



EN7

FUME HOODS for HIGH HEAT & ACID LOADS



A lab outfitted **with EN7** fume hoods has the **versatility** to accommodate **all** applications, while allowing users the **freedom to perform** any type of lab work.

From **routine** hood procedure to the handling of high thermal **& acid** loads, the **SecuflowEN7** secures user safety. And because of its **sophisticated** air **flow technology**, the **EN7** still maintains all the **benefits** of the supportive flow, **Secuflow**.

By testing & retesting the flow technology, we've been able to minimize our fumehoods' overall energy consumption, meanwhile achieving the absolute highest standard of safety for you, the user. And with such advanced flow technology, your safety is guaranteed even when handling the most caustic of materials inside the fume hood interior.

Our primary focus has always been, and will continue to be the development and advancement of our products. We are committed to continue creating the most sophisticated, energy efficient laboratory & research facilities in the world. Our intelligent lab equipment and modular furniture systems have set the industry standard, for the future.

We have been sharing our laboratory expertise with standardization committees for many years, in a constant effort to further develop safety in laboratories. We test our fume hoods in accordance with ASHRAE Standard 110P-2005, in our very own certified testing lab!

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// SAFE & COST EFFECTIVE WORKING

The new standard EN 14175-7:2012 regulates fume hoods for special application with high thermal and/or acid loads. The use of these special purpose fume hoods instead of general purpose fume hoods is usually the result of a risk assessment.

The standard is applicable for the following special purpose fume hoods

- **HIGH THERMAL LOADS**
- **HIGH THERMAL LOADS + ACID DIGESTIONS**
- **HANDLING OF PERCHLORIC ACID**
- **HANDLING OF HYDROFLUORIC ACID**

REQUIREMENTS FOR MATERIALS

In fume hoods for high thermal loads, the materials used must be able to meet the resulting demands. The materials must be resistant to acids, acidic vapors and to thermal deformation at the working temperatures.

REQUIREMENTS ON THE CLEANABILITY

The construction of the fume hood must secure the necessary access to all air flow parts for cleaning purposes.

REQUIREMENTS ON THE AIR FLOW AND THE MONITORING

Impacts on the air current, caused by thermal loads and installed heating appliances, for example, must be taken into account and limited. In addition to the fume hood function display with the acoustic and optical alarm, fume hoods for high thermal loads must be equipped with a temperature sensor that will trigger an alarm when the maximum temperature is reached.

While the previous standard series EN 14175 defines exclusively isothermal conditions in the fume cupboard, the newly issued part 7 offers the opportunity to evaluate the safety of fume hoods on incidence of high thermal loads. This closes a significant gap, as working with heat sources in the fume hood is part of the everyday routine work in many laboratories.

