



**Thermo Scientific HERAsafe®
Microbiological Safety Cabinets**

Advanced operator and product protection

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Advanced Operator and Product Protection

Thermo Scientific precision-engineered safety cabinets provide clean air solutions for a host of applications, ranging from routine work with potentially hazardous samples to handling cytotoxic compounds. Every cabinet provides the level of operator, product and environmental protection you need – and every cabinet is designed to make working safely as easy and as comfortable as possible.

Our Thermo Scientific HERAsafe safety cabinets are renowned for their performance, reliability and ease of use. They are functionally advanced, easy to clean and simple to maintain. The safety cabinets are also fully modular – so with a broad range of options and accessories available, they can easily be configured to meet specific laboratory requirements.

We bring a history of excellence to the design and manufacture of safety cabinets. We work closely with our customers to create and support safety cabinets that offer unmatched quality, precision and reliability.



Our models are tested by independent organizations to national and international standards including:

EN-12469: (09/00)
DIN 12980: (06/05)
EN-61010-1



No Operator Fatigue

A relaxed working posture helps to prevent back and shoulder aches, so operators can work in comfort for hours at a time. Ergonomically designed arm rests ensure that the air suction vents are not inadvertently obstructed.

A variety of floor stands are available as optional accessories to easily customize the working height for each individual user.

In addition, the slanted front window allows for a comfortable working position.

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Improved ergonomics
maximizes safety



Maximize contamination prevention: A mobile infrared control unit permits parameter setting from within the cabinet, so operators do not need to remove their hands from the sterile work area.



Work Comfortably, Work Safely

Thermo Scientific HERAsafe KS Class II Cabinets

Our HERAsafe KS safety cabinets incorporate a range of revolutionary ergonomic design make safety cabinet operation simpler, easier and more comfortable, creating an inherently safer working environment.

- **Motorized aerosol-tight front window**

Allows precise and easy operation of the front window.

Seals the inner chamber for secure contamination protection for samples and personnel in stand-by mode

- **Hinged front window** allows full access to the interior for thorough cleaning/disinfection as well as easy load and unload of the work space
- **Slanted front window and arm rests** Support ergonomic working posture and minimize operator fatigue
- **Mobile control unit** allows users to keep hands within the sterile work area while parameter settings are changed

Thermo Scientific HERAsafe KSP Class II Cabinets

Our HERAsafe KSP models offer all the benefits of the HERAsafe KS, with added protection for hazardous applications. For applications with stringent safety requirements, an additional, segmented HEPA filter system purifies air 100,000 times more effectively – resulting in the highest possible levels of sample, user and environmental protection when working with hazardous samples (e.g. cytotoxic compounds) in a Class II cabinet.



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Thermo Scientific HERAsafe KS/KSP Cabinets – Setting New Standards in Safety Cabinet Design

Our HERAsafe KS/KSP models incorporate a range of innovations that you won't find in other safety cabinets. Every aspect of the cabinet is ergonomically designed to make operation simpler and more comfortable than ever before, creating an inherently safer working environment with maximized contamination prevention for your samples.

Our HERAsafe KS safety cabinets are used wherever protection and safety are of paramount importance:

- Biotechnology
 - Microbiology
 - Pharmacy
 - Clinics
- **Aerosol-tight motor driven front window** – seals the inner chamber in closed position for optimum protection from contamination even in stand-by mode. The window height can be adjusted with a finger tip.
 - **Fully open, hinged front window** – allows total access to the interior for thorough cleaning/disinfection and the easy loading and unloading of items.
 - **Parameter setting via mobile control** – using the mobile control unit minimizes contamination risks, since hands are never removed from the clean air atmosphere.
 - **Eye-level digital display on rear wall** – no need to lean awkwardly to monitor status or read parameters during operation.

HERAsafe KS

Ergonomically Designed for Maximum Safety and Operator Comfort



Save time, prevent contamination

Use the mobile control unit inside a SAFEbag: change parameters quickly and make glove changes history.

Work safely, work comfortably – the aerosol-tight motor driven front window provides optimal protection, preventing contaminants from entering or leaving the work area. The window is sloped for a more comfortable working posture.

Unobstructed, all-round visibility – frameless front window and transparent glass side windows.

Flexible configuration – optional ports for gas, water and vacuum in side panels or rear wall.

Adjustable stands – configure the support stand for individual working height. Levelling feet securely position the cabinet.

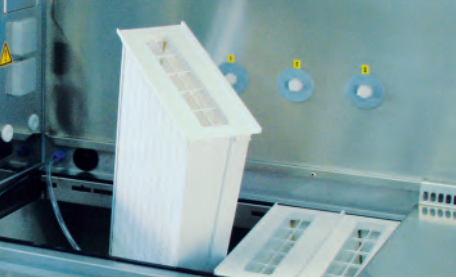
Easy Cleaning

The hinged front window gives easy access to the interior for cleaning and disinfection. The stainless steel work surface is scratchproof, acid-resistant and easy to clean.

