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TECHNOLOGY GROUP

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Custom engineering
so your equipment works exactly as you specify.

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Find the *Kuhner ISF-4-W* at our website: *Click HERE*

Climo-Shaker (ISF4-X)

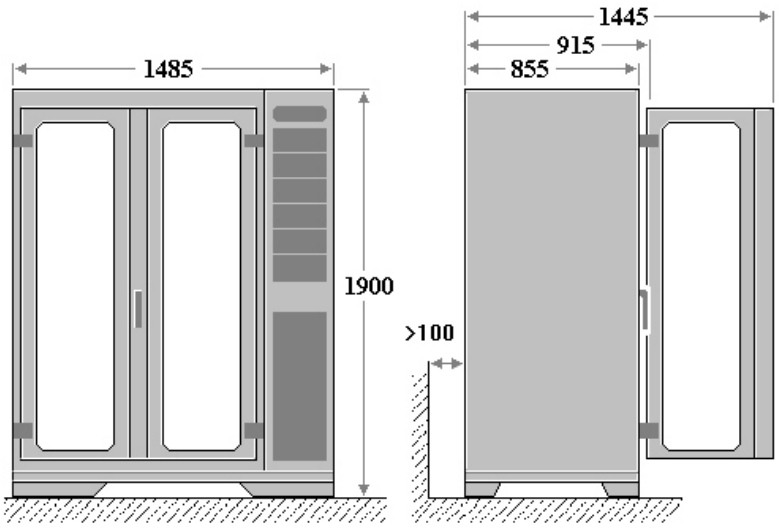


ISF4-X was developed for customers who need a large shaking capacity in a uniform environment (**temperature- / humidity- / CO_2-controlled**). The ISF4-X has up to four (or five) completely independent shaking units.
Furthermore the distance between the shaking units is individually adjustable.
As the complete inner body is made out of stainless steel, the incubator can be easily sterilized with chemicals.
Very low energy consumption due to the high efficiency shaker motors and controlled cooling system.

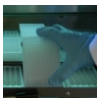
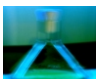
Performance Features

+ up to four shaking machines in one incubator
+ large capacity on small floor space
+ humidity control (optional)
+ CO_2-control (optional)
+ door switch
+ heated door windows* (preventing condensation)
+ all stainless steel interior (cleaning, disinfection)
+ maintenance free operation
+ extremely low energy consumption
+ precise shaking speed control
+ at least three adjustable shaking diameters
+ easy handling due to separate displays and controls
+ modular electronics with CAN-bus
+ interface to PC: USB, Ethernet

* only standard in machines with humidity control





Kuhner SHAKER

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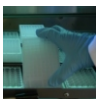
Climo-Shaker (ISF4-X)

Technical data	SMX1600	SMX1601	SMX1603
Refrigerator	no	yes *	yes *
Humidity control	no	no	yes
Temperature minimum	ambient + 10°C	ambient - 15°C	ambient - 15
Temperature maximum	80°C	80°C	80°C
Humidity maximum	-	-	85 % r.h.
Power consumption	< 1700W	< 2000W	< 2600W

Machine	
Outside (WxDxH)	1400 x 860 x 1900mm, see front page
Inside (WxDxH)	957 x 625 x 1640mm
Volume of interior	800 litre
Weight (without SF-X)	520kg
Illumination	Halogen
Operating menu in	English, French, German
Interface, standard	CAN-Bus
Interface, optional	USB, Ethernet, digital, analogue
Ambient temperature	10°C up to 35°C

subject to change






Temperature	
Setting, digital	0.1°C
Accuracy, absolute	± 0.30°C (37°C)
Principle of sensor	Pt-100
Power of heating	1000W
Power of cooling *	250...420W
Air circulation	700m3/h

Humidity	(SMX1603)
maximum at 25..55°C	85% r.h.
Setting, digital	1% r.h.
Accuracy, absolute	± 2% r.h.
Principle of sensor	capacitive
Water refill	automatic
Water heater	300W
Door heater	220W

Shaking unit SF-X	(SMX1610)
Number of shaking-units	4
Tray, size	F (800x420mm)
Loading, maximum	25kg
Setting, digital	1 rpm
Accuracy, absolute	± 0.1 rpm
Timer	1s ... 999h
Acceleration	controlled
Active brake	adjustable
Stop on position	adjustable

CO_2	(SMX1034)
Principle of sensor	Infrared, NDIR
Measuring range	0...20% CO_2
Setting, digital	0.1%
Accuracy, absolute	± 0.42% at 20% CO_2
Non-linearity	< 0.1%
Temperature range	5...60°C
CO_2-supply	max. 1 bar overpressure

Shaking motion	Speed
* orbital, Ø 12.5mm	20...500 rpm
* orbital, Ø 25.0mm	20...400 rpm
* orbital, Ø 50.0mm	20...300 rpm
* can be changed	
* linear motion available	

Mains connection	
SMX1021:	220 - 240 V / 50-60 Hz
SMX1022:	190 - 210 V / 50-60 Hz

tray size		shake flask size														
		25 mL	50 mL	100 mL	150 mL	200 mL	250 mL	300 mL	500 mL	1000 mL	1500 mL	2000 mL	3000 mL	4000 mL	5000 mL	6000 mL
E	420x420	81	50	39	30	20	18	15	12	9	5	5	4	2	2	1
EX	500x420	90	62	42	36	27	22	21	14	9	8	6	4	3	2	2
F	800x420	153	100	74	60	40	40	30	26	16	12	9	8	5	4	3
EU	420x420	78	39	24	25	20	20	17	12	8	5	4	4	2	2	1
EXU	500x420	80	45	34	25	23	22	21	15	9	6	5	4	3	2	2
FU	800x420	109	89	50	50	38	38	34	26	15	12	9	7	5	4	4

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