

Köttermann Fume Cupboards.

Individually configurable.



We exceed standards for you.

Individually configurable efficiency.



Contents

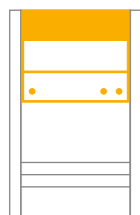
- 02 Overview of fume cupboard types
- 03 Which fume cupboard for which requirement?
- 04 Bench-type fume cupboards
- 06 Energy-efficient fume cupboards
- 08 Walk-in and distillation fume cupboards
- 10 Height-adjustable fume cupboards
- 12 High-performance fume cupboards
- 14 Radionuclide fume cupboards
- 16 Pharmacy hood
- 18 Substructures and accessories
- 20 Fume cupboard electronics
- 21 Modularity
- 22 Contact

Fume cupboard types

Flexible and individually configurable

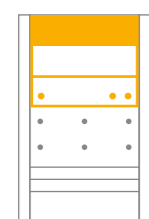
When dealing with volatile hazardous substances, dusts or aerosols, the protection of employees is our top priority. Such works must therefore be carried out in a fume cupboard.

KÖTTERMANN fume cupboards not only achieve top results in all relevant tests, but also offer users ergonomic advantages that make work processes easier and thus even safer.

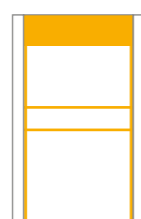


Bench-type fume cupboards
All-rounders for general use

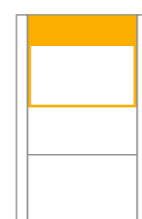
- **Complete range**
the right fume cupboard for every application
- **Made from Steel**
high quality and long lasting
- **Perfect safety**
certified by independent institutes
- **Ergonomic functions**
to improve workflows
- **Exemplary sustainability**
low operating costs, recyclable material
- **Quality "Made in Germany"**
best price-performance ratio



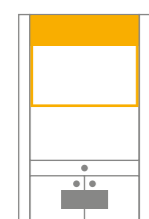
Energy-efficient fume cupboards
EXPLORIS EcoPlus®
The low-energy fume cupboard



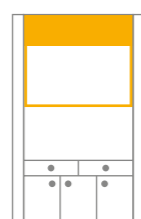
Walk-in and distillation fume cupboards
High experimental setups



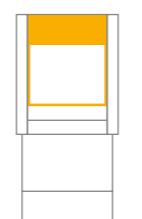
Height-adjustable fume cupboards
EXPLORIS VarioTop®
Ergonomics in the workplace due to flexible working heights



High-performance fume cupboards
Optimal protection when working with acids and high thermal loads



Radionuclide fume cupboards
For dealing with radioactive isotopes



Pharmacy hood
Space-saving and flexible

Benefits

- Certification of all EXPLORIS® standard fume cupboards according to DIN EN 14175
- Optimized exhaust air system in terms of flow technology
- Excellent containment capacity for pollutants
- Sash made of laminated safety glass
- Especially low operating costs
- Lots of space for devices due to particularly large interior depth
- Easy operation and safe monitoring through integrated EXPLORIS TouchTronic®*
- Support of various applications through individual gas, water and electrical services
- Tested for 20 years of operation
- Electric cables free from halogenated hydrocarbons
- Cable entry through the inlet profile at the worktop

Equipment options

- EXPLORIS TouchTronic®
– fume cupboard electronics with touch screen for controlling and monitoring all functions
- EXPLORIS AutoProtect®
– closes the sash automatically as soon as the fume cupboard area is left
- EXPLORIS AirMonitor®
– monitoring function with digital display, option of volume flow or face velocity
- EXPLORIS AirControl®
– for variable control of the exhaust air volume flow
- EXPLORIS CloseGuard®
– stops the automatic closing of the sash in the event of obstacles
- EXPLORIS LevelControl®
– waste collection system with electronic fill level monitoring
– for solvent and aqueous wastes
– can be integrated in safety underbench cabinets
– can be integrated in acid and base cabinets
– filling of containers directly from the fume cupboard interior
– electrically conductive polypropylene
- Temperature sensor in high-performance fume cupboards
– for monitoring the interior temperature and alarming when a limit value is exceeded
- Foot switch for operating the sash
– practical when no hand is free
- Worktops in different materials
– optionally height-adjustable (EXPLORIS VarioTop®)
- LED-Interior lighting
– bright and uniform illumination of the workspace
- Programmable sockets in the fume cupboard interior
– individually switchable
– start-stop-timer and countdown
- Integrated fuses / RCCBs
- Fittings for water and gases in different purity
– easy and safe to reach outlets
- Scaffolding parts for the installation on the rear panel of the fume cupboard
- Drawers in the fume cupboard frame
- Baffle
- Exhaust air scrubber

Possibilities for substructures

- Safety underbench cabinets for flammable liquids
- Chemical storage underbench cabinets
- Acid and base underbench cabinets
- Standard pedestal underbench cabinets
- Mobile underbench cabinets
- Knee-space panel
- Waste collection system
- Neutralisation system
- EXPLORIS LevelControl®

BGRCI (DGUV Information 213 - 850, Chapter 4.11.1):

"Activities in which gases, vapours and suspended matter can occur in a dangerous concentration or quantity may only be carried out in fume cupboards. The sashes are to be kept closed during such activities."

*More information on page 20

Which fume cupboard for which requirement?

KÖTTERMANN fume cupboards for every application

Fume cupboards can be used universally in the laboratory. They ensure optimum protection against hazardous substances. The selection of the appropriate fume cupboard type depends both on the room conditions of the laboratory and on the type of chemicals used. Especially when using acids, the following recommendations should be followed.

Fume cupboards for general use

(Bench-type, distillation, walk-in fume cupboard, EXPLORIS VarioTop®, EXPLORIS EcoPlus®)

	suitable	occasional use	not suitable
Organic solvents	X		
Weak acids	X		
Diluted mineral acids	X		
Cold concentrated mineral acids		X	
Hot concentrated mineral acids			X
Hydrofluoric acid			X
Radioactive substances			X
High thermal load			X

Fume cupboards for general use

with Trespa® TopLab® VERTICAL lining

	suitable	occasional use	not suitable
Organic solvents	X		
Weak acids	X		
Diluted mineral acids	X		
Cold concentrated mineral acids	X		
Hot concentrated mineral acids		X	
Hydrofluoric acid			X
Radioactive substances			X
High thermal load			X

High-performance fume cupboards

with PP lining (polypropylene) / fume cupboard for hydrofluoric acid

	suitable	suitable but not recommended	not suitable
Organic solvents		X	
Weak acids		X	
Diluted mineral acids		X	
Cold concentrated mineral acids		X	
Hot concentrated mineral acids		X	
Hydrofluoric acid	X		
Radioactive substances			X
High thermal load	X		

High-performance fume cupboards

with ceramic lining

	suitable	not suitable
Organic solvents	X	
Weak acids	X	
Diluted mineral acids	X	
Cold concentrated mineral acids	X	
Hot concentrated mineral acids	X	
Hydrofluoric acid		X
Radioactive substances		X
High thermal load	X	

Radionuclide fume cupboards

	suitable	not suitable
Organic solvents	X	
Weak acids	X	
Diluted mineral acids	X	
Cold concentrated mineral acids		X
Hot concentrated mineral acids		X
Hydrofluoric acid		X
Radioactive substances	X	
High thermal load		X

