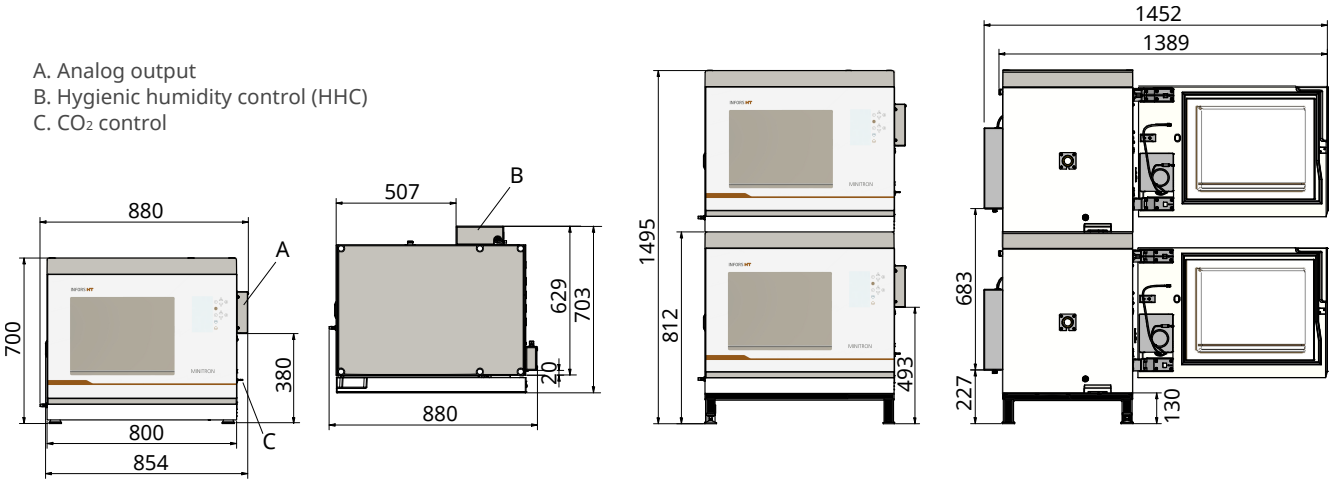
INFORS HT
We bring life to your laboratory

Minitron

An all-round genius in a small space. From standard experiments with microorganisms to complex cultivations of animal and plant cells, the Minitron has been designed to perform a comprehensive range of applications. Each Minitron is configured to your exact needs whilst the design ensures for a straightforward upgrade if required.

Dimensions and Weights

A. Analog output
B. Hygienic humidity control (HHC)
C. CO_2 control



Exterior dimensions	
Height single unit (with rubber feet)	700 mm
Height single unit (with base)	812 mm
Height two units stacked (with base)	1495 mm
Height base	130 mm
Height rubber feet	17 mm
Depth (with door closed)	625 mm
Depth (with door open)	1389 mm

Various	
Interior dimension (w x d x h)	570 mm x 528 mm x 508 mm
Tray size	N (480 mm x 420 mm)
Additional space for ventilation	Back: 100 mm Side: 80 mm

Weight single unit without base frame and options	
Single unit 25 mm throw	75 kg
Single unit 50 mm throw	77 kg

Weight options and accessories	
Base frame	7.5 kg
Cooling unit	9 kg
Hygienic Humidity Control (HHC)	3 kg
CO_2 control	0.5 kg
Analog output	1 kg
Universal tray	2.5 kg

Shaker Drive / Rotation Speed

Direction of rotation	Clockwise
Throw	25 mm or 50 mm
Setting range (25 mm throw)	20 min^{-1} to 400 min^{-1}
Setting range (50 mm throw)	20 min^{-1} to 350 min^{-1}
Increment setpoint	1 min^{-1}
Accuracy control (at maximum rotation speed, full scale)	± 1 %

Max. Rotation Speeds

Single unit	25 mm throw	50 mm throw
	400 min^{-1}	350 min^{-1}

Two units stacked	25 mm throw	50 mm throw
Top unit	400 min^{-1}	300 min^{-1}
Bottom unit	400 min^{-1}	350 min^{-1}

Hygienic Humidity Control (HHC) (Option)

General	
Setting range	20 % to 85 %
Increment setpoint	1 %
Accuracy control	± 3 %
Water consumption (typical)	5 g/h
Max. temperature for use	40 °C

Reachable values	AT [1]	IT [2]	
Max. value (without condensation)	20 °C	37 °C	75 %rH
	25 °C	37 °C	75 %rH
Min. value (dehumidification)	25 °C	30 °C	70 %rH
	25 °C	40 °C	50 %rH

[1] *AT = ambient temperature*

[2] *IT = temperature in incubation chamber*

Temperature Control

Setting range	4 °C to 65 °C
Increment setpoint	0.1 °C
Accuracy control 4 °C to 50 °C	± 0.3 °C
Accuracy control > 50 °C	± 0.5 °C
Temperature distribution, deviation: max. – min. [1]	± 0.8 °C
Temperature distribution, max. deviation to value on display [1]	± 0.8 °C

[1] *at 37 °C in incubation chamber, on tray with 5 flasks*

Lowest Attainable Temperature

Configuration	Lowest attainable temp.
Single unit without cooling	5 °C above ambient temp.
Single unit with cooling	16 °C below ambient temp.

