

1 Technical Data

1.1 Claire® pure: 2-Filter-System

GENERAL DATA

Manufacturer	BERNER INTERNATIONAL GMBH		
Device	Lab device		
Device type	Class II microbiological safety cabinets		
cDesign	DIN EN 12469; NSF 49, Type A2		
Year of construction	Please refer to the type label underneath the front hood		
Certificate	TÜV GS certificate		
Labelling	CE		
Quality management system	DIN EN ISO 9001:2008		
Model	Claire® pure B-2-130	Claire® pure B-2-160	Claire® pure B-2-190
Article number	202003	202004	202005

GENERAL TECHNICAL DATA

Sound pressure level conforming to ISO 11201^{a)} (ECO/GMP)	≥ 49.9/54.8 dB(A)	≥ 54.0/56.9 dB(A)	≥ 51.5/54.5 dB(A)
Nominal illuminance	0-1,100 lux	0-1,100 lux	0-1,100 lux
Vibration (RMS) on the worktops	≤ 5 µm	≤ 5 µm	≤ 5 µm
Collecting basin volume	approx. 74 l	approx. 92 l	approx. 110 l

ELECTRICAL DATA

Nominal voltage or nominal frequency	230 V AC / 50 Hz		
Deactivation characteristics fuse on-site	C16		
Nominal current^{b)} or nominal output (GMP/ECO)	0.80 A, 185 VA 0.61 A, 142 VA	1.15 A, 264 VA 1.05 A, 242 VA	1.1 A, 250 VA 0.90 A, 215 VA
Power consumption (GMP/ECO)	approx. 160 / 112 W	approx. 241 / 220 W	approx. 214 / 172 W
Protection class	I		
Protection type	IP 20		
Connection	Schuko safety plug		

a) Measured with distances to the device conforming to EN 12469.

b) Overall nominal current increases with the use of the sockets in the working area by up to 5 A. The total load of the sockets is not permitted to exceed 5 A!

MECHANICAL DATA*

* All length details in [mm]

External dimensions (WxHxD)	1,352 x 2,097±10 x 815	1,654 x 2,097±10 x 815	1,957 x 2,097±10 x 815
Work area (WxHxD)	1,257 x 640-700 x 600	1,559 x 640-700 x 600	1,862 x 640-700 x 600
Usable working surface^{c)} (WxD)	1,217 x 467	1,519 x 467	1,822 x 467
Segmented worktops (WxL)	313 x 472	310 x 472	309 x 472
Number of worktops	4	5	6
Maximum load capacity per segment	10 kg	10 kg	10 kg
Working access opening(WxH)	1,257 x 180	1,559 x 180	1,862 x 180
Access opening, front window fully open^{d)}	450 ± 50	450 ± 50	450 ± 50
Clearance dimensions^{e)} (HxD), excl. base frame	1,417 x 815	1,417 x 815	1,417 x 815
Minimal clearance dimensions^{e)f)} (HxD)	1,417 x 782	1,417 x 782	1,417 x 782
Work surface height	772 ± 10	772 ± 10	772 ± 10
Weight	approx. 312 kg	approx. 375 kg	approx. 400 kg

c) Excluding the front, rear and side intake openings.

d) **Caution:** This is not a position with optimal personnel and product protection! Only for loading/unloading of the working space (e.g. bulky utensils), cleaning, etc.

e) For default shipment Claire® pure is separated from the base frame due to the overall height > 2m. **A horizontal and vertical distance of 10 mm more should be planned in!** Before delivery, it is critical to coordinate with the dimensions of the smallest doors! Also take the pallet into account!

f) Excludes front side panels and base frame.

