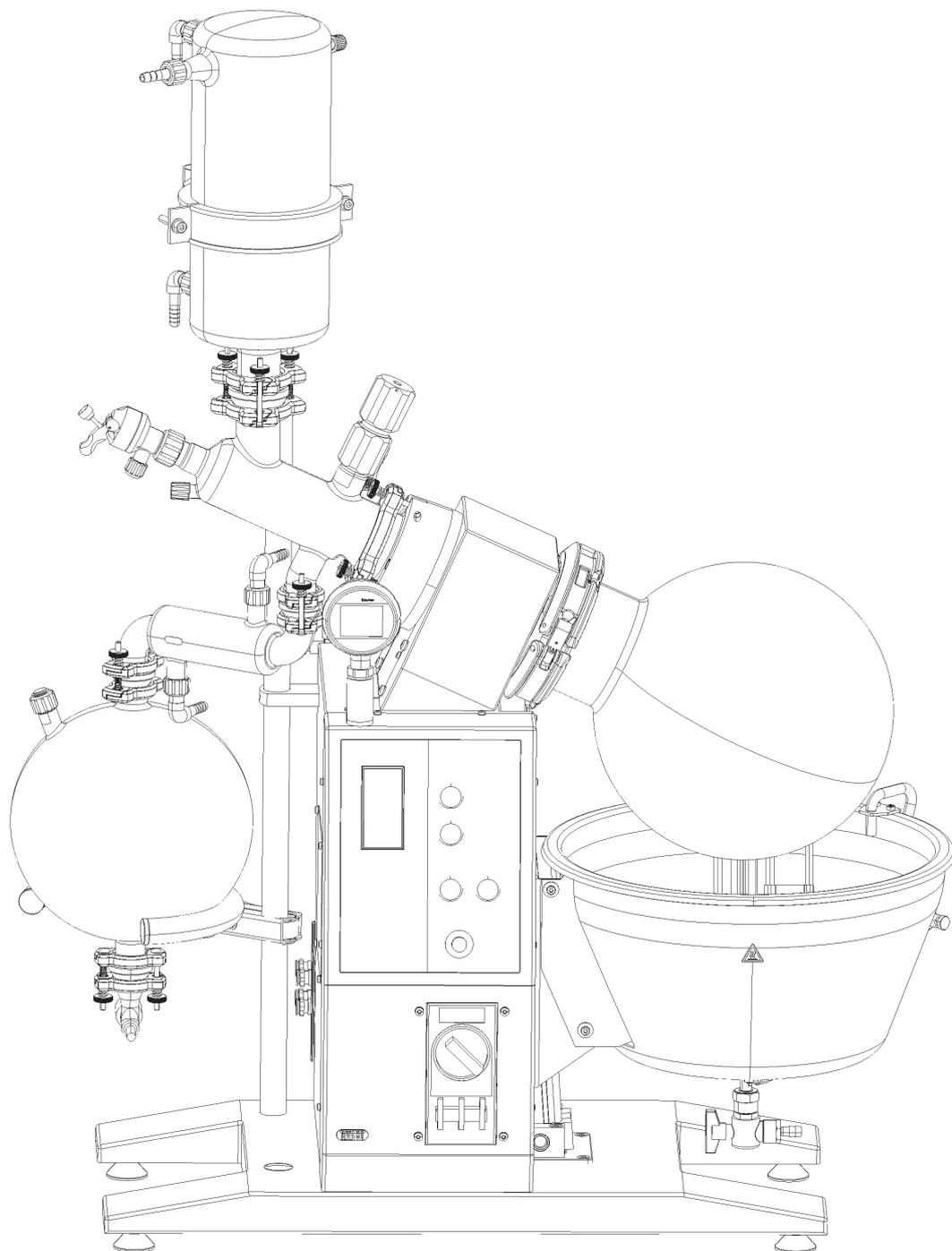# Rotavapor® R-220 EX
Technical data sheet