Bench-type fume cupboards

All-rounders for general use



A particularly energy-saving variant of the fume cupboard for general use is the

EXPLORIS EcoPlus®

More information
on page 6

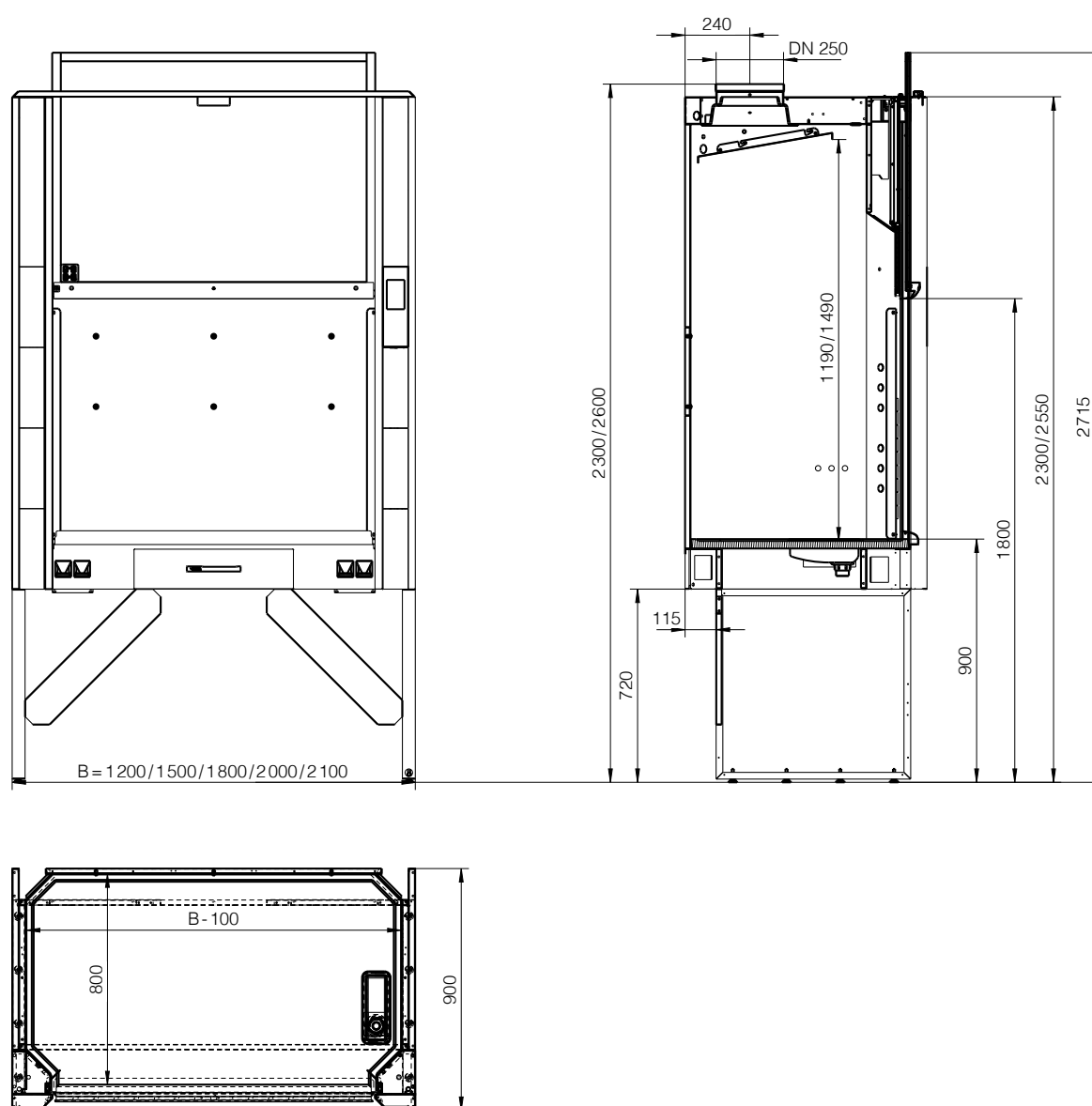
Description

EXPLORIS® bench-type fume cupboards for general use can be used universally in the laboratory. They are ideal for dealing with organic solvents and are also suitable for working with cold or diluted acids. Depending on the room height of the laboratory, there is a choice between a high and a low design.

Properties and benefits

- Certified according to DIN EN 14175 Part 2 and Part 3
- Low operating costs due to low airflow
- Extra large interior depth due to special worktop shape

Dimensions EXPLORIS® Bench-type fume cupboard high / low design



Equipment Options

- Sash options
 - one-piece sash (fume cupboards with standard front height)
 - telescopic sash (fume cupboards with reduced front height)
 - two-piece laminated safety glass (with and without sliding glass panels)
- Foot switch for operating the sash
- Interior: coated steel, optional lining in Trespa® TopLab® VERTICAL
- Drawer with full pull-out, cushioned automatic closure and label
- Worktops in different materials
- LED interior lighting
- Programmable sockets in the fume cupboard chamber
- Individual gas, water and electrical fittings with quality products from BROEN - LAB A/S, Spectron Gas Control Systems GmbH and GCE GmbH Integrated fuses / RCCBs
- Scaffolding parts for the installation on the rear panel of the fume cupboard
- Cable entry through the inlet profile on the worktop
- Cable bushing in the fume cupboard side
- Window in the fume cupboard side
- Also available as fume cupboard for low ceiling height with reduced front height (2300mm) and floor-mounted service columns

EXPLORIS® Bench-type fume cupboards

Dimensions in mm | Volume flow in m³/h

	1200	1500	1800	2000	2100
Width	1200	1500	1800	2000	2100
Front height	2300/2550	2300/2550	2300/2550	2300/2550	2300/2550
Housing height	2300/2600	2300/2600	2300/2600	2300/2600	2300/2600
Depth	900	900	900	900	900
Usable space width	1100	1400	1700	1900	2000
Usable space height	1190/1490	1190/1490	1190/1490	1190/1490	1190/1490
Usable space depth	800	800	800	800	800
Working height	900	900	900	900	900
Minimum permissible volume flow **	450	530	680	800	800
Volume flow to be adjusted	480	600	720	840	840
Maximum permissible volume flow	1500	1500	1500	1500	1500

** Alarm value

Energy-efficient fume cupboards

EXPLORIS EcoPlus®



Convincing figures

Operating time per f.c. (width 1500mm)	Fume cupboard conventional		EXPLORIS EcoPlus®		Saving EXPLORIS EcoPlus®
	m ³	€	m ³	€	€
1 hour	600	0.48	375	0.30	0.18
1 day (a 8 hours)	4800	3.84	3000	2.40	1.44
1 year (250 days a 8 hours)	1 200 000	960	750 000	600	360
1 year (250 days a 24 hours)	3 600 000	2 880	2 250 000	1 800	1 080

Assumption: 1000m³ of processed laboratory air cost 0.80 Euro.

Description

EXPLORIS EcoPlus® reduces the consumption of expensive conditioned air in the laboratory by up to 30 percent compared to conventional fume cupboards. This saves energy, protects the environment and reduces the operating costs per fume cupboard by up to € 1,000 per year. The ventilation system offers further savings potential: Smaller pipe cross-sections and smaller dimensioned fans can save up to 20 percent on investment costs.