Model	Claire® pure B-2-130	Claire® pure B-2-160	Claire® pure B-2-190
MATERIAL-SPECIFIC DATA: HOUSING			
Material of work area	1.5 mm thick stainless steel "V2A", 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; aluminium grey RAL 9007		
Front, side and rear windows	Multi-layer safety glass with intermediate film to absorb UV radiation		
AIR-TECHNICAL DATA "2-FILTER SYSTEM"			
Exhaust and supply air volume flow	approx. 330 m ³ /h	approx. 410 m ³ /h	approx. 485 m ³ /h
Required total exhaust volume (with non-reactive exhaust connection)	450 ± 50 m ³ /h	525 ± 50 m ³ /h	600 ± 50 m ³ /h
Displacement flow velocity ^{g)} (Downflow)	0.29 / 0.45 m/s (ECO/GMP)	0.32 / 0.45 m/s (ECO/GMP)	0.33 / 0.45 m/s (ECO/GMP)
Average air inlet velocity (Inflow)	0.40 m/s	0.40 m/s	0.40 m/s
LWZ _{ECO} in the work area (air exchanges/h)	1,175 /h	1,181 /h	1,223 /h
LWZ _{GMP} in the work area (air exchanges/h)	1,889 /h	1,897 /h	1,965 /h
Temperature increase in the work area ^{h)}	0.6°C	1.0°C	1.0°C
Heat load (ECO/GMP)	approx. 67.2 / 96 W	approx. 132 / 144 W	approx. 103 / 128 W
Filter class(es) of the 2-filter system with recirculation and exhaust air filters	Minimum of H 14 (separation efficiency ⁱ⁾ : $E \geq 99.995\%$ in accordance with DIN EN 1822-1		
Cleanroom class in the work space	EG-GMP guide: Class A; DIN EN ISO 14644-1: ISO class 5		
g) Specifications for ECO determined in accordance with DIN EN 12469, for GMP in accordance with ISO 14644-3.			
h) Increase in temperature inside the cabinet when switched on in GMP mode after 4 hours of operation.			
i) Integral separation efficiency determined in the minimum of separation efficiency or with maximum penetrability, i.e. using particles known as the Most Penetrating Particle Size (MPPS).			

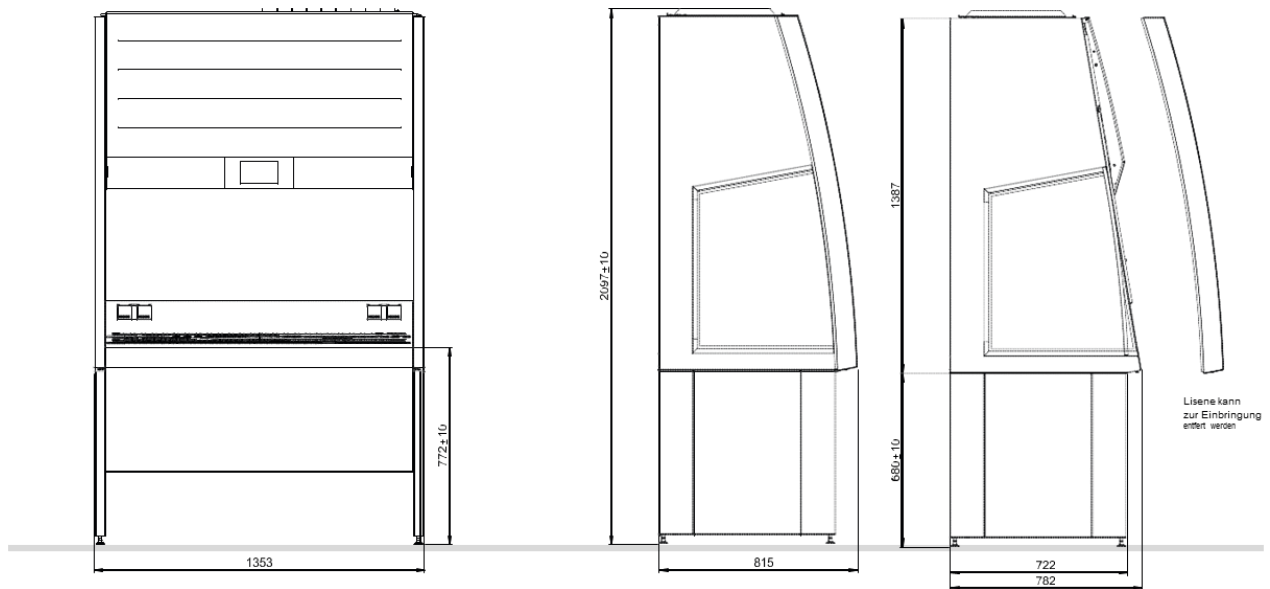


Figure 1: Construction and dimensions of the Claire® pure B-2-130 safety cabinet in the front and side views with and without front side panels

