 2 rows tripod rod holder
05 Option: Internal sockets, switched outside
06 Service fitting points
07 Aluminium duct with electrical service outlets and front control valves
08 Option: Under bench cabinet or safety store cabinet
09 Option: Drip cup
10 Lighting

- Available as one or two phase filter
- 2 phase filter from frame size 1500 (asymmetrical sequence)

Fume cupboard systems | 1.4 DELTAguard walk-in fume cupboard

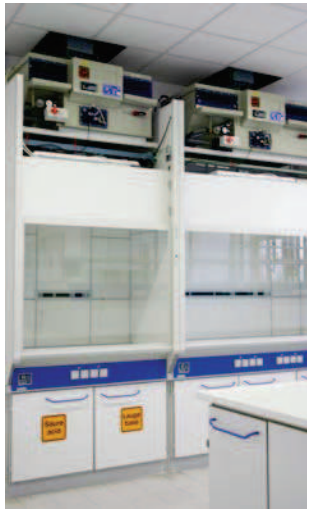


Variation: Total depth 1070 mm, useable depth 840 mm

Variation: Total depth 1270 mm, useable depth 1040 mm

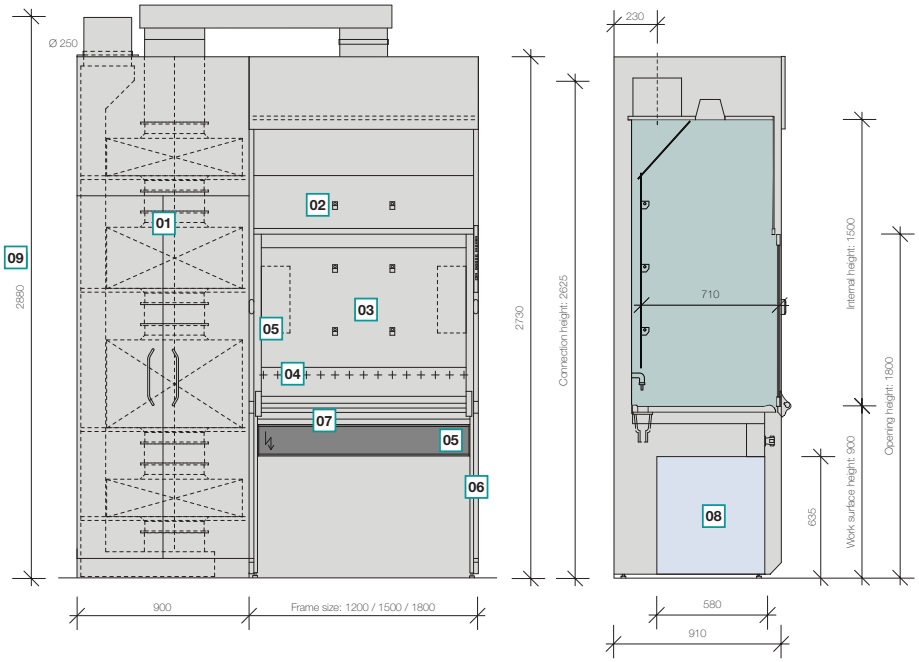
01 Upper part glazed fixed screen or optional 2 cross slides
02 Option: sash with 3/4 cross slides
03 Fume cupboard functional monitoring display
04 6 rows tripod rod holder
05 Option: Internal sockets, switched outside
06 Service fitting points
07 Service panel left or right available
08 Option: Fume hood controller (damper and high-speed actuator) 2820 mm Connection height
09 Option: Drip cup
10 Lighting

Fume cupboard systems | 1.7 Special application (acids) high performance fume cupboard



- Fume cupboards for high heat and acidic load according to EN 14175-7:2012-08
- Perchloric acid fume cupboard for working with perchlorics
- Hydrofluoric acid fume cupboard for working with fluorides

