Model KT 53 | Refrigerated incubators with Peltier technology

The KT series combines outstanding performance with impressive energy efficiency and environmental friendliness. The refrigerated incubators of the KT series are state-of-the-art in application and protect the samples.

BENEFITS

- Safe and reproducible incubation conditions even at high environmental conditions
- Hot air disinfection at 100°C
- Energy efficient, environmentally friendly and secure



Model 53

IMPORTANT FEATURES

- Temperature range: 4 °C to 100 °C
- APT.line[™] preheating chamber technology
- Adjustable fan speed
- Electric refrigeration with Peltier module
- Controller with time-segment and real-time programming
- Display via LCD monitor
- Input via pushbutton/rotary knob

- Inner door made of tempered safety glass
- 2 stainless steel racks
- Units up to 115 liters are stackable
- Class 3.1 independent temperature safety device (DIN 12880) with visual and audible temperature alarm
- Computer interface: Ethernet
- Data recording and USB interface

ORDERING INFORMATION

Interior volume		Power supply - unit fuse	Plug*	Version	Model version	ArtNo.
[L]	[L]					
Model KT 53						
		200240 V 1~ 50/60 Hz -10,0 A	CEE 7/7	Standard	KT053-230V	9020-0311
53 53	53	100120 V 1~ 50/60 Hz -10,0 A	NEMA 5-20	Standard	KT053UL-120V	9020-0312

