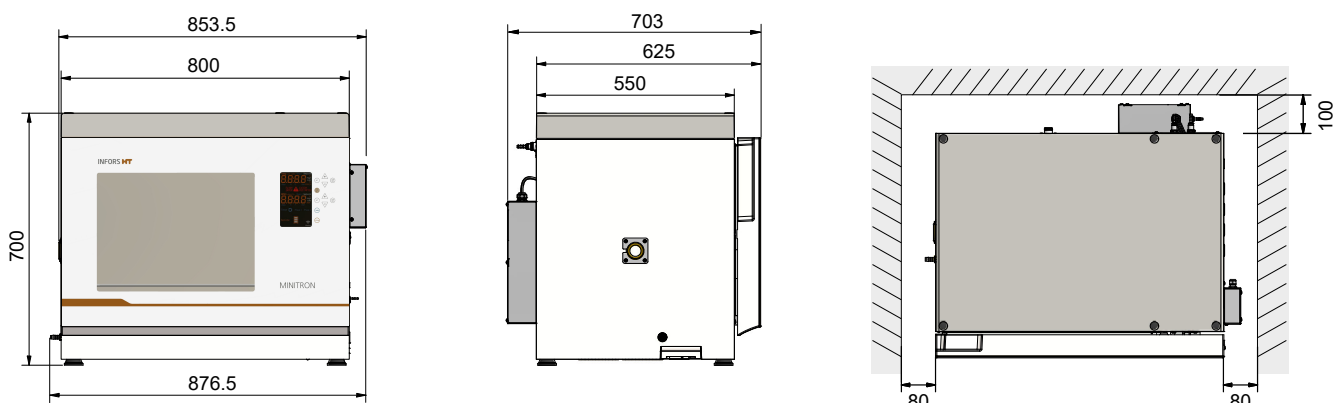


Minitron

An all-round genius in a small space. In terms of capacity, the Minitron is the little sister of the Multitron incubator shaker, but it offers the same variety of application possibilities for microbial, animal, and plant cell cultures.



Dimensions and Weights



Exterior dimensions	
Height single unit (with rubber feet)	700 mm
Height single unit (with base)	803 mm
Height two units stacked (with base)	1490 mm
Height base	120 mm
Height rubber feet	17 mm
Depth (with door closed)	625 mm
Depth (with door open)	1375 mm

Interior dimensions	
Width	570 mm
Depth	528 mm
Height	508 mm
Tray size	N (480 x 420 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
Direct steam humidification	3.5 kg
CO ₂ control	0.5 kg
Analogue output	1 kg
Universal tray	2.5 kg

Shaker Drive / Rotation Speed

Direction of rotation	Clockwise
Throw	25 or 50 mm
Setting range (25 mm throw)	20 to 400 min ⁻¹
Setting range (50 mm throw)	20 to 350 min ⁻¹
Increment setpoint	1 min ⁻¹
Control precision (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

Direct Steam Humidification (Option)

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

Reachable values without condensation ¹⁾	
Max. value at ambient temp. 20 °C	75 %rH
Max. value at ambient temp. 22 °C	80 %rH
Max. value at ambient temp. 25 °C	85 %rH

¹⁾ at 37 °C in incubation chamber

Operating Conditions

Load	
Load max.	12 kg
Load optimal	9.5 kg

Ambient conditions	
Ambient temperature	10 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

Temperature Control

Setting range	4 to 65 °C
Increment setpoint	0.1 °C
Control precision 4 to 50 °C	± 0.3 °C
Control precision > 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.

CO₂ Control (Option)

Setting range	0.1 to 20 %	
Increment setpoint	0.1 %	
Control precision 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 L/h	
Max. temperature for use	60 °C	

¹⁾ at 1013 hPa, 20 °C to 40 °C

Materials

Housing	Polyurethane (PUR-IHS) with flame retardant
Door	PUR-IHS, safety glass
Cover plate temperature control	Stainless steel (1.4301-2B)
Shaking table	Aluminium, anodised
Universal tray	Aluminium, anodised

Various

IP rating	IP20
Sound pressure	35 dB(C)
Cooling agent in compressor	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
Analogue 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
Power consumption cooling compressor	173/196 W	146 W
Fuse (two 5 x 20 mm fuses, time lag)	6.3 A	

Connections/Utilities



Pos.	Connection	Size	Pressure	Requirements
1	Demineralised water In	Hose nozzle DN06, for hose Ø = 6 mm	max. 0.3 bar	<ul style="list-style-type: none"> Water hardness (CaCO₃ equivalent): < 0.01 mmol/L Dissolved solids: < 10 mg/L Recommendation: Reverse osmosis water with a conductivity of approx. 5 µS/cm
2	Cooling liquid In	Hose nozzle DN08, for hose Ø = 8 mm	max. 4.0 bar	<ul style="list-style-type: none"> Water hardness (CaCO₃ equivalent): 0 to 1.5 mmol/l). For medium-hard to very hard water quality, use demineralised water as an alternative. Cooling liquid: Based on 1,2-propanediol with inhibitor (suitable for copper). Must be approved for the food and pharmaceutical sectors.
3	Cooling liquid Out	Hose nozzle DN08, for hose Ø = 8 mm	pressureless	N/A
4	Discharge outlet	Internal thread G1/4", for hose Ø = 10 mm	N/A	N/A
5	CO ₂ In	Hose nozzle DN04, for hose Ø = 3 to 4 mm	0.4 bar to 0.6 bar	N/A

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.