Fume cupboard systems | 1.6 DELTAguard radio-isotope fume cupboard



01 Option: filter device, in addition extraction by a separate filter cabinet with 3 to 4 filter stages

02 Option: Interior in stainless steel or polypropylene

03 Sash made of Makrolon / acrylic one-piece, option: access apertures

04 Service fitting points

05 Aluminium duct with electrical service outlets and front control valves

06 Heavy-duty frame

07 Option: Shielded against gamma and beta rays

08 Option: With base cupboard or safety cabinet

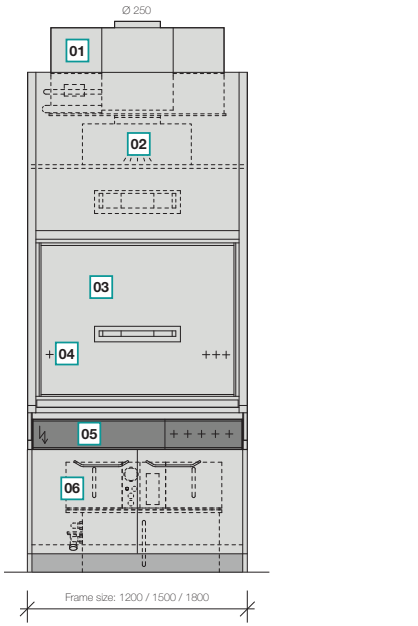
09 Option: Fume hood controller (damper and high-speed actuator) 3075 mm Connection height

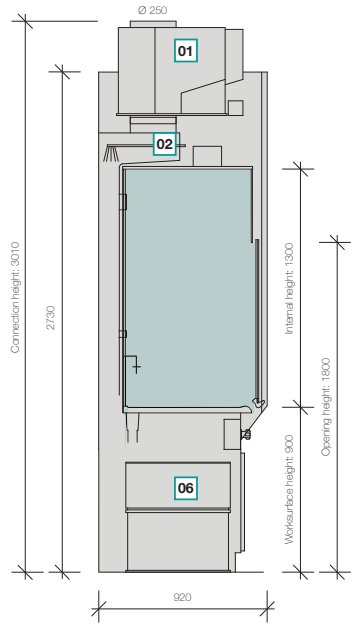
- Fume cupboard for the handling of unsealed radioactive materials in accordance with DIN 25466:2012-08

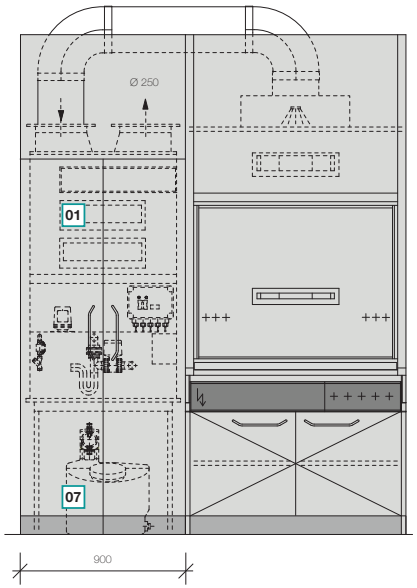
Fume cupboard systems | 1.8 DELTAcare fume cupboard

- Integral bench-mounted fume cupboard with electrical drive stepless adjustable height
- Work surface heights of 750 to 950 mm adjustable
- Anti-pinch safety
- Wheelchair users can easily work on this fume cupboard
- Transparent control panels in the sides
- Moving heavy equipment and loads at the touch of a button

Fume cupboard systems | 1.7 Special application (acids) high performance fume cupboard







01 Option: waste air scrubber on the top of the fume cupboard or next to the fume cupboard in a separate cabinet

02 Option: Sprinkling the exhaust air duct

03 Option: Inner lining in stoneware or polypropylene

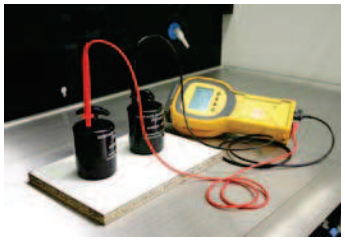
04 Service fitting points

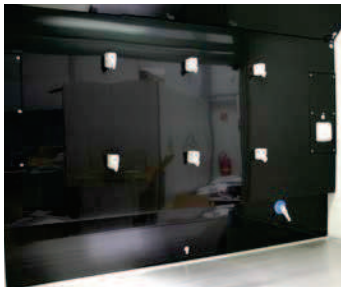
05 Aluminium duct with electrical service outlets and front control valves