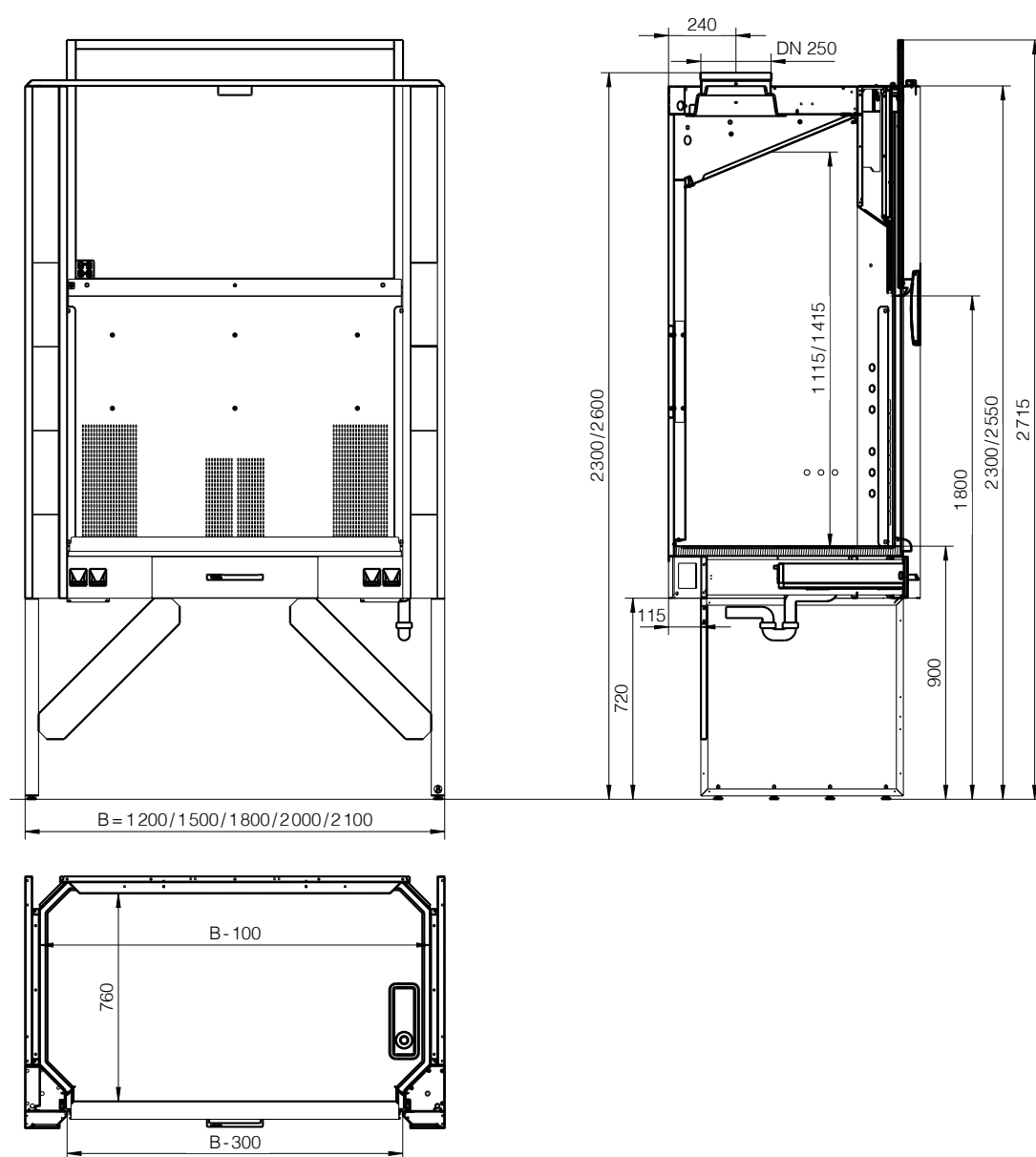
Bench-type fume cupboards are available as EXPLORIS EcoPlus® and can be retrofitted.

Properties and benefits

- Certified according to DIN EN 14175 Part 2 and Part 3
- With innovative EXPLORIS TouchTronic® * (optional)
- Tested safety at 250 m³/h per running metre
 - no cost-intensive supportive flow technology
 - meets the requirements in the demanding robustness test without consuming supply air
- Even more cost-effective due to low air consumption
 - reduces the operating costs of the fume cupboard by up to 30 percent depending on the room conditions
 - reduces the investment costs of the exhaust air system
- Exemplary sustainability
 - environmental protection through low energy consumption
 - longevity and environmentally sound disposal through the material Steel

*More information on page 20

Dimensions EXPLORIS EcoPlus®



EXPLORIS EcoPlus®

Dimensions in mm | Volume flow in m³/h

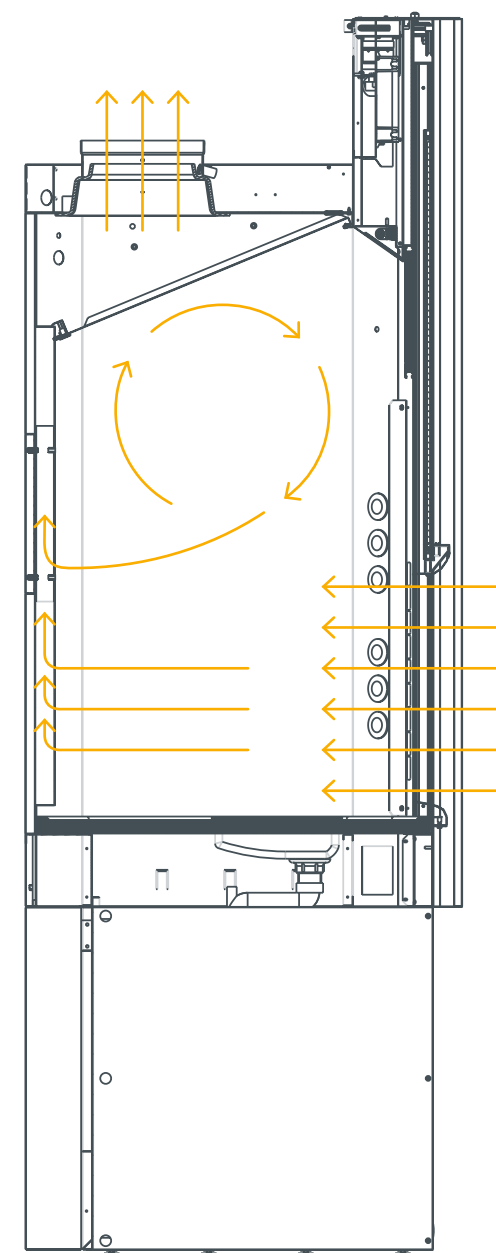
Width	1200	1500	1800	2000	2100
Front height	2300/2550	2300/2550	2300/2550	2300/2550	2300/2550
Housing height	2300/2600	2300/2600	2300/2600	2300/2600	2300/2600
Depth	900	900	900	900	900
Usable space width	1100	1400	1700	1900	2000
Usable space height	1115/1415	1115/1415	1115/1415	1115/1415	1115/1415
Usable space depth	760	760	760	760	760
Working height	900	900	900	900	900
Minimum permissible volume flow **	300	375	450	530	530
Volume flow to be adjusted	360	450	540	630	630
Maximum permissible volume flow	1500	1500	1500	1500	1500

** Alarm value

Equipment Options

- As per fume cupboards for general use (see page 5)
- Also available as fume cupboard for low ceiling height with reduced front height (2300 mm) and floor-mounted service columns.

