



**Secuflow
laboratory fume cupboards**

SCALA





More safety, economy and comfort than ever: Our Secuflow fume cupboards

We are continuously working to improve laboratory equipment because being the leader in innovation is no accident.

Having developed the Secuflow further within our new range of laboratory furniture, **SCALA**, means that our Secuflow fume cupboards again fulfil highest user requirements.

Available for rear wall and side panel installation, with new design widths and a larger internal work-space, investing into Secuflow returns significant advantages:

We have now reduced our fume cupboards' energy consumption even further. Equipped with optimised supply and extract air ducts, the Secuflow requires an extract air volume of only 270m³/h/lfm while operating safely.

This significantly reduced energy consumption makes laboratory operations even more economical.

Modifications of details such as the control panel which is inclined towards the user, the new lock on the sash, the 2-chamber flow technology, the flow-in duct between the sash frames and the side post profile, the Soft Touch control panel, the sink modules

integrated into the rear panel of the fume cupboard, as well as many other design features ensure safe and comfortable working.

Fume cupboards with services on side walls are also available as are sitting height fume cupboards for people in wheelchairs.

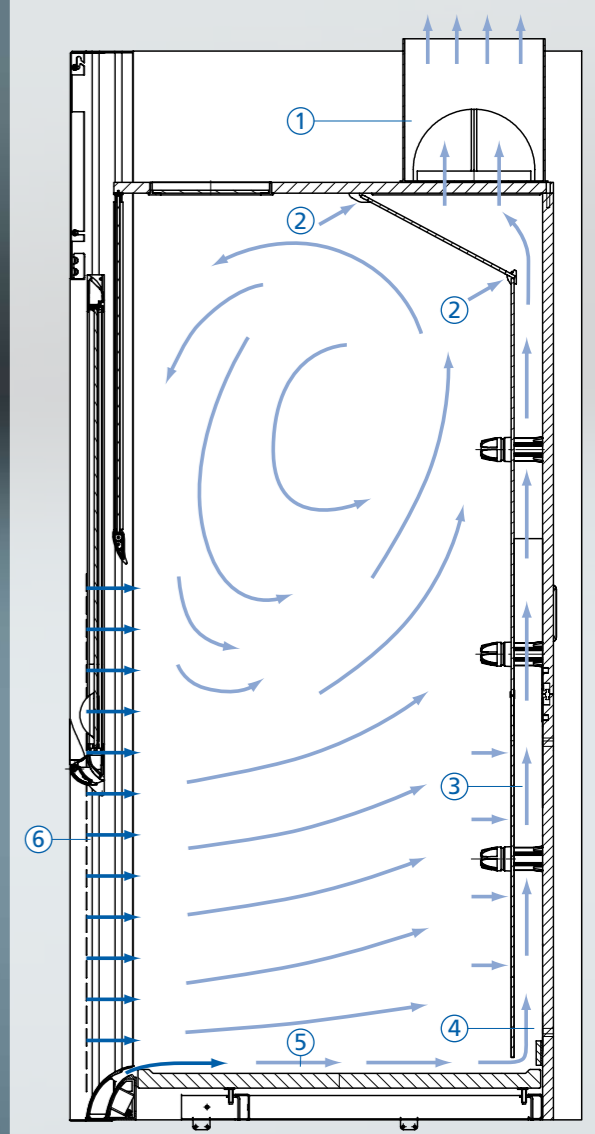
Find out why the Secuflow sets the standard for the future.



Secuflow

The Secuflow: Satisfies highest user requirements

WALDNER



**What makes Secuflow superior:
Its sophisticated flow technology**

Because we are constantly further developing our company and our products, we are leading the market in the field of laboratory furniture and fume cupboards. To achieve this, we combine our engineering know-how with scientific findings in flow technology.

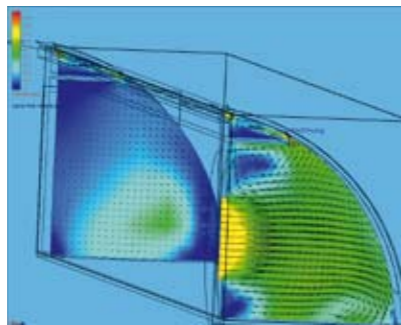
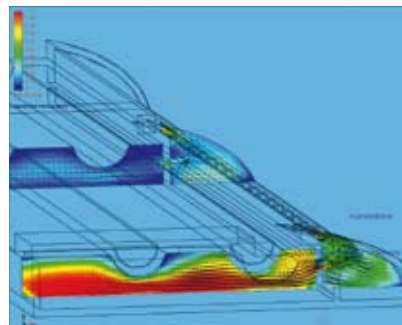
The result is our highly innovative Secuflow with supportive flow technology for optimum flow regulation.

