

KUBOTA

Micro Refrigerated Centrifuge



3780

3740

3700

What are the differences ?



Model 3780

High Speed model

Saves time with high RCF of 30,030xg.

Maximum Speed – 18,100rpm

Maximum RCF – 30,030xg

Rotors available – 10 types

Model 3740

Remarkable multi-purpose model

4x50/15mL conical tubes with swing rotor and plate rotor can be used.

Maximum Speed – 15,000rpm

Maximum RCF – 22,140xg

Rotors available – 14 types

Model 3700

Standard model

Standard micro refrigerated centrifuge in function and value.

Maximum Speed – 15,000rpm

Maximum RCF – 22,140xg

Rotors available – 11 types

The appearance of 3740 and 3700 is almost same as that of 3780.

3 models of line-up. One-touch rotor function enables exchanging rotors easily. Angle rotors are autoclavable. 2 types of bio sealed rotors are available.

The memory flashing function allows storage of operating time (1sec. – 90 sec.) automatically and recall repeatedly.

Pre-cooling function enables getting low temperature before experiment.

Centrifuge can be operated by setting RCF (xg). Integration function g.sec value can be measured, and centrifuge can be operated by setting g.sec value.

The centrifuges conform to the international safety standard IEC-61020-2-020.

Automatic rotor identification

Equipped with various sensors for safety. Stops at occurrence of an abnormality.

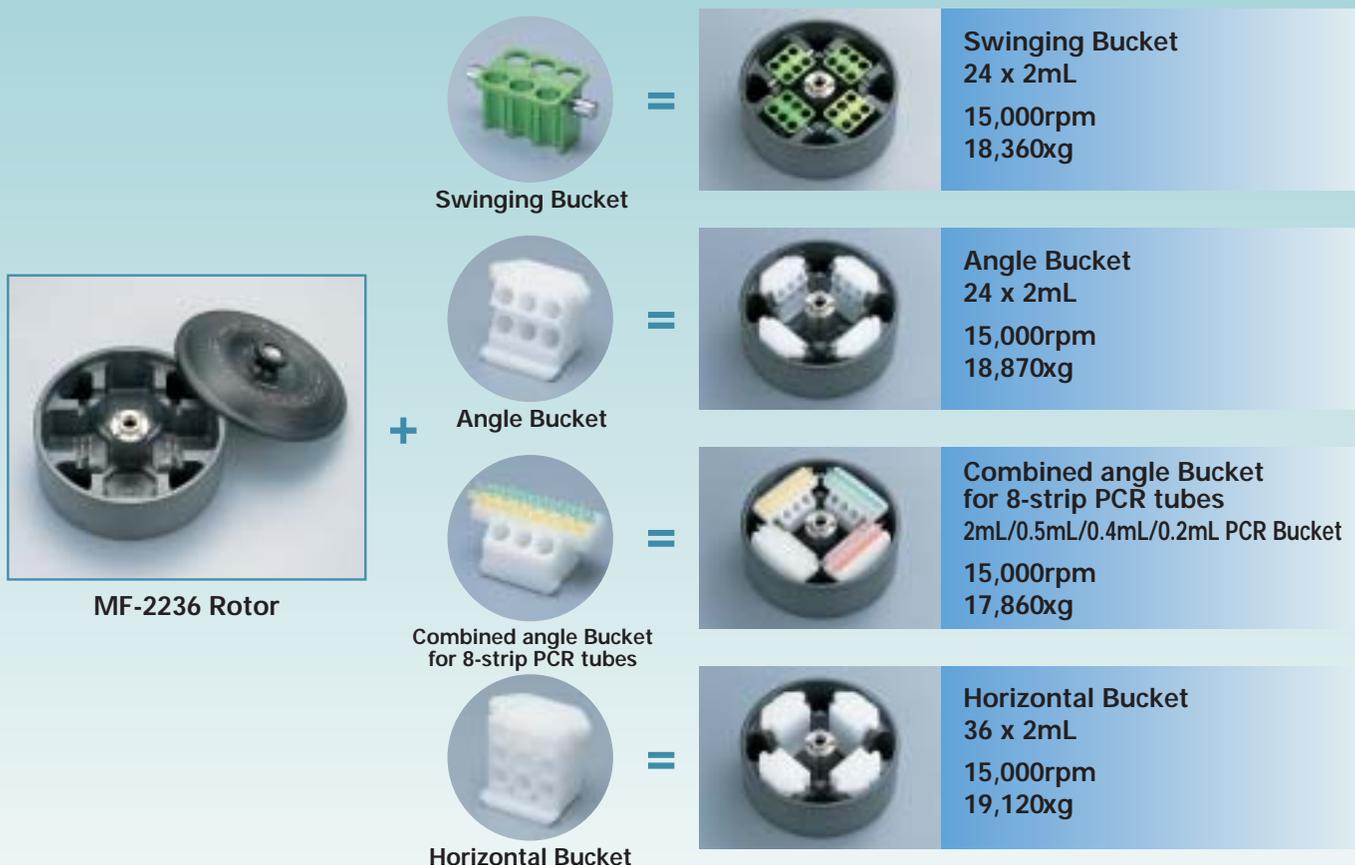
Sample temperature is kept at 4 °C (at ambient temperature 25 °C).

