

## CLAIRE® TOTAL – SAFETY CABINET TYPE B2

Safe for chemicals due to Total Exhaust

# CLAIRE® TOTAL PRO CHEMISTRY

## Protection Shield



*The multiple award-winning "Shield Design" underlines the high design quality and the union of innovation in form and function*



## Custom-made

*With our own research, development and construction we offer customized solutions for individual needs*

## Touch Display



*Intuitive operation and user-friendly menu navigation*

## CLAIRE TOTAL SAFETY FOR CRITICAL WORK

Claire® total models are particularly suitable for work in combination with volatile toxic compounds or also with radioactive labelled substances and viruses particles. They represent a special device type for the handling of biological and chemical hazardous substances under aseptic, low particle conditions. The concept uses an air conveyance system without recirculation into the work space. In the working space a uniform laminar flow is generated. A series of high-efficiency cartridge filters as the main filter stage retain particulate matter from the total airflow which is removed by a fixed exhaust air system.



MORE ADVANCED

36

**YEARS**  
experience in the development  
and production of safety cabinets

INTELLIGENT

128

**SENSORS**  
in the safety bank  
detect movements



## SPECIAL AIR CONVEYANCE

Safety cabinets of class II, Type B2, according to NSF 49 with 100 % exhaust air. Ensures safe working conditions even with volatile toxic chemicals in standard laboratory volumes.

## Fulfillment of the special requirements for the exhaust air connection

Similar to a chemical fume hood, it is necessary to provide a fixed direct and specially assigned exhaust air duct. For Claire® total, a built-in, high-performance fan supports the removal of air into the external exhaust air system.



## Innovative LED-light technology

Apart from the interior LED lighting, laterally arranged LED light bands and the illuminated window edge in direct view of the user visualize the operating state or alarms and guarantee the highest security

## Ergonomics

Particularly bright operating conditions and optimum legroom due to the special compact design of the main filter level