The Rotavapor® R-220 EX is the EX rated version of the Rotavapor® R-220 SE and fulfills the high requirements of the ATEX regulations. It is designed for easy and safe operation combined with high performance.
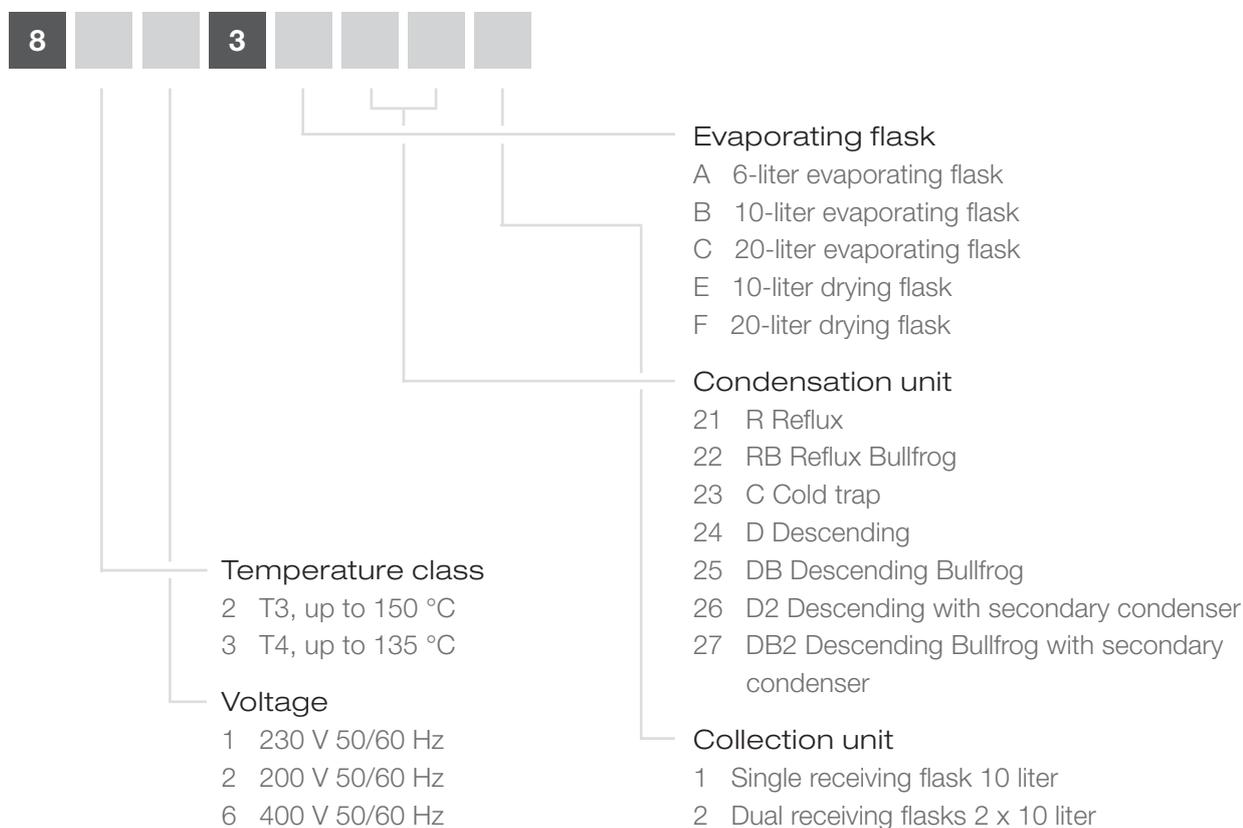
Scope of delivery