1.2 Claire® pure: 3-Filter-System

GENERAL DATA

Manufacturer	BERNER INTERNATIONAL GMBH		
Device	Lab device		
Device type	Safety cabinet for cytostatics & class II microbiological safety cabinet		
Design	DIN 12980, DIN EN 12469; NSF 49, Type A2		
Year of construction	Please refer to the type label underneath the front hood		
Certificate	TÜV GS certificate		
Labelling	CE		
Quality management system	DIN EN ISO 9001:2008		
Model	Claire® pure C-3-130	Claire® pure C-3-160	Claire® pure C-3-190
Article number	202000	2020001	200002
Model	Claire® pure B-3-130	Claire® pure B-3-160	Claire® pure B-3-190
Article-number	200006	202007	200008

GENERAL TECHNICAL DATA

Sound pressure level conforming to ISO 11201^{a)} (ECO/GMP)	≥ 54.0/56.6 dB(A)	≥ 56.1/58.5 dB(A)	≥ 55.8/56.9 dB(A)
Nominal illuminance	0-1,100 lux	0-1,100 lux	0-1,100 lux
Vibration (RMS) on the worktops	≤ 5 µm	≤ 5 µm	≤ 5 µm
Collecting basin volume	approx. 6 l	approx. 7.0 l	approx. 8.7 l

ELECTRICAL DATA

Nominal voltage or nominal frequency	230 V AC / 50 Hz		
Deactivation characteristics fuse on-site	C16		
Nominal current^{b)} or nominal output (GMP/ECO)	1.35 A, 310 VA 0.95 A, 220 VA	1.90 A, 440 VA 1.5 A, 345 VA	2.44 A, 560 VA 1.63 A, 375 VA
Power consumption (GMP/ECO)	approx. 280 / 190 W	approx. 400 / 330 W	approx. 530 / 335 W
Protection class	I		
Protection type	IP 20		
Connection	Schuko safety plug		

a) Measured with distances to the device conforming to EN 12469.

b) Overall nominal current increases with the use of the sockets in the working area by up to 5 A. The total load of the sockets is not permitted to exceed 5 A!

MECHANICAL DATA*

* All length specifications in [mm]

External dimensions (WxHxD)	1,352 x 2,097±10 x 815	1,654 x 2,097±10 x 815	1,957 x 2,097±10 x 815
Work area (WxHxD)	1,257 x 640-700 x 600	1,559 x 640-700 x 600	1,862 x 640-700 x 600
Usable working surface^{c)} (WxD)	1,217 x 445	1,519 x 445	1,822 x 445
Segmented worktops (WxL)	313 x 470	310 x 470	309 x 470
Number of worktops	4	5	6
Maximum load capacity per segment	10 kg	10 kg	10 kg
Working access opening(WxH)	1,257 x 180	1,559 x 180	1,862 x 180
Access opening, front window fully open^{d)}	450 ± 50	450 ± 50	450 ± 50
Clearance dimensions^{e)} (HxD), excl. base frame	1,417 x 857	1,417 x 857	1,417 x 857
Minimal clearance dimensions^{e)f)} (HxD)	1,417 x 782	1,417 x 782	1,417 x 782
Work surface height	772 ± 10	772 ± 10	772 ± 10
Weight	approx. 325 kg	approx. 400 kg	approx. 426 kg

c) Excluding the front, rear and side intake openings.

d) **Caution:** This is not a position with optimal personnel and product protection! Only for loading/unloading of the working space (e.g. bulky utensils), cleaning, etc.

e) For default shipment Claire® pure is separated from the base frame due to the overall height > 2m. **A horizontal and vertical distance of 10 mm more should be planned in!** Before delivery, it is critical to coordinate with the dimensions of the smallest doors! Also take the pallet into account!

f) Excludes front side panels and base frame.

TECHNICAL DATA

Claire® pure | Safety cabinet for cytostatics & class II microbiological safety cabinet

Page 4 of 5

Model	Claire® pure C-3-130	Claire® pure C-3-160	Claire® pure C-3-190
	Claire® pure B-3-130	Claire® pure B-3-160	Claire® pure B-3-190

MATERIAL-SPECIFIC DATA: HOUSING

Material of work area	1.5 mm thick stainless steel "V2A", 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; aluminium grey RAL 9007		
Front, side and rear windows	Multi-layer safety glass with intermediate film to absorb UV radiation		

TECHNICAL AIR DATA "3-FILTER SYSTEM"