## Unique Filtertechnology

Special HEPA cartridge filter for even lower sound levels and energy consumption

HIGH PERFORMANCE

# 1320

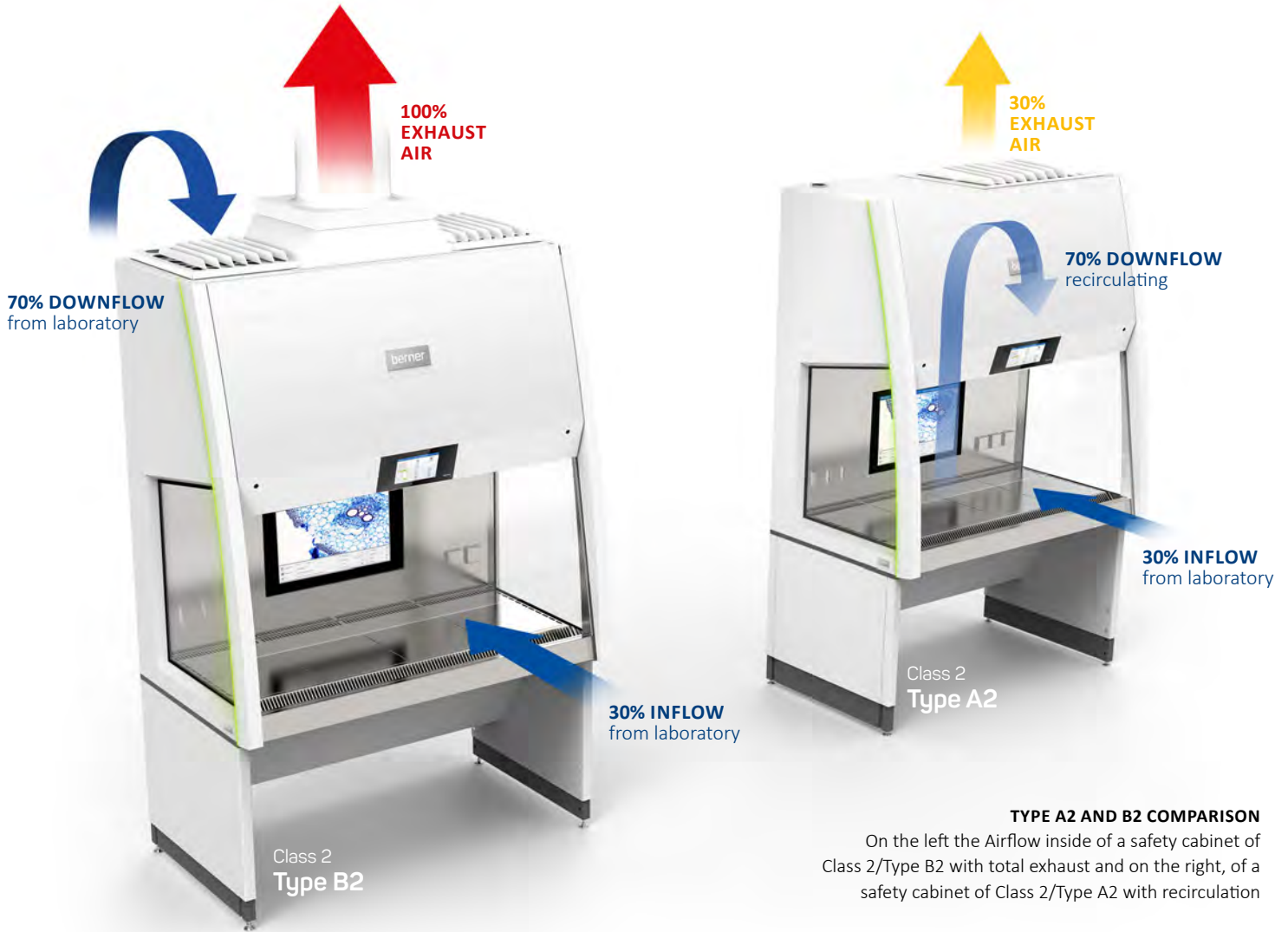
**CUBIC METRE** – this much air is extracted in one hour by Claire® total T-130

SAFE

# 1950

**AIR EXCHANGE** – the number of times the air of the work space is changed per hour

# MORE EFFICIENT WITH TOTAL EXHAUST



## TYPE A2 AND B2 COMPARISON

On the left the Airflow inside of a safety cabinet of Class 2/Type B2 with total exhaust and on the right, of a safety cabinet of Class 2/Type A2 with recirculation

## SAFETY CABINET TYPE B2 FOR COMPLEX APPLICATIONS

For Claire® total, an air conveyance concept without circulation or recirculating air in the work space is used, compared to conventional safety cabinets of class 2 (Type A1 or A2). Around 70% of the total volume flow in the safety cabinet is sucked in from the laboratory via roof-side fans and cleaned via pre-filters and a large H14 HEPA filter. In this way the laminar displacement flow (downflow to 0.45 m/s) for aseptic working conditions is generated inside the work space, typically with cleanroom class A according to the EU

GMP guidelines or ISO class 5 according to ISO EN DIN 14644-1.

About 30% of the total volume flow is sucked in at the work opening, the inflow is 0.51 m/s. This serves to create the retention capacity for personal protection through a stable air curtain. Hazardous substances released during activities cannot enter the laboratory air. A strong main fan supplies 100% of the total volume flow to the laboratory exhaust system.



## SPECIAL REQUIREMENTS FOR THE EXHAUST AIR CONNECTION

For safety cabinets of class II Type B2, a fixed permanent connection to the laboratory exhaust system has to be provided, so that the exhaust air is safely guided out of the building. With Claire® total, a built-in, high-performance fan supports the discharge of air into the exhaust air conveyance system.