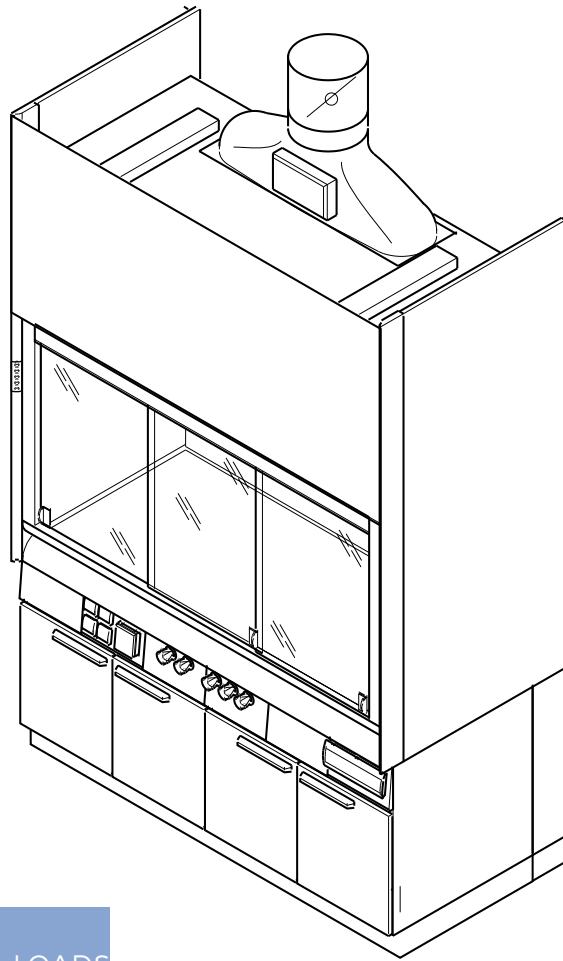
SECUFLOW EN7

BENCH-MOUNTED FUME HOOD FOR HIGH THERMAL LOADS

The Secuflow is especially successful because it can be operated with lower extract air volumes, which means considerable saving in energy costs and in the investment costs for the ventilation system. The Secuflow is the safest and most ecologically sound variant.

We have developed the Secuflow EN7 to secure these benefits also for working with high thermal loads. Due to its sophisticated supply and extract air flow, this fume hood secures safe operation when working with thermal loads, whilst retaining all the benefits of the supportive flow fume hood Secuflow.

When the laboratory is equipped with Secufow EN7 fume hoods, the user is ideally equipped for any kind of laboratory work: whether this is normal operation or working with thermal loads.



// SPECIALTY HOOD FOR HIGH THERMAL LOADS

INTENDED USE

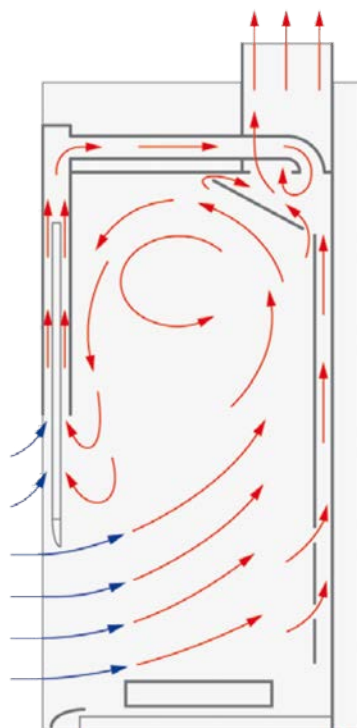
- For work with high thermal loads in the inside of the fume hoods // Heat sources of 4 KW per meter inner width of the hood
- Protective device for the user, tested in accordance with EN 14175-7:2012
- Extraction of fumes, aerosols and dust from the internal workspace to prevent dangerous amounts of pollutants from escaping into the laboratory
- To prevent the formation of dangerous potentially explosive atmospheres in the internal workspace
- Protection from splashes of hazardous substances
- Protection from flying particles, bodies or parts escaping from the internal workspace

- General fume hoods constructed in acc. with EN 14175 are not suited for use with radioactive substances or microorganisms
- Not suitable for openly breaking down chemicals
- Active supportive flow technology // Secuflow, reduces the energy consumption while regulations and standards are observed
- Service outlets for sanitary supply in the rear panel of the internal workspace
- Control units located horizontally on the service rail of the support unit

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) (*Low ceiling fume hood)		106.30 (2700)	
Clear width of internal workspace [in] (mm)	45.28 (1150)	57.09 (1450)	68.90 (1750)
Clear height of internal workspace [in] (mm) (*Low ceiling fume hood)		61.02 (1550)	
Working height [in] (mm)		35.43 (900)	