With the Secuflow, supportive air is systematically directed into the internal workspace from the aerodynamically designed sill on the side panel and along the worktop. This prevents turbulences and perfectly stabilises the inflow air.

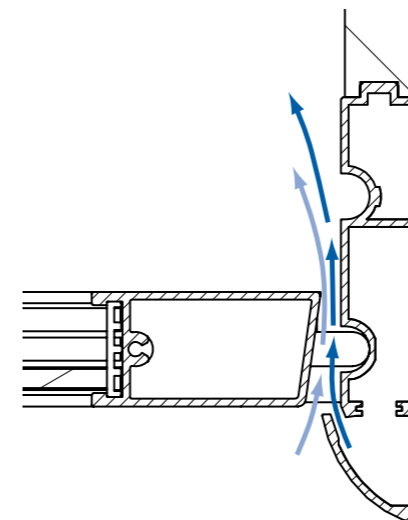
Extraction is performed safely on the rear panel of the fume cupboard shortly above the worktop, and around the service panels and the fume cupboard top panel.

EN 14175 has defined significantly stricter criteria for flow technology in fume cupboards. In particular, the new robustness test defines high requirements for the containment values of fume cupboards. Due to the optimised flow in our new fume cupboards, now even less extract air is necessary to ensure safe operation.

Secuflow takes you one step ahead in laboratory fume cupboard technology.



- ① Extract manifold
- ② Inclined extract fume cupboard top panel
- ③ Extract service panels in baffle
- ④ Baffle
- ⑤ Supportive flow technology over entire width of worktop
- ⑥ Supportive flow technology along both side posts



Cross section through sash and side post.
Due to the special design, ambient air is flowing in like being accelerated through a nozzle without jeopardising the splash protection.

Secuflow

The Secuflow: Where construction and science go hand in hand





Maximum work safety in the laboratory

Operating laboratory fume cupboards with the sash closed only is not always possible during everyday laboratory work. It is often necessary to modify experimental setups or processes inside the fume cupboard.

Turbulences which can create outbreaks from inside the workspace can occur when opening the sash, if the sash is open, or when working in the internal workspace.

Complex experimental setups or people walking past the fume cupboard will intensify this outbreak effect into the laboratory, thus endangering staff working with the fume cupboard.

This is why EN 14175 now places even more emphasis on the containment factor of fume cupboards when the sash is open.

The containment values in conventional standard fume cupboards can primarily be reduced by increasing the extract air volume. This results in an increased energy consumption and higher noise levels.

The new Secuflow offers even more safety and requires less energy. When the internal workspace is extensively equipped or a lot of movement is taking place in front of the fume cupboard, the Secuflow still shows excellent containment values – even when the sash is open. And all this is achieved with reduced extract air volumes and, as a consequence, a significantly lower energy consumption.

In extensive test series, we have defined the new standard that again surpasses the requirements of EN 14175 and ASHRAE 110/1995, which sets the standard for the future. For maximum safety at work.



The lock on the sash can easily be operated with one hand

Directs air into the fume cupboard when pushing up the sash:
The sash handle profile is shaped like a spoiler

Secuflow

The Secuflow: Optimum values for laboratory staff

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**From theory to practice:
Technical innovations can be measured**

The Secuflow had to pass a considerable number of tests in all development stages.

The aerodynamically optimal component design was carefully determined, as was the ergonomic functionality of the supply connections or modular installation elements.

With the new profile of the worktop edge, the cleverly designed extract air distribution in the fume cupboard as well as the stable circulation around the side posts we have been able to reduce the extract air volume in our fume cupboards even further while guaranteeing safe operation at all times.

The airflow of the supportive flow technology in the area of the sash opening is perfectly matched to the entire extractor distribution on the rear panel and the internal workspace.