CO_2 Control (Option)

Setting range		0.1 % to 20 %
Increment setpoint		0.1 %
Accuracy control [1]	0 % to 5 % CO_2	0.5 %
	5 % to 10 % CO_2	0.6 %
	10 % to 15 % CO_2	0.7 %
	15 % to 20 % CO_2	0.8 %
Gas consumption at 5 % CO_2 (air vent open)		2 NL/h
Max. temperature for use		60 °C

[1] *at 1013 hPa, 20 °C to 40 °C*

Operating Conditions

Load	
Load max.	12 kg
Load optimal	9.5 kg

Ambient conditions	
Ambient temperature	10 °C to 32 °C
Ambient humidity	10 % to 85 %
Altitude operating location	max. 2000 m above sea level
Pollution degree as per EN 61010-1	2
Minimum distance side and back	80 mm

Materials

Housing	Polyurethane (PUR-IHS) with flame retardant
Door	PUR-IHS, safety glass
Cover plate temperature control	Stainless steel (AISI 304)
Shaking table	Aluminium, anodised
Universal tray	Aluminium, anodised

Various

IP rating		IP20
Sound pressure		35 dB(C)
Cooling agent in compressor	Version 230 V	R1234yf (quantity: 55 g)
	Version 115 V	R134a

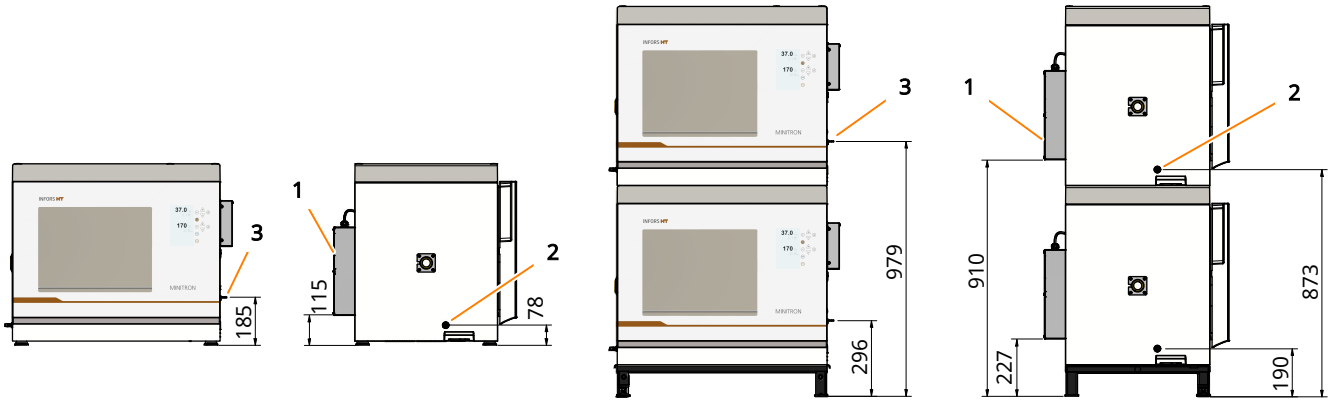
Interfaces

Alarm connection	Stereo jack, 3 5 mm, allows to send system alarms to an external system.
Ethernet interface	RJ45, 10/100 Mbps Ethernet
Analog output (optional)	8 channels, 4 mA to 20 mA; allows to control the device and record data.
Profibus DP gateway (optional)	Allows to connect the device to a SCADA system to control the device and record data.
Modbus TCP gateway (optional)	

Electrical Connection and Power Values

General	230 V	115 V
Mains voltage	230 V (±10 %)	115 V (±10 %)
Mains frequency	50/60 Hz	60 Hz
Max. power consumption (base unit)	500 W	
Max. power consumption (all options)	650 W	
Max. current consumption (all options)	2.8 A	5.6 A
Fuse (two 5 x 20 mm fuses, time lag)	6.3 A	

Connections/Utilities



Pos.	Connection	Size	Pressure	Requirements
1	Demineralised water In	UNF 1/4-28 for hoses 1/8" (= 3.2 mm)	max. 2.0 bar	■ Water hardness ($CaCO_3$ equivalent): < 0.01 mmol L^{-1} ■ Dissolved solids: < 10 mg L^{-1} ■ Recommendation: Reverse osmosis water with a conductivity of approx. 5 µS cm^{-1} or ultra-pure water/WFI. Do not use tap water, not even as an additive to ultra-pure water.
2	Discharge outlet	Internal thread G1/4", for hose Ø = 10 mm	N/A	N/A
3	CO_2 In	Hose nozzle DN04, for hose Ø = 3 mm to 4 mm	0.4 bar to 0.6 bar	■ For best efficiency, it is recommended to use a gas with a high CO_2 concentration (e.g. 99.5 %).

eve®

eve® is a platform software for planning, execution and analysis of bioprocesses. eve® allows you to record bioprocess data and store it in a central database. The software offers workflows from simple bioprocesses to the planning and execution of complex strategies with various phases.

eve® makes it possible to generate and store bioprocess knowledge. Various libraries for storing information on organisms and culture media are available. Thanks to soft-sensors, additional knowledge can be generated.

In addition to INFORS HT products, biotech machines and analysis devices from third-part manufacturers can be connected. This makes it possible to holistically control, monitor and analyse bioprocesses using a single software.

eve® is installed on a centralised server. Access takes place via a browser, no client side installation is required. Bioprocess data is therefore available directly via the browser and independent of the operating system.

Various packages of the software are available. This makes it possible to adapt it to the individual needs and requirements of its users. eve® (in the premium version) is also suitable for working in a validated environment as per FDA CFR 21 Part 11.