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TECHNICAL DATA

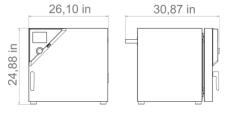
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Texperature ange4so "C4so "CTexperature anjornity at 3/°C0.3 + K0.3 - KTexperature futuration at 3/°C0.0 W0.0 WNax heat compensation at 40°C0.0 W0.0 WRecord tine after door was specied or 30 st 37.02 min2 minRecord tine after door was specied or 30 st 37.02 min2 minRecord tine after door was specied or 30 st 37.02 min2 minRecord tine after door was specied or 30 st 37.02 min2 minRecord tine after door was specied or 30 st 37.02 min2 minRecord tine after door was specied or 30 st 37.02 min2 minRecord tine after door was specied or 30 st 37.02 min2 minRecord tine after door was specied or 30 st 37.03 min3 minRecord tine after door was specied or 30 st 37.03 min3 minRecord tine after door was specied or 30 st 37.03 min3 minRecord tine after door was specied or 30 st 37.03 min3 minRecord tine after door was specied or 30 st 37.03 min3 minRecord tine after door was specied or 30 st 37.03 min3 minRecord tine after door was specied or 30 st 37.03 min3 minRecord tine after door was specied or 30 st 37.03 min3 minRecord tine after door was specied or 30 st 37.03 min3 minRecord tine after door was specied or 30 st 37.03 min3 minRecord tine after door was specied or 30 st 37.03 min3 minRecord tine after door was specied or	Option model	Standard	Standard
Temperature uniformity at χ ^{arc} 0.3 ± K0.3 ± KTemperature fluctuation at χ ^{arc} 0.0 W0.1 ± KNone0.0 W0.0 WRecovery time after door was opened for jo s at χ ^{arc} 0.0 W0.0 WRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 WRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time after door was opened for jo s at χ ^{arc} 0.0 M0.0 MRecovery time af	Performance Data Temperature		
Tenperature Buchation at 34°Cois a Kois 1 KBreactorino Wino WBackensy time after door was opened for 3 of at 34°Ca mina minBreacted ataino 2 minino 2 minBeter tableino 2 minino 2 minBreacted tableino 2 min <td>Temperature range</td> <td>4100 °C</td> <td>4100 °C</td>	Temperature range	4100 °C	4100 °C
Max. het compendation at Jo ^{AC} ino W ino W Receivery time after door was opened for 5 as at Jo ^{AC} reln reln Electrical data soc. 32 a V soc. 30 o Lao V Preve frequency sol/60 JZ sol/60 JZ Nominal power sol/60 JZ sol/60 JZ Preve frequency sol/60 JZ sol/60 JZ Nominal power sol/60 JZ sol/60 JZ Preve frequency sol/60 JZ sol/60 JZ Prever frequency sol/60 JZ sol/60 JZ	Temperature uniformity at 37°C	0.3 ± K	0.3 ± K
Recovery time after door was opened for jos at 37°Ca minRecovery time after door was opened for jos at 37°Ca minRecovery time after door was opened for jos at 37°Czom.Recovery time after door was opened for jos at 37°C	Temperature fluctuation at 37°C	0.1 ± K	0.1 ± K
Factical data Rated Voltage 20030 V 10030 V Power frequency 50/60 H2 50/60 H2 Norinal power 0.4 KP 0.4 KP Naminal power 0.4 KP 0.4 KP Phase (Norinal voltage) 10.0 A 0.0 A Phase (Norinal voltage) 1-0 1-0 Distributional voltage) 1-0 1-0 Name (Norinal voltage) 51 31 Netweight of the unit (empty) 51 51 Lod per rack 518 51 Valideaince sidewise 20 rom 51 Valideaince sidewise 20 rom 20 rom Valideaince sidewise 60 rom 60 rom Itagin reliance sidewise 60 rom 60 rom Valideaince sidewise 60 rom 60 rom Itagin reliance sidewise 60 rom 60 rom Ita	Max. heat compensation at 40°C	100 W	100 W
Rated Voltage 2002,0 V 100120 V Power frequency 50/60 Hz 50/60 Hz Norminal power 0,4 KW 0,4 KW Naminal power 0,0 A 0,0 A Phase (Norminal yours) 1-0 0,0 A Phase (Norminal yours) 1-0	Recovery time after door was opened for 30 s at 37°C	2 min	2 min
Power frequencyso/60 HzPower frequencyo.q /kWNoninal powero.q kWInitiaseo.q. APhase (Noninal voltage)-Intersonand weights-Dimensions and weightss1Interior volumeo.g ANeweight of the unit (empty)o.g A0.g Ago.g AgInterleted backo.g NaWalt chearance backo.g NaWalt chearance backo.g NaWild the and use field backo.g NaWild the and use field backo.g NaWild the and use field backo.g NaWalt net field backo.g NaBagint the dimensioned backo.g NaWalt net field backo.g NaBagint the dimensioned backo.g NaIntersoried backo.g NaBagint the dimensioned backo.g NaInterpreting the dimension	Electrical data		
Nominal powero.q. AWo.d. AWUnit fuseio.o. Aio.o. APhase (Nominal voltage)i=-i=-Dimensions and weightsis Iis IInterfor volume63 kg63 kgLoad per rackis kgis kgPemitted loadio. Nameis kgValid clearance backio. Nameio. NameWild near ce sidewiseio. Nameio. NameNeting there is the side is the si	Rated Voltage	200240 V	100120 V
Unit fuseion APiase (Nominal Vottage)i-Dimensions and weightsi-Interior volume51 ANet weight of the unit (empty)63 kg10 day er and keight and the unit (empty)is kg10 and per rackis kgPermitted loadio omVal clearance backio omVal clearance sidewiseio omVal clearance sidewiseio andValt hert60 mIndependentio andHeight netio andInternet Mitterio and	Power frequency	50/60 Hz	50/60 Hz
Phase (Nominal voltage)1-0Direstions and weights51Interior volume51Net weight of the unit (empty)63 kg63 kg5 kgLad per rack63 kgPermitted load60 kgWall clearance back100 mmWall clearance sidewise240 mmWith net60 mmHeight net60 mmHeight net60 mmLad per rack60 mmHeight net60 mmHeight net60 mmHeight net60 mmLatomations60 mmLa	Nominal power	0,4 kW	0,4 kW
Dimensions and weightsInterior volume53 LNet weight of the unit (empty)63 kg63 kg63 kgLoad per nack15 kgPermitted load40 kgWall clearance back100 mmVall clearance sidewise240 mmWall clearance sidewise60 mmHeight net660 mmBight net635 mmDepth net630 mmInterior wildh630 mmInterior wildh400 mmMather400 mmInterior wildh400 mmInterior wildh<	Unit fuse	10,0 A	10,0 A
Interior volume53 L53 LNet weight of the unit (empty)63 kg63 kgLoad per rack15 kg15 kgPermitted load40 kg40 kgWall clearance back100 mm100 mmWall clearance sidewise240 mm240 mmHousing dimensions not incl. fittings and connections53 mm660 mmWidth net660 mm630 mmDepth net630 mm630 mmInterior width400 mm400 mm	Phase (Nominal voltage)	1~	1~
Net weight of the unit (empty)63 kg63 kgLoad per rack15 kg15 kgPermitted load40 kg40 kgPermitted load100 mm100 mmWall clearance back200 mm240 mmVall clearance sidewise240 mm240 mmHusing dimensions not Incl. fittings and connections50 mmWidth net660 mm660 mmHeight net635 mm635 mmDepth net630 mm630 mmInteract Width400 mm400 mm	Dimensions and weights		
Load per rack15 kgPermitted load40 kgPermitted load40 kgWalt clearance back100 mnWalt clearance sidewise240 mnHusing dimensions not incl. fittings and connections240 mnWidth net660 mnHeight net660 mnDepth net635 mnInterior width400 mnInterior width400 mn	Interior volume	53 L	53 L
Permitted load40 kg40 kgWall clearance back100 mm100 mmWall clearance sidewise240 mm240 mmHousing dimensions not incl. fittings and connectionsHousing dimensions not incl. fittings and connections660 mmWidth net660 mm660 mmHeight net635 mm635 mmDepth net630 mm630 mmInteral Dimensions400 mm400 mm	Net weight of the unit (empty)	63 kg	63 kg
Wall clearance back100 mm100 mmWall clearance sidewise240 mm240 mmHousing dimensions not incl. fittings and connectionsWidth net660 mm660 mmHeight net635 mm635 mmDepth net630 mm630 mmInternal DimensionsInterior width400 mm	Load per rack	15 kg	15 kg
Wall clearance sidewise 240 mm 240 mm Housing dimensions not incl. fittings and connections 560 mm 660 mm Width net 660 mm 660 mm 660 mm Height net 635 mm 635 mm 635 mm Depth net 630 mm 630 mm 630 mm Internal Dimensions 400 mm 400 mm 600 mm	Permitted load	40 kg	40 kg
Housing dimensions not incl. fittings and connectionsWidth net660 mmHeight net635 mm0 ppth net630 mmInternal Dimensions400 mm	Wall clearance back	100 mm	100 mm
Width net660 mm660 mmHeight net635 mm635 mmDepth net630 mm630 mmInternal DimensionsInterior width400 mm	Wall clearance sidewise	240 mm	240 mm
Height net 6_{35} mm 6_{35} mmDepth net 6_{30} mm 6_{30} mmInternal Dimensions 400 mm 400 mm	Housing dimensions not incl. fittings and connections		
Depth net 630 mm Internal Dimensions 400 mm Interior width 400 mm	Width net	660 mm	660 mm
Internal Dimensions Interior width 400 mm 400 mm	Height net	635 mm	635 mm
Interior width 400 mm 400 mm	Depth net	630 mm	630 mm
	Internal Dimensions		
Interior height 400 mm 400 mm	Interior width	400 mm	400 mm
	Interior height	400 mm	400 mm