06 Option: neutralization system in conjunction with waste air scrubber

07 Option: pH-metering device for neutralization of the wash water

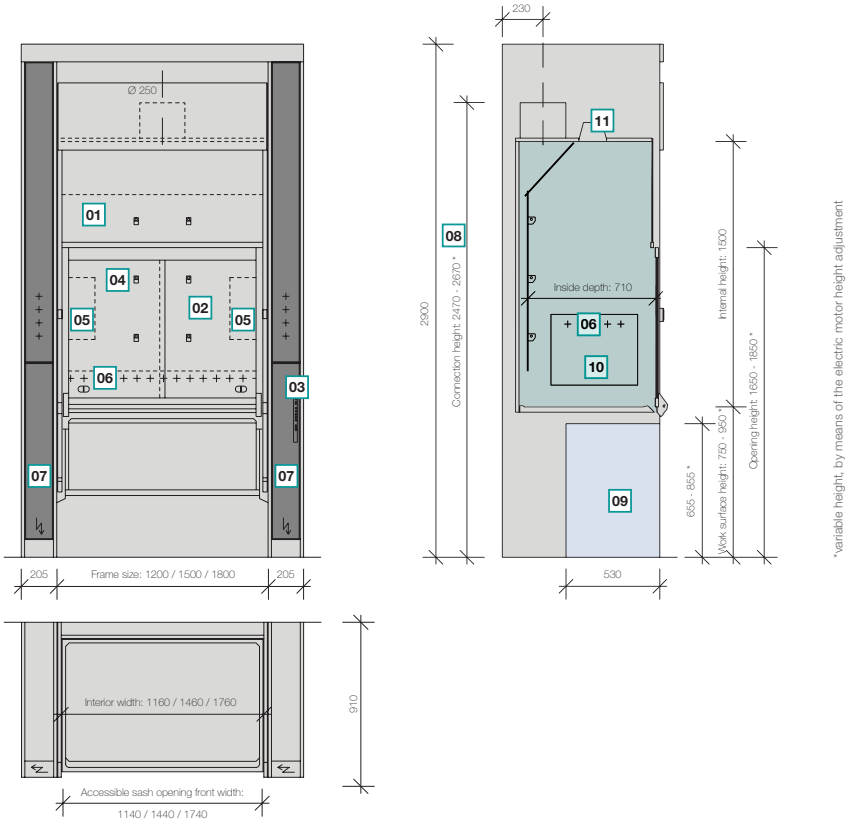
Fume cupboard systems | 1.9 DELTAguard Ex fume cupboard





- Certified in accordance with Directive 94/9/EC
- Consistently running conformity assessment procedures
- Suitable for hazardous areas (within an EX-Zone 1)
- Ignition sources are safely avoided by the design of the fume cupboard, so that sparks can not be created and explosive atmospheres can`t ignite
- All surfaces are electrically conductive and grounded