Refer to rotor list for details.

Model	3780	3740	3700
Maximum Speed	18,100rpm	15,000rpm	
Maximum RCF	30,030xg	22,140xg	
Maximum Capacity	228mL		
No. of rotors available	10	14	11
Control System	Microprocessor control (brushless motor) / Speed, RCF, Time, g.sec value, Temp, Acceleration/Deceleration (3 levels), 5 memory channels.		
Dimensions	37(W) x 50(D) x 79(H) cm		Refrigerant R134a
Weight	80kg	81kg	80kg

4 types of buckets can be used with this rotor. It helps saving cost and time of centrifuging.

High Speed Centrifuging
 Maximum speed : 15,000rpm
 Maximum RCF : 19,120xg



Multi Rotor MF-2236

	Rotor Name	Nominal Capacity	3780/3740/3700		Bucket Code No.	Tube rack Adaptor Code No.
			Maximum rpm	Maximum RCF x g		
	Swinging Bucket	24 x 2mL	15,000	18,360	053-5860	
		24 x 0.5mL	15,000	15,090	053-5860	055-7590
		24 x 0.4mL	15,000	17,860	053-5860	055-7580
		24 x 0.2mL PCR	15,000	11,820	053-5860	055-0500
	Angle Bucket	24 x 2mL	15,000	18,870	053-2000	
		24 x 0.5mL	15,000	16,100	053-2000	055-7590
		24 x 0.4mL	15,000	18,360	053-2000	055-7580
		24 x 0.2mL PCR	15,000	13,330	053-2000	055-0500
	Combined Angle Bucket	8 x 0.2mL 8-strip PCR	15,000	17,860	053-6000	
		12 x 2mL	15,000	15,600	053-6000	
		12 x 0.5mL	15,000	13,330	053-6000	055-7590
		12 x 0.4mL	15,000	15,340	053-6000	055-7580
		12 x 0.2mL PCR	15,000	11,320	053-6000	055-0500
	Horizontal Bucket	36 x 2mL	15,000	19,120	053-3000	
		36 x 0.5mL	15,000	15,850	053-3000	055-7590
		36 x 0.4mL	15,000	18,610	053-3000	055-7580
		24 x 0.2mL PCR	15,000	13,330	053-3000	
		36 x 0.2mL PCR	15,000	12,580	053-3000	055-0500

22,140xg · Rotor for Conical Tubes

15,000rpm/RCF 22,140xg

Proteins with high viscosity can be centrifuged.

Cap support structure which prevents 50mL conical tubes from breaking is adopted.



