



Technical Catalog
SCALA laboratory furniture system

SCALA

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WALDNER



Technical Catalog **SCALA**

The new design of our **SCALA** laboratory furniture program is creating the laboratory of the future.

Only when design and functionality effectively complement each other will arise real, useful results which enrich the laboratory working environment.

With innovative ideas, demanding detail solutions and the best materials, we have newly formed our laboratory program to meet the needs of the user with respect to ergonomics and efficiency more than ever before.

Our **SCALA** laboratory furniture system flexibly adapts to new, problem-free working environments. That way it unfolds a large number of different designs and constructions for every functional area in the laboratory.

With our new **SCALA** laboratory furniture, we offer you innovative, mature technology, the highest level of work safety and ergonomics, and perfect service. Discover all new details on the following pages.

It is for good reason that customers all over the world have trusted in us and our achievements for more than 60 years.

With the technical catalog, we give you the foundation for your future laboratory to hold in your hand.

Please contact us – we are always happy to hear from you.





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1 Fume hoods and exhaust devices

Energy efficiency, optimal ergonomics and a very large internal volume make work with our new fume hood even safer and more comfortable for users than before.

New design coupled with an increased product range shape the fume hoods of our new **SCALA** laboratory program.

In combination with lengths up to 94.5 in (2400 mm) our fume hoods provide you the most extensive variety of products on the market! Nearly all fume hoods are also available with Secuflow technology.



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1 Fume hoods and exhaust devices

Work in laboratories where gases, vapors, particulate matter or liquids in dangerous quantities and concentrations are handled must be carried out in fume hoods.

All of our new fume hoods ensure highest level of safety, ease of use and ergonomics for the operator – at the greatest cost-effectiveness.

Less power consumption than before – for economical operation

Through further improvement of fluid dynamics, our new fume hoods consume significantly less energy than before while still maintaining a high level of safety. For example our conventional fume hoods can be operated with a face velocity of 80 FPM and our Secuflow fume hoods with 40 FPM still fulfilling the requirements of ASHRAE 110-1995.

As an important part of the overall laboratory ventilation scheme, our fume hoods can be integrated into the ventilation design of the entire building.

The fact that our Secuflow fume hood technology also reduces the investment and operating costs for the ventilation system is a further economic advantage – made possible by the integrated supportive flow technology. You can find further information on this topic in our Secuflow brochure.

Improved ergonomics by means of the inclined control panel

Through the inclination to the operating panel to the user, all fixtures and functions are even easier to reach and to use.



Safety through the intake airflow profile on the front edge of the fume hood worktop

It prevents turbulence that could cause the release of contaminated air.

Air flowing through the fume hood is guided through the airfoil-like profile geometry (with low turbulence over the worktop) to the back panel – where the safe removal of heavy gasses, e. g. solvent fumes, is taken care of directly over the worktop.

For more safety

Out toothed belt sash suspension unit ensures maximum safety, while also significantly reducing maintenance. The stainless steel reinforced toothed belts show the highest stability in endurance tests with more than 200,000 load cycles. The design of the sash frame provides the best splash and shatter protection.

The anti-slip device provides additional protection

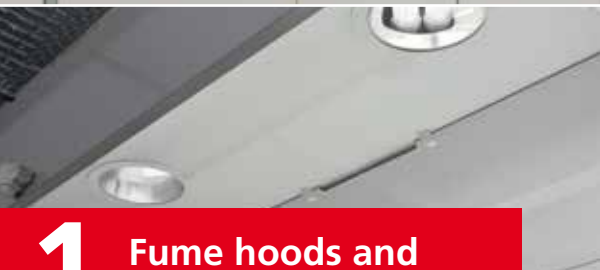
In the unlikely case that both sash mountings fail, the sash is stopped in fractions of a second.

Maximum usable contact surface

Our slender, patented fume hood side posts provide more usable width in the internal workspace, and their special design ensures that there is little turbulence in the intake air.

Larger internal volume

Through 10 % more internal height, the entire workspace is increased. Beneficial for high and projecting experimental equipment.



1 Fume hoods and exhaust devices

Clear view of all processes in the workspace

The sash window of the fume hood head unit enables a clear view of all high experimental equipment and procedures.

The new scaffold points

Scaffold rods of 0.47 in (12 mm) and 0.51 in (13 mm) diameters can be firmly and securely fastened.

All functions at a glance

The soft-touch control elements integrated into the fume hood side posts at eye height provide information about the operational state.

Window sash handle with air exhaust function

When open, air flows into the workspace and pollutant backflow is prevented. The balanced and free-moving sash mechanism including the release for the sash stop can be operated with one hand at any point along the sash.

The automatic sash

The sash is closed automatically when there is nobody working in the fume hood. A photo-electric barrier stops the closing process if there are objects protruding from inside the workspace.

New fume hood widths to choose from

Our bench-mounted fume hoods are now available in widths of 82.68 in (2100 mm), side-installation fume hoods in 94.5 in (2400 mm) – naturally with Secuflow technology as well.

New interior lighting

Energy efficient lamps steadily illuminate the internal workspace – easily switchable from the side posts.

Barrier-free sitting height fume hood

We also provide fume hoods with services on side walls in a wheelchair accessible design. The design of all our control switches provides for optimal ergonomics and freedom of movement for seated operations at the fume hood.



The best for equipment and variability

Along with convenient standard equipment, our fume hoods provide a wide range of variable equipment options. Depending on the application, the worktop is made of stoneware, epoxy resin, polypropylene or stainless steel. Our fume hoods are assembled with self-supporting underbench units or on a steel support frame. It is possible to install fixed base underbench cabinets, mobile cabinets, metal solvent cabinets, and others under the fume hood.

The service modules for assembly as needed

Integrated into the back and side wall of our fume hoods, removable service modules provide for the supply of sanitary and electrical services.

Our certified test laboratory for fume hood measurements

On the publication of EN 14175 we set up our new test laboratory for fume hoods. The latest technical equipment and the GS certification via TÜV Product Service GmbH guarantee the best measurement results in relation to accuracy and reproducibility.

We test fume hoods according to EN 14175. Furthermore, we also perform measurements according to ASHRAE 110/1995.

Beyond our ISO 9001 certification and the GS marking for our entire product range, we have closed the loop in relation to fume hood tests and had our test laboratory certified by TÜV Product Service GmbH according to the German law on product safety (Gerätesicherheitsgesetz).

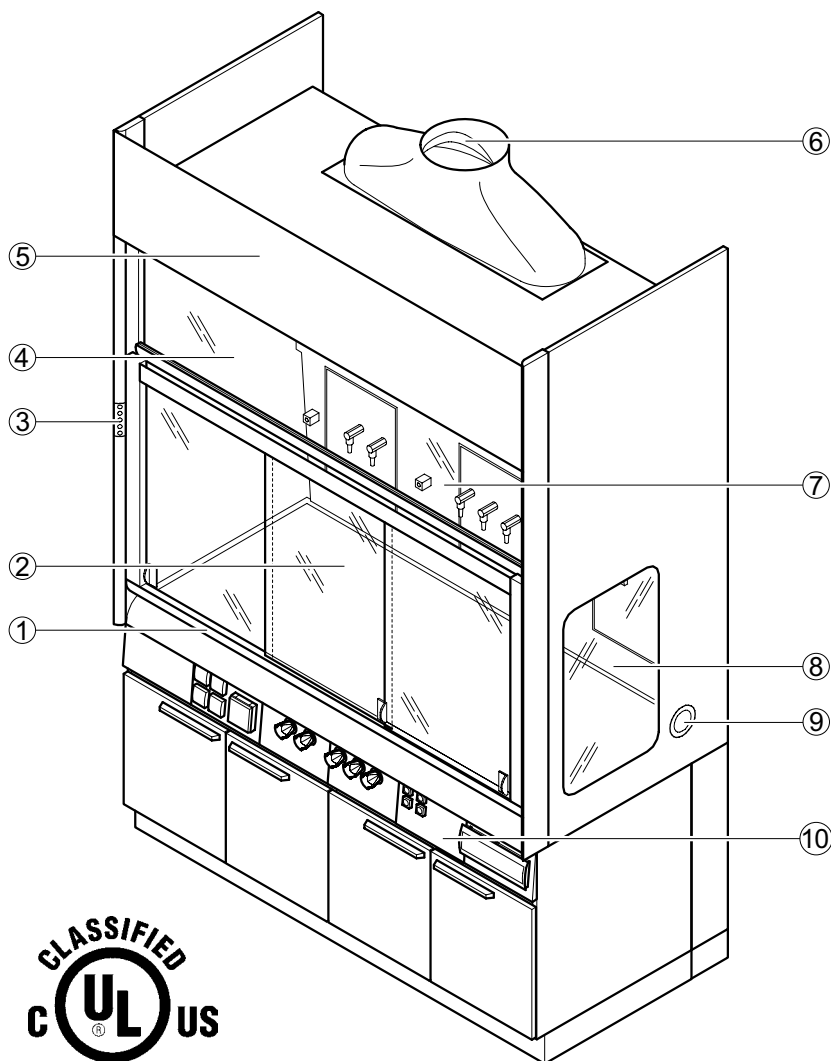
Bench-mounted fume hoods

Bench-mounted fume hood

Use

- Safety equipment for operators, tested according to EN 14175
- Extraction of fumes, aerosols and dusts from the internal workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the internal workspace
- Protection from splashes and spills of hazardous substances
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to EN 14175, are generally not suited for work with radioactive substances or for work with micro-organisms.
- Not to be used for exposed work involving chemical digestions
- Service outlets in the back wall of the internal workspace
- Operating controls externally at the traverse

Design



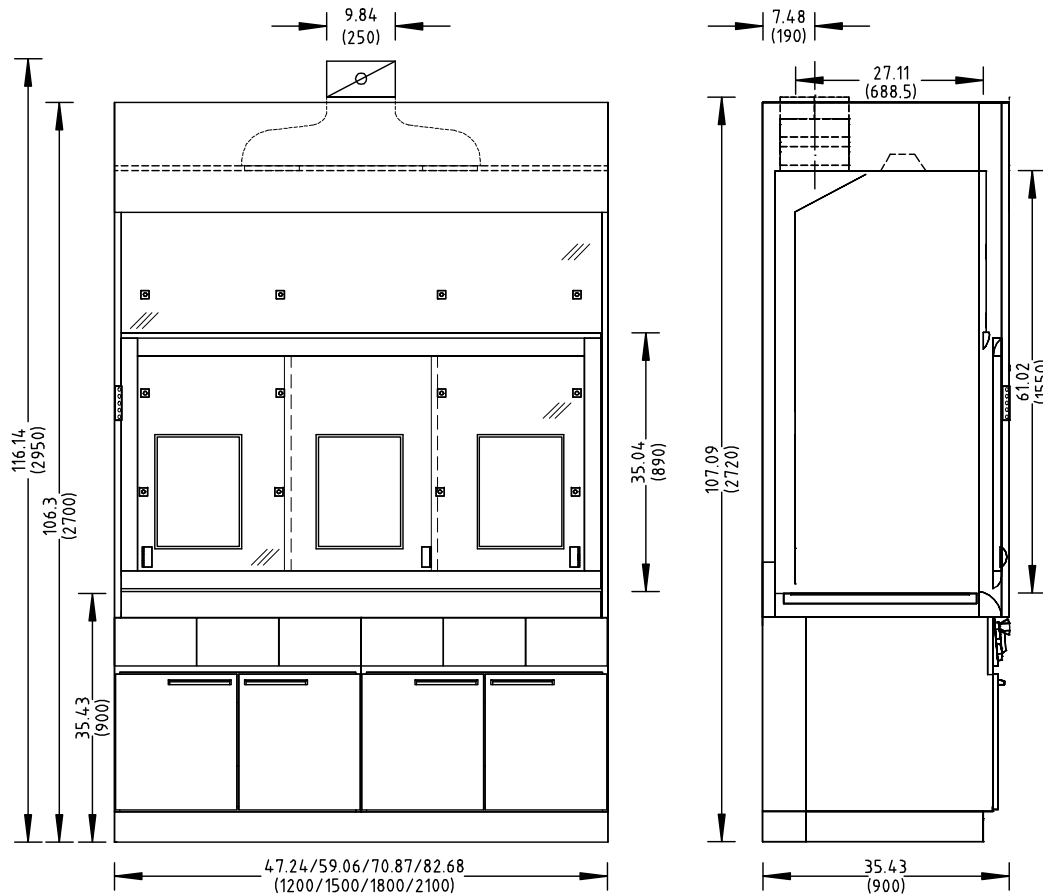
- 1 Sash with sash handle and horizontal sash
- 2 Worktop
- 3 Control panel FAZ or AC
- 4 Upper sash window
- 5 Removable front filler panel
- 6 Extract manifold
- 7 Baffle with service modules
- 8 Optional glazed side panel
- 9 Optional cable pass-through
- 10 Self-supporting underbench unit with traverse and service panels



Bench-mounted fume hoods

Bench-mounted fume hood

Dimensional drawing



Technical Data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Depth [in] (mm)	35.43 (900)			
Height [in] (mm)	106.3 (2700)			
Interior effective width [in] (mm)	45.28 (1150)	57.09 (1450)	68.90 (1750)	80.71 (2050)
Interior effective height [in] (mm)	61.02 (1550)			
Working height [in] (mm)	35.43 (900)			

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Without installation [lb] (kg)	approx. 551.15 (250)	approx. 661.38 (300)	approx. 771.61 (350)	approx. 881.84 (400)

Bench-mounted fume hoods

Bench-mounted fume hood

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Supporting structure	Self-supporting underbench units or H-frame with pushed-in underbench units			
Sash	2 horizontal sashes		3 horizontal sashes	
Side panel	Optional glazed side panel left and/or right, not for stoneware internal lining Optional cable pass-through left and/or right, not for stoneware internal lining			
Max. number of devices for scaffold points, $\varnothing$ 0.47 (12) to 0.51 in (13 mm)	9		12	
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)			
Service modules	2		3	

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panels Power outlets on the interior in the service modules
Fuse box	Optional
SC sash controller	Optional

Sanitary engineering	
Sanitary supply	Optional service module with fittings for vacuum, gas and/or water and integrated sink (PP)

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Minimum volume flow [cfm] (m^3/h) ¹⁾	282.5 (480)	353.2 (600)	423.8 (720)	494.4 (840)
Extract air function display	FAZ			
Flow regulator, constant	Airflow controller AC			
Flow regulator, variable	Airflow controller AC			
Detector of horizontal sash position	Only variable with airflow controller AC			
Connection point level [in] (mm) for FAZ with extract manifold $\varnothing$ 9.84 in (250 mm)	107.09 (2720)			
Connection point level [in] (mm) for FAZ with extract manifold $\varnothing$ 12.408 in (315 mm) ²⁾	112.20 (2850)			
Connection point level [in] (mm) for AC with extract manifold $\varnothing$ 9.84 in (250 mm)	116.14 (2950)			
Connection point level [in] (mm) for AC with extract manifold $\varnothing$ 12.40 in (315 mm) ²⁾	120.87 (3070)			
Underbench exhaust extraction	Optional according to requirements and specifications			

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) and the recommended tracer gas maximum value from BG Chemie

²⁾ In order to minimize noise and pressure leakage, Waldner recommends, for air volumes of >588.6 cfm (1000 m^3/h) an extract manifold with diameter 12.40 in (315 mm).

With the sash in the closed position the minimum volume flow can be reduced to 120 cfm (203.9 m^3/h) when utilizing the Waldner AC3 airflow controller or a conventional VAV system.

For Waldner airflow dampers, a maximum pressure of 0.087 psi (600 Pa) must not be exceeded.

The listed volume flows are according to DIN EN 14175 minimum volume flows for operation of fume hoods. It is therefore disadvised to use these values as a model for the ventilation system.

Air volume may differ when using on-site extract air control systems and other products. Operating limitations must be verified by Waldner before usage.

Material/Facing	
Worktop	Stoneware Polypropylene Epoxy Stainless steel
Internal lining	Solid grade laminate HPL (high pressure laminate)

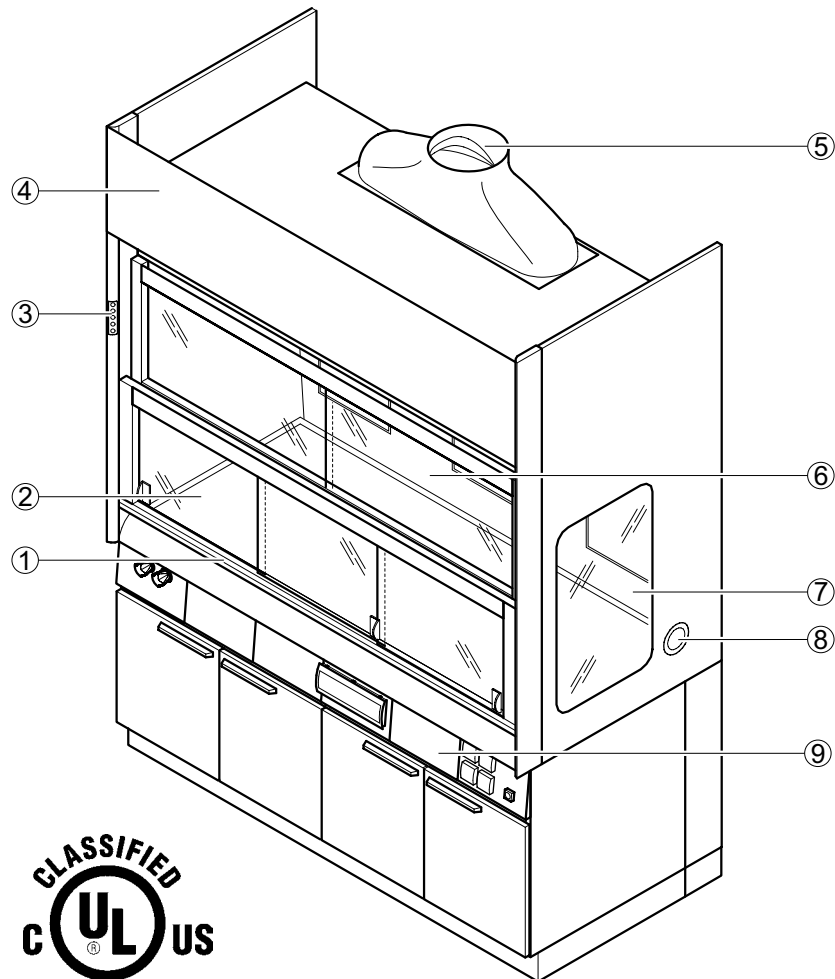
Bench-mounted fume hoods

Low ceiling bench-mounted fume hood

Use

- Safety equipment for operators, tested according to EN 14175
- Extraction of fumes, aerosols and dusts from the internal workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the internal workspace
- Protection from splashes and spills of hazardous substances
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to EN 14175, are generally not suited for work with radioactive substances or for work with micro-organisms.
- Not to be used for exposed work involving chemical digestions
- Service outlets in the back wall of the internal workspace
- Operating controls externally at the traverse
- Suitable for spaces with low ceiling heights

Design



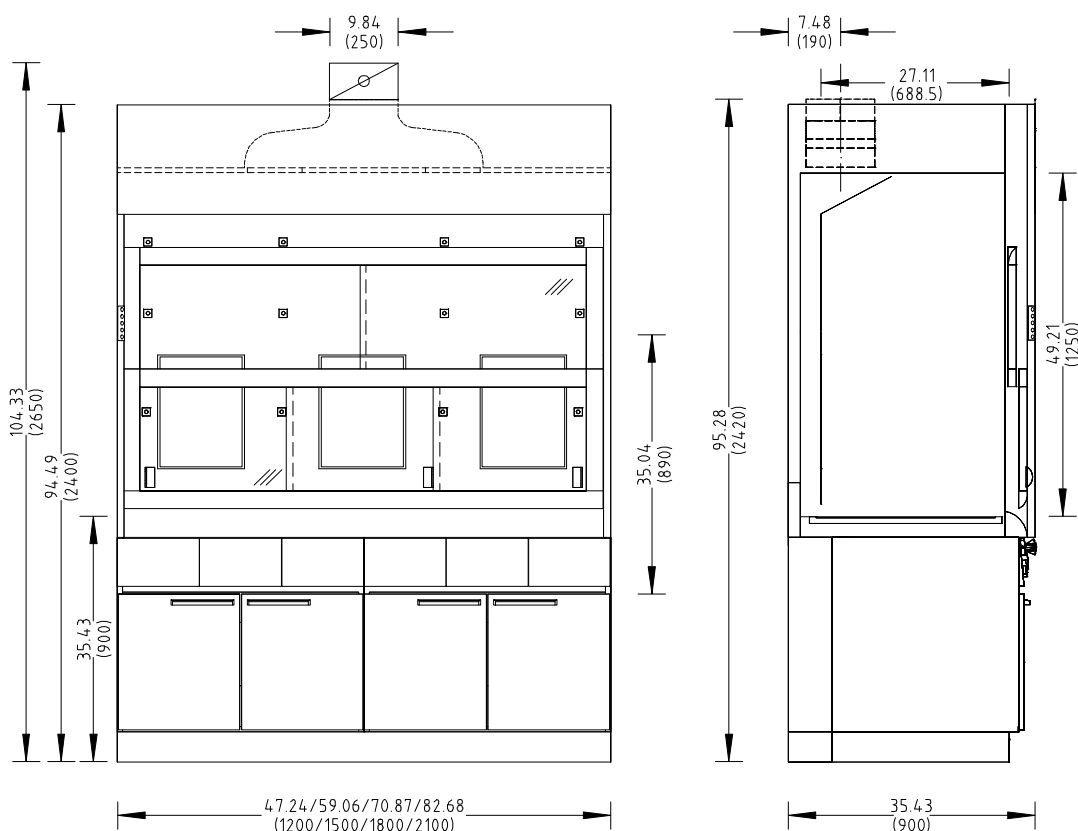
- 1 Two-part sash with sash handle and horizontal sash
- 2 Worktop
- 3 Control panel FAZ or AC
- 4 Removable front filler panel
- 5 Extract manifold
- 6 Baffle with service modules
- 7 Optional glazed side panel
- 8 Optional cable pass-through
- 9 Self-supporting underbench unit with traverse and service panels



Bench-mounted fume hoods

Low ceiling bench-mounted fume hood

Dimensional drawing



Technical Data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Depth [in] (mm)	35.43 (900)			
Height [in] (mm)	94.49 (2400)			
Interior effective width [in] (mm)	45.28 (1150)	57.09 (1450)	68.90 (1750)	80.71 (2050)
Interior effective height [in] (mm)	49.21 (1250)			
Working height [in] (mm)	35.43 (900)			

Weight	47.24(1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Without installation [lb] (kg)	approx. 485.01 (220)	approx. 573.2 (260)	approx. 661.38 (300)	approx. 771.62 (350)

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Supporting structure	Self-supporting underbench units or H-frame with pushed-in underbench units			
Sash	2 horizontal sashes		3 horizontal sashes	
Side panel	Optional glazed side panel left and/or right, not for stoneware internal lining Optional cable pass-through left and/or right, not for stoneware internal lining			
Max. number of devices for scaffold points, ø 0.47 (12) to 0.51 in (13 mm)	9		12	
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)			
Service modules	2		3	

Bench-mounted fume hoods

Low ceiling bench-mounted fume hood

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panels Power outlets on the interior in the service modules
Fuse box	Optional
SC sash controller	Optional

Sanitary engineering	
Sanitary supply	Optional service module with fittings for vacuum, gas and/or water and integrated sink (PP)

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Minimum volume flow [cfm] (m^3/h) ¹⁾	282.5 (480)	353.2 (600)	423.8 (720)	494 (840)
Extract function display	FAZ			
Flow regulator, constant	Airflow controller AC			
Flow regulator, variable	Airflow controller AC			
Detector of horizontal sash position	Only variable with airflow controller AC			
Connection point level [in] (mm) for FAZ with extract manifold Ø 9.75 in (250 mm)	95.28 (2420)			
Connection point level [in] (mm) for FAZ with extract manifold Ø 12.28 in (315 mm) ²⁾	100.39 (2550)			
Connection point level [in] (mm) for AC with extract manifold Ø 9.75 in (250 mm)	104.33 (2650)			
Connection point level [in] (mm) for AC with extract manifold Ø 12.28 in (315 mm) ²⁾	109.05 (2770)			
Underbench exhaust extraction	Optional according to requirements and specifications			

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) and the recommended tracer gas maximum value from BG Chemie

²⁾ In order to minimize noise and pressure leakage, Waldner recommends, for air volumes of >588.6 cfm (1000 m^3/h) an extract manifold with diameter 12.40 in (315 mm).

With the sash in the closed position the minimum volume flow can be reduced to 120 cfm (203.9 m^3/h) when utilizing the Waldner AC3 airflow controller or a conventional VAV system.

For Waldner airflow dampers, a maximum pressure of 0.087 psi (600 Pa) must not be exceeded.

The listed volume flows are according to DIN EN 14175 minimum volume flows for operation of fume hoods. It is therefore disadvised to use these values as a model for the ventilation system.

Air volume may differ when using on-site extract air control systems and other products. Operating limitations must be verified by Waldner before usage.

Material/Facing	
Worktop	Stoneware Polypropylene Stainless steel Epoxy
Internal lining	Solid grade laminate HPL (high pressure laminate)

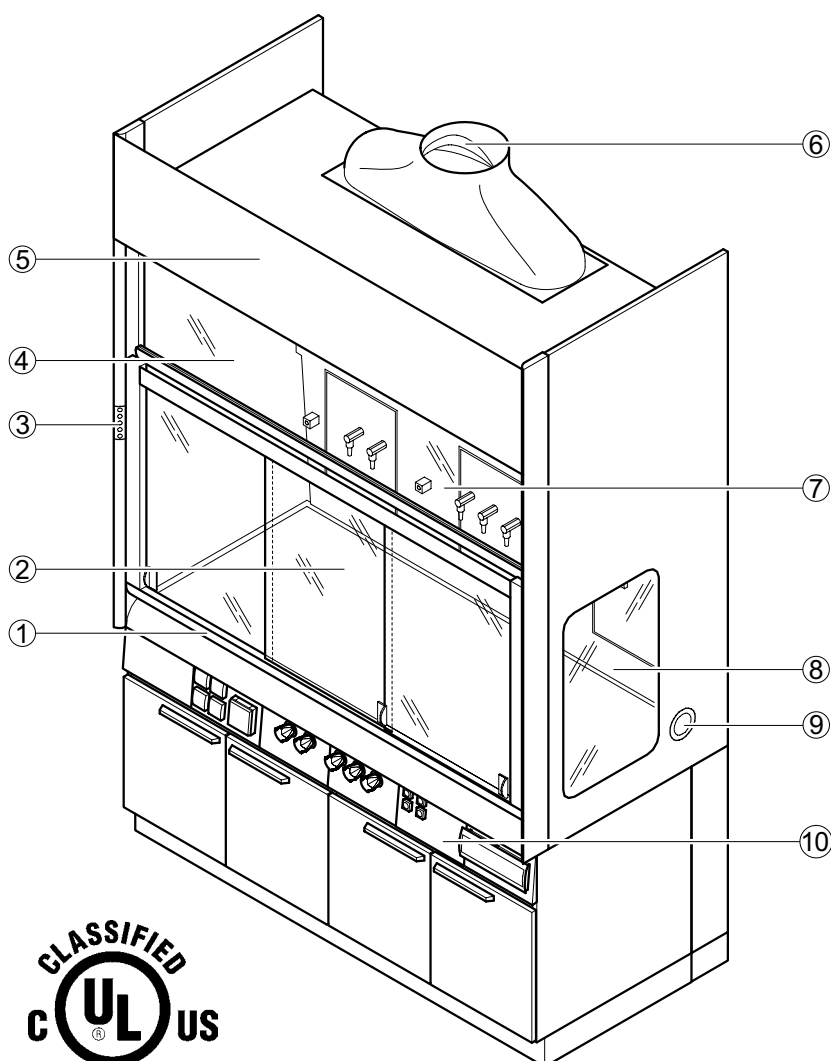
Bench-mounted fume hoods

Secuflow bench-mounted fume hood

Use

- Safety equipment for operators, tested according to EN 14175
- Extraction of fumes, aerosols and dusts from the internal workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the internal workspace
- Protection from splashes and spills of hazardous substances
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to EN 14175, are generally not suited for work with radioactive substances or for work with micro-organisms.
- Not to be used for exposed work involving chemical digestions
- Reduction of energy usage through supportive flow technology (Secuflow technology) in accordance with regulations and norms
- Service outlets in the back wall of the internal workspace
- Operating controls externally at the traverse

Design



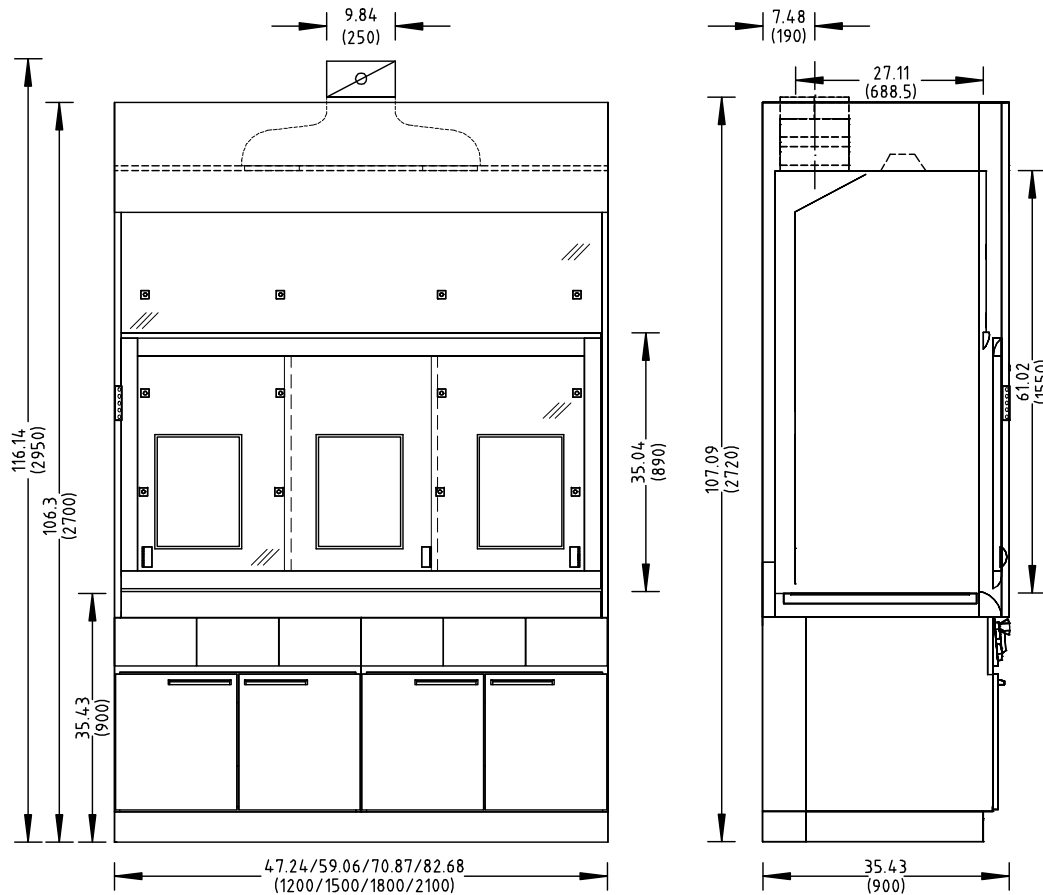
- 1 Sash with sash handle and horizontal sash
- 2 Worktop
- 3 Control panel FAZ or AC
- 4 Upper sash window
- 5 Removable front filler panel
- 6 Extract manifold
- 7 Baffle with service modules
- 8 Optional glazed side panel
- 9 Optional cable pass-through
- 10 Self-supporting underbench unit with traverse and service panels



Bench-mounted fume hoods

Secuflow bench-mounted fume hood

Dimensional drawing



Technical Data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Depth [in] (mm)	35.43 (900)			
Height [in] (mm)	106.3 (2700)			
Interior effective width [in] (mm)	45.28 (1150)	57.09 (1450)	68.90 (1750)	80.71 (2050)
Interior effective height [in] (mm)	61.02 (1550)			
Working height [in] (mm)	35.43 (900)			

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Without installation [lb] (kg)	approx. 551.15 (250)	approx. 661.38 (300)	approx. 771.61 (350)	approx. 881.84 (400)

Bench-mounted fume hoods

Secuflow bench-mounted fume hood

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Supporting structure	Self-supporting underbench units or H-frame with pushed-in underbench units			
Sash	2 horizontal sashes		3 horizontal sashes	
Side panel	Optional glazed side panel left and/or right, not for stoneware internal lining Optional cable pass-through left and/or right, not for stoneware internal lining			
Max. number of devices for scaffold points, $\varnothing$ 0.47 in (12 mm) to 0.51 in (13 mm)	9		12	
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)			
Service modules	2		3	

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panels Power outlets on the interior in the service modules
Fuse box	Optional
SC sash controller	Optional

Sanitary engineering	
Sanitary supply	Optional service module with fittings for vacuum, gas and/or water and integrated sink (PP)

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Minimum air exchange rate [cfm] ¹⁾ (m^3/h) ¹⁾ at a face velocity of 60 FPM (0.3 m/s)	400 (680)	489 (830)	577 (980)	665 (1130)
Minimum air exchange rate [cfm] ¹⁾ (m^3/h) ¹⁾ at a face velocity of 40 FPM (0.2 m/s)	294 (500)	347 (590)	406 (690)	465 (790)
Exhaust 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 $\varnothing$ 9.84 in (250 mm)	107.09 (2720)			
Connection height [mm] for FAZ with extract manifold 12.4 in (315 mm) ²⁾	112.20 (2850)			
Connection height [mm] for AC with extract manifold 9.84 in (250 mm)	116.14 (2950)			
Connection height [mm] for AC with extract manifold 12.4 in (315 mm) ²⁾	120.87 (3070)			
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 18 in (457 mm) (test opening in acc. with ASHRAE 110-2005).

²⁾ In order to minimize noise and pressure losses, for air volumes >588.6 cfm (1000 m^3/h) Waldner recommends using the extract manifold with a connection diameter of 12.4 in (315 mm).

³⁾ Face velocity refer to an opening height of the sash window of 18 in (457 mm).

Maximum admission pressure of 0.09 psi (600 Pa) for fume hoods with airflow dampers should not be exceeded.

The indicated air exchange rates were determined under test conditions specified in ASHRAE 110-2005. To dimension the ventilation system, these minimum air exchange rates must also be adapted.

If on-site exhaust air monitoring systems or airflow dampers are used, the required air volumes may differ.

The operating limitations must be agreed upon with Waldner.

Material/Facing	
Worktop	Stoneware Polypropylene Stainless steel Epoxy
Internal lining	Solid grade laminate HPL (high pressure laminate)

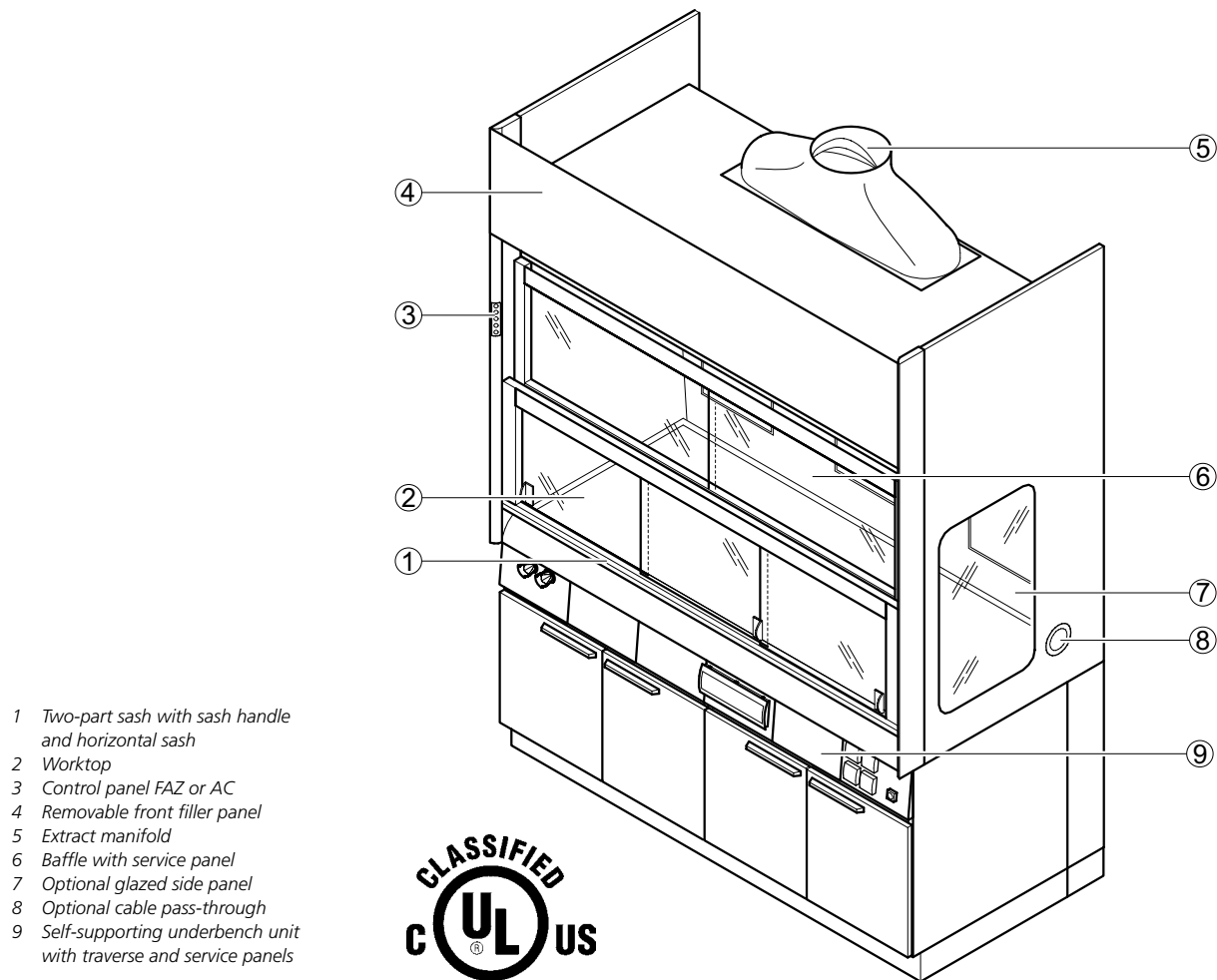
Bench-mounted fume hoods

Secuflow low ceiling bench-mounted fume hood

Use

- Safety equipment for operators, tested according to EN 14175
- Extraction of fumes, aerosols and dusts from the internal workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the internal workspace
- Protection from splashes and spills of hazardous substances
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to EN 14175, are generally not suited for work with radioactive substances or for work with micro-organisms.
- Not to be used for exposed work involving chemical digestions
- Reduction of energy usage through supportive flow technology (Secuflow technology) in accordance with regulations and norms
- Service outlets in the back wall of the internal workspace
- Operating controls externally at the traverse
- Suitable for spaces with low ceiling heights

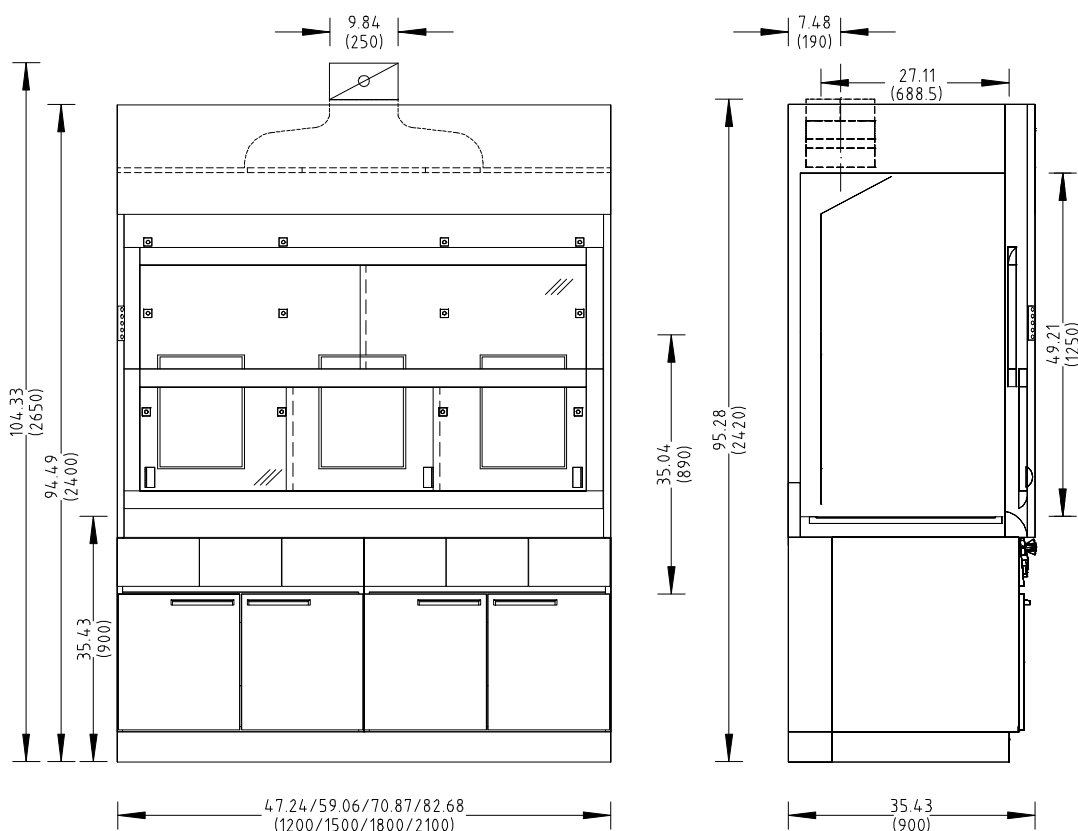
Design



Bench-mounted fume hoods

Secuflow low ceiling bench-mounted fume hood

Dimensional drawing



Technical Data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Depth [in] (mm)	35.43 (900)			
Height [in] (mm)	94.49 (2400)			
Interior effective width [in] (mm)	45.28 (1150)	57.09 (1450)	68.9 (1750)	80.71 (2050)
Interior effective height [in] (mm)	49.21 (1250)			
Working height [in] (mm)	35.43 (900)			

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Without installation [lb] (kg)	approx. 485.01 (220)	approx. 573.2 (260)	approx. 661.38 (300)	approx. 771.62 (350)

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Supporting structure	Self-supporting underbench units or H-frame with pushed-in underbench units			
Sash	2 horizontal sashes		3 horizontal sashes	
Side panel	Optional glazed side panel left and/or right, not for stoneware internal lining Optional cable pass-through left and/or right, not for stoneware internal lining			
Max. number of devices for scaffold points, $\varnothing$ 0.47 (12) to 0.51 in (13 mm)	9		12	
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)			
Service modules	2		3	

Bench-mounted fume hoods

Secuflow low ceiling bench-mounted fume hood

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panels Power outlets on the interior in the service modules
Fuse box	Optional
SC sash controller	Optional

Sanitary engineering	
Sanitary supply	Optional service module with fittings for vacuum, gas and/or water and integrated sink (PP)

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Minimum air exchange rate [cfm] ¹⁾ (m ³ /h) ¹⁾ at a face velocity of 60 FPM (0.3 m/s)	400 (680)	489 (830)	577 (980)	665 (1130)
Minimum air exchange rate [cfm] ¹⁾ (m ³ /h) ¹⁾ at a face velocity of 40 FPM (0.2 m/s)	294 (500)	347 (590)	406 (690)	465 (790)
Exhaust 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 Ø9.84 in (250 mm)	95.28 (2420)			
Connection height [mm] for FAZ with extract manifold 12.4 in (315 mm) ²⁾	100.39 (2550)			
Connection height [mm] for AC with extract manifold 9.84 in (250 mm)	104.33 (2650)			
Connection height [mm] for AC with extract manifold 12.4 in (315 mm) ²⁾	109.05 (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 18 in (457 mm) (test opening in acc. with ASHRAE 110-2005).

²⁾ In order to minimize noise and pressure losses, for air volumes >588.6 cfm (1000 m³/h) Waldner recommends using the extract manifold with a connection diameter of 12.4 in (315 mm).

³⁾ Face velocity refer to an opening height of the sash window of 18 in (457 mm).

Maximum admission pressure of 0.09 psi (600 Pa) for fume hoods with airflow dampers should not be exceeded.

The indicated air exchange rates were determined under test conditions specified in ASHRAE 110-2005. To dimension the ventilation system, these minimum air exchange rates must also be adapted.

If on-site exhaust air monitoring systems or airflow dampers are used, the required air volumes may differ.

The operating limitations must be agreed upon with Waldner.

Material/Facing	
Worktop	Stoneware Polypropylene Epoxy Stainless steel
Internal lining	Solid grade laminate HPL (high pressure laminate)

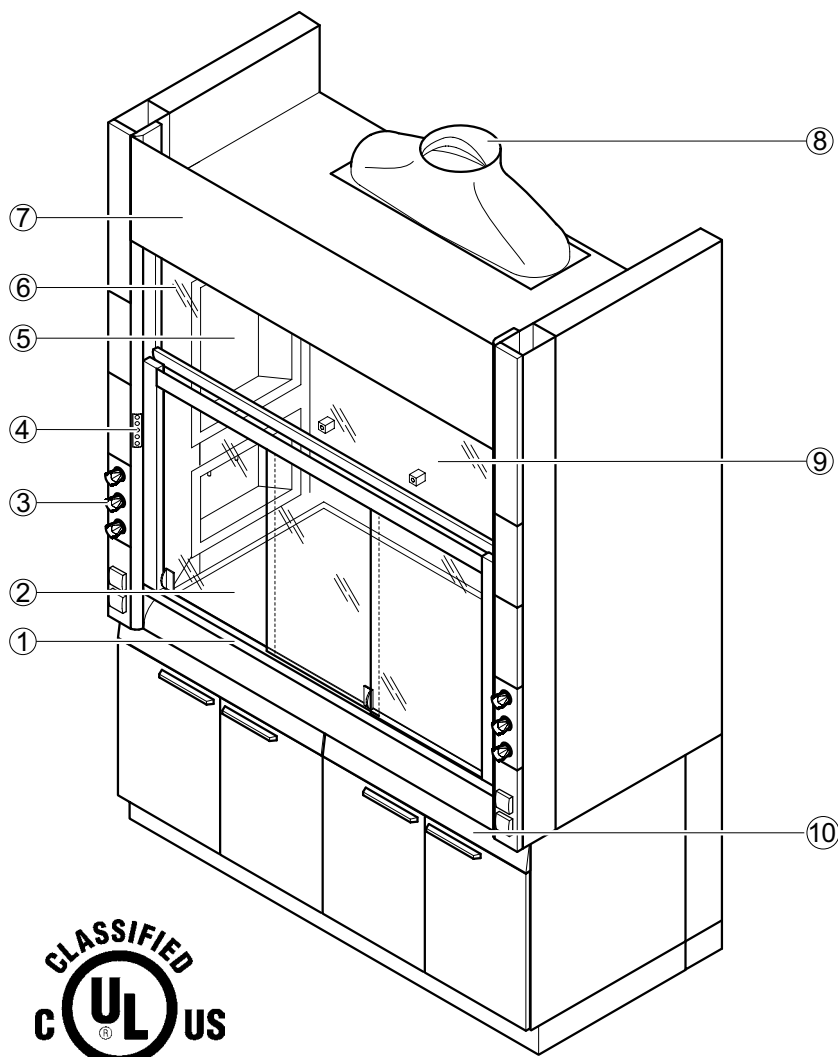
Bench-mounted fume hoods with services on side walls

Bench-mounted fume hood with services on side walls

Use

- Safety equipment for operators, tested according to EN 14175
- Extraction of fumes, aerosols and dusts from the internal workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the internal workspace
- Protection from splashes and spills of hazardous substances
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to EN 14175, are generally not suited for work with radioactive substances or for work with micro-organisms.
- Not to be used for exposed work involving chemical digestions
- Service outlets in the service module of the interior workspace's side walls
- Operating controls externally at the service panels

Design



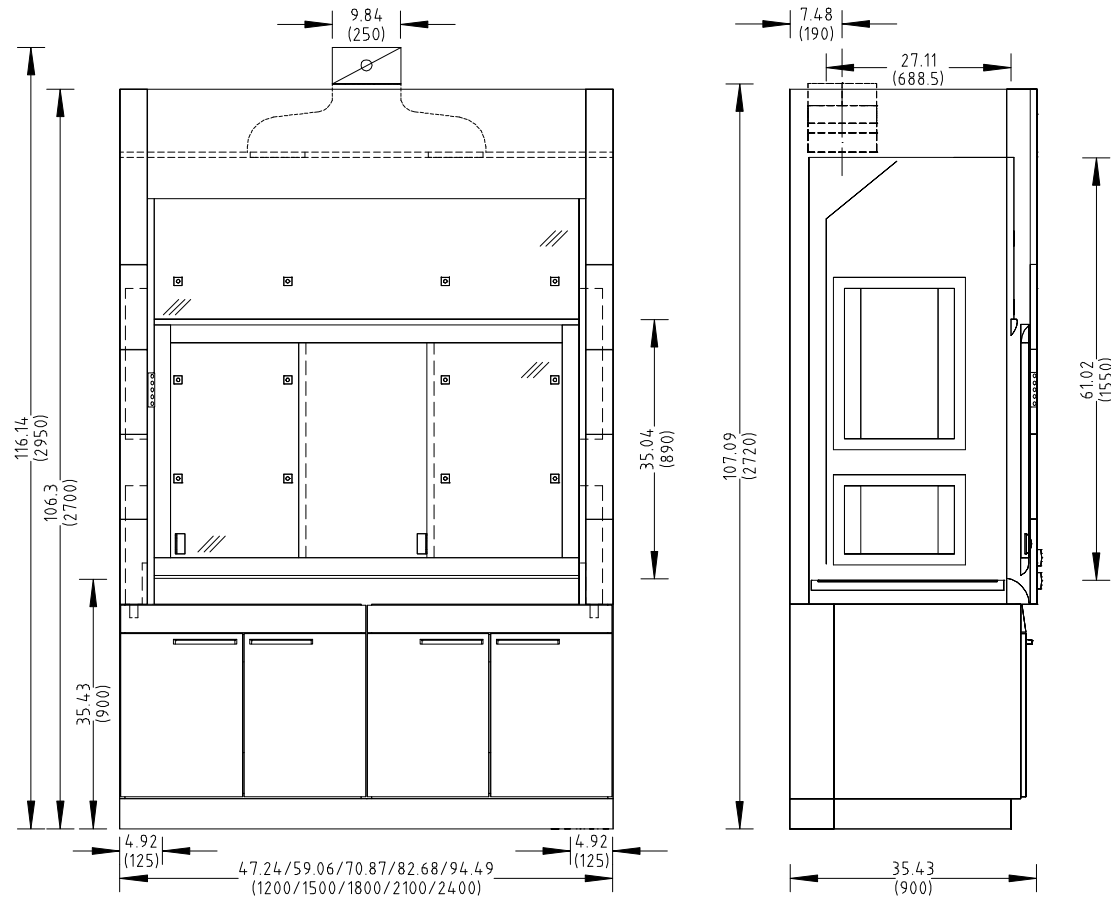
- 1 Sash with sash handle and horizontal sash
- 2 Worktop
- 3 Service panel
- 4 Control panel FAZ or AC
- 5 Service modules in the fume hood side wall
- 6 Upper sash window
- 7 Removable front filler panel
- 8 Extract manifold
- 9 Baffle with scaffold points
- 10 Self-supporting underbench unit



Bench-mounted fume hoods with services on side walls

Bench-mounted fume hood with services on side walls

Dimensional drawing



Technical Data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Depth [in] (mm)	35.43 (900)				
Height [in] (mm)	106.30 (2700)				
Interior effective width [in] (mm)	37.40 (950)	49.21 (1250)	61.02 (1550)	72.83 (1850)	84.65 (2150)
Interior effective height [in] (mm)	61.02 (1550)				
Working height [in] (mm)	35.43 (900)				

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Without installation [lb] (kg)	approx. 705.47 (320)	approx. 859.79 (390)	approx. 992.07 (450)	approx. 1124.35 (510)	approx. 1256.62 (570)

Bench-mounted fume hoods with services on side walls

Bench-mounted fume hood with services on side walls

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Supporting structure	Self-supporting underbench units or H-frame with pushed-in underbench units				
Sash	2 horizontal sashes		3 horizontal sashes		
Side panel	Optional glazed side panel left and/or right not for service modules in the fume hood side wall Optional cable pass-through left and/or right				
Max. number of devices for scaffold points, ø 0.47 (12) to 0.51 in (13 mm)	9	12			15
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)				
Service modules	According to requirements, service modules in the left and/or right fume hood side wall				

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panels Power outlets on the interior in the service modules
Fuse box	Optional
SC sash controller	Optional

Sanitary engineering	
Sanitary supply	Optional service module with fittings for vacuum, gas and/or water and integrated sink (PP)

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Minimum volume flow [cfm] (m³/h) ¹⁾	247.2 (420)	309 (525)	370.8 (630)	432.6 (735)	494.4 (840)
Extract function display	FAZ				
Flow regulator, constant	Airflow controller AC				
Flow regulator, variable	Airflow controller AC				
Detector of horizontal sash position	Only variable with airflow controller AC				
Connection point level [in] (mm) for FAZ with extract manifold Ø 9.75 in (250 mm)	107.09 (2720)				
Connection point level [in] (mm) for FAZ with extract manifold Ø 12.28 in (315 mm) ²⁾	112.20 (2850)				
Connection point level [in] (mm) for AC with extract manifold Ø 9.75 in (250 mm)	116.14 (2950)				
Connection point level [in] (mm) for AC with extract manifold Ø 12.28 in (315 mm) ²⁾	120.87 (3070)				
Underbench exhaust extraction	Optional according to requirements and specifications				

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) and the recommended tracer gas maximum value from BG Chemie

²⁾ In order to minimize noise and pressure leakage, Waldner recommends, for air volumes of >588.6 cfm (1000 m³/h) an extract manifold with diameter 12.4 in (315 mm).

With the sash in the closed position the minimum volume flow can be reduced to 120 cfm (203.9 m³/h) when utilizing the Waldner AC3 airflow controller or a conventional VAV system.

For Waldner airflow dampers, a maximum pressure of 0.087 psi (600 Pa) must not be exceeded.

The listed volume flows are according to DIN EN 14175 minimum volume flows for operation of fume hoods. It is therefore disadvised to use these values as a model for the ventilation system.

Air volume may differ when using on-site extract air control systems and other products. Operating limitations must be verified by Waldner before usage.

Material/Facing	
Worktop	Stoneware Polypropylene Epoxy Stainless steel
Internal lining	Solid grade laminate Stainless steel HPL (high pressure laminate)

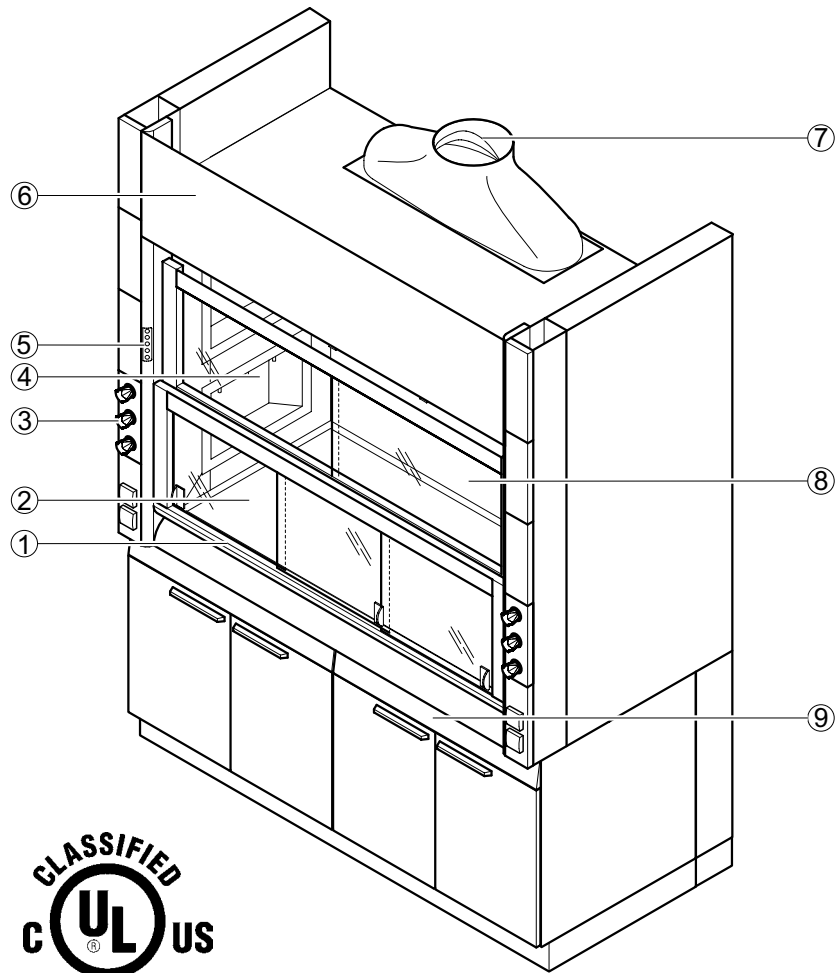
Bench-mounted fume hoods with services on side walls

Low ceiling bench-mounted fume hood with services on side walls

Use

- Safety equipment for operators, tested according to EN 14175
- Extraction of fumes, aerosols and dusts from the internal workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the internal workspace
- Protection from splashes and spills of hazardous substances
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to EN 14175, are generally not suited for work with radioactive substances or for work with micro-organisms.
- Not to be used for exposed work involving chemical digestions
- Service outlets in the service module of the interior workspace's side walls
- Operating controls externally at the service panels
- Suitable for spaces with low ceiling heights

Design



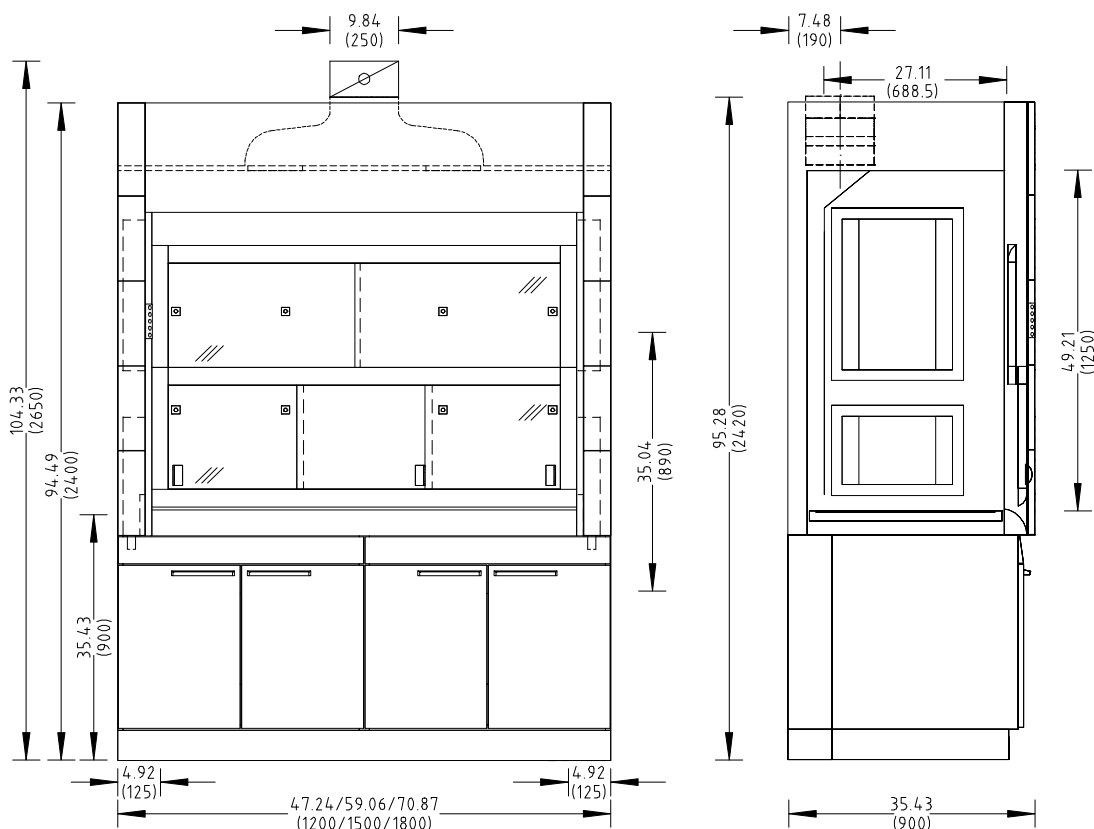
- 1 Two-part sash with sash handle and horizontal sash
- 2 Worktop
- 3 Service panel
- 4 Service module in the fume hood side wall
- 5 Control panel FAZ or AC
- 6 Removable front filler panel
- 7 Extract manifold
- 8 Baffle with scaffold points
- 9 Self-supporting underbench unit



Bench-mounted fume hoods with services on side walls

Low ceiling bench-mounted fume hood with services on side walls

Dimensional drawing



Technical Data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [in] (mm)	35.43 (900)		
Height [in] (mm)	94.49 (2400)		
Interior effective width [in] (mm)	37.4 (950)	49.21 (1250)	61.02 (1550)
Interior effective height [in] (mm)	49.21 (1250)		
Working height [in] (mm)	35.43 (900)		

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)
Without installation [lb] (kg)	approx. 485.01 (220)	approx. 573.2 (260)	approx. 661.38 (300)

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)
Supporting structure	Self-supporting underbench units or H-frame with pushed-in underbench units		
Two-part sash	2 horizontal sashes		3 horizontal sashes
Side panel	Optional glazed side panel left and/or right, not for service panels in the fume hood side wall, not for stoneware internal lining Optional cable pass-through left and/or right		
Max. number of devices for scaffold points, ø 0.47 (12) up to 0.51 in (13 mm)	6	8	
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)		
Service modules	According to requirements, service modules in the left and/or right fume hood side wall		

Bench-mounted fume hoods with services on side walls

Low ceiling bench-mounted fume hood with services on side walls

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panels Power outlets on the interior in the service modules
Fuse box	Optional
SC sash controller	Optional

Sanitary engineering	
Sanitary supply	Optional service module with fittings for vacuum, gas and/or water and integrated sink (PP)

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)
Minimum volume flow [cfm] (m^3/h) ¹⁾	247.2 (420)	312 (530)	370.8 (630)
Extract function display	FAZ		
Flow regulator, constant	Airflow controller AC		
Flow regulator, variable	Airflow controller AC		
Detector of horizontal sash position	Only variable with airflow controller AC		
Connection point level [in] (mm) for FAZ with extract manifold Ø 9.75 in (250 mm)	95.28 (2420)		
Connection point level [in] (mm) for FAZ with extract manifold Ø 12.28 in (315 mm) ²⁾	100.39 (2550)		
Connection point level [in] (mm) for AC with extract manifold Ø 9.75 in (250 mm)	104.33 (2650)		
Connection point level [in] (mm) for AC with extract manifold Ø 12.28 in (315 mm) ²⁾	109.05 (2770)		
Underbench exhaust extraction	Optional according to requirements and specifications		

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) and the recommended tracer gas maximum value from BG Chemie.