Airflow profile



Walk-in and distillation fume cupboards

High experimental setups securely contained



Description

EXPLORIS® distillation and walk-in fume cupboards are used when a large working height is required, for example in distillations or preparative column chromatography.

Distillation fume cupboards are equipped with a low worktop. In addition, walk-in fume cupboards have the advantage that big and heavy equipment can be moved on a mobile table directly into the chamber of the fume cupboard.

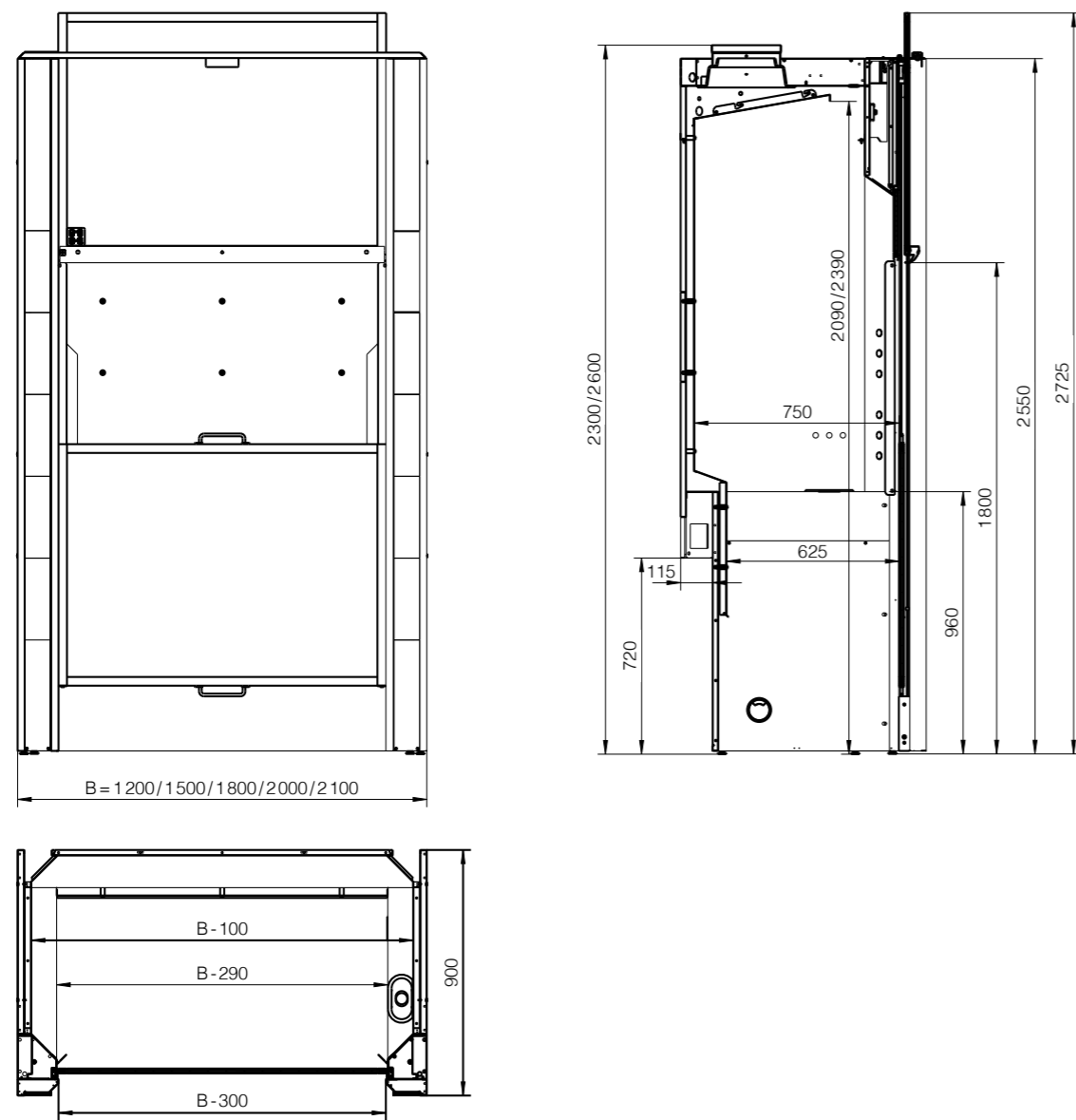
Properties and benefits

- Certified according to DIN EN 14175 Part 2 and Part 3
- With innovative EXPLORIS TouchTronic® *(optional)
- Extremely high interior space for particularly large experimental setups

Equipment options

- Two-piece sash
 - two-piece laminated safety glass
 - glazed throughout or with sliding glass panels
- Foot switch for operating the sash
- Worktops in different materials
- LED interior lighting
- Programmable sockets in the fume cupboard chamber
- Individual gas, water and electrical fittings with quality products from BROEN-LAB A/S, Spectron Gas Control Systems GmbH and GCE GmbH
- Integrated fuses / RCCBs
- Scaffolding parts for the installation on the rear panel of the fume cupboard
- Cable entry through the inlet profile on the worktop (distillation fume cupboard)
- Cable bushing in the fume cupboard side
- Underbench cabinets with drawers or doors (distillation fume cupboard)