Fume cupboard systems | 1.8 DELTAcare fume cupboard



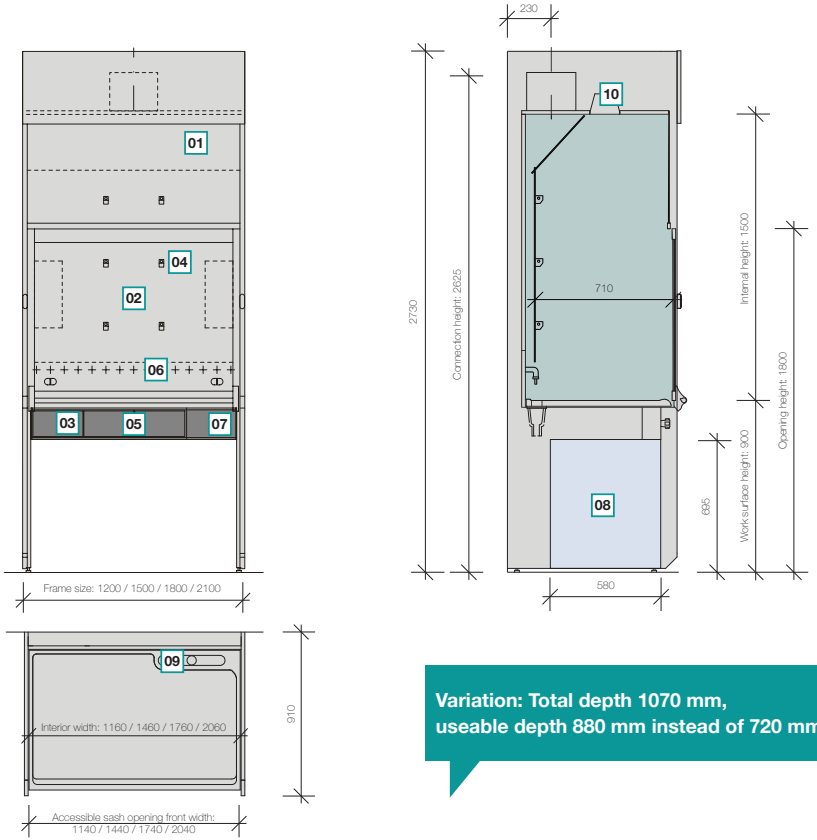
- 01 Upper part glazed fixed screen or optional 2 cross slides
- 02 Option: sash with 3/4 cross slides
- 03 Exhaust functional monitoring display Connection height
- 04 3 series tripod rod holders
- 05 Option: Internal sockets, switched outside
- 06 Service fitting points
- 07 Service panel left and right
- 08 Option: Fume hood controller (damper and high-speed actuator) from 2470 to 2870 mm Connection height
- 09 Space
- 10 Option: Drip cup
- 11 Lighting

Fume cupboard system | 1.10 Special designs

- Fume cupboard with integrated physical protection extinguishing system (night fume cupboard)

- Washing fume cupboard
- Spray cabin

Fume cupboard systems | 1.9 DELTAguard Ex-fume cupboard



Variation: Total depth 1070 mm, useable depth 880 mm instead of 720 mm

- 01 Upper part glazed fixed screen
- 02 Sash with fixed glass
- 03 Option: (depending on EX-zone) Exhaust functional monitoring display EX model
- 04 3 series tripod rod holders from PPsEL
- 05 Option: Electrical service outlets in EX-protected installation housing
- 06 Service fitting points in explosion-proof design
- 07 Option: Aluminium duct with front control valves in explosion-proof design
- 08 Option: With base cupboard or safety cabinet in explosion-proof design
- 09 Option: Drip cup
- 10 Option: Lighting explosion-proof design

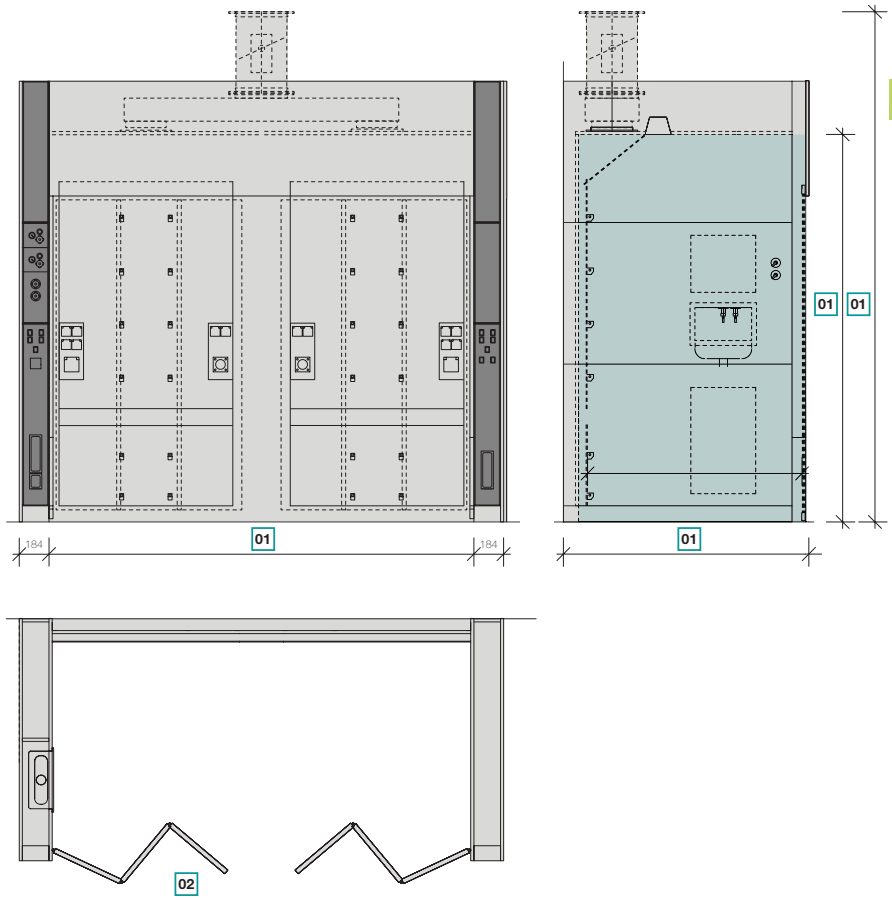
Fume cupboard systems | 1.12 DELTAbigbox