EN7 FLOW PATTERN WITH HEAT SOURCE



STANDARD FUME HOOD WITH HEAT SOURCE



EN7 FUME HOOD WITH HEAT SOURCE



DESIGN CHARACTERISTICS	47.24" // 1200 mm	59.06" // 1500 mm	70.87" // 1800 mm
Supporting construction	Self-supporting underbench units or H-frame with push-in underbench units		
Sash	2 horizontal sashes		3 horizontal sashes
Max. number of devices for scaffold points, \varnothing 12 mm to 13 mm	9		12
Service modules	2		3
ELECTRICS			
Electrical supply	External sockets in service panels		
Fuse box, Sash controller SC	Optional		
SANITARY TECHNOLOGY			
Sanitary supply	Service modules with take-off valves for vacuum, gases and/or waters and integrated sink (PP) as an option		
VENTILATION TECHNOLOGY			
Air flow range without / with thermal load [m^3/h] 1)	360 / 600	450 / 750	540 / 900
Airflow damper, variable, including detector of sash position	Airflow-Controller AC		
Function display with temperature monitoring	FAZ		
Connection height [mm] for AC with extract manifold \varnothing 250 mm	2950		
Underbench exhaust	As an option, depending on requirements and regulations		

All air volume specifications refer to an opening height of the sash window of 500 mm (test opening in acc. with EN 14175) and the maximum tracer gas values recommended by German Standard (BG Chemie). A maximum admission pressure of 600 Pa should not be exceeded in the case of fume hoods with airflow dampers. The indicated minimum air exchange rates were determined under specified test conditions in acc. with EN 14175-3. These minimum air exchange rates must be adapted when dimensioning the ventilation system. If on-site extract air monitoring systems or airflow dampers are used, the required air volumes may be different. The operating limitations must be agreed upon with Waldner.

MATERIAL/SURFACE	
Worktop	Stoneware, Polypropylene, Stainless steel, Epoxy
Internal lining	Melamine resin facing, Solid grade laminate, Stoneware

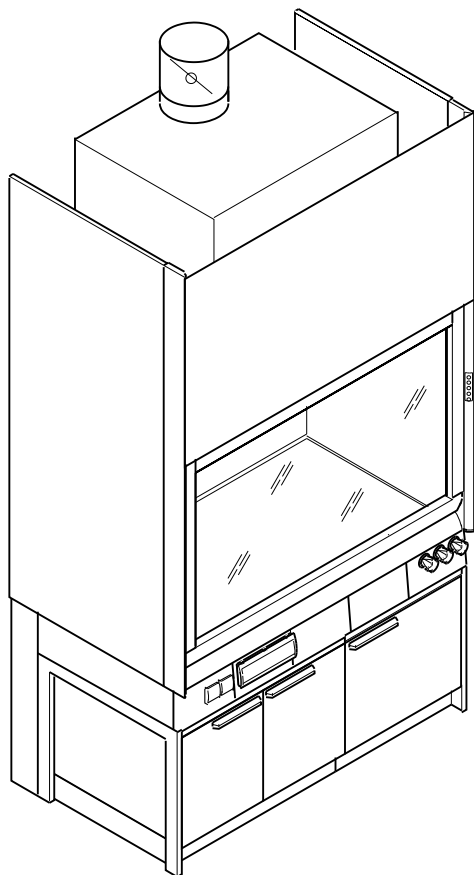
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BENCH-MOUNTED FUME HOOD FOR HIGH THERMAL & ACID LOADS

These three types of fume hoods are designed for safe operation under high thermal load in combination with acidic digestions and for the handling of perchloric and hydrofluoric acid.

The special cladding of the inside of the fume hoods is resistant to extreme strain. A compact fume scrubber and a neutralisation unit can be optionally integrated into our fume hoods at any time.

If the maximum admissible temperature is exceeded, the integrated alarm can be relayed to the building management system.