²⁾ In order to minimize noise and pressure leakage, Waldner recommends, for air volumes of >588.6 cfm (1000 m^3/h) an extract manifold with diameter 12.4 in (315 mm).

With the sash in the closed position the minimum volume flow can be reduced to 120 cfm (203.9 m^3/h) when utilizing the Waldner AC3 airflow controller or a conventional VAV system.

For Waldner airflow dampers, a maximum pressure of 0.087 psi (600 Pa) must not be exceeded.

The listed volume flows are according to DIN EN 14175 minimum volume flows for operation of fume hoods. It is therefore disadvised to use these values as a model for the ventilation system.

Air volume may differ when using on-site extract air control systems and other products. Operating limitations must be verified by Waldner before usage.

Material/Facing	
Worktop	Stoneware Polypropylene Epoxy Stainless steel
Internal lining	Solid grade laminate Stainless steel HPL (high pressure laminate)

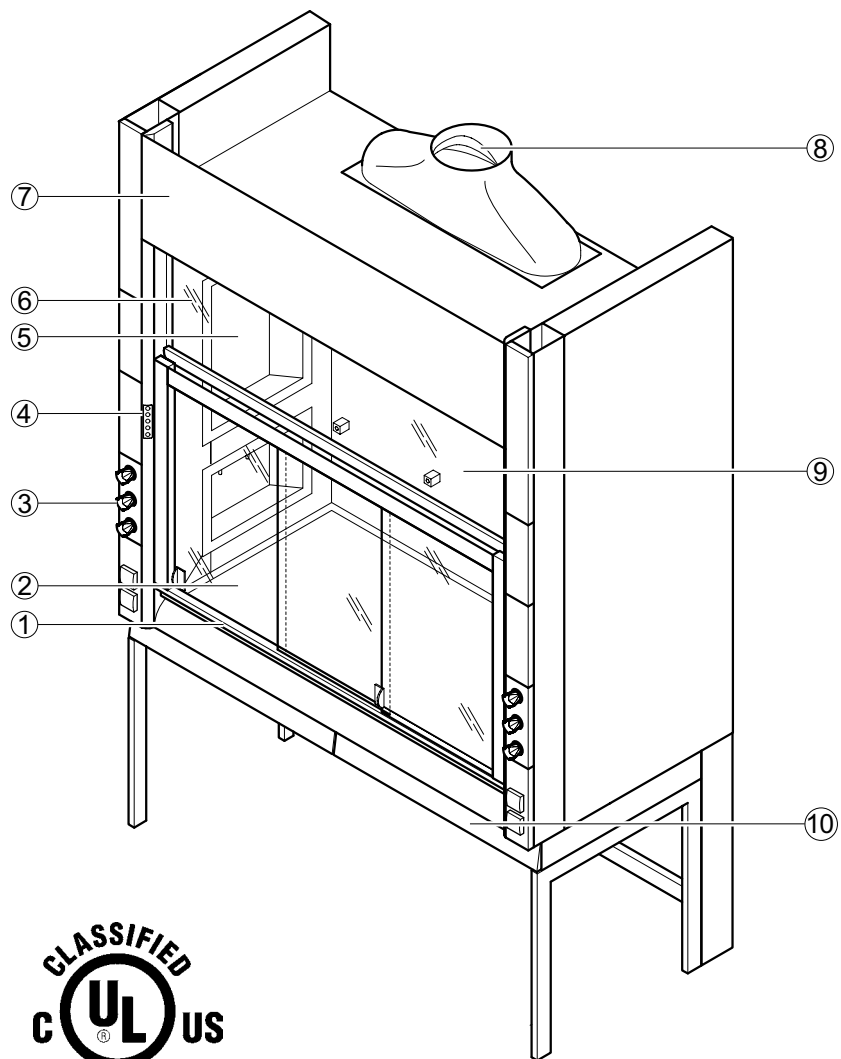
Bench-mounted fume hoods with services on side walls

Secuflow bench-mounted fume hood with services on side walls

Use

- Safety equipment for operators, tested according to EN 14175
- Extraction of fumes, aerosols and dusts from the internal workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the internal workspace
- Protection from splashes and spills of hazardous substances
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to EN 14175, are generally not suited for work with radioactive substances or for work with micro-organisms.
- Not to be used for exposed work involving chemical digestions
- Reduction of energy usage through supportive flow technology (Secuflow technology) in accordance with regulations and norms
- Service outlets in the service module of the interior workspace's side walls
- Operating controls externally at the service panels

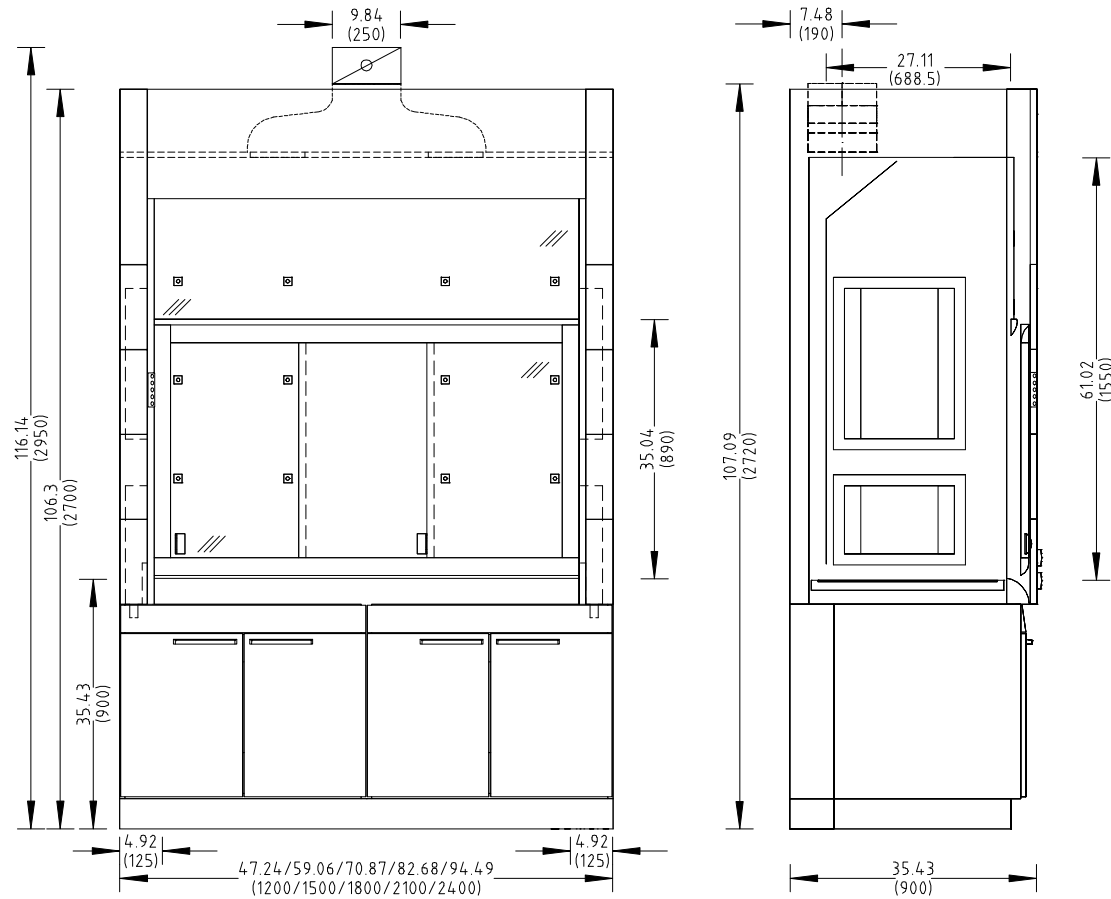
Design



Bench-mounted fume hoods with services on side walls

Secuflow bench-mounted fume hood with services on side walls

Dimensional drawing



Technical Data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Depth [in] (mm)	35.43 (900)				
Height [in] (mm)	106.3 (2700)				
Interior effective width [in] (mm)	37.4 (950)	49.21 (1250)	61.02 (1550)	72.83 (1850)	84.65 (2150)
Interior effective height [in] (mm)	61.02 (1550)				
Working height [in] (mm)	35.43 (900)				

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Without installation [lb] (kg)	approx. 705.47 (320)	approx. 859.79 (390)	approx. 992.07 (450)	approx. 1124.35 (510)	approx. 1256.62 (570)

Bench-mounted fume hoods with services on side walls

Secuflow bench-mounted fume hood with services on side walls

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Supporting structure	Self-supporting underbench units or H-frame with pushed-in underbench units				
Sash	2 horizontal sashes		3 horizontal sashes		
Side panel	Optional glazed side panel left and/or right not for service modules in the fume hood side wall Optional cable pass-through left and/or right				
Max. number of devices for scaffold points, ø 0.47 (12) up to 0.51 in (13 mm)	9	12			15
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)				
Service modules	According to requirements, service modules in the left and/or right fume hood side wall				

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panels Power outlets on the interior in the service modules
Fuse box	Optional
SC sash controller	Optional

Sanitary engineering	
Sanitary supply	Optional service module with fittings for vacuum, gas and/or water and integrated sink (PP)

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Minimum air exchange rate [cfm] ¹⁾ (m ³ /h) ¹⁾ at a face velocity of 60 FPM (0.3 m/s)	341 (580)	430 (730)	518 (880)	606 (1030)	695 (1180)
Minimum air exchange rate [cfm] ¹⁾ (m ³ /h) ¹⁾ at a face velocity of 40 FPM (0.2 m/s)	253 (430)	312 (530)	371 (630)	430 (730)	489 (830)
Exhaust 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 Ø9.84 in (250 mm)	107.09 (2720)			107.09 (2720)	
Connection height [mm] for FAZ with extract manifold 12.4 in (315 mm) ²⁾	112.20 (2850)			112.20 (2850)	
Connection height [mm] for AC with extract manifold Ø9.84 in (250 mm)	116.14 (2950)			116.14 (2950)	
Connection height [mm] for AC with extract manifold 12.4 in (315 mm) ²⁾	120.87 (3070)			120.87 (3070)	
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 18 in (457 mm) (test opening in acc. with ASHRAE 110-2005).

²⁾ In order to minimise noise and pressure losses, for air volumes >588.6 cfm (1000 m³/h) Waldner recommends using the extract manifold with a connection diameter of 12.4 in (315 mm).

³⁾ Face velocity refer to an opening height of the sash window of 18 in (457 mm).

Maximum admission pressure of 0.09 psi (600 Pa) for fume hoods with airflow dampers should not be exceeded.

The indicated air exchange rates were determined under test conditions specified in ASHRAE 110-2005. To dimension the ventilation system, these minimum air exchange rates must also be adapted.

If on-site exhaust air monitoring systems or airflow dampers are used, the required air volumes may differ.

The operating limitations must be agreed upon with Waldner.

Material/Facing	
Worktop	Stoneware Polypropylene Epoxy Stainless steel
Internal lining	Solid grade laminate Stainless steel HPL (high pressure laminate)

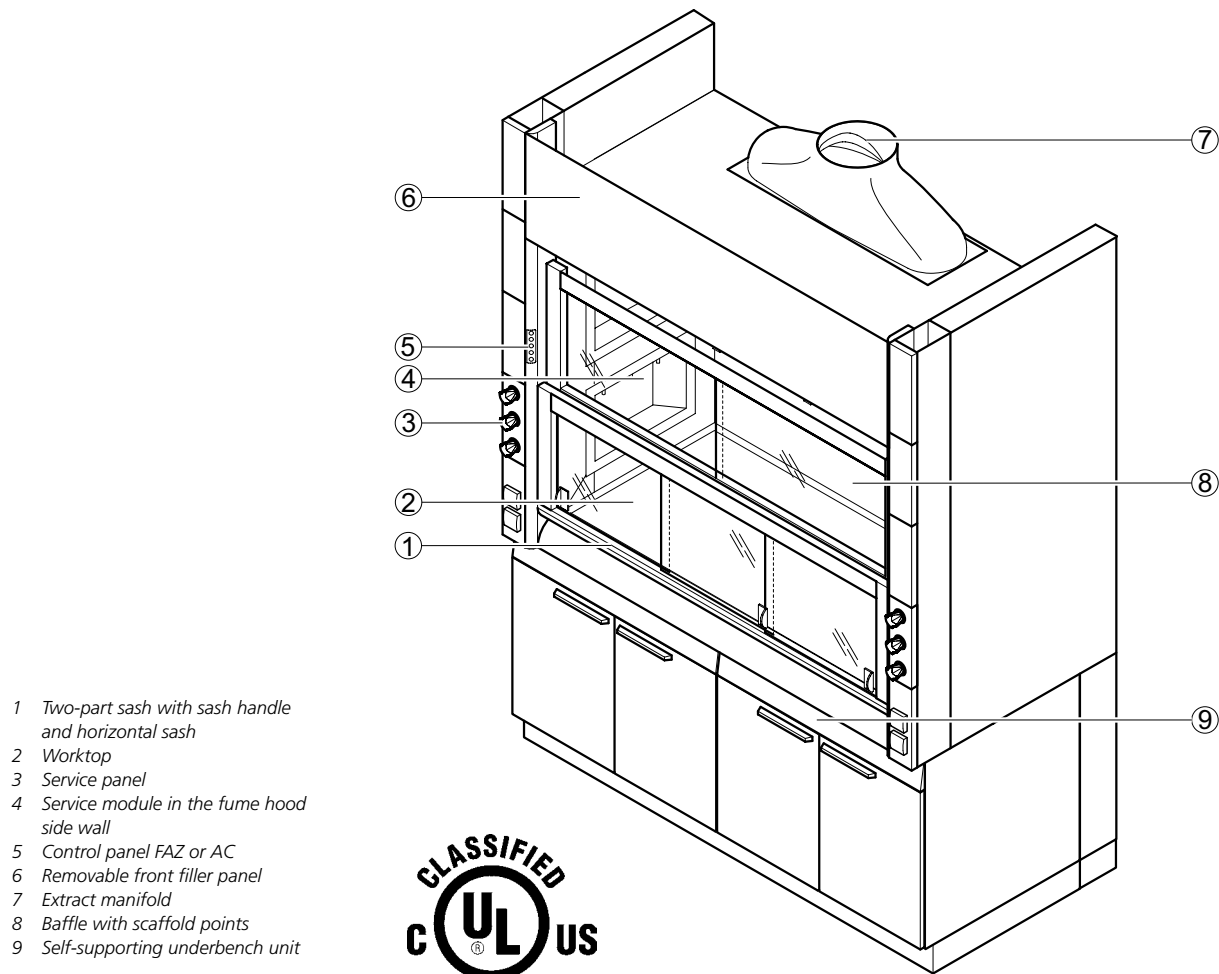
Bench-mounted fume hoods with services on side walls

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

Use

- Safety equipment for operators, tested according to EN 14175
- Extraction of fumes, aerosols and dusts from the internal workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the internal workspace
- Protection from splashes and spills of hazardous substances
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to EN 14175, are generally not suited for work with radioactive substances or for work with micro-organisms.
- Not to be used for exposed work involving chemical digestions
- Reduction of energy usage through supportive flow technology (Secuflow technology) in accordance with regulations and norms
- Service outlets in the service module of the interior workspace's side walls
- Operating controls externally at the service panels
- Suitable for spaces with low ceiling heights

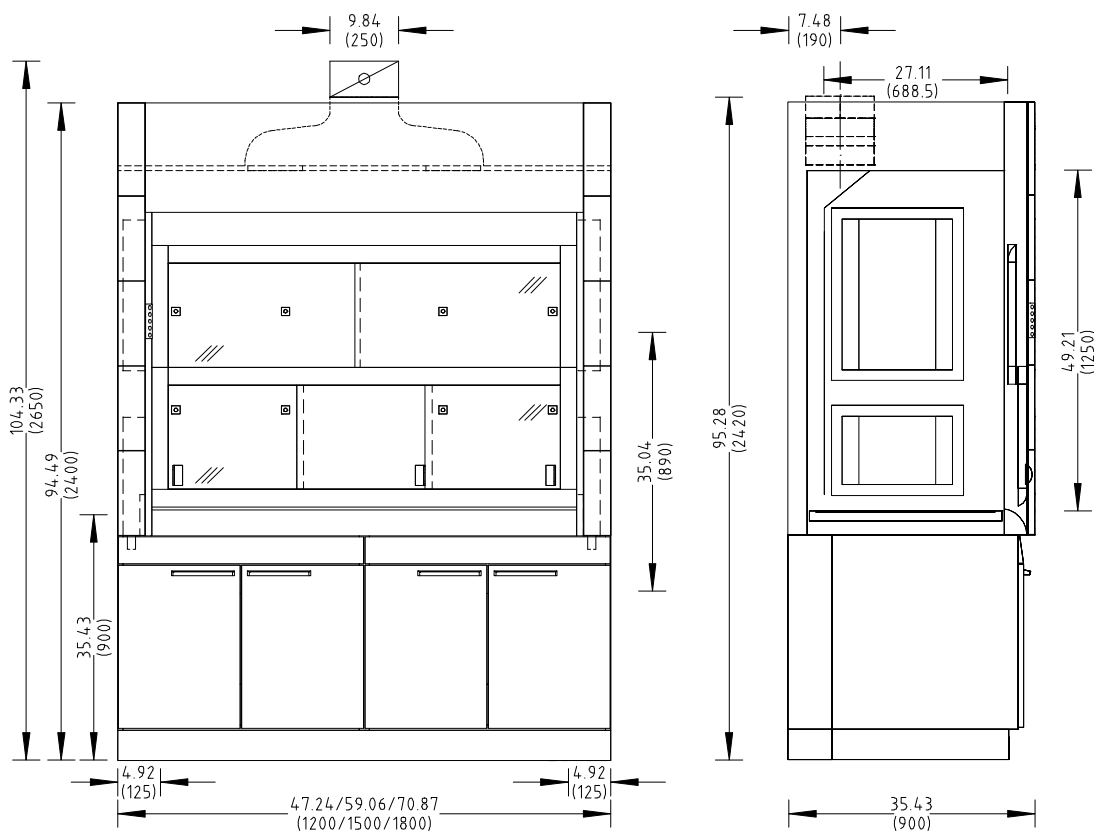
Design



Bench-mounted fume hoods with services on side walls

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

Dimensional drawing



Technical Data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [in] (mm)	35.43 (900)		
Height [in] (mm)	94.49 (2400)		
Interior effective width [in] (mm)	37.4 (950)	49.21 (1250)	61.02 (1550)
Interior effective height [in] (mm)	49.21 (1250)		
Working height [in] (mm)	35.43 (900)		

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)
Without installation [lb] (kg)	approx. 485.01 (220)	approx. 573.2 (260)	approx. 661.38 (300)

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)
Supporting structure	Self-supporting underbench units or H-frame with pushed-in underbench units		
Two-part sash	2 horizontal sashes		3 horizontal sashes
Side panel	Optional glazed side panel left and/or right, not for service panels in the fume hood side wall, not for stoneware internal lining Optional cable pass-through left and/or right, not for stoneware internal lining		
Max. number of devices for scaffold points, ø 0.47 (12) up to 0.51 in (13 mm)	6	9	
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)		
Service modules	According to requirements, service modules in the left and/or right fume hood side wall		

Bench-mounted fume hoods with services on side walls

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

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panels Power outlets on the interior in the service modules
Fuse box	Optional
SC sash controller	Optional

Sanitary engineering	
Sanitary supply	Optional service module with fittings for vacuum, gas and/or water and integrated sink (PP)

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Minimum air exchange rate [cfm] ¹⁾ (m³/h) ¹⁾ at a face velocity of 60 FPM (0.3 m/s)	341 (580)	430 (730)	518 (880)	606 (1030)	695 (1180)
Minimum air exchange rate [cfm] ¹⁾ (m³/h) ¹⁾ at a face velocity of 40 FPM (0.2 m/s)	253 (430)	312 (530)	371 (630)	430 (730)	489 (830)
Exhaust 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 Ø9.84 in (250 mm)	95.28 (2420)			107.09 (2720)	
Connection height [mm] for FAZ with extract manifold 12.4 in (315 mm) ²⁾	100.39 (2550)			112.20 (2850)	
Connection height [mm] for AC with extract manifold Ø9.84 in (250 mm)	104.33 (2650)			116.14 (2950)	
Connection height [mm] for AC with extract manifold 12.4 in (315 mm) ²⁾	109.05 (2770)			120.87 (3070)	
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 18 in (457 mm) (test opening in acc. with ASHRAE 110-2005).

²⁾ In order to minimise noise and pressure losses, for air volumes >588.6 cfm (1000 m³/h) Waldner recommends using the extract manifold with a connection diameter of 12.4 in (315 mm).

³⁾ Face velocity refer to an opening height of the sash window of 18 in (457 mm).

Maximum admission pressure of 0.09 psi (600 Pa) for fume hoods with airflow dampers should not be exceeded.

The indicated air exchange rates were determined under test conditions specified in ASHRAE 110-2005. To dimension the ventilation system, these minimum air exchange rates must also be adapted.

If on-site exhaust air monitoring systems or airflow dampers are used, the required air volumes may differ.

The operating limitations must be agreed upon with Waldner.

Material	
Worktop	Stoneware Polypropylene Epoxy Stainless steel
Internal lining	Solid grade laminate Stainless steel HPL (high pressure laminate)

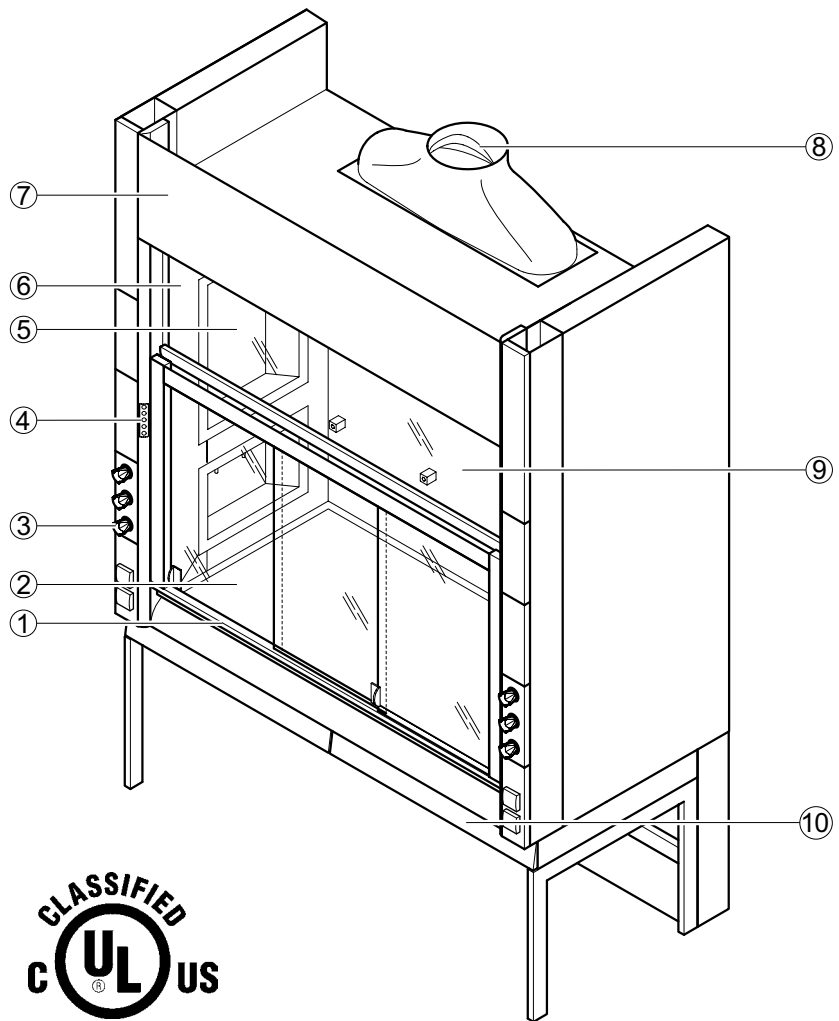
Bench-mounted fume hoods with services on side walls

Sitting height fume hood with services on side walls

Use

- Safety equipment for operators, tested according to EN 14175
- Extraction of fumes, aerosols and dusts from the internal workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the internal workspace
- Protection from splashes and spills of hazardous substances
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to EN 14175, are generally not suited for work with radioactive substances or for work with micro-organisms.
- Not to be used for exposed work involving chemical digestions
- Adapted for usage while sitting
- Service outlets in the service module of the interior workspace's side walls
- Operating controls externally at the service panels

Design



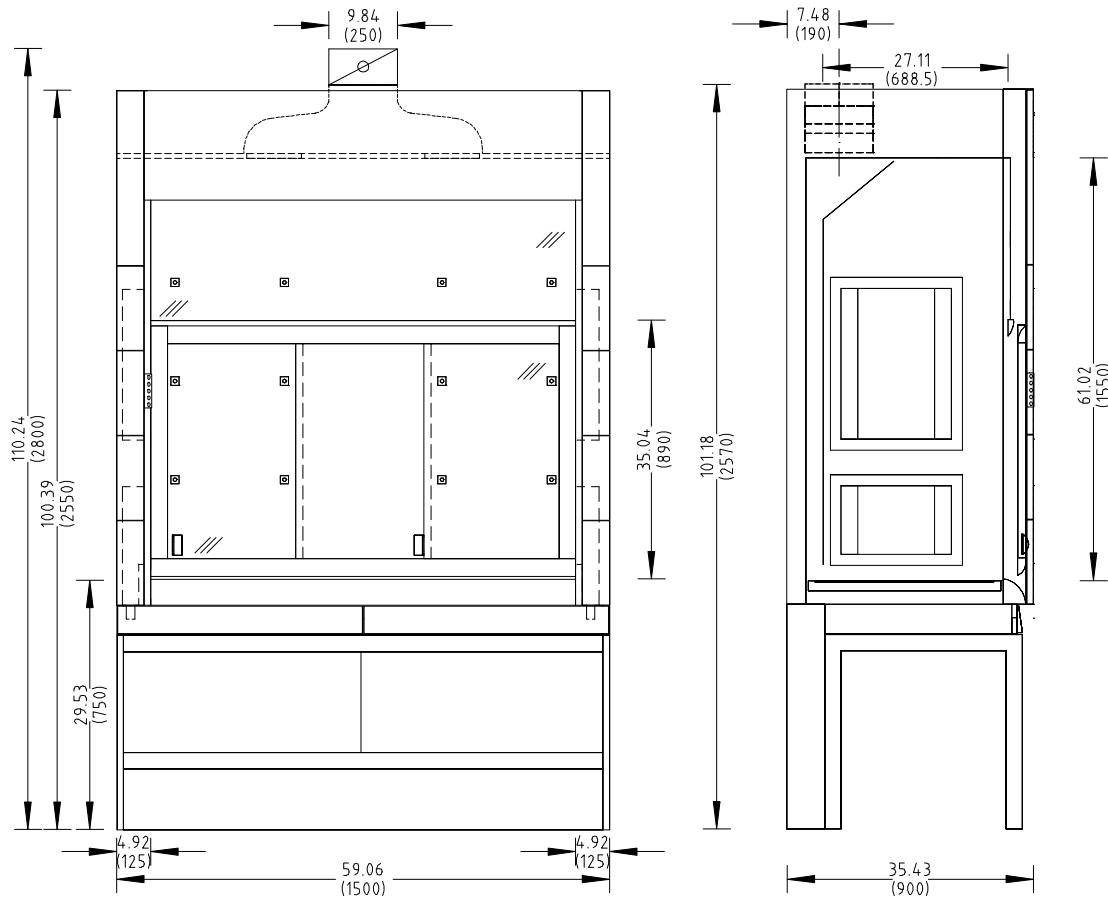
- 1 Sash with sash handle and horizontal sash
- 2 Worktop
- 3 Service panel
- 4 Control panel FAZ or AC
- 5 Service module in the fume hood side wall
- 6 Upper sash window
- 7 Removable front filler panel
- 8 Extract manifold
- 9 Baffle with scaffold points
- 10 Support frame optional with pushed-in underbench units



Bench-mounted fume hoods with services on side walls

Sitting height fume hood with services on side walls

Dimensional drawing



Technical Data

Dimensions	
Width [in] (mm)	59.06 (1500)
Depth [in] (mm)	35.43 (900)
Height [in] (mm)	100.39 (2550)
Interior effective width [in] (mm)	49.21 (1250)
Interior effective height [in] (mm)	61.02 (1550)
Working height [in] (mm)	29.53 (750)
Weight	
Without installation [lb] (kg)	approx. 859.79 (390)

Bench-mounted fume hoods with services on side walls

Sitting height fume hood with services on side walls

Relevant features	
Supporting structure	H-frame
Sash	2 horizontal sashes
Side panel	Optional glazed side panel left and/or right not for service modules in the fume hood side wall Optional cable pass-through left and/or right
Max. number of devices for scaffold points, ø 0.47 (12) to 0.51 in (13 mm)	12
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)
Service modules	According to requirements, service modules in the left and/or right fume hood side wall

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panels Power outlets on the interior in the service modules
Fuse box	Optional
SC sash controller	Optional

Sanitary engineering	
Sanitary supply	Optional service module with fittings for vacuum, gas and/or water and integrated sink (PP)

Ventilation engineering	
Minimum volume flow [cfm] (m^3/h) ¹⁾	312 (530)
Extract function display	FAZ
Flow regulator, constant	Airflow controller AC
Flow regulator, variable	Airflow controller AC
Detector of horizontal sash position	Only variable with airflow controller AC
Connection point level [in] (mm) for FAZ with extract manifold Ø 9.84 in (250 mm)	101.18 (2570)
Connection point level [in] (mm) for FAZ with extract manifold Ø 12.4 in (315 mm) ²⁾	106.30 (2700)
Connection point level [in] (mm) for AC with extract manifold Ø 9.84 in (250 mm)	110.24 (2800)
Connection point level [in] (mm) for AC with extract manifold Ø 12.4 in (315 mm) ²⁾	114.96 (2920)
Underbench exhaust extraction	Optional according to requirements and specifications

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) and the recommended tracer gas maximum value from BG Chemie

²⁾ In order to minimize noise and pressure leakage, Waldner recommends, for air volumes of >588.6 cfm (1000 m^3/h) an extract manifold with diameter 12.4 in (315 mm).

With the sash in the closed position the minimum volume flow can be reduced to 120 cfm (203.9 m^3/h) when utilizing the Waldner AC3 airflow controller or a conventional VAV system.

For Waldner airflow dampers, a maximum pressure of 0.087 psi (600 Pa) must not be exceeded.

The listed volume flows are according to DIN EN 14175 minimum volume flows for operation of fume hoods. It is therefore disadvised to use these values as a model for the ventilation system.

Air volume may differ when using on-site extract air control systems and other products. Operating limitations must be verified by Waldner before usage.

Material	
Worktop	Stoneware Polypropylene Epoxy Stainless steel
Internal lining	Solid grade laminate Stainless steel HPL (high pressure laminate)

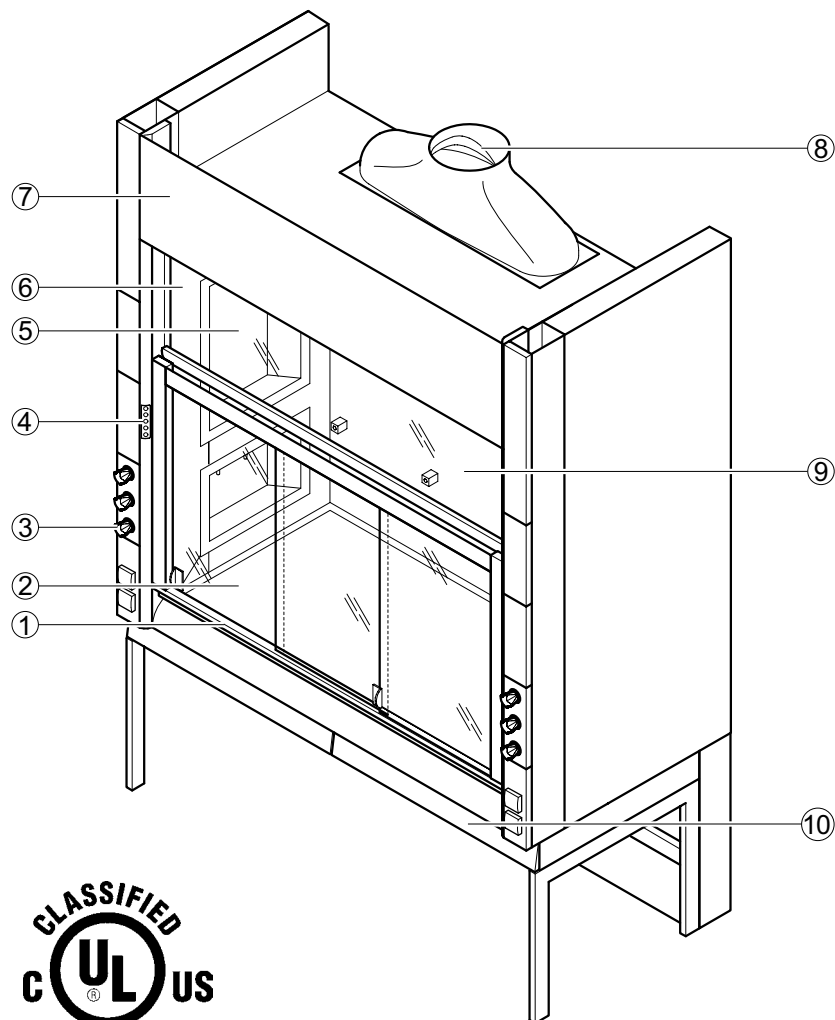
Bench-mounted fume hoods with services on side walls

Secuflow sitting height fume hood with services on side walls

Use

- Safety equipment for operators, tested according to EN 14175
- Extraction of fumes, aerosols and dusts from the internal workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the internal workspace
- Protection from splashes and spills of hazardous substances
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to EN 14175, are generally not suited for work with radioactive substances or for work with micro-organisms.
- Not to be used for exposed work involving chemical digestions
- Adapted for usage while sitting
- Reduction of energy usage through supportive flow technology (Secuflow technology) in accordance with regulations and norms
- Service outlets in the service module of the interior workspace's side walls
- Operating controls externally at the service panels

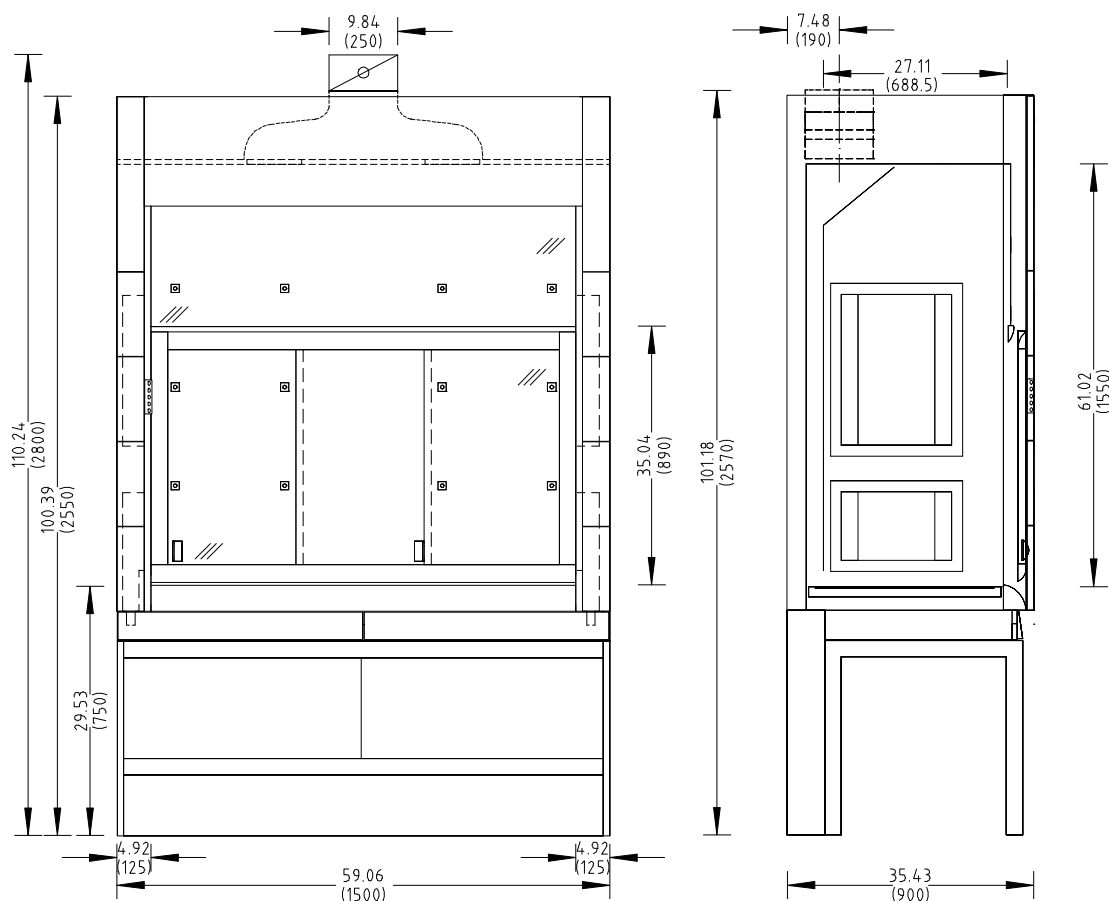
Design



Bench-mounted fume hoods with services on side walls

Secuflow sitting height fume hood with services on side walls

Dimensional drawing



Technical Data

Dimensions	
Width [in] (mm)	59.06 (1500)
Depth [in] (mm)	35.43 (900)
Height [in] (mm)	100.39 (2550)
Interior effective width [in] (mm)	49.21 (1250)
Interior effective height [in] (mm)	61.02 (1550)
Working height [in] (mm)	29.53 (750)
Weight	
Without installation [lb] (kg)	approx. 859.79 (390)
Relevant features	
Supporting structure	H-frame
Sash	2 horizontal sashes
Side panel	Optional glazed side panel left and/or right not for service modules in the fume hood side wall Optional cable pass-through left and/or right

Bench-mounted fume hoods with services on side walls

Secuflow sitting height fume hood with services on side walls

Relevant features	
Max. number of devices for scaffold points, $\varnothing$ 0.47 (12) to 0.51 in (13 mm)	12
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)
Service modules	According to requirements, service modules in the left and/or right fume hood side wall

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panels Power outlets on the interior in the service modules
Fuse box	Optional
SC sash controller	Optional

Sanitary engineering	
Sanitary supply	Optional service module with fittings for vacuum, gas and/or water and integrated sink (PP)

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Minimum air exchange rate [cfm] ¹⁾ (m³/h) ¹⁾ at a face velocity of 60 FPM (0.3 m/s)	341 (580)	430 (730)	518 (880)	606 (1030)	695 (1180)
Minimum air exchange rate [cfm] ¹⁾ (m³/h) ¹⁾ at a face velocity of 40 FPM (0.2 m/s)	253 (430)	312 (530)	371 (630)	430 (730)	489 (830)
Exhaust 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 Ø9.84 in (250 mm)	101.18 (2570)			107.09 (2720)	
Connection height [mm] for FAZ with extract manifold 12.4 in (315 mm) ²⁾	106.30 (2700)			112.20 (2850)	
Connection height [mm] for AC with extract manifold Ø9.84 in (250 mm)	11110.24 (2800)			116.14 (2950)	
Connection height [mm] for AC with extract manifold 12.4 in (315 mm) ²⁾	114.96 (2920)			120.87 (3070)	
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 18 in (457 mm) (test opening in acc. with ASHRAE 110-2005).

²⁾ In order to minimise noise and pressure losses, for air volumes >588.6 cfm (1000 m³/h) Waldner recommends using the extract manifold with a connection diameter of 12.4 in (315 mm).

³⁾ Face velocity refer to an opening height of the sash window of 18 in (457 mm).

Maximum admission pressure of 0.09 psi (600 Pa) for fume hoods with airflow dampers should not be exceeded.

The indicated air exchange rates were determined under test conditions specified in ASHRAE 110-2005. To dimension the ventilation system, these minimum air exchange rates must also be adapted.

If on-site exhaust air monitoring systems or airflow dampers are used, the required air volumes may differ.

The operating limitations must be agreed upon with Waldner.

Material/Facing	
Worktop	Stoneware Polypropylene Epoxy Stainless steel
Internal lining	Solid grade laminate Stainless steel HPL (high pressure laminate)

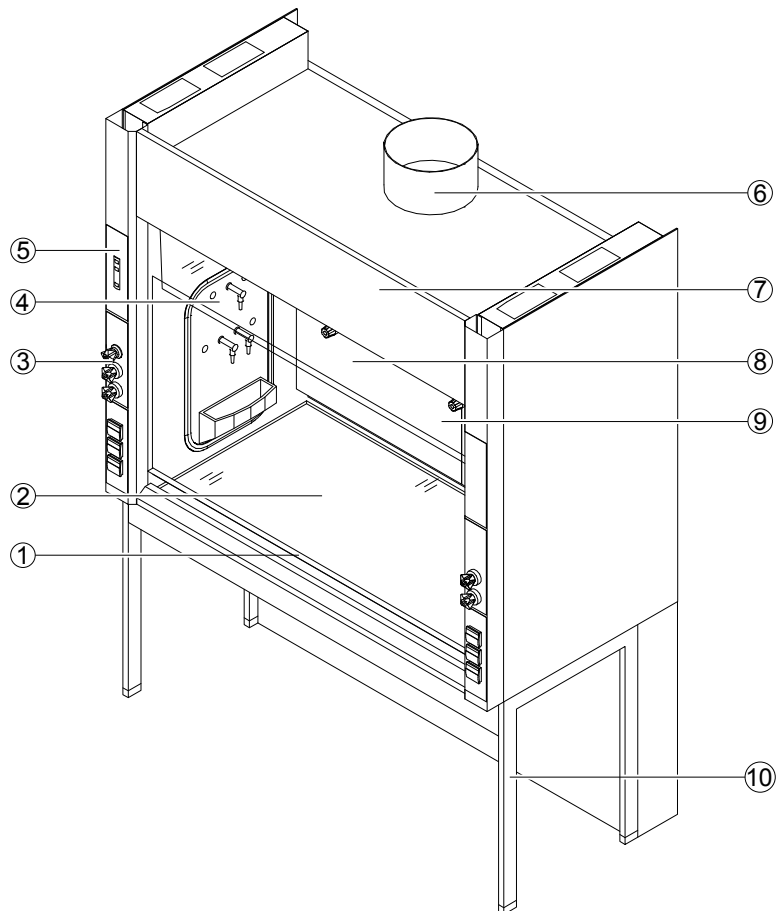
Bench-mounted fume hoods with services on side walls

Bench-mounted fume hood with services on side walls made of stainless steel - SI 3 steel

Use

- Safety equipment for operators, tested according to EN 14175 and ASHRAE 110-2005
- Extraction of fumes, aerosols and dusts from the interior workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the interior workspace
- Protection against dangerous substances
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to EN 14175 and ASHRAE 110-2005, are generally not suited for work with radioactive substances or for work with micro-organisms.
- Not to be used for exposed work involving chemical breakdowns
- Service outlets in the side wall of the internal workspace
- Operating controls externally at the service panels

Design

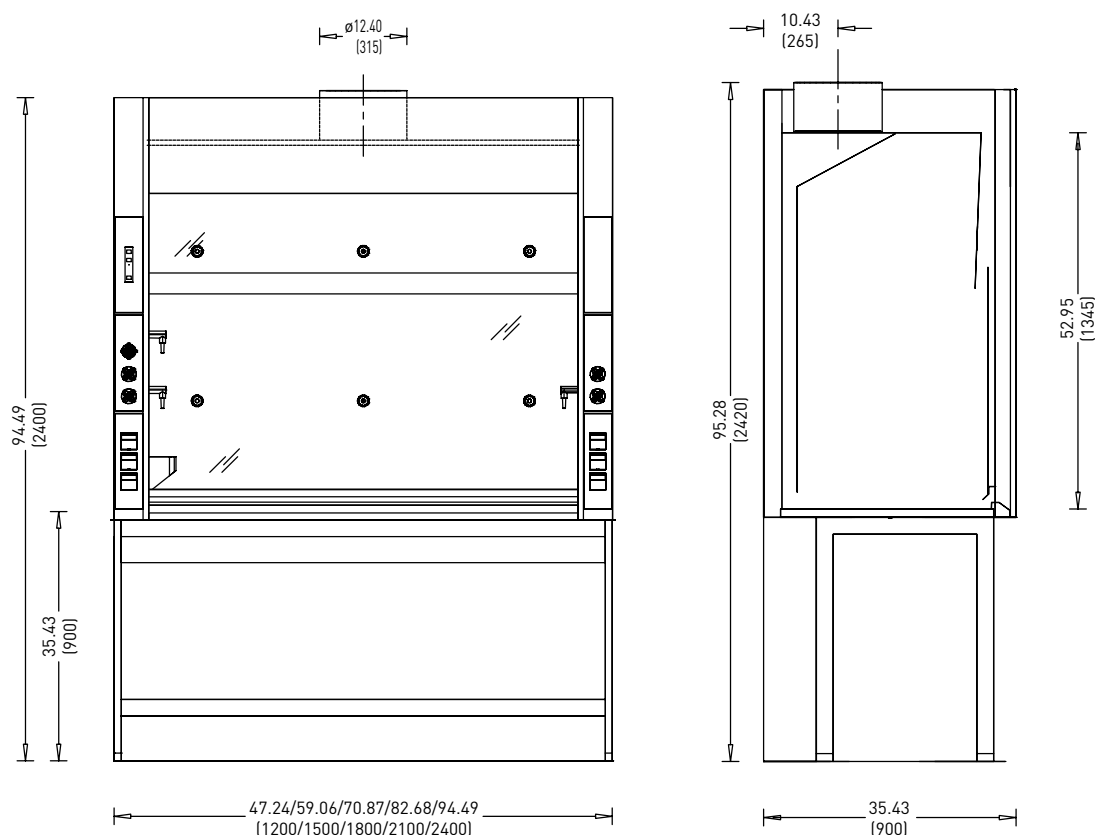


- 1 Sash with handle
- 2 Work top
- 3 Service panel
- 4 Side panel in fume hood wall
- 5 FAZ operating field
- 6 Extract air spigot
- 7 Removable front filler panel
- 8 Upper sash window
- 9 Baffle with scaffold points
- 10 Support frame

Bench-mounted fume hoods with services on side walls

Bench-mounted fume hood with services on side walls made of stainless steel - SI 3 steel

Dimensional drawing



Technical data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Depth [in] (mm)	35.43 (900)				
Height [in] (mm)	94.49 (2400)				
Interior effective width [in] (mm)	37.01 (940)	48.82 (1240)	60.63 (1540)	72.44 (1840)	84.25 (2140)
Interior effective height [in] (mm)	52.95 (1345)				
Working height [in] (mm)	35.43 (900)				

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Without installation [lb] (kg)	approx. 485.10 (approx. 220)	approx. 639.45 (approx. 290)	approx. 771.75 (approx. 350)	approx. 904.05 (approx. 410)	approx. 1036.35 (approx. 470)

Bench-mounted fume hoods with services on side walls

Bench-mounted fume hood with services on side walls made of stainless steel - SI 3 steel

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Supporting structure	H-frame with pushed-in underbench units				
Sash	One piece				
Number of devices for scaffold points, $\varnothing$ 0.47 to 0.51 inch (12 to 13 mm)	6	6	6	8	10

Electrical engineering	
Electrical supply	Power outlets only in the service panel
Fuse box	Optional

Sanitary engineering	
Sanitary supply	Optional: Fittings for vacuum, gas and/or water and integrated sink (PP) in side panel

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
EN 14175 Minimum volume flow [cfm] ¹⁾ (m ³ /h) ¹⁾	223.67 (380)	270.76 (460)	294.30 (500)	382.59 (650)	441.45 (750)
ASHRAE with 60 fpm (0.3 m/s) [cfm] ²⁾ (m ³ /h) ²⁾	276.64 (470)	364.93 (620)	453.22 (770)	535.63 (910)	623.92 (1060)
ASHRAE with 100 fpm (0.5 m/s) [cfm] ³⁾ (m ³ /h) ³⁾	459.11 (780)	606.26 (1030)	765.18 (1300)	894.67 (1520)	1041.82 (1770)
Function display	FAZ / Controller by others				
Connection point level [in] for FAZ with extract air spigot $\varnothing$ 12.40 inch (315 mm)	95.28 (2420)				
Underbench exhaust extraction	Optional according to requirements and specifications				

¹⁾ Air volume specifications refer to sash window opening height of 19.69 inch (500 mm) (test opening according to EN 14175) and the recommended tracer gas maximum value from BG Chemie.

²⁾ Air volume specifications refer to the model evaluation test according to ASHRAE 110-2005 with an inflow rate of 60 fpm (0.3 m/s).

³⁾ Air volume specifications refer to the model evaluation test according to ASHRAE 110-2005 with an inflow rate of 100 fpm (0.5 m/s).

The listed minimum volume flows were determined according to EN 14175-3 and ASHRAE 110-2005 under defined test conditions. These minimum volume flows must be matched for the design of the ventilation system.

The required air volumes may differ when using on-site exhaust air control systems or airflow dampers. Operating limitations must be verified by Waldner.

Material/Facing	
Work top	Epoxy
Internal lining	Polyresin Solid grade laminate

Floor-mounted fume hoods

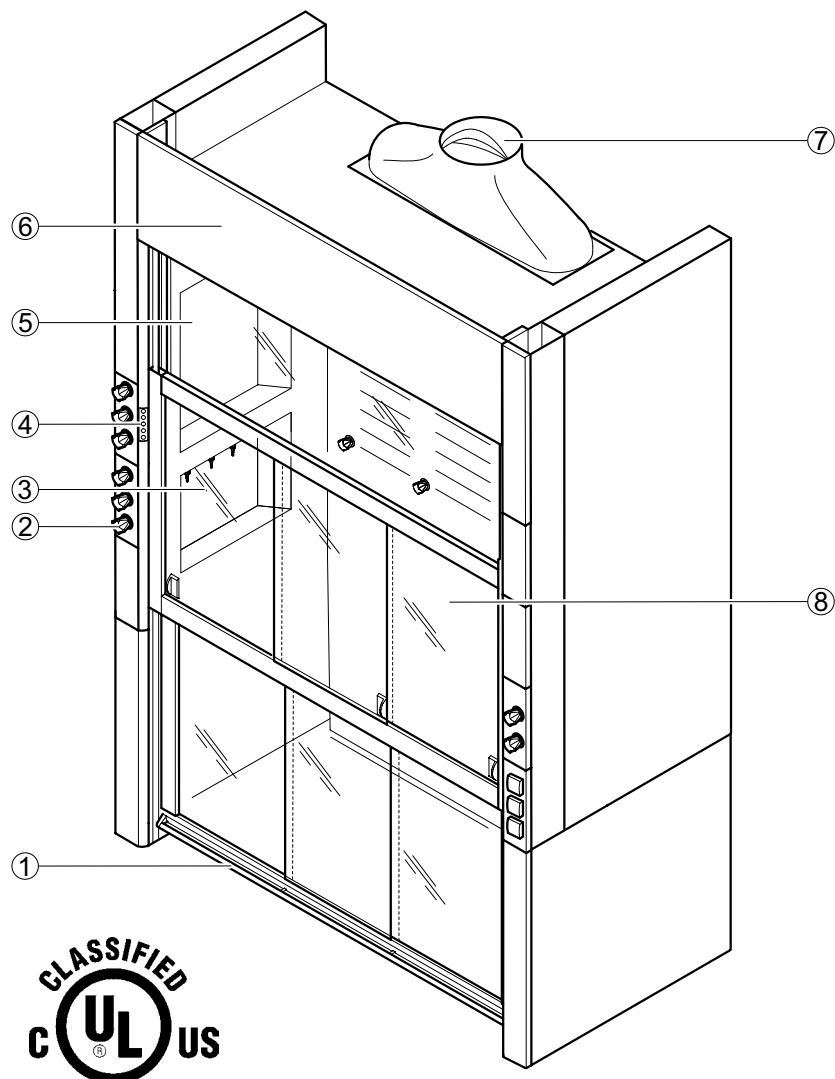
Floor-mounted fume hood with services on side walls

Use

- Safety equipment for operators, tested according to EN 14175
- Extraction of fumes, aerosols and dusts from the internal workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the internal workspace
- Protection from splashes and spills of hazardous substances
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to EN 14175, are generally not suited for work with radioactive substances or for work with micro-organisms.
- Not to be used for exposed work involving chemical digestions
- Suitable for barrier-free entering of the internal workspace
- Service outlets in the service module of the interior workspace's side walls
- Operating controls externally at the service panels
- Suitable for high experimental setups

Design

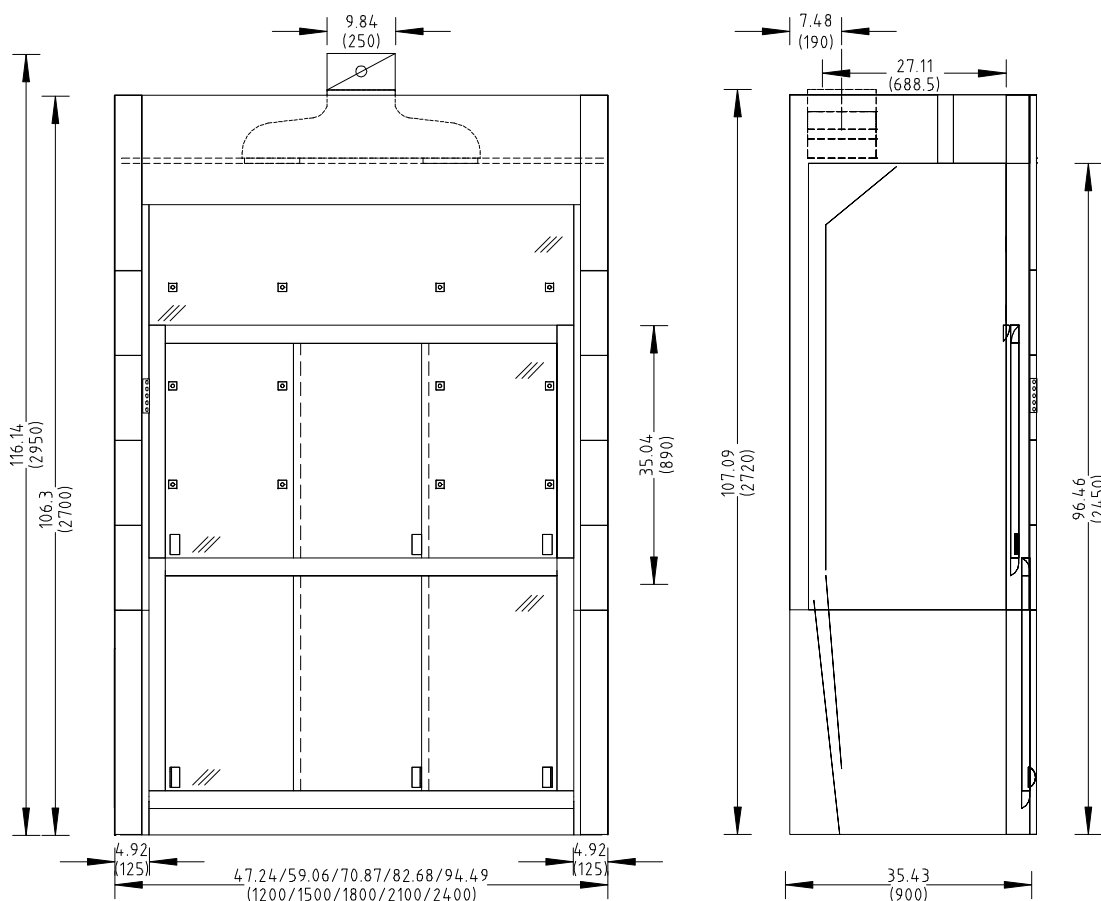
- 1 Sash with sash handle and horizontal sash
- 2 Service panel
- 3 Service module in the fume hood side wall
- 4 Control panel FAZ or AC
- 5 Upper sash window
- 6 Removable front filler panel
- 7 Extract manifold
- 8 Baffle with scaffold points



Floor-mounted fume hoods

Floor-mounted fume hood with services on side walls

Dimensional drawing



Technical Data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Depth [in] (mm)	35.43 (900)				
Height [in] (mm)	106.3 (2700)				
Interior effective width [in] (mm)	37.4 (950)	49.21 (1250)	61.02 (1550)	72.83 (1850)	84.65 (2150)
Interior effective height [in] (mm)	96.46 (2450)				
Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Without installation [lb] (kg)	approx. 705.47 (320)	approx. 859.79 (390)	approx. 992.07 (450)	approx. 1124.35 (510)	approx. 1256.62 (570)

Floor-mounted Fume hoods

Floor-mounted fume hood with services on side walls

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Two-part sash	Each with 2 horizontal sashes at the top and bottom		Each with 3 horizontal sashes at the top and bottom		
Side panel	Optional glazed side panel left and/or right not for service modules in the fume hood side wall Optional cable pass-through left and/or right				
Max. number of devices for scaffold points, ø 0.47 (12) to 0.51 in (13 mm)	9	12			15
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)				
Service modules	According to requirements, service modules in the left and/or right fume hood side wall				

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panels Power outlets on the interior in the service modules
Fuse box	Optional
SC sash controller	Optional

Sanitary engineering	
Sanitary supply	Optional service module with fittings for vacuum, gas and/or water and integrated sink (PP)

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Minimum volume flow [cfm] (m^3/h) ¹⁾	423.8 (720)	529.7 (900)	635.7 (1080)	741.6 (1260)	847.6 (1440)
Extract air function display	FAZ				
Flow regulator, constant	Airflow controller AC				
Flow regulator, variable	Airflow controller AC				
Detector of horizontal sash position	Only variable with airflow controller AC				
Connection point level [in] (mm) for FAZ with extract manifold $\varnothing$ 9.84 in (250 mm)	107.09 (2720)				
Connection point level [in] (mm) for FAZ with extract manifold $\varnothing$ 12.4 in (315 mm) ²⁾	112.20 (2850)				
Connection point level [in] (mm) for AC with extract manifold $\varnothing$ 9.84 in (250 mm)	116.14 (2950)				
Connection point level [in] (mm) for AC with extract manifold $\varnothing$ 12.4 in (315 mm) ²⁾	120.87 (3070)				

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) and the recommended tracer gas maximum value from BG Chemie

²⁾ In order to minimize noise and pressure leakage, Waldner recommends, for air volumes of >588.6 cfm (1000 m^3/h) an extract manifold with diameter 12.4 in (315 mm).

With the sash in the closed position the minimum volume flow can be reduced to 120 cfm (203.9 m^3/h) when utilizing the Waldner AC3 airflow controller or a conventional VAV system.

For Waldner airflow dampers, a maximum pressure of 0.087 psi (600 Pa) must not be exceeded.

The listed volume flows are minimum volume flows for operation of the fume hoods. It is therefore disadvised to use these values as a model for the ventilation system.

Air volume may differ when using on-site extract air control systems and other products. Operating limitations must be verified by Waldner before usage.