Exhaust and supply air volume flow	approx. 330 m ³ /h	approx. 410 m ³ /h	approx. 485 m ³ /h
Required total exhaust volume (with non-reactive exhaust connection)	450 ± 50 m ³ /h	525 ± 50 m ³ /h	600 ± 50 m ³ /h
Displacement flow velocity ^{g)} (Downflow)	0.29 / 0.45 m/s (ECO/GMP)	0.30 / 0.45 m/s (ECO/GMP)	0.31 / 0.45 m/s (ECO/GMP)
Average air inlet velocity (Inflow)	0.40 m/s	0.40 m/s	0.40 m/s
LWZ_{ECO} in the work area (air exchanges/h)	1,175 /h	1,181 /h	1,223 /h
LWZ_{GMP} in the work area (air exchanges/h)	1,889 /h	1,897 /h	1,965 /h
Temperature increase in the work area ^{h)}	1.8°C	1.2°C	1.4°C
Heat load (ECO/GMP)	approx. 114 / 168 W	approx. 165 / 200 W	approx. 201 / 318 W
Filter class(es) of the 3-filter system with main, recirculation and exhaust air filters	Minimum of H 14 (separation efficiency ⁱ⁾ : $E \geq 99.995\%$ in accordance with DIN EN 1822-1		
Cleanroom class in the work area	EG-GMP guide: Class A; DIN EN ISO 14644-1: ISO class 5		

g) Specifications for ECO determined in accordance with DIN EN 12469, for GMP in accordance with ISO 14644-3.

h) Increase in temperature inside the cabinet when switched on in GMP mode after 4 hours of operation.

i) Integral separation efficiency determined in the minimum of separation efficiency or with maximum penetrability, i.e. using particles known as the **Most Penetrating Particle Size** (MPPS).

1.3 Claire® pure: standard equipment and other options

Standard and options	Model line Claire® pure					
	B/C-3-130	B/C-3-160	B/C-3-190	B-2-130	B-2-160	B-2-190
GENERAL						
Power socket ¹⁾ , 230 VAC, I _{Max} = 5 A	Standard (1x, 2x with 190 models)					
Filter test access	Standard					
Base frame, working height 772 ± 10mm	Standard					
side window lead-throughs, 2x, d=22 mm	Standard (for all B models), 200051					
Blind socket	Standard ²⁾					
Power socket, in addition	200009					
Weighing work top for low vibration system	200018					
Work top, fully continuous, one-part	201006	201041	201042	201027	201040	201038
Electrically height-adjustable base frame ³⁾	200097	200098	200099	200059	200064	200060
INTERFACES						
Interface RS 232	200010					
Interface USB	200011					
Double Interface USB	200046					
Interface USB 3.0	200012					
Double Interface USB 3.0	200052					
Interface CAT 6	200425					
Double Interface CAT 6	200168					
Interface Mettler-Toledo scales	200081					
Interface HDMI	200447					
CLEANROOM & EXHAUST AND EXHAUST AIR SYSTEMS						
Exhaust air connection Exhaust FlexDuct	200027	200180	200028	200027	200180	200028
Potential-free contact, normal operation	200035					
Potential free contact, night operation	200034					
Potential-free contact, group alarm	200036					
Particle monitoring: Integration of an isokinetic sampling probe in the rear panel	200062 ⁴⁾ / 200017 ⁵⁾					
GMP documentation ⁶⁾ (in accordance with EU-GMP guide appendix 15)	200031					
BIOTECHNOLOGICAL APPLICATIONS						
Lab fittings for compressed air/vacuum/nitrogen	200037 / 200038 / 200039					
Assembly of the lab fittings into the rear panel	200096					
Media tap for flammable gases in the side panel	200040					
Media tap for flammable gases integrated into the rear panel	200041					
Pre-filter protection	N/A		200069 200068 200070			
UV-C disinfection system QuickDecon	200019	200151	200020	200019	200151	200020

1) All connections in the working space are positioned in the rear cover flaps (IP 44) with spraywater protection. The total number of possible connections is restricted with the Claire® pure models, maximum of 2+2 (R/L) for 130 and 160 and maximum of 3+3 (R/L) for 190

2) Blind sockets can be retrofitted with additional sockets or interfaces.

3) Special adaptations should be observed or required when using a waste air connection or a gas line

4) Mobile or flexible installation in the work space

5) Stationary, normally positioned centrally in the middle of the rear panel

6) Individual consultation & quotation, in accordance with requirements