Autoclavable (121°C)

AF-5004CH 4 x 50mL Conical tube

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF xg	
AF-5004CH	4 x 50mL Conical tube	30 x 117	15,000	22,140	055-1250
	4 x 15mL Conical tube	17 x 121	15,000	21,130	

As for 50mL conical tubes (PP), Iwaki, Greiner, Corning, Sarstedt, Falcon, Fisher, Labcon, Nalgene Nunc tubes (cap diam. : 36mm or less) are available.

Nalgene Nunc's 35mL oak ridge conical tubes (PC, PPCO) are also available.

Autoclavable times are limited. Refer to operation and service manual.

Bio Sealed Rotors

AF-2730 rotor and AF-5004CS rotors are certified as "Bio sealed rotors" by CAMR (U.K.).

Even if tubes are broken, samples do not come out of the rotor. These rotors can be used for inspections of BSE, SARS, and etc.



Autoclavable (134°C)

AF-2730 30 x 2mL

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF xg	
AF-2730	30 x 2mL	9.5 ~ 11.0 x 36 ~ 42	14,000	21,040	055-1240
	14 x 0.5mL	7.0 ~ 7.9 x 25 ~ 34	14,000	17,530	
	30 x 0.4mL	5.4 ~ 6.1 x 26 ~ 48	14,000	20,380	
	14 x 0.2mL PCR	5.9 ~ 6.3 x 20 ~ 24	14,000	16,430	

Autoclavable times are limited. Refer to operation and service manual.



Autoclavable (134°C)

AF-5004CS 4 x 50mL Conical tube

Rotor Name	Nominal Capacity	Tube sizes (mm) diam. x length	3740		Adaptor Code No.
			Maximum Speed rpm	Maximum RCF xg	
AF-5004CS *	4 x 50mL Conical tube	30 x 117	12,000	14,970	055-1280
	4 x 15mL Conical tube	17 x 121	12,000	14,490	

As for 50mL conical tubes (PP), Iwaki, Greiner, Corning, Sarstedt, Falcon, Fisher, Labcon, Nalgene Nunc tubes (cap diam. : 36mm or less) are available.

Nalgene Nunc's 35mL oak ridge conical tubes (PC, PPCO) are also available.

Autoclavable times are limited. Refer to operation and service manual.

Plate Rotor



Autoclavable (121°C)

PF-23
Plate Rotor
6 x Micro-plate
2 x Deepwell-plate

Rotor Name	Nominal Capacity	3740		Bucket Code No.
		Maximum Speed rpm	Maximum RCF xg	
PF-23	6 x Micro-plate 2 x Deepwell-plate	4,000	1,790	Attached to Rotor

Autoclavable times are limited. Refer to operation and service manual.

Micro Rotor



AF-2018

18 x 2mL

Quick Acceleration: 6 seconds (3740), 9 seconds (3700)

Autoclavable (121°C)

Autoclavable times are limited. Refer to operation and service manual.

Rotor Name	Nominal Capacity	3780		3740		3700		Bucket Code No.	Tube Rack Adaptor Code No.
		Maximum Speed rpm	Maximum RCF xg	Maximum Speed rpm	Maximum RCF xg	Maximum Speed rpm	Maximum RCF xg		
AF-2018	18 x 2mL			15,000	20,630	15,000	20,630		
	18 x 0.5mL			15,000	18,110	15,000	18,110		055-7590
	18 x 0.4mL			15,000	20,120	15,000	20,120		055-7580
	18 x 0.2mL PCR			15,000	15,850	15,000	15,850		055-0500



AF-2724A

24 x 2mL, 12 x 0.5/0.2mL PCR

3 types of tubes (2mL, 0.5mL, 0.2mL PCR) can be used without adaptors.

Autoclavable (134°C)

Autoclavable times are limited. Refer to operation and service manual.