All physical influences on aerodynamically relevant areas of the fume cupboard were tested and noise was reduced even further in the new Secuflow fume cupboards. We achieved the lowest possible values under a wide range of different operating conditions.

The result of our work is a perfectly coherent product which has passed all final EN 14175 and ASHRAE 110/1995 tests with excellent results.

Beyond the requirements of EN 14175, we also performed the tests for an opening height of 900 mm. Here, too, the new Secuflow convinces with its outstanding test results for the benefit of user safety.



Secuflow

The Secuflow: Optimum values in every operating state

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The Secuflow requires 33% less air than conventional fume cupboards

During laboratory operation, a standard fume cupboard consumes about the same amount of energy per year as a family home.

So it is not surprising that the ventilation of the laboratory building accounts for the main part of laboratory operating costs. The flow rate of conditioned supply air and the dimensioning of the ventilation system clearly depend on the fume cupboards used.

At $270\text{m}^3/\text{h}/\text{fm}$, Secuflow fume cupboards easily fall below the maximum values for tracer gas specified in German regulations (BG Chemie) and numerous other countries across the world. Conventional fume cupboards require at least $400\text{m}^3/\text{h}/\text{fm}$ for this.

In this way, the Secuflow reduces the air volume by 33% compared with conventional fume cupboards. This means significant savings not only in energy costs and investment costs for the ventilation system, but also in the dimensioning of the entire building.

Investing in the Secuflow will quickly pay for itself. Make use of the advantages of the Secuflow for your laboratory of the future.

We will be happy to calculate the potential savings for your specific laboratory project through Secuflow fume cupboards.

In addition, we are the only manufacturer who offers you fume cupboards and controls all from one supplier. Benefit from our know-how. We will be glad to help you.

For more information about Waldner laboratory control, please see our special brochure or visit us at www.waldner-lab.com.



Secuflow

The Secuflow: Investing into the laboratory of the future

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Secuflow bench-mounted fume cupboard

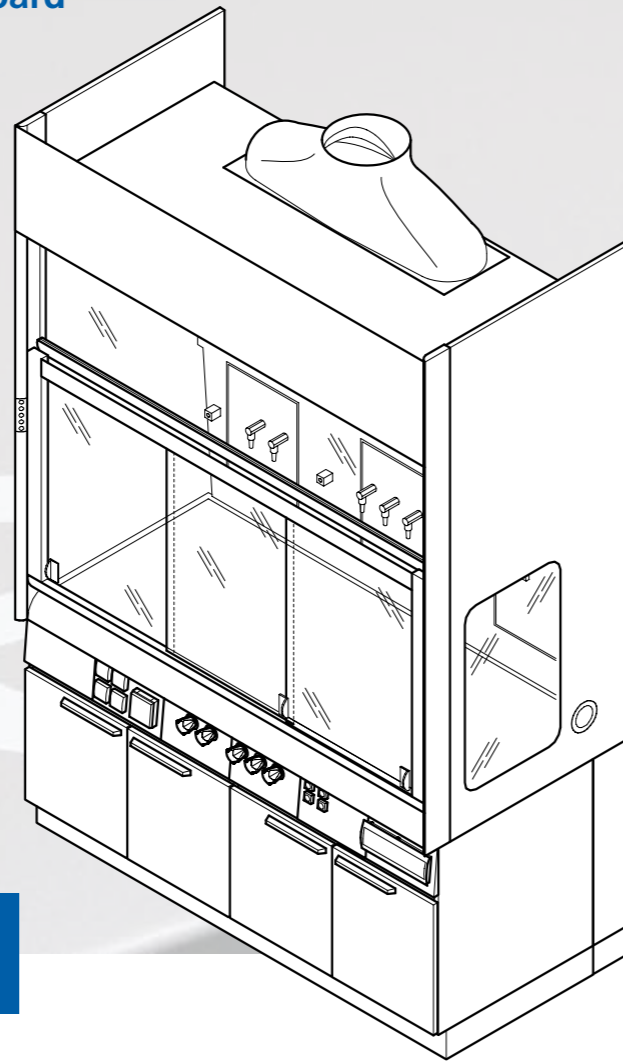
Energy efficiency, perfect ergonomics and a larger internal workspace make working with our new fume cupboards even safer and more convenient.

A new design together with an enlarged product range characterises the fume cupboards of our new **SCALA** laboratory range.