Additional, segmented HEPA filters purify the air inside the KSP cabinets 100,000 times more effectively

Efficient Disinfection

Powerful UV-C irradiators (optional) are available for efficient disinfection. Cross-beam radiation illuminates the entire work area without causing shadows thus ensuring thorough disinfection.



At-a-glance monitoring – the unique eye-level display on the rear wall eliminates the need to lean awkwardly to read parameters or check operational status. The display indicates downflow rate, total operating hours and alarms. The display also shows the 'PER' Performance Factor, which advises the current safety status using a relative measure that considers air flow, operating time and filter status thus allowing an effective maintenance schedule.

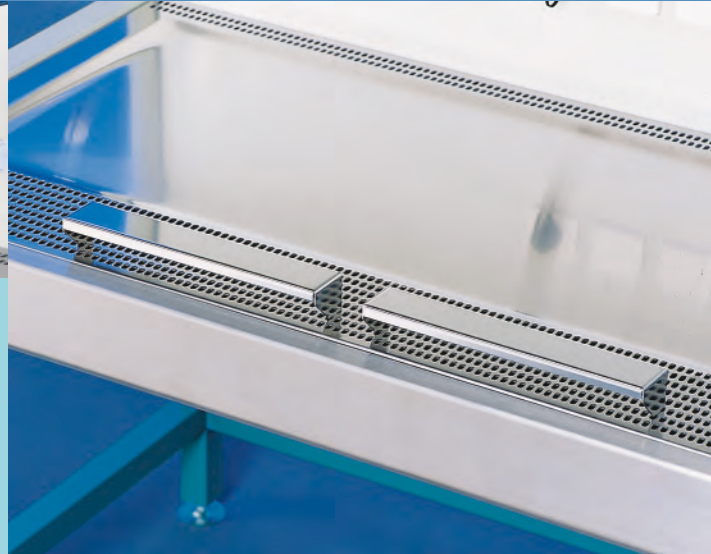
Better disinfection – patented cross-beam UV irradiation (optional) illuminates the entire working area without causing shadows ensuring a thorough disinfection.

HERAsafe KS

Comfortable Working
Ergonomically designed arm rests allow the operator to work comfortably without obstructing the air vents.



Taps for vacuum, gas, water and other media can be fitted to side panels or the rear wall.



HERAsafe KSP

Thermo Scientific HERAsafe KSP Cabinets

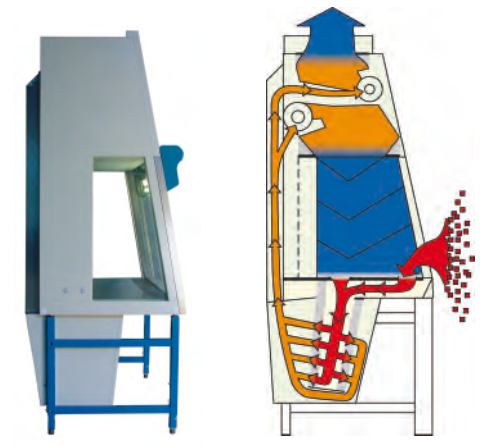
– 100,000 times higher safety

While featuring all benefits of the previously described models KS, in addition our HERAsafe KSP Class II safety cabinets incorporate the newly-developed segmented HEPA filter system for significantly higher contamination protection when working with hazardous samples and materials. This additional filter system purifies inlet, supply and exhaust air 100,000 times more effectively than conventional 2-filter systems. Its outstanding efficiency means that supply and exhaust air filters do have an almost eternal life time.

- **Reduced risk** – contamination of inner air ducts is virtually impossible.
- **Easy maintenance** – filter cartridges can be replaced while the cabinet is in operation. Cartridges snap into position over a gasket.
- **Safe, easy disposal** – filter cartridges can be disposed of by incineration.



HERAsafe KSP



Airflow diagram of the HERAsafe KSP

Maximum Sterility – The additional segmented HEPA-filter is fitted beneath the work area, ensuring that all inner surfaces are kept sterile. The filter can be easily sealed and replaced under operating conditions with a significantly reduced contamination risk.