Rotor Name	Nominal Capacity	3780		3740		3700		Bucket Code No.	Tube Rack Adaptor Code No.
		Maximum Speed rpm	Maximum RCF xg	Maximum Speed rpm	Maximum RCF xg	Maximum Speed rpm	Maximum RCF xg		
AF-2724A	24 x 2mL *3	18,100 *2	30,030	15,000	20,630	15,000	20,630		
	12 x 0.5mL	18,100 *2	24,540	15,000	16,850	15,000	16,850		
	24 x 0.4mL	18,100 *2	29,670	15,000	20,380	15,000	20,380		055-7580
	12 x 0.2mL PCR	18,100 *2	21,610	15,000	14,840	15,000	14,840		



AF-2730

Bio Sealed Rotor

30 x 2mL, 14 x 0.5/0.2mL PCR

This rotor is useful for countermeasure of Bio hazard.

3 types of tubes (2mL, 0.5mL, 0.2mL PCR) can be used without adaptors.



Autoclavable (134°C)

Autoclavable times are limited. Refer to operation and service manual.

Rotor Name	Nominal Capacity	3780		3740		3700		Bucket Code No.	Tube Rack Adaptor Code No.
		Maximum Speed rpm	Maximum RCF xg	Maximum Speed rpm	Maximum RCF xg	Maximum Speed rpm	Maximum RCF xg		
AF-2730	30 x 2mL	14,000	21,040	14,000	21,040	14,000	21,040		
	14 x 0.5mL	14,000	17,530	14,000	17,530	14,000	17,530		
	30 x 0.4mL	14,000	20,380	14,000	20,380	14,000	20,380		055-1240
	14 x 0.2mL PCR	14,000	16,430	14,000	16,430	14,000	16,430		



AF-2236

36 x 2mL, 12 x 0.2mL PCR

2 types of tubes (2mL, 0.2mL PCR) can be used without adaptors.

Caps of 2mL tubes can be inserted in the same direction.

Autoclavable (134°C)

Autoclavable times are limited. Refer to operation and service manual.

Rotor Name	Nominal Capacity	3780		3740		3700		Bucket Code No.	Tube Rack Adaptor Code No.
		Maximum Speed rpm	Maximum RCF xg	Maximum Speed rpm	Maximum RCF xg	Maximum Speed rpm	Maximum RCF xg		
AF-2236	36 x 2mL	16,000 *2	24,900 *1	15,000	21,880 *1	15,000	21,880 *1		
	12 x 0.2mL PCR	16,000 *2	17,460	15,000	15,340	15,000	15,340		
	36 x 0.5mL	16,000 *2	22,320 *1	15,000	19,620 *1	15,000	19,620 *1		055-7590
	36 x 0.4mL	16,000 *2	24,610 *1	15,000	21,630 *1	15,000	21,630 *1		055-7580
	36 x 0.2mL PCR	16,000 *2	19,750 *1	15,000	17,360 *1	15,000	17,360 *1		055-0500

*1 This is the RCF of outer tubes.
RCF of 2mL tubes : Inner 20,890xg / Outer 24,900xg
RCF over 20,000xg is useful for BSE inspection.

*2 To maintain 4 °C,
The maximum speed with AF-2724A is 17,000rpm / 26,490xg (7 °C at 18,100rpm)
The maximum speed with AF-2236 is 15,000rpm / 21,880xg (6 °C at 16,000rpm)
As for other rotors, 4 °C is maintained at their maximum speed. (at an ambient temperature 25 °C)

*3 When 1.5mL tubes are used at over 16,000rpm, 055-6020 adaptors are necessary.

Micro Rotor



AF-2048
Angle Rotor
48 x 2mL

Autoclavable (121°C)

Autoclavable times are limited. Refer to operation and service manual.

Rotor Name	Nominal Capacity	3780		3740		3700		Bucket Code No.	Tube Rack Adaptor Code No.
		Maximum Speed rpm	Maximum RCF x g	Maximum Speed rpm	Maximum RCF x g	Maximum Speed rpm	Maximum RCF x g		
AF-2048	48 x 2mL			12,000	15,780 *1				
	48 x 0.5mL			12,000	14,330 *1				055-7590
	48 x 0.4mL			12,000	15,620 *1				055-7580
	48 x 0.2mL PCR			12,000	12,880 *1				055-0500

*1 RCF of outer tubes. As for details, contact your distributor.