Interior depth	334 mm	334 mm
Inner doors	1	1
Unit doors	1	1
Environment-specific data		
Sound-pressure level	48 dB(A)	48 dB(A)
Energy consumption at 37°C	75 Wh/h	75 Wh/h
Fixtures		
Number of shelves (std./max.)	2/5	2/5

All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined in accordance to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.

DIMENSIONS Incl. fittings and connections [mm]



OPTIONS

Designation	Description	KT 53	*	ArtNo.
	left			
	10 mm	•	01	8012-1290
	30 mm	•	01	8012-1158
	50 mm	•	01	8012-1165
	right			
	10 mm	•	01	8012-1289
Access port with silicone plug	30 mm	•	01	8012-1155
	50 mm	•	01	8012-1163
	top			
	10 mm	•	01	8012-1288
	30 mm	•	01	8012-1152
	50 mm	•	01	8012-1161

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Designation	Description	KT 53	*	ArtNo.
	100 mm	•	01	8012-1168
Alarm output, zero-voltage	for temperature (±2 °C), accessible via 6-pin DIN socket (max. 24 V - 2.5 A), with audible signal that can be switched off	•	-	8012-0982
Calibration certificate, expanded	for temperature; for extending the measurement in center of chamber to include another test temperature	•	-	8012-1122
	for temperature, measurement in center of chamber at specified temperature	•	-	8012-1141
Calibration certificate,	temperature measurement incl. certificate, 9 measuring points at specified temperature	•	-	8012-1558
temperature	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	•	-	8012-1579
	temperature measurement incl. certificate and 27 measuring points at specified temperature	•	-	8012-1600
Door lock	lockable door handle	•	-	8012-1668
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	•	-	8012-0935
Shelf, reinforced	positioned at bottom level, max. load 45 kg, with additional attachment for operation of shaking device, stirring device or roller bottle system	•	-	8012-0818