Material	
Internal lining	Solid grade laminate Stainless steel HPL (high pressure laminate)

Low level fume hoods

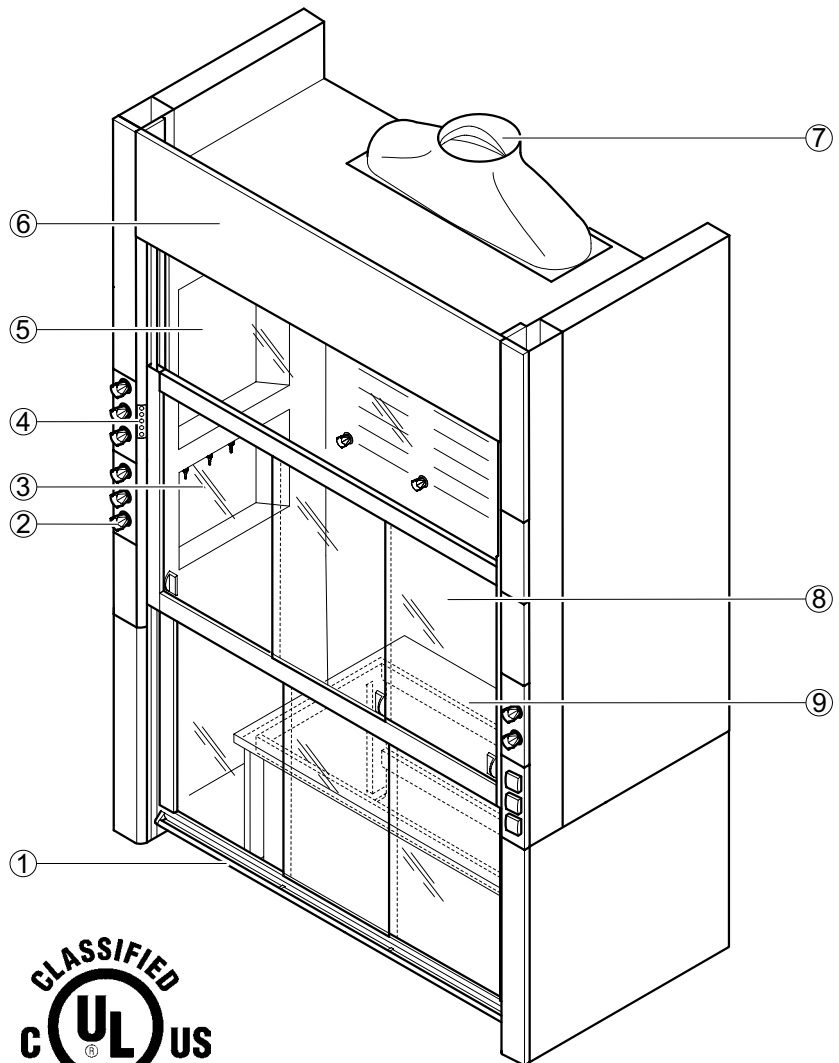
Low level fume hood with services on side walls

Use

- Safety equipment for operators, tested according to EN 14175
- Extraction of fumes, aerosols and dusts from the internal workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the internal workspace
- Protection from splashes and spills of hazardous substances
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to EN 14175, are generally not suited for work with radioactive substances or for work with micro-organisms.
- Not to be used for exposed work involving chemical digestions
- Adapted for test set-ups on an add-on table
- Service outlets in the service module of the interior workspace's side walls
- Operating controls externally at the service panels

Design

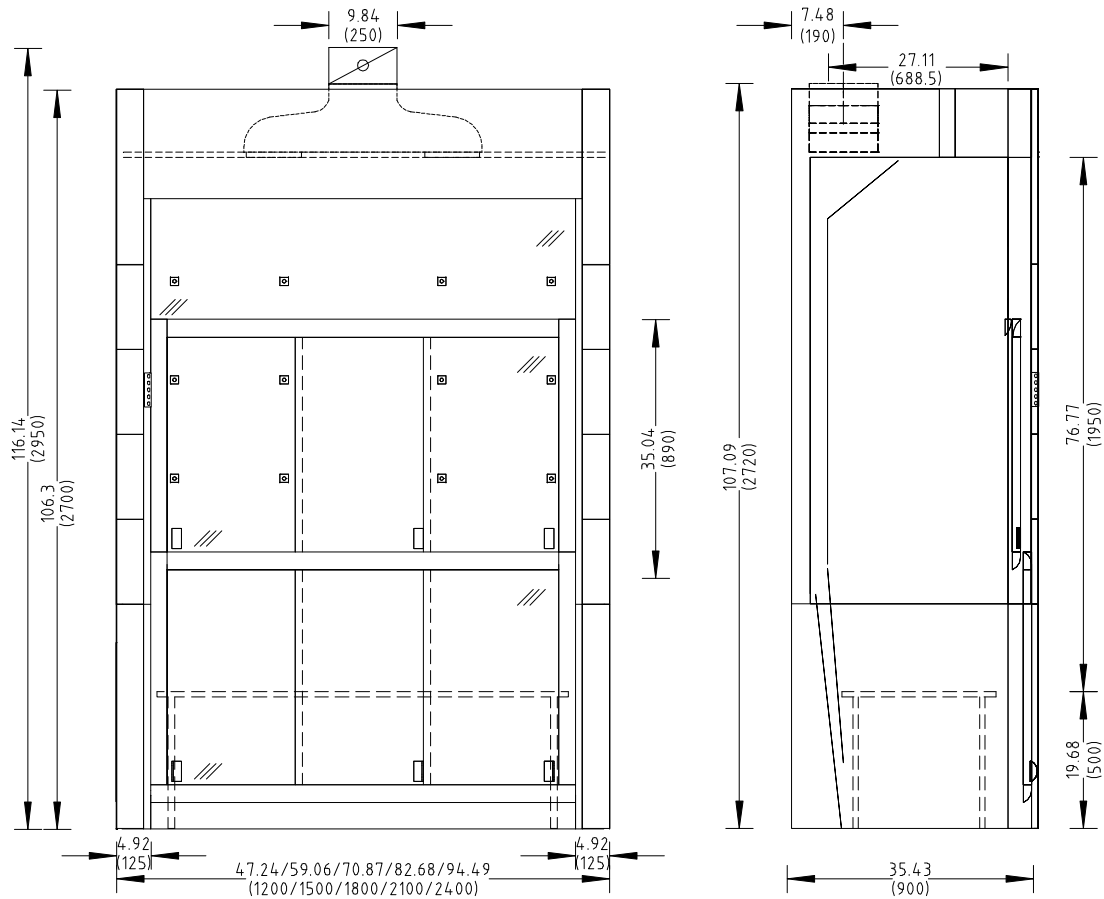
- 1 Sash with sash handle and horizontal sash
- 2 Service panel
- 3 Service module in the fume hood side wall
- 4 Control panel FAZ or AC
- 5 Upper sash window
- 6 Removable front filler panel
- 7 Extract manifold
- 8 Baffle with scaffold points
- 9 Add-on table



Low level fume hoods

Low level fume hood with services on side walls

Dimensional drawing



Technical Data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Width [in] (mm)	47.24(1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Depth [in] (mm)	35.43 (900)				
Height [in] (mm)	106.3 (2700)				
Interior effective width [in] (mm)	37.4 (950)	49.21 (1250)	61.02 (1550)	72.83 (1850)	84.65 (2150)
Interior effective height [in] (mm)	76.77 (1950)				
Add-on table with H-frame [in] (mm)	35.43 (900) x 23.62 (600)	47.24 (1200) x 23.62 (600)	59.06 (1500) x 23.62 (600)	70.87 (1800) x 23.62 (600)	82.68 (2100) x 23.62 (600)
Working height [in] (mm)	19.69 (500)				

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Without installation [lb] (kg)	approx. 705.47 (320)	approx. 859.79 (390)	approx. 992.07 (450)	approx. 1124.35 (510)	approx. 1256.62 (570)

Low level fume hoods

Low level fume hood with services on side walls

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Worktop	Add-on table H-frame with marine edging				
Sash	Each with 2 horizontal sashes at the top and bottom		Each with 3 horizontal sashes at the top and bottom		
Side panel	Optional glazed side panel left and/or right not for service modules in the fume hood side wall Optional cable pass-through left and/or right				
Max. number of devices for scaffold points, $\varnothing$ 0.47 (12) to 0.51 in (13 mm)	9	12			15
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)				
Service modules	According to requirements, service modules in the left and/or right fume hood side wall				

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panels Power outlets on the interior in the service modules
Fuse box	Optional
SC sash controller	Optional

Sanitary engineering	
Sanitary supply	Optional service module with fittings for vacuum, gas and/or water and integrated sink (PP)

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)	94.49 (2400)
Minimum volume flow [cfm] (m^3/h) ¹⁾	423.8 (720)	529.7 (900)	635.7 (1080)	741.6 (1260)	847.6 (1440)
Extract function display	FAZ				
Flow regulator, constant	Airflow-Controller AC				
Flow regulator, variable	Airflow-Controller AC				
Detector of horizontal sash position	Only variable with airflow controller AC				
Connection point level [in] (mm) for FAZ with extract manifold $\varnothing$ 9.84 in (250 mm)	107.09 (2720)				
Connection point level [in] (mm) for FAZ with extract manifold $\varnothing$ 12.4 in (315 mm) ²⁾	112.20 (2850)				
Connection point level [in] (mm) for AC with extract manifold $\varnothing$ 9.84 in (250 mm)	116.14 (2950)				
Connection point level [in] (mm) for AC with extract manifold $\varnothing$ 12.4 in (315 mm) ²⁾	120.87 (3070)				
Underbench exhaust extraction	Optional according to requirements and specifications				

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) and the recommended tracer gas maximum value from BG Chemie

²⁾ In order to minimize noise and pressure leakage, Waldner recommends, for air volumes of >588.6 cfm (1000 m^3/h) an extract manifold with diameter 12.4 in (315 mm).

With the sash in the closed position the minimum volume flow can be reduced to 120 cfm (203.9 m^3/h) when utilizing the Waldner AC3 airflow controller or a conventional VAV system.

For Waldner airflow dampers, a maximum pressure of 0.087 psi (600 Pa) must not be exceeded.

The listed volume flows are minimum volume flows for operation of the fume hoods. It is therefore disadvised to use these values as a model for the ventilation system.

Air volume may differ when using on-site extract air control systems and other products. Operating limitations must be verified by Waldner before usage.

Material	
H-frame add-on table with marine edging	Polypropylene Epoxy Stoneware Stainless steel
Internal lining	Solid grade laminate Stainless steel HPL (high pressure laminate)

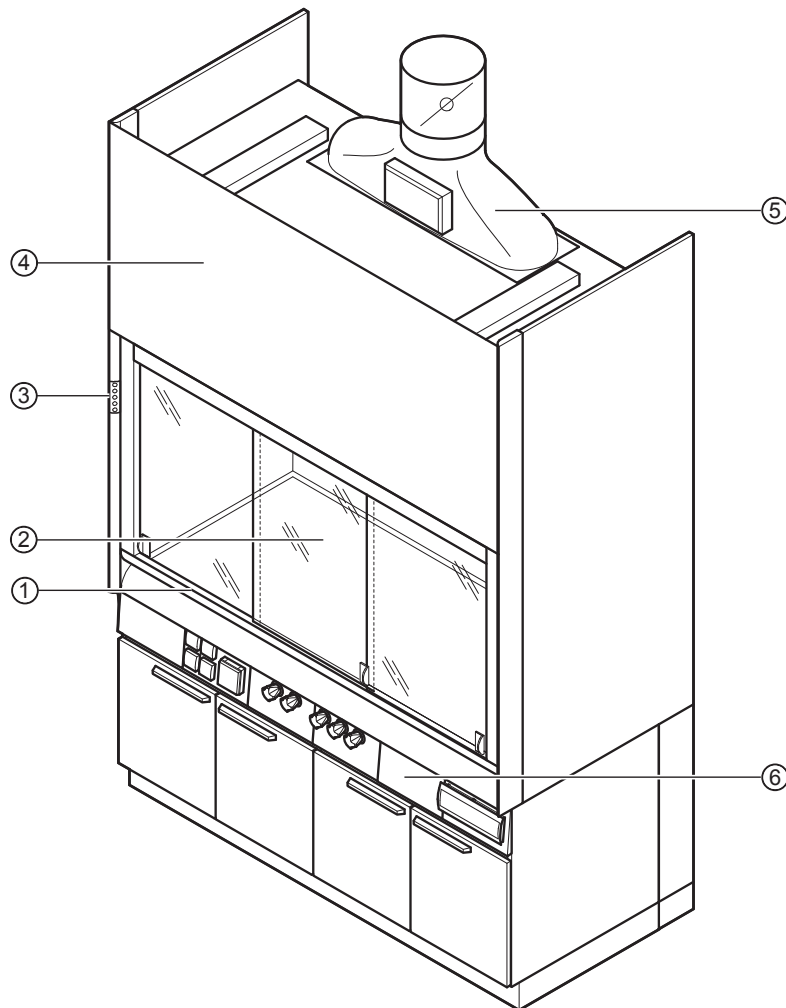
Specialized fume hoods

Secuflow EN7 fume hood for high thermal loads

Use

- For working with high thermal loads in the fume hood interior workspace (heat sources of 4 KW per meter clear width of the fume hood)
- Safety equipment for operators, tested according to DIN EN 14175-7:2012
- Extraction of fumes, aerosols and dusts from the interior workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the interior workspace
- Protection against dangerous substances
- Protection against flying debris, compounds or particles from the fume hood interior workspace
- Fume hoods built according to EN 14175 are not permitted to be used for work with radioactive substances or for work with micro-organisms
- Not to be used for exposed work involving chemical digestions
- Reduction of energy usage through supportive flow technology (Secuflow technology) in accordance with regulations and norms
- Service outlets for sanitary supply in the back wall of the interior workspace
- Control units externally at the traverse

Design

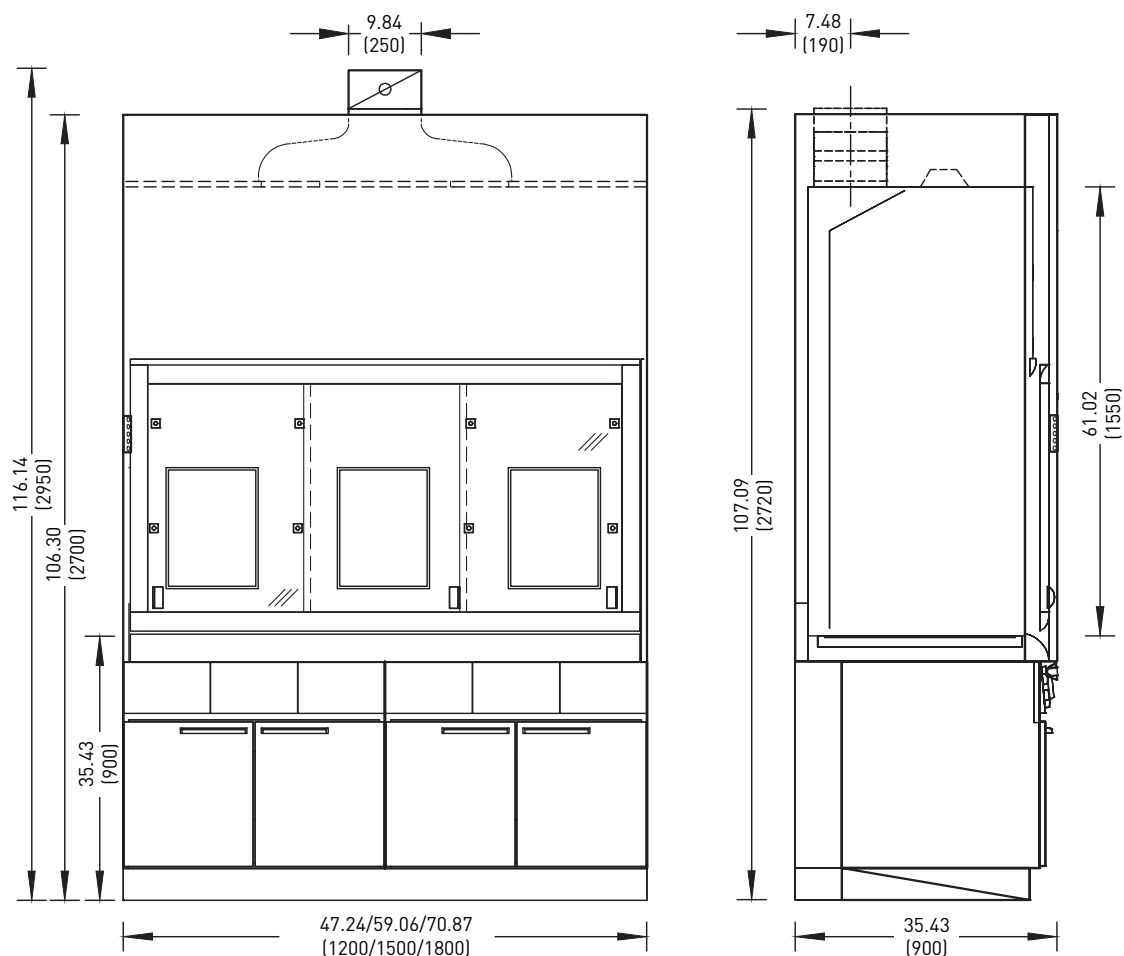


- 1 Sash with sash handle and horizontal sash
- 2 Work top
- 3 Control panel FAZ or AC
- 4 Removable front filler panel
- 5 Exhaust air manifold
- 6 Self-supporting underbench unit with traverse and service panels

Specialized fume hoods

Secuflow EN7 fume hood for high thermal loads

Dimensional drawing



Technical Data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [in] (mm)	35.43 (900)		
Height [in] (mm)	106.3 (2700)		
Interior effective width [in] (mm)	45.28 (1150)	57.09 (1450)	68.90 (1750)
Interior effective height [in] (mm)	61.02 (1550)		
Working height [in] (mm)	35.43 (900)		

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)
Without installation [lb] (kg)	approx. 551.15 (250)	approx. 661.38 (300)	approx. 771.61 (350)

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)
Supporting structure	Self-supporting underbench units or H-frame with pushed-in underbench units		
Sash	2 horizontal sashes		3 horizontal sashes
Side panel	full		

Specialized fume hoods

Secuflow EN7 fume hood for high thermal loads

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)
Max. number of devices for scaffold points, $\varnothing$ 0.47 in (12 mm) to 0.51 in (13 mm)	9		12
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)		
Service modules	2		3

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panel
Fuse box	Optional
Sash controller SC	Optional

Sanitary engineering	
Sanitary supply	Optional multiple service terminals with fittings for vacuum, gas and/or water and integrated sink (PP)

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)
Air flow rate without /with thermal load [cfm] (m^3/h) ¹⁾	264.87/412.02 (450/700)	264.87/441.45 (450/750)	317.84/529.74 (540/900)
Function display with temperature control	FAZ		
Airflow damper, constant with temperature control	Airflow controller AC		
Airflow damper, variable with temperature regulation	Airflow controller AC		
Detector of horizontal sash position	Only with variable airflow controller AC		
Connection point level [in] (mm) for FAZ with exhaust air manifold $\varnothing$ 9.84 in (250 mm)	107.09 (2720)		
Connection point level [in] (mm) for FAZ with exhaust air manifold $\varnothing$ 12.40 in (315 mm) ²⁾	111.42 (2830)		
Connection point level [in] (mm) for AC with exhaust air manifold $\varnothing$ 9.84 in (250 mm)	116.14 (2950)		
Connection point level [in] (mm) for AC with exhaust air manifold $\varnothing$ 12.40 in (315 mm) ²⁾	120.87 (3070)		
Underbench floor extraction	Optional according to requirements and specifications		

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) (Test opening according to EN 14175) and the recommended tracer gas maximum value from BG Chemie.

²⁾ In order to minimize noise and pressure leakage, Waldner recommends, for air volumes of >588.60 cfm (1000 m^3/h) an exhaust air manifold with termination diameter 12.40 in (315 mm).

A maximum pressure of 0.087 psi (600 Pa) should not be exceeded for fume hoods with airflow damper.

The listed minimum volume flows were determined according to EN 14175-3 under defined test conditions. These minimum volume flows must be adapted for the design of the ventilation system.

The required air volumes may differ when using on-site exhaust air control systems or airflow dampers. Operating limitations must be verified by Waldner.

Material/Facing	
Work top	Stoneware Polypropylene Stainless steel Epoxy
Internal lining	HPL (high pressure laminate) Solid grade laminate Stoneware

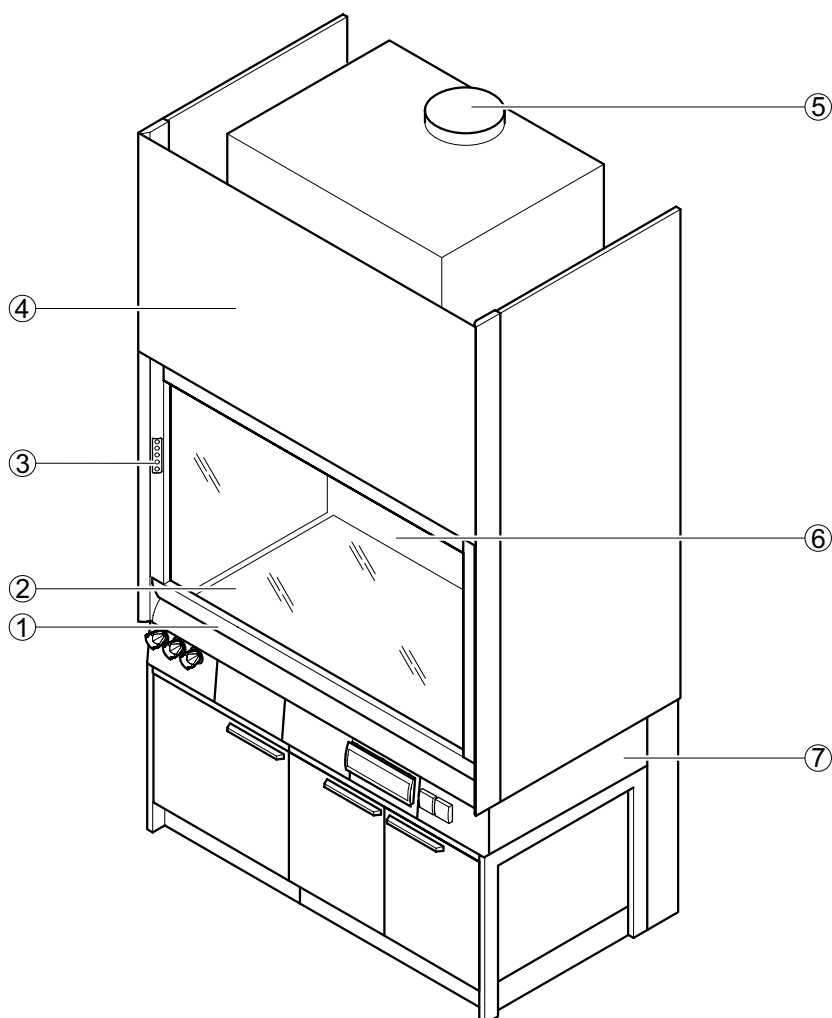
Specialized fume hoods

EN7 fume hood for high thermal loads in combination with acid hydrolysis (special application fume hood)

Use

- Safety equipment for operators, tested according to DIN EN 14175-7:2012
- Adapted for open, thermal chemical digestions with aggressive media, e.g. sulfuric acid, hydrochloric acid or aqua regia
- Structural design of the fume hood and materials of the internal lining determine the usage capabilities in terms of the type of aggressive media
- Extraction of fumes and aerosols from the interior workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the interior workspace
- Protection against dangerous substances in the internal workspace
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to DIN EN 14175-7:2012 are not permitted to be used for work with radioactive substances or for work with micro-organisms
- For working with high thermal loads in combination with acid hydrolysis in the fume hood interior workspace (heat sources of 4 KW per meter clear width of the fume hood)

Design

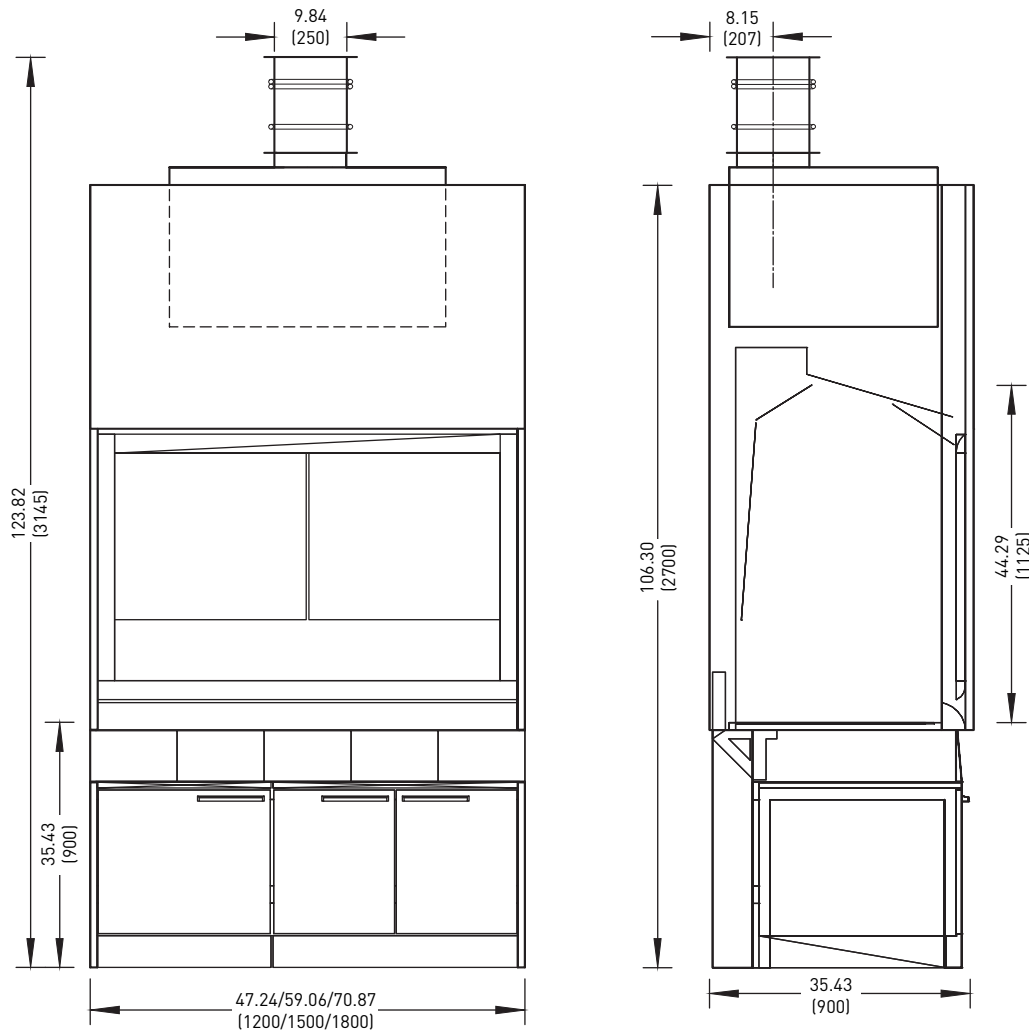


- 1 Sash with handle
- 2 Work top
- 3 Control panel FAZ or AC
- 4 Removable front filler panel
- 5 Exhaust air spigot integrated into fume scrubber (optional)
- 6 Baffle
- 7 H-frame with pushed-in under-bench unit with traverse and service panels

Specialized fume hoods

EN7 fume hood for high thermal loads in combination with acid hydrolysis (special application fume hood)

Dimensional drawing



Technical data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)
Width [mm]	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [mm]	35.43 (900)		
Height [mm]	106.3 (2700)		
Interior effective width [mm]	45.28 (1150)	57.09 (1450)	68.90 (1750)
Interior effective height [mm]	44.29 (1125)		
Working height [mm]	35.43 (900)		

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)
Without installation and fume scrubber [lb] (kg)	approx. 551.15 (250)	approx. 661.38 (300)	approx. 771.61 (350)
Fume scrubber without contents [lb] (kg)	198.45 (90) (Type C 54)		220.50 (100) (Type C 90)

Specialized fume hoods

EN7 fume hood for high thermal loads in combination with acid hydrolysis (special application fume hood)

Relevant features	
Supporting structure	Self-supporting underbench units or H-frame with pushed-in underbench units
Extract air manifold	Standard
Fume scrubber	Optional
Underbench neutralization unit	Optional

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panel
Fuse box	Optional
Sash controller SC	Optional

Sanitary engineering	
Sanitary supply	With take-off valves for vacuum, gases and/or waters and drip cup integrated in the work top as an option

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)
Minimum volume flow [cfm] (m^3/h) ¹⁾	23.26 (600)	29.35 (750)	35.43 (900)
Exhaust air manifold pressure loss with FAZ/ AC [psi] (Pa)	0.006/0.017 (45/120)	0.007/0.017 (50/120)	0.012/0.021 (85/150)
Fume hood pressure loss with fume scrubber [psi] (Pa)	0.063/0.073 (440/510)	0.082/0.092 (570/640)	0.107/0.116 (740/800)
Friatec fume scrubber type	C 54		C 90
Function display with temperature control	FAZ		
Airflow damper, constant with temperature control	Airflow controller AC		
Connection point level [in] (mm) for FAZ and AC with exhaust air spigot Ø 9.84 in (250 mm) with fume scrubber	123.82 (3145)		
Connection point level [in] (mm) for FAZ with exhaust air manifold Ø 9.84 in (250 mm) (without fume scrubber)	94.88 (2410)		
Connection point level [in] (mm) for AC with exhaust air manifold Ø 9.84 in (250 mm) (without fume scrubber)	103.94 (2640)		
Underbench floor extraction	Optional according to requirements and specifications		

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) (Test opening according to EN 14175) and the recommended tracer gas maximum value from BG Chemie.

A maximum pressure of 0.087 psi (600 Pa) should not be exceeded for fume hoods with airflow dampers.

The listed minimum volume flows were determined according to EN 14175-3 under defined test conditions. These minimum volume flows must be adapted for the design of the ventilation system.

The required air volumes may differ when using on-site exhaust air control systems or airflow dampers. Operating limitations must be verified by Waldner.

Material/Facing	
Internal lining including work top	Stoneware (for use of sulfuric acid, hydraulic acid, aqua regia)

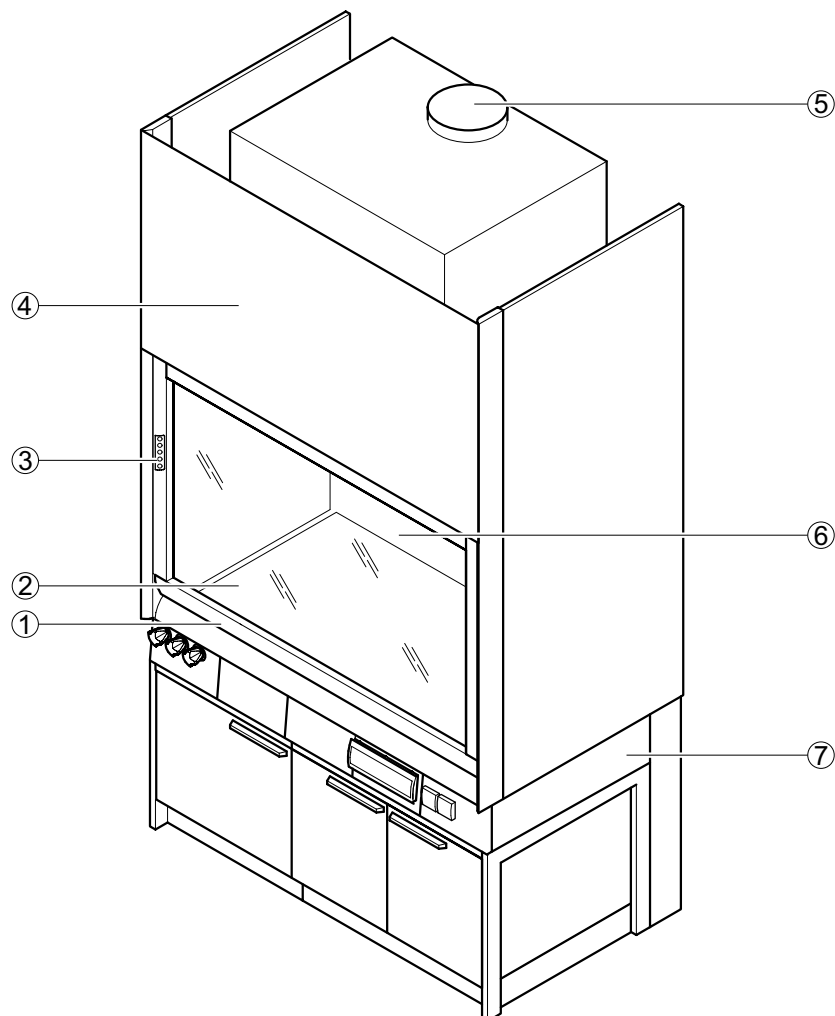
Specialized fume hoods

Perchloric acid fume hood

Use

- Safety equipment for operators, tested according to DIN EN 14175-7:2012
- Suitable for open, thermal digestion with aggressive media, especially for perchloric acid
- Structural design of the fume hood and materials of the internal lining determine the usage capabilities in terms of the type of aggressive media
- Exhaust of fumes and aerosols from the interior workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the interior workspace
- Protection against dangerous substances in the internal workspace
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to DIN EN 14175-7:2012 are not permitted to be used for work with radioactive substances or for work with micro-organisms
- For working with high thermal loads in combination with acid hydrolysis in the fume hood interior workspace (heat sources of 4 KW per meter clear width of the fume hood)

Design

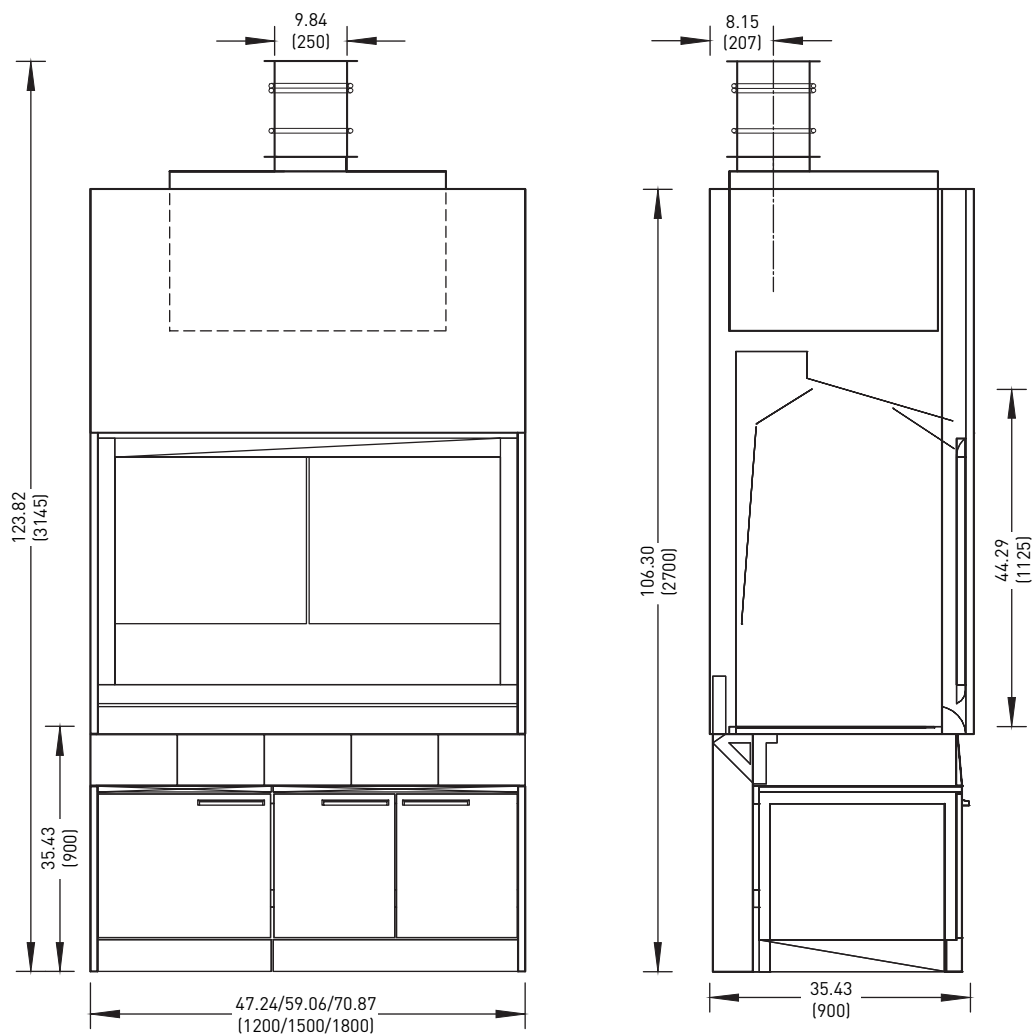


- 1 Sash with handle
- 2 Work top
- 3 Control panel FAZ or AC
- 4 Removable front filler panel
- 5 Exhaust air spigot integrated into fume scrubber (optional)
- 6 Baffle
- 7 H-frame with pushed-in under-bench unit with traverse and service panels

Specialized fume hoods

Perchloric acid fume hood

Dimensional drawing



Technical data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)
Width [mm]	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [mm]	35.43 (900)		
Height [mm]	106.3 (2700)		
Interior effective width [mm]	45.28 (1150)	57.09 (1450)	68.90 (1750)
Interior effective height [mm]	44.29 (1125)		
Working height [mm]	35.43 (900)		

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)
Without installation and fume scrubber [lb] (kg)	approx. 551.15 (250)	approx. 661.38 (300)	approx. 771.61 (350)
Fume scrubber without contents [lb] (kg)	198.45 (90) (Type C 54)		
	220.50 (100) (Type C 90)		

Specialized fume hoods

Perchloric acid fume hood

Relevant features	
Supporting structure	Self-supporting underbench units or H-frame with pushed-in underbench units
Fume scrubber	Optional
Exhaust air manifold with sprinkler	Optional (only for perchloric acid fume hoods)
Underbench neutralization unit	Optional

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panel
Fuse box	Optional
Sash controller SC	Optional

Sanitary engineering	
Sanitary supply	With take-off valves for vacuum, gases and/or waters and drip cup integrated in the work top as an option

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)
Minimum volume flow [cfm] (m^3/h) ¹⁾	23.26 (600)	29.35 (750)	35.43 (900)
Exhaust air manifold pressure loss with sprinkler with FAZ/AC [psi] (Pa)	0.020/0.043 (140/300)	0.023/0.050 (160/350)	0.039/0.072 (270/500)
Exhaust air manifold pressure loss with FAZ/AC [psi] (Pa)	0.006/0.017 (45/120)	0.007/0.017 (50/120)	0.012/0.021 (85/150)
Fume hood pressure loss with fume scrubber [psi] (Pa)	0.063/0.073 (440/510)	0.082/0.092 (570/640)	0.107/0.116 (740/800)
Friatec fume scrubber type	C 54		C 90
Function display with temperature control	FAZ		
Airflow damper, constant with temperature control	Airflow controller AC		
Connection point level [in] (mm) for FAZ and AC with exhaust air spigot Ø 9.84 in (250 mm) with fume scrubber	123.82 (3145)		
Connection point level [in] (mm) for FAZ/AC with exhaust air manifold and sprinkler	98.23/111.22 (2495/2825)		
Underbench exhaust extraction	Optional according to requirements and specifications		

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) (Test opening according to EN 14175) and the recommended tracer gas maximum value from BG Chemie.

A maximum pressure of 0.087 psi (600 Pa) should not be exceeded for fume hoods with airflow dampers.

The listed minimum volume flows were determined according to EN 14175-3 under defined test conditions. These minimum volume flows must be adapted for the design of the ventilation system.

The required air volumes may differ when using on-site exhaust air control systems or airflow dampers. Operating limitations must be verified by Waldner.

Material/Facing	
Internal lining including work top	Stoneware (use of sulfuric acid, hydraulic acid, aqua regia)

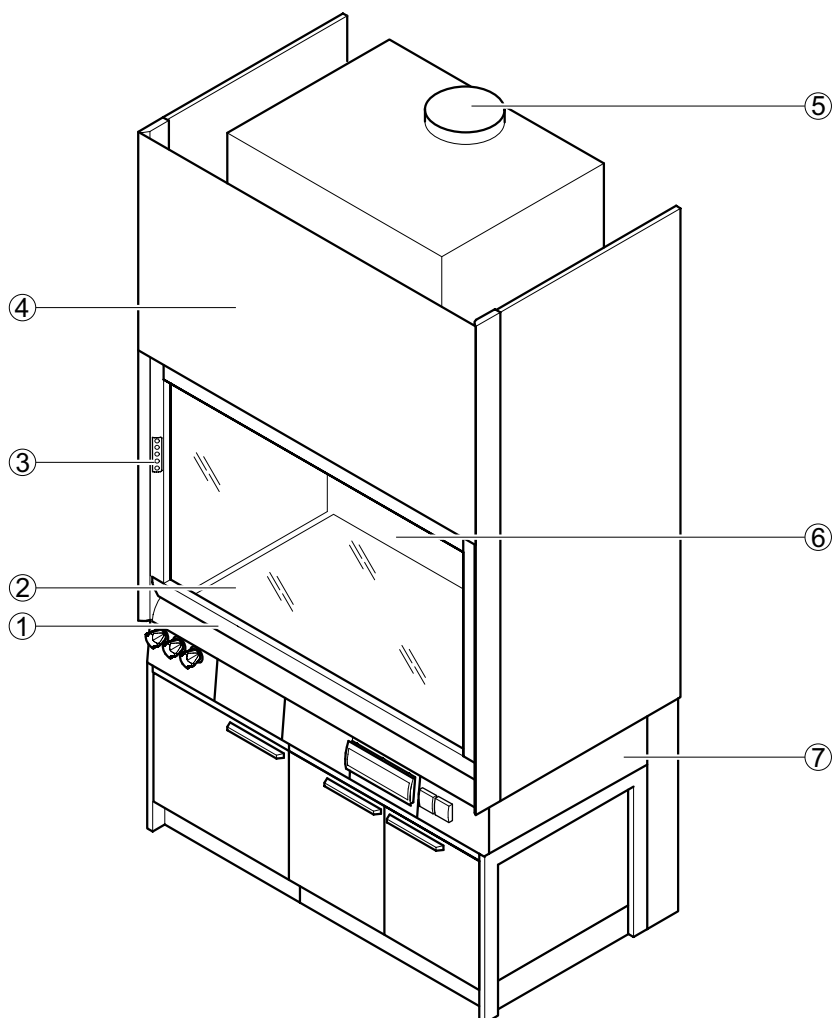
Specialized fume hoods

Hydrofluoric acid fume hood

Use

- Safety equipment for operators, tested according to DIN EN 14175-7:2012
- Suitable for open, thermal digestion with aggressive media, especially for hydrofluoric acid
- Structural design of the fume hood and materials of the internal lining determine the usage capabilities in terms of the type of aggressive media
- Exhaust of fumes and aerosols from the interior workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the interior workspace
- Protection against dangerous substances in the internal workspace
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to DIN EN 14175-7:2012 are not permitted to be used for work with radioactive substances or for work with micro-organisms
- For working with high thermal loads in combination with acid hydrolysis in the fume hood interior workspace (heat sources of 4 KW per meter clear width of the fume hood)

Design

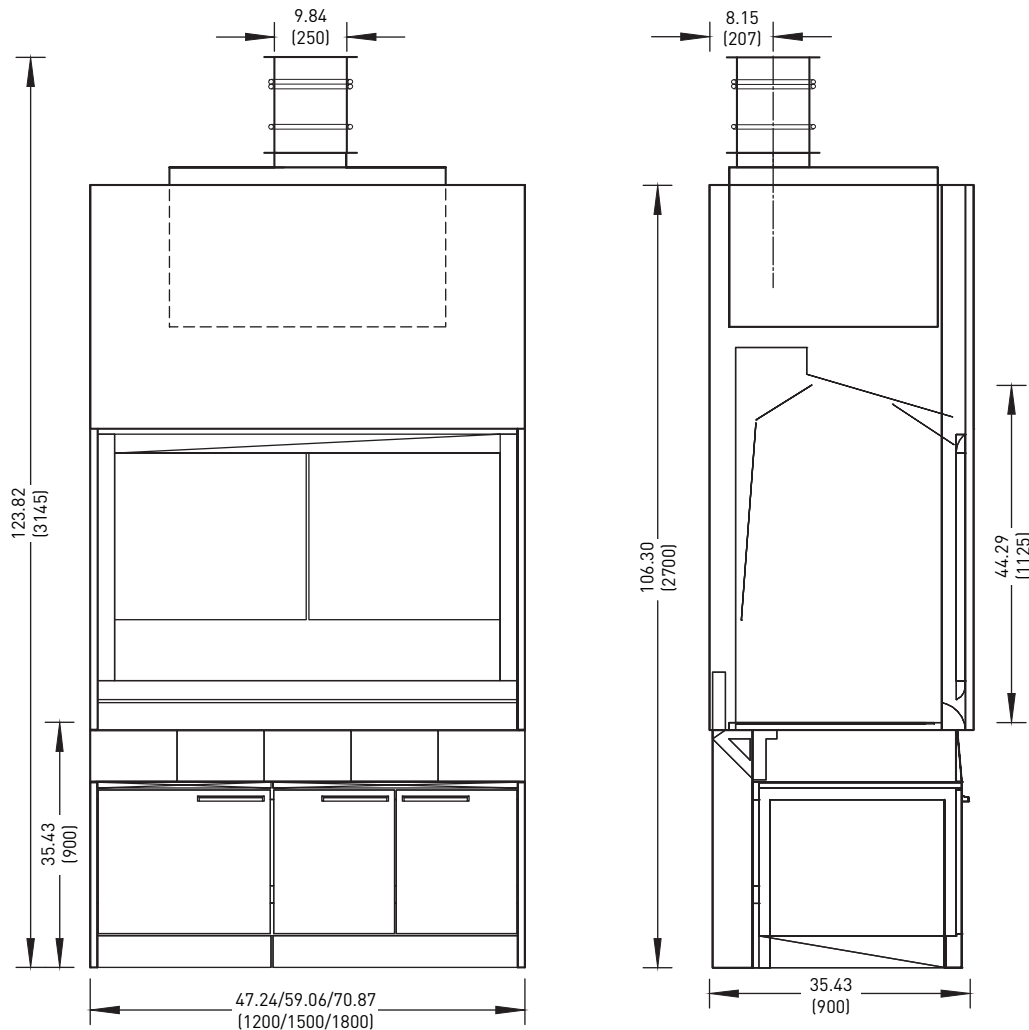


- 1 Sash with handle
- 2 Work top
- 3 Control panel FAZ or AC
- 4 Removable front filler panel
- 5 Exhaust air spigot integrated into fume scrubber (optional)
- 6 Baffle
- 7 H-frame with pushed-in under-bench unit with traverse and service panels

Specialized fume hoods

Hydrofluoric acid fume hood

Dimensional drawing



Technical data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)
Width [mm]	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [mm]	35.43 (900)		
Height [mm]	106.3 (2700)		
Interior effective width [mm]	45.28 (1150)	57.09 (1450)	68.90 (1750)
Interior effective height [mm]	44.29 (1125)		
Working height [mm]	35.43 (900)		

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)
Without installation and fume scrubber [lb] (kg)	approx. 551.15 (250)	approx. 661.38 (300)	approx. 771.61 (350)
Fume scrubber without contents [lb] (kg)	198.45 (90) (Type C 54)		220.50 (100) (Type C 90)

Specialized fume hoods

Hydrofluoric acid fume hood

Relevant features	
Supporting structure	Self-supporting underbench units or H-frame with pushed-in underbench units
Exhaust air manifold	Standard
Fume scrubber	Optional
Underbench neutralization unit	Optional

Electrical engineering	
Electrical supply	Power outlets on the exterior in the service panel
Fuse box	Optional
Sash controller SC	Optional

Sanitary engineering	
Sanitary supply	With take-off valves for vacuum, gases and/or waters and drip cup integrated in the work top as an option

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)
Minimum volume flow [cfm] (m^3/h) ¹⁾	23.26 (600)	29.35 (750)	35.43 (900)
Exhaust air manifold pressure loss with FAZ/ AC [psi] (Pa)	0.006/0.017 (45/120)	0.007/0.017 (50/120)	0.012/0.021 (85/150)
Fume hood pressure loss with fume scrubber [psi] (Pa)	0.063/0.073 (440/510)	0.082/0.092 (570/640)	0.107/0.116 (740/800)
Friatec fume scrubber type	C 54		C 90
Function display with temperature control	FAZ		
Airflow damper, constant with temperature control	Airflow controller AC		
Connection point level [in] (mm) for FAZ and AC with exhaust air spigot Ø 9.84 in (250 mm) with fume scrubber	123.82 (3145)		
Connection point level [in] (mm) for FAZ with exhaust air manifold Ø 9.84 in (250 mm) (without fume scrubber)	94.88 (2410)		
Connection point level [in] (mm) for AC with exhaust air manifold Ø 9.84 in (250 mm) (without fume scrubber)	103.94 (2640)		
Underbench exhaust extraction	Optional according to requirements and specifications		

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) (Test opening according to EN 14175) and the recommended tracer gas maximum value from BG Chemie.

A maximum pressure of 0.087 psi (600 Pa) should not be exceeded for fume hoods with airflow dampers.

The listed minimum volume flows were determined according to EN 14175-3 under defined test conditions. These minimum volume flows must be adapted for the design of the ventilation system.

The required air volumes may differ when using on-site exhaust air control systems or airflow dampers. Operating limitations must be verified by Waldner.

Material/Facing	
Internal lining including work top	Polypropylene (use of hydrofluoric acid)

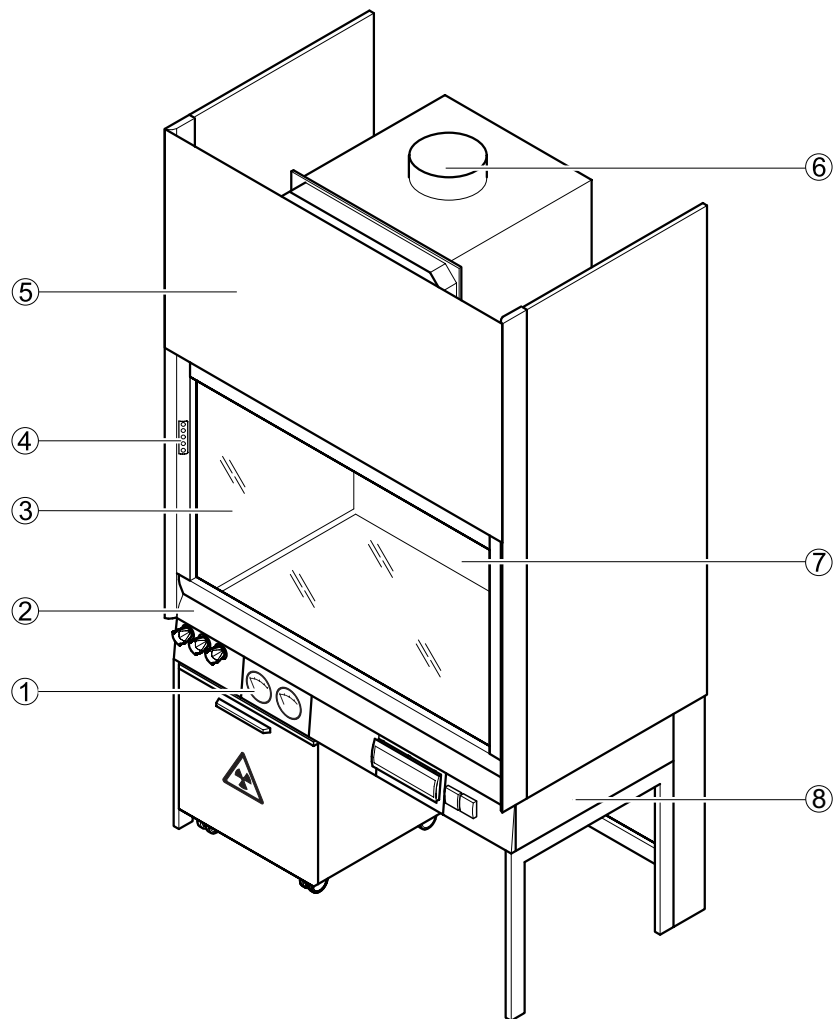
Specialized fume hoods

Radio-isotope fume hood

Use

- Safety equipment for operators, tested according to DIN 25466
- Exhaust extraction for work with radioactive substances involving heightened requirements for radiation protection
- For protection against incorporation, contamination and exterior radiation exposure
- Extraction of fumes, aerosols and dusts from the internal workspace to prevent dangerous toxic concentrations from escaping into the laboratory
- For avoiding the creation of a dangerous, potentially explosive atmosphere in the internal workspace
- Protection from splashes and spills of hazardous substances in the internal workspace
- Protection against flying debris, compounds or particles from the internal workspace
- Fume hoods built according to DIN 25466 are generally not permitted for use in work with micro-organisms
- Not to be used for exposed work involving chemical digestions

Design

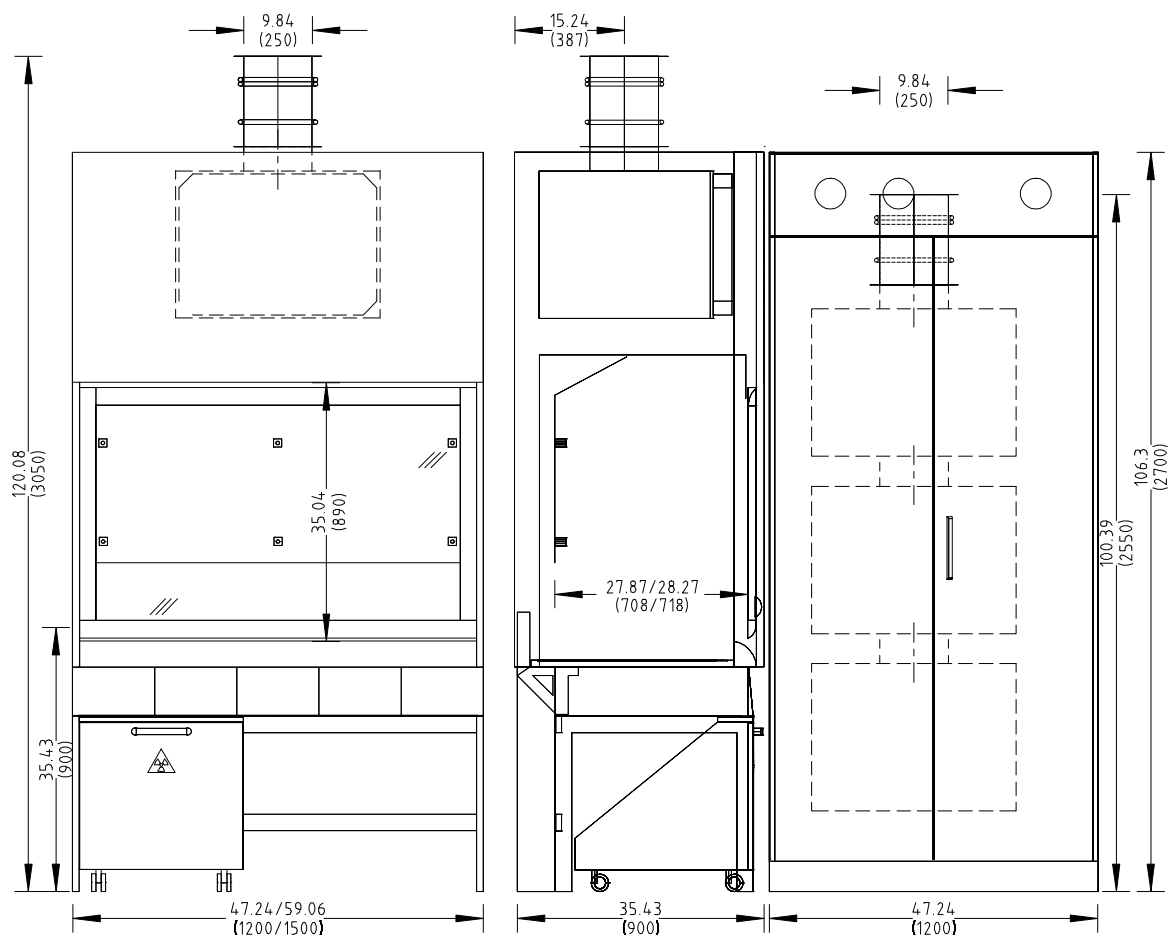


- 1 Differential pressure gauge
- 2 Sash with handle
- 3 Worktop
- 4 Control panel FAZ or AC
- 5 Removable front filler panel
- 6 Extract air spigots integrated into the filter housing
- 7 Baffle with scaffold points
- 8 H-frame with pushed-in under-bench unit with traverse and service panels

Specialized fume hoods

Radio-isotope fume hood

Dimensional drawing



Technical Data

Dimensions	47.24 (1200)	59.06 (1500)
Width [in] (mm)	47.24 (1200)	59.06 (1500)
Depth [in] (mm)	35.43 (900)	
Height [in] (mm)	106.3 (2700)	
Interior effective width [in] (mm)	45.28 (1150)	57.09 (1450)
Interior effective height [in] (mm)	41.73 (1060)	
Interior effective depth with internal lining PP [in] (mm)	27.87 (708)	
Interior effective depth with internal lining stainless steel [in] (mm)	28.27 (718)	
Working height [in] (mm)	35.43 (900)	
Filter housing width x depth x height [in] (mm)	32.28 (820) x 30.51 (775) x 26.54 (674)	

Weight	47.24 (1200)	59.06 (1500)
Without installation and lead insert [lb] (kg)	approx. 551.15 (250)	approx. 661.38 (300)
Filter housing [lb] (kg)	198.41 (90)	

Specialized fume hoods

Radio-isotope fume hood

Relevant features	
Supporting structure	H-frame with pushed-in underbench units
Sash	One piece
Max. number of devices for scaffold points, $\varnothing$ 0.47 (12) to 0.51 in (13 mm)	6
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)
Filter, fume hood roof	Standard equipment: Filter F7 / particle filter H13
Filter for lateral tall cabinet (max. 3 filter housings)	Filter housing, top: Particulate filter Filter housing, centre: Active charcoal filter Filter housing, bottom: Filter and particle filter
Differential pressure gauge	Display of the filter's saturation level (does not apply to active charcoal filters)
Lead insert	Optional
Disposal system for radionuclide waste material in the underbench unit	Optional canister for collecting liquid radionuclide waste material Optional folding carton for collecting solid radionuclide waste material Optional level indicator and/or opening in the worktop

Electrical engineering	
Electrical supply	Exterior receptacles
Fuse box	Optional
SC sash controller	Optional

Sanitary engineering	
Sanitary supply	Take-off valves for vacuum and gases as an option

Ventilation engineering	47.24 (1200)	59.06 (1500)
Minimum volume flow [cfm] (m^3/h) ¹⁾	282.5 (480)	353.2 (600)
Pressure drop prefilter [psi] (Pa) ²⁾	0.0036 (25) / 0.029 (200)	0.0044 (30) / 0.034 (235)
Pressure drop filter for particle filter [psi] (Pa) ²⁾	0.0073 (50) / 0.044 (300)	0.0087 (60) / 0.050 (350)
Pressure drop charcoal filter [psi] (Pa) ²⁾	0.0036 (25) / 0.036 (250)	0.0044 (30) / 0.0044 (30)
Pressure drop particulate filter [psi] (Pa) ²⁾	0.0044 (30) / 0.036 (250)	0.0050 (35) / 0.042 (290)
Extract function display	FAZ	
Flow regulator, constant	Airflow controller AC	
Flow regulator, variable	Airflow controller AC	
Connection point level [in] (mm) for FAZ and AC with extract manifold $\varnothing$ 9.84 in (250 mm)	120.08 (3050)	
Underbench exhaust extraction	Optional according to requirements and specifications	

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) and the recommended tracer gas maximum value from BG Chemie

²⁾ Pressure drop indications refer to conditions of clean/polluted.

For Waldner airflow dampers, a maximum pressure of 0.087 psi (600 Pa) must not be exceeded.

The listed volume flows are according to DIN EN 14175 minimum volume flows for operation of fume hoods. It is therefore disadvised to use these values as a model for the ventilation system.

Air volume may differ when using on-site extract air control systems and other products. Operating limitations must be verified by Waldner before usage.

For fume hoods with filter devices, the pressure drop of the built-in filter layers must be added to the pressure drop of the fume hood.

Specialized fume hoods

Radio-isotope fume hood

Filter (filter in the filter cabinet or on the fume hood roof)	
Dimensions [in] (mm)	24.02 x 24.02 x 1.81 (+ 0.31 seal) (610 x 610 x 46 (+ 8 mm seal))
Pressure loss [psi] (PA) at 1118.30 cfm m ³ /h (1900 m ³ /h)	0.016 (110)
Design characteristics	Filter element (fine particle filter); filter class EN 779: F7 Frame made of multilayer board with grip and type label on the 24.02 in (610-mm) side; PU seal on the dust-laden air side
Use	Fine particle filter for particle adsorption, e.g.: Oil smoke and agglomerated soot, tobacco smoke, metal oxide smoke Average efficiency (Em) 80–90%

Particle filter (filter in the filter cabinet or on the fume hood roof)	
Dimensions [in] (mm)	24.02 x 24.02 x 11.50 (+ 0.28 seal) (610 x 610 x 292 (+ 7 mm seal))
Pressure loss [psi] (PA) at 1433.19 cfm m ³ /h (2435 m ³ /h)	0.036 (250)
Design characteristics	Particle filter element type: Hepa H13; efficiency: MPPS Frame made of multilayer board with grip and type label on the 24.02 in (610-mm) side; PU tight seat seal on the clean air side; filter medium flush on the clean air side
Use	Particle filter for the adsorption of particles up to H13; particle adsorption 99.95 %; transmittance 0.05%

Active charcoal filter (filter in the filter cabinet)	
Dimensions [in] (mm)	24.02 x 24.02 x 11.50 (+ 0.28 seal) (610 x 610 x 292 (+ 7 mm seal))
Pressure loss [psi] (PA) at 353.15 cfm m ³ /h (600 m ³ /h)	0.0014 (9)
Design characteristics	Activated charcoal cell 7C for 16 x activated charcoal cartridges Frame galvanised sheet metal; 2 x U handle and type plate on the 24.02 in (610-mm) side; PU tight seat seal on the clean air side
Use	Standard impregnation: for all common radioactive materials, radioactive iodine compounds, radioactive iodomethane, radioactive gases. (A filter with filters class F7 in acc. with EN 779 is recommended.)