Combined with grid widths up to 2400 mm of our fume cupboards, we offer the most comprehensive product range available in the market.

Largest usable internal workspace

The slender, patented side posts of our fume cupboards offer an increased clear width of the internal workspace of the fume cupboard. The internal workspace is 10 % higher, making it larger altogether. This is useful when working with tall and wide items of experimental equipment.



Secuflow bench-mounted fume cupboards

Intended use

- Protective device for the user, tested in acc. with EN 14175
- Extraction of fumes, aerosols and dust from the internal workspace to prevent dangerous amounts of pollutants from escaping into the laboratory
- To prevent the formation of dangerous potentially explosive atmospheres in the internal workspace
- Protection from splashes of hazardous substances
- Protection from flying particles, bodies or parts escaping from the internal workspace
- General purpose fume cupboards constructed in acc. with EN 14175 are normally not suited for use with radioactive substances or microorganisms *

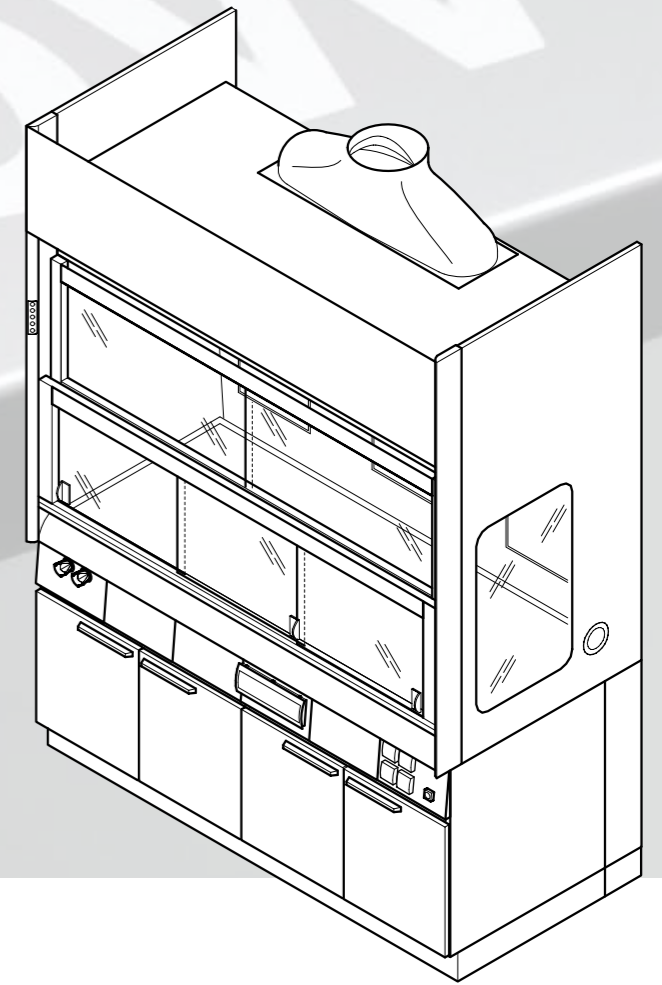
- Not suitable for the process of breaking down chemicals *
- Active supportive flow technology (Secuflow technology) reduces the energy consumption while regulations and standards are observed
- Service outlets in the rear panel of the internal workspace
- Control units located externally at the support
- Only low ceiling bench-mounted fume cupboards: Suitable for rooms with a low height

* refer to our technical catalogue for special application fume cupboards designed according to standards covering special applications

Technical data

Dimensions	1200	1500	1800	2100
Width [mm]	1200	1500	1800	2100
Depth [mm]	900			
Height [mm] (*Low ceiling fume cupboard)	2700 (*2400)			
Clear width of internal workspace [mm]	1150	1450	1750	2050
Clear height of internal workspace [mm] (*Low ceiling fume cupboard)	1550 (*1250)			
Working height [mm]	900			