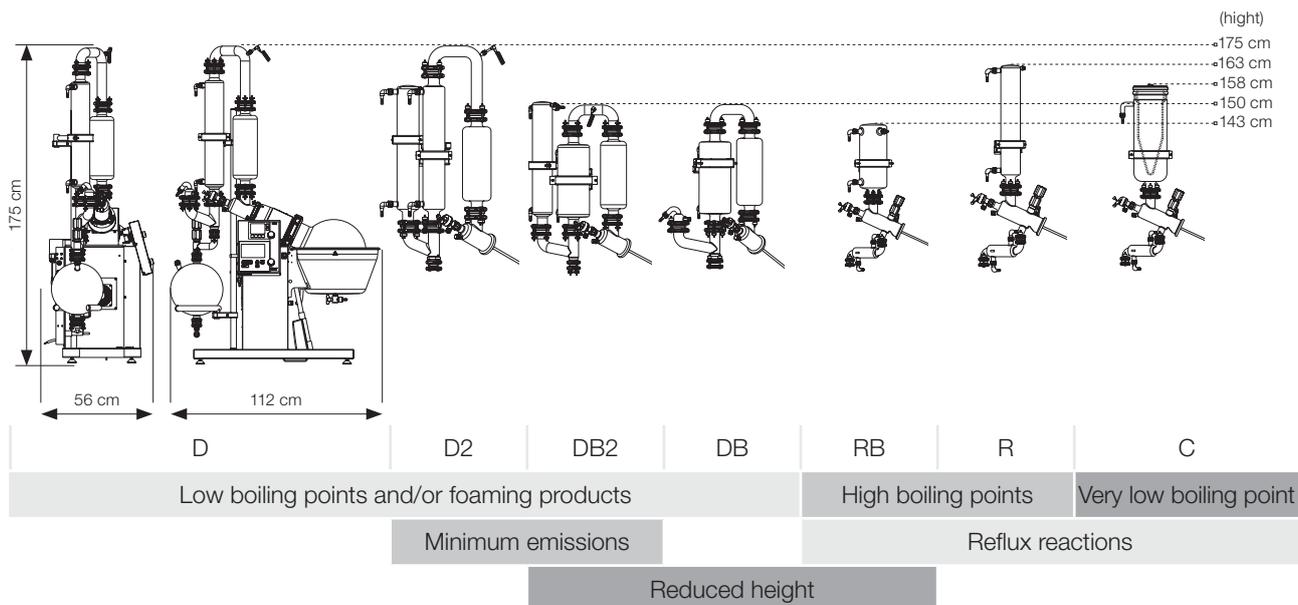All Rotavapor® R-220 SE models are delivered ready to use, including all needed tools and are complete of:

Components	R-220 EX
Vacuum controller UDS7 EX	1
Vacuum valve EX	1
Glass configuration according to order	1
Evaporating flask according to order	1
Vacuum hose to vacuum source (PVC), 3.5 m	1
Vacuum hose to the vacuum controller (rubber), 2 m	1
Cooling water hose (PVC), 4.5 m	1
Hose for compressed air (PVC), 3.5 m	1
Feed hose (PTFE), 2 m	1
Seal removal tool	1
Operation manual	1

Order code

Choose the configuration according to your needs:

| 8 | | | 3 | | | | |

Evaporating flask
A   6-liter evaporating flask
B   10-liter evaporating flask
C   20-liter evaporating flask
E   10-liter drying flask
F   20-liter drying flask

Condensation unit
21   R Reflux
22   RB Reflux Bullfrog
23   C Cold trap
24   D Descending
25   DB Descending Bullfrog
26   D2 Descending with secondary condenser
27   DB2 Descending Bullfrog with secondary condenser

Temperature class
2   T3, up to 150 °C
3   T4, up to 135 °C

Voltage
1   230 V 50/60 Hz
2   200 V 50/60 Hz
6   400 V 50/60 Hz

Collection unit
1   Single receiving flask 10 liter
2   Dual receiving flasks 2 x 10 liter

Dimensions and weight

	D	D2	DB2	DB	RB	R	C
	Low boiling points and/or foaming products				High boiling points		Very low boiling point
		Minimum emissions			Reflux reactions		
			Reduced height				

	Dimensions (W x H x D)				Weight
R-220 EX without glass	950 x	880 x	660	mm	75 kg
Assembly R	1130 x	1630 x		mm	7.7 kg
Assembly RB	1130 x	1430 x		mm	9.9 kg
Assembly C	1130 x	1580 x		mm	13 kg
Assembly D	1130 x	1750 x		mm	11 kg
Assembly DB	1130 x	1500 x		mm	13 kg
Assembly D2	1130 x	1750 x		mm	15 kg
Assembly DB2	1130 x	1500 x		mm	17 kg
One receiving flask	1130 x		660 x	mm	5 kg
Two receiving flasks	1130 x			750 mm	6 kg