In the planning process the following should be considered:

- Direct, permanent and specifically to the safety cabinet assigned connection to the exhaust air system
- Exhaust air system with own terminal fan, adapted to the exhaust air volume
- Mutual monitoring of the function of the safety cabinet and the exhaust air system with alarm and emergency shutdown, for this there are potential-free contacts in the Claire® total available
- Shutters in the exhaust air system for shutdown and decontamination by fumigation



NSF 49

### Good to Know

## SAFETY CABINETS OF CLASS II – TYPE B2 ACCORDING TO THE US STANDARD NSF49 HAVE THE FOLLOWING ADVANTAGES

- + Prevention of the formation of explosive atmospheres when handling volatile compounds, e.g. organic solvents.
- + Gaseous compounds are quickly and directly guided into the laboratory exhaust air system, similar to a fume hood for chemicals.
- + The downflow HEPA filter does not come into contact with infectious, toxic or radioactive particles. The main filter level beneath the work surface exclusively binds all particulate contamination.
- + At the same time (and unlike the fume hood!), the system offers an aseptic and particle-free working environment.

**Provides optimal product and personal protection and protection of the environment in biological-chemical applications when handling volatile toxic substances, radioactive substances and viruses.**

## CONSTRUCTION AND INSTALLATION OF CLAIRE® TOTAL

### → Premium quality

The interior work space has a first-class & solid finish, is made entirely of stainless steel and safety glass, durable, resistant, virtually joint-free and easy to clean. All components, options or modifications of the safety cabinet are implemented by our qualified employees in the design and production department with the highest quality standards.

### → Low and flexible overall height

Claire® total offers a height adjustment in seven steps as standard, thus the possible work surface height varies between 683 and 952 mm. The total height lies between 2039- 2308 mm. This makes an installation even possible in rooms with low ceilings, the exhaust air connection and the filters are easily accessible for testing and replacement. If required, our partners' service engineers will gladly assist you in assessing the installation options.

### → Transport and installation

Transport and installation is carried out by our trained logistics partners or our sales partners' own service engineers. Again, an on-site assessment of the access routes may be useful. If it does not seem fit, there are other options available for Claire® total. For example, the safety cabinet and base frame may be transported separately.

### → Options

Claire® total has similar equipment options as Claire® pro. This allows you to design and customize your safety cabinet according to your personal ideas and individual needs. The choice is yours! For more information: contact our sales partner in your country.

Safety cabinets from Berner International meet the highest quality requirements and undergo a comprehensive test program before being delivered to the customer. We also offer intensive commissioning, maintenance and other services by our certified staff or our sales partners. From product development through production to commissioning in your laboratory and beyond- quality "Made in Germany".

**Berner Safety Hotline: +49 4121 4356-0**

**Email: [info@berner-safety.de](mailto:info@berner-safety.de)**



**Claire® total T-130**  
Article No. 203000



**Claire® total T-160**  
Article No. 203001



**Claire® total T-190**  
Article No. 203002

# TECHNICAL INFORMATION FOR CLAIRE® TOTAL

## General data

Device	Laboratory device
Standards	DIN 12980; DIN EN 12469; NSF 49, Type B2
Quality management	DIN EN ISO 9001:2008
Identification	CE
Model	Claire® total T-130; T-160; T-190

## General technical data

Nominal illuminance	0–1.100 lux
Vibration (RMS) on the worktops	≤ 5µm
Sound pressure level conforming to ISO 11201 (GMP) [1]	≥ 57,0 dB(A); ≥ 57,4 dB(A); N/A.

## Mechanical data (in mm)

External width	1.352; 1.654; 1.957
External height	2.039–2.308
External depth	815
Usable work surface (WxD) [2]	1.217 x 445; 1.519 x 445; 1.822 x 445
Work level height	(7 steps) 683–952
Work surface width	1.257; 1.559; 1.862
Work surface height	640–700
Work surface depth	600
Work access opening (WxD)	1.257 x 180; 1.559 x 180; 1.862 x 180
Weight	approx. 325kg; ca. 400kg; ca. 426kg