Dimensions EXPLORIS® walk-in fume cupboard



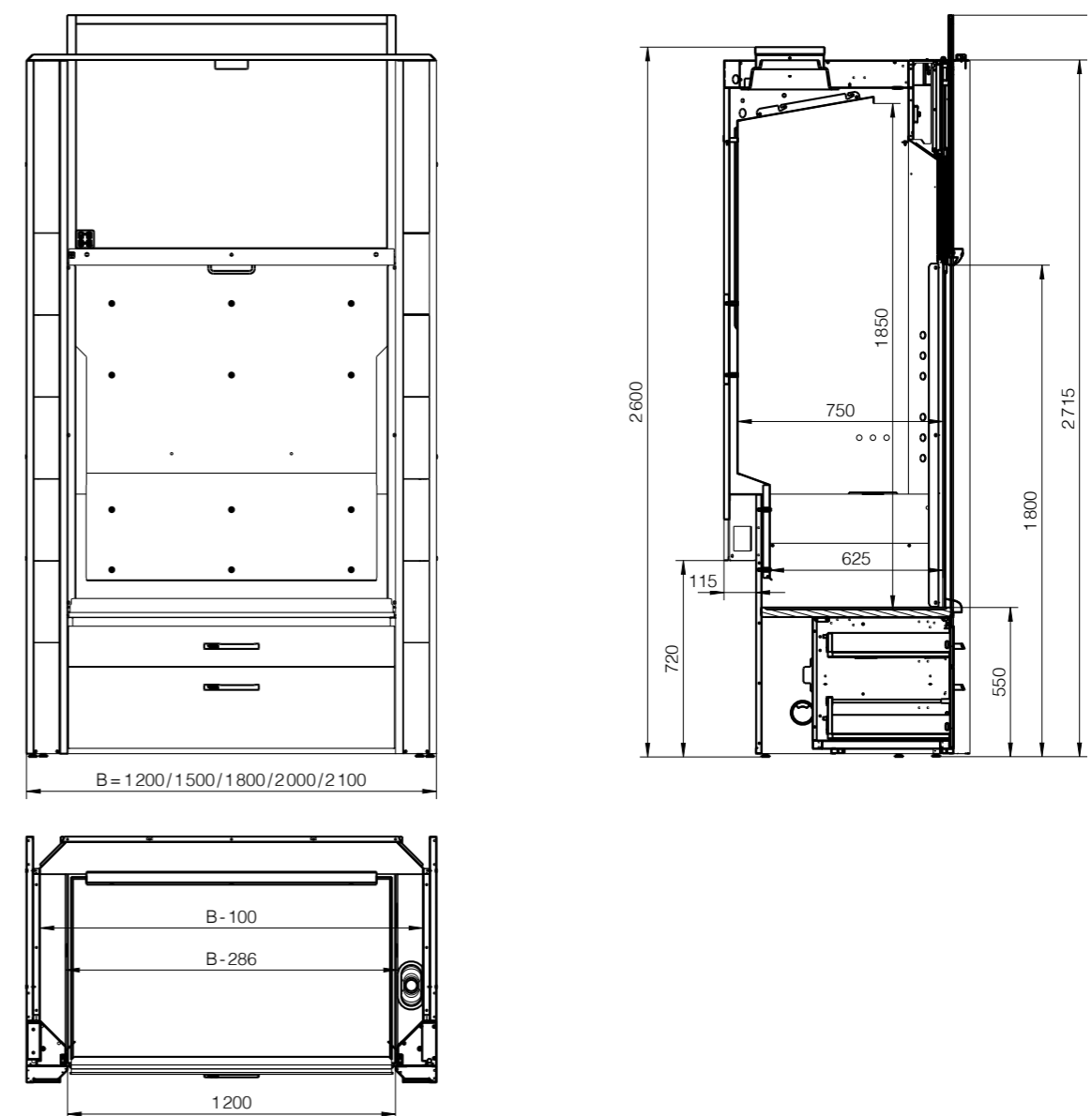
EXPLORIS® walk-in fume cupboards

Dimensions in mm | Volume flow in m³/h

Width	1200	1500	1800	2000	2100
Front height	2550	2550	2550	2550	2550
Housing height	2300/2600	2300/2600	2300/2600	2300/2600	2300/2600
Depth	900	900	900	900	900
Usable space width	910/1100	1210/1400	1510/1700	1710/1900	1810/2000
Usable space height	2090/2390	2090/2390	2090/2390	2090/2390	2090/2390
Usable space depth	625/750	625/750	625/750	625/750	625/750
Minimum permissible volume flow **	660	830	990	1160	1160
Volume flow to be adjusted	750	940	1120	1310	1310
Maximum permissible volume flow	2000	2000	2000	2000	2000

** Alarm value

Dimensions EXPLORIS® distillation fume cupboard



EXPLORIS® distillation fume cupboards

Dimensions in mm | Volume flow in m³/h

Width	1200	1500	1800	2000	2100
Front height	2550	2550	2550	2550	2550
Housing height	2600	2600	2600	2600	2600
Depth	900	900	900	900	900
Usable space width	910/1100	1210/1400	1510/1700	1710/1900	1810/2000
Usable space height	1850	1850	1850	1850	1850
Usable space depth	625/750	625/750	625/750	625/750	625/750
Working height	550	550	550	550	550
Minimum permissible volume flow **	600	750	900	1050	1050
Volume flow to be adjusted	630	790	950	1110	1110
Maximum permissible volume flow	1500	1500	1500	1500	1500

** Alarm value

Height-adjustable fume cupboards

EXPLORIS VarioTop®



Description

EXPLORIS VarioTop® fume cupboards are extremely flexible. The worktop can be electrically adjusted to a height of 750 to 950mm in order to meet the requirements of experimental setups – simply and conveniently via the innovative control electronics EXPLORIS TouchTronic®*.

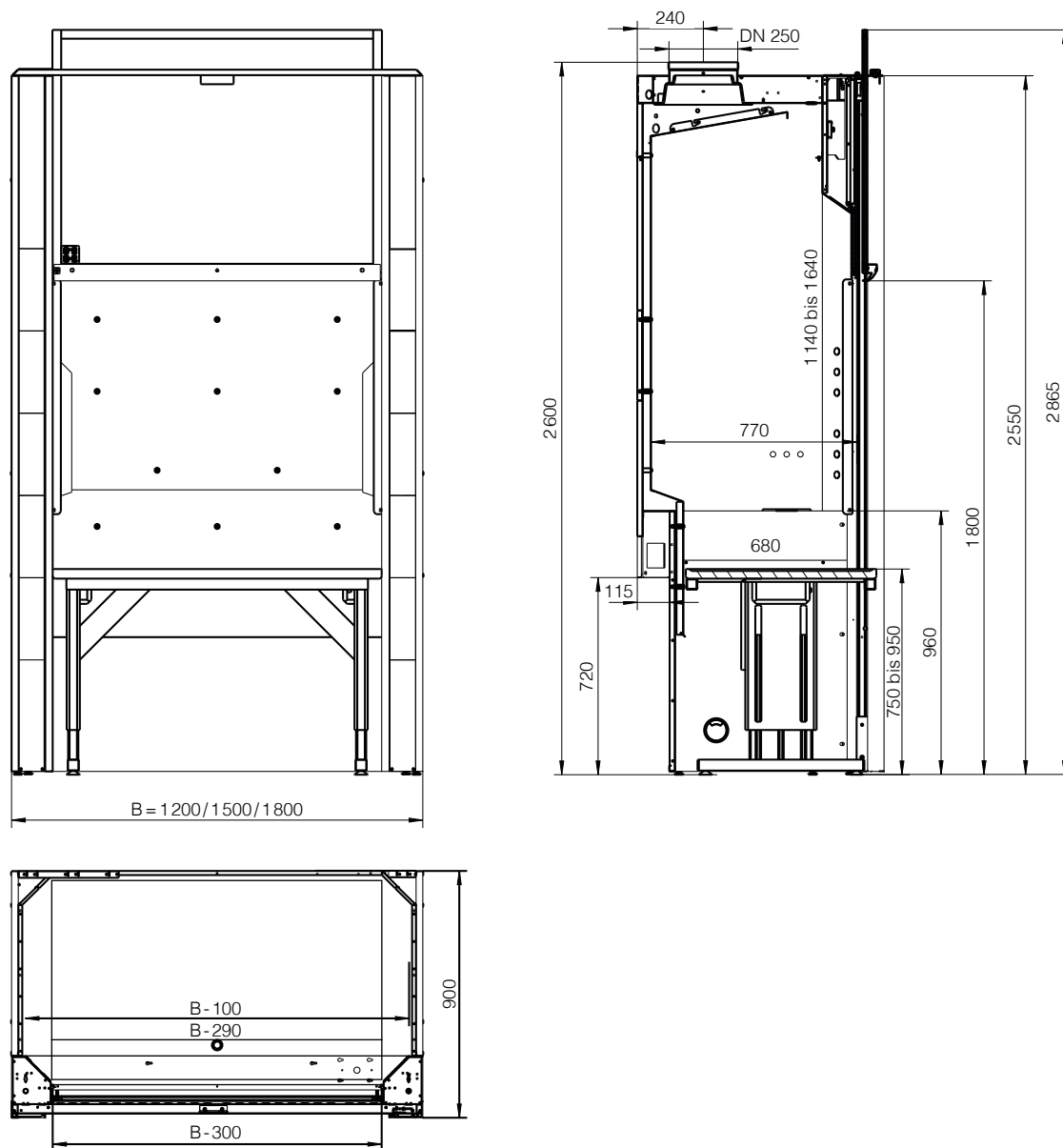
The intelligent EXPLORIS AutoProtect® sash control system ensures that the sash closes automatically up to the actual height of the worktop.