Secuflow low ceiling bench-mounted fume cupboard



Ventilation technology	1200	1500	1800	2100
Minimum air exchange rate [m³/h] ¹⁾	330	410	490	570
Face velocity [m/s] ³⁾	0,3	0,3	0,3	0,3
Extract air function display	FAZ			
Airflow damper, constant	Airflow-Controller AC			
Airflow damper, variable	Airflow-Controller AC			
Detector of sash position	Only variable with Airflow-Controller AC			
Connection height [mm] for FAZ with extract manifold Ø250 mm (*Low ceiling fume cupboard)	2720 (*2420)			
Connection height [mm] for FAZ with extract manifold Ø315 mm ²⁾ (*Low ceiling fume cupboard)	2830 (*2530)			
Connection height [mm] for AC with extract manifold Ø250 mm (*Low ceiling fume cupboard)	2950 (*2650)			
Connection height [mm] for AC with extract manifold Ø315 mm ²⁾ (*Low ceiling fume cupboard)	3070 (*2770)			
Underbench exhaust	As an option, depending on requirements and regulations			

¹⁾ All air volume specifications refer to an opening height of the sash window of 500 mm (test opening in acc. with EN 14175) and the maximum tracer gas values recommended by BG Chemie.

²⁾ In order to minimise noise and pressure losses, for air volumes >1000 m³/h Waldner recommends using the extract manifold with a connection diameter of 315 mm.

³⁾ Face velocity refer to an opening height of the sash window of 500 mm and a tracer gas value of 0,01 ppm in the inner grid position as 0,1 ppm by the robustness test.

Maximum admission pressure of 600 Pa for fume cupboards with airflow dampers should not be exceeded.

The indicated air exchange rates were determined under test conditions specified in EN 14175 part 3. To dimension the ventilation system, these minimum air exchange rates must also be adapted.

If on-site extract air monitoring systems or airflow dampers are used, the required air volumes may differ. The operating limitations must be agreed upon with Waldner.

Material/surface	
Worktop	Stoneware, Polypropylene, Stainless steel, Epoxy
Internal lining	Melamine resin coating, Solid (grade) laminate, Stoneware

Secuflow bench-mounted fume cupboard with services on side walls

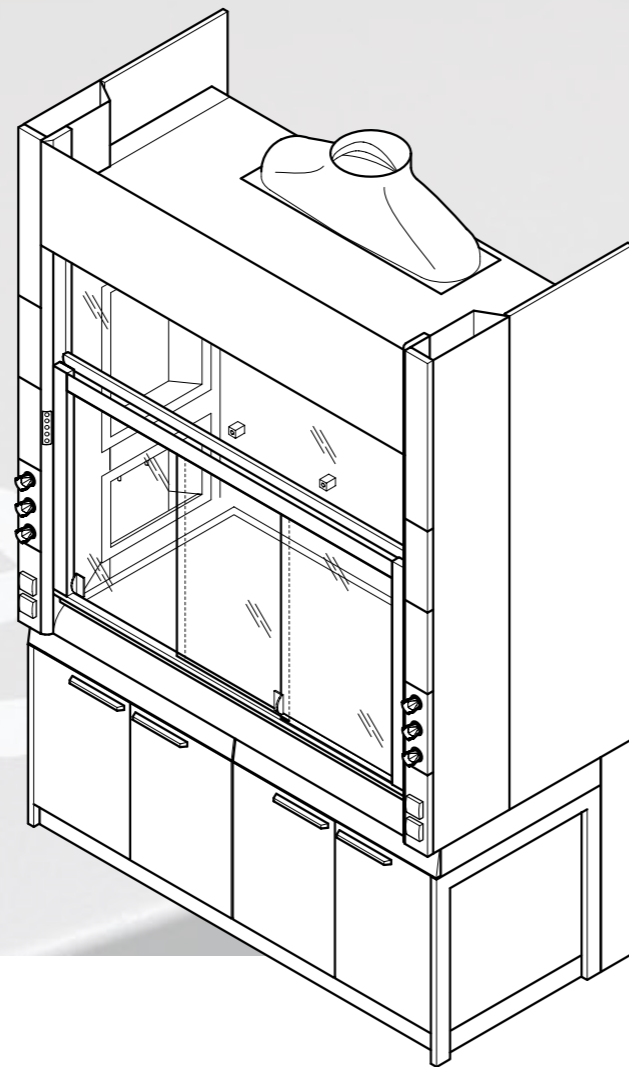
The best for equipment and variability

Along with the convenient basic equipment, our fume cupboards provide a maximum of variable equipment options. Depending on the application, the worktop is made of stoneware, epoxy resin, polypropylene or stainless steel. Our fume cupboards are mounted with self supporting underbench units or on a steel support frame. You can install plinth mounted, mobile or solvent cabinets under the fume cupboard.