Particulate filter (filter in the filter cabinet)	
Dimensions [in] (mm)	24.02 x 24.02 x 11.50 (+ 0.28 seal) (610 x 610 x 292 (+ 7 mm seal))
Pressure loss [psi] (PA) at 1156.56 cfm m ³ /h (1965 m ³ /h)	0.018 (125)
Design characteristics	Particulate- or Micretain filter element type: Hepa H11 in acc. with EN 1822 Frame made of multilayer board with grip and type label on the 24.02 in (610-mm) side; PU tight seat seal on the clean air side; filter medium flush on the clean air side
Use	Particle filter for the adsorption of particles up to H11; particle adsorption 95 %; transmittance 5%; to be installed after active charcoal filters to bind the charcoal dust contamination from the charcoal filter.

Material/Facing	
Internal lining including worktop	Polypropylene Stainless steel

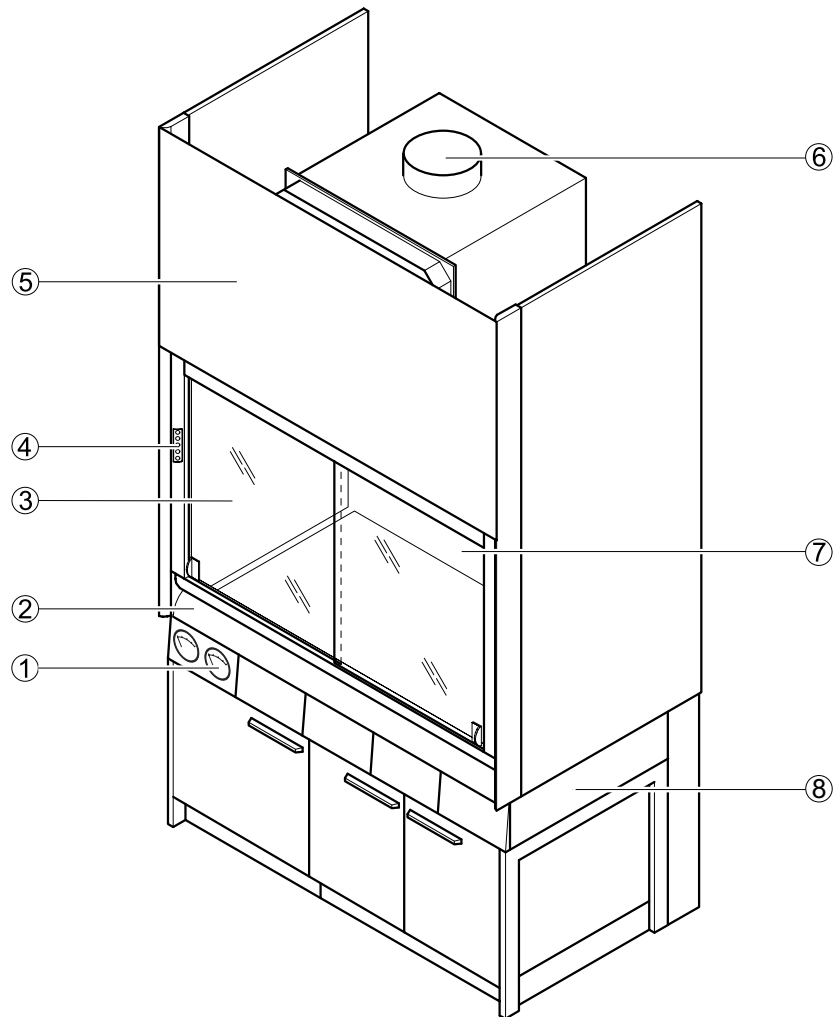
Specialized fume hoods

Filter fume hood

Use

- Before the exhaust air is released into the environment, air from the internal workspace is purified through a filter unit

Design

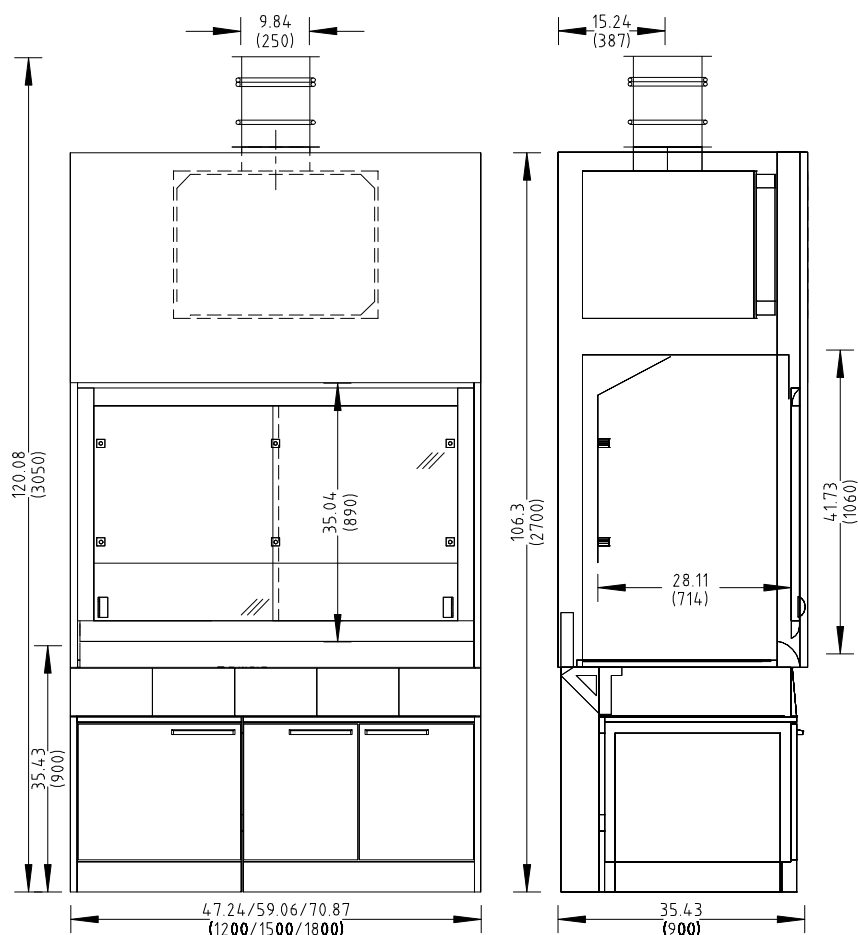


- 1 Differential pressure gauge
- 2 Sash with sash handle and horizontal sash
- 3 Worktop
- 4 Control panel FAZ or AC
- 5 Removable front filler panel
- 6 Extract air spigot
- 7 Baffle with scaffold points
- 8 H-frame with pushed-in under-bench unit with traverse and service panels

Specialized fume hoods

Filter fume hood

Dimensional drawing



Technical data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [in] (mm)	35.43 (900)		
Height [in] (mm)	106.3 (2700)		
Interior effective width [in] (mm)	45.28 (1150)	57.09 (1450)	68.9 (1750)
Interior effective height [in] (mm)	41.73 (1060)		
Working height [in] (mm)	35.43 (900)		
Filter housing width x depth x height [in] (mm)	32.28 (820) x 30.51 (775) x 26.54 (674)		

Weight	47.24 (1200)	59.06 (1500)	70.87 (1800)
Filter fume hood without installations [lb] (kg)	approx. 595.24 (270)	approx. 705.47 (320)	815.7 (370)
Filter housing [lb] (kg)	198.41 (90)		

Specialized fume hoods

Filter fume hood

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)
Supporting structure	H-frame with pushed-in underbench units		
Sash	2 horizontal sashes		3 horizontal sashes
Glazed side panel	Possible on the left and/or right fume hood panes: not for stoneware internal lining		
Max. number of devices for scaffold points, $\varnothing$ 0.47 (12) to 0.51 in (13 mm)	6		8
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)		
Cable pass-through	Possible in the left and/or right fume hood panes		
Filter, fume hood roof	Standard equipment: Filter F7 / particle filter H13		
Differential pressure gauge	Display of the filter's saturation level (does not apply to active charcoal filters)		

Electrical engineering	
Electrical supply	Exterior receptacles
Fuse box	Optional
Sash controller SC	Optional

Sanitary engineering	
Sanitary supply	With take-off valves for vacuum, gases and/or waters and drip cup integrated in the worktop as an option

Ventilation engineering	47.24 (1200)	59.06 (1500)	70.87 (1800)
Minimum volume flow [cfm] (m^3/h) ¹⁾	282.5 (480)	353.2 (600)	423.8 (720)
Pressure drop prefilter [psi] (Pa) ²⁾	0.0050 (35) / 0.029 (200)	0.0065 (45) / 0.034 (235)	0.0094 (65) / 0.042 (290)
Pressure drop filter for suspended particles [psi] (Pa) ²⁾	0.010 (70) / 0.044 (300)	0.014 (95) / 0.053 (365)	0.019 (130) / 0.062 (430)
Extract air function display	FAZ		
Flow regulator, constant	Airflow controller AC		
Flow regulator, variable	Airflow controller AC		
Detector of horizontal sash position	Only variable with airflow controller AC		
Connection height [in] (mm) for FAZ and AC with extract air spigot $\varnothing$ 9.84 in (250 mm)	120.08 (3050)		
Underbench exhaust extraction	Optional according to requirements and specifications		

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) and the recommended tracer gas maximum value from BG Chemie

²⁾ Pressure drop indications refer to conditions of clean/polluted.

For Waldner airflow dampers, a maximum pressure of 0.087 psi (600 Pa) must not be exceeded.

The listed volume flows are according to DIN EN 14175 minimum volume flows for operation of fume hoods. It is therefore disadvised to use these values as a model for the ventilation system.

Air volume may differ when using on-site extract air control systems and other products. Operating limitations must be verified by Waldner before usage.

For fume hoods with filter devices, the pressure drop of the built-in filter layers must be added to the pressure drop of the fume hood.

Specialized fume hoods

Filter fume hood

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

Filter	
Dimensions [in] (mm)	24.02 x 24.02 x 1.81 (+ 0.31 seal) (610 x 610 x 46 (+ 8 mm seal))
Pressure loss [psi] (PA) at 1118.30 cfm m ³ /h (1900 m ³ /h)	0.016 (110)
Design characteristics	Filter element (fine particle filter); filter class EN 779: F7 Frame made of multilayer board with grip and type label on the 24.02 in (610-mm) side; PU seal on the dust-laden air side
Use	Fine particle filter for particle adsorption, e.g.: Oil smoke and agglomerated soot, tobacco smoke, metal oxide smoke Average efficiency (Em) 80–90%

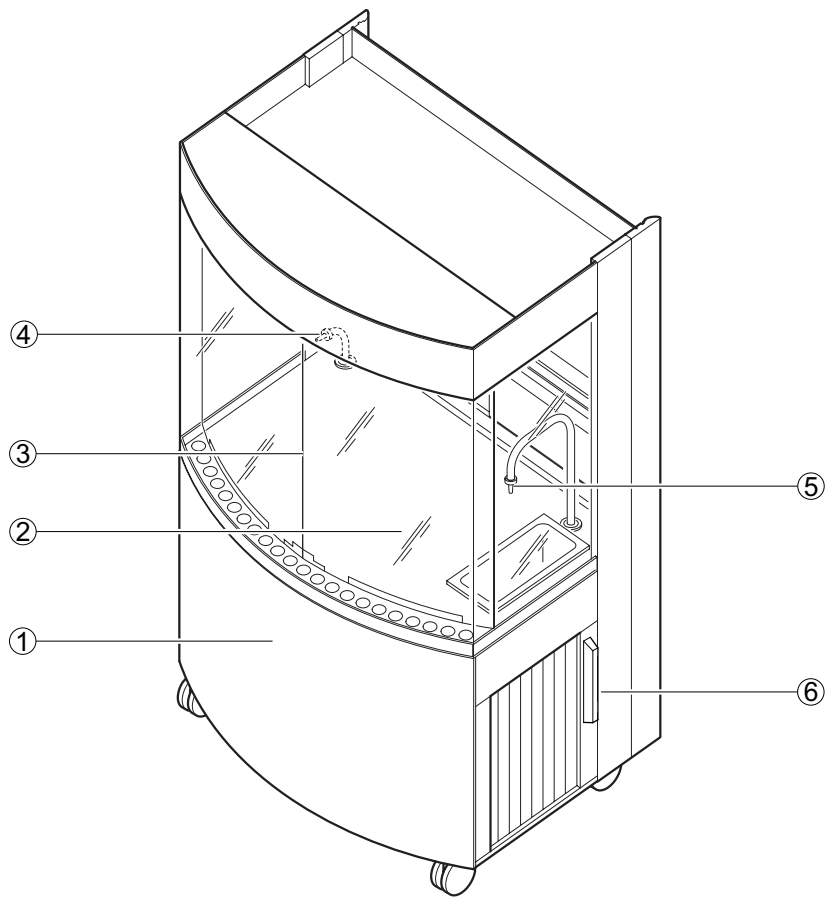
Particle filter	
Dimensions [in] (mm)	24.02 x 24.02 x 11.50 (+ 0.28 seal) (610 x 610 x 292 (+ 7 mm seal))
Pressure loss [psi] (PA) at 1433.19 cfm m ³ /h (2435 m ³ /h)	0.036 (250)
Design characteristics	Particle filter element type: Hepa H13; efficiency: MPPS Frame made of multilayer board with grip and type label on the 24.02 in (610-mm) side; PU tight seat seal on the clean air side; filter medium flush on the clean air side
Use	Particle filter for the adsorption of particles up to H13; particle adsorption 99.95 %; transmittance 0.05%

Use

- For usage in any location with connections for service provision e.g. a service wing
- Fully visible from all sides
- Service outlet in the internal workspace
- Operating controls externally at the traverse

Design

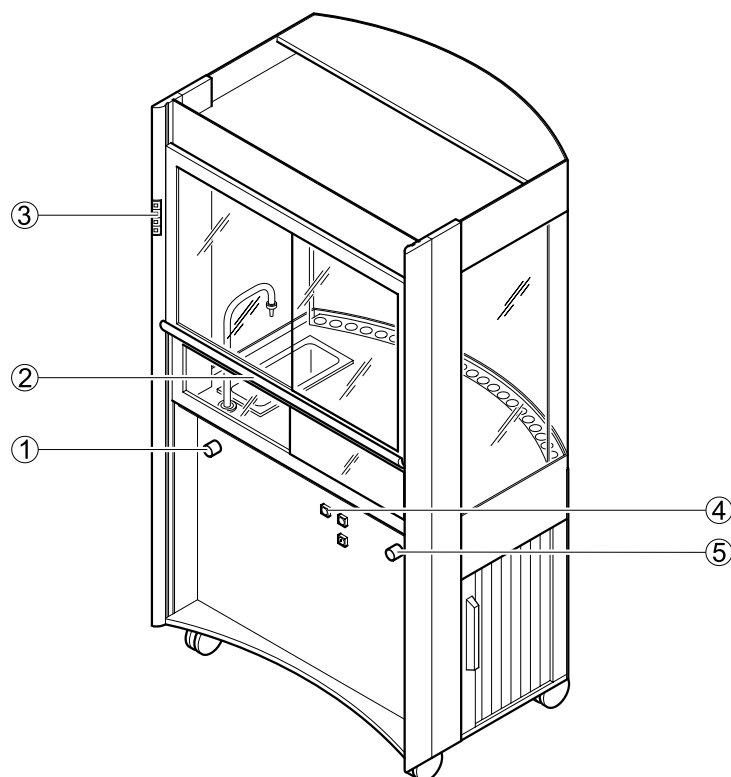
Front view



- 1 Lifting block
- 2 Worktop with marine edging
- 3 Window and deflector (safety glass)
- 4 Gas outlet
- 5 Water outlet with drainage basin and waste water lifting unit
- 6 Openings for pipework

Mobile fume hoods AeroEm

Rear view



- 1 Valve for water outlet
- 2 Sash handle with front sash and horizontal sash
- 3 FAZ operating field
- 4 Switch for interior receptacles
- 5 Valve for gas outlet

Technical Data

Dimensions	
Width [in] (mm)	41.34 (1050)
Depth [in] (mm)	32.09 (815)
Height [in] (mm)	77.76 (1975)
Working height [in] (mm)	35.43 (900)
Height, casters [in] (mm)	4.72 (120)

Weight	
Weight [lb] (kg)	396.83 (180)

Relevant features	
Sash	Two parts, can be moved up and down, each with 2 horizontal sashes
Glazed side panel	All 4 fume hood sides
Lighting	Non-glare, switchable from the outside
Rolling shutter guides	For pipework on the left and right side panels

Mobile fume hoods AeroEm

1

Fume hoods and exhaust devices

Electrical engineering	
Electrical supply	2 power outlets in the internal workspace, individually switchable from outside
Total power of outlets [W]	1000
Connection voltage [V AC]	230
Voltage of waste water pump [V]	230
Lighting output [W]	52
Length of electrical connection cable [in] (mm)	98.43 (2500)

Sanitary engineering	
Water connection	Optional
Waste water connection	Optional waste water coupling
Gas connection	Optional
Water fitting	Optional cold water WPC or WNC (EN), with drainage sink, operable from outside
Take-off valve for gases	Optional

Ventilation engineering	
Minimum volume flow [cfm] (m^3/h) ¹⁾	176.6 (300)
Supply air back-up fans	Switchable on FAZ
Extract air function display	FAZ
2 extract air spigots Ø [in] (mm)	3.54 (90)
Length of exhaust air duct [in] (mm)	98.43 (2500)

¹⁾ All air volume specifications refer to sash window opening height of 19.69 in (500 mm) and the recommended tracer gas maximum value from BG Chemie

The listed volume flows are according to DIN EN 14175 minimum volume flows for operation of fume hoods. It is therefore disadvised to use these values as a model for the ventilation system.

Air volume may differ when using on-site extract air control systems and other products. Operating limitations must be verified by Waldner before usage.

Material/Facing	
Worktop	Compound stoneware worktop with polypropylene edge

Mobile fume hoods

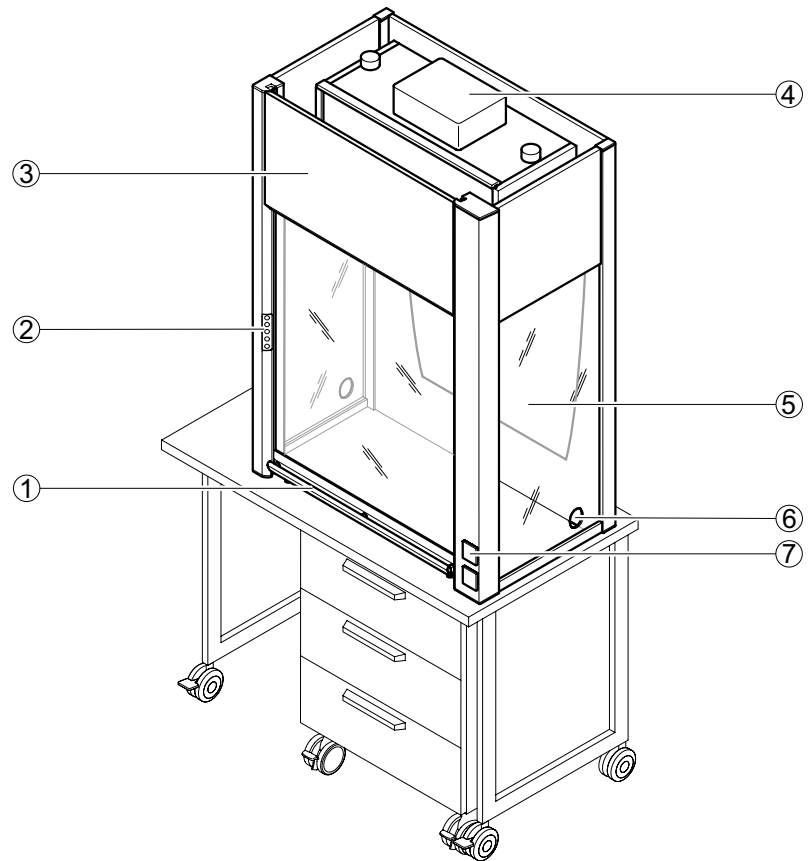
MobilAir

Use

- For usage at any location (only with air circulation)
- Operating controls on the exterior
- Not to be used for exposed work involving chemical digestions
- Not to be used as a substitute for bench-mounted fume hood according to EN 14175

Design

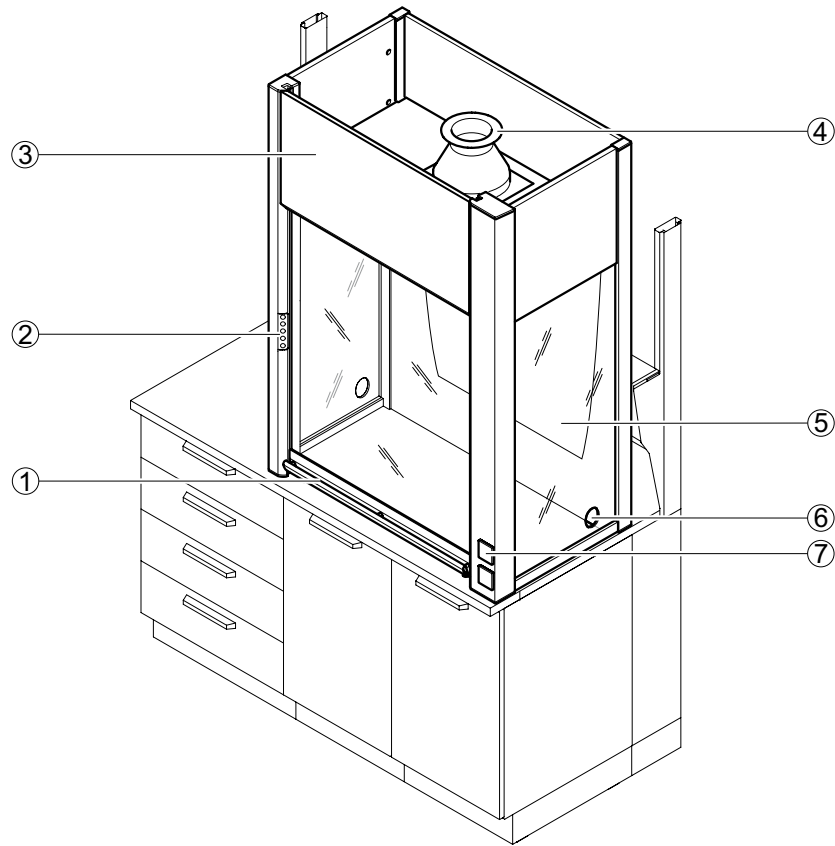
Air circulator



- 1 Sash with handle
- 2 Control panel FAZ
- 3 Removable front filler panel
- 4 Filter housing with ventilator in the air circulator
- 5 Back wall with baffle profile
- 6 Cable pass-through
- 7 Receptacles

Mobile fume hoods MobilAir

Air extraction system



- 1 Sash with handle
- 2 Control panel FAZ
- 3 Removable front filler panel
- 4 Extract air spigot attached to on-site exhaust air system
- 5 Back wall with baffle profile
- 6 Cable pass-through
- 7 Receptacles

Technical Data

Dimensions	
Width [in] (mm)	35.43 (900)
Depth [in] (mm)	23.62 (600)
Height with closed/open sash [in] (mm)	47.83 (1215)/63.78 (1620)
Interior effective width [in] (mm)	33.07 (840)
Usable depth [in] (mm)	19.80 (503)
Interior effective height [in] (mm)	33.31 (846)
Weight	
MobilAir for air extraction [lb] (kg)	154.32 (70)
MobilAir for air circulation mode inc. filter [lb] (kg)	180.78 (82)

Mobile fume hoods

MobilAir

Relevant features	
Air circulator	With fan and filter (see filter types)
Air extraction system	Extract air spigot attached to on-site exhaust air system
Lighting	Non-glare, switchable from the outside
Sash	Can be moved upwards
Cable pass-through	Possible in the left and/or right fume hood panes

Electrical engineering	
Electrical supply	2 exterior receptacles
Total power of outlets [W]	1000
Connection voltage [V AC]	230
Lighting output [W]	13
Fan capacity [W]	115

Ventilation engineering	
Minimum volume flow [cfm] (<i>m³/h</i>)	176.6 (300)
Extract air function display	Optional FAZ
Connection height [in] (<i>mm</i>) Extract air spigot Ø 4.92 in (125 mm)	44.76 (1137)

Material	
Side execution, sash	Plexiglass

Filter type „A“ no.5, gas filter	
Dimensions [in] (<i>mm</i>)	24.02 x 12.01 x 5.91 (610 x 305 x 150) (+ 0.31 in (8 mm) seal)
Pressure loss [psi] (Pa) at 176.57 cfm (300 m³/h)	0.019 (130)
Design characteristics	Gas filter cell with 5 layers of activated carbon mat, type „A“; MDF frame; with white-painted grid on both sides, with grip and type label on the 24.02 in (610 mm) side, PU seal on the dust-laden air side
Use	Separable substances: organic gases and vapours (e.g. solvents, petrol fumes, toluol, benzol, kerosine, odours, hydrocarbons with mass weights 30 and higher), cold, non-boiling (VOC, high-boiling substances)

Filter type „BEP“, gas and particle filter	
Dimensions [in] (<i>mm</i>)	24.02 x 12.01 x 5.91 (610 x 305 x 150) (+ 0.31 in (8 mm) seal)
Pressure loss [psi] (Pa) at 176.57 cfm (300 m³/h)	0.035 (240)
Design characteristics	Combination filter Hepa „H“ 13 with activated carbon mat and particle filter, type „BEP; MDF frame, with white-painted grid on both sides, with grip and type label on the 24.02 in (610 mm) side, PU seal on the dust-laden air side
Use	Separable substances: inorganic gases and vapours (e.g. chlorine, hydrosulphides, sulphur dioxide, hydrogen chlorides, cold and heated). Molecules and particle separation 99.95 % MPPS

Filter type „P“, particle filter cell	
Dimensions [in] (<i>mm</i>)	24.02 x 12.01 x 5.91 (610 x 305 x 150) (+ 0.31 in (8 mm) seal)
Pressure loss [psi] (Pa) at 176.57 cfm (300 m³/h)	0.022 (150)
Design characteristics	Particle filter, type „P“, Hepa „H“ 13, Midilar MDSA; MDF frame, with white-painted grid on both sides, with grip and type label on the 24.02 in (610 mm) side, fold height 45 mm PU seal on the dust-laden air side, filter medium flush on the dust-laden air side
Use	Separable substances: Particle separation 99.95 % MPPS, Hepa „H“ 13

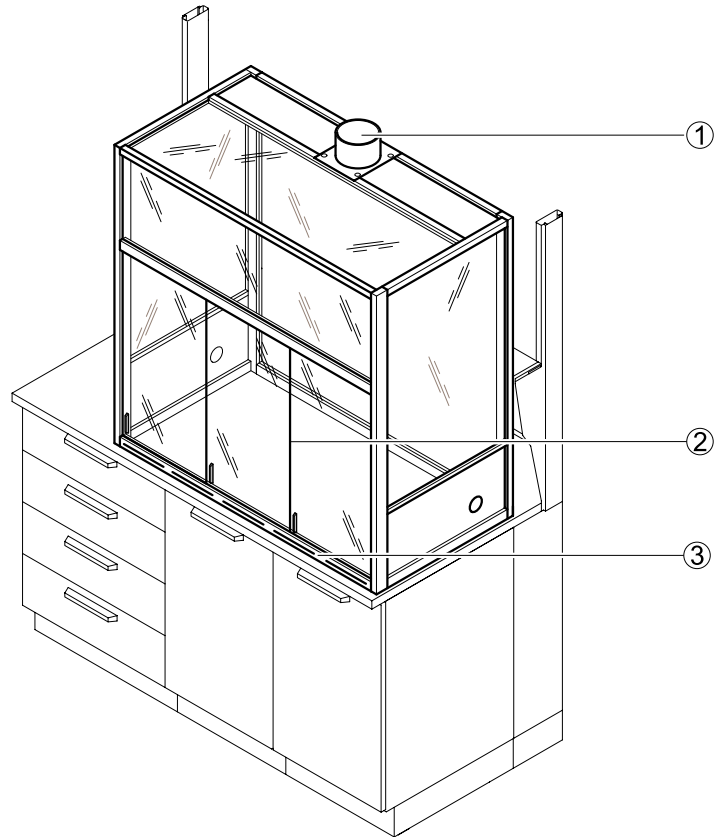
Housings

Permanent enclosure

Use

- Extraction of thermal loads, gases, fumes, aerosols or dust from the interior of the housing
- Reduction of sonic emissions
- Not to be used for exposed work involving chemical digestions
- Not to be used as a substitute for for bench-mounted fume hood according to EN 14175

Design



- 1 Extract air spigot
2 Horizontal sashes
3 Ventilation slots

Technical Data

Dimensions	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Depth [in] (mm)		22.24 (565) 28.15 (715) 29.53 (750) 35.43 (900)		
Height [in] (mm)		57.09 (1450)		
Height inc. extract air spigot [in] (mm)		61.02 (1550)		
Height inc. extract manifold [in] (mm)		68.90 (1750)		

Housings

Permanent enclosure

Relevant features	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Design	For combination with service spines, shortened back wall for usage of services			
Sash	2 horizontal sashes	3 horizontal sashes		
Air extraction system	attached to on-site exhaust air system Optional extract manifold			
Cable pass-through	Optional			
Lighting	Optional			
Interior shelf	Optional			

Ventilation engineering	
Function display	FAZ as an option
Connection height [in] (mm) for extract air spigot Ø 4.92 in (125 mm)	61.02 (1550)

Material	
Side execution, sash	Safety glass (toughened glass)

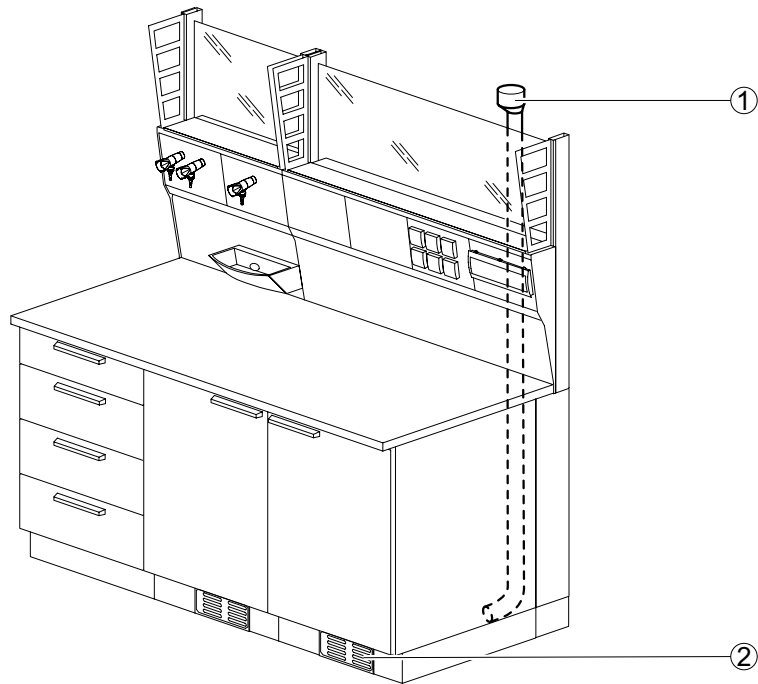
Local exhausts

Underbench exhaust

Use

- For exhaust extraction from safety cabinets (underbench units) where dangerous substances are stored
- For exhaust extraction from underbench units in service spines and fume hoods

Design



- 1 Extract air spigot
2 Ventilation slots

Technical Data

Ventilation engineering	
Volume flow [cfm] (m^3/h)	23.5 (40)
Ventilation connector (ascending duct) $\varnothing$ [in] (mm)	3.54 (90)
Material	
Ventilation pipe	PPS

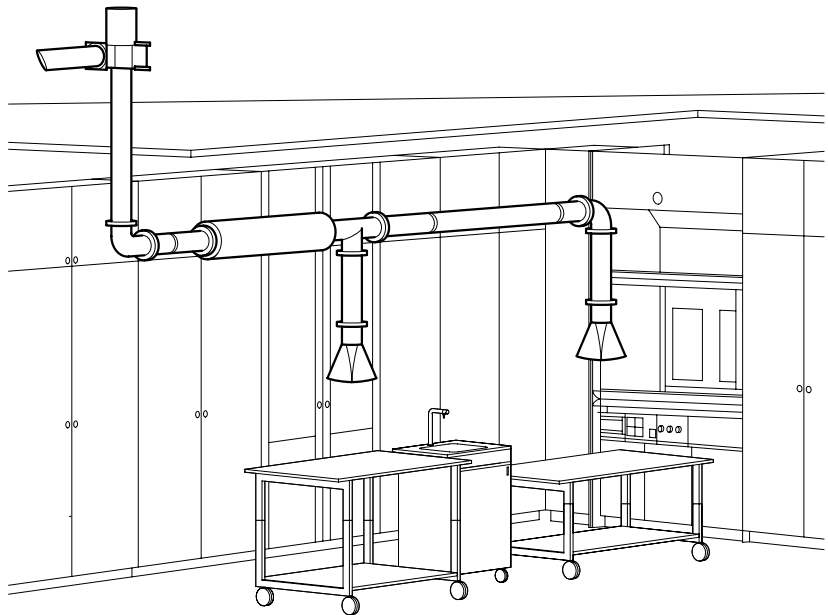
Local exhausts

AAS extract air system

Use

- For exhaust extraction of combustion residue in laboratory spaces
- For extraction of exhaust from cold and hot flames
- For stabilization of flames from burner units
- For protecting instruments against corrosive fumes

Design



Technical Data

Dimensions	
Dimensioning, design	Project planning according to requirements
Canopy hood	Stainless steel
Relevant features	
Standard	Canopy hood Telescopic tube Piping system Fans Blow-out unit Fastening elements
Acoustic insulation	Option installation of fans and blow-out unit outside of the laboratory
Material	
Piping system	Stainless steel
Canopy hood	Stainless steel

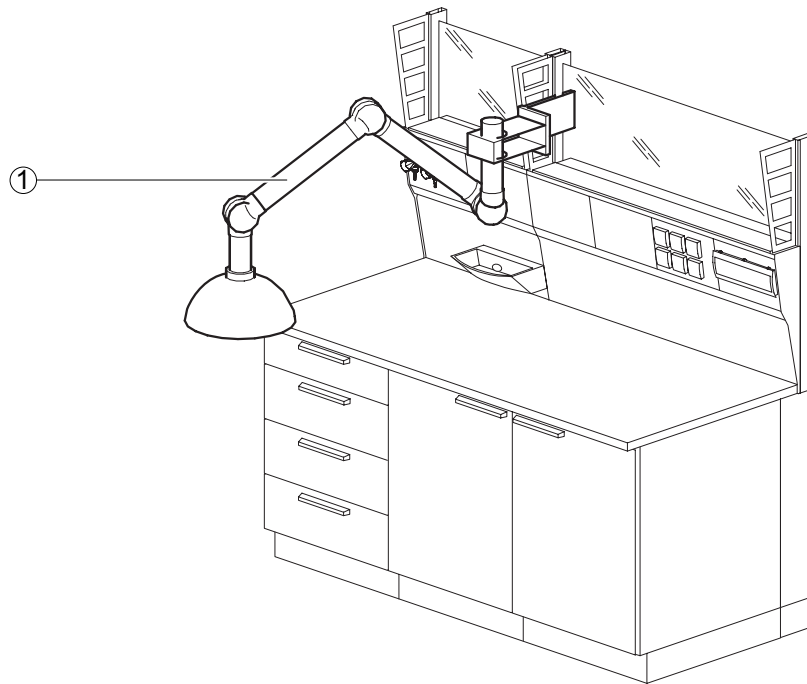
Local exhausts

Extraction lever

Use

- For targeted exhaust extraction from a particular area
- For mounting on service spines, service wings and on the wall

Design



1 Extraction lever

Technical Data

Dimensions	1.97 (50)	2.95 (75)
Pipework system Ø [in] (mm)	1.97 (50)	2.95 (75)
Dome hood Ø [in] (mm)	13.78 (350)	
Extract head [in] (mm)	1.97 (50)	2.95 (75)

Ventilation engineering	1.97 (50)	2.95 (75)
Minimum volume flow [cfm] (m³/h)	29.4 (50)	58.9 (100)
Primary pressure [psi] (Pa)	0.022 (150)	0.022 (150)
Primary pressure [psi] (Pa) with Waldner air flow damper	0.029 (200)	0.029 (200)

Material	
Pipework	Anodized aluminum
Hinged bracket	Polypropylene
Dome hood	Polycarbonate
Extract head	Anodized aluminum

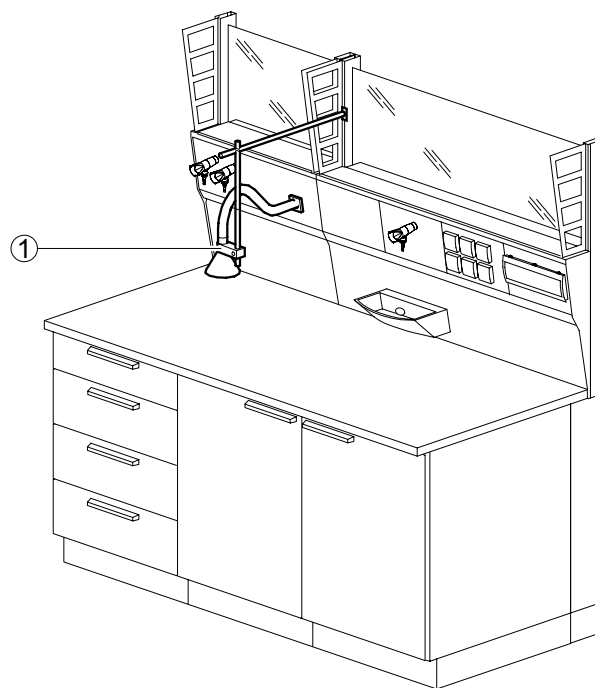
Local exhausts

Relieving hood

Use

- For targeted extraction of fumes
- Attachment to the extract air adaptor in the service panel

Design



1 Relieving hood

Technical Data

Dimensions	
Length of piping system [in] (mm) at Ø 1.57 in (40 mm)	39.37 (1000)
Hood Ø [in] (mm)	4.72 (120)
Extract head [in] (mm)	1.97 (50)
Ventilation engineering	
Minimum volume flow [cfm] (m³/h)	5
Primary pressure [psi] (Pa)	0.029 (200)
Material	
Piping and hood	Plastic

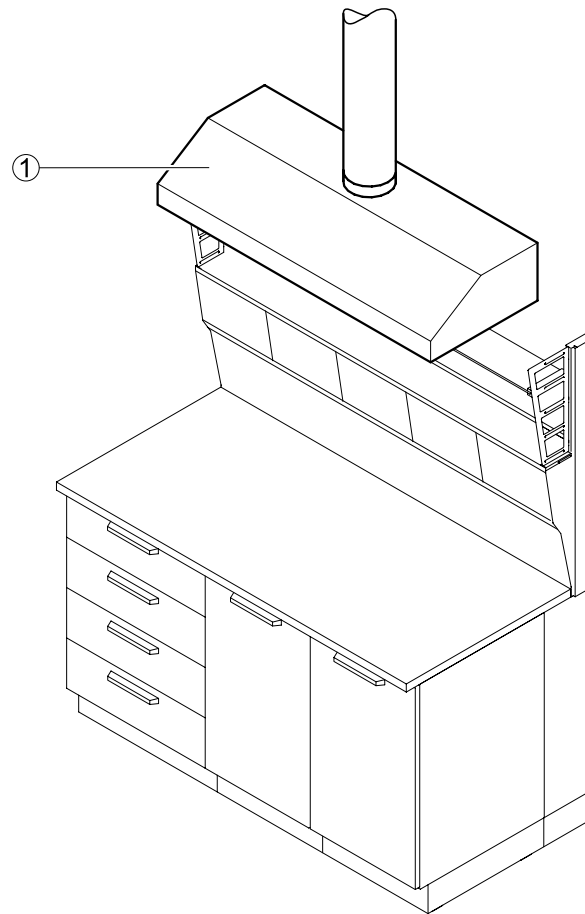
Local exhausts

Canopy hood

Use

- For targeted exhaust extraction from a particular area
- For mounting on service spines and on the wall

Design



1 Canopy hood

Technical Data

Dimensions	47.24 (1200)	59.06 (1500)
Width [in] (mm)	47.24 (1200)	59.06 (1500)
Height x Depth [in] (mm)	11.81 (300) x 23.62 (600)	11.81 (300) x 23.62 (600)
Extract air spigot Ø [in] (mm)	7.87 (200)	

Ventilation engineering	47.24 (1200)	59.06 (1500)
Minimum volume flow [cfm] (m³/h)	282.5 (480)	353.2 (600)
Primary pressure [psi] (Pa)	0.0036 (25)	0.0044 (30)
Primary pressure [psi] (Pa) with Waldner air flow damper	0.0218 (150)	0.0218 (150)

Material	
Canopy hood	Polypropylene



2 Service modules

Our **SCALA** laboratory program defines itself via flexibility, mobility and ergonomics for the future of the laboratory.

The services area has central importance in a laboratory system.

Our new service modules such as service spines, suspended service booms, service modules, service wings, and service ceilings, by means of their modular design, don't just provide services – they are more ergonomically suited to the researchers in the laboratory than ever before. The valves and control elements are easier to reach because the service panels are inclined towards the user.

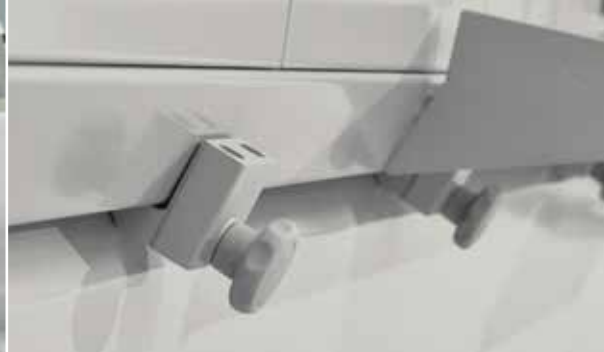
With useful details for a visually clear presentation, our service modules are increasing the standards in laboratory design.

Our new laboratory furniture system contains significantly fewer individual parts. Our service panels are seamlessly fitted, the even form is without bulky edges, and the concealed internal rail is built to accommodate additional features.

This facilitates cleaning and fulfills the highest demands for hygiene.



Service duct.....	92
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2 Service modules

Space-saving service distribution terminal

The service supply installations are housed in the service duct to save space. The modular service panels, inclined towards the user, are ergonomic and easy to reach. The result is far more usable depth on the work surface.

Service spines

The service spine provides many options during the design of the laboratory environment for different designs and rapid changes. As an independent unit, the service spine can be combined with freely selectable bench frames for wall-mounted work stations or for a double-sided bench.

Internal rail for compatible equipment

The internal rail below the panel surface accommodates useful equipment, such as storage shelves, reagent stands, scaffold pipes and towel holders. Attached "helpers" can be adjusted along the rail, and securely fastened.

Uncomplicated upgradability

The modular, screwless service panels can be rapidly exchanged as the need arises.

Supply lines, such as for water and compressed air, are quickly adjusted and installed with a plug-in coupling system – without appreciable interruption of laboratory operations.

Equipment details for service spines

The surface above the service panel can be used as a reagent shelf. The inlaid glass shelves are easily detachable for cleaning. In addition, it is possible to fasten shelves onto the side walls. Suspended cabinets make upward extensions possible at any time.



Service modules

As a compact service supply, our service modules offer the possibility of transparent room design.

Equipped with removable panels and an internal rail, the service modules can either be installed directly on the laboratory ceiling or on the service ceiling.

Suspended service boom

As an element freely suspended from the laboratory ceiling, the suspended service boom provides advantages for certain areas of the laboratory.

Equipped with removable panels and an internal rail, the suspended service boom is also usable in service-independent layouts. Height-adjustment is possible for installation on the laboratory ceiling. The suspended service boom can also be installed on the service ceiling.

Service wall duct

As an alternative to service spines, service ducts can be installed directly on the wall or in connection with a wall-sided service spine. Additionally equipped with panel technology and internal rails for variable placement.



2 Service modules

The service wing system

Our service wing defines freedom in the laboratory in a special manner: as the central furniture element, integrating all key services such as plumbing, electrical, EDP, energy-saving lighting, exhaust air and also the disposal of waste water, our new service wing provides a high degree of flexibility.

It is possible to safely plug-in to supply and disposal connections practically anywhere, providing a great degree of flexibility and free floor plan design.

The expansion stages of service wings

With its modular design, the service wing offers many independent and freely combinable expansion stages. For every imaginable application. With the exchangeable service panel, valves and connections can be positioned as desired.

Internal rail for auxiliary equipment

The internal rail accommodates useful accessories such as instrument shelves, service stations and scaffold points. These allow for movement along the grid, and secure fastening in any position.

The service wing can be easily integrated

The use of the service wing simplifies completion of the interior and coordination of trades. One central feed point is sufficient.

Existing architecture and its configuration often requires further installations. In this respect, the service is especially easy to install with minimal assembly expenses.



Economical energy usage

The energy saving lamps set into the service wings evenly light up the workspace and the room, and spare the use of current by up to 50 % (with daylight-dependent control).

The service wing reaches the entire room

We make every area of the laboratory accessible using T-elements and the different lengths of our wing elements. For a number of placement opportunities. It can be "docked" anytime, anywhere.

All benches, racks, mobile sink units or mobile fume hoods are freely set under the wing – for a flexible working environment.

Precise planning, on-site preassembly

The service wing will be pre-assembled exactly according to plan for your laboratory project.

In that way, we save assembly time on-site, and your service wing is quickly assembled and ready to use.

Alteration and expansion are simple

With its property as an individual system unit, the service wing is always capable of being altered.

It is possible to expand, improve and control the system with little effort.



2 Service modules

Service ceilings for flexible laboratory rooms

It is of essential importance to be able to quickly adapt the laboratory, and it will continue to expand in the future.

The Waldner service ceiling, for the first time, integrates all liquid laboratory services, gases, current, datalines, lighting, and air conditioning, as well as supply air and extract air flow, and offers effective and variable use of the laboratory by means of high adaptability to changing conditions.

With the service ceiling, the entire laboratory will not only be flexible and independent from connections and service, supply and removal units, but also the entire laboratory room is freely changeable by the user and can be optimized with respect to specific needs.

The service ceiling simplifies the planing of the laboratory building

Entire stories can be covered by the service ceiling and newly divided as needed through the gridless partitioning – without interfering with the building structure. This drastically reduces the costs of a redesign, as opposed to conventional laboratory furniture.

The space-saving arrangement of integrated assembly areas of our service systems reduces the building volume.

The factory-assembled service ceiling elements are delivered with all components on-site, making the room almost pre-assembled. This limits the coordination of different service providers, and thus costs as well. The number of bores for the suspension of the complete service ceiling has been reduced by over 90 % compared with a conventional installation.

The service ceiling is also integratable with existing architecture.



Quick change of environment

Our service ceiling system successfully responds to new tasks in the laboratory.

The mobile parts of the system, such as benches, underbench units or racks, are rolled to another place, mobile components docked to a suspended service boom, and working on new tasks runs more smoothly in the laboratory.

Connecting the office to the laboratory

New areas can be created by means of the service ceiling segments. Changing the installation follows from the nearest connection block. Through our partition system, it is possible to realize the direct coexistence of office and laboratory.

Rational preassembly saves valuable time

The planned dimensions of the service ceiling for the laboratory project is subdivided into individual segments. The system framework, made from high-strength aluminum profiles, is extremely stable despite its low weight. All service lines, supply and extract air ducts, current, lighting and connection blocks are installed in just the right position. The accuracy of all the individual components prevents time-consuming reworking.

Only one on-site service delivery point

Fed via an on-site service delivery point, the service ceiling offers connection points distributed over a freely definable surface unit to the movable service modules at several workstations. That limits costs, since it dispenses with the coordination of different trades.

Movable service modules

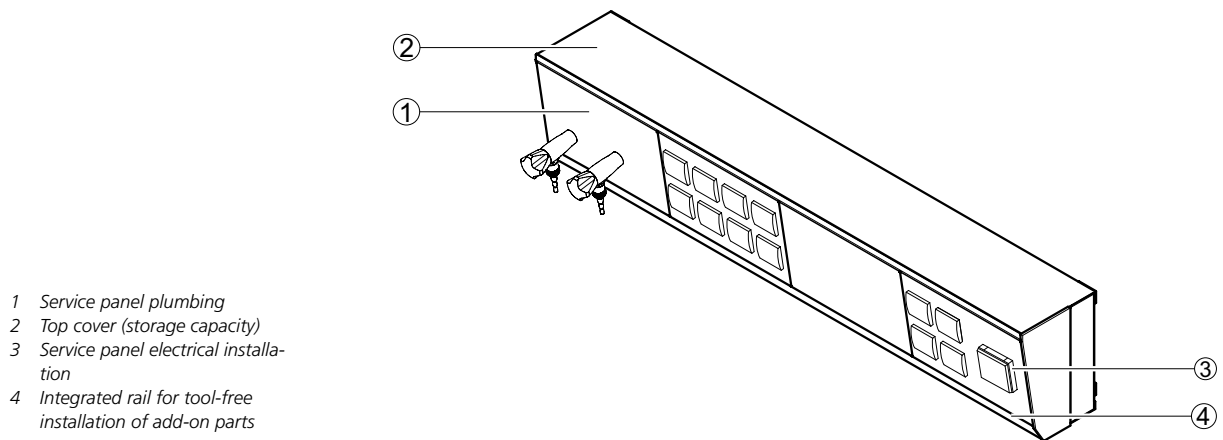
The service installation on each individual system frame carries special connection blocks from which the service modules are supplied with movable lines. Moving the modules simply requires loosening the clamp and fastening it again.

Service duct

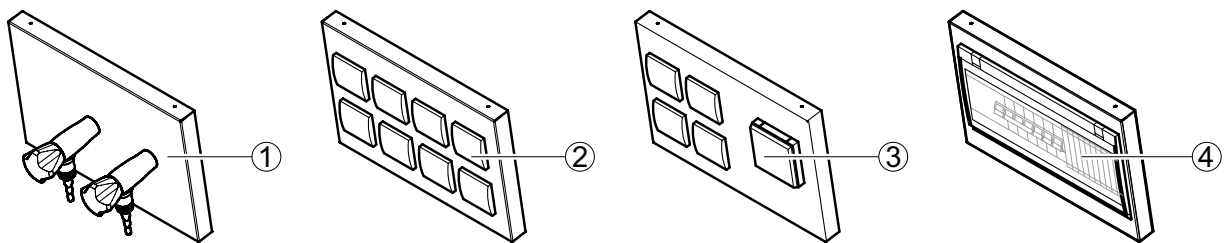
Use

- Supply of services at the laboratory workstation
- Integration of all tapping points, including sockets and multiple connectors, for information engineering
- Enhancement and modification of the services supply through clipping of the panels
- For use in service spines, service wall ducts, suspended service booms, service modules and bench-mounted service outlets
- Tool-free installation of supplemental service duct add-on parts such as pegboards, monitor arms, pipette holders, paper towel dispensers, universal storage, etc.

Design



Variants of the service panel



Technical Data

Dimensions					
Width [in] (mm)	23.62 (600)	35.43 (900)	47.24 (1200)	59.06 (1500)	70.87 (1800 ¹⁾)
Depth [in] (mm) without carrier system	4.33 (110)				
Height [in] (mm)	9.92 (252)				
Front inclination [°]	9				
Panel width x height [in] (mm)	11.81 (300) x 7.87 (200)				

¹⁾ The service duct is extendable in increments of 11.81 in (300 mm)

Relevant features	
Number of service panels	Dependent on width of service duct Supply of electrical and information technology corresponding to combination with other service modules
Service panel	Clipped to size
Waterproof protection	Degree of protection IP 44

Material	
Covering	Solid grade laminate 0.2 in (5 mm) Glass plate

Electrical engineering	
Electrical supply	Socket in service panel
Fuse box	Optional
Max. number of 230 V outlets per panel	8
Max. number of 400 V outlets per panel	2
Max. number of automatic circuit breakers per panel	15

Sanitary engineering	
Sanitary supply	Service panel with taps and fittings for vacuum, gases and/or water Service supply corresponding to combination with other service modules
Max. number of corner valves per panel	5
Max. number of high purity gas valves per panel	3 to 5, depending on model and function

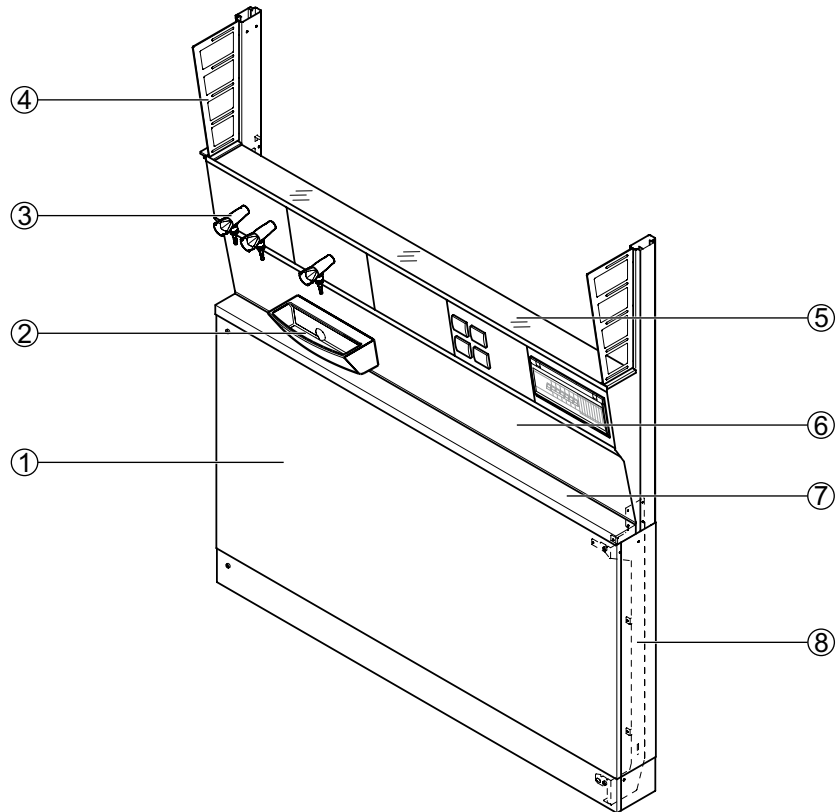
Service spine

Use

- For floor-mounted services supply to:
 - ▶ Wall benches
 - ▶ Double work benches
 - ▶ Laboratory equipment on mobile tables or substructures
 - ▶ Floor-mounted laboratory equipment
- Variants for genetic field
- Modular attachment of cell add-ons at function stands such as reagent shelves, instrument shelves, suspended cabinets, scaffold points, etc.
- Tool-free installation of supplemental service duct add-on parts such as pegboards, monitor arms, pipette holders, paper towel dispensers, universal storage, etc.