Rotors for Conical Tubes



AF-5004CH
4x50mL conical tubes
High RCF : 22,140xg

Autoclavable (121°C)

Autoclavable times are limited. Refer to operation and service manual.

Rotor Name	Nominal Capacity	3780		3740		3700		Bucket Code No.	Tube Rack Adaptor Code No.
		Maximum Speed rpm	Maximum RCF x g	Maximum Speed rpm	Maximum RCF x g	Maximum Speed rpm	Maximum RCF x g		
AF-5004CH	4 x 50mL Conical tube *1	15,000	22,140	15,000	22,140	15,000	22,140		
	4 x 15mL Conical tube	15,000	21,130	15,000	21,130	15,000	21,130		055-1250



AF-5004CS
Bio sealed rotor
4 x 50mL Conical tubes
Useful for countermeasure of bio hazard.

Autoclavable (134°C)

Autoclavable times are limited. Refer to operation and service manual.

Rotor Name	Nominal Capacity	3780		3740		3700		Bucket Code No.	Tube Rack Adaptor Code No.
		Maximum Speed rpm	Maximum RCF x g	Maximum Speed rpm	Maximum RCF x g	Maximum Speed rpm	Maximum RCF x g		
AF-5004CS	4 x 50mL Conical tube *1	12,000	14,970	12,000	14,970	12,000	14,970		
	4 x 15mL Conical tube	12,000	14,490	12,000	14,490	12,000	14,490		055-1280



AF-5004CA
4 x 50mL Conical tubes

Autoclavable (121°C)

Autoclavable times are limited. Refer to operation and service manual.

Rotor Name	Nominal Capacity	3780		3740		3700		Bucket Code No.	Tube Rack Adaptor Code No.
		Maximum Speed rpm	Maximum RCF x g	Maximum Speed rpm	Maximum RCF x g	Maximum Speed rpm	Maximum RCF x g		
AF-5004CA	4 x 50mL Conical tube *1	12,000	14,170	12,000	14,170	12,000	14,170		
	4 x 15mL Conical tube	12,000	13,520	12,000	13,520	12,000	13,520		055-1280

*1 As for 50mL conical tubes (PP), Iwaki, Greiner, Corning, Sarstedt, Falcon, Fisher, Labcon, Nalgene Nunc tubes (cap diam. : 36mm or less) are available. Nalgene Nunc's 35mL oak ridge conical tubes (PC,PPCO) are also available.

Fixed Angle Rotor (Middle Size)

**AF-1408A**

8 x 14mL

Use Falcon's 352006, 352059 tubes

Autoclavable times are limited. Refer to operation and service manual.

Rotor Name	Nominal Capacity	3780/3740/3700		Tube Rack Adaptor Code No.
		Maximum Speed rpm	Maximum RCF xg	
AF-1408A	8 x 14mL	12,000	14,170	

Autoclavable (121°C)

**AF-5004R**

4 x 50mL

10mL anti-bio hazard sealing adaptors (code no. 055-4280) can be used.

Autoclavable times are limited. Refer to operation and service manual.

Rotor Name	Nominal Capacity	3780/3740/3700		Tube Rack Adaptor Code No.
		Maximum Speed rpm	Maximum RCF xg	
AF-5004R	4 x 50mL	15,000	21,880	
	4 x 12mL	15,000	20,630	055-7410
	4 x 10mL	15,000	20,630	055-4280 *1

Autoclavable (121°C)

*1 This adaptor is to be used for countermeasure of bio hazard.

**AF-3806**

6 x 38mL

Autoclavable times are limited. Refer to operation and service manual.