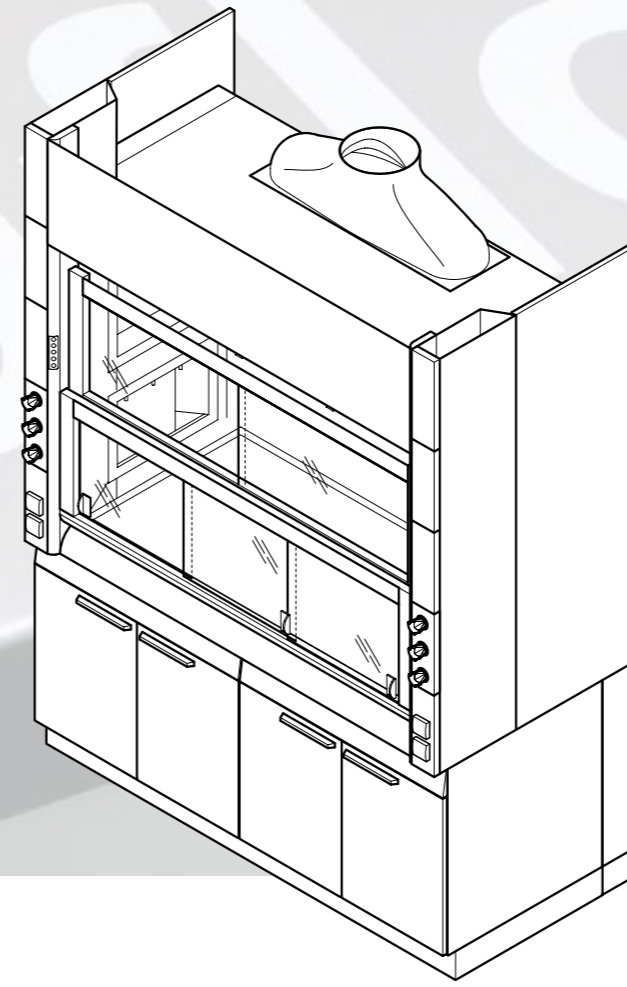
The Secuflow with services on side walls is also suitable as a sitting height fume cupboard for people in wheelchairs.

Service modules that can be equipped as desired

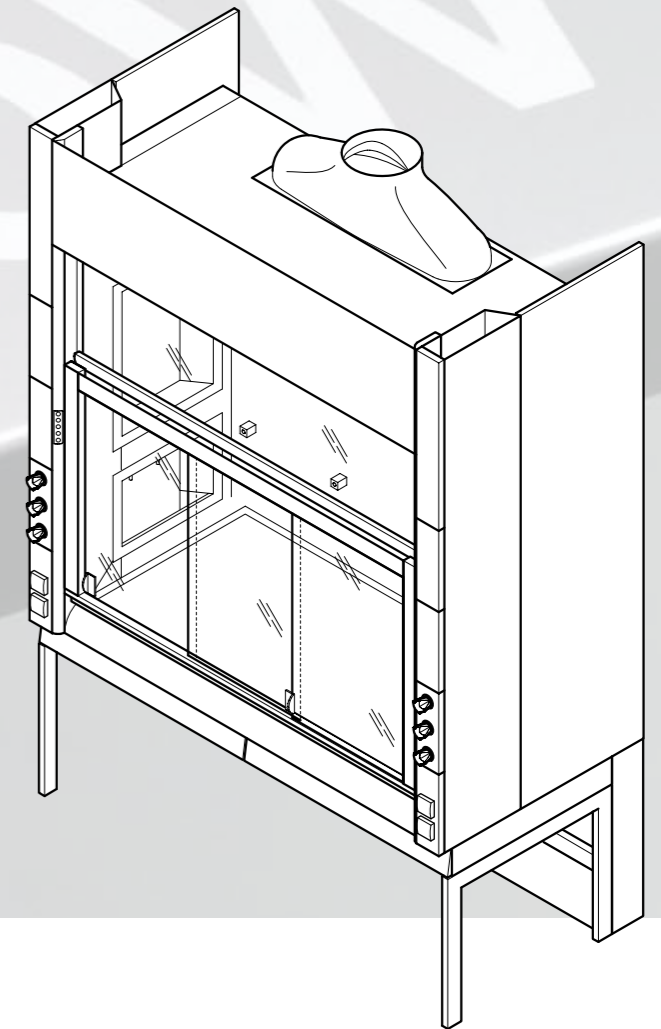
The replaceable service modules are integrated into the side panel of our fume cupboards and ensure the mechanical and electrical services supply. The integrated sink module for water offers more freedom when using the internal workspace.