## Material-specific data

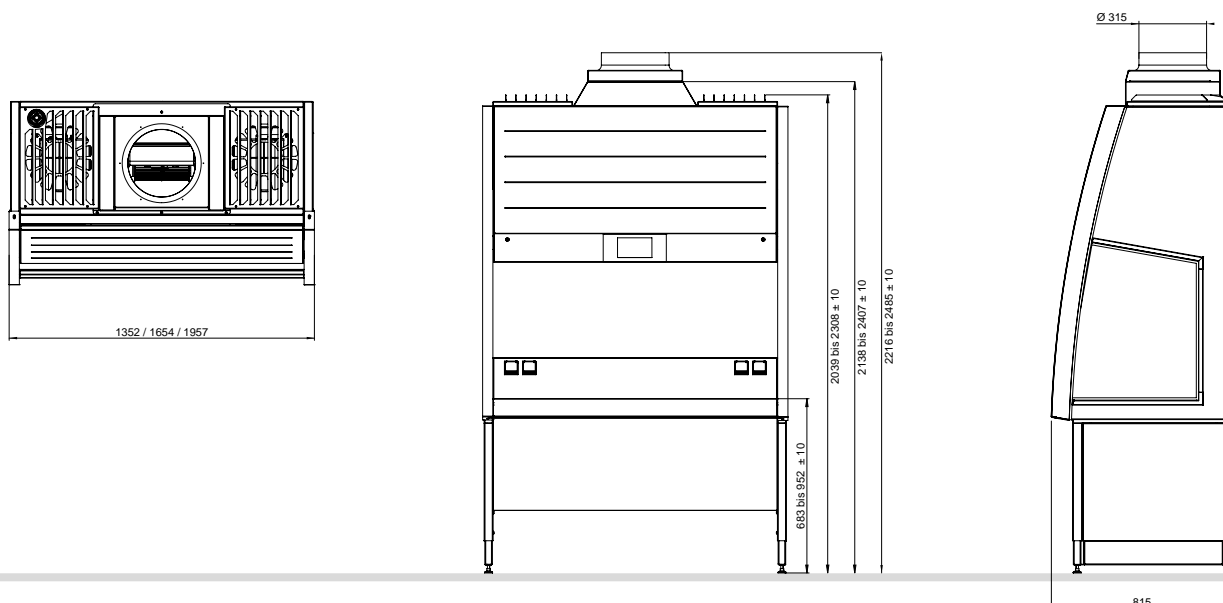
Material of work area	1.5 mm thick stainless steel, material no.: 1.4301
Surface quality of work area	320 grind, medium roughness $R_a \approx 1.6 \mu\text{m}$
Housing material	Powder-coated 1.5 mm thick Zincor steel plate, material no.: 1.0330
Powder coating colour	White RAL 9003 matt; black RAL 9005 matt
Front-, side and rear panels	Multi-layer safety glass with intermediate film to absorb UV radiation

## Electrical data

Nominal voltage or nominal frequency	230 V AC / 50 Hz
Nominal current or nominal output (GMP) [3]	0,65A/150VA; 1,5A/345VA; N/A
Power consumption (GMP)	136 W; 311 W; N/A

## Technical air data “3-filter system”

Supply air volume at the access opening	415 m <sup>3</sup> /h, 515 m <sup>3</sup> /h, 615 m <sup>3</sup> /h
Exhaust volume flow	1350 m <sup>3</sup> /h, 1670 m <sup>3</sup> /h, 2000 m <sup>3</sup> /h
Displacement flow velocity [4]	0,41 m/s, 0,45 m/s, 0,45 m/s
Average air inlet velocity	0,51 m/s
Filterclass(s) with main filter- and recirculation filter	Minimum H 14 (separation efficiency) [5]: $E \geq 99.995\%$ in accordance with DIN EN 1822-1
Cleanroom class in the work area	EC-GMP-guide: class A; DIN EN ISO 14644-1: ISO-class 5



[1] Distance to device acc. to EN 12469.

[2] Without the air inlet openings in front, back or sideways.

[3] Total currency can increase by up to 5A, when internal power sockets are used. The total electric load of the power sockets should not exceed 5A!

[4] Values determined acc. to ISO 14644-3.

[5] Integral retention level at the minimum or with maximum penetration at the so-called Most Penetrating Particle Size (MPPS).



\* Awards were given to a model version of Claire® pro

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