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1// HIGH HEAT IN COMBINATION WITH ACID DIGESTIONS 2// PERCHLORIC 3// HYDROFLUORIC ACID

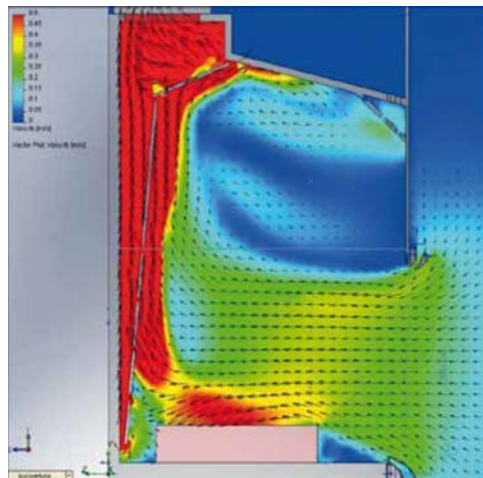
INTENDED USE

- Protective device for the user, tested in accordance with EN 14175-7:2012
- Suitable for open, thermal processes of breaking down chemicals with aggressive media such as e. g. sulphuric acid, perchloric acid, hydrofluoric acid or aqua regia
- The construction of the fume hoods and the materials of the inner lining of the internal workspace determine which aggressive media the device can be used for
- Extraction of fumes and aerosols from the internal workspace to prevent dangerous amounts of pollutants from escaping into the laboratory
- To prevent the formation of dangerous potentially explosive atmospheres in the internal workspace
- Protection from splashes of hazardous substances in the internal workspace
- Protection from flying particles, bodies or parts escaping from the internal workspace
- Fume hoods constructed in accordance with EN 14175-7:2012 are not approved for working with radioactive substances and for working with microorganisms
- For work with high thermal loads in combination with acid digestions in the inside of the fume hood

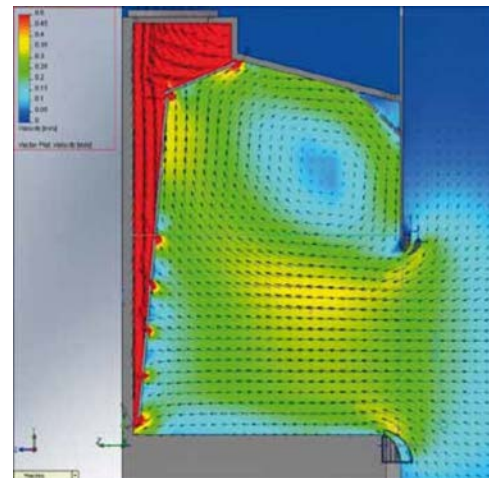
TECHNICAL DATA

DIMENSIONS	47.24" // 1200 mm	59.06" // 1500 mm	70.87" // 1800 mm
Width [in] (mm)	47.24 (1200)	59.06 (1500)	70.87 (1800)
Depth [in] (mm)		35.43 (900)	
Height [in] (mm) / *Low ceiling fume hood		106.30 (2700)	
Clear width of internal workspace [in] (mm)	45.28 (1150)	57.09 (1450)	68.90 (1750)
Clear height of internal workspace [in] (mm) (*Low ceiling fume hood)		61.02 (1550)	
DESIGN CHARACTERISTICS	47.24" // 1200 mm	59.06" // 1500 mm	70.87" // 1800 mm
Supporting construction	H-frame with push-in underbench units		
Fume-scrubber, Extract manifold, Extract manifold with sprinkler (for working with perchloric acid), Neutralization unit underbench unit	Optional		

INTERIOR WORKSPACE VELOCITY



EN7 FUME HOOD INTERIOR WITH HEAT SOURCE



EN7 FUME HOOD INTERIOR WITHOUT HEAT SOURCE

ELECTRIC

Electrical supply	External sockets in service panels
Fuse box, Sash controller SC	Optional