Secuflow low ceiling bench-mounted fume cupboard with services on side walls



Secuflow bench-mounted fume cupboard with services on side walls for work performed while seated



Secuflow bench-mounted fume cupboards with services on side walls

Intended use

- Protective device for the user, tested in acc. with EN 14175
- Extraction of fumes, aerosols and dust from the internal workspace to prevent dangerous amounts of pollutants from escaping into the laboratory
- To prevent the formation of dangerous, potentially explosive atmospheres in the internal workspace
- Protection from splashes of hazardous substances
- Protection from flying particles, bodies or parts escaping from the internal workspace
- General purpose fume cupboards constructed in acc. with EN 14175 are normally not suited for use with radioactive substances or microorganisms *
- Not suitable for the process of breaking down chemicals *
- Active supportive flow technology (Secuflow technology) reduces the energy consumption while regulations and standards are observed
- Service outlets in the service modules of the side panels of the internal workspace
- Control units located externally at the service panels
- Only low ceiling bench-mounted fume cupboards: Suitable for rooms with a low height
- Only sitting height fume cupboards: Suitable for work performed while seated

* refer to our technical catalogue for special application fume cupboards designed according to standards covering special applications

Technical data

Dimensions	1200	1500	1800	2100	2400
Width [mm] Secuflow bench-mounted fume cupboard with services on side walls	1200	1500	1800	2100	2400
Width [mm] Secuflow low ceiling bench-mounted fume cupboard with services on side walls	1200	1500	1800		
Width [mm] Secuflow bench-mounted fume cupboard with services on side walls for work performed while seated		1500			
Depth [mm]	900				
Height [mm] (*Low ceiling fume cupboard) (**Sitting height fume cupboard)	2700 (*2400) (**2550)			2700	
Clear width of internal workspace [mm]	950	1250	1550	1850	2150
Clear height of internal workspace [mm] (*Low ceiling fume cupboard)	1550 (*1250)			1550	
Working height [mm] (**Sitting height fume cupboard)	900 (**750)				

Ventilation technology	1200	1500	1800	2100	2400
Minimum air exchange rate [m³/h] ¹⁾	330	410	490	570	650
Face velocity [m/s] ³⁾	0,3	0,3	0,3	0,3	0,3
Extract air function display	FAZ				
Airflow damper, constant	Airflow-Controller AC				
Airflow damper, variable	Airflow-Controller AC				
Detector of sash position	Only variable with Airflow-Controller AC				
Connection height [mm] for FAZ with extract manifold Ø250 mm (*Low ceiling fume cupboard) (**Sitting height fume cupboard)	2720 (*2420) (**2570 - only 1500 mm wide)			2720	
Connection height [mm] for FAZ with extract manifold Ø315 mm ²⁾ (*Low ceiling fume cupboard) (**Sitting height fume cupboard)	2830 (*2530) (**2730 - only 1500 mm wide)			2830	
Connection height [mm] for AC with extract manifold Ø250 mm (*Low ceiling fume cupboard) (**Sitting height fume cupboard)	2950 (*2650) (**2800 - only 1500 mm wide)			2950	
Connection height [mm] for AC with extract manifold Ø315 mm ²⁾ (*Low ceiling fume cupboard) (**Sitting height fume cupboard)	3070 (*2770) (**2920 - only 1500 mm wide)			3070	
Underbench exhaust	As an option, depending on requirements and regulations				

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If on-site extract air monitoring systems or airflow dampers are used, the required air volumes may differ. The operating limitations must be agreed upon with Waldner.

Material/surface	
Worktop	Stoneware (not for bench-mounted fume cupboard with a width of 2400 mm), Polypropylene, Epoxy, stainless steel
Internal lining	Solid (grade) laminate, stainless steel (not for sitting height fume cupboard)



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