Properties and benefits

- Certified according to DIN EN 14175 Part 2 and Part 3
- With innovative EXPLORIS TouchTronic®* (optional)
- Ergonomic working in sitting and standing heights
- Table height individually adjustable for user or experimental conditions
- Three definable positions for frequently required table heights

*More information on page 20

Dimensions EXPLORIS VarioTop®



Equipment options

- One-piece sash
 - made of two-piece laminated safety glass (with and without sliding glass panels)
- Foot switch for operating the sash
- Fume cupboard interior: coated steel
- Worktops in different materials, height-adjustable from 750 to 950 mm
- LED interior lighting
- Programmable sockets in the fume cupboard chamber
- Individual gas, water and electrical fittings with quality products from BROEN-LAB A/S, Spectron Gas Control Systems GmbH and GCE GmbH
- Integrated fuses / RCCBs
- Scaffolding parts for the installation on the rear panel of the fume cupboard
- Cable entry through the inlet profile on the worktop
- Cable bushing in the fume cupboard side
- Window in the fume cupboard side

EXPLORIS VarioTop®

Dimensions in mm | Volume flow in m³/h

Width	1200	1500	1800
Front height	2550	2550	2550
Housing height	2600	2600	2600
Depth	900	900	900
Usable space width**	910/1100	1210/1400	1510/1700
Usable space height	1440 bis 1640	1440 bis 1640	1440 bis 1640
Usable space depth**	680/770	680/770	680/770
Working height	750 bis 950	750 bis 950	750 bis 950
Minimum permissible volume flow***	540	600	720
Volume flow to be adjusted	600	750	900
Maximum permissible volume flow	1500	1500	1500

**to/from 960mm interior height
***Alarm value

High-performance fume cupboards

Optimal protection when working with acids and high thermal loads



Description

High-performance fume cupboards are specially designed for high chemical loads, which occur, for example, when fuming strong mineral acids such as sulphuric, nitric and hydrochloric acid or aqua regia.

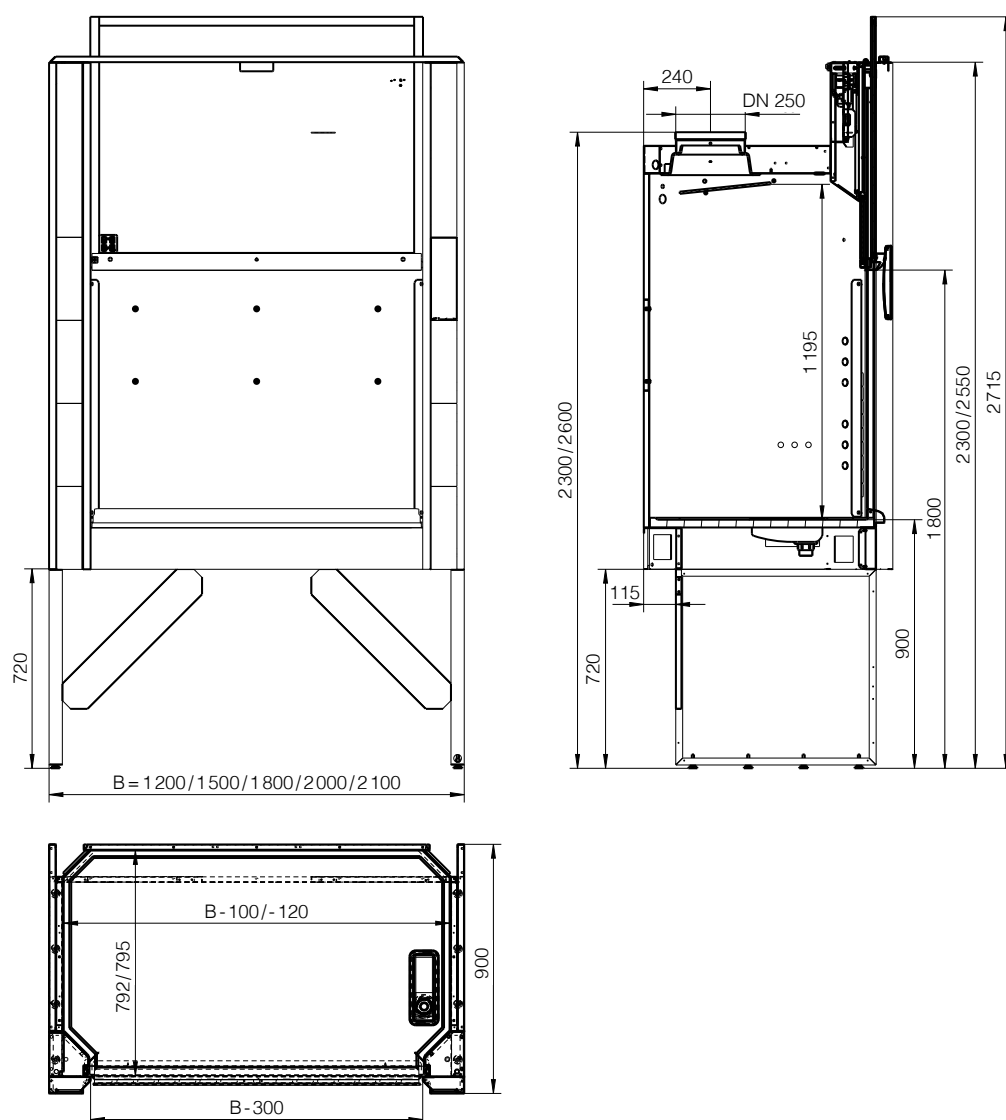
Lined with resistant ceramic or polypropylene, EXPLORIS® high-performance fume cupboards protect against all acid attacks. Due to its design, the special airflow also allows working with high thermal loads.

Properties and benefits

- Certified according to DIN EN 14175 Part 2, Part 3 and Part 7
- With innovative EXPLORIS TouchTronic®* (optional)
- Enormous resistance due to large-area linings
- Special air technology for working with high heat development
- Extra large interior depth
- Temperature sensor with alarm function

*More information on page 20

Dimensions EXPLORIS® High-performance fume cupboard



Equipment Options

- Sash options
 - one-piece sash (fume cupboards with standard front height)
 - telescopic sash (fume cupboards with reduced front height)
 - two-piece laminated safety glass
 - made of polycarbonate – especially for applications with hydrofluoric acid
- Foot switch for operating the sash
- Interior: lining made of
 - acid-resistant ceramic
 - polypropylene: especially for working with hydrofluoric acid
- Worktops made of polypropylene or ceramic
- LED interior lighting
- Individual gas, water and electrical fittings with quality products from BROEN-LAB A/S, Spectron Gas Control Systems GmbH and GCE GmbH
- Integrated fuses / RCCBs
- Scaffolding parts for the installation on the rear panel of the fume cupboard
- Drawer in the fume cupboard frame
- Cable entry through the inlet profile on the worktop
- Exhaust air scrubber for exhaust air cleaning
- Also available as fume cupboard for low ceiling height with reduced front height (2300mm) and floor-mounted service columns