- System solution for systems and equipment with moderately loaded emissions
- Optimum modular design adapting the dimensions of the equipment requirements with high efficiency
- Access via horizontal sash, wing, hinged, folding or sliding doors, closed or with glazing
- Exhaust performance and air distribution according to process requirements
- Variable service and power supply
- Installation upon request such as tripod structures or warning systems

Fume cupboard systems| 1.11 Demonstration fume cupboards

- Pass-through fume cupboard, both sides with sash
- For installation between preparatory and demonstration room
- With blackout sliders

- Universal demonstration fume cupboard (with excellent visibility through panoramic window)



01 Dimensions upon request

02 Example: Access via folding doors

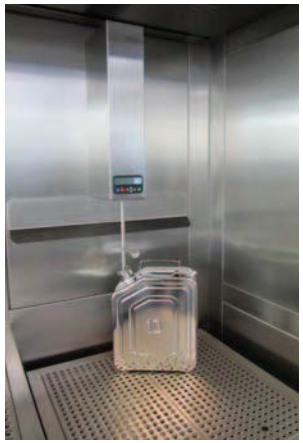
- A symbiosis of a DELTAguard fume cupboard with an air barrier air management system
- For safe operator protection, compliant with EN 14175-3 or product exposure (OEL) <10 g / m³ and product protection, within a clean room zone up to class 5 according to EN ISO 14644-1
- Also with a free front opening of 900 mm height
- Option: Comprehensive horizontal slide for spray and splinter protection
- Option: Horizontal sliding screen with two glove ports and gloves as protection against cross contamination
- Variation: System completely in stainless steel

Enclosures with flexible, modular design - precisely adapted to your needs for:

- Apparatus/appliances (splinter shield/splash guard)
- Automated robotic workstations/processes
- Pipetting/liquid handling workstations
- High-throughput screening
- HPLC instruments
- Handling and transfer of hazardous substances (solvents)
- Weighing
- Working with powders
- Other laboratory automation processes
- Measurement stations (Faraday cage)
- Pass-through

Air Barrier & Containment Systems

Product solutions for special requirements



The vertical AirBarrier (air barrier) on the front opening of the containment, i.e. between operator and product, is the base component for the safe and robust retention capacity of this technology. It can be used safely from the free front opening, over the entire width of the containment without protective screens, curtains, or other mechanical barriers restricting ergonomic work.

Lab Safety

- Safety work tables
- Chemical filling areas
- AirTable boxes
- Disposal substructure
- „Lab butler“ disposal
- „Lab butler“ supply
- Weighing containment
- AirBarrier „efficiency“
- Laminar flow systems

Weighing and refilling containment

- Free working place
- Clean room containment
- Laminar flow systems
- Material and personnel airlocks
- Air Barrier
- Horizontal Air Barrier
- Air Barrier special workstations

Equipment

- Lifting devices
- Lifting and turning stations
- Container handling
- Conveyor technology
- Balance tables
- Continuous liner system

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