Design

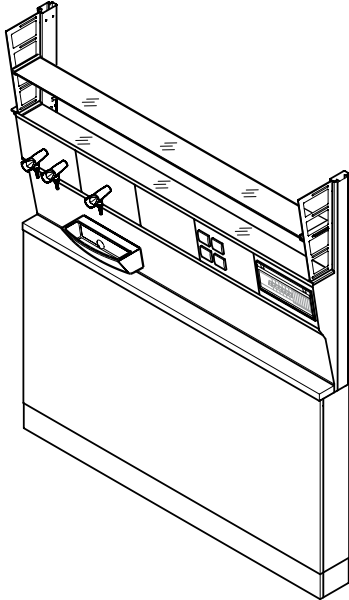
Service spine for wall bench



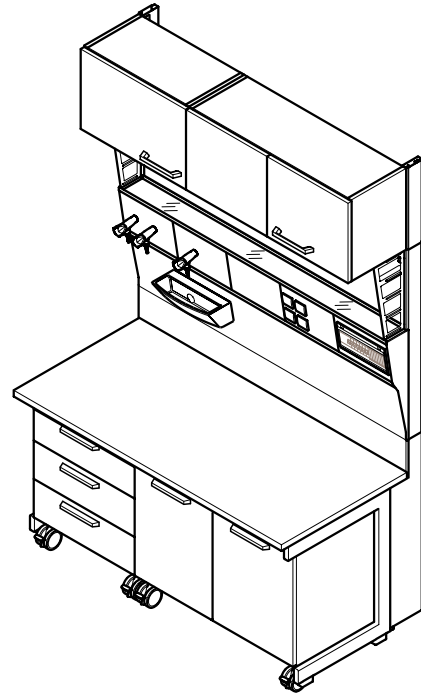
- 1 Knee-hole cover panel
- 2 Sink module
- 3 Service panel for plumbing
- 4 Pillars for attachment parts
- 5 Service duct with panels, glass shelf and integrated rail for add-on parts
- 6 Service panel
- 7 Cantilever
- 8 Function stands

Service spine

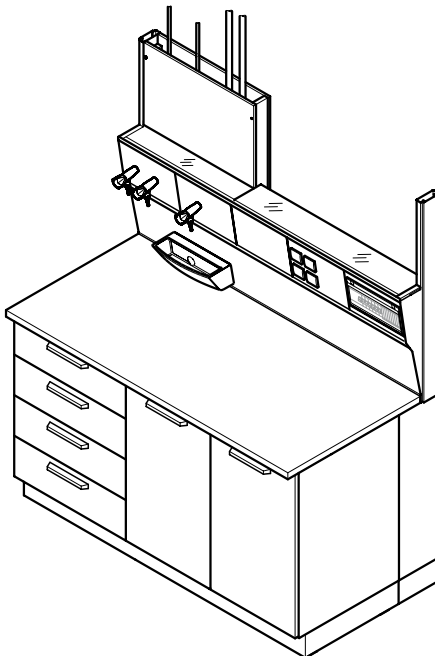
Service spine for wall bench with cantilever and 2 glass shelves, working height 35.43 in (900 mm)



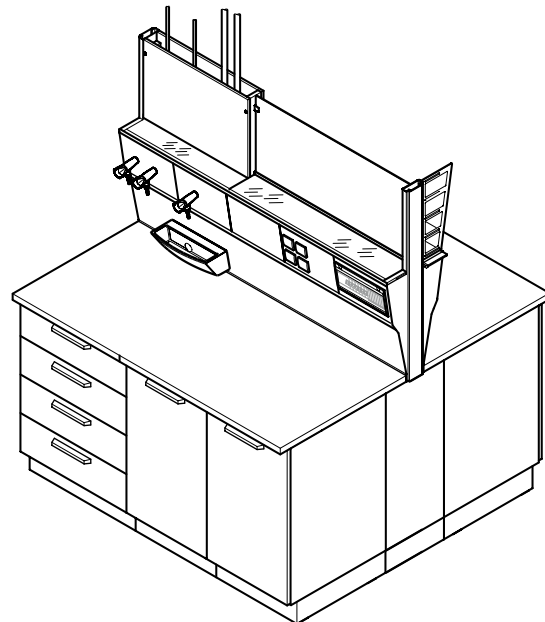
Service spine for wall bench with C-frame, under-bench units on casters and suspended cabinet, working height 29.53 in (750 mm)



Service spine for wall bench with underbench units on plinth and service supply from above, working height 35.43 in (900 mm)

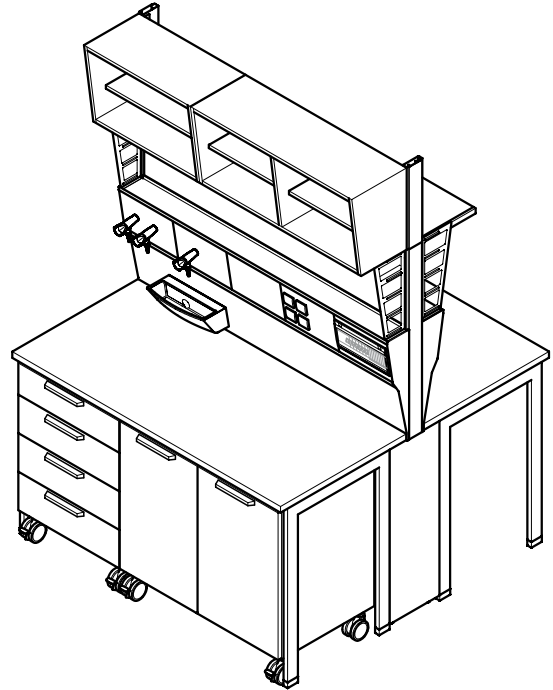


Service spine for double work bench with under-bench units on plinth and service supply from above, working height 35.43 in (900 mm)



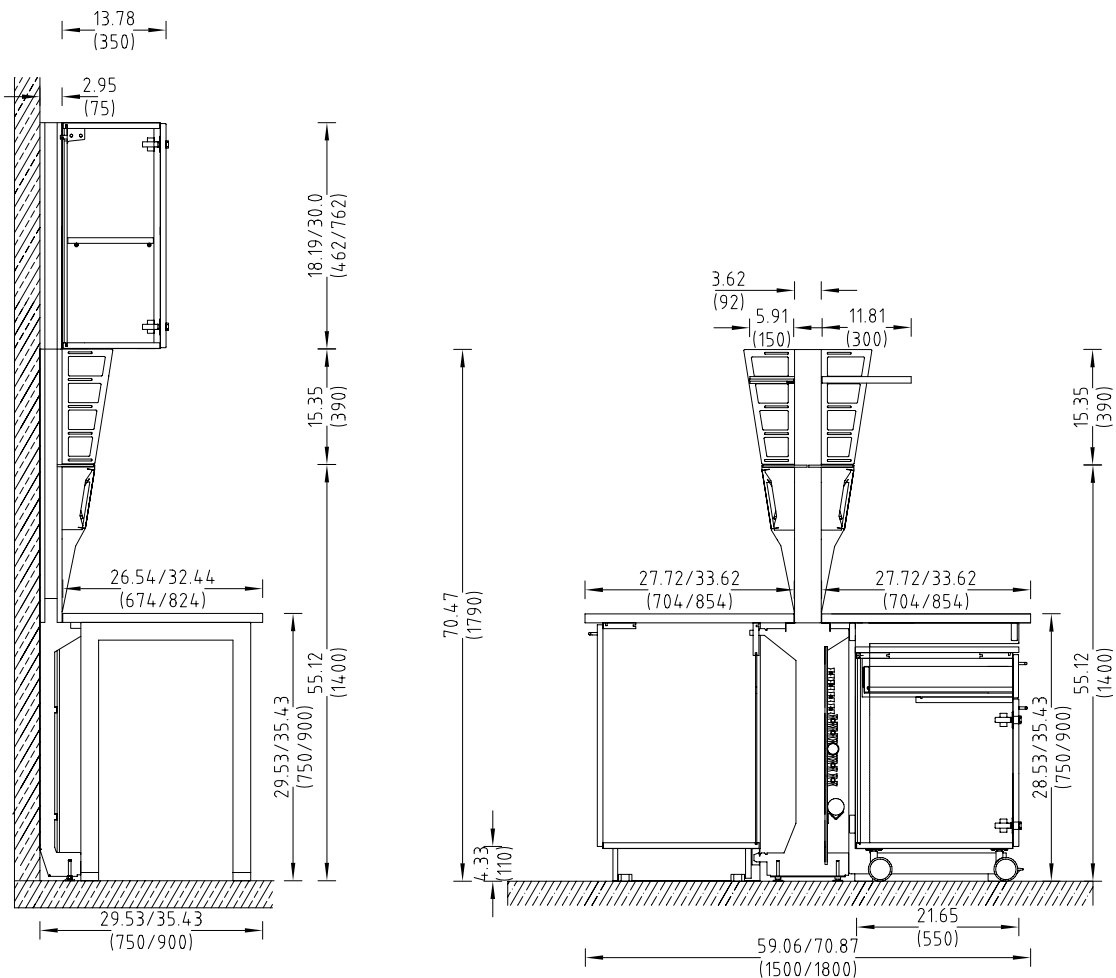
Service spine

Service spine for double work bench with H-frame, underbench units on casters and suspended cabinet, working height 35.43 in (900 mm)



Dimensional drawing

Service spine for wall-mounted/double work bench



Technical Data

Dimensions	23.62 (600)	35.43 (900)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Width [in] (mm)	23.62 (600)	35.43 (900)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth, service spine for wall-mounted work bench [in] (mm) (incl. wall-mounted work bench)	2.95 (75) (29.53 (750)/35.43 (900))				
Depth, service spine for double work bench [in] (mm) (incl. double work bench)	3.62 (92) (59.06 (1500)/70.87 (1800))				
Height [in] (mm)	70.47 (1790)				
Working height [in] (mm)	29.53 (750) 35.43 (900)				
Height, pillar extension [in] (mm) for suspended cabinet with height of 18.11 in (460 mm)	18.19 (462)				
Height, pillar extension [in] (mm) for suspended cabinet with height of 29.92 in (760 mm)	30.0 (762)				
Height, pillar extension [in] (mm) up to the ceiling 137.8 in (3500 mm)	Depending on ceiling height				
Panel width x height [in] (mm)	11.81 (300) x 7.87 (200)				
Reagent repository width x height [in] (mm)	Service spine width x 5.91 (150)				
Instrument shelf width x height [in] (mm)	Service spine width x 11.81 (300)				

Load bearing capacity

Glass shelf [lb] (kg)	44.09 (20)
Instrument shelf [lb] (kg)	66.14 (30)
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)

Relevant features

Modular layout	Can be equipped one-sided for wall bench and two-sided for double work bench Function stands with service duct capable of being adapted, e. g. for suspended cabinet Worktop, cantilever and underbench unit compatible without disassembling the installations Grid-independent assembly of accessories
Scaffold points ø [in] (mm)	0.47 (12) to 0.51 (13)
Number of service panels	Dependent on width of service duct

Electrical engineering

Electrical supply	Socket in service panel
Fuse box	Optional

Sanitary engineering

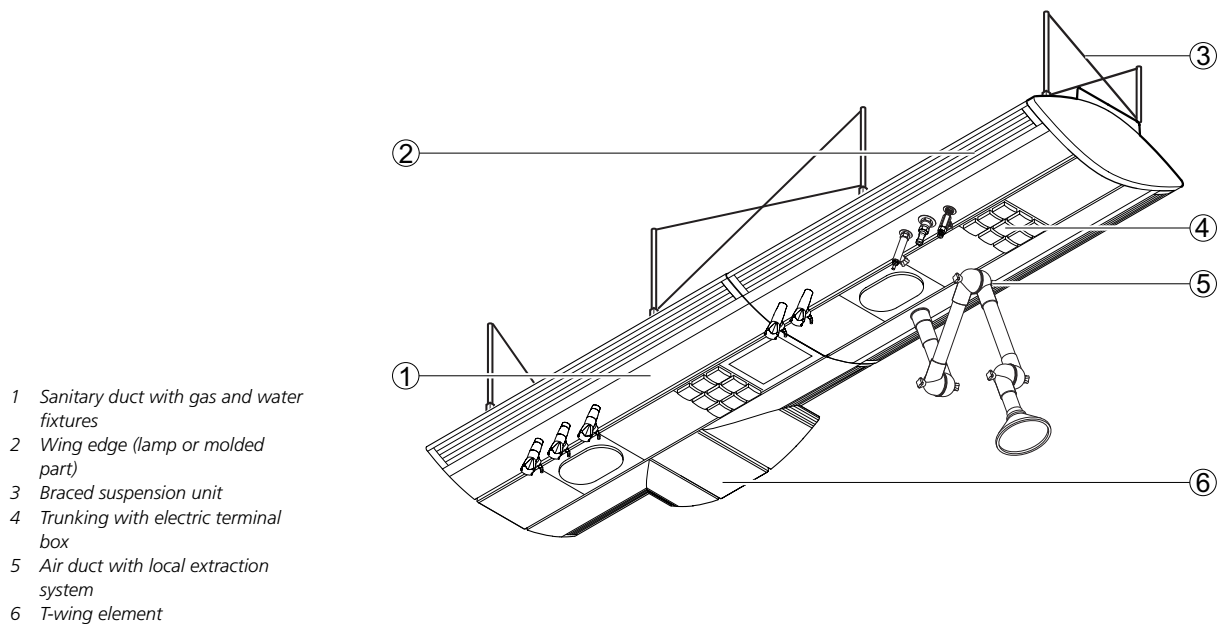
Sanitary supply	Service panel with taps and fittings for vacuum, gases and/or water Guiding of supply lines under the worktop or the cantilever
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Service wing

Use

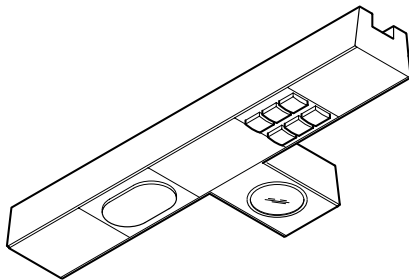
- Laboratory areas with technical devices for services.
- Services supply and disposal via the ceiling for:
 - ▶ Laboratory benches and sinks under the service wing
 - ▶ Local exhaust equipment and AeroEm fume hood
 - ▶ Laboratory equipment on mobile tables or substructures
 - ▶ Floor-mounted laboratory equipment
- Tool-free installation of supplemental service wing add-on parts

Design



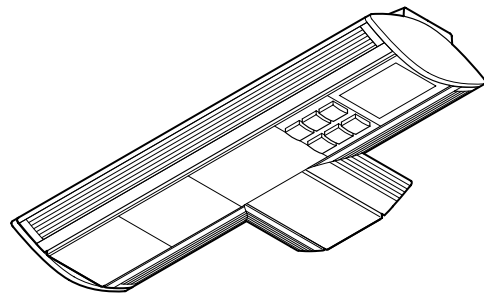
Expansion stage 1

Trunking with panels for electrical supply



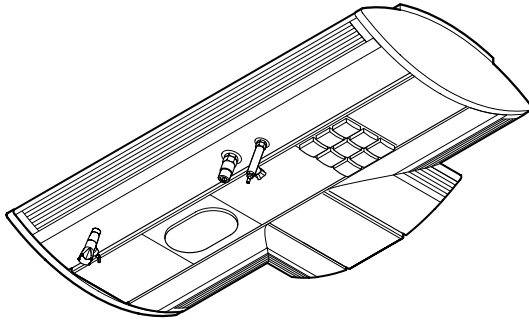
Expansion stage 2

Trunking with panels for electrical supply
 Wing edges constructed as lights

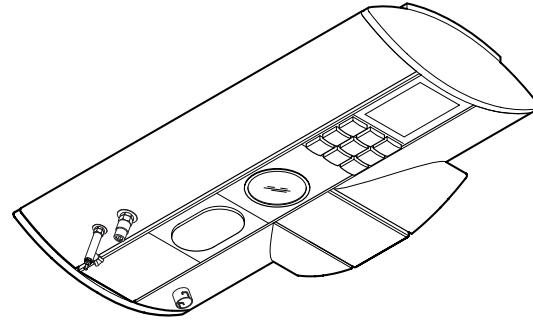
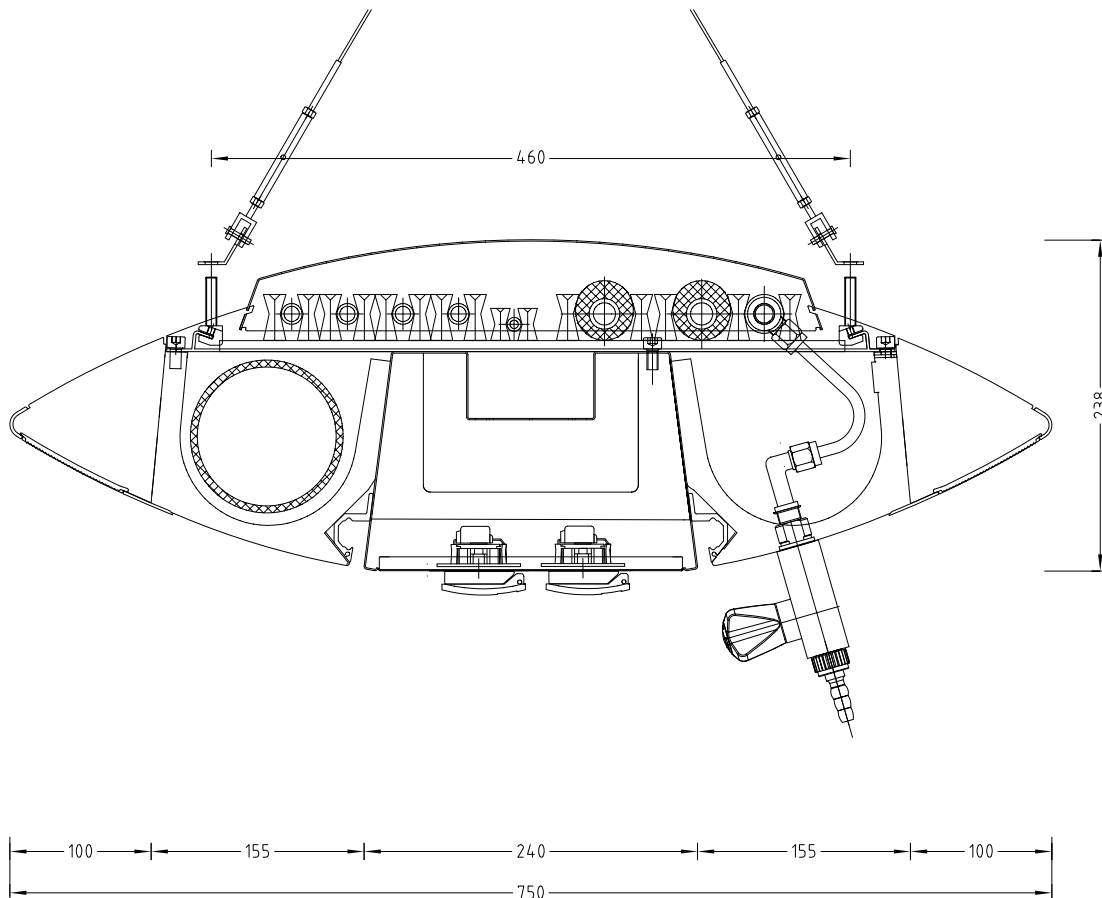


Expansion stage 3

Trunking with panels for electrical supply
 Wing edges constructed as lights
 Sanitary duct
 Air duct

**Expansion stage 4**

Trunking with panels for electrical supply
 Sanitary duct
 Air duct
 Wing edges constructed as add-on for sanitary and air ducts

**Dimensional drawing****4 service wing expansion stages**

Service wing

Technical Data

Dimensions				
Width [in] (mm)	23.62 (600)	35.43 (900)	47.24 (1200)	59.06 (1500)
Depth [in] (mm) at expansion stage 1	9.45 (240)			
Depth [in] (mm) at expansion stage 2	19.53 (496)			
Depth [in] (mm) at expansion stages 3 and 4	29.53 (750)			
Height [in] (mm) without dust cover at expansion stages 1 and 2	7.13 (181)			
Height [in] (mm) without dust cover at expansion stages 3 and 4	7.52 (191)			
Service panel outer dimension [in] (mm)	11.81x8.66x1.14 (300x220x29)			

Relevant features	
Design	Optional incoming-, blade-, T-element Flexible tension for the prevention of vibrations Both sides can be used Dust protection provided by grid element mounted overhead

Electrical engineering	
Electrical supply	Electrical trunking with service panels to supply electricity Optional facilities for telephone, computer, monitor and loud speaker
Lighting	Optional integration of lights in wing edges (direct and indirect lighting) as well as downlight in the electrical trunking
Fuse box	Optional

Sanitary engineering	
Sanitary supply	Service panel with taps and fittings for vacuum, gases and/or water Supply lines, ventilation system Optional local extraction system and/or extract air spigot for AeroEM

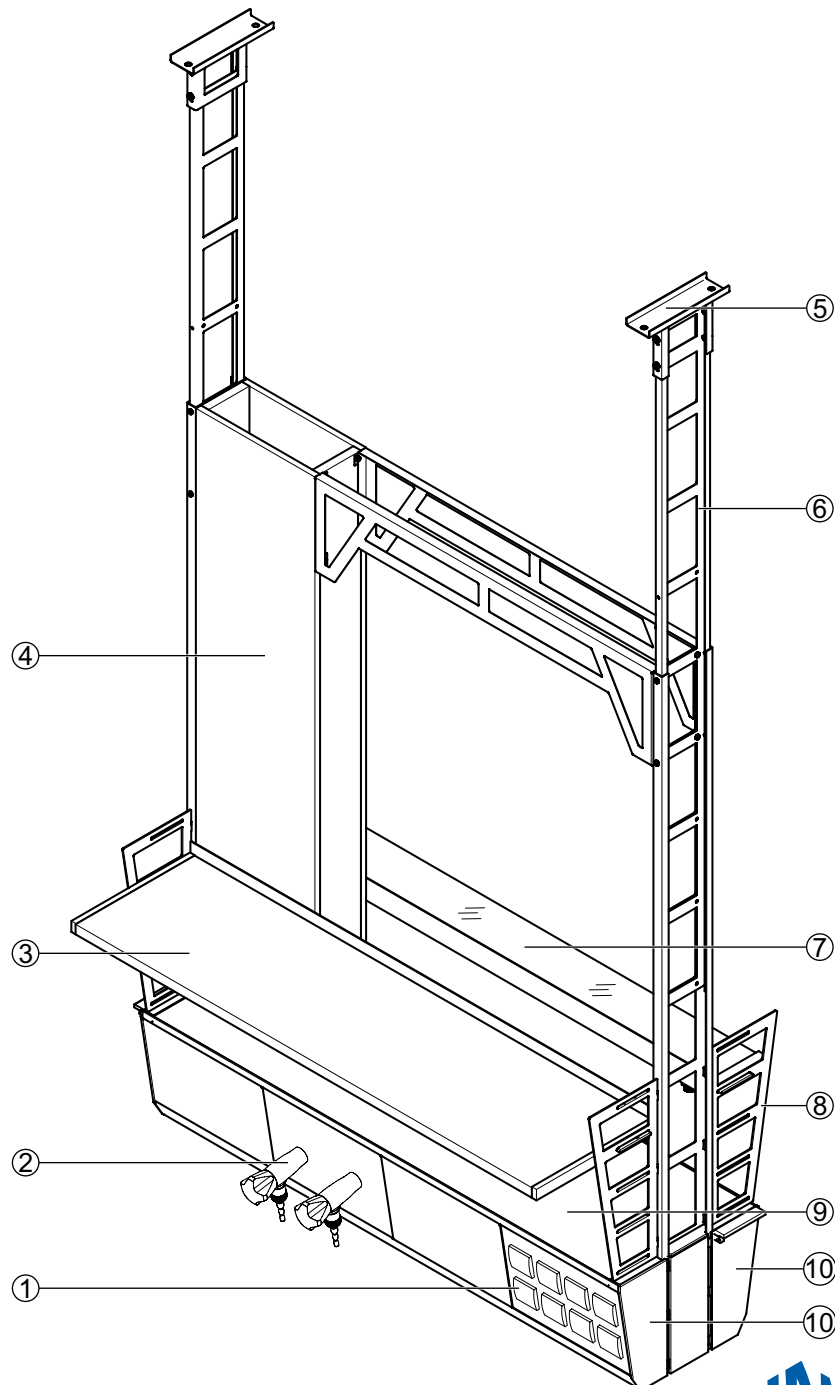
Suspended service boom

Use

- Services supply via the ceiling for:
 - ▶ Laboratory benches under the suspended service boom
 - ▶ Laboratory equipment on mobile tables or substructures
 - ▶ Floor-mounted laboratory equipment
- Variants for genetic fields
- Modular attachment of service boom add-on parts on the supporting construction such as reagent repositories, instrument shelves, scaffold points, etc.
- Tool-free installation of supplemental service duct add-on parts such as pegboards, monitor arms, pipette holders, paper towel dispensers, universal storage, etc.

Design

- 1 Service panel with electric installation
- 2 Service panel for plumbing
- 3 Instrument shelf
- 4 Supply duct
- 5 Ceiling anchor
- 6 Function bracket
- 7 Glass shelf
- 8 Pillars
- 9 Service duct covering
- 10 Service duct



Suspended service boom

Technical Data

Dimensions					
Width [in] (mm)	23.62 (600)	35.43 (900)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [in] (mm) without side walls	13.78 (350)				
Depth [in] (mm) with side walls	18.54 (471)				
Recommended minimum height [in] (mm) of bottom edge suspended service boom to top edge finished floor	68.90 (1750)				
Height of supporting construction (up to ceiling height of 157.48 in (4000 mm))	Depending on ceiling height				
Panel width x height [in] (mm)	11.81 (300) x 7.87 (200)				
Reagent repository width x height [in] (mm)	Service spine width x 5.91 (150)				
Instrument shelf width x height [in] (mm)	Service spine width x 11.81 (300)				

Load bearing capacity	
Additional max. load bearing capacity, suspended service boom [lb] (kg) per grid	66.14 (30)
Glass shelf [lb] (kg)	44.09 (20)
Instrument shelf [lb] (kg)	66.14 (30)
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)

Relevant features	
Design	Function bracket anchored to the ceiling, attached, for the incorporation of service ducts
Max. number of service panels (per side)	Dependent on width of service duct
Scaffold points ø [in] (mm)	0.47 (12) to 0.51 (13)

Material	
Covering	Solid grade laminate 0.2 in (5 mm)

Electrical engineering	
Electrical supply	Socket in service panel
Fuse box	Optional

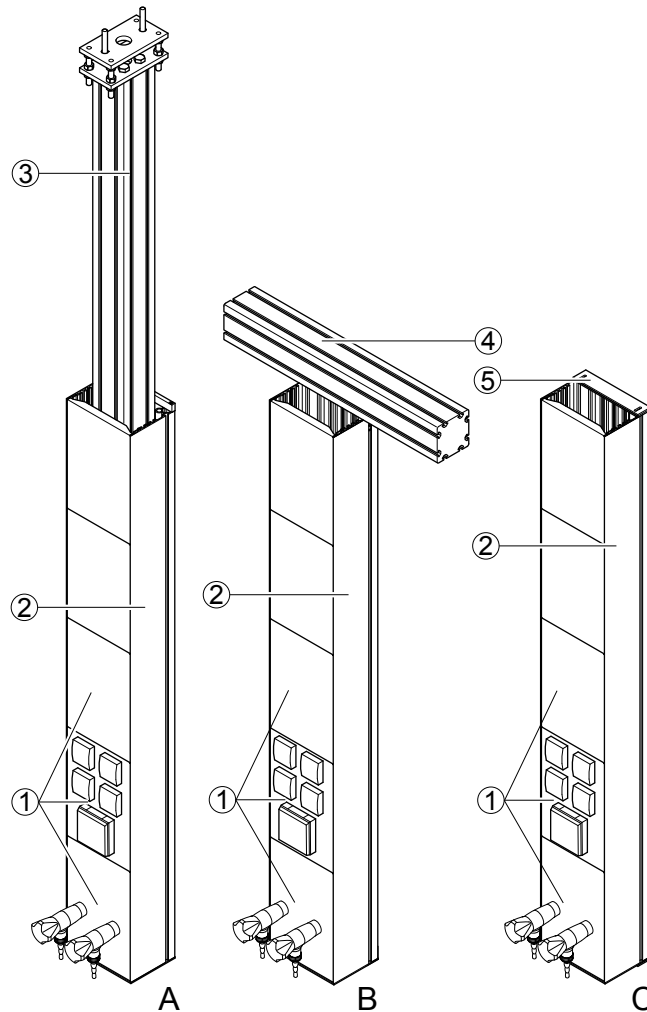
Sanitary engineering	
Sanitary supply	Service panel with taps and fittings for vacuum, gases and/or water Supply lines in supply shaft from above

Use

- Services supply via the ceiling for:
 - ▶ Laboratory benches under the service columns
 - ▶ Laboratory equipment on mobile tables or substructures
 - ▶ Floor-mounted laboratory equipment
- One or two-sided design
- Variants for genetic engineering areas
- Additional storage areas through the connection of service columns with reagent repositories

Design

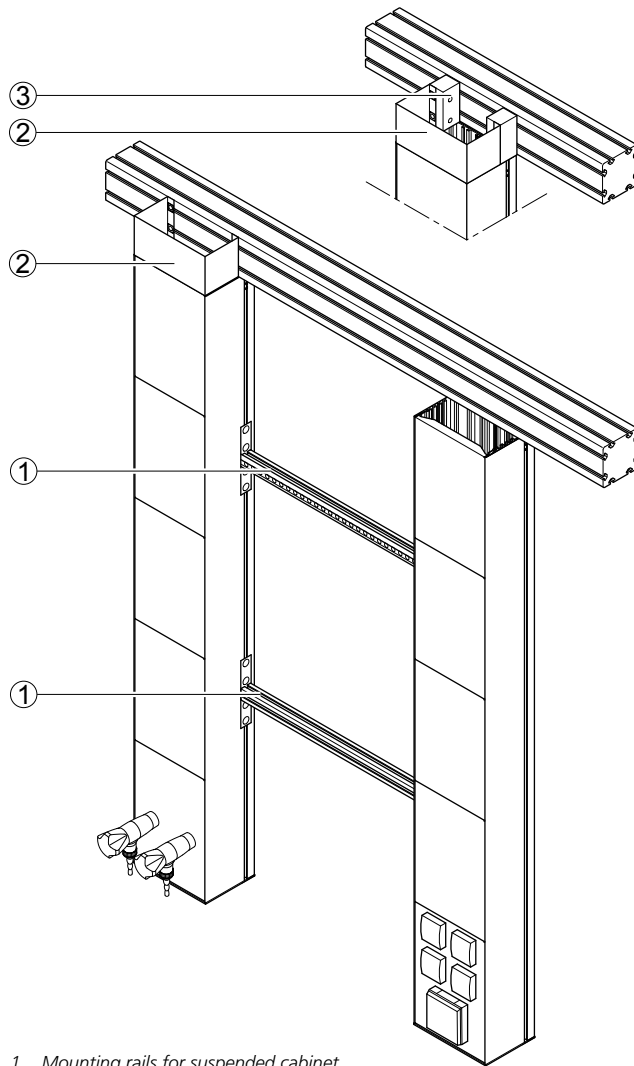
- A: Raw ceiling
B: Service ceiling
C: Wall



- 1 Service panel with corner valves/
outlets/empty panel
- 2 Single/double-sided service
column aluminum profile
- 3 Ceiling console with steel sheet
and aluminum profile
- 4 Service ceiling (by client)
- 5 Angle profile for wall mounting
- 6 Service column

Service column

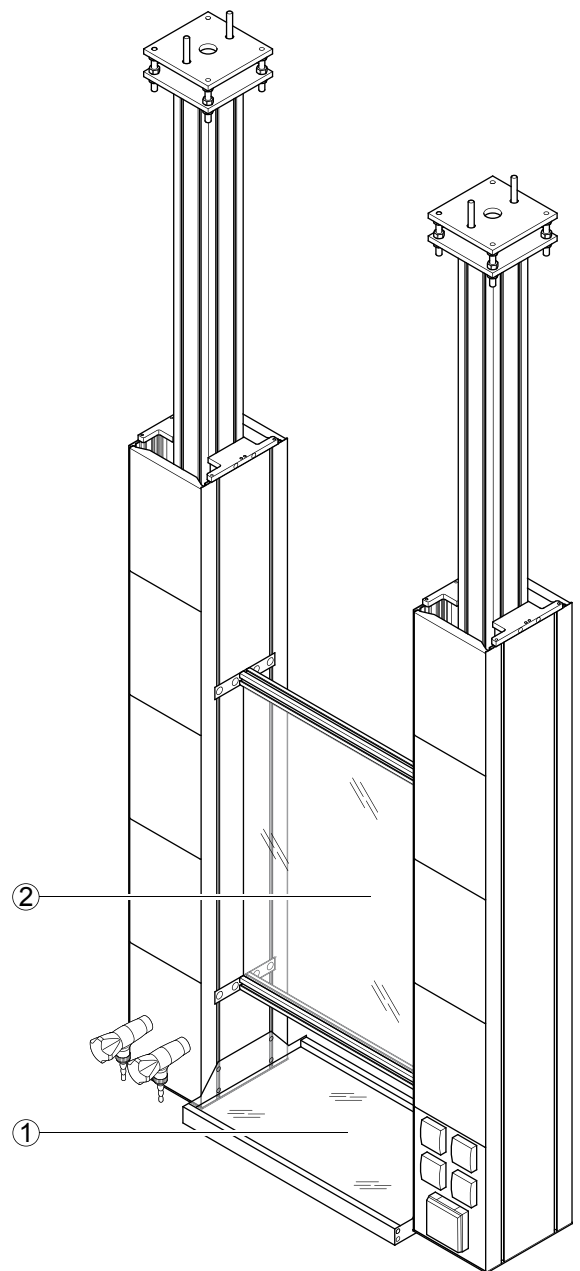
Two single-sided service columns with storage



- 1 Mounting rails for suspended cabinet
- 2 Cover plate (service ceiling mounting)
- 3 Adapter blocks (service ceiling mounting)

Two double-sided service columns with storage

- 1 Glass shelf
- 2 Splash protection



Technical Data

Dimensions			
Width [in] (mm)	8.07 (205)		
Depth [in] (mm) single-sided	5.51 (140)		
Depth [in] (mm) double-sided	9.45 (240)		
Height [in] (mm) without C-supporting construction	59.06 (1500) + 70.87 (1800)		
Height, supporting construction [in] (mm) (up to ceiling height of 177.17 in (4500 mm))	Adjusted to the ceiling height		
Panel width x height [in] (mm)	7.8 (200) x 11.7 (300)		
Storage width [in] (mm)	24.02 (610)	35.83 (910)	47.64 (1210)
Storage depth [in] (mm)	13.78 (350)		

Relevant features	
Design	C-shelf anchored to the ceiling for service column, for one or two-sided use, with height adjustable shelves or profile attached to the wall, for one-sided use Extendable on one or both sides Service column flange-mounted directly to the aluminium supporting system
Max. number of service panels (per side)	5
Scaffold points ø [in] (mm)	0.47 (12) to 0.51 (13)
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)

Electrical engineering	
Electrical supply	Socket in service panel
Fuse box	Optional

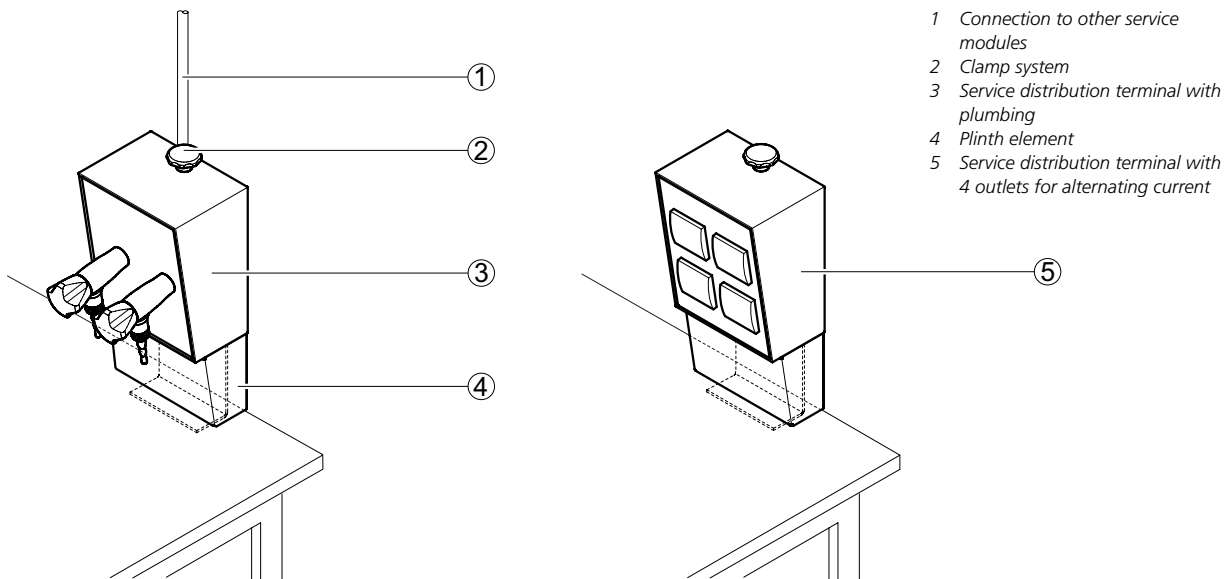
Sanitary engineering	
Sanitary supply	Service panel with taps and fittings for vacuum, gases and/or water Incorporation of supply lines

Service distribution terminal

Use

- Services supply for connection to a laboratory workstation
- Supply of the station via service columns suspended from the ceiling, such as suspended service booms, service columns, service wings, service ceilings, or via a floor-mounted service spine

Design



Technical Data

Dimensions	
Width [in] (mm)	6.22 (158)
Depth [in] (mm)	4.65 (118)
Height [in] (mm)	8.07 (205)
Height including plinth element [in] (mm)	12.20 (310)
Panel width x height [in] (mm)	5.91 (150) x 7.87 (200)
Clamping gap [in] (mm)	0.39 (10) - 3.94 (100)

Relevant features	
Design	Clamping system for worktop or other supports Services supply via ceiling-mounted service column or service spine Tension relief for pipes between service distribution terminal and service module units through service beams and junctions Cable and hose connected with service modules via plug-in coupling

Electrical engineering	
Electrical supply	Max. 4 power outlets with alternating current in service panels
Max. number of 230 V outlets per panel	4

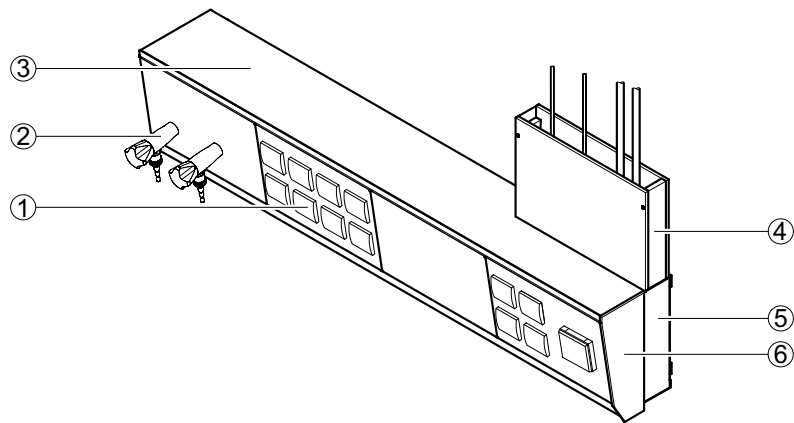
Sanitary engineering	
Sanitary supply	Various taps and fittings for vacuum, gases or compressed air
Max. number of corner valves per panel	2
Max. number of high purity gas valves per panel	1 or 2 (depending on model and function)

Use

- Wall-mounted services supply for:
 - ▶ Laboratory benches under or in front of the service wall duct
 - ▶ Laboratory equipment on mobile tables or underbench constructions
 - ▶ Floor-mounted laboratory equipment
- Variants for genetic engineering areas
- Tool-free installation of supplemental service duct add-on parts such as pegboards, monitor arms, pipette holders, paper towel dispensers, universal storage, etc.

Design

- 1 Service panel with electric installation
- 2 Service panel for plumbing
- 3 Service wall duct covering
- 4 Service supply from above
- 5 Fastening profile/service channel
- 6 Service duct



Technical Data

Dimensions	23.62 (600)	35.43 (900)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Width [in] (mm)	23.62 (600)	35.43 (900)	47.24 (1200)	59.06 (1500)	70.87 (1800 ¹⁾)
Depth [in] (mm)	7.24 (184)				
Height [in] (mm)	9.92 (252)				
Front inclination [°]	9				
Panel width x height [in] (mm)	11.81 (300) x 7.87 (200)				

¹⁾ The service wall duct is extendable in increments of 11.81 in (300 mm)

Load bearing capacity	
Covering [lb] (kg)	44.09 (20) per installed grid

Relevant features	
Design	Service duct for wall mounting incl. solution for inside corner
Number of service panels	Dependent on width of service duct

Material	
Covering	Solid grade laminate 0.2 in (5 mm)

Electrical engineering	
Electrical supply	Socket in service panel
Fuse box	Optional

Sanitary engineering	
Sanitary supply	Service panel with taps and fittings for vacuum, gases and/or water Supply lines in fastening profile

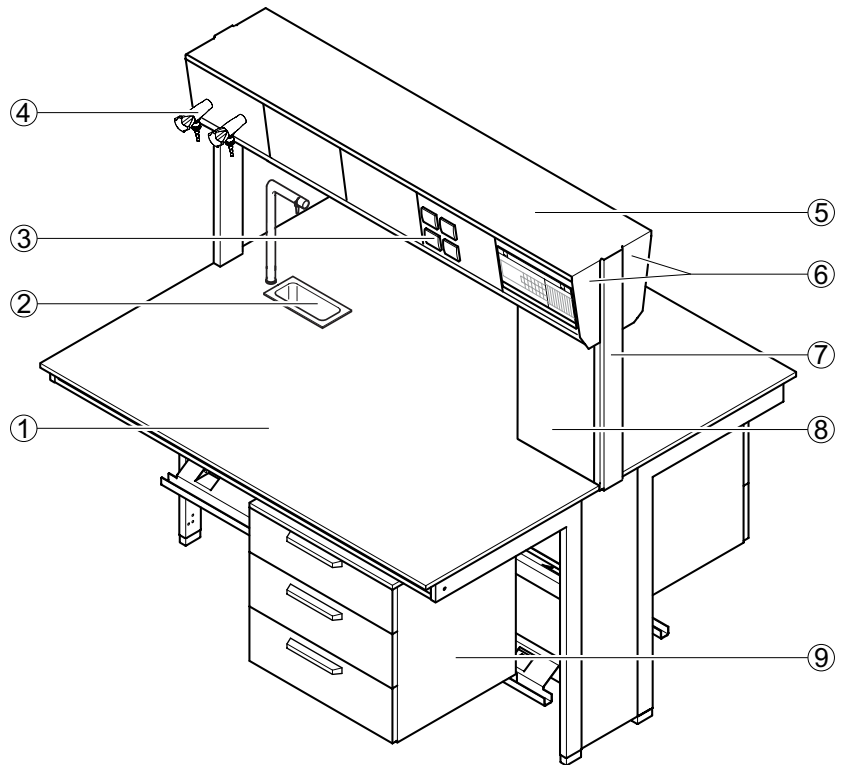
Bench-mounted service outlet

Use

- Services supply for double work benches
- Variants for genetic fields
- Modular attachment of cell add-ons at function stands such as reagent repositories, instrument shelves, suspended cabinets, scaffold points, etc.
- Tool-free installation of supplemental service duct add-on parts such as pegboards, monitor arms, pipette holders, paper towel dispensers, universal storage, etc.
- Not suitable for double work benches where separate work surfaces are required (cf. BGI/GUV-I 850-0)

Design

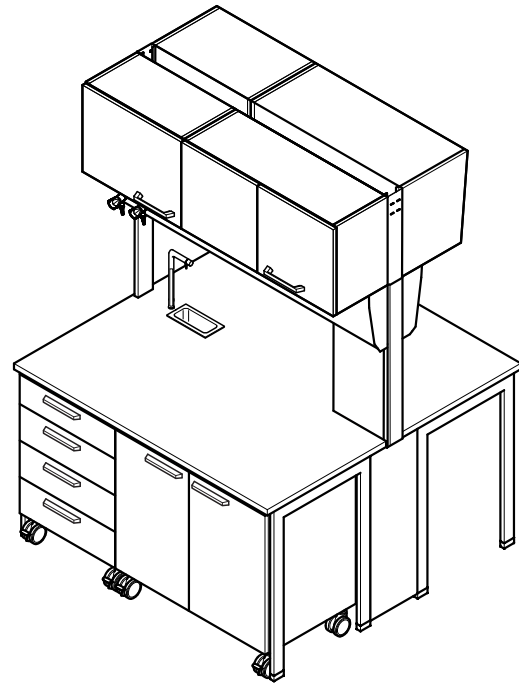
Bench-mounted service outlet with cantilever frame and suspended underbench unit



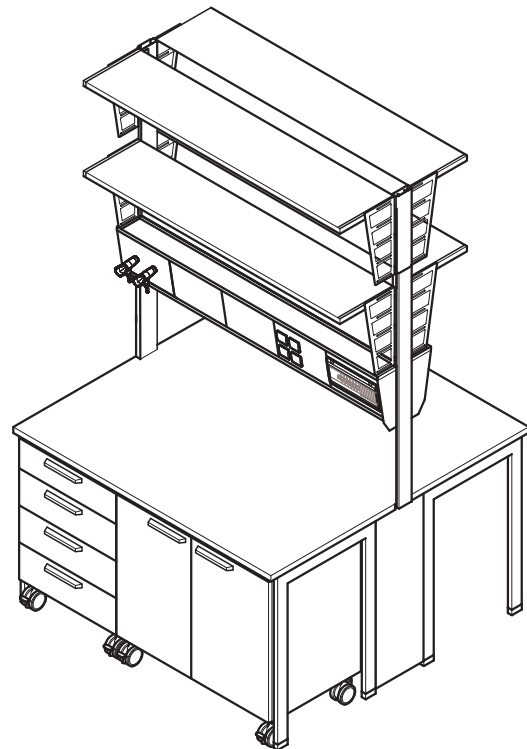
- 1 Worktop
- 2 Panel with electric installation
- 3 Panel with plumbing
- 4 Bench-attachment covering
- 5 Service duct
- 6 Function stands
- 7 Service supply slot
- 8 Suspended underbench unit

Bench-mounted service outlet

Bench-mounted service outlet with suspended cabinets, H-frame and underbench units on casters



Bench-mounted service outlet with shelves and underbench units on casters



Bench-mounted service outlet

Technical Data

Dimensions					
Width [in] (mm)	23.62 (600)	35.43 (900)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [in] (mm)	12.20 (310)				
Height [in] (mm)	63.07 (1602)				
Height, opening for working height of 35.43 in (900 mm) [in] (mm)	17.72 (450)				
Height, pillar extension [in] (mm) (for suspended cabinet height of 18.11 in (460 mm))	18.19 (462)				
Height, pillar extension [in] (mm) (for suspended cabinet height of 30.51 in (760 mm))	30.0 (762)				
Height, pillar extension [in] (mm) (up to ceiling height of 137.8 in (3500 mm))	Depending on ceiling height				
Panel width x height [in] (mm)	11.81 (300) x 7.87 (200)				
Reagent repository width x height [in] (mm)	Bench attachment width x 5.91 (150)				
Instrument shelf width x height [in] (mm)	Bench attachment width x 11.81 (300)				

Load bearing capacity	
Reagent repository [lb] (kg)	44.09 (20)
Instrument shelf [lb] (kg)	66.14 (30)
Max. load per scaffold point with scaffold rod length 11.81 inch (300 mm) [lb] (kg)	11.02 (5)

Relevant features	
Design	Two-sided service duct as bench attachment with opening above the tabletop
Number of panels	Dependent on width of duct
Scaffold points ø [in] (mm)	0.47 (12) to 0.51 (13)

Material	
Covering	Solid grade laminate 0.2 in (5 mm)

Electrical engineering	
Electrical supply	Socket in service panel
Fuse box	Optional

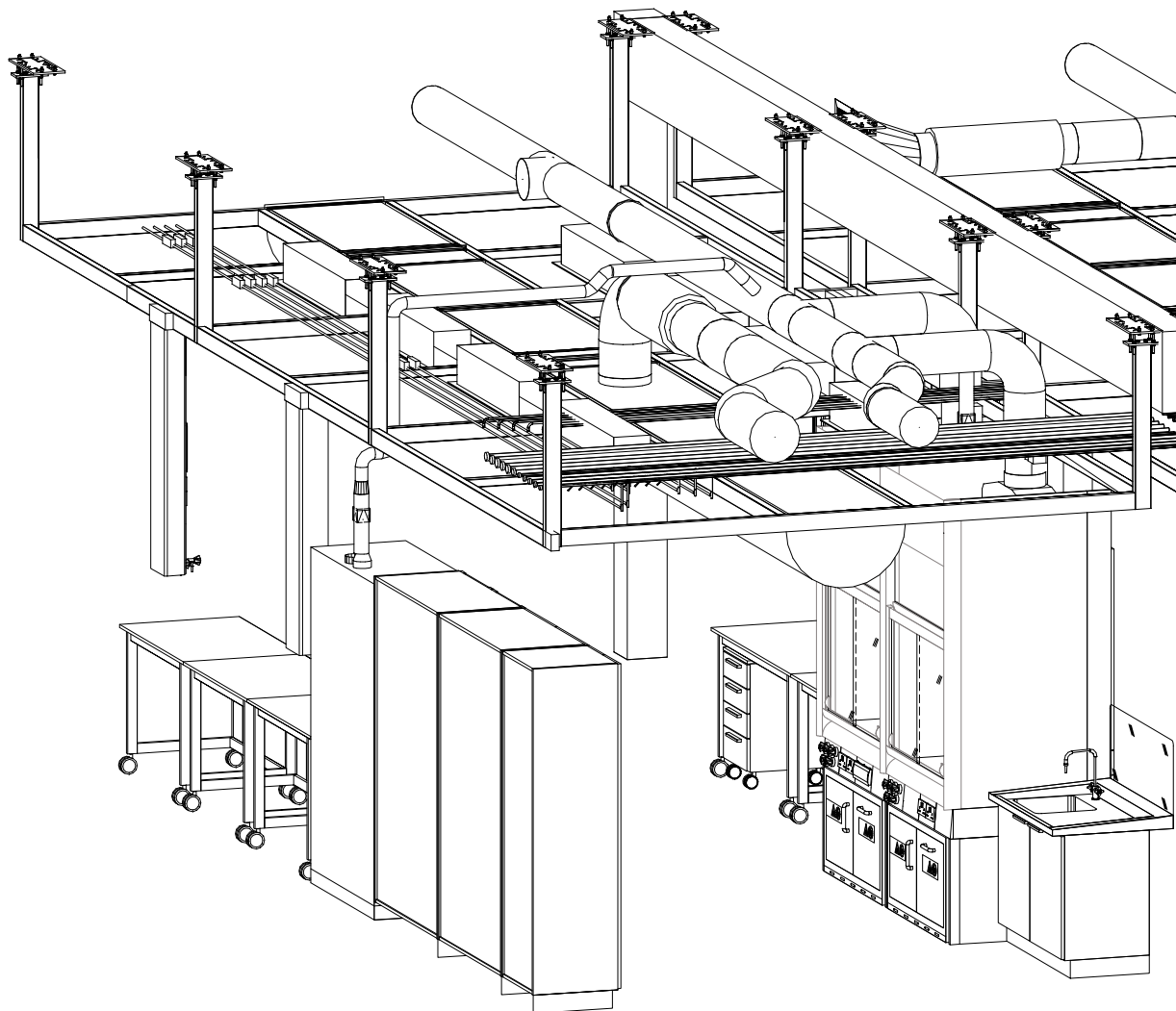
Sanitary engineering	
Sanitary supply	Service panel with taps and fittings for vacuum, gases and/or water Supply lines in bench attachment

Use

- Ceiling supply system for laboratories with highly flexible, modular layout of the individual project phases
- Suitable for all types of laboratories, including chemical, analytical, physical
- For laboratories with diverse requirements
- Integration of all mechanical systems trades in the lab room, such as ventilation systems with control, electrical supply, lighting and services supply
- Custom size adjustment to the building grid
- Very short on-site assembly time

Design

Ceiling supply system



Service ceiling

Technical Data

Dimensions	
Width x depth	Adjusted to the building grid
Module width [in] (<i>mm</i>)	Suggested 118.11 (3000) - 149.61 (3800)
Module depth [in] (<i>mm</i>)	Suggested 94.49 (2400) - 472.44 (12000)
Suggested height [in] (<i>mm</i>) for suspension unit (bottom edge of service ceiling)	112.2 (2850)
Load bearing capacity	
Maximum load bearing capacity [lbs/ft ²] (<i>kg/m²</i>)	102.5 (500)
Aluminum profile [in] (<i>mm</i>)	1.97 (50) x 1.97 (50) 3.94 (100) x 1.97 (50) 3.94 (100) x 3.94 (100)
Relevant features	
Design	Rectangular module grid from aluminum profile Modules carry service lines, electrical trunking, air supply duct, extract air duct and lighting system as well as service modules (e.g. service pillars), laboratory equipment Frictional connection for partition wall Spherical joint suspension units make the adjustment of engineering tolerance possible Assembly dependent on the condition of the ceiling
Electrical engineering	
Electrical supply	Various power supply concepts possible, e. g. bus bar systems with outlet boxes Bus bar systems with 32 A or 64 A Degree of protection IP 55
Cabling	Cable duct to the extra power and data route
Fuse box	Integrated into bus bar or service module
Sanitary engineering	
Supply line	Intersection-free Simple retrofitting of all services is possible With any number of terminal blocks for vacuum, gases and water
Terminal blocks	2, 3 or 4 outlet couplings Connections lockable under pressure (except for vacuum) via exposed pipes
Cooling	Optional

Service ceiling

Ventilation technology	
Supply air	Various aeration systems, e.g. laminar flow, wavedrall, textile-based, etc. Draft-proof Excellent air mixing
Extract air	Extract air duct with interfaces for, among other things, fume hoods (extract air spigot Ø 9.84 in (250 mm) and Ø 3.54 in (90 mm)) Elevated on ceiling grid Optional with room extract air spigot
Sound attenuator module	Optional
Filter module	Optional
Airflow damper	Optional
VAV module	Optional individual VAV for each spacial axis with inflow zone, airflow damper, heat exchanger and sound attenuator
Room control	Optional for supply and extract air, temperature and room pressure
Lighting technology	
Light-band system	Various kinds of optics
	Min. 500 Lux
Lighting in the supply air system	Also possible in a textile-based supply air system as an option



3 Laboratory benches and sinks

In our new **SCALA** laboratory furniture system, laboratory benches have primary importance.

We create flexibility in the laboratory by keeping the supply and disposal services consistently self-contained.

Our work benches are equipable with individually selectable tabletop materials in all models – for a variety of applications in each area of the laboratory.

Our laboratory benches feature a high level of stability, straightforward design and attractive appearance.

In the laboratory, access to water has to meet a variety of needs.

Amplly dimensioned sink modules, integrated sinks, and drip cups, built into service spines or fume hoods, are integrated into the laboratory environment as needed.

Where flexibility is sought, our mobile units fit the bill – under the service wings, with suspended service booms, service modules, and service ceilings – for quick changes of location in the laboratory.



Laboratory benches	120	Special tables	139
Material/frame combinations.....	120	Add-on table for low level fume hoods.....	139
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Laboratory sink.....	132	Sliding element Sekretär.....	147
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Drip cup in worktop.....	136		
Mobile sink.....	137		
AquaEl.....	138		



3 Laboratory benches and sinks

Our benches fit many applications.

We produce our new bench frames out of precision rectangular stainless steel with reinforced cross-sections. Thus our benches handle the strain of 41 lbs/ft² (200 kg/m²) without any problem. The thoroughly homogeneous powder coating, which protects our bench frames from outside influences, results in a flawless appearance.

The same is true for our work surfaces. You can select from our wide spectrum of materials according to your desires.

Bench frames for a variety of needs

You can choose from our C-frame, H-frame and cantilever frame work benches, to suit your needs and purposes.

The greatest variety of grid frames available

For optimal implementation in the workplace, we offer a variety of frame widths.

Improved levelling

Our new, flush height-adjustable feet for C-frames and H-frames provide up to 0.91 in (23 mm) travel distance – optionally to 1.97 in (50 mm). Easily accessible and adjustable – for a completely safe status.

For easier cleaning

The new levelling keeps the C-frame approx. 1.18 in (30 mm) over the floor. It is formed in such a way that cleaning at the floor level is quite easy.



H-frames

provide great stability for add-on tables, mobile tables and analysis tables for seated or standing work.

Underbench cabinets can be mobile, suspended and laterally adjusted independent of a grid. Knee holes are therefore possible anywhere.

C-frames

are extremely stable and can be loaded with 41 lbs/ft² (200 kg/m²). They provide great knee and leg room for mobile and suspended underbench units.

Cantilever frames

provide the greatest leg room and lightest visual impact. They are attached to service spines or directly to walls via their cantilever bracket design.

Movable suspended underbench units

Our new guiding rail allows for completely framed sliding of suspended underbench units with cantilever frames or C-frames.

Movable knee-hole cover panels

In benches without underbench units, we place movable and height-adjustable knee-hole cover panels. Thus, installations routed below the rear side of the table can be concealed.

Other useful helpers

Add-on tables, swings and round tables are also combinable to new situations as independent objects – entirely as needed. Our height-adjustable table can be positioned from 27.55 (700) to 37.4 in (950 mm).

Our multi-purpose rack

The rack is ideally equipped for fitting equipment, AquaEl and others. The stable shelves are height-adjustable and the casters enable quick re-positioning.



3 Laboratory benches and sinks

There are no limits on the use of sinks, sink modules and cup sinks in the laboratory. In new design, adjusted to our **SCALA** laboratory furniture program and manufactured out of chosen materials, our sink elements can be integrated wherever they are needed. Materials like stoneware, polypropylene, stainless steel and epoxy resin are extremely durable.

Sink modules made of stoneware

Our sink modules can be used as end units, but can also be fitted inline with service spines. The module is made of high-strength fired, glazed stoneware in widths of 47.24 in (1200 mm) and is made of one jointless piece. Our sink modules are mounted supporting plinth units that can be fitted with drawers, hinged or tilting doors as desired.

Sink modules and drip cups

Sink modules, made of stoneware or polypropylene, are integrated in the service spine above the bench levels. Drip cups are inserted directly into the worktops – made of stoneware, polypropylene, epoxy resin or stainless steel.



Laboratory sink with built-in basin

As permanently installed parts of the laboratory furniture, sinks are either placed against a service spine or a wall. Sinks come in various designs, and are combinable with a wide variety of worktop materials.

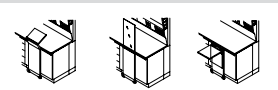
Mobile sinks and AquaEl

The mobile sinks are equipped with casters, and they supplement the flexibility of the laboratory in conjunction with the service wing and the service ceiling. Using flexible pipes, the connection of the mobile sinks leads directly to the service wing or the service ceiling system. The AquaEl is a plug-in compact system that can be used for straightforward supply and disposal of water from service modules. Here, a pump removes the wastewater over the respective system.