EXPLORIS® High-performance fume cupboards

Dimensions in mm | Volume flow in m³/h

Width	1200	1500	1800	2000	2100
Front height	2300/2550	2300/2550	2300/2550	2300/2550	2300/2550
Housing height	2300/2600	2300/2600	2300/2600	2300/2600	2300/2600
Depth	900	900	900	900	900
Usable space width PP lining	1090	1390	1690	1890	1990
Usable space width Ceramic lining	1080	1380	1680	1880	1980
Usable space height	1195	1195	1195	1195	1195
Usable space depth PP lining	795	795	795	795	795
Usable space depth Ceramic lining	792	792	792	792	792
Working height	900	900	900	900	900
Minimum permissible volume flow **	660	830	990	1790	1790
Volume flow to be adjusted	720	900	1080	1900	1900
Maximum permissible volume flow	1500	1500	1500	2000	2000

** Alarm value

Radionuclide fume cupboards

For dealing with radioactive isotopes



Description

EXPLORIS® radionuclide fume cupboards are specialists in dealing with radioactive substances. With radiation protection, easy decontamination and containment safety, they ensure that laboratory workers are on the safe side, even when working on delicate tasks.

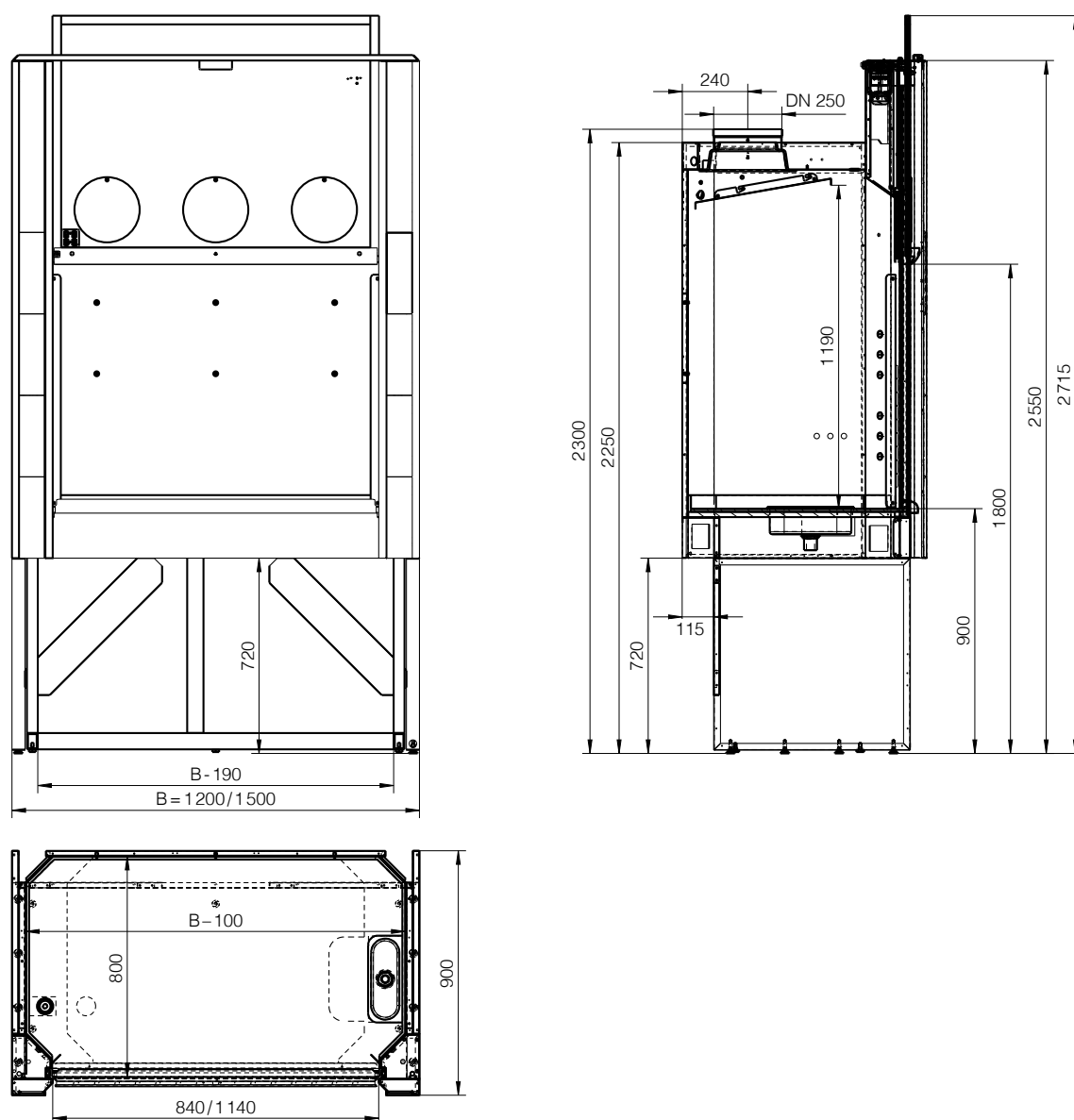
The worktop made of stainless steel is easy to clean and has a particularly high upstand, which securely retains spilled liquids. For even greater demands on laboratory safety, the radionuclide fume cupboard can be equipped with a completely welded stainless steel interior.

Properties and benefits

- Certified according to DIN EN 14175 Part 2 and Part 3
- Design according to DIN 25466
- With innovative EXPLORIS TouchTronic®* as standard
- Low operating costs due to low airflow
- Extra large interior depth
- Worktop made of stainless steel:
A load capacity of more than 1.5 t allows the installation of lead containers

*More information on page 20

Dimensions EXPLORIS® radionuclide fume cupboards



Equipment Options

- Foot switch for operating the sash
- Worktop made of stainless steel, optionally lined with lead for shielding of the knee-space
- LED interior lighting
- Programmable sockets in the fume cupboard interior
- Individual gas, water and electrical fittings with quality products from BROEN-LAB A/S, Spectron Gas Control Systems GmbH and GCE GmbH
- Integrated fuses / RCCBs
- Scaffolding parts for the installation on the rear panel of the fume cupboard
- Cable entry through the inlet profile on the worktop
- Cable bushing in the fume cupboard side
- Exhaust air filter available for exhaust air cleaning
- Shielding against radiation through lead plate in the worktop

EXPLORIS® Radionuclide fume cupboards

Dimensions in mm | Volume flow in m³/h

Width	1200	1500
Front height	2550	2550
Housing height	2300	2300
Depth	900	900
Usable space width	1100	1400
Usable space height	1190	1190
Usable space depth	800	800
Working height	900	900
Minimum permissible volume flow **	450	720
Volume flow to be adjusted	500	800
Maximum permissible volume flow	1500	1500

** Alarm value

Pharmacy hood

Space-saving and flexible



General

Pharmacy fume cupboards are small fume cupboards that were especially developed for the handling of hazardous substances in pharmacies. Of course, they comply with the requirements of §4(2) of the German Pharmacy Regulations and are ideally suited for working with dusty preparations or volatile chemicals – not only in pharmacies.