Rotor Name	Nominal Capacity	3780/3740/3700		Tube Rack Adaptor Code No.
		Maximum Speed rpm	Maximum RCF xg	
AF-3806	6 x 38mL	15,000	21,880	

Autoclavable (121°C)

SF-240 Swinging Bucket Rotor



Used for Model 3740 only

Buckets

24 x 2mL
Code No.053-480024 x 5mL blood collecting tube/10mL
Code No.053-58504 x 15mL Conical tube
15mL Glass tube/
10mL blood collecting tube
Code No.053-49108 x 15mL Conical tube
15mL Glass tube/
10mL blood collecting tube
Code No.053-490010mL blood collecting tube/15mL Glass tube
4 x 50mL Glass tube
Code No.053-4990
Adaptor for 10mL blood collecting tube/15mL glass tube
Code No.055-74004 x 50mL Conical tube
Code No.053-5010
Adaptor applicable for 15mL/50mL
Code No.055-6010

Rotor Name	Nominal Capacity	Rotation radius cm	Maximum Speed rpm	Maximum RCF xg *1	Bucket Code No.	Tube Rack Adaptor Code No.
SF-240	24 x 2mL *2	13.5	4,000	2,410	053-4800	
	24 x 5mL narrow blood collecting tubes / 10mL *4	13.6	4,000	2,430	053-5850	
	4 x 10mL blood collecting tube / 15mL	14.2	4,000	2,540	053-4910	
	4 x 15mL Conical tube	14.4	4,000	2,580	053-4910	
	8 x 10mL blood collecting tube / 15mL	14.1	4,000	2,520	053-4900	
	8 x 15mL Conical tube	14.4	4,000	2,580	053-4900	
	4 x 10mL blood collecting tube / 15mL	14.0	4,000	2,500	053-4990	055-7400 *5
	4 x 50mL	14.2	4,000	2,540	053-4990	
	4 x 50mL Conical tube	14.3	4,000	2,560	053-5010	
	4 x 15/50mL Conical tube	14.6/14.0	4,000	2,610/2,500	053-5010	055-6010 *3

*1 Display of RCF is set at rotation radius 14.4cm. Refer to operation and service manual of SF-240 rotor.

*2 Supports for special sized tubes can be manufactured. Contact our distributor.

*3 This adaptor can be used for both 15mL and 50mL conical tubes.

*4 24 narrow, short blood collecting tubes made by Sekisui, Nipro, and Becton Dickinson can be used. 16 Becton Dickinson tubes made by Termo can be used.

*5 Cushions (Code No.024-1400) are necessary.

Tube Size List diam. x length (mm)

Micro Tubes

2mL	9.5 ~ 11.0 x 36 ~ 42
0.5mL, 0.5mL PCR	7.0 ~ 7.9 x 25 ~ 34
0.4mL	5.4 ~ 6.1 x 26 ~ 48
0.2mL PCR	5.9 ~ 6.3 x 20 ~ 24

Conical/Middle Size Tubes

5mL Narrow blood collecting tubes / 10mL Glass tubes	12.5 ~ 13.3 x 46 ~ 105
12mL	15.9 ~ 16.4 x 103 ~ 110
14mL	17 x 75 ~ 100
10mL Blood collecting tubes / 15mL Glass tubes	15.0 ~ 17.2 x 87 ~ 110
15mL Conical tubes	17 x 121
38mL	25.4 ~ 25.7 x 87 ~ 95
50mL (Plastic)	28.7 ~ 29.0 x 103 ~ 109
50mL Conical tubes	30 x 117
50mL Glass tubes	27 ~ 37 x 95 ~ 110