Laboratory benches

Material/frame combinations

Combination of worktop materials and bench frames

Worktop material		Melamine resin coating	Postformed	Solid grade laminate	Solid grade laminate Trespa TopLab+	Polypropylene
H-frame		x	x	x	x	x
C-frame		x	x	x	x	x
Cantilever frame		x	x	x	x	x
Mobile bench frames		x	x	x	x	x
H-frame for low level fume		–	–	–	–	x ⁴⁾
Balance table		x	x	–	–	–
Swing		x ¹⁾	–	–	–	–
Round table		x ¹⁾	–	–	–	–
Rack		x ²⁾	–	–	–	–
Sliding elements		x ³⁾	–	–	–	–

¹⁾ Walnut decor or light gray

²⁾ White shelves, Sekretär boards walnut decor

³⁾ Only walnut decor

⁴⁾ Material with marine edging

Laboratory benches

Material/frame combinations

Worktop material		Epoxy	Stainless steel	Stoneware	Compound worktop - stoneware	Glass
H-frame		x	x	x	x	x
C-frame		x	x	x	x	x
Cantilever frame		x	x	x	x	x
Mobile bench frames		x	x	x	x	x
H-frame for low level fume		x ¹⁾	x ¹⁾	x ¹⁾	—	—

¹⁾ Material with marine edging

Laboratory benches

Worktop material

Melamine resin coating/postforming	
Critical substances	Acids in concentrations > 10 %
Damaging substances	Concentrated hydrochloric acids Nitric acid Heated sulfuric acid
Advantage	Flat
Disadvantage	Joints sensitive to moisture Medium chemical resistance
Use	Mobile tables, add-on tables, window benches Instrument benches and laboratory benches in the dry area Cannot be used in moist or wet area
Weight [lbs/ft ²] (kg/m ²)	4 (19.6)
Total thickness [in] (mm)	1.18 (30)
	Light gray NCS S 3005 R80B

Polypropylene	
Critical substances	Hydrocarbons Citric acid Oxalic acid Carbon tetrachloride Diesel oil
Damaging substances	Ozone Concentrated nitric acid Chloroform Gas Benzol
Advantage	Jointless Flat Light High chemical resistance to acids and many solvents Easy to dispose of Less glass breakage
Disadvantage	Soft surface sensitive to scratches Heat-sensitive
Use	Areas with high chemical resistance Working with hydrofluoric acid Radio-isotope area Areas in which the lack of joints is important
Weight [lbs/ft ²] (kg/m ²)	4.2 (20.3)
Total thickness [in] (mm)	1.18 (30)
Increased edge [in] (mm)	0.28 (7)
	Light gray NCS S 3005 R80B

Laboratory benches

Worktop material

Solid grade laminate	
Critical substances	Acids in concentrations > 10 %
Damaging substances	Concentrated hydrochloric acids Nitric acid Heated sulfuric acid
Advantage	Moisture-resistant Flat Easy to dispose of
Disadvantage	Reduced coating thickness
Use	Wet rooms Physical laboratories Benches with average load
Weight [lbs/ft²] (kg/m²)	5.4 (26.4)
Total thickness [in] (mm)	0.75 (19)
	Light gray NCS S 3005 R80B

Solid grade laminate Trespa TopLab+	
Critical substances	Acids in concentrations > 10 %
Damaging substances	Concentrated hydrochloric acids Nitric acid Heated sulfuric acid
Advantage	Antibacterial Highly compressed surface structure High chemical resistance Moisture-resistant Flat Easy to dispose of
Disadvantage	Reduced coating thickness
Use	Chemical, micro-biological, genetic engineering laboratories
Weight [lbs/ft²] (kg/m²)	5.4 (26.4)
Total thickness [in] (mm)	0.79 (20)
	Glacier blue Similar to NCS 1010 R80B

Laboratory benches and sinks

Laboratory benches

Worktop material

Epoxy	
Critical substances	Various solvents Diluted acids
Damaging substances	Hydrofluoric acid Concentrated warm mineral acids
Advantage	Jointless Flat Solid panel High mechanical load capacity Easy to dispose of
Disadvantage	Surface sensitive to scratches Sensitive to concentrated acids
Use	Laboratory workstation of all types
Weight [lbs/ft ²] (kg/m ²)	6.6 (32)
Total thickness [in] (mm)	0.75 (19)
Increased edge [in] (mm)	0.28 (7)
	Platinum colored Similar to NCS S 4202 R

Stainless steel	
Critical substances	Cadmium Lactic acid Oxalic acid
Damaging substances	Compounds containing chlorine and bromine Formic acid Sulfuric acid
Advantage	Jointless High resistance to solvents High temperature resistance
Disadvantage	Sensitive to halogens and their compounds
Use	For maximum loads in the area of decontamination and moisture resistance as well as solvent resistance Biology Microbiology Pharmacy Radio-isotope area Pathology
Weight [lbs/ft ²] (kg/m ²)	5.6 (27.5)
Total thickness [in] (mm)	1.18 (30)
Increased edge [in] (mm)	0.28 (7)
	

Laboratory benches

Worktop material

Stoneware	
Critical substances	None
Damaging substances	Hydrofluoric acid
Advantage	Best chemical resistance Mechanically stable Easy to dispose of
Disadvantage	Evenness tolerances due to firing process Thermodynamic stress limited
Use	Areas with very high chemical and mechanical stress
Weight [lbs/ft ²] (kg/m ²)	11.5 (56)
Total thickness [in] (mm)	1.02 (26)
Increased edge [in] (mm)	0.28 (7)
	Light gray NCS S 3005 R80B

Compound worktop - stoneware	
Critical substances	None
Damaging substances	Hydrofluoric acid
Advantage	Flat Lighter than stoneware Best chemical resistance Easy to dispose of
Disadvantage	Thermodynamic stress limited
Use	Areas with high chemical exposure
Weight [lbs/ft ²] (kg/m ²)	8.2 (40)
Total thickness [in] (mm)	1.18 (30)
Increased edge (epoxy resin) [in] (mm)	0.28 (7)
	White Similar to NCS S 0300-N

Service modules

Worktop material

Glass	
Critical substances	None
Damaging substances	Hydrofluoric acid
Advantage	Flat High chemical resistance
Disadvantage	Sensitive to knocks at corners and edges
Use	Laboratory benches of all types subject to large amounts of chemicals
Weight [lbs/ft²] (kg/m²)	7.8 (38)
Total thickness [in] (mm)	1.18 (30)
	Light green NCS S 2010 G10Y

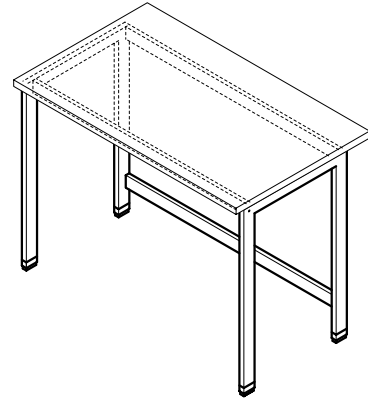
Laboratory benches

Bench with H-frame

Use

- Bench frame with worktops made of various materials as work and storage areas for laboratory work
- Supporting structure for chemical analysis devices and installations
- Not to be used for laboratory work that requires the extraction of dangerous substances

Design



Technical Data

Dimensions					
Width [in] (mm)	23.62 (600)	35.43 (900)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [in] (mm)	23.62 (600) 29.53 (750) 35.43 (900)				
Working height [in] (mm)	29.53 (750) 35.43 (900)				
Load bearing capacity					
H-frame [lbs/ft²] (kg/m²)	41 (200)				
Relevant features					
Height-adjustable feet	Individually adjustable				
Material					
Bench frame [in] (mm)	Steel section 2.34 (60) / 0.98 (25) / 0.08 (2)				
Worktop	See table Material/frame combinations				
Height-adjustable feet	Plastic				

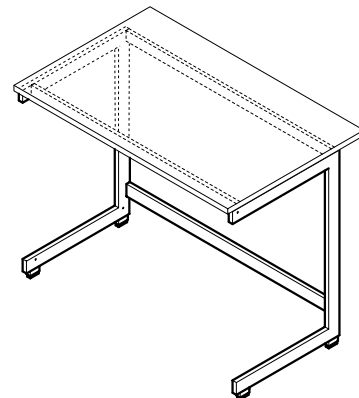
Laboratory benches

Bench with C-frame

Use

- Bench frame with worktops made of varied materials as work and storage areas for laboratory work
- Supporting structure for chemical analysis devices and installations
- Not to be used for laboratory work that requires the extraction of dangerous substances

Design



Technical Data

Dimensions					
Width [in] (mm)	23.62 (600)	35.43 (900)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [in] (mm)	23.62 (600) 29.53 (750) 35.43 (900)				
Working height [in] (mm)	29.53 (750) 35.43 (900)				
Load bearing capacity					
C-Frame [lbs/ft²] (kg/m²)	41 (200)				
Relevant features					
Design	For suspended and caster-mounted underbench units, easily movable				
Height-adjustable feet	Individually adjustable				
Material					
Bench frame [in] (mm)	Steel section 2.76 (70) / 0.98 (25) / 0.12 (3)				
Worktop	See table Material/frame combinations				
Height-adjustable feet	Plastic				

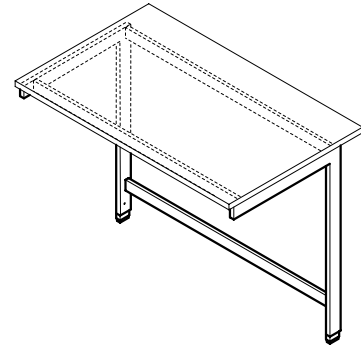
Laboratory benches

Bench with cantilever frame

Use

- Bench frame with worktops made of varied materials as work and storage areas for laboratory work
- Supporting structure for chemical analysis devices and installations
- For permanent installation on a wall or a wall-mounted service spine
- Not to be used for laboratory work that requires the extraction of dangerous substances

Design



Technical Data

Dimensions					
Width [in] (mm)	23.62 (600)	35.43 (900)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [in] (mm)	29.53 (750) 35.43 (900)				
Working height [in] (mm)	29.53 (750) 35.43 (900)				

Load bearing capacity	
For wall installation [lbs/ft²] (kg/m²)	41 (200)

Relevant features	
Design	For suspended and caster-mounted underbench units, easily movable
Height-adjustable feet	Individually adjustable

Material	
Bench frame [in] (mm)	Steel section 2.76 (70) / 0.98 (25) / 0.12 in (3)
Worktop	See table Material/frame combinations
Height-adjustable feet	Plastic

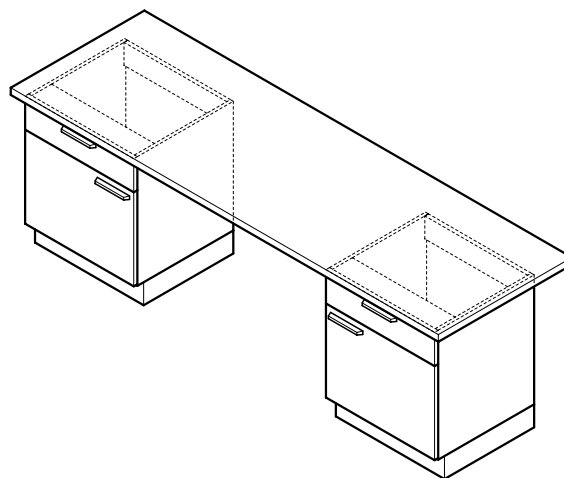
Laboratory benches

Bench with supporting underbench unit

Use

- Self-supporting underbench units on plinth and worktop made of varied materials as work and storage area for laboratory work
- Supporting structure for chemical analysis devices and installations
- Not to be used for laboratory work that requires the extraction of dangerous substances

Design



Technical Data

Dimensions	
Total width [in] (mm)	Max. 118.11 (3000)
Width of underbench unit [in] (mm)	17.72 (450) 23.62 (600) 35.43 (900) 47.24 (1200)
Total depth [in] (mm)	29.53 (750) 35.43 (900)
Working height [in] (mm)	29.53 (750) 35.43 (900)
Material	
Worktop	See table Material/frame combinations
Load bearing capacity	
Table [lbs/ft²] (kg/m²)	7.87 (200)

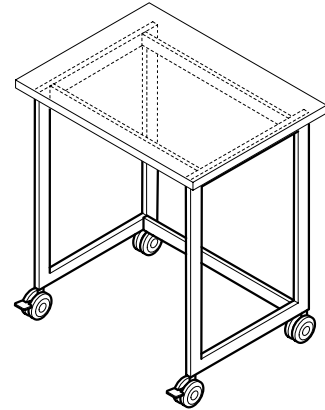
Mobile tables

Mobile table

Use

- Caster-mounted bench frame with worktops made of varied materials as work and storage areas for laboratory work
- Movable supporting structure for chemical analysis devices and installations
- Not to be used for laboratory work that requires the extraction of dangerous substances

Design



Technical Data

Dimensions			
Width [in] (mm)	35.43 (900)	47.24 (1200)	59.06 (1500)
Depth [in] (mm)		23.62 (600)	
		29.53 (750)	
		35.43 (900)	
Working height [in] (mm)		29.53 (750)	
		35.43 (900)	

Load bearing capacity	
Mobile table [lb] (kg)	330 (150)
Each heavy duty caster [lb] (kg)	242 (110)

Relevant features	
Heavy-duty casters	4, 2 of which are lockable (lockable casters and steering axle)
Extendable shelf	Optional
Shelf and underbench unit	Optional

Material	
Bench frame [in] (mm)	Steel section 2.36 (60) / 0.98 (25) / 0.08 (2)
Worktop	See table Material/frame combinations

Laboratory sinks

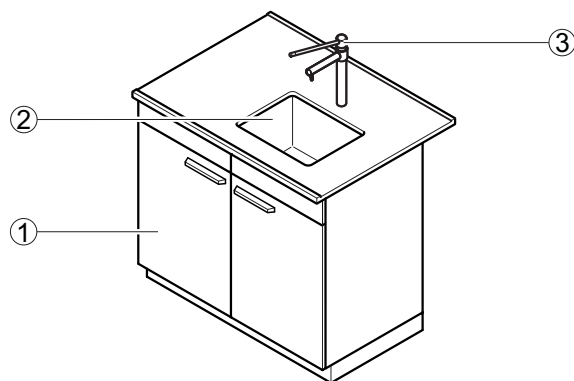
Laboratory sink

Use

- Water supply and disposal
- For cleaning equipment
- For containing large volumes of water
- Not to be used for disposal of chemicals

Design

- 1 Underbench unit
- 2 Sink
- 3 Fitting



Technical Data

Material Worktop	Material Sink	Sink dimensions width x depth x height [in] (mm)	Mode of installation
Stoneware	Stoneware	15.75 (400) x 15.75 (400) x 9.84 (250) 19.69 (500) x 15.75 (400) x 9.84 (250)	Sink fitted flush in the worktop
Melamine resin coating, laminate, Trespa Toplab+, glass	Polypropylene	12.6 (320) x 12.6 (320) x 7.87 (200) 15.75 (400) x 15.75 (400) x 9.84 (250) 19.69 (500) x 15.75 (400) x 9.84 (250)	Sink with raised edge inserted into the worktop from above
Melamine resin coating, laminate, Trespa Toplab+, glass	Stainless steel	13.39 (340) x 14.57 (370) x 5.91 (150) 19.69 (500) x 15.75 (400) x 9.84 (250)	Sink with raised edge inserted into the worktop from above
Polypropylene	Polypropylene	15.16 (385) x 15.16 (385) x 9.84 (250) 19.09 (485) x 15.16 (385) x 9.84 (250)	Sink attached to the worktop from below and welded
Stainless steel	Stainless steel	15.75 (400) x 15.75 (400) x 9.84 (250) 19.69 (500) x 15.75 (400) x 9.84 (250)	Sinks fitted flush in the worktop
Compound worktop - stoneware	Stoneware	14.96 (380) x 14.96 (380) x 9.84 (250) 20.87 (530) x 14.96 (380) x 9.84 (250)	Sink fitted flush in the worktop
Epoxy	Epoxy	15.98 (406) x 12.01 (305) x 7.99 (203) 15.98 (406) x 15.98 (406) x 7.48 (190) 18.7 (475) x 14.96 (380) x 10.98 (279)	Sink fitted flush in the worktop

Dimensions					
Width [in] (mm)	23.62 (600)	35.43 (900)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [in] (mm)	23.62 (600) ¹⁾ 26.57 (675) ¹⁾ 27.76 (705) ¹⁾ 29.53 (750) 32.48 (825) 33.67 (855) 35.43 (900)				
Height [in] (mm)	35.43 (900)				

¹⁾ If necessary, fitting positioned laterally next to the sink

Sanitary engineering	
Water connection	Fixed connection
Waste water connection	Fixed connection with siphon
Water fitting	Optional bench-mounted service valve
Eye wash	Optional

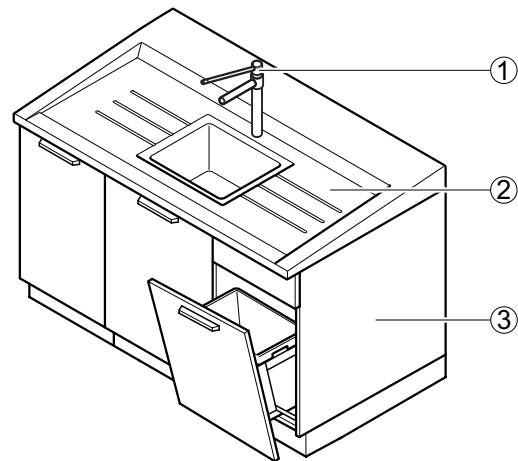
Laboratory sinks

Laboratory sink with sink module

Use

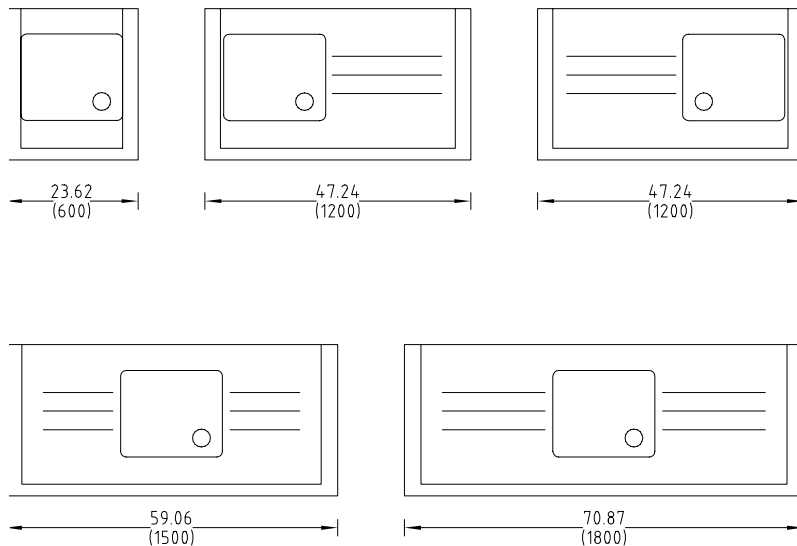
- Water supply and disposal
- For cleaning equipment
- For containing large volumes of water
- For installing on specialized underbench units
- Not to be used for disposal of chemicals

Design



- 1 Fitting
2 Sink module
3 Underbench unit (3 parts)

Variants



Technical Data

Laboratory sinks

Laboratory sink with sink module

Dimensions				
Width, sink module [in] (mm)	23.62 (600)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth, sink module for wall bench with service spine [in] (mm)	26.57 (675) or 32.48 (825)			
Depth, sink module for double bench with service spine [in] (mm)	27.76 (705) or 33.66 (855)			
Depth, sink module in front of building wall [in] (mm)	29.92 (760) or 35.83 (910)			
Depth, sink module as an end sink [in] (mm)	–		28.74 (730)	
Overall height, sink module with underbench unit [in] (mm)	front 35.83 (910) to 37.40 (950) rear			
Sink dimensions, width x depth x height [in] (mm)	18.11 (460) x 15.35 (390) x 9.84 (250)			
Height, edge of sink [in] (mm)	front 0.79 (20) to 1.97 (50) rear			

Material	
Sink module	Stoneware

Relevant features	
Design	Self-supporting, integrally moulded draining area Marine edging
Modular layout	Various underbench units possible as front-end sink with specialized underbench unit

Sanitary engineering	
Water connection	Fixed connection
Waste water connection	Fixed connection with siphon
Water fitting	Bench-mounted fitting optional
Eye wash	Optional

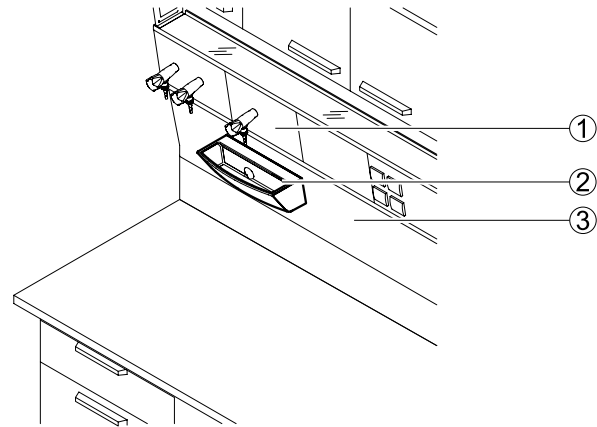
Laboratory sinks

Drip cup on service spine

Use

- Water supply and disposal
- For cleaning equipment
- Drip collector under water fittings for containing small volumes of water
- Not to be used for disposal of chemicals

Design



- 1 Sanitary panel with fitting
2 Drip cup
3 Front filler panel of the service spine

Technical Data

Dimensions	
Width [in] (mm)	11.57 (294)
Depth [in] (mm)	5.2 (132)
Height [in] (mm)	4.41 (112)
Sink dimensions width x depth x height [in] (mm)	10.63 (270) x 3.35 (85) x 3.15 (80)
Material	
Sink module	Stoneware Polypropylene
Relevant features	
Design	Attached to the front filler panel of the service spine
Sanitary engineering	
Water connection	Fixed connection
Waste water connection	Fixed connection with siphon
Water fitting	Optional spine fitting

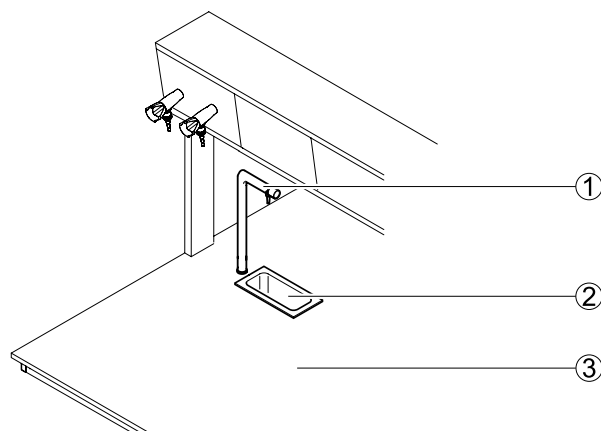
Laboratory sinks

Drip cup in worktop

Use

- Water supply and disposal
- For cleaning equipment
- Drip collector under water fittings for containing small volumes of water
- Not to be used for disposal of chemicals

Design



- 1 Fitting
2 Drip cup
3 Worktop

Technical Data

Dimensions	
Width x depth [in] (mm)	11.61 (295) x 5.71 (145)
Height [in] (mm)	4.92 (125) 5.51 (140)
Sink dimensions width x depth x height [in] (mm)	9.84 (250) x 3.94 (100) x 5.91 (150)

Material drip cup	Material worktop
Stoneware	Stoneware, compound worktop - stoneware
Polypropylene	Polypropylene, melamine resin coating, glass, laminate, Trespa Toplab+
Stainless steel	Stainless steel, melamine resin coating, glass, laminate, Trespa Toplab+
Epoxy	Epoxy

Relevant features	
Design	Fastened to the worktop from below or above

Sanitary engineering	
Water connection	Fixed connection
Waste water connection	Fixed connection with siphon
Water fitting	Standard fitting optional

Laboratory sinks

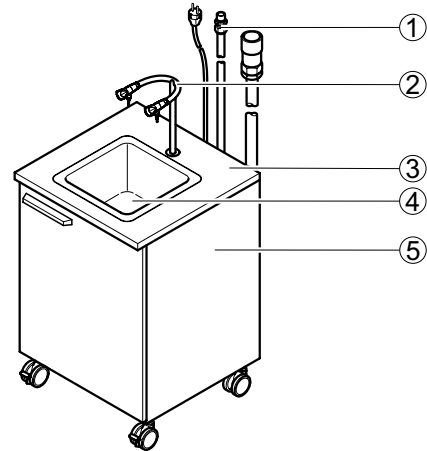
Mobile sink

Use

- Mobile supply and disposal of water and gas
- For cleaning equipment at any location
- Not to be used for disposal of chemicals

Design

- 1 Connecting pipes
- 2 Fitting with two cold water outlets
- 3 Worktop
- 4 Sink
- 5 Underbench unit on casters



Technical Data

Dimensions	
Width [in] (mm)	23.82 (605)
Depth [in] (mm)	23.62 (600)
Height without fittings [in] (mm)	35.71 (907)
Sink dimensions width x depth x height [in] (mm)	12.6 (320) x 12.6 (320) x 7.87 (200)
Height of casters [in] (mm)	4.33 (110)
Length of inflow and outflow pipes [in] (mm)	98.43 (2500)
Length of connecting pipes [in] (mm)	98.43 (2500)
Material	
Worktop/drip cups	Melamine resin coating/polypropylene
Load capacity	
Each caster [lb] (kg)	154.32 (70)
Relevant features	
Design	Mounted on underbench unit on casters with hinged doors Attached to the worktop from above Pipes routed out at the rear of the underbench unit Drainage pumping system in underbench unit Disconnection of water intake in case of power outage
Electrical engineering	
Electrical power supply [V]	230
Sanitary engineering	
Water connection	Flexible with male coupling
Waste water connection	Flexible with male coupling
Gas connection	Optionally flexible with male coupling
Water fitting	Standard fitting
Gas fitting	Optional standard fitting in combination with water fitting
Mixing tap	Optional additional flexible water fitting

Laboratory sinks

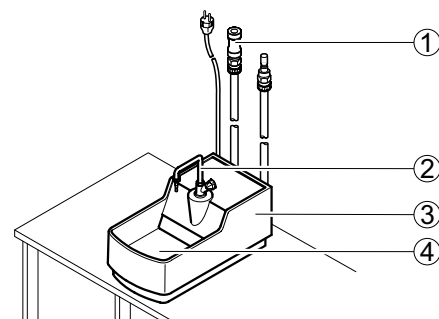
AquaEI

Use

- Mobile supply and disposal of water and gas
- For cleaning equipment at the work station, or at any mobile or stationary laboratory work station
- Not to be used for disposal of chemicals

Design

- 1 Connecting pipes
- 2 Fitting for water outlet
- 3 Housing with pump
- 4 Sink



Technical Data

Dimensions	
Width x depth x height (without fittings) [in] (mm)	12.48 (317) x 23.03 (585) x 10.55 (268)
Sink width x depth x height [in] (mm)	10.24 (260) x 10.83 (275) x 4.13 (105)
Length of inflow and outflow pipes [in] (mm)	59.06 (1500)
Length of connecting pipes [in] (mm)	59.06 (1500)
Material	
Material	GRP coated
Weight	
Weight without fittings [lb] (kg)	30.86 (14)
Relevant features	
Design	Ready to plug-in compact system with flexible pipes Waste water lifting unit integrated into the housing Disconnection of water intake in case of power outage
Electrical engineering	
Electrical power supply [V]	230
Sanitary engineering	
Water connection	Flexible with male coupling
Waste water connection	Flexible with male coupling
Gas connection	Optionally flexible with male coupling
Water fitting	Standard fitting
Gas fitting	Optional standard fitting in combination with water fitting
Mixing tap	Optional additional flexible water fitting

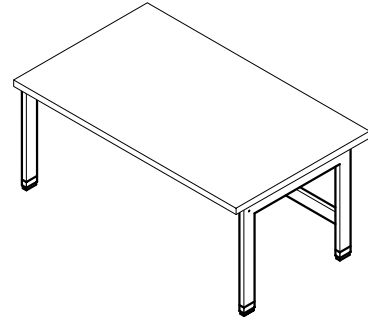
Special tables

Add-on table for low level fume hoods

Use

- For installation in low level fume hoods
- Bench frame with worktops made of varied materials as work and storage areas for laboratory work
- Supporting structure for chemical analysis devices and installations

Design



Technical Data

Dimensions					
Width [in] (mm)	35.43 (900)	47.24 (1200)	59.06 (1500)	70.87 (1800)	82.68 (2100)
Depth [in] (mm)	22.64 (575)				
Working height [in] (mm)	19.69 (500)				

Material	
Bench frame [in] (mm)	Steel section 2.36 (60) / 0.98 (25) / 0.08 (2)
Worktop	See table Material/frame combinations
Height-adjustable feet	Plastic

Load bearing capacity	
H-frame [lbs/ft²] (kg/m²)	41 (200)

Relevant features	
Worktop	Marine edging
Height-adjustable feet	Individually adjustable

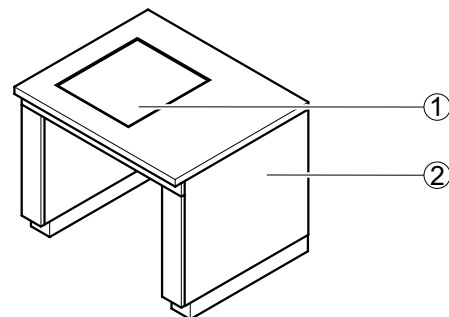
Special tables

Balance table

Use

- For installing analytical balances and other sensitive measuring devices
- Bench frame with worktop and specially positioned vibration-isolated surface
- Not to be used for laboratory work that requires the extraction of dangerous substances

Design



- 1 Concrete worktop
2 Table sheathing

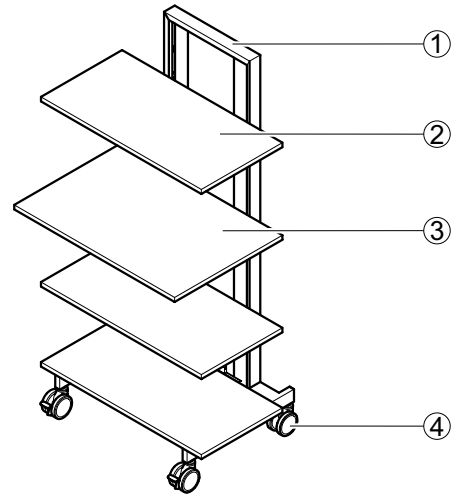
Technical Data

Dimensions	
Width [in] (mm)	35.43 (900)
Depth [in] (mm)	29.53 (750) 35.43 (900)
Working height [in] (mm)	29.53 (750) 35.43 (900)
Balance plate width x depth [in] (mm)	15.75 (400) x 17.72 (450)
Material	
Supporting construction	Steel section
Worktop	See table Material/frame combinations
Balance plate	Smooth concrete
Weight	
Total weight [lb] (kg)	264.55 (120)
Weight of balance plate [lb] (kg)	143.3 (65)
Relevant features	
Design	Specially mounted, heavy balance plate made of smooth concrete Supporting construction for the balance plate vibration isolated

Use

- Mobile, flexible storage area
- Combinable with the 23.62 in (600 mm) deep shelf to create a mobile desk/work station
- Not to be used for storing dangerous substances

Design



- 1 Steel support frame with latticing
- 2 Depth of bottom storage shelf 17.72 in (450 mm)
- 3 Depth of bottom storage shelf 23.62 in (600 mm)
- 4 Heavy-duty casters with brakes

Technical Data

Dimensions	
Width [in] (mm) with shelf	35.43 (900)
Depth [in] (mm) with shelf depth 17.55 in (450 mm)	23.62 (600)
Height [in] (mm)	70.47 (1790)
Depth of shelf [in] (mm)	17.72 (450) 23.62 (600)

Material	
Supporting construction	Steel section
Shelf 0.87 in (22 mm)	Mounting plate with melamine resin coating

Load bearing capacity	
Total [lbs/ft²] (kg/m²)	30.7 (150)
Shelf [lbs/ft²] (kg/m²)	6.1 (30)

Relevant features	
Heavy-duty casters	4, 2 of which are lockable (lockable casters and steering axle)
Shelf	Adjustable without tools in a grid of 1.78 in (45 mm)
Integrated distribution pillar	Optional

Special tables

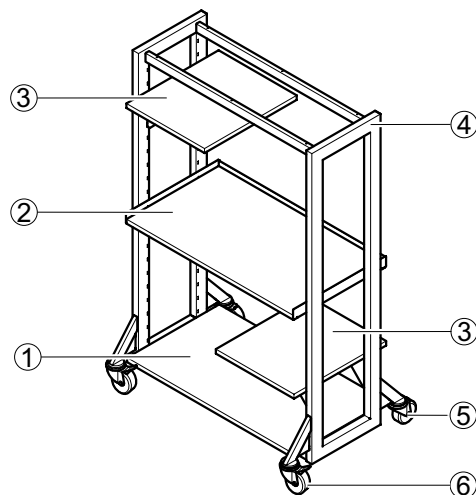
Heavy duty rack

Intended use

- Mobile multi-stage storage area
- With flexible work surfaces for free horizontal configuration
- Suitable for accommodating stackable and non-stackable measuring instruments / measuring instrument towers
- Suitable for heavy apparatus

Design

- 1 Lower shelf, fixed
- 2 Height-adjustable shelf, full width
- 3 Height-adjustable shelf, depth 23.23 in (590 mm)
- 4 Steel support frame
- 5 Heavy duty casters without brake
- 6 Heavy duty casters with brake



Technical data

Dimensions		
Width [in] (mm)	47.24 (1200)	70.87 (1800)
Depth [in] (mm)	30.31 (770)	
Height [in] (mm)	70.47 (1790)	
Shelf, width x depth [in] (mm)	15.75 x 23.23 (400 x 590)	15.75 x 23.23 (400 x 590)
	42.13 x 29.53 (1070 x 750)	65.75 x 29.53 (1670 x 750)

Material	
Supporting construction	Steel profile 2.76 x 1.57 in (70 x 40 mm)
Shelf	Shelf of OSB board

Load bearing capacity	
Total	1102.31 lb (500 kg)
Shelf 15.75 x 23.23 [in] (400 x 590 mm)	66.14 lb (30 kg)
Shelf 42.13 x 29.53 [in] (1070 x 590 mm)	154.32 lb (70 kg)
Shelf 65.75 x 29.53 [in] (1670 x 590 mm)	154.32 lb (70 kg)
Lower shelf 42.13 x 29.53 [in] (1070 x 590 mm)	330.69 lb (150 kg)
Lower shelf 65.75 x 29.53 [in] (1670 x 590 mm)	330.69 lb (150 kg)

Design characteristics	
Heavy duty casters	4, of which 2 can be locked (caster and steering axle can be locked)
Shelf	Can be adjusted with a grid of 2.95 in (75 mm)

Special tables

Heavy load mobile table

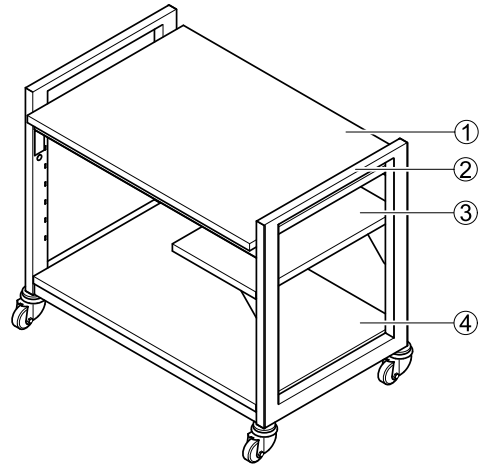
Use

- Movable heavy-duty bench frame with work top and integrated handle. Total load bearing capacity: 1102.31 lb (500 kg)

Design

- 1 Worktop
- 2 Integrated handle
- 3 Height-adjustable intermediate shelf
- 4 Lower storage shelf, fastened

3+4 Optionally available as accessories, not contained in the basic model



Technical data

Dimensions		
Width [in] (mm)	47.24 (1200)	59.06 (1500)
Depth [in] (mm)	29.53/35.43 (750/900)	
Working height [in] (mm)	35.43 (900)	
Table top width x depth [in] (mm)	42.13 x 29.53/35.43 (1070 x 750/900)	53.94 x 29.53/35.43 (1370 x 750/900)
Side intermediate floor width x depth [in] (mm)	27.17 x 15.75 (690 x 400)	27.17 x 15.75 (690 x 400)
Lower storage shelf width x depth [in] (mm)	42.13 x 27.17/33.07 (1070 x 690/840)	53.94 x 27.17/33.07 (1370 x 690/840)

Material	
Supporting construction	Steel profile 2.76 x 157 in (70 x 40 mm)
Worktop	1.18 in (30 mm) particle board with a layer of melamine / 0.75 in (19 mm) solid grade laminate
Side intermediate floor and storage shelf	1.18 in (30 mm) particle board with a layer of melamine

Load bearing capacity	
Total	1102.31 lb (500 kg)
Worktop	1102.31 lb (500 kg), only if no intermediate/storage shelves are mounted
Lateral intermediate shelf	66.14 lb (30 kg)
Lower storage shelf	330.69 lb (150 kg)

Attention: The total maximum load bearing capacity of 1102.31 lb (500 kg) for work top, lower storage shelf and intermediate shelf should not be exceeded by additional shelves.

Relevant features	
Heavy-duty castors	4x lockable (lockable castors and steering axle), load bearing capacity 300 kg / castor
Lateral intermediate shelf	Adjustable in a grid of 75 mm

Options /accessories	
Lower storage shelf	A shelf is applied on the firmly welded traverse Load bearing capacity: 330.69 lb (150 kg)
Lateral intermediate shelf	Left and/or right, a shelf, depth 1.57 in (40 mm), can be hooked into in a grid. Load bearing capacity: 66.14 lb (30 kg)

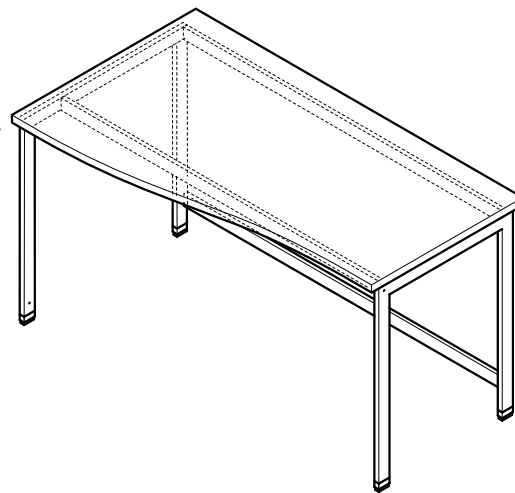
Special tables

Swing

Use

- Bench frame with worktops made of varied materials as work and storage areas for laboratory work
- Supporting structure for chemical analysis devices and installations
- Visually appealing combination of laboratory tables of various depths
- Not to be used for laboratory work that requires the extraction of dangerous substances

Design



Technical Data

Dimensions		
Width [in] (mm)	47.24 (1200)	59.06 (1500)
Depth [in] (mm)	23.62 (600) - 29.53 (750) 29.53 (750) - 35.43 (900)	
Working height [in] (mm)	29.53 (750) 35.43 (900)	
Material		
Bench frame [in] (mm)	Steel section 2.36 (60) / 0.98 (25) / 0.08 (2)	
Worktop	See table Material/frame combinations	
Load bearing capacity		
Total [lbs/ft²] (kg/m²)	41 (200)	

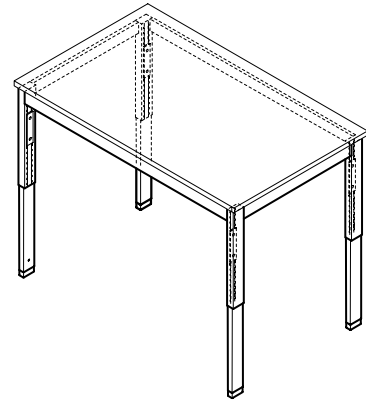
Special tables

Height-adjustable table

Use

- Bench frame with worktops made of varied materials as height-adjustable work and storage areas for laboratory work
- Supporting structure for chemical analysis devices and installations
- Not to be used for laboratory work that requires the extraction of dangerous substances

Design



Technical Data

Dimensions		
Width [in] (mm)	47.24 (1200)	59.06 (1500)
Depth [in] (mm)	29.53 (750) 35.43 (900)	
Working height [in] (mm)	27.56 (700) - 37.4 (950)	
Material		
Bench frame [in] (mm)	Steel section 2.36 (60) / 0.98 (25) / 0.08 (2)	
Worktop	See table Material/frame combinations	
Load bearing capacity		
Total [lbs/ft²] (kg/m²)	41 (200)	
Relevant features		
Working height	Adjustable in a grid of 0.99 in (25 mm)	
Bench frame	H-frame	

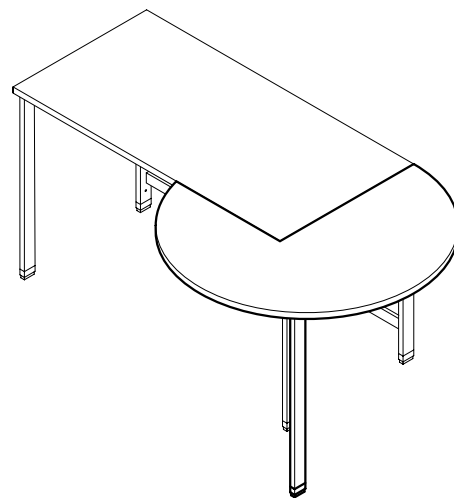
Special tables

Round table

Use

- For installation as an additional work surface on tables with H- and C-frames
- Not to be used for laboratory work that requires the extraction of dangerous substances

Design



Technical Data

Dimensions	
Diameter [in] (mm)	47.24 (1200)
Working height [in] (mm)	29.53 (750) 35.43 (900)
Material	
Bench frame [in] (mm)	Steel section 2.36 (60) / 0.98 (25) / 0.08 (2)
Worktop	See table Material/frame combinations
Height-adjustable feet	Plastic
Load bearing capacity	
Round table [lbs/ft²] (kg/m²)	10.2 (50)

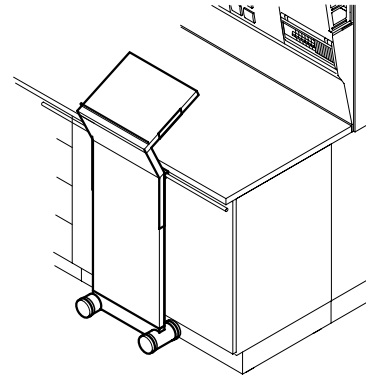
Special tables

Sliding element Sekretär

Use

- Movable, slanted writing surface attached to a laboratory work bench

Design



Technical Data

Dimensions	
Width [in] (mm)	16.38 (416)
Working height, bench [in] (mm)	35.43 (900)
Max. total height [in] (mm)	48.98 (1244)
Relevant features	
Design	Sliding elements on 4 wheels Fastened to a sliding rail on the laboratory work bench
Material	
Sliding element	Melamin resin coating, walnut decor

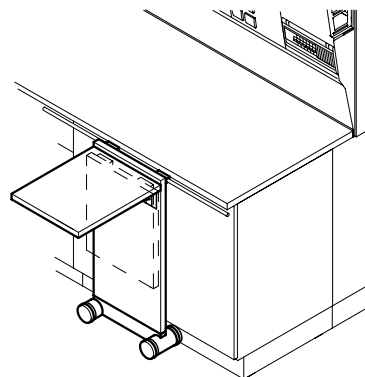
Special tables

Sliding element Assistant

Use

- Movable, installation and writing surface that swings out of a laboratory work bench
- Not to be used for laboratory work that requires the extraction of dangerous substances

Design



Technical Data

Dimensions	
Width [in] (mm)	15.98 (406)
Depth [in] (mm)	20.87 (530)
Working height, bench [in] (mm)	35.43 (900)
Load bearing capacity	
Storage and writing surface [lb] (kg)	33.07 (15)
Relevant features	
Design	Sliding elements on 4 wheels Fastened to the work bench by means of a sliding rail Can be folded down completely
Material	
Sliding element	Melamin resin coating, walnut decor

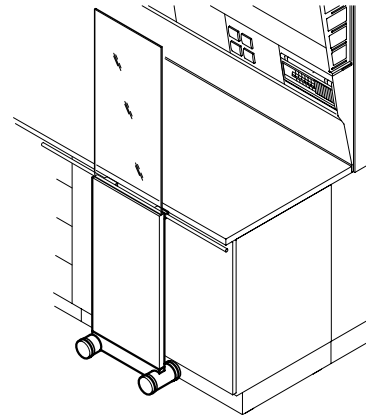
Special tables

Sliding element Protector

Use

- Movable splash and splinter guard attached to a laboratory work bench
- Not to be used for laboratory work that requires the extraction of dangerous substances

Design



Technical Data

Dimensions	
Width [in] (mm)	15.98 (406)
Working height, bench [in] (mm)	35.43 (900)
Height, splash guard [in] (mm)	70.87 (1800)
Relevant features	
Design	Sliding elements on 4 wheels Fastened to the work bench by means of a sliding rail Tempered safety glass (toughened glass)
Material	
Sliding element	Melamin resin coating, walnut decor
Splash guard	Tempered safety glass (toughened glass)



4 Storage cabinets

Our **SCALA** laboratory furniture system provides you the greatest possible selection of storage variations for quick access and safe storage.

All storage cabinets are variably equipable and allow for the optimal use of space in all sorts of laboratories.

Designed with a sophisticated appearance – manufactured with Wadner's high quality.

The laboratory cabinets can be extended, upgraded and are, of course, compatible – for problem-free adaptation to new requirements.

We place special value on durability. Even after thousands of load changes, hinges, pull-out rails and surfaces must not give in. First-class materials, carefully processed, guarantee long durability – with certainty.

Along with laboratory cabinets, suspended cabinets, top-mounted cabinets, underbench cabinets and pull-out cabinets, we have exhaust cabinets for the safe storage of typical laboratory items such as solvents, acids, bases and gas cylinders as well as for the disposal of chemicals.



Underbench units	154	Exhaust cabinets	177
Underbench on plinth	154	Laboratory cabinet for storage of acids and bases	177
Underbench unit on casters	156	Underbench unit for fume hoods, for the storage	
Suspended underbench unit	158	of acids and bases	179
Self-supporting underbench unit for fume hoods	160	FWF 90 underbench unit for fume hoods, for the storage	
Pushed-in underbench unit for fume hoods	163	of flammable liquids	181
Underbench unit for sinks	164	FWF 90 laboratory cabinet for the storage	
Suspended cabinets	167	of flammable liquids	183
Laboratory cabinets	169	G90 cabinet for gas cylinders	185
Laboratory cabinet	169		
Emergency cabinet	173		
Top-mounted cabinets	174		
Pull-out cabinets	175		



4 Storage cabinets

Great number of options

For the highest flexibility in the laboratory we provide our cabinets and underbench units in the widest variety of designs. Pushed-in underbench units in plinth and movable designs are in best position under C-frames, H-frames, cantilever frames or under fume hoods with individual support structures.

Suspended underbench units are attached directly under the worktop, or as a sliding variant in cantilever support frames.

Design and function go hand in hand

The jointless handles made from die-cast aluminum are chemical resistant and can be cleaned easily. Special emphasis can be placed in the laboratory design through the use of walnut decor set into the fronting. The attachment of our suspended cabinets on the service spines or on the wall can be effected without an observable gap.

More mobility in the laboratory

With four smooth-running casters, two of them lockable, our movable underbench units can be positioned simply in the frame on add-on tables or laboratory benches. The caster height is also harmonized and flush with the plinth height of our fixed cabinets.

More safety details

Our movable underbench units are made tilt-resistant through self-locking protection and the pull-out catch of the drawer compartment. Our tall cabinets have an integrated rail on the inside for safely suspending a ladder.



More useable storage space

With an underbench depth of 21.65 in (550 mm) and the drawer compartment depth of 19.69 in (500 mm) we provide the best usable storage space on the market. Even in corner cabinets, we have expanded the usable storage space by means of new service outlets.

Surfaces and edges are optimally protected

The melamine resin coated faces are easy to clean and robust against the effects in the laboratory. The front edges on the carcass and on the shelves are equipped with impact resistant 0.08 in (2 mm) polypropylene edges. In addition, the foil-coated plinths of our furnishings are manufactured out of waterproof bonded plywood.

Optimal positioning

Due to four height-adjustable feet, our laboratory cabinets and underbench units can be set up straight and absolutely stable with plinths.

Fully extendable drawer compartments with concealed roller rails

The double-wall steel frame with concealed roller rails is more stable, protected against soiling and thus operates more easily than single wall frames with open roller rails. Our standard full extension creates a complete overview. Soft stops are standard on all drawer compartments.

Safety for problematic substances

Our security cabinets for gasses, acids and bases as well as flammable liquids meet the highest requirements on material properties and function. Naturally, in accordance with current standards.

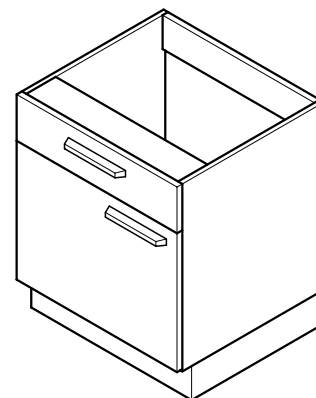
Underbench units

Underbench unit on plinth

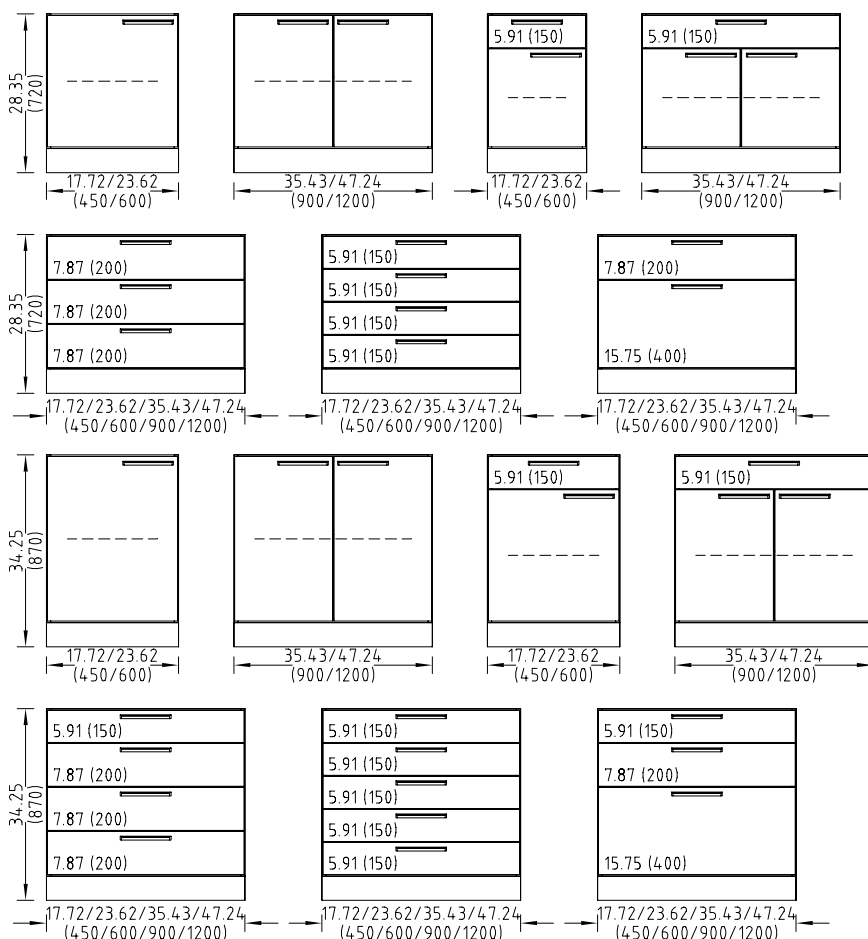
Use

- For storage of instruments and chemicals, according to DIN EN 14727
- For working heights of 29.53 in (750 mm) and 35.43 in (900 mm)
- Not to be used for storage of flammable liquids, gas cylinders, and spontaneously flammable or decomposing substances
- Not to be used for storage of acids and bases

Design



Variants



Underbench units

Underbench unit on plinth

Technical Data

Dimensions				
Width [in] (mm)	17.72 (450)	23.62 (600)	35.43 (900)	47.24 (1200)
Depth [in] (mm)	21.65 (550)			
Total height [in] (mm)	28.35 (720) 34.25 (870)			
Height, drawer compartments [in] (mm)	5.91 (150) 7.87 (200) 15.75 (400) For possible combinations, see variants			
Height, plinth [in] (mm)	4.33 (110)			

Load bearing capacity	
Each shelf/drawer compartment [lb] (kg)	66.14 (30)

Relevant features	
Design	For working heights of 29.53 (750) and 35.43 in (900 mm) Hinged door with 270° hinges Fully extendable drawer compartments Open top, detachable rear wall Shelf, height-adjustable Without doors as a rack 4 height-adjustable feet
Possible combinations	See variants
Handle	Handle bar SCALA U handle stainless steel
Full-height drawers	Optional
Move-in damper for drawer compartments	Standard
Extract air spigot	Optional
Locking device	Optional

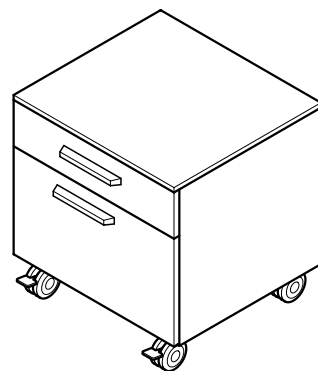
Underbench units

Underbench unit on casters

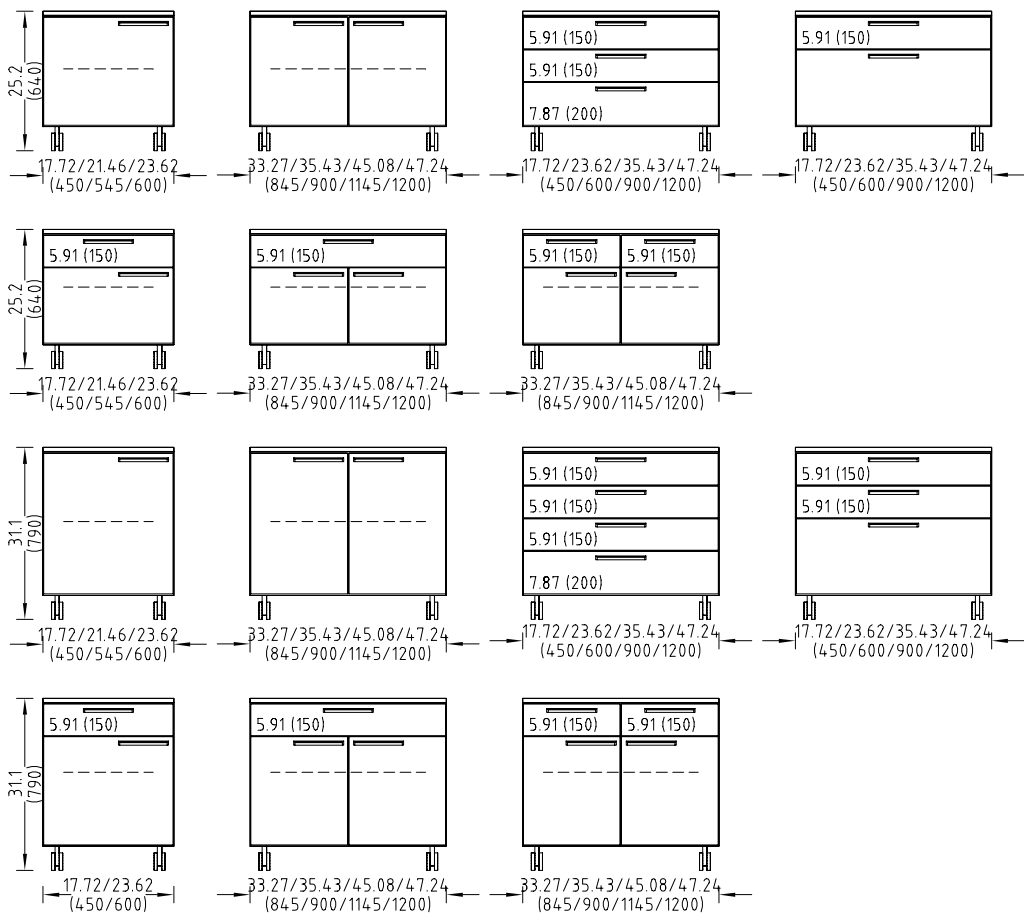
Use

- For flexible storage of instruments and chemicals, according to DIN EN 14727
- For working heights of 29.53 in (750 mm) and 35.43 in (900 mm)
- Not to be used for storage of flammable liquids, gas cylinders, and spontaneously flammable or decomposing substances
- Not to be used for storage of acids and bases

Design



Variants



Underbench units

Underbench unit on casters

Technical Data

Dimensions							
Width [in] (mm)	17.72 (450)	21.46 (545)	23.62 (600)	33.27 (845)	35.43 (900)	45.08 (1145)	47.24 (1200)
Depth [in] (mm)	21.65 (550)						
Total height [in] (mm)	25.2 (640) 31.1 (790)						
Height, drawer compartments [in] (mm)	5.91 (150) 7.87 (200) 13.78 (350) For possible combinations, see variants						
Height, casters [in] (mm)	4.33 (110)						

Load bearing capacity	
Each shelf/drawer compartment [lb] (kg)	66.14 (30)
Each caster [lb] (kg)	154.32 (70)

Relevant features	
Design	For working heights of 29.53 (750) and 35.43 in (900 mm) Hinged door with 270° hinges Fully extendable drawer compartments and change-pull-out catches Shelf, height-adjustable Without doors as a rack Top covered, rear wall firmly connected with carcass 4 swivelling casters, front casters lockable
Possible combinations	See variants
Handle	Handle bar SCALA U handle stainless steel
Move-in damper for drawer compartments	Standard
Locking device	Optional
Drawer compartments with change pull-out catch	Standard

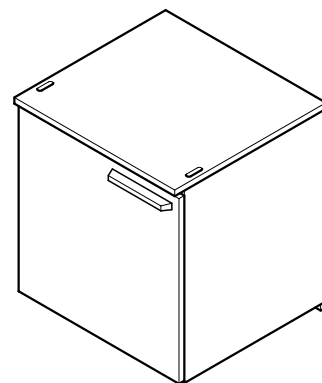
Underbench units

Suspended underbench unit

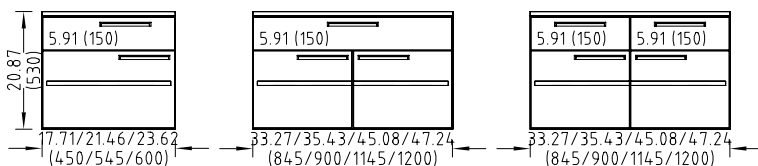
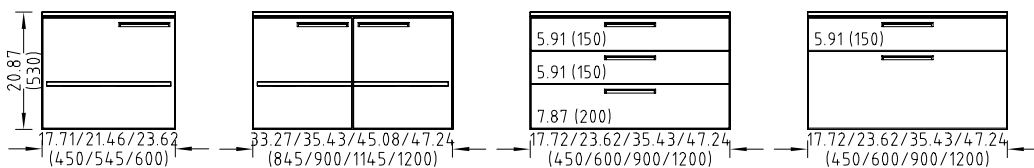
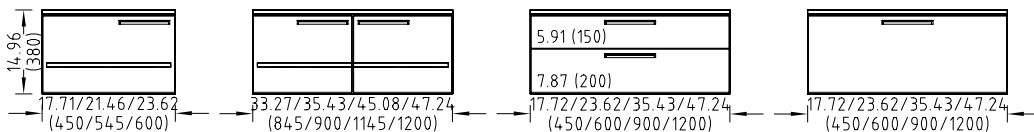
Use

- For flexible storage of instruments and chemicals, according to DIN EN 14727
- For working heights of 29.53 in (750 mm) and 35.43 in (900 mm)
- Not to be used for storage of flammable liquids, gas cylinders, and spontaneously flammable or decomposing substances
- Not to be used for storage of acids and bases

Design



Variants



Underbench units

Suspended underbench unit

Technical Data

Dimensions							
Width [in] (mm)	17.72 (450)	21.46 (545)	23.62 (600)	33.27 (845)	35.43 (900)	45.08 (1145)	47.24 (1200)
Depth [in] (mm)	19.69 (500) (depth of frame, 22.52 (572)) 21.62 (550) (depth of frame, 26.46 (672))						
Height [in] (mm)	14.96 (380) 20.87 (530)						
Height, drawer compartments [in] (mm)	5.91 (150) 7.87 (200) 13.78 (350) For possible combinations, see variants						

Load bearing capacity	
Each shelf/drawer compartment [lb] (kg)	66.14 (30)

Relevant features	
Design	For working heights of 29.53 (750) and 35.43 in (900 mm) 2 service outlets for replacements in the profile rail of the bench frame Hinged door with 270° hinges Fully extendable drawer compartments Top covered, rear wall firmly connected with carcass Shelf, height-adjustable With C frame/cantilever frame, laterally movable over the table grid Hinged door(s) with 1 shelf, height 20.87 in (530 mm) Height of 20.87 in (530 mm) without doors, with 1 shelf
Possible combinations	See variants
Handle	Handle bar SCALA U handle stainless steel
Move-in damper for drawer compartments	Standard
Locking device	Optional

Underbench units

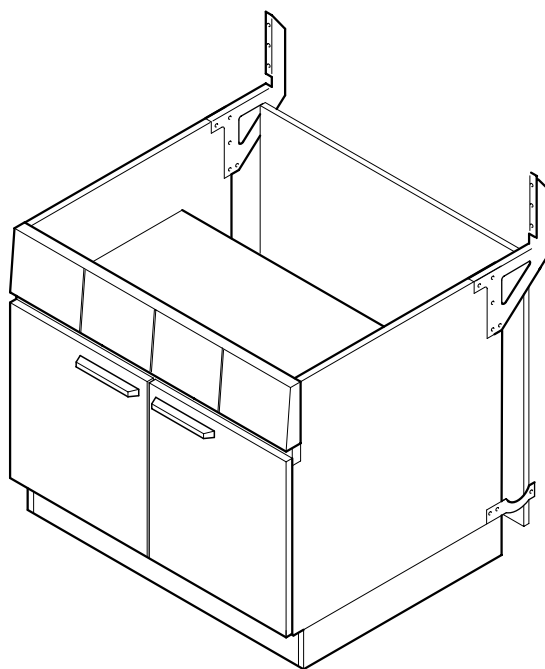
Self-supporting underbench unit for fume hoods

Use

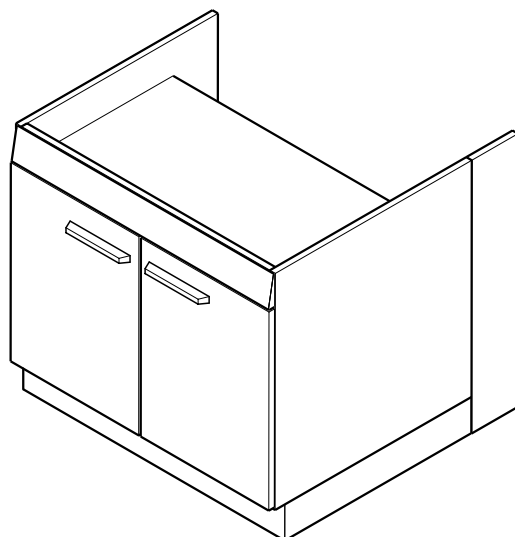
- For storage of instruments and chemicals, according to DIN EN 14727
- For fume hoods with services on baffle and side walls
- Not to be used for storage of flammable liquids, gas cylinders, and spontaneously flammable or decomposing substances
- Not to be used for storage of acids and bases

Design

For fume hoods with services on baffle



For fume hoods with services on side walls

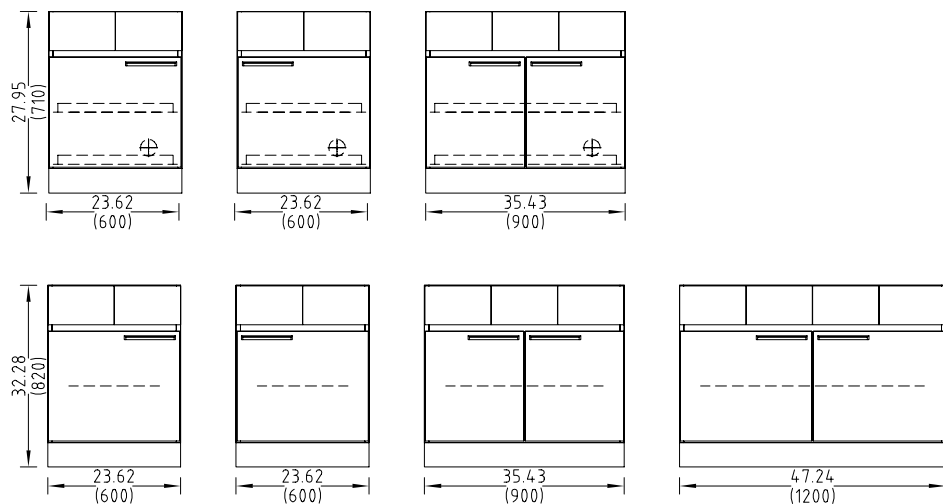


Underbench units

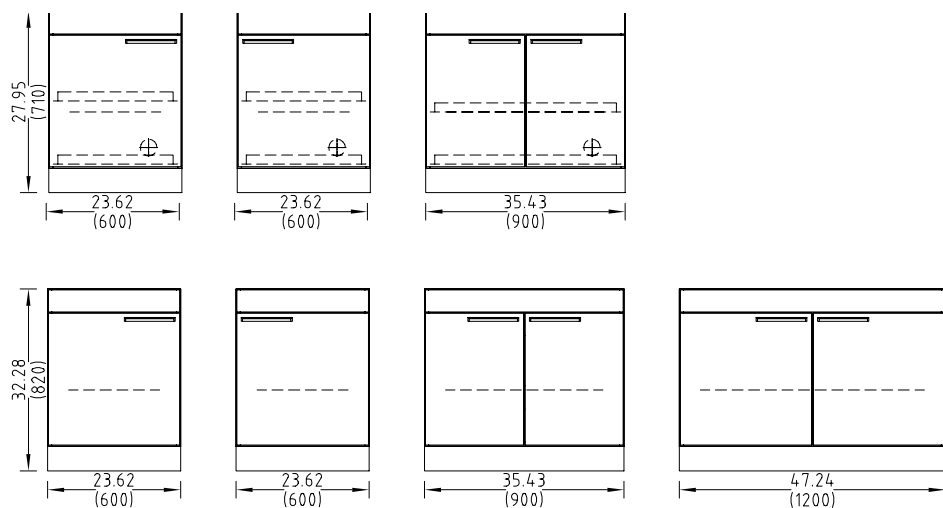
Self-supporting underbench unit for fume hoods

Variants

For fume hoods with services on baffle



For fume hoods with services on side walls



Underbench units

Self-supporting underbench unit for fume hoods

Technical Data

Dimensions			
Width [in] (mm)	23.62 (600)	35.43 (900)	47.24 (1200)
Depth [in] (mm)	21.65 (550)		
Total height [in] (mm)	27.95 (710) 32.28 (820)		
Height, plinth [in] (mm)	4.33 (110)		
Load bearing capacity			
Each shelf [lb] (kg)	66.14 (30)		
Relevant features			
Design	Hinged door with 270° hinges Service panel on top of the storage cabinet for fume hoods with services on baffle Covered top, detachable rear wall Shelf, height-adjustable 4 height-adjustable feet		
Possible combinations	See variants		
Full-height drawers	Optional		
Extract air duct	Optional		
Underbench exhaust	Optional		
Acids-bases-equipment	Optional		
Locking device	Optional		
Handle	Handle bar SCALA U handle stainless steel		

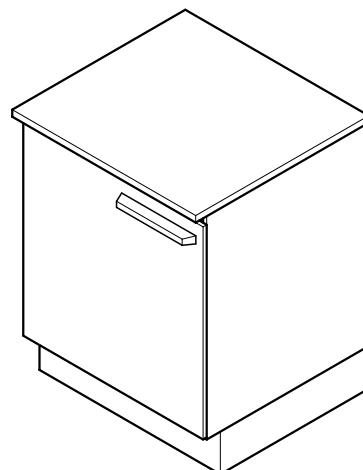
Underbench units

Pushed-in underbench unit for fume hoods

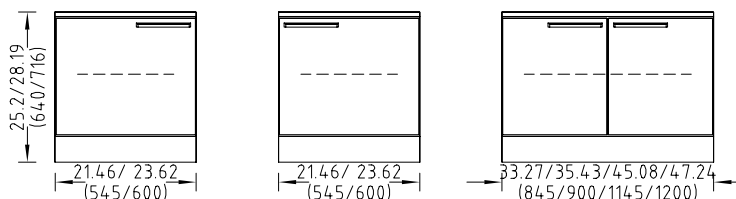
Use

- For storage of instruments and chemicals, according to DIN EN 14727
- For fume hoods with services on baffle and side walls, on steel support frame
- Not approved for storage of flammable liquids, gas cylinders, and spontaneously flammable or decomposing substances
- Not approved for storage of acids and bases