For the overall weight, summarize the related components

Technical data

Electrical

Voltage	200 V (1Ph, N, G)
	230 V (1Ph, N, G)
	400 V (3Ph, N, G)
Frequency	50 – 60 Hz
Power consumption	4200 W

Standards

EX label	Ex de ia [ia] IIC T3 and T4
CE marking	Yes

Safety

Safety coated glassware	No, due to the risk of electrostatic charges
Over temperature protection of the bath	Separate monitoring circuit with manual reset
Rotation	Soft start
At any Error	Heater off
	Indication of error

Display

Bath temperature	Yes (1 °C steps)
Vapor temperature	Yes (1 °C steps)
Set rotation speed	Yes (no display)
Set bath temperature	Yes (1 °C steps)
Actual vacuum	Yes (1 mbar steps)
Set vacuum	Yes (1 mbar steps)

Cooling

Consumption	120 – 200 liter/hour (adjustable via integrated needle valve)
Restriction	max. 2.7 bar abs. without pulsation

Heating (bath)

Medium	Water or oil
Temperature range	Ambient to 115 °C (T4) or 150 °C (T3)
Heating capacity	3600 W (3 W/cm^2)
Accuracy	+/- 2 °C

Rotation

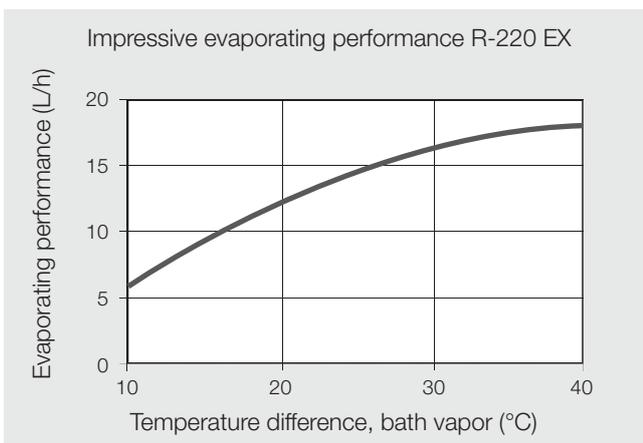|	
Motor	Pneumatic, 6 bar, oil-free
Controlling	Continuous with precision regulator valve
Speed	0 – 100 rpm
Accuracy	no display

Materials

Housing	Stainless steel 1.4301 (AISI 304)
Gear head	Aluminum cast (3.2373)
Paint	Powder coated with Epoxy (EPX)
Bath pan	Stainless steel 1.4404 (AISI 316 L)
Heating element	Stainless steel 1.4404 (AISI 316 L)
Glass	Borosilicate 3.3
In contact with product	FDA compliant materials
Leakage of the complete system	<1 mbar/min

Sensors

Vapor temperature	PT-1000, 2 wire
Bath temperature	PT-1000, 2 wire
Vacuum	Piezoresistive measuring cell; stainless steel 1.4435 (AISI 316 L)

Performance

Impressive evaporating performance R-220 EX

— 20-liter flask, acetone, 100 rpm

For other solvents the following maximum general figures apply:

Water	Methanol	Ethanol	Toluene	Ethylacetate	Hexane	Trichlorethane
3.5 L/h	8.3 L/h	12 L/h	22.0 L/h	23.0 L/h	33.0 L/h	25.0 L/h

Accessories

	Order number
Vacuum pump MD4C EX PTFE membrane pump with a capacity of 3.7m³/h and a final vacuum of 3mbar. 230 V / 50 Hz	040197
Trolley Made of stainless steel	041257
Manual flask handler For easy mounting and removal of the flasks along with safe transport.	041400
Bath shield Shield to protect the operator from splashes. Made in stainless steel.	046431
Vapor duct with sinter plate With frit P3 protects the condenser assembly against powder and dust during the drying process.	041100
Flange adapter To use a 1, 2 or 3 liter evaporating flask with SJ29,2/32	11058738
IQ/OQ	40786

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