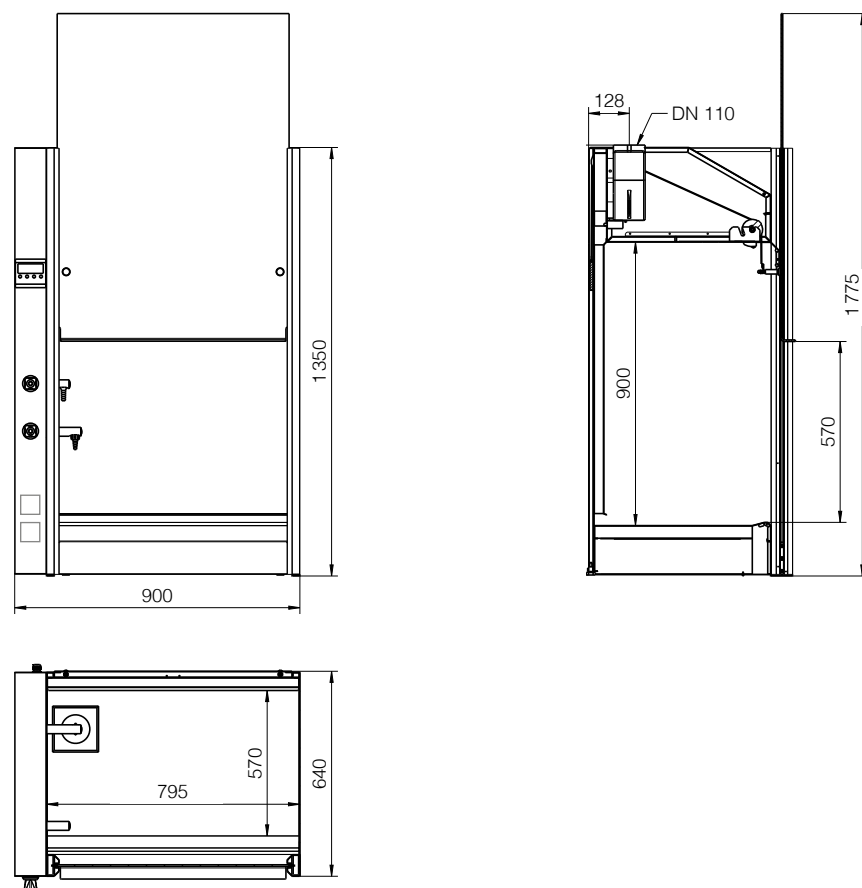
Pharmacy fume cupboards are always used when less toxic substances need to be extracted.

- Protection against harmful vapours
- Filling of volatile solvents
- Enclosing of small experiments
- Neutralisation of odours

Properties and benefits

- Tested according to DIN 12924 Part 4
- Sash: one-piece sash made of polyacrylic
- Well suited for small laboratories and rooms with low ceiling height
- Optimal placement on a table
- Integrated airflow monitoring
- For the connection to an exhaust air system available on site

Dimensions EXPLORIS® Pharmacy fume cupboard



Equipment

- Monitoring electronics
- Two sockets
- Interior lighting
- Infinitely adjustable acrylic glass sash
- Optionally with integrated fan
- Completely equipped with gas, water and power supply

Further exhaust air accessories

- Extraction arms
- Extract canopies
- Bench-type fume cupboard hood without services

EXPLORIS® EXPLORIS® Pharmacy fume cupboard

Dimensions in mm | Volume flow in m³/h

Width	900	900
Front height	1350	1350
Depth	640	640
Usable space width	795	795
Usable space height	900	900
Usable space depth	570	570
Fan	X	–
Services	X	X
Minimum required volume flow	250	250

EXPLORIS EcoPlus[®] – the energy-efficient fume cupboard.

The perfect combination of safety and cost-effectiveness.



Reduces
operating costs
by up to

30 %

Particularly cost-effective due to low air consumption

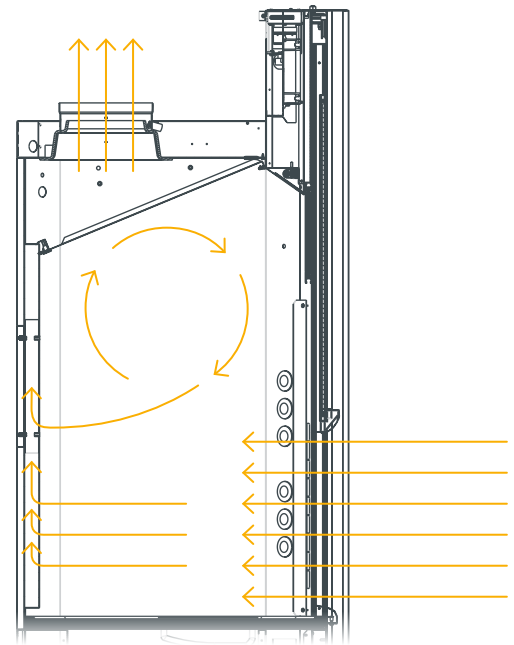
- Operation with a remarkably low volume flow rate of 250m³/h per running metre of fume cupboard width
 - Up to € 1 000 savings per year by reducing the need for costly conditioned laboratory air
 - Reduces the investment costs of the exhaust air system
- EXPLORIS EcoPlus® reduces the operating costs of the fume cupboard considerably

Example:

Operating costs of a 1500 mm wide fume cupboard
Standard fume cupboard EXPLORIS® approx. 3000€/year
EXPLORIS EcoPlus® approx. 2000€/year

Assumptions:

Volume flow rate
– EXPLORIS standard: 600m³/h
– EXPLORIS EcoPlus: 375m³/h
Costs for conditioned laboratory air: 0.80€/1000m³
Operating time of the fume cupboard: 1 year (250 days) for 24h/d operating time

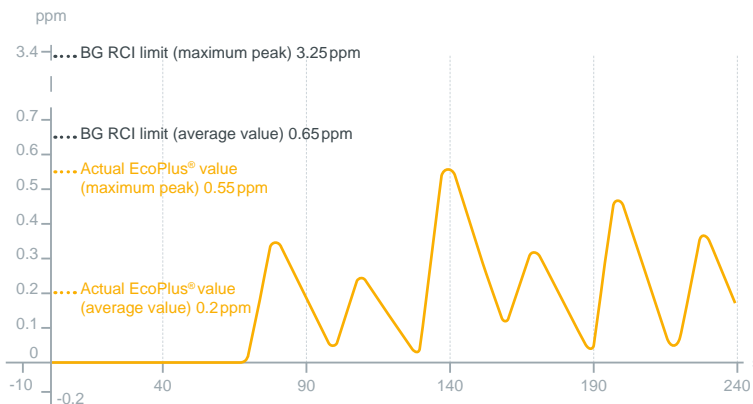


EXPLORIS EcoPlus® cross-section

Safe handling of hazardous substances without any compromise

EN 14175-3 robustness test

Fume cupboard: KÖTTERMANN EXPLORIS EcoPlus®, 1500 mm, 375m³/h



The retention capacity of EXPLORIS EcoPlus® is significantly better than the requirements of the German BG RCI.

- Meets the performance requirements of the German BG RCI with high safety reserves
 - Certified according to DIN EN 14175 (Part 2 and 3) by an independent testing institute
 - Safety through flow-optimised geometry - without complex supportive airflow technology
- Particularly cost-effective due to low air consumption

Exemplary sustainability

- Saves energy, protects the environment
 - Material steel stands for durability and environmentally friendly recycling
- EXPLORIS EcoPlus® is a safe investment in the future