Design



Variants



Technical Data

Dimensions						
Width [in] (mm)	21.46 (545)	23.62 (600)	33.27 (845)	35.43 (900)	45.08 (1145)	47.24 (1200)
Depth [in] (mm)	21.65 (550)					
Total height [in] (mm) pushed-in underbench unit for bench-mounted fume hood, with services on baffle	25.2 (640)					
Total height [in] (mm) pushed-in underbench unit for bench-mounted fume hood, with services on side walls	28.19 (716)					
Height, plinth [in] (mm)	4.33 (110)					

Load bearing capacity	
Each shelf [lb] (kg)	66.14 (30)

Relevant features	
Design	Hinged door with 270° hinges Open top, detachable rear wall Shelf, height-adjustable 4 height-adjustable feet
Possible combinations	See variants
Handle	Handle bar SCALA U handle stainless steel
Full-height drawers	Optional
Extract air duct	Optional
Underbench exhaust	Optional
Locking device	Optional

Underbench units

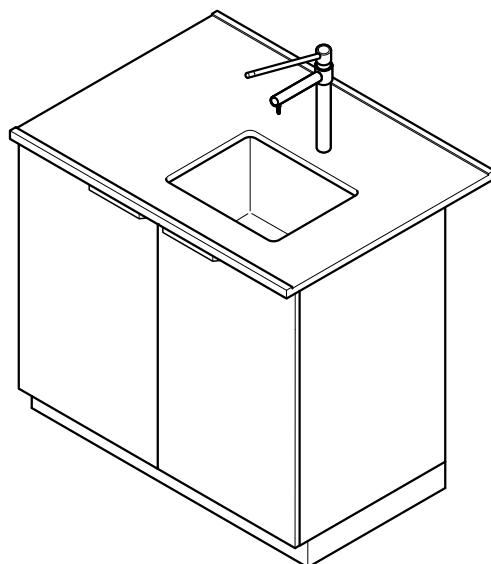
Underbench unit for sinks

Use

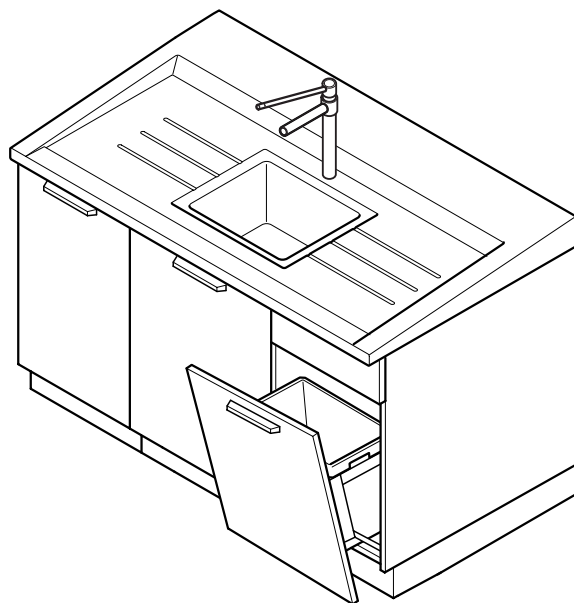
- As underbench unit for sinks, for storage of instruments and chemicals, according to DIN EN 14727
- Not to be used for storage of flammable liquids, gas cylinders, and spontaneously flammable or decomposing substances
- Not to be used for storage of acids and bases

Design

Sink with underbench unit for service spines or on the wall



Front end sink for island benches

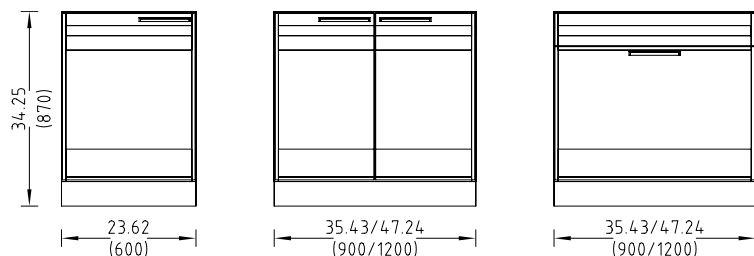


Underbench units

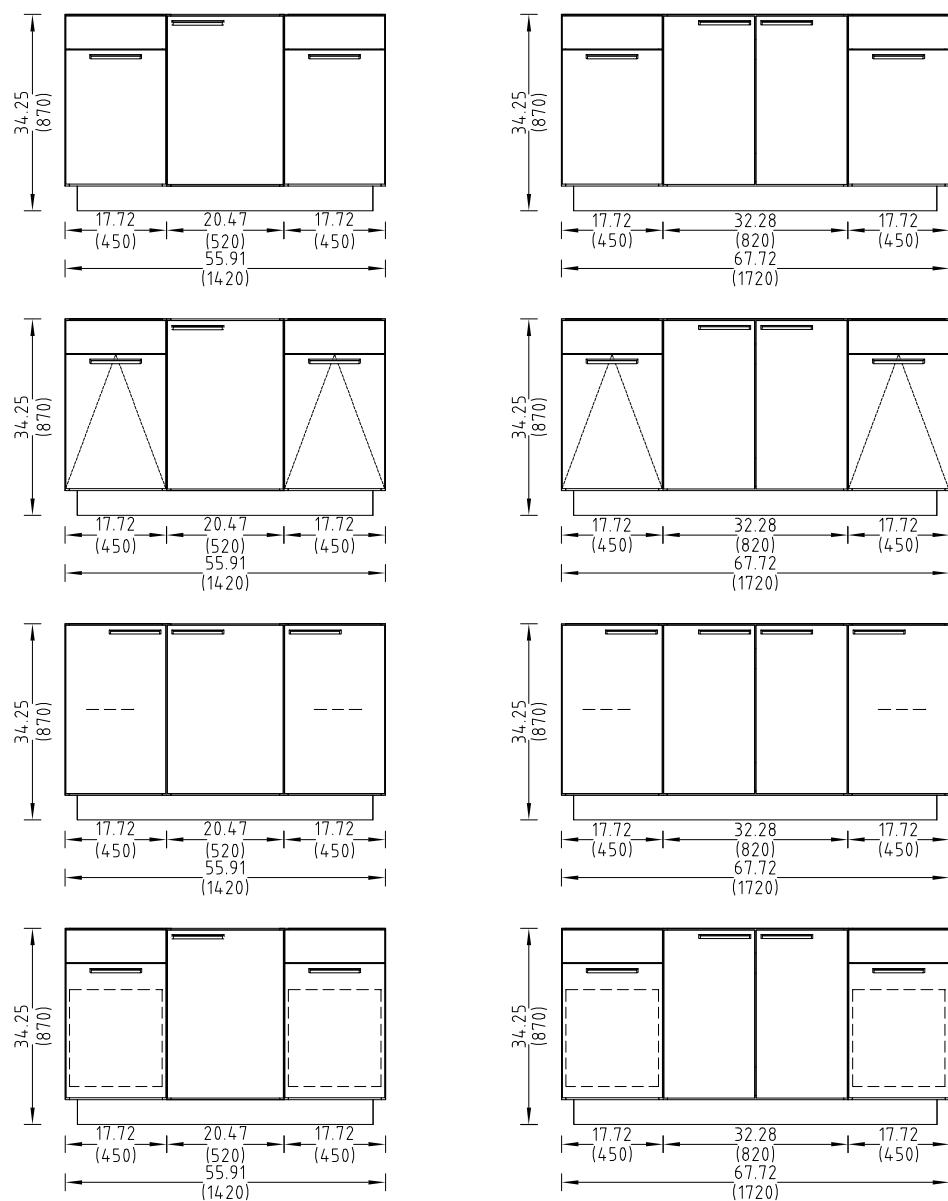
Underbench unit for sinks

Variants

Sink with underbench unit for service spines or on the wall



Front end sink for island benches



Underbench units

Underbench unit for sinks

Technical Data

Dimensions					
Width [in] (mm)	23.62 (600) ¹⁾	35.43 (900 ¹⁾)	47.24 (1200 ¹⁾)	55.91 (1420 ²⁾)	67.72 (1720 ²⁾)
Depth [in] (mm)	21.65 (550)	21.65 (550)	21.65 (550)	27.56 (700)	27.56 (700)
Total height [in] (mm)	34.25 (870)	34.25 (870)	34.25 (870)	34.25 (870)	34.25 (870)
Height, plinth [in] (mm)	4.33 (110)	4.33 (110)	4.33 (110)	4.33 (110)	4.33 (110)

¹⁾ For sinks on service spines or on the wall

²⁾ For front end sinks

Load bearing capacity	
Each shelf/drawer compartment [lb] (kg)	66.14 (30)

Relevant features	
Design	Hinged door with 270° hinges 4 height-adjustable feet Inclined swivel door with waste bin 7.93 gal (30 l) Waste bin 2 x 3.96 gal (15 l) with full-height drawer Waste bin 2 x 9.24 gal (35 l) with full-height drawer Hinged door(s), full-height drawer Combination possibilities see variants
Handle	Handle bar SCALA U handle stainless steel
Locking device	Optional

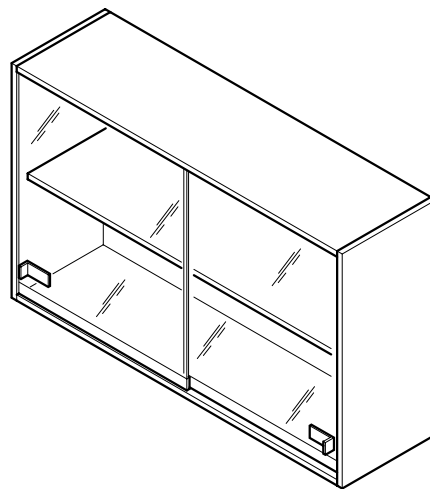
Suspended cabinets

Suspended cabinet

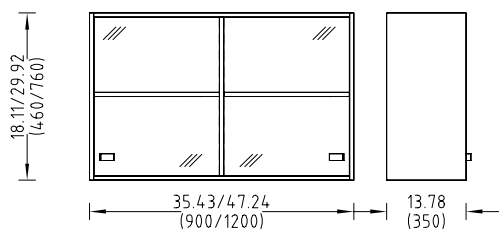
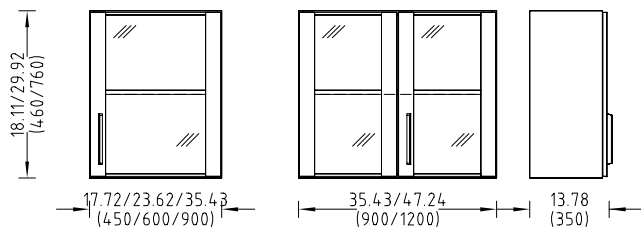
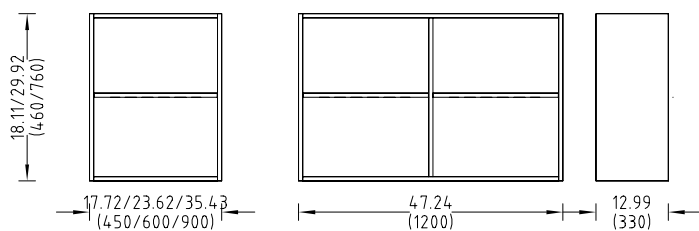
Use

- For storage of instruments and chemicals, according to DIN EN 14727
- Not approved for storage of flammable liquids, gas cylinders, and spontaneously flammable or decomposing substances
- Not approved for storage of acids and bases

Design

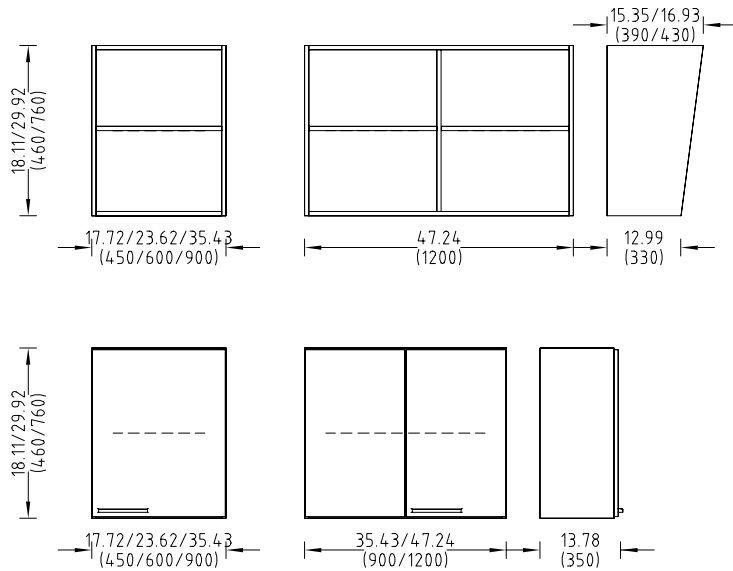


Variants



Suspended cabinets

Suspended cabinet



Technical Data

Dimensions				
Width [in] (mm)	17.72 (450)	23.62 (600)	35.43 (900)	47.24 (1200)
Depth [in] (mm)	13.78 (350)			
Height [in] (mm)	18.11 (460) 29.92 (760)			

Load bearing capacity	
Each shelf [lb] (kg)	66.14 (30)
Total load bearing capacity [lb] (kg)	132.28 (60)

Relevant features	
Design	Automatic level fitting for fastening to wall/service spine Width of 47.24 in (1200 mm) with central panel Shelf, height-adjustable
Possible combinations	See variants
Handle	U handle SCALA U handle stainless steel Plastic handle affixed to glass sliding door
Shelf with inclined side walls	Optional
Locking device	Optional

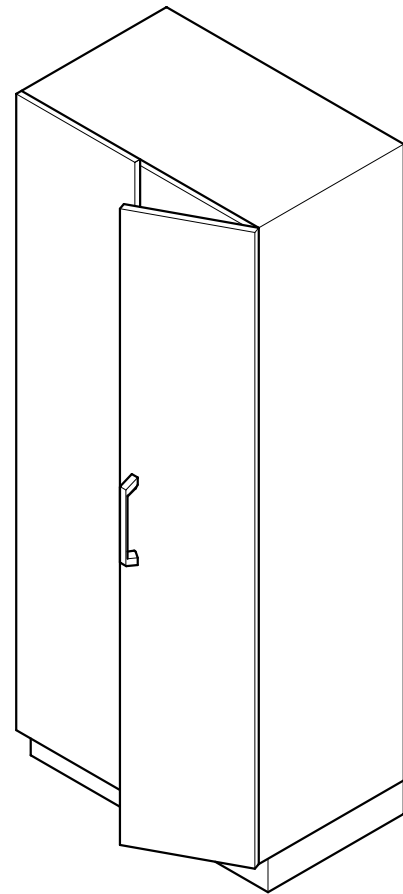
Laboratory cabinets

Laboratory cabinet

Use

- For storage of instruments and chemicals, according to DIN EN 14727
- Not approved for storage of flammable liquids, gas cylinders, and spontaneously flammable or decomposing substances
- Not approved for storage of acids and bases

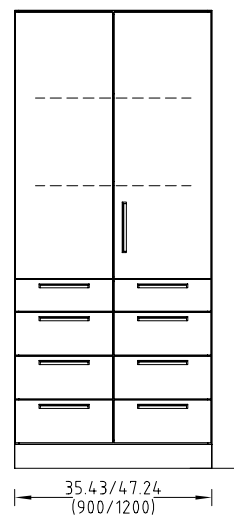
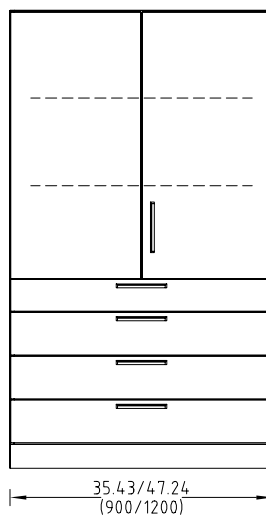
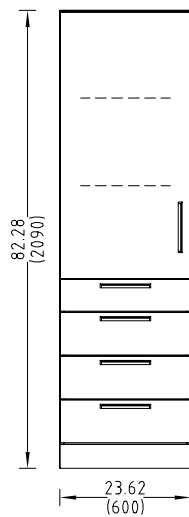
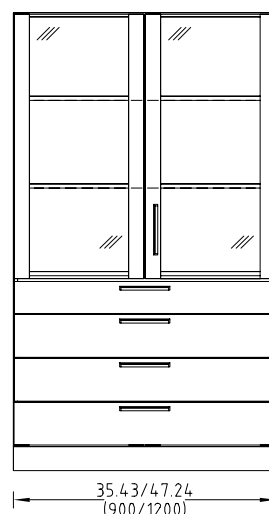
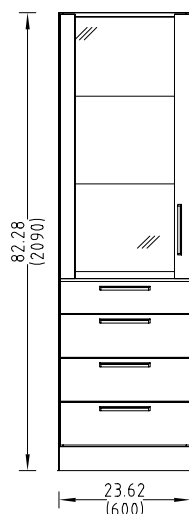
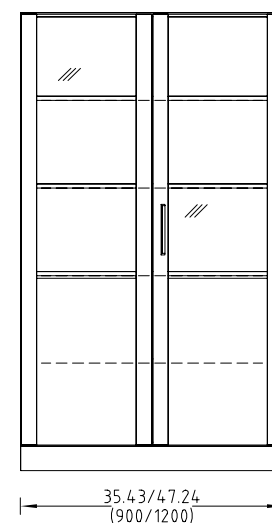
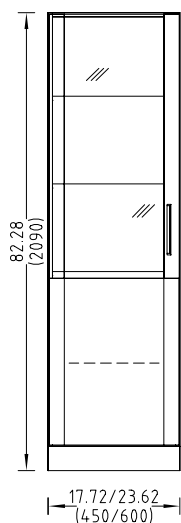
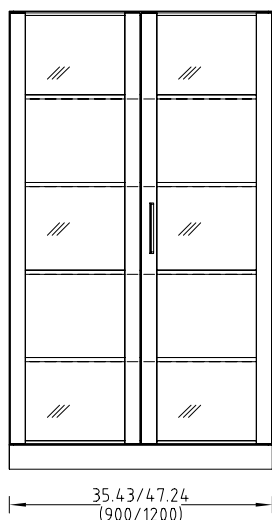
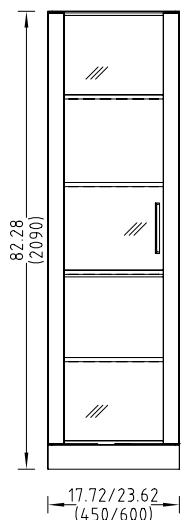
Design

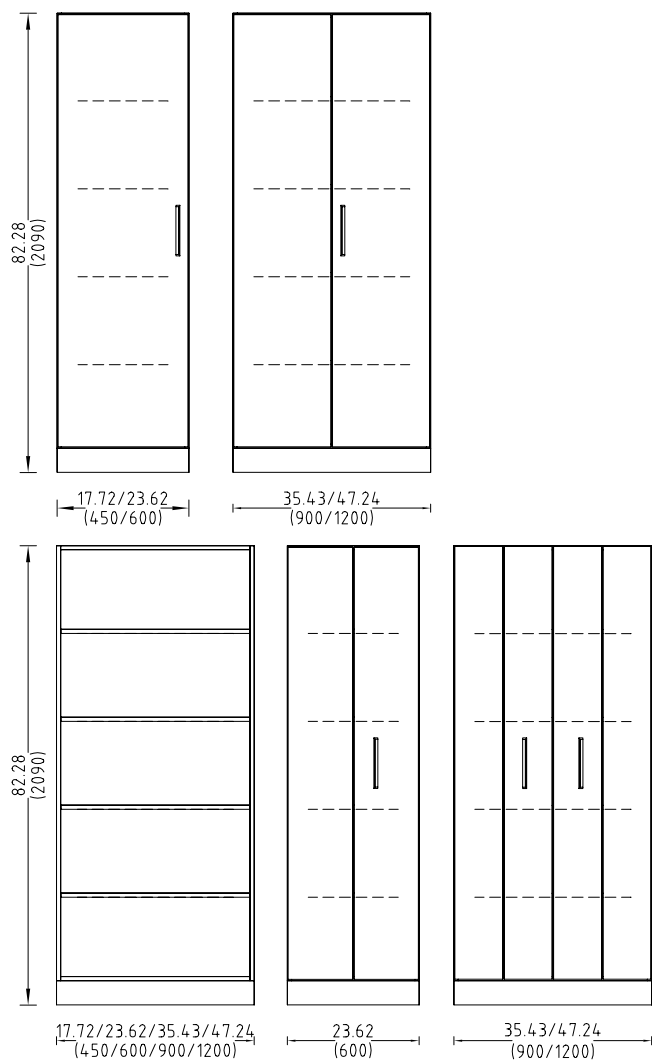


Laboratory cabinets

Laboratory cabinet

Variants





Laboratory cabinets

Laboratory cabinet

Technical Data

Dimensions				
Width [in] (mm)	17.72 (450)	23.62 (600)	35.43 (900)	47.24 (1200)
Depth [in] (mm)	13.78 (350) 21.65 (550)			
Total height [in] (mm)	82.28 (2090)			
Height, plinth [in] (mm)	4.33 (110)			

Load bearing capacity	
Each shelf/drawer compartment [lb] (kg)	66.14 (30)

Relevant features	
Design	Hinged door with 270° hinges Shelves, height-adjustable Fully extendable drawer compartments 4 height-adjustable feet
Possible combinations	See variants, drawers only with depth 21.65 in (550 mm)
Handle	U handle SCALA U handle stainless steel
Shelves, extendable	Optional (with cabinet depth of 21.65 in (550 mm))
Drawer compartments with change pull-out catch	Optional (with cabinet depth of 21.65 in (550 mm))
Move-in damper for drawer compartments	Standard
Extract air duct	Optional
Locking device	Optional

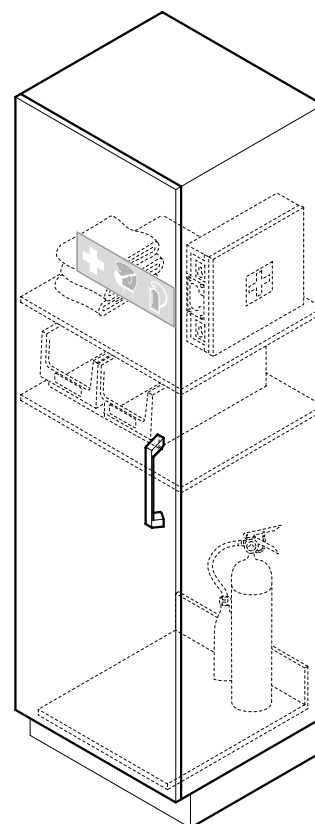
Laboratory cabinets

Emergency cabinet

Use

- For storage of protective equipment and rescue equipment (fire extinguisher, first aid kit etc.)
- Not approved for storage of flammable liquids, gas cylinders, and spontaneously flammable or decomposing substances
- Not approved for storage of acids and bases

Design



Technical Data

Dimensions	
Width [in] (mm)	23.62 (600)
Depth [in] (mm)	13.78 (350) 21.65 (550)
Total height [in] (mm)	82.28 (2090)
Height, plinth [in] (mm)	4.33 (110)
Relevant features	
Design	Hinged door with 270° hinges 2 shelves, height-adjustable 4 height-adjustable feet
Optional equipment	1 first aid kit 1 CO ₂ fire extinguisher, 11.02 lb (5 kg) 2 fiber glass fire blankets 2 sand boxes 1 sand shovel 1 instruction label with first aid instructions

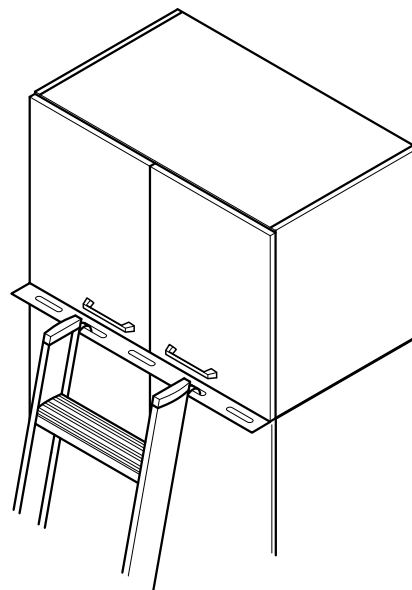
Top-mounted cabinets

Top-mounted cabinet

Use

- For storage of instruments and chemicals, according to DIN EN 14727
- Only suitable as permanently installed top part for the following Waldner cabinets: Laboratory cabinet, pull-out cabinet, emergency cabinet as well as acid and base cabinet
- Not approved for storage of flammable liquids, gas cylinders, and spontaneously flammable or decomposing substances
- Not approved for storage of acids and bases

Design



Technical Data

Dimensions				
Width [in] (mm)	17.72 (450)	23.62 (600)	35.43 (900)	47.24 (1200)
Depth [in] (mm)	13.785 (350) 21.65 (550)			
Height [in] (mm)	24.02 (610) 29.92s (760)			

Load bearing capacity	
Each shelf [lb] (kg)	66.14 (30)

Relevant features	
Design	With rail for attaching a ladder For laboratory cabinets with or without extract air spigot 1 shelf, height-adjustable
Door	Hinged door(s)
Handle	U handle SCALA U handle stainless steel
Connecting ladder	Optional
Locking device	Optional

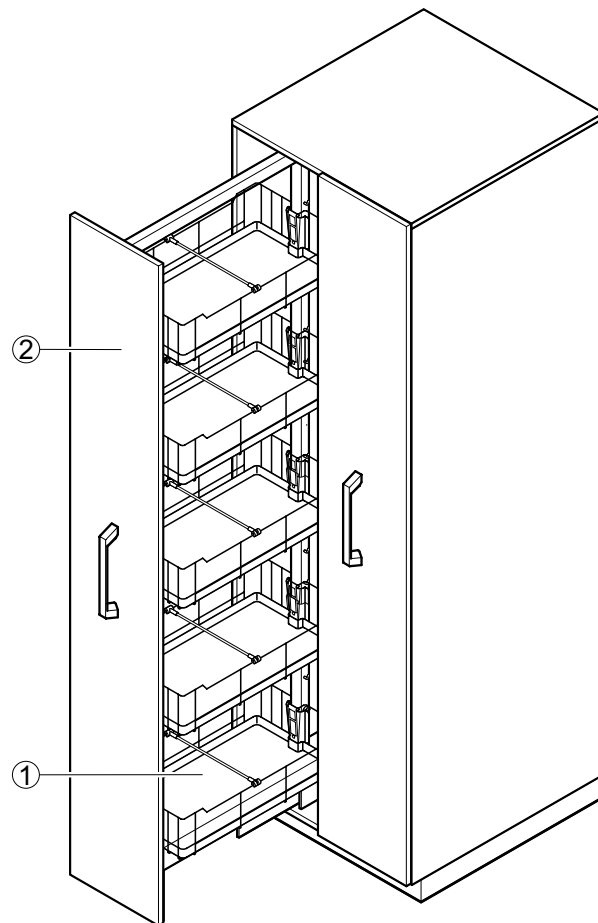
Pull-out cabinets

Pull-out cabinet

Use

- For storage of liquid or solid substances in suitable containers, according to DIN EN 14727
- Not approved for storage of flammable liquids, gas cylinders, and spontaneously flammable or decomposing substances
- Not approved for storage of acids and bases

Design



- 1 Wire basket with tray
2 Pull-out

Pull-out cabinets

Pull-out cabinet

Technical Data

Dimensions		
Width [in] (mm)	23.62 (600)	35.43 (900)
Depth [in] (mm)	21.65 (550)	
Total height [in] (mm)	82.28 (2090)	
Height, plinth [in] (mm)	4.33 (110)	
Full-height drawer, width x depth [in] (mm)	11.81 (300) x 19.69 (500)	
Tray, width x depth x height [in] (mm)	9.45 (240) x 16.73 (425) x 1.57 (40)	

Load bearing capacity	
Each pull-out [lb] (kg)	220.46 (100)
Each tray [lb] (kg)	22.05 (10)

Relevant features	
Design	5 wire baskets with trays for each drawer, height-adjustable Wall fastening 4 height-adjustable feet
Door	Pull-out doors with pull-outs accessible from both sides
Handle	U handle SCALA U handle stainless steel
Move-in damper	Optional
Compartment partitioning	Optional
Extract air spigot	Optional
Locking device	Optional

Material	
Trays	Polyethylene

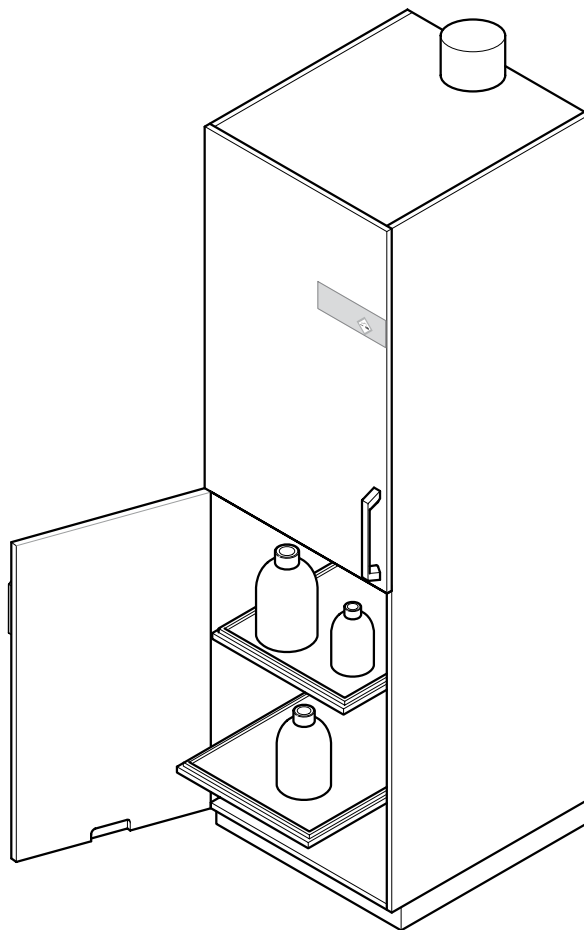
Exhaust cabinets

Laboratory cabinet for storage of acids and bases

Use

- For storage of limited quantities of acids and bases
- Not to be used for storage of flammable liquids, gas cylinders, and spontaneously flammable or decomposing substances

Design



Exhaust cabinets

Laboratory cabinet for storage of acids and bases

Technical Data

Dimensions	
Width [in] (mm)	23.62 (600)
Depth [in] (mm)	21.65 (550)
Total height [in] (mm)	82.28 (2090)
Height, plinth [in] (mm)	4.33 (110)
Load bearing capacity	
Fixed shelf [lb] (kg)	66.14 (30)
Extendable shelves [lb] (kg)	44.09 (20)
Relevant features	
Design	Connection to permanently working ventilation system 4 shelves, fixed or extendable Separate compartments for acids and bases Polypropylene collecting tray Coated fittings 4 height-adjustable feet
Door	Hinged doors
Handle	U handle SCALA U handle stainless steel
Ventilation data	
Volume flow [cfm] (m ³ /h)	58.9 (100)
Ventilation connection Ø [in] (mm)	3.54/ (90)
Connection height extract air spigot [in] (mm)	85.67 (2176)

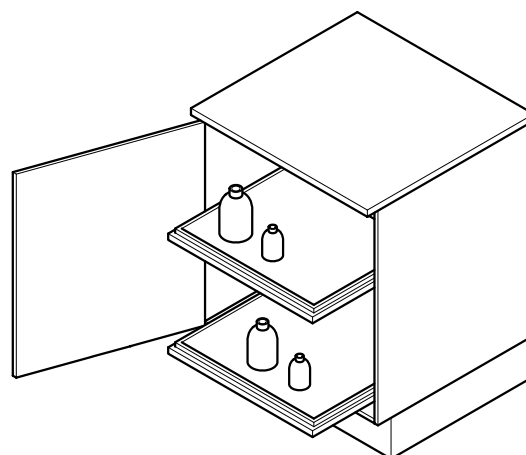
Exhaust cabinets

Underbench unit for fume hoods for the storage of acids and bases

Use

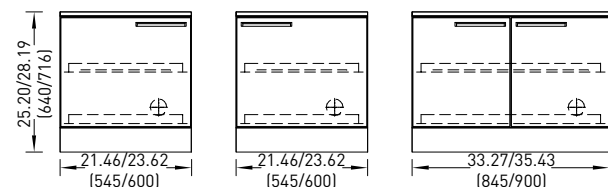
- Pushed-in or self-supporting underbench unit for bench-mounted fume hoods, for storage of limited quantities of acids and bases
- Not to be used for storage of flammable liquids, gas cylinders, and spontaneously flammable or decomposing substances

Design

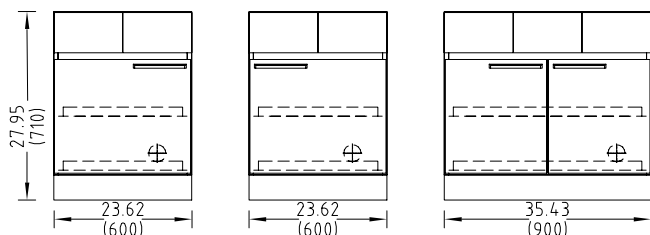


Variants

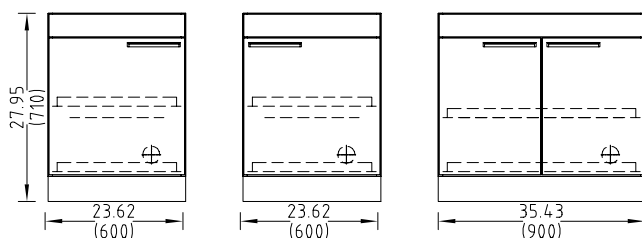
Pushed-in underbench units



Self-supporting underbench units for fume hoods with services on baffle



Self-supporting underbench units for fume hoods with services on side walls



Exhaust cabinets

Underbench unit for fume hoods for the storage of acids and bases

Technical Data

Dimensions		
Width [in] (mm)	23.62 (600)	35.43 (900)
Width for pushed-in underbench units [in] (mm)	21.46/23.62/33.27/35.43 (545/600/845/900)	
Depth [in] (mm)	21.65 (550)	
Total height [in] (mm) for pushed-in underbench units for bench-mounted fume hood, with services on baffle	25.2 (640)	
Total height [in] (mm) for pushed-in underbench units for bench-mounted fume hood, with services on side walls	28.19 (716)	
Total height [in] (mm) for self-supporting underbench units for bench-mounted fume hood, with services on baffle/side walls	27.95 (710)	
Height for plinth [in] (mm)	4.33 (110)	

Load bearing capacity	
Extendable shelves [lb] (kg)	44.09 (20)

Relevant features	
Design	Connection to permanently working ventilation system Coated fittings 2 extendable shelves, with collecting trays 4 height-adjustable feet
Door	Hinged door For possible combinations, see variants
Handle	Handle bar SCALA U handle stainless steel

Ventilation data	
Volume flow [cfm] (m³/h)	17.7 (30)
Ventilation connection to the ascending duct Ø [in] (mm)	3.54 (90)

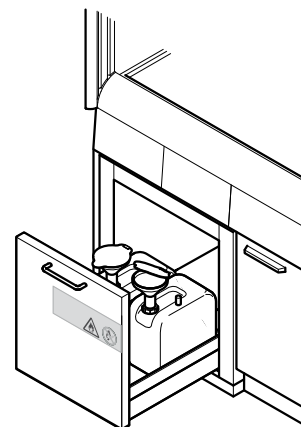
Exhaust cabinets

FWF 90 underbench unit for fume hoods for the storage of flammable liquids

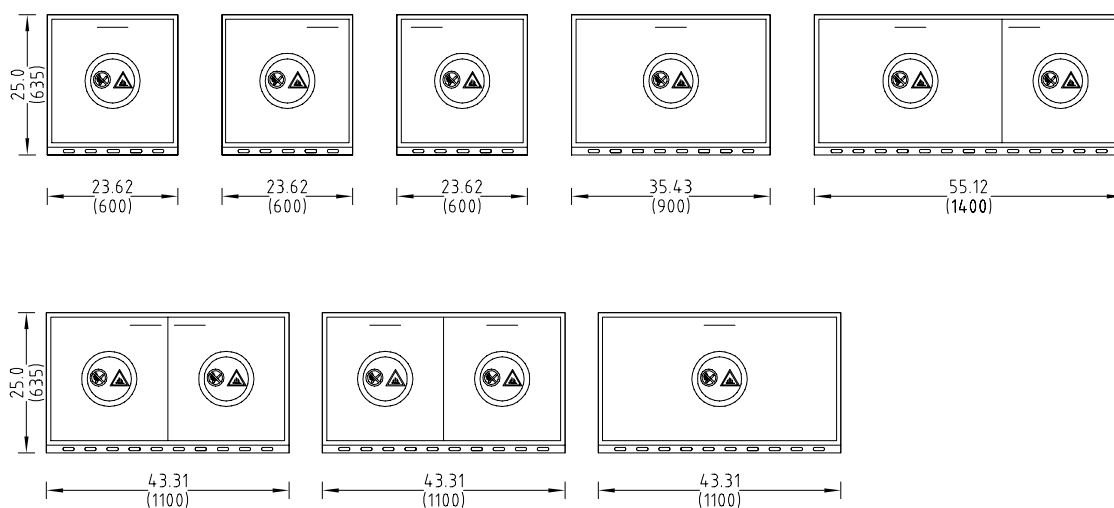
Use

- Pushed-in underbench unit for bench-mounted fume hoods for storage of limited quantities of flammable liquids
- Not to be used for gas cylinders and spontaneously flammable or decomposing substances
- Not to be used for storage of acids and bases

Design



Variants



Exhaust cabinets

FWF 90 underbench unit for fume hoods for the storage of flammable liquids

Technical Data

Dimensions				
Width [in] (mm)	23.62 (600)	35.43 (900)	43.31 (1100)	55.12 (1400)
Depth [in] (mm)	23.62 (600)			
Total height [in] (mm)	25.0 (635)			
Height, plinth [in] (mm)	1.38 (35)			
Weight, max. [lb] (kg)	286.6 (130)	374.78 (170)	485.01 (220)	639.33 (290)

Load bearing capacity	
Fixed shelf [lb] (kg)	66.14 (30)
Drawer [lb] (kg)	55.12 (25)

Relevant features	
Design	Connection to permanently working ventilation system Connection to grounding line with potential equalization With locking device Basin bed with perforated sheet metal element Automatic locking through current-independent thermal activation, in case of fire Hinged door Drawer
Possible combinations	See variants
Handle	Stainless steel U handle
Additional tray extension	Optional for drawers
Regulations and standards	DIN EN 14470-1 TRGS 510 (German ordinance on flammable liquids)

Ventilation data	
Volume flow [cfm] (m³/h)	17.7 (30)
Ventilation connection to the ascending duct Ø [in] (mm)	3.54 (90)

Material	
Underbench unit	Powder-coated steel exterior, color: Light gray RAL 7035
Ventilation connection	PPS

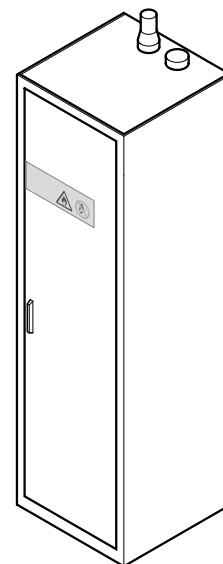
Exhaust cabinets

FWF 90 laboratory cabinet for the storage of flammable liquids

Use

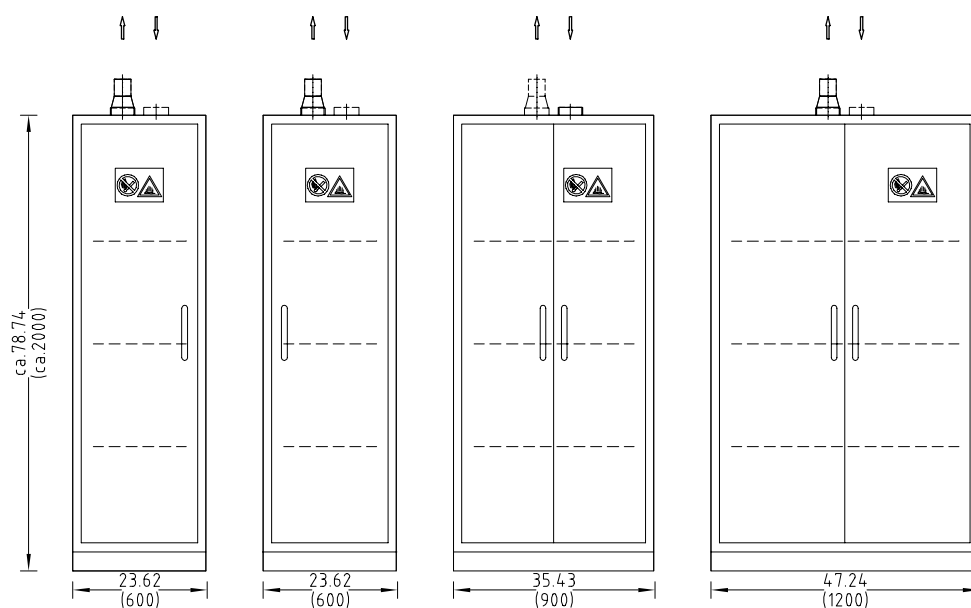
- For storage of limited quantities of flammable liquids
- Not to be used for gas cylinders and spontaneously flammable or decomposing substances
- Not to be used for storage of acids and bases

Design



Storage cabinets

Variants



Exhaust cabinets

FWF 90 laboratory cabinet for the storage of flammable liquids

Technical Data

Dimensions			
Width [in] (mm)	23.62 (600)	35.43 (900)	47.24 (1200)
Depth [in] (mm)	approx. 23.62 (600)		
Total height [in] (mm)	approx. 78.74 (2000)		
Height, plinth [in] (mm)	approx. 3.15 (80)		
Weight, max. [lb] (kg)	639.33 (290)	793.66 (360)	1036.16 (470)

Load bearing capacity	
Basin bed [lb] (kg)	Dependent on design

Relevant features	
Design	Connection to permanently working ventilation system Connection to grounding line with potential equalization In case of fire, automatic locking through current-independent thermal activation 3 basin beds, height-adjustable Basin bed with perforated sheet metal element With locking device 4 height-adjustable feet Hinged door
Possible combinations	See variants
Additional designs and equipment	Available on request
Regulations and standards	DIN EN 14470-1 TRGS 510 (German ordinance on flammable liquids)

Ventilation data	
Volume flow [cfm] (m³/h)	17.7 (30)
Ventilation connection Ø [in] (mm)	2.95 (75)

Material	
Laboratory cabinet	Powder-coated steel exterior, color: Light gray RAL 7035
Ventilation connection	Galvanized steel

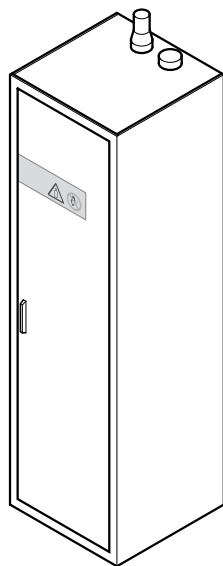
Exhaust cabinets

G90 cabinet for gas cylinders

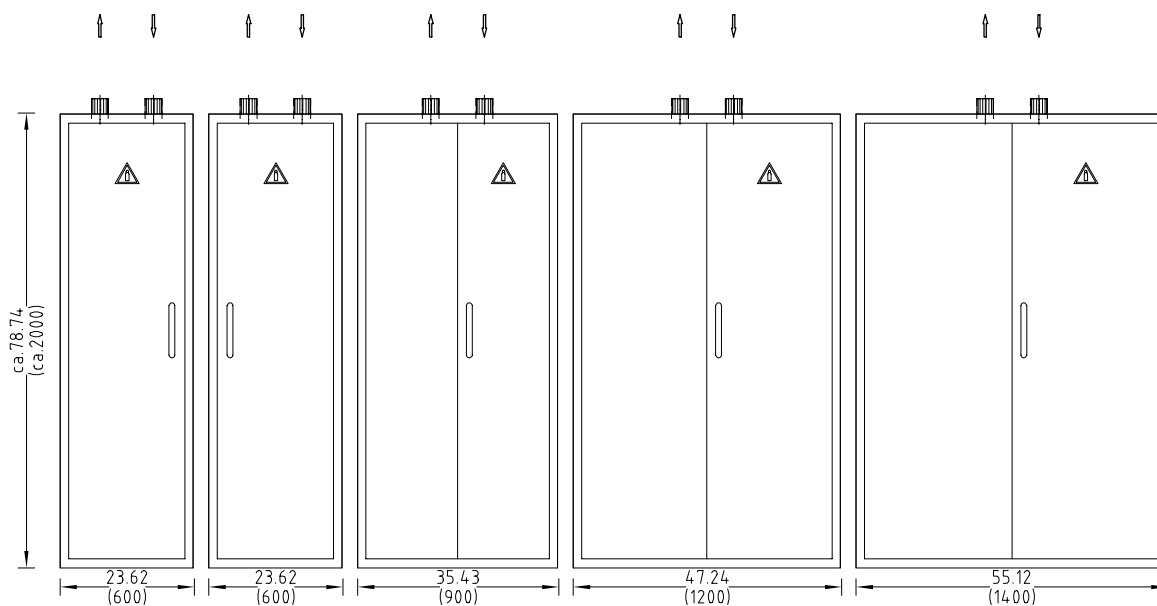
Use

- For storage of gas cylinders in buildings
- Not to be used for storage of flammable liquids and spontaneously flammable or decomposing substances
- Not to be used for storage of acids and bases

Design



Variants



Exhaust cabinets

G90 cabinet for gas cylinders

Technical Data

Dimensions	23.62 (600)	35.43 (900)	47.24 (1200)	55.12 (1400)
Width [in] (mm)	23.2 (600)	35.43 (900)	47.24 (1200)	55.12 (1400)
Depth [in] (mm)	approx. 23.62 (600)			
Total height [in] (mm)	approx. 78.74 (2000)			
Empty weight max. [lb] (kg)	859.79 (390)	1168.44 (530)	1455.04 (660)	1631.4 (740)

Relevant features	23.62 (600)	35.43 (900)	47.24 (1200)	55.12 (1400)
Design	Connection to permanently working ventilation system Mounting rails for incorporation of compressed gas reduction units Ramp for rolling in gas cylinders With locking device 4 height-adjustable feet Ducts for piping and cables in cabinet cover			
Door	Hinged door(s)			
Max. number of 13.2 gal (50 l) by cabinet width	1	3	4	4
Additional designs and equipment	Available on request			

Ventilation data	23.62 (600)	35.43 (900)	47.24 (1200)	55.12 (1400)
Volume flow [cfm] (m^3/h) by cabinet width	35.3 (60)	53 (90)	70.6 (120)	82.4 (140)
Ventilation connection Ø [in] (mm)	2.95 (75)			

Material	
Laboratory cabinet	Powder-coated steel exterior, color: Light gray RAL 7035
Ventilation connection	Galvanized steel



5 Supply and disposal

For the disposal of liquids and solid substances, we offer you our TÜV-certified system for use in appropriate underbench units.

Our underbench units for waste disposal are standardly equipped with pullout safety trays for the inclusion of suitable containers. For even more convenient container removal.

The disposal of acids, bases and flammable liquids can be directly into the container via screw-mounted safety funnels; or inside the fume hood via funnels which are built into the worktop.

Mechanical or electronic level indicators and suitable ventilation units make the system complete.

We furnish our new underbench units for waste disposal of solid substances with two robust, 9.24 gal (35 l) capacity waste bins, either fully extensible or with tilting door, with a waste bin of 7.92 gal (30 l) intake volume.

Supply system for flammable liquids

For cyclical and continuous supply of flammable liquids, suitable safety cabinets are used, which are connected to a permanent exhaust system.

Our cabinets comply with relevant standards and regulations.

Our safety pump nozzles with flexible supply pipes made of stainless steel are used for the safe withdrawal of flammable liquids.



Supply system for flammable liquids	190
Waste disposal system for acids and bases	193
Waste disposal system for flammable liquids	196
Disposal system for solid waste and domestic waste	199
Disposal system for radionuclide waste	201

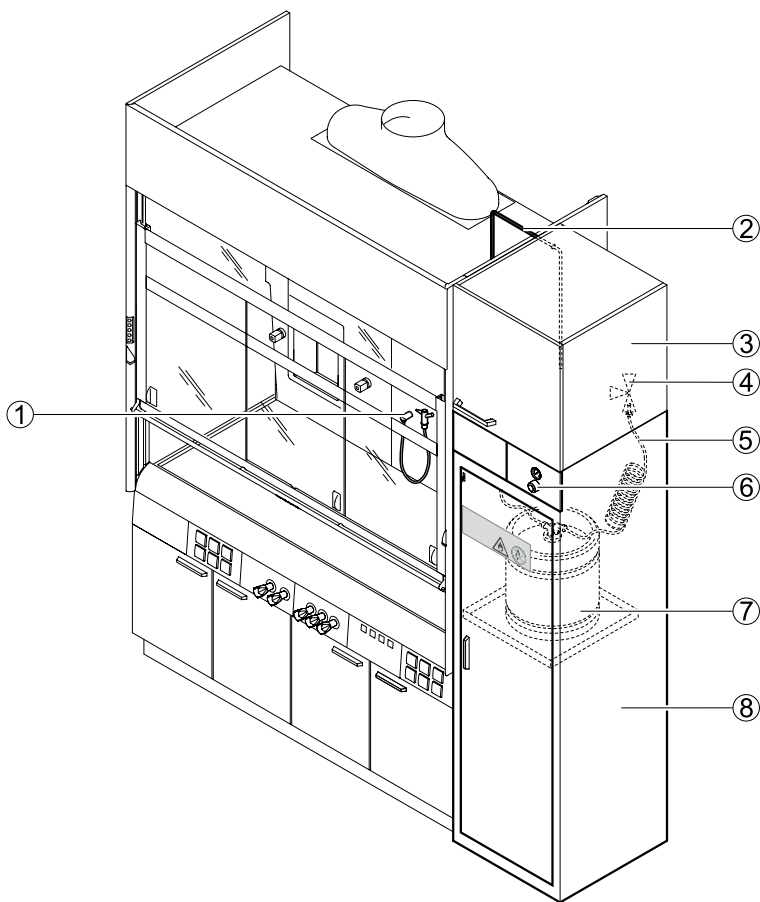
Supply system for flammable liquids

Use

- For safe storage and retrieval of flammable liquids in the laboratory workstation according to EN 14470-1 (type 90) and TRGS 510 (appendix L)
- For the transferring of flammable liquids from containers into small casks (max. 2 containers with 30 l each)
- Not suitable for the storage of the following hazardous substances:
 - ▶ acids and bases
 - ▶ gas cylinders
 - ▶ radioactive substances
 - ▶ micro-organisms

Design

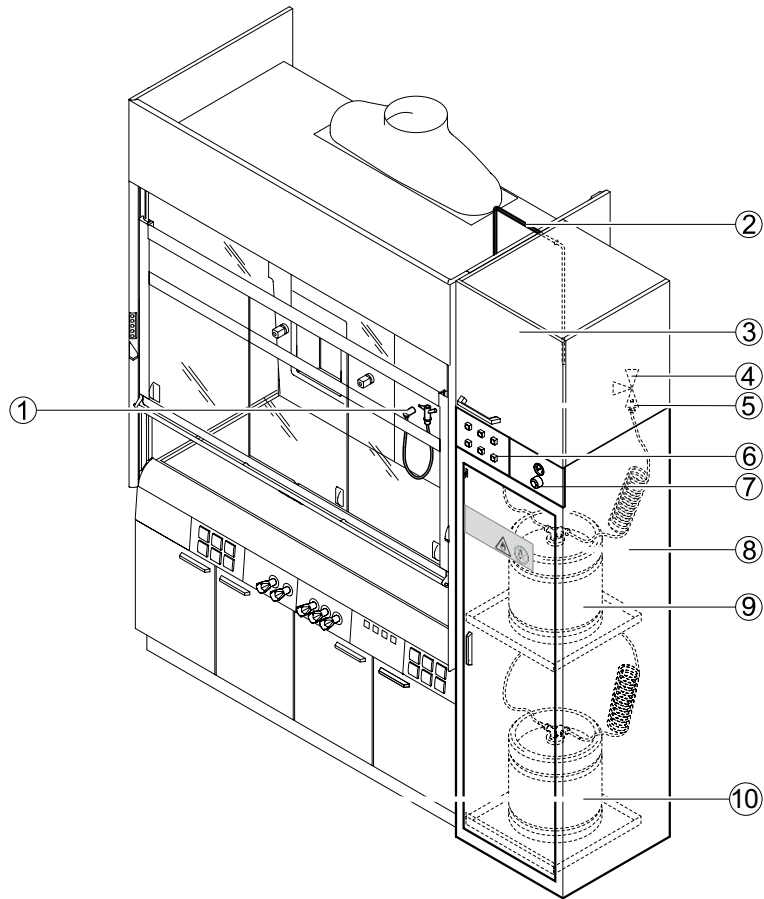
Cyclic supply



- 1 Pump nozzle in the internal workspace
- 2 Outlet pipe
- 3 Top-mounted cabinet
- 4 3-way valve
- 5 Inert gas pipe
- 6 Pressure regulator
- 7 Container
- 8 Safety cabinet

Supply system for flammable liquids

Continuous supply with automatic changeover to another container



- 1 Pump nozzle in the internal workspace
- 2 Outlet pipe
- 3 Top-mounted cabinet
- 4 3-way valve
- 5 Inert gas pipe
- 6 Electrical module for the monitoring system
- 7 Pressure regulator
- 8 Safety cabinet
- 9 Container 1
- 10 Container 2

Supply and disposal

Supply system for flammable liquids

Technical Data

Dimensions	
Width [in] (mm)	approx. 23.62 (600)
Depth [in] (mm)	approx. 23.62 (600)
Height [in] (mm) with top-mounted cabinet	106.3 (2700)
Container 7.92 gal (30 l), Height [in] (mm)	17.32 (440)
Container 7.92 gal (30 l), Ø [in] (mm)	14.57 (370)

Relevant features	
Design	Safety cabinet with: Connection to ventilation system Connection to voltage compensation with grounding line Automatic locking through current-independent thermal activation, in case of fire Height-adjustable shelves Hinged door
Number of containers 7.92 gal (30 l)	1-2
Door	Hinged door
Cyclic supply	With different flammable liquids Separate pipes to 1-2 containers in the safety cabinet
Continuous supply	With automatic changeover to second container Joint pipe connected to maximal 2 containers in the safety cabinet Monitoring system: with empty container, automatic changeover to second container
Pressure regulator solvent dispenser system	Defined pressure of NaN 2.9 psi (0,2 bar) for carrying flammable liquid Safety valve at NaN 7.2 psi (0,5 bar)
Extraction point solvent dispenser system	Flexible solvent pump nozzle spray in the internal workspace Fixed solvent pump nozzle in the internal workspace

Material	
Safety cabinet	Powder-coated steel
Container	Stainless steel
Air connection spigot Ø 2.95 in (75 mm)	PPs

Ventilation data	
Volume flow [cfm] (m³/h)	29.4 (50)
Ventilation connection on the ascending duct [in] (mm)	3.54 (90)

Waste disposal system for acids and bases

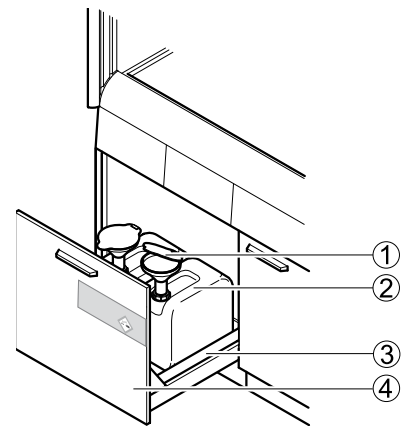
Use

- For safe intermediate storage of residual acids and bases in the laboratory workstation
- The following dangerous substances are not suitable for the waste disposal system:
 - ▶ flammable liquids
 - ▶ gas cylinders
 - ▶ radioactive substances
 - ▶ micro-organisms

Design

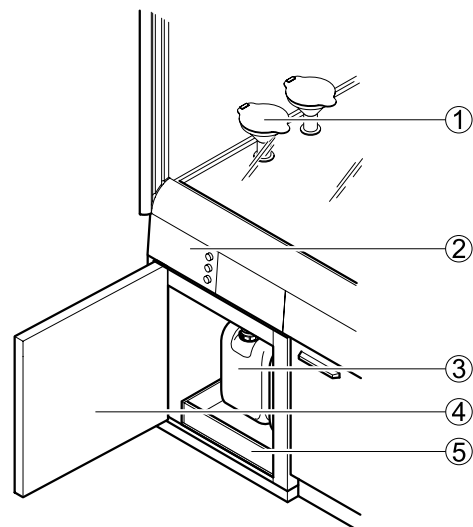
Filling via funnel in underbench unit

- 1 Funnel with mechanical level indicator
- 2 Container
- 3 Tray
- 4 Underbench unit with full-height drawer



Filling via funnel in internal workspace

- 1 Underbench unit with hinged door
- 2 Electrical module with level indicator and control unit
- 3 Funnel on the work surface
- 4 Container
- 5 Tray
- 6 Extendable shelf



Waste disposal system for acids and bases

Technical Data

Dimensions for underbench unit on plinth	
Width [in] (mm)	23.62 (600)
Depth [in] (mm)	21.65 (550)
Height [in] (mm) at working height 29.53 in (750 mm)	28.35 (720)
Height [in] (mm) at working height 35.43 in (900 mm)	34.25 (870)
Max. height [in] (mm)	20.87 (530)

Dimensions for self-supporting/pushed-in underbench unit for bench-mounted fume hood with services on baffle	
Width [in] (mm)	23.62 (600)
Depth [in] (mm)	21.65 (550)
Height [in] (mm) at working height 35.43 in (900 mm)	25.16 (639)
Max. height [in] (mm)	16.73 (425)

Dimensions for self-supporting/pushed-in underbench unit for bench-mounted fume hood with services on side walls	
Width [in] (mm)	23.62 (600)
Depth [in] (mm)	21.65 (550)
Height [in] (mm) at working height 35.43 in (900 mm)	28.19 (716)
Max. height [in] (mm)	20.87 (530)

Dimensions container	
1.32 gal (5 l) width x depth x height [in] (mm)	6.30 (160) x 7.28 (185) x 9.06 (230), connecting threat S 55
3.17 gal (12 l) width x depth x height [in] (mm)	7.68 (195) x 9.09 (231) x 13.78 (350), connecting threat S 60
5.28 gal (20 l) width x depth x height [in] (mm)	10.24 (260) x 11.22 (285) x 15.35 (390), connecting threat S 60

Relevant features	
Design	Vented underbench unit with full-height drawer (max. 2 containers) or vented underbench unit with hinged door and without drawer (max. 2 containers) Coated fittings Tray made of polypropylene
Funnel	Underbench unit with full-height drawer: funnel screw-mounted on container Underbench unit with hinged door: funnel on work surface with filling pipe between funnel and container
Filling and level indicator	Funnel screw-mounted on container mechanical level indicator with signal rod, which rises over the edge of the funnel when the maximum level has been reached Funnel on work surface: electronic level indicator, acoustic and visual signal indicates maximum level has been reached
Approval container 1.32 gal (5 l), 3.17 gal (12 l), 5.28 gal (20 l)	UN 3H1/Y1,6
Resistance	Based on consultation with Waldner

Waste disposal system for acids and bases

Funnel in underbench unit	Container 1.32 gal (5 l)	Container 3.17 gal (12 l)	Container 5.28 gal (20 l)	Container 3.17 gal (12 l) and 5.28 gal (20 l)
Underbench unit on plinth	–	4	2	2 x 3.17 gal (12 l) and 1 x 5.28 gal (20 l)
Self-supporting/pushed-in underbench unit for bench-mounted fume hood, with services on baffle	–	4	–	–
Self-supporting/pushed-in underbench unit for bench-mounted fume hood, with services on side walls	–	4	2	2 x 3.17 gal (12 l) and 1 x 5.28 gal (20 l)

Funnel in internal workspace:	Container 1.32 gal (5 l)	Container 3.17 gal (12 l)	Container 5.28 gal (20 l)	Container 3.17 gal (12 l) + 5.28 gal (20 l)
Underbench unit on plinth	2	–	–	–
Self-supporting/pushed-in underbench unit for bench-mounted fume hood, with services on baffle	2	2	–	–
Self-supporting/pushed-in underbench unit for bench-mounted fume hood, with services on side walls	2	2	1	1 x 3.17 gal (12 l) and 1 x 5.28 gal (20 l)

Material	
Container	PP
Ventilation connection	PPS
Tray	PP
Components for installation	Electrically conductive PE-HD

Ventilation data	
Volume flow [cfm] (m^3/h)	29.4 (50)
Ventilation connection on the ascending duct $\varnothing$ [in] (mm)	3.54 (90)

Waste disposal system for flammable liquids

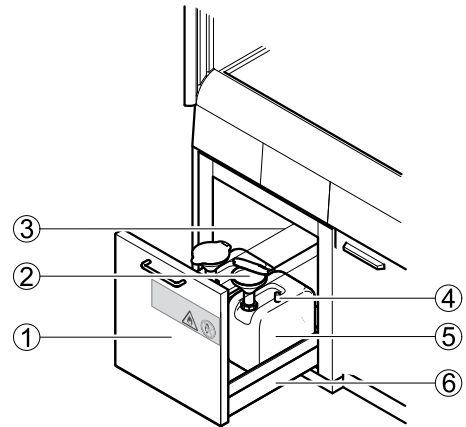
Use

- For safe intermediate storage of residual flammable liquids in the laboratory workstation according to EN 14470-1 (type 90) and TRGS 510 (appendix L)
- For disposal via screw-mounted funnels in safety underbench units or via funnels on the work surface in the internal workspace
- The following dangerous substances are not suitable for the waste disposal system:
 - ▶ acids and bases
 - ▶ gas cylinders
 - ▶ radioactive substances
 - ▶ micro-organisms