Micro and Deep well Plate

86(W) x 128(D) x 52(H) cm

Specifications

Model 3780/3740/3700

- Maximum Speed ● 18,100rpm (3780), 15,000rpm (3740/3700)
- Maximum RCF ● 30,030xg (3780), 22,140xg (3740/3700)
- Maximum Capacity ● 228mL
- Control system ● Micro-processor control (Brushless motor)
 - Speed, RCF, Time, g-sec, Temp, Acceleration & Deceleration, 5 memory channels
- Abnormality detected display ● Lid open, Imbalance, Over speed, abnormally high temperature, Abnormal rotor setting, Function for detecting an occurrence of electrical abnormality in motor, inverter, lid interlock, speed sensor and temperature sensor.
- Acceleration / Deceleration ● Three-level switching; Rapid, Slow and Super Slow
 - Speed setting ● Digital display, From 200 to 18,100rpm (3780), From 200 to 15,000rpm (3740/3700), 10rpm increments
 - Speed indication ● Digital display, From 0 to 18,600rpm (3780), From 0 to 15,500rpm (3740/3700), 10rpm increments
 - RCF setting ● Digital display, From 0 to 30,030xg (3780), From 10 to 22,140xg (3740/3700), 10xg increments
 - RCF indication ● Digital display, From 0 to 31,720xg (3780), From 0 to 23,370xg (3740/3700), 10xg increments
- Integrator setting and indication ● Digital display, From 1.00 to 9.99 × 10⁹ g · sec
- Timer setting and indication ● Digital display, with Hold and Memory Flashing
 - from 1 sec. to 100 sec., in 1 sec. increment setting and indication.
 - from 100 sec. to 990 sec., in 10 sec increments setting, in 1 sec. increments indication.
 - from 1 min. to 100 min., in 1 min. increment setting and indication.
 - from 100 min. to 990 min., in 10 min. increments setting, in 1 min. increments indication.
- Temperature setting and indication ● Digital display, 1 °C increments setting and indication from -20°C to 40°C
- Power requirements ● Single phase AC110V±10%, 115V±10%, 50/60Hz, 15A
Single phase AC220V±10%, 230V±10%, 50/60Hz, 10A
- Rated voltage and Rated current ● 3700: 110/115V 8.5A, 220/230V 4.4A
3740: 110/115V 10A, 220/230V 5.2A
3780: 110/115V 9.1A, 220/230V 4.8A
- Power consumption and Heat output ● 3700: 110/115V 730W 2.6MJ/h, 220/230V 760W 2.7MJ/h
3740: 110/115V 830W 3.0MJ/h, 220/230V 870W 3.1MJ/h
3780: 110/115V 770W 2.8MJ/h, 220/230V 840W 3.0MJ/h
- Dimensions, weight ● 370(W) x 500(D) x 790(H) mm^{*}; 80kg (3780/3700), 81kg (3740)
- Certificates of conformity ● IEC 61010-2-020
CE Marking (AC220V and 230V version)

(*1) Those of projections are not included.

All specifications and external appearance subject to change without notice.

* On Model 3700, 3740 and 3780 only use KUBOTA made rotor, adapter and tube rack. Do not attempt use rotors, adapters or tube racks made by other manufacturers.

* The rotor mentioned in the catalogue is usable on other KUBOTA centrifuge models. For details, refer to the catalogues relevant to each model.

* Follow instructions given in the relevant Instruction & Service Manual for operating centrifuges.

URL <http://www.centrifuge.jp>

Kubota has acquired Certification of ISO 9001 and ISO 13485.

 Safety Precautions	For your safe use of the equipments, be sure to read the instruction manual carefully before you start its operation.	Parts may be adversely affected by heat, humidity and specimens or deteriorated by aging resulting in functional failures or may even lose their safety characteristic to cause accidents.
 DISCONTINUE USE	Always discontinue use when phenomena listed at right appear. <ul style="list-style-type: none"> •The rotor or bucket has been found to be damaged or corroded. •A burnt smell comes out of the equipment. •You receive a minor electrification when you touch the equipment body by a naked hand. •Some other abnormality or failure has been found occurring. 	<div style="background-color: yellow; padding: 5px; display: inline-block;">IMPORTANT</div> To prevent occurrences of functional failures or accidents, turn off the power switch, pull out the power cable plug from the plug socket and be sure to contact your nearest Kubota Dealer, or an office of Kubota Corporation when there is no Kubota Dealer in your neighbourhood.

KUBOTA CORPORATION

<http://www.centrifuge.jp>

29-9 Hongo 3-chome, Bunkyo-ku, Tokyo 113-0033, Japan

Tel +81 3 3815 1331 Fax +81 3 3814 2574

E-mail: f-trade@kubotacorp.co.jp

Note: This catalogue is not for distribution in the USA, Canada, Mexico and Australia as products shown are not for sale in these countries.