SANITARY TECHNOLOGY

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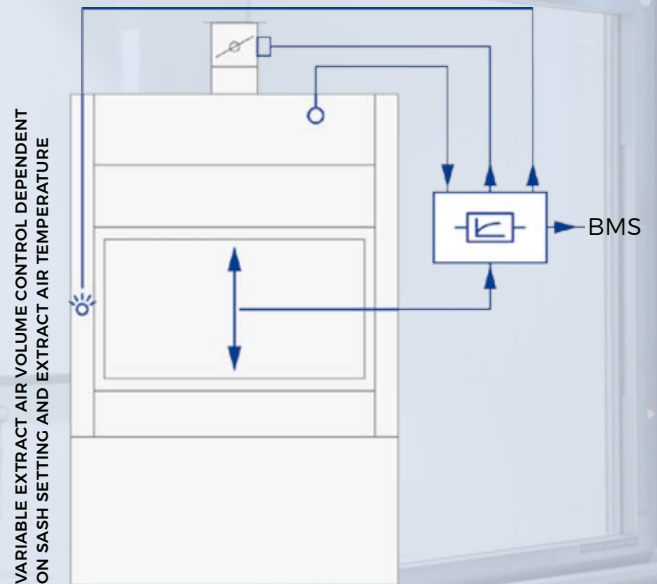
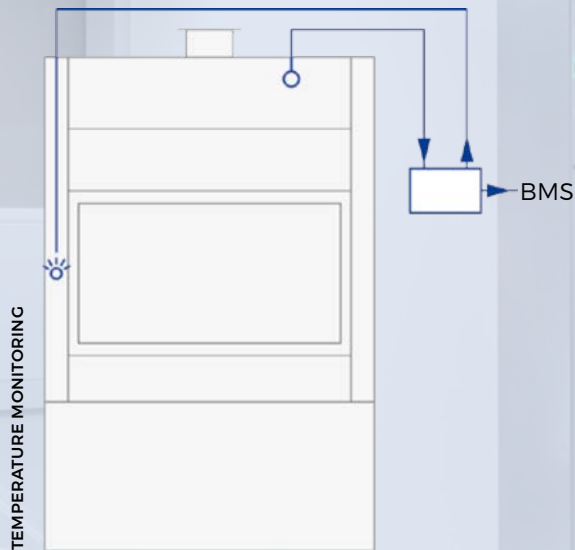
VENTILATION TECHNOLOGY

	47.24" // 1200 mm	59.06" // 1500 mm	70.87" // 1800 mm
Minimum air exchange rate [m ³ /h] 1)	600	750	900
Function display with temperature monitoring	FAZ		
Airflow damper, constant with temperature monitoring	Airflow-Controller AC		
Connection height [mm] for FAZ and AC with extract air spigot	3145		
Connection height [mm] for FAZ with extract manifold	2410		
Connection height [mm] for AC with extract manifold	2640		
Underbench exhaust	As an option, depending on requirements and regulations		

All air volume specifications refer to an opening height of the sash window of 500 mm (test opening in acc. with EN 14175) and the maximum tracer gas values recommended by German Standard (BG Chemie). A maximum admission pressure of 600 Pa should not be exceeded in the case of fume hoods with airflow dampers. The indicated minimum air exchange rates were determined under specified test conditions in acc. with EN 14175-3. These minimum air exchange rates must be adapted when dimensioning the ventilation system. If on-site extract air monitoring systems or airflow dampers are used, the required air volumes may be different. The operating limitations must be agreed upon with Waldner.

MATERIAL/SURFACE

Internal lining including worktop	Polypropylene for working with hydrofluoric acid // ie.: stoneware, for working with perchloric acid, with sulphuric acid, with hydro-chloric acid and aqua regia
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// INTELLIGENT AIR FLOW TECHNOLOGY

An optical and acoustic alarm is activated when the maximum admissible temperature in the top of the fume hood is exceeded, which can be relayed to the building management system if desired.

The extract air of the Secuflow EN7 can be controlled with our variable Airflow Controller AC dependent on the setting of the sash and the extract air temperature inside the fume hood.

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It's time for more flexibility, safety and versatility in your current laboratory workspace. With the EN7 you'll be safely equipped to perform any type of lab work with maximum comfort & efficiency.

Due to further flow technology optimization, our lab fume hoods require less energy, while still providing utmost safety. The fact that our lab fume hoods are not only reducing the investment and operating costs for the ventilation device is not only an ecologic advantage but als an economic benefit provided by the integrated supportive flow technology.



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