Design

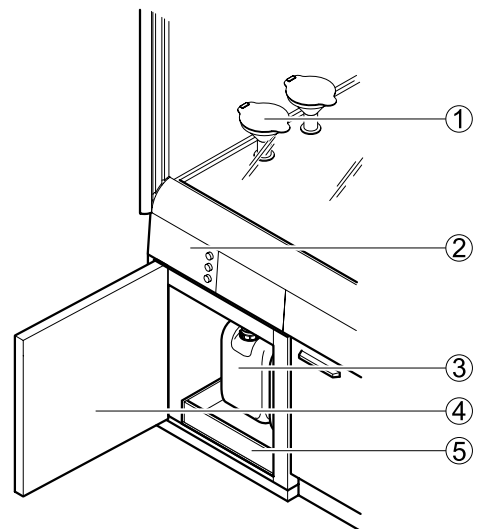
Filling via funnel in underbench unit

- 1 Safety cabinet with full-height drawer
- 2 Funnel
- 3 Grounding cable
- 4 Funnel with mechanical level indicator
- 5 Container
- 6 Collecting tray



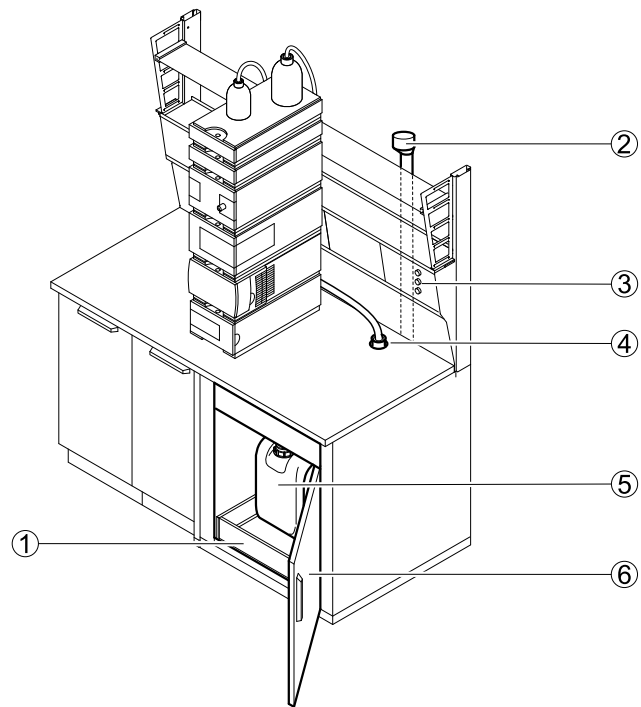
Filling via funnel in internal workspace

- 1 Safety cabinet with hinged door
- 2 Container
- 3 Electrical module with level indicator and control units
- 4 Funnel on the work surface



Waste disposal system for flammable liquids

Disposal system for HPLC equipment



- 1 Collecting tray
- 2 Extract air duct
- 3 Electrical panel with level indicator and control units
- 4 Intake spigot for capillaries
- 5 Container
- 6 Safety cabinet with hinged door

Waste disposal system for flammable liquids

Technical Data

1. Filling via funnel in the underbench unit
2. Filling via funnel in the fume hood internal workspace
3. Transfer system with trolley

Dimensions underbench safety unit	
Safety underbench unit width x depth [in] (mm)	approx. 23.43 x 23.62 (595 x 600)
Safety underbench unit total height [in] (mm)	approx. 23.62 (600)
Container 1.32 gal (5 l) width x depth x height [in] (mm)	6.30 x 7.28 x 9.06 (160 x 185 x 230)
Container 2.64 gal (10 l) width x depth x height [in] (mm)	7.80 x 11.73 x 10.39 (198 x 298 x 264)
Container 7.92 gal (30 l) width x depth x height [in] (mm)	10.43 x 14.37 x 16.14 (265 x 365 x 410)

Relevant features	
Design	With funnel in underbench unit: Underbench safety unit with full-height drawer with max. 2 containers With funnel in fume hood internal workspace: Underbench safety unit with hinged door with max. 2 containers or with transfer system with 1 container Connection to ventilation system Connection to voltage compensation with grounding line Funnel, grounded
Container	2 containers 1.32 gal (5 l), isolating, 2 conductive containers 2.64 gal (10 l), or with transfer system 1 conductive container 7.92 gal (30 l), permanently installed
Funnel	Safety cabinet with full-height drawer: Funnel screw-mounted on container Safety underbench unit with hinged door, transfer system: Funnel on the work surface is connected with the container through one filling pipe per funnel
Transfer system	Mandatory for container with 7.92 gal (30 l) maximum level
Approval for container 1.32 gal (5 l), 2.64 gal (10 l), 7.92 gal (30 l)	UN 3H1/Y1,6
Filling, level indicator	Funnel in safety underbench unit: mechanical level indicator integrated in the 2.64 gal (10 l) container Funnel in fume hood internal workspace: electrical level indicator, acoustic and visual signal when maximum level has been reached Optional connection for liquid chromatograph (HPLC) with spigots instead of funnels and with electrical level indicator Filler head is connected with gas displacement line to extract air
Resistance	Based on consultation with Waldner

Cart for transfer system	
Design	Trolley with 15.84 gal (60 l) compressed air membrane pump and electronic level indicator At maximum level the automatic pump is shutdown and acoustic and visual signals are emitted
Trolley, width [in] (mm)	24.21 (615)
Transport container, material	Polyethylene (PE), electrically conducting

Material	
Safety underbench unit	Powder-coated steel
Container 1.32 gal (5 l)	PP
Container 2.64 gal (10 l), 7.92 gal (30 l)	High density polyethylene, electrically conductive
Ventilation connection	PPS
Components for installation	Electrically conductive PE-HD
Components for transfer system	Stainless steel

Ventilation data	
Volume flow [cfm] (m³/h)	29.4 (50)
Ventilation connection on the ascending duct Ø [in] (mm)	3.54 (90)

Disposal system for solid waste and domestic waste

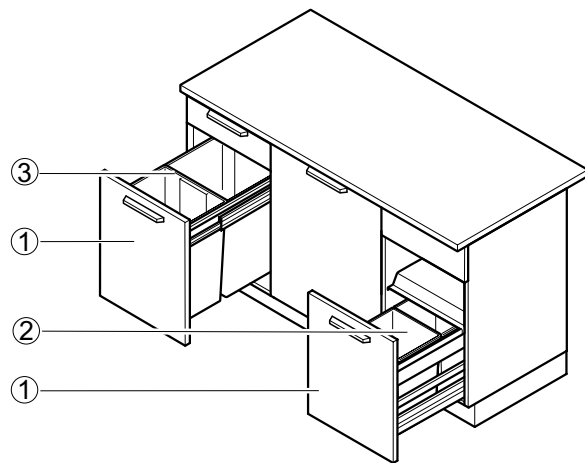
Use

- For disposal of residual solid waste and of domestic waste in laboratory work
- Not suitable for permanent storage of solid waste and domestic waste
- Not suitable for the disposal of dangerous substances, especially:
 - ▶ acids and bases
 - ▶ flammable liquids
 - ▶ gas cylinders
 - ▶ radioactive substances
 - ▶ micro-organisms

Design

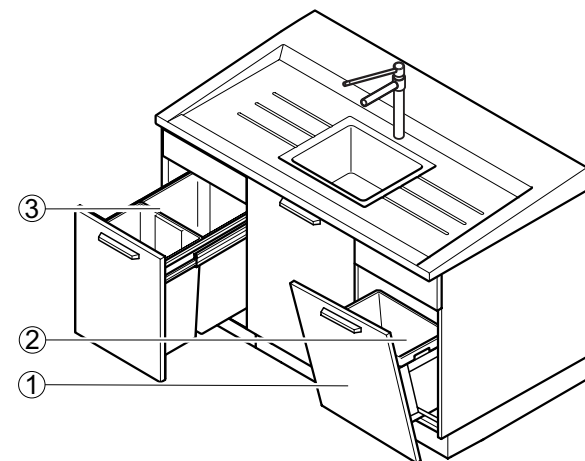
Waste collector with full-height drawer

- 1 Full-height drawer
- 2 Waste collector
2 x 3.96 gal (15 l)
- 3 Waste collector
2 x 9.24 gal (35 l)



Waste collector with tilting door

- 1 Tilting door
- 2 Waste collector
7.92 gal (30 l)
- 3 Waste collector
2 x 9.24 gal (35 l)



Disposal system for solid waste and domestic waste

Technical Data

Dimensions for underbench unit on plinth				
Width x height [in] (mm)	17.72 (450) x 34.25 (870)	23.62 (600) x 34.25 (870)	17.72 (450) x 28.35 (720)	23.62 (600) x 28.35 (720)
Depth [in] (mm)	21.65 (550)			
Height, plinth [in] (mm)	4.33 (110)			
Capacity with full-height drawer	2 x 3.96 gal (15 l) or 2 x 9.24 gal (35 l)	2 x 3.96 gal (15 l) -	2 x 3.96 gal (15 l) or 2 x 9.24 gal (35 l)	2 x 3.96 gal (15 l) -
Capacity with tilting door	1 x 7.92 gal (30 l)	1 x 7.92 gal (30 l)	1 x 7.92 gal (30 l)	1 x 7.92 gal (30 l)

Dimensions for underbench unit for sinks			
Width x height [in] (mm)	23.62 (600) x 34.25 (870)	35.43 (900) x 34.25 (870)	47.24 (1200) x 34.25 (870)
Depth [in] (mm)	21.65 (550)		
Height, plinth [in] (mm)	4.33 (110)		
Capacity with full-height drawer	-	2 x 3.96 gal (15 l)	
Capacity with tilting door	1 x 7.92 gal (30 l)	2 x 7.92 gal (30 l)	

Dimensions for self-supporting underbench unit for bench-mounted fume hood	
Width x height [in] (mm)	23.62 (600) x 32.28 (820)
Depth [in] (mm)	21.65 (550)
Height, plinth [in] (mm)	4.33 (110)
Capacity with full-height drawer	2 x 3.96 gal (15 l)
Capacity with tilting door	1 x 7.92 gal (30 l)

Dimensions for pushed-in underbench unit for bench-mounted fume hood		
Width x height [in] (mm)	21.46 (545) x 25.16 (639)	23.62 (600) x 25.16 (639)
Depth [in] (mm)	21.65 (550)	
Height, plinth [in] (mm)	4.33 (110)	
Capacity with full-height drawer	2 x 3.96 gal (15 l)	
Capacity with tilting door	1 x 7.92 gal (30 l)	

Relevant features	
Door variants	Full-height drawer Tilting door
Automatic opening using foot operation	Optional for full-height drawers up to a width of 23.62 in (600 mm)
Extract air spigot	Optional

Material	
Ventilation air connection	PPS

Ventilation data	
Volume flow [cfm] (m³/h)	17.7 (30)
Ventilation air connection on the ascending duct Ø [in] (mm)	3.54 (90)

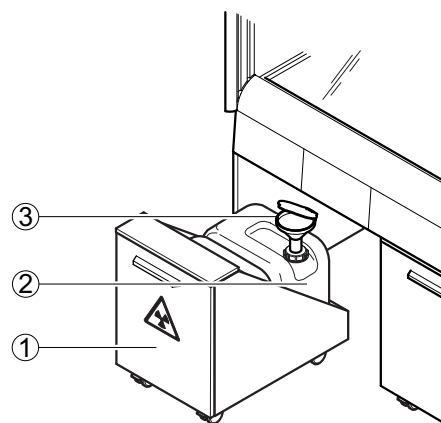
Disposal system for radionuclide waste

Use

- Waste container in the workstation for safe disposal of heavy radioactive waste
- Not suitable for disposal of the following dangerous substances:
 - ▶ acids and bases
 - ▶ flammable liquids
 - ▶ gas cylinders
 - ▶ micro-organisms

Design

**Filling via funnel in the underbench unit
(funnel with mechanical level indicator)**



- 1 Underbench on casters
2 Container 3.17 gal (12 l)
3 Funnel

Technical Data

Dimensions underbench units for radionuclide waste		
Width [in] (mm)	17.72 (450)	23.62 (600)
Depth [in] (mm)	21.65 (550)	
Total height [in] (mm)	25.16 (639)	
Height, casters [in] (mm)	4.33 (110)	
Container 3.17 gal (12 l), width x depth x height [in] (mm)	7.68 (195) x 9.09 (231) x 13.78 (350), connecting thread S 60	
Folding carton, width x depth x height [in] (mm)	11.81 (300) x 11.81 (300) x 19.69 (500)	

Dimensions underbench units for radionuclide waste	
Design	Front inside with lead sheet With casters Max. 2 containers 3.17 gal (12 l) in discharge tray made from polypropylene for the intake of weakly radioactive, residual liquid waste Optional folding carton for the intake of strong radionuclide residual waste



6 School

We are the technological market leaders in Europe in the design of multi-functional science classrooms.

Our new **SCALA** school system can be easily and flexibly integrated into any setting, and affords the free space for technical and educational needs.

With our **SCALA** school system, we provide the ideal basis for successful learning. Due to the large number of possible configurations, our modular concept creates multi-functional classrooms with great adaptability. Thus technology and science can be experienced in all sorts of ways.

For extensive information with all details about our new school system, we will gladly send you more literature – please contact us at www.waldner-schule.de





7 Media

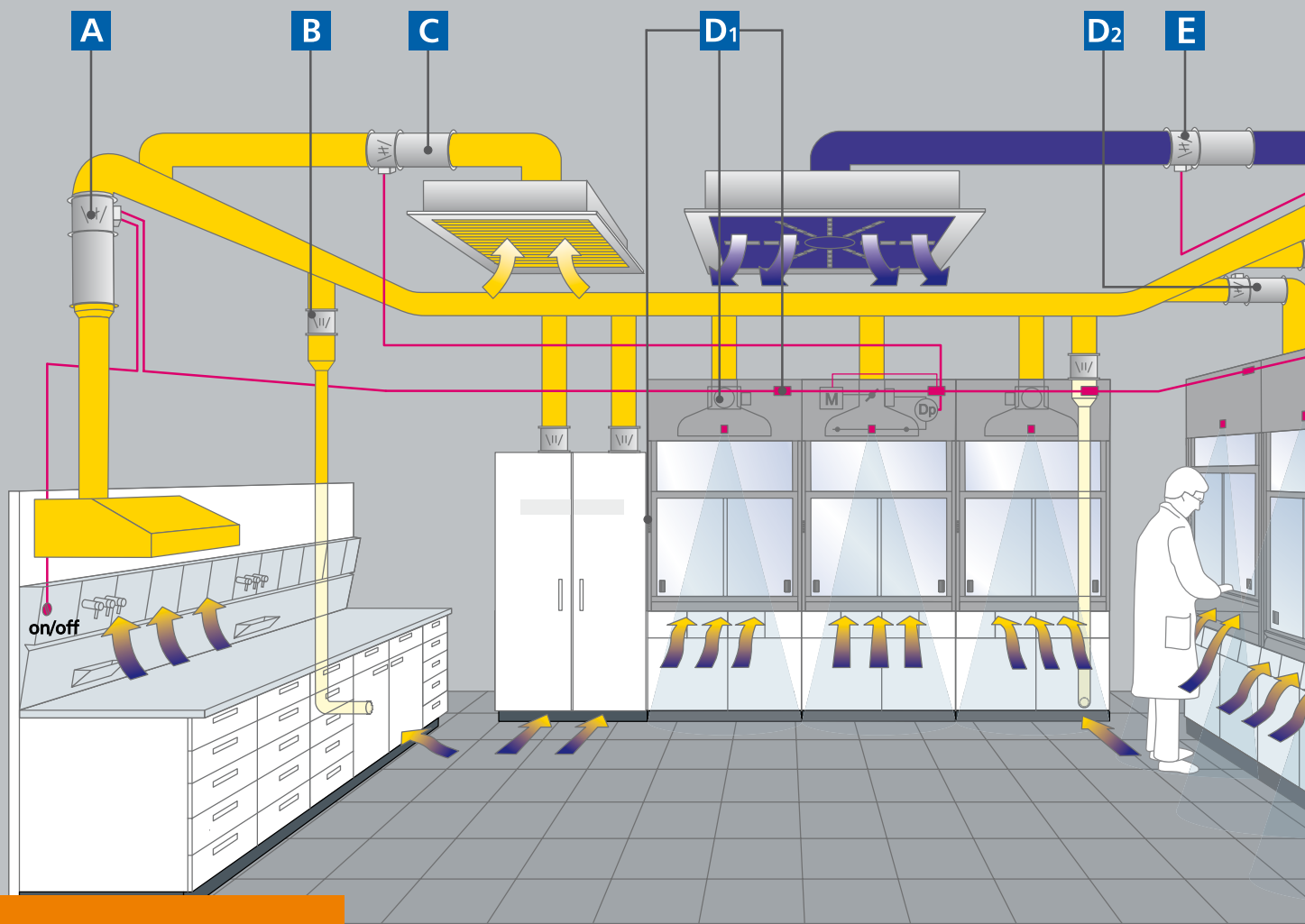
We are the only producer of laboratory furnishings to offer fume hoods and variable fume hood controls crafted by a single hand. Take advantage of our know-how on laboratory room control questions.

We have completed a large number of projects around the world in all kinds of sizes, all of which are being operated to the complete satisfaction of our customers. This confirms our philosophy of acting as a system provider.

And we provide the additional advantage that you, as a customer, only need to contact one partner to respond to your questions – and especially when it comes to your maintenance issues.

Being a full range supplier, we plan and complete your project the typical Waldner way and in the shortest time. Being the market leader, we have the capacity required for your projects – regardless of their scope – Just contact us, we will be happy to provide you with advice.





7 Media

Clear operating cost savings regardless of operating status

Business requirements no longer allow you to separate your laboratory equipment from the ventilation of the entire laboratory building. Waldner's intelligent laboratory controls significantly reduce ventilation system operating costs and provide the highest level of work safety.

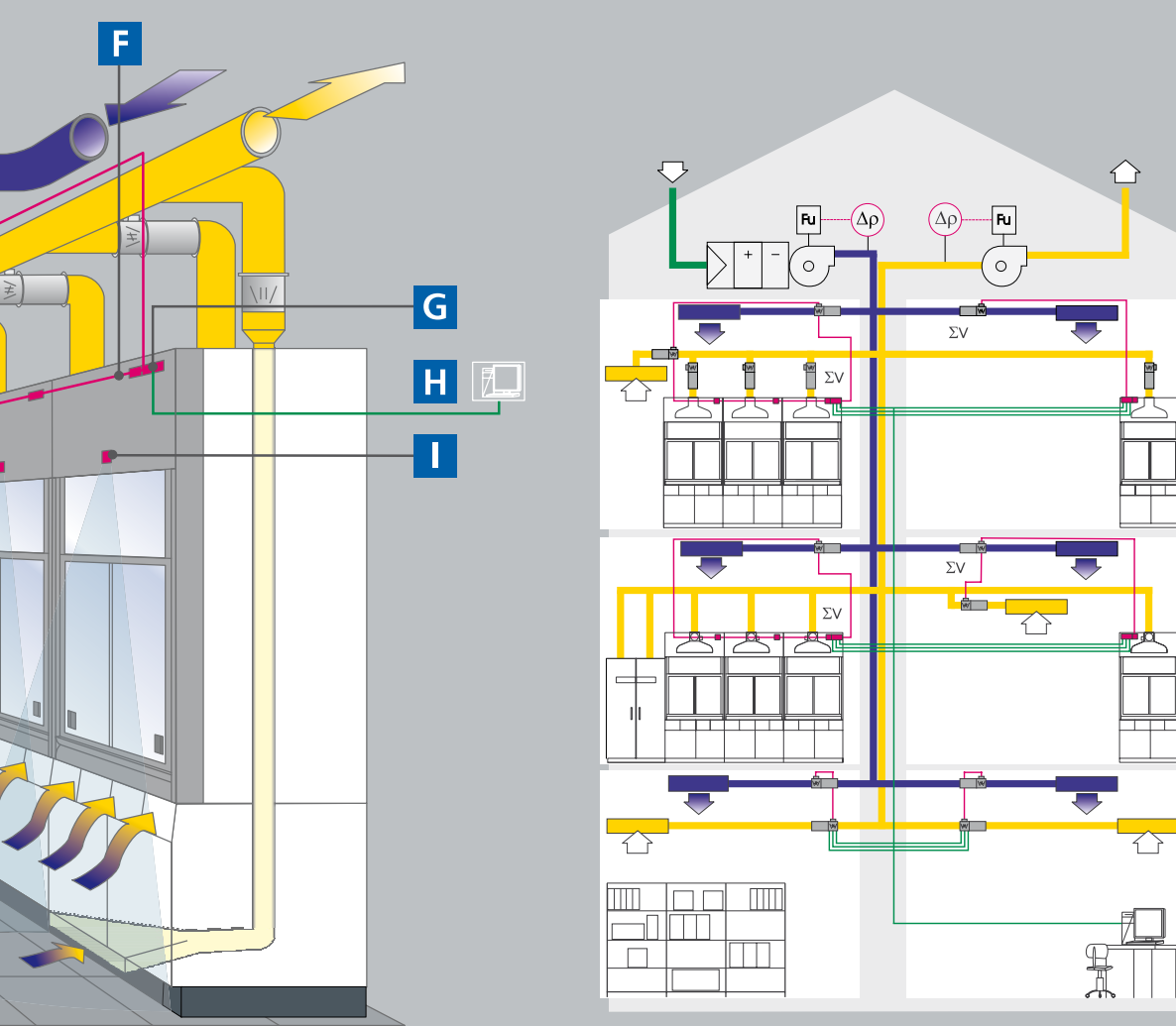
Optimum function through engineering that is properly thought through

Our fume hoods can be ideally integrated into the ventilation concept for the building as a significant component of laboratory ventilation. The measurement and control unit of our Airflow-Controller reliably recognizes the fume hood's utilization condition at all times and within seconds precisely and securely adjusts the air flow rate.

If needed, the user can manually decrease or increase the air exchange rate at the hood anytime.

Investments in our laboratory room controls will quickly amortize

Economic returns clearly speak for our laboratory room controls: The laboratory room control will amortize within one to two years, if the ventilation system is used efficiently given appropriately reduced energy usage. This is a significant advantage given continuously increasing energy prices.



Ventilation and controls as an overall concept

Being a leading system partner, we will create an overall concept design for your laboratory. This will begin with dimensioning the central ventilation system and ducts to fit your usage requirements and end with implementing appropriate measurement, console, and control engineering.



- A** Airflow damper canopy hood AC 3 Compact
- B** Mechanical airflow damper
- C** Airflow damper extract air AC3 Compact
- D1** Airflow-Controller AC3 v Standard
- D2** Airflow-Controller AC3 v pipe controller
- E** Airflow damper supply air AC3 Compact
- F** CAN-Bus
- G** Airflow-Controller with activated master function for laboratory room controls
- H** The following methods of communication with the DDC/building control are possible:
Analogue I/O, LON bus, MOD bus, Profibus, BACnet, Ethernet
- I** Sash controller SC

Control Systems and Monitoring

Control Systems

Control system - Airflow-Controller (AC) for fume hoods fulfilling DIN EN 14175 Part 6

Airflow controller (AC)

The heart of Waldner control components is a central unit consisting of an electronic control system controlled by a microprocessor.

The standard set value for the airflow rate is determined via the sash position. The processor controls this quickly and precisely by using specific (adaptive or predictive) control behavior. The microprocessor recognizes the required damper valve position, disposes of a max. servo velocity of two seconds for 90°, and is equipped with a position feedback control. This allows all set point changes to be corrected in less than three seconds.

The controller calculates an appropriate measuring diaphragm coefficient by integrating a range of variables from the damper position and the differential pressure. As required by DIN EN 14175, when the value drops below the set point, an optical and acoustic alarm is

triggered. An optical and acoustic alarm is also triggered when the sash is opened beyond the maximum permitted sash opening.

As a standard, the control damper is used with the extract air manifold. Motorized dampers must be used as pipe controllers if the room height is less than 129.92 in (3.30 m).

This feature is monitored and controlled when Secuf-low technology is used. The supportive flow technology shuts down when the exhaust air falls below specified amounts.

If the supportive flow mechanism fails, the optical and acoustic alarm is triggered and the extract air flow rate will automatically increase to the rate of a standard fume hood.



1 Display and operating device



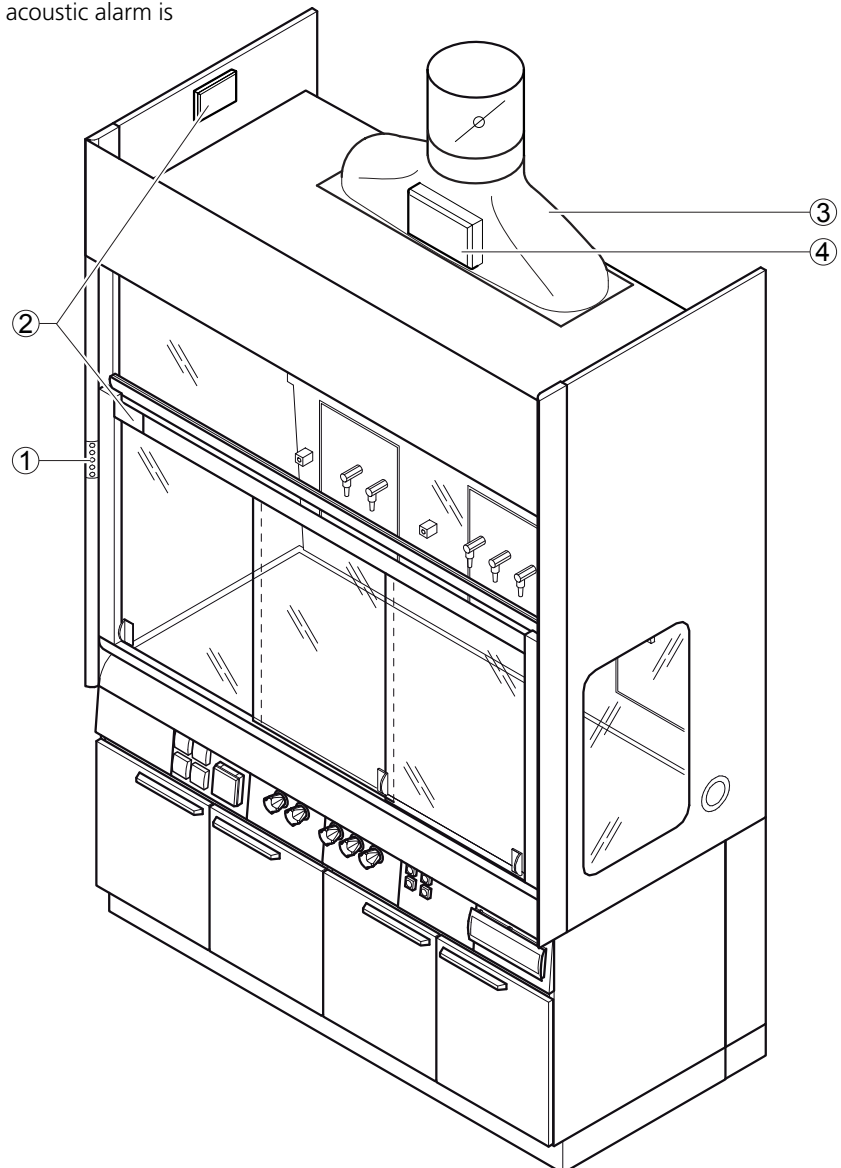
2 Sensor technology to detect the sash position



3 Extract air manifold with actuator, measuring equipment and measured data acquisition



4 Central control unit AC



Control Systems and Monitoring

Control Systems

Fume hood and controller form a single unit

The systems are precisely synchronized, providing for the highest level of reliability during ongoing laboratory operations.

Both fume hood and variable air volume control are approved under DIN EN 14175 Part 6 as a complete safety device. Thus, the time-consuming and costly coordination of different trades becomes unnecessary and legal security and warranty are provided by one supplier, if need be.

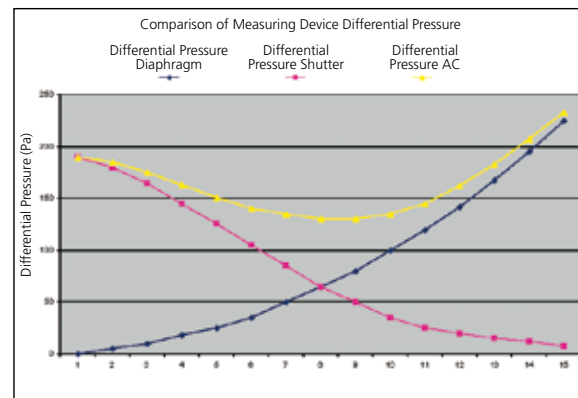
Our patented measuring method and measuring equipment

A volumetric flow rate deviation of 1:15 can be achieved through the variable diaphragm factor and the special way that the measuring equipment functions. Air volume on the fume hood can be reduced during night operations to 58.9 cfm (100 m³/h).

At the same time measuring accuracy for volume flow value is guaranteed to +/- 5%. This is required to secure compliance with directed air flow in the laboratory even when volume flows are low.



Fume hood control type approved under DIN EN 14175-T6 5.4 measurement in the exterior measuring plane



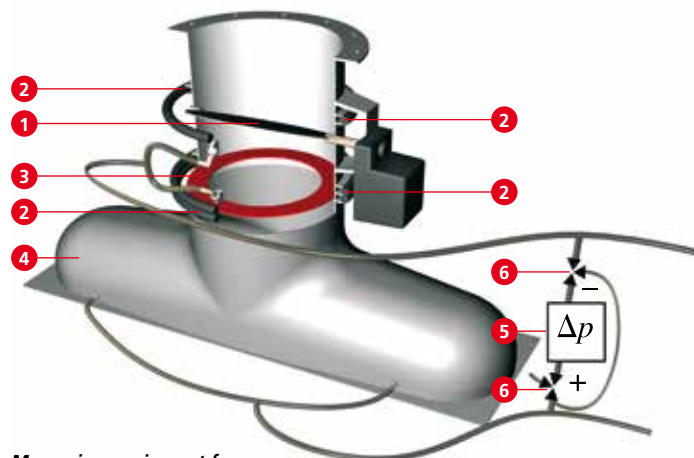
Differential pressure curve AC



Operating Panel AC

Monitoring and Controlling:

- Light On/Off
- Optical and acoustic alarm system
- Rinsing function (increase in air volume)
- Reduced operation
- Monitoring and feedback control on/off



Measuring equipment for Airflow-Controller

- 1 Control flap
- 2 Pressure measuring duct
- 3 Calibrated orifice
- 4 Extract air manifold
- 5 Pressure sensor
- 6 Magnetic valve

Control Systems and Monitoring

Control Systems

Technical Data

Characteristics	
Air flow rate range for DN 97.5 in (250 mm)	58.9cfm (100m ³ /h) - 882.9cfm (1500m ³ /h)
Air flow rate range for DN 122.85 in (315 mm)	117.7 cfm (200 m ³ /h) - 1765.8 cfm (3000 m ³ /h)
Measuring accuracy to actual value [%]	+/- 5
Nominal output [VA]	35
Motor operating time at 0-90° [sec]	2
Settling time [sec]	3
Allowable system pressure	0.015 psi (100 Pa) - 0.087 psi (600 Pa)

Inputs	
Voltage supply	24 V DC
Digital input	6 pieces (parameters can be freely set)
Analogue input	1 pieces (parameters can be freely set)
Sash detector	2 pieces (vertical and horizontal sash detector)
Mod-Bus connection	RS 232
PDR connection	RS 232
CAN-Bus	

Outputs	
Digital output	5 pieces (parameters can be freely set)
Analogue output	1 pieces (parameters can be freely set)
Control of AC3 Compact	RS 485
Connection operating field	RJ 10
CAN-Bus	
Motor control	RJ 45

Control Systems and Monitoring

Laboratory control

Master function to control the room

In order to create an overall air amount, the module will cyclically register individual exhaust amounts from the siphoned units in the laboratory room.

In each case, a minimum air exchange can be held for four different operational states in the laboratory room. The module will determine the corresponding minimum value and will transmit these to the fume hoods or volume flow regulators for the room exhaust systems, if the minimum air-exchange rate is not achieved through the fume hood minimum air values. The other fume hoods or volume flow regulators for the room exhaust systems will be lowered to their minimum air values, if the air exchange rate exceeds the minimum when a fume hood is opened. The room inlet air will be increased if the minimum air exchange rate continues to be exceeded.

Temperature and room pressure can be regulated through the module.

For the use of the fume hoods, a preset simultaneity (max. exhaust amount per laboratory room) can be monitored. When the preset exhaust amount is exceeded a signal is sent to the fume hoods in the laboratory.

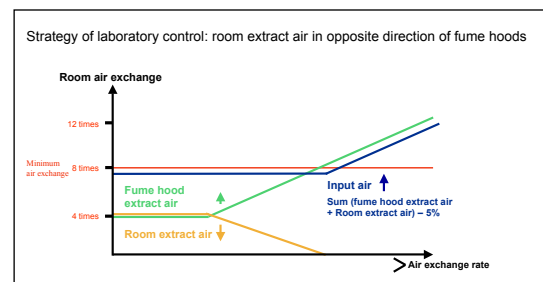
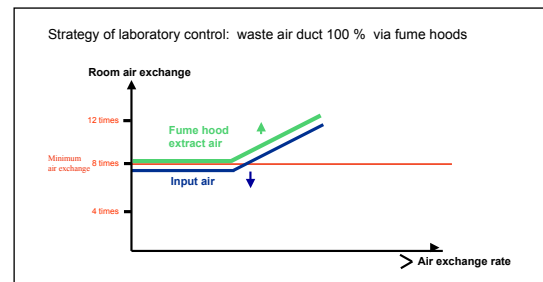
The room ventilation volume controls (AC Compact) are controlled by the control unit over an internal bus system.

Data exchange between the laboratory room controls and the DDC or GLT can take place over the following interfaces:

- MOD bus RTU
- LON bus
- Profibus
- Ethernet
- BACnet
- Analogue I/O

Data points such as set values and actual values of the airflow dampers, motorised damper positions, error messages, operating states and sash positions of the fume hoods can, e.g., be provided for visualisation.

Complete solutions are available for implementing a remote diagnostics system for laboratory control components.



Two examples of variations on laboratory control systems

GLT Status																																							
Info																																							
Softwareversion	10.21																																						
Raumnummer	2	2	2																																				
Positionsnummer	1																																						
Bediener	Glogger S.																																						
Datum	120308																																						
GLT																																							
Status																																							
AC-Adresse	1																																						
Fehlerstack	Kein Fehler																																						
Raumwerte																																							
Gesamt Abluftvolumenstrom	1450 m³/h																																						
Wärmelastabfuhrung	0 %																																						
Istwert Temperatur	0.0 °C																																						
Istwert Zuluft	0 m³/h																																						
Adresse	Betriebsart	Luft Soll	Luft	Winkel	Druck	Fenster	Querfenster	Störung	GLT	Sensor	Einheit	Raumbilanz	DB	SW	HW																								
Erhöht		1454	1458	54.9	0	0	0	OK		0.5		ja	10	21	2																								
1.0 EIN			199	0	53.4	0	0	OK		0.1 °C		ja	10	21	2																								
1.1 Raumzuluft				0	26.5			OK					10	6	0																								
2.0 Erhöht		650	653	54.9	100.4	42	1	OK		0.1 m³/h		ja	10	21	2																								
3.0 EIN			201	0	44.9	0	0	OK		0.1 °C		ja	10	21	2																								
4.0 EIN			201	0	41	0	0	OK		0.1 °C		ja	10	21	2																								
5.0 EIN			203	0	48.7	0	2	OK		0.1 °C		ja	10	21	2																								
5.1 Raumabluft				0	-0.1			OK					10	6	1																								

AC3 gefunden AC3 nicht vorhanden

Control Systems and Monitoring

Airflow controller for laboratory supply and exhaust air

AC3 Compact

Application areas

- Room intake control
 - Room exhaust control
 - Airflow measuring equipment / measuring orifice (without control flap and actuating drive)
 - Expansion module for AC3
- Up to four AC3 compact controls can be switched on and administered per AC3 control

AC3 Compact

Air amounts can be continuously variably controlled with the AC3 Compact microprocessor-based electronic control unit.

It rapidly and precisely controls the airflow according to the desired value and over a predetermined control action (predictive and adaptive).

Performance characteristics

- Control parameters are adaptively optimized online
- Standard tolerances are predictively corrected using a theoretical process model
- Motorized damper position feedback control
- Floating time: 5 seconds, settled
3 seconds, 80 % of setpoint
- Free ability to set parameters through PCs
- Integrated pressure sensor 0 psi (0 Pa) - 0.036 psi (250 Pa) (pressure-resistant to 0.362 psi (2500 Pa))
- Motorized damper housing: galvanized, stainless steel, PPs

Connections (parameters can be partially set)

- 2 x analogue output
- 1 x analogue input
- 1 x digital input
- 1 x operating field input RJ 10
- 1 x Modbus internal input RJ 45
- 1 x Modbus internal output RJ 45
- 1 x motor output RJ 45
- 1 x connecting plug with double terminals
24 VAC/DC, I max. 0.7 A (17 W)



AC3 Compact



Actuating drive



Galvanized control housing with AC3 Compact and rapid actuating drive

Control Systems and Monitoring

Airflow controller for laboratory supply and exhaust air

Technical Data

Design table for round supply and extract air airflow dampers

Nominal size	Fitting length	Volume flow range B1		Volume flow range B0		Volume flow range B2	
[in] (mm)	[in] (mm)	Vmin [cfm] (m³/h)	V. nom. [cfm] (m³/h)	Vmin [cfm] (m³/h)	V. nom. [cfm] (m³/h)	Vmin [cfm] (m³/h)	V. nom. [cfm] (m³/h)
3.94 (100)	20.87 (530)	15.9 (27)	111.8 (190)	11.2 (19)	80 (136)	23 (39)	160.1 (272)
4.92 (125)	20.87 (530)	25.3 (43)	176 (299)	18.2 (31)	126 (214)	35.9 (61)	251.9 (428)
6.3 (160)	20.87 (530)	41.8 (71)	290.8 (494)	29.4 (50)	207.8 (353)	59.4 (101)	415.6 (706)
7.87 (200)	22.83 (580)	65.3 (111)	456.8 (776)	46.5 (79)	326.1 (554)	93.6 (159)	652.2 (1108)
9.84 (250)	22.83 (580)	102.4 (174)	716.3 (1217)	73 (124)	511.5 (869)	146.6 (249)	1023.6 (1739)
12.4 (315)	24.41 (620)	163 (277)	1141.3 (1939)	116.5 (198)	815.2 (1385)	233.1 (396)	1630.4 (2770)
13.98 (355)	24.41 (620)	207.2 (352)	1451.5 (2466)	148.3 (252)	1037.1 (1762)	296.7 (504)	2073.6 (3523)
15.75 (400)	24.41 (620)	263.7 (448)	1845.3 (3135)	188.4 (320)	1317.9 (2239)	376.7 (640)	2636.3 (4479)
19.69 (500)	37.8 (960)	412.6 (701)	2889.4 (4909)	294.9 (501)	2063.6 (3506)	590.4 (1003)	4127.3 (7012)
24.8 (630)	37.8 (960)	656.3 (1115)	4594.6 (7806)	468.5 (796)	3281.4 (5575)	938.8 (1595)	6563.5 (11151)

Design table for angular supply and extract air airflow dampers

Construction size		Fitting length	Volume flow range B1		Volume flow range B0		Volume flow range B2	
Width [in] (mm)	Height [in] (mm)	[in] (mm)	Vmin [cfm] (m³/h)	V. nom. [cfm] (m³/h)	Vmin [cfm] (m³/h)	V. nom. [cfm] (m³/h)	Vmin [cfm] (m³/h)	V. nom. [cfm] (m³/h)
7.87 (200)	5.51 (140)	20.87 (530)	57.7 (98)	405.5 (689)	148330 (70)	289.6 (492)	83 (141)	579.2 (984)
9.84 (250)	5.51 (140)	20.87 (530)	72.4 (123)	507.4 (862)	51.8 (88)	362.6 (616)	103.6 (176)	725.2 (1232)
11.02 (280)	6.3 (160)	20.87 (530)	93 (158)	651.6 (1107)	66.5 (113)	465.6 (791)	133 (226)	930.6 (1581)
12.4 (315)	7.09 (180)	22.83 (580)	118.3 (201)	826.4 (1404)	84.2 (143)	590.4 (1003)	168.9 (287)	1180.7 (2006)
13.98 (355)	7.87 (200)	22.83 (580)	148.3 (252)	1036.5 (1761)	105.9 (180)	740.5 (1258)	211.9 (360)	1480.9 (2516)
15.75 (400)	8.82 (224)	22.83 (580)	187.2 (318)	1310.8 (2227)	133.6 (227)	935.9 (1590)	267.8 (455)	1872.3 (3181)
15.75 (400)	11.02 (280)	22.83 (580)	234.3 (398)	1641 (2788)	167.2 (284)	1172.5 (1992)	335.5 (570)	2344.4 (3983)
12.4 (315)	12.4 (315)	24.41 (620)	207.8 (353)	1453.3 (2469)	148.3 (252)	1037.7 (1763)	296.7 (504)	2076 (3527)
13.98 (355)	13.98 (355)	24.41 (620)	264.3 (449)	1848.2 (3140)	188.4 (320)	1320.2 (2243)	377.3 (641)	2640.5 (4486)
15.75 (400)	15.75 (400)	24.41 (620)	335.5 (570)	2349.7 (3992)	239.6 (407)	1678.1 (2851)	479.7 (815)	3356.8 (5703)
19.69 (500)	15.75 (400)	24.41 (620)	420.3 (714)	2940.1 (4995)	299.6 (509)	2117.8 (3598)	600.4 (1020)	4199.7 (7135)
24.8 (630)	15.75 (400)	24.41 (620)	529.7 (900)	3707.6 (6299)	377.9 (642)	2648.1 (4499)	757.5 (1287)	5296.2 (8998)
31.5 (800)	15.75 (400)	24.41 (620)	672.8 (1143)	4711.2 (8004)	480.3 (816)	3365 (5717)	962.4 (1635)	6730.1 (11434)
24.8 (630)	7.87 (200)	24.41 (620)	254.9 (433)	1844.1 (3133)	186 (316)	1317.3 (2238)	372.6 (633)	2634.6 (4476)

For optimum adaptation of the airflow dampers to the air exchange rate range and the size of the duct network, the measuring panel sizes (B1/B0/B2) are available for each dimension. The standard version of the airflow dampers includes the measuring panel B1.

Maximum air velocity in the measuring panel:

B1: 1377.95 FPM (7 m/s); B0: 984.25 FPM (5 m/s); B2: 1968.50 FPM (10 m/s)

Control Systems and Monitoring

Monitoring

Monitoring - Function display (FAZ) for fume hoods fulfilling DIN EN 14175 Part 2

To warn laboratory personnel in the event of a failure through optical and acoustic signals, DIN EN 14175 Part 2 requires continuous monitoring of ventilation functions in fume hood. The optical signal cannot be turned off.

The FAZ is an electronic monitoring system that continuously measures the air exchange rate. When the volume flow falls below the preset threshold value, it triggers both acoustic and optical alarms. This continuous control of the airflow and, where needed, of the Secuflow technology, guarantees a continuous monitoring of the fume hood's ventilation function.

The display is located in the fume hoods profile. Alarms, such as lack of air, are signaled in red, while warning, such as exceeding the max. sash opening

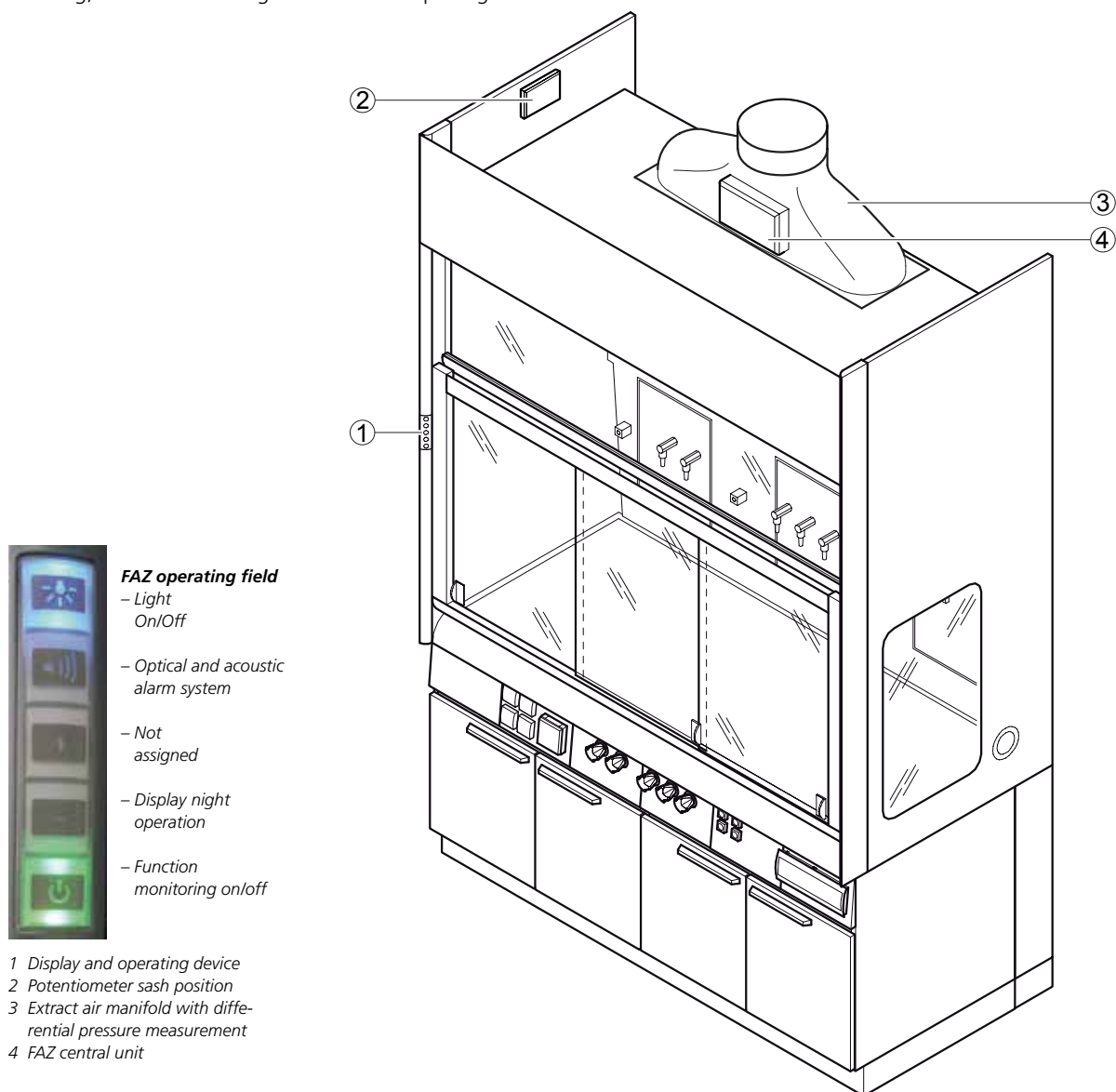
height, are signaled in orange. Pressing a button can deactivate the acoustic alarm. A user-enabled on-off switch for the FAZ system is available as an option.

Airflow measurement FAZ

The extract air manifold on the fume hood is used to generate the air pressure signal.

The measurement method used is a differential pressure measurement. The function display works independent of room pressure fluctuations and independent of the sash opening.

During nighttime operations, a second air volume can be monitored.

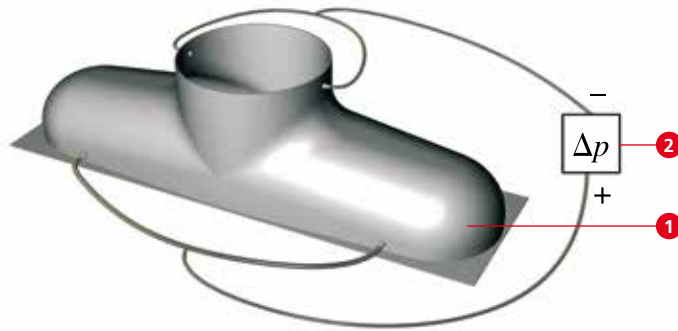


Control Systems and Monitoring Monitoring

FAZ differential pressure measurement

1 Extract air manifold, available in two versions:
9.84 in (250 mm) diameter and 12.40 in (315 mm)
2 Pressure sensor

9.84 in (250 mm) measuring pipe diameter for
scrubber and filter fume hoods



Technical Data

Monitoring	Function display (FAZ)
Electrical power supply	24 V DC
Outputs	Alarm output Status message Light switch
Inputs	On Off Acoustic alarm shut-off Night operations
Diameter [in] (mm)	9.84 (250), 12.40 (315)
System connection	Analogue I/O, Modbus

Sash controller

When the user lightly activates the sash, the sash's opening or closing process will be supported and completed by a motor.

When the fume hood is not used, the electronics of the sash will close the fume hood sash with the aid of a motor. The area in front of the fume hood is monitored by a motion detector. If no movement occurs for a predetermined period of time, the sash will automatically close. As a safety feature, a photoelectric barrier is built into the bottom edge of the sash and prevents the sash from closing if there are obstacles in its path.

The requirements of TRGS 526, that fume hoods which are currently not in use, are automatically and practically fulfilled through a sash controller.

The closing delay period after the sensors are enabled can be set to between 30 seconds and fifteen minutes.

In combination with an airflow controller the sash controller can also be connected to the DDC/BMS.

Components:

- 1) Processor-controlled central unit
- 2) Motor drive (closes and opens the sash)
- 3) A photoelectric barrier that is integrated in the sash frame serves to detect obstacles during the automatic closing process
- 4) The motion detector will stop the sash when working in front of the fume hood



Technical data SC

Closing device	Sash controller SC
Power supply	24 V DC
Nominal capacity	48 VA
Inputs	Open Closed



8

Accessories

For our new **SCALA** laboratory furniture system, we have developed accessories that allow you to furnish your working environment – in your particular area of the laboratory – according to your individual needs.

System-conforming, flexible and sophisticated in design, our movable sliding elements Sekretär, Assistent and Protector present themselves as space-saving and extremely useful helpers in the workplace.

We will be pleased to show you many more accessories, custom fit to our new system.

The choice is yours – you can find our complete line of accessories in our special catalog, which we will gladly send to you, or can be viewed on the internet at www.waldner-inc.com.





9 General

Our innovative developments have made us the laboratory market leader in Europe.

Our products set the benchmark worldwide, and have definitely molded the laboratory workstation.

Since we know the expectations of our customers, we are continuously developing and improving.

This catalog represents the condition of our product line in May 2009. We reserve the right to make technical changes in the context of further development. Pictures, descriptions and textual contents are copyrighted. Reproduction, even extracts, only with the explicit approval of our headquarter Waldner Laboreinrichtungen GmbH & Co. KG.

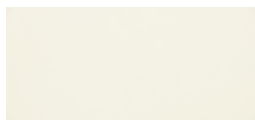


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Color scheme



We have paid attention to design and color to make a balanced appearance, resulting in an optimal orientation for the researchers, in an environment that they will spend long hours every day. We give the laboratory environment a clear and timeless design – making work pleasant.



Pure white RAL 9010
Similar to
NCS S 0602 G91Y
 Storage cabinets
 Internal workspace



Walnut

- Sekretär, Assistant, Protector
- Optional as emphasis for storage cabinet fronting



Light gray
NCS S 3005 R80B

- Metalwork service modules
- Bench frames, worktops

Color scheme

General



Anthracite metallic effect
Similar to
NCS S 5502 R
Fume hood frontings



Light green
Glass
NCS S 1010 G10Y
■ Rear-lacquered
worktops



Dark gray
NCS S 7502 B
similar to RAL 7015
Storage cabinet on
plinth



Stainless steel
Handles
Worktops
Sinks



Pictograms
CMYK 0/16/65/0
■ Emphasizing all labels
for hazardous mate-
rial and special sto-
rage spaces



Our service goes far beyond merely manufacturing the finest laboratory furniture. Due to our many years of experience in project management, we have acquired profound planning competence. We not only equip your laboratory, but on request we can undertake the planning and coordination of all related trades.

The start of planning

Layout planning defines, with two-dimensional clarity, the best utilization of available space. We take your needs into account, as well as the existing environment: dimensions, access to services, required connections, and other pertinent information.

The third dimension gives a clear picture

We now provide you with malleable three-dimensional drawings of the laboratory space. Then we refine the details together.

The next step of the presentation is to add color and depth perception. So the rendered presentation makes your laboratory almost "accessible" as if you could already walk right into it. You can see your laboratory from all angles.

As the logical conclusion of precise planning and project development, we install your new laboratory in the highly professional manner for which Waldner has become known – complete, precise and on time.

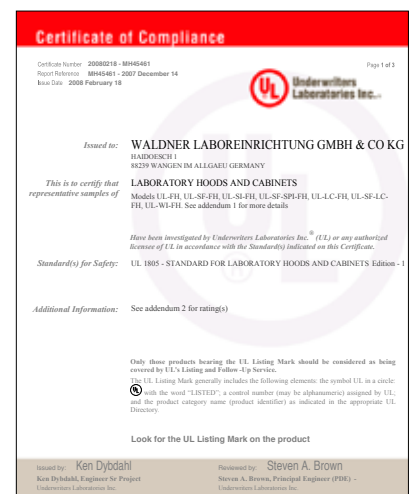


Awards

We have been developing our laboratory furniture for more than 60 years. Over this entire period of time, we have definitively influenced the laboratory workplace with our innovations.

Because of our attention to detail during development, planning and manufacturing over a long period of time, we have built an impressive pool of experience in all phases of our complete service, including product development, manufacturing, project management, installation and service.

Numerous patents, brands, design patents and registered designs are an impressive demonstration of our innovative power. As the European market leader, we will continue to do everything possible to impress our customers with new and innovative products. To view our latest developments, innovations and patents, please visit our website at www.waldner-inc.com.



Quality down to the finest detail isn't just our claim, it's what we do.

We are the first German laboratory furniture manufacturer to be certified according to the ISO 9001 quality standard.

To qualify for ISO 9001, we must maintain the finest quality products and professional service and support every step of the way – from initial planning through final installation. This level of quality assurance applies to every phase of our manufacturing as well: procurement, product development, engineering, production, and installation. Our in-house quality checks and regular training courses ensure the exact observance of the demanding criteria required to comply with ISO 9001.

All products for our **SCALA** laboratory furniture system have been tested by TÜV Product Service GmbH based on all applicable standards and regulations in accordance with German law on equipment safety (Gerätesicherheitsgesetz) and carry the GS marking. Different fume hood types are as well certified according to UL 1805.

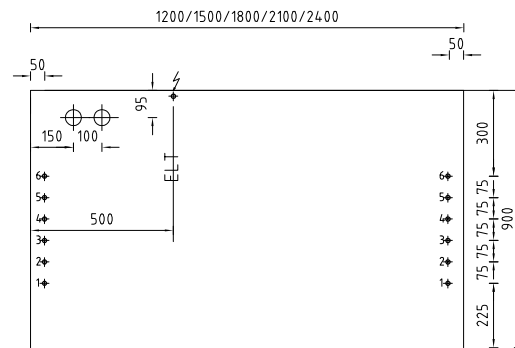
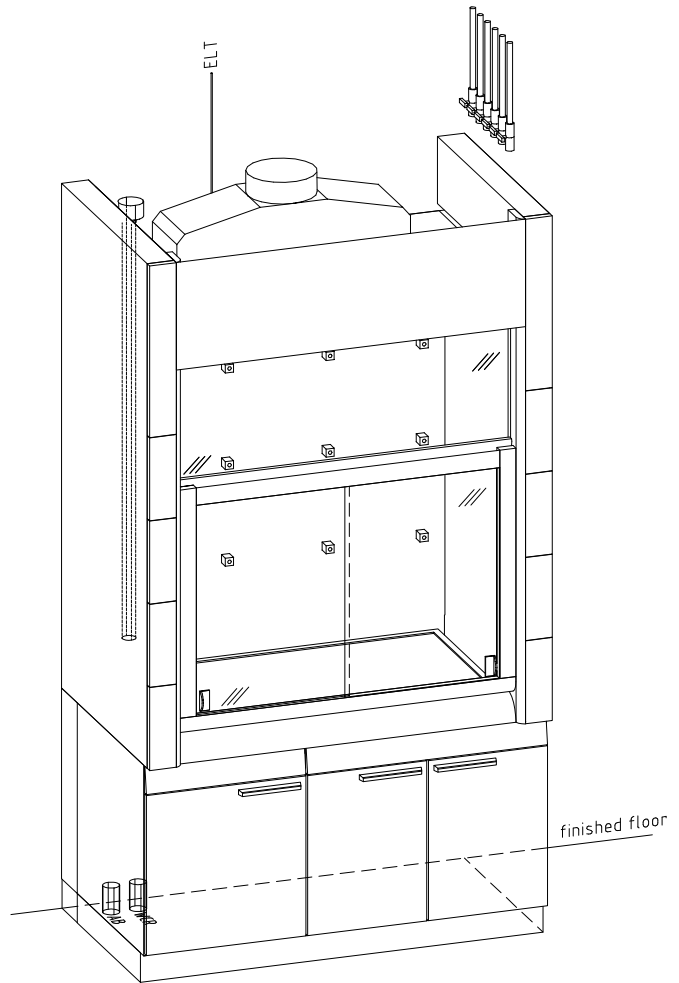
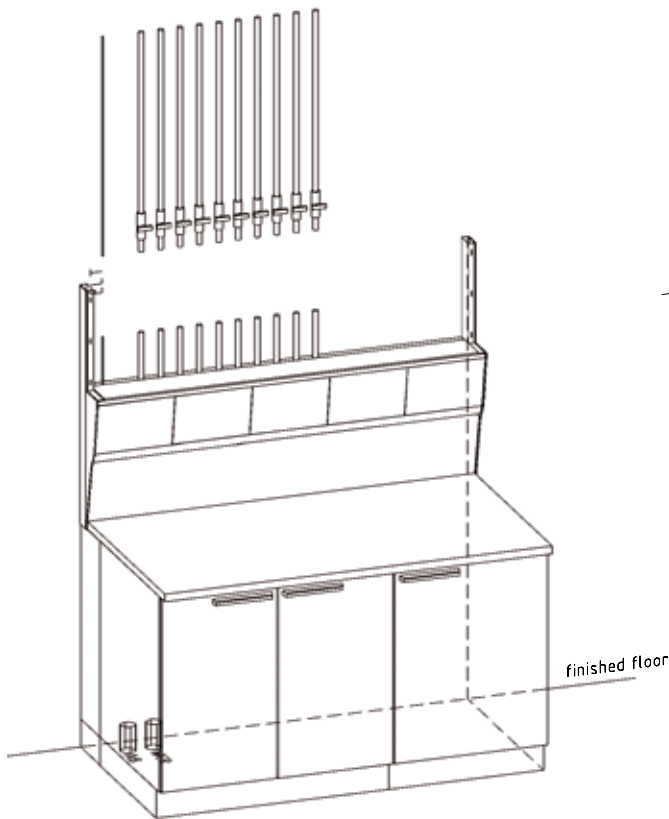
These test certificates are only awarded to companies who practice continuous monitoring of high quality standards throughout the entire manufacturing process. We honor our obligation to monitor production in many ways: all materials, components, and individual parts used in our factory are continuously quality tested by us, and in some cases by independent testing laboratories, as well.

The Waldner laboratory division is environmentally certified. Our active environmental management system meets the EN ISO 14001 guidelines. To us, all aspects matter: From the materials used to the energy efficiency in the production processes, we strive to ensure environmental safety. The renewable resource "wood", for example, is exclusively supplied by regional distributors, our powder coatings do not contain any solvents, the wood left over in the production process covers 85% of our heating requirements, all employees receive continuous training in environmental issues, and the EN ISO 14001 conformity is tested by TÜV Süd at regular intervals.

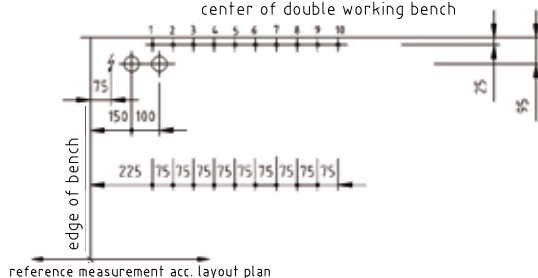


Installation interfaces of plumbing and electrical services

- Water and industrial gases ending on-site with NPT 1/2" internal screw thread shut-off valves
- Pure gases with 1/4" OD Swagelok screw coupling
- Waste water ends on-site with 5/4" OD plug sleeve
- Electrical cable according to
UL 1584
UL/CSA 600V
UL AWM Style 21098
CSA AWM I A/B II A/B
- Cable type in coordination with on-site fuse protection upon agreement
- We provide transfer points for on-site trades, specific to the project, in our position drawings



reference axis = finished wall (wall working bench)
center of double working bench





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