ACCESSORIES

Designation	Description	KT 53	*	ArtNo.
	convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units.			
	version 4, PROFESSIONAL edition	•	_	9053-0040
APT-COM™ 4	for simple logging and documentation requirements with up to 5 networked units.			
APT-COM [™] 4	version 4, BASIC edition	•	_	9053-0039
	for working under GLP-compliant conditions. Measured values are documented in a tamper- proof way in line with the requirements of FDA Regulation 21 CFR 11.			
	version 4, GLP edition	•	-	9053-0042
	Basic set consisting of 2 pieces, attachment material, control unit for max. 4 light strips, 100-240 V, 50/60 Hz			
	Basic set 300, length 30 cm	•	-	8012-1107
LED light bars	Expansion set consisting of 2 pieces, attachment material: clips. For expanding the basic set of light bars			
	Expansion set 300, length 30 cm	•	-	8012-1716
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	•	-	8012-2250
Qualification documents	IQ/OQ/PQ documents – supporting documents for validation performed by customers, according to customer requirements, PQ section added to qualification folder IQ/OQ; parameters: temperature, CO_2 , O_2 – or pressure, depending on unit			

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Designation	Description	KT 53	*	ArtNo.
	Digital in PDF format	•	-	7057-0005
	- Hard copy inside folder	•	-	7007-0005
	IQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ checklists incl. calibration guide and comprehensive unit documentation; parameters: temperature, CO_2 , O_2 , pressure, depending on unit			
	- Digital in PDF format	•	-	7057-0001
	Hard copy inside folder	•	-	7007-0001
Rack	stainless steel	•	-	8012-2047
Rack, reinforced	stainless steel, with fasteners (1 set of 4)	•	-	8012-0829
ack accessories	fasteners (1 set of 4) for additional security of racks	•	-	8012-2280
Rubber pads	set anti-slip feet	•	-	8012-2030
helf, perforated	Stainless steel	•	-	8012-2083
able on castors	stable cart, casters with locking brakes, dimensions: W 1,000 x D 800 x H 780 mm	•	-	9051-0018

SERVICES

Designation	Description	*	ArtNo.
Calibration services			
	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate Travel to be quoted separate.	-	DL30-0135
Temperature calibration	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate Travel to be quoted separate.	_	DL30-0102
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 3 shelves are required.	_	DL30-0109
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 2 shelves are required.	_	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate. Travel to be quoted separate. A total of 3 shelves are required.	_	DL30-0127
Installation services			
Unit installation	Connect the unit to the customer-side connections (electricity, water, wastewater, gas), basic functions check, brief operating instructions. (excl.: unpacking, setup, controller instructions, programming, installation work) Travel to be quoted as separate.	_	DL10-0100
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming. Travel to be quoted as separate Limited to 3 hours.	-	DL10-0500
Maintenance services			

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Designation	Description	*	ArtNo.
BRONZE 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate. 10% Discount on Spare Parts and Labor for any additional Services needed Wear + tear parts to be purchased or billed to customer. Travel to be quoted as separate.	_	DL20-0720
GOLD 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate of Temperature. 25% Discount on Spare Parts and Labor for any additional Services needed. One additional courtesy visit per year can be used for service visit or operator. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	_	DL20-0945
Preventive maintenance	One-off maintenance service in accordance with maintenance schedule. Visual inspection of mechanical and electrical components, testing of all key functions. Checking a test temperature specified by the user in center of usable space without certificate. Wear + tear parts need to be purchased or billed to customer. Travel to be quoted as separate.	_	DL20-0604
SILVER 3-year maintenance contract	Annual Device Inspection Includes Preventive Maintenance with Calibration Certificate 15% Discount on Spare Parts and Labor for any additional Services needed One additional courtesy visit per year can be used for service visit or operator training. Wear + tear parts to be purchased or billed to customer. Travel to be quoted separate.	_	DL20-0845
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder. Travel to be quoted separate.	_	DL41-0200
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder. Travel to be quoted separate.	_	DL44-0500
Warranty service			
1-year warranty extension	The warranty is extended by 1 year from the delivery date, wear parts are excluded	-	DL50-0010

NOTES

01 Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge.

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BINDER Environmental Testing

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