HERAsafe KSP

Technical Specifications HERAsafe KSP						
Type		Unit	KSP 9	KSP 12	KSP 15	KSP 18
Dimensions						
External dimensions KSP ¹⁾	(w/h/d)	mm	1000/2265/880	1300/2265/880	1600/2265/880	1900/2265/880
Internal dimensions	(w/h/d)	mm	900/780/627	1200/780/627	1500/780/627	1800/780/627
Minimum doorway	(w)	mm	800	800	800	800
Work aperture	(h)	mm	200	200	200	200
Max. lifting height of front window (not open)		mm	~470	~470	~470	~470
Working height (stand. support frame adjustable)		mm	750 – 950 mm (support frame is adjustable in 50 mm steps)			
Weight	Equipment	kg	~240	~290	~320	~350
Maximum load capacity of work surfaces						
for single module work surface		kg	50	50	50	50
for segmented work surface		kg	25	25	25	25
Ventilation system						
Exhaust air/inflow volume flow		m ³ /h	~300	~400	~500	~600
Air circulation flow rate flow		m ³ /h	~600	~830	~1040	~1170
Heat emission at 25 °C room temperature		kW	~0.2	~0.2	~0.4	~0.4
Filter technology						
Forced air/exhaust air filter	type		HEPA H 14 EN 1822, 99.999% at 0.3 µm particle size			
Additional Exhaust Filter (AEF)	type		HEPA H 14 EN 1822, 99.999% at 0.3 µm particle size			
Performance						
Illumination		lx	> 1000	> 1000	> 1000	> 1000
Electrical data Voltage ²⁾		V	1/N/PE 230 V AC	1/N/PE 230 V AC	1/N/PE 230 V AC	1/N/PE 230 V AC
Frequency		Hz	50/60	50/60	50/60	50/60
Power consumption		kW	0.4	0.4	0.8	0.8
Current consumption		A	1.7	1.7	3.4	3.4
Protection class			I / IP 20	I / IP 20	I / IP 20	I / IP 20
Protective measure			Protective conductor connection			
Individual precautions on customer side			Lead fuse (slow blow) T 16 A or circuit breaker B 16. The electrical regulations in the country of use as well as the relevant connection conditions must be observed.			
Supply management			Same as HERAsafe KS			

1) Equipment and support frame are delivered individually. Installation and assembly on-site, 2) Further voltages on request



HERAsafe KS

Technical Specifications HERAsafe KS

Type		Unit	KS 9	KS 12	KS 15	KS 18
Dimensions						
External dimensions KS ¹⁾	(w/h/d)	mm	1000/1586/800	1300/1586/800	1600/1586/800	1900/1586/800
Internal dimensions	(w/h/d)	mm	900/780/627	1200/780/627	1500/780/627	1800/780/627
Minimum doorway	(d)	mm	800	800	800	800
Work aperture	(h)	mm	250	250	250	250
Max. lifting height of front window (not open)		mm	~470	~470	~470	~470
Working height (optional support frame)		mm	780 + 20 mm adjustable floor stand between 750 - 950 mm			
Weight	Equipment	kg	~190	~240	~290	~340
Maximum load capacity of work surfaces						
for single module work surface		kg	50	50	50	50
for segmented work surface		kg	25	25	25	25
Ventilation system ²⁾						
Exhaust air/inflow volume flow		m ³ /h	~380	~500	~625	~750
Air circulation volume flow		m ³ /h	~670	~890	~1100	~1330
Heat emission at 25 °C room temperature		kW	~0.2	~0.2	~0.4	~0.4
Filter technology						
Supply/exhaust air filter	type		HEPA H 14 EN 1822, 99.999% at 0.3 µm particle size			
Additional Exhaust Filter (AEF)	type		HEPA H 14 EN 1822, 99.999% at 0.3 µm particle size			
Performance						
Lighting power		lx	> 1000	> 1000	> 1000	> 1000
Electrical data Voltage ²⁾		V	1/N/PE 230 V AC	1/N/PE 230 V AC	1/N/PE 230 V AC	1/N/PE 230 V AC
Frequency		Hz	50/60	50/60	50/60	50/60
Power consumption		kW	0.4	0.4	0.8	0.8
Current consumption		A	1.7	1.7	3.4	3.4
Protection class			I / IP 20	I / IP 20	I / IP 20	I / IP 20
Protective measure			conductor connection			
Individual precautions on customer side			Lead fuse (slow blow) T 16 A or circuit breaker B 16. The electrical regulations in the country of use as well as the relevant connection conditions must be observed.			
Supply management						
Supply requirement			230 V/50 Hz standard supply. Total requirement including interior sockets 13–16 Amps. The national regulations for electrical engineering as well as the relevant technical connection conditions must be taken into account.			
Receptacles			The sockets have a load capacity of up to 5 A and are protected with T 5 A fuses. When all sockets are in use simultaneously they must not exceed the maximum total load capacity of 5 A.			
Radio interference			Circuit is interference free in accordance with EN 55 014			



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