

## BENCHTOP CENTRIFUGES

# — UNIVERSAL 320 | 320 R

## A UNIVERSAL CHOICE

The UNIVERSAL 320 is a compact, versatile and indispensable general purpose centrifuge. Excellent performance and a comprehensive range of accessories enable the UNIVERSAL 320 to carry out virtually any centrifuging tasks including plates, blood tubes, cell culture, microliter and cytology.

This unit is available with refrigeration and a temperature range from -20 °C to +40 °C (UNIVERSAL 320 R).



## — HIGHLIGHTS

- RPM: 500 - 16,000 min<sup>-1</sup>  
Adjustable in increments of 10
- max. RCF: 24,900
- max. capacity: 4 x 200 ml / 6 x 94 ml
- the universal choice among the benchtop centrifuges
- choice of 18 rotors
- IVD-conform according to directive 98/79/EC
- noise level of 48 dB(A) with angle rotor 1611
- impulse button for short centrifugation
- easy operation with keypad and control knob
- impulse key for short cycle mode
- 9 program memories
- 9 individual acceleration and 10 deceleration stages
- model 320 R coolable from -20 to +40 °C with pre-cooling function

## — FEATURES

- metal housing and lid
- viewing port in the lid
- powered lid lock
- lid dropping protection
- emergency lid lock release
- stainless steel chamber
- automatic rotor recognition
- brushless drive
- error display
- imbalance switch-off
- backlit panel with actual values of all parameters
- auditory message after completion of the centrifugation run

## TECHNICAL DATA

	UNIVERSAL 320 non-refrigerated	UNIVERSAL 320 R refrigerated
voltage *)	200 – 240 V 1 ~	200 – 240 V 1 ~      240 V 1 ~
frequency	50 – 60 Hz	50 – 60 Hz      60 Hz
consumption	400 VA	800 VA
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B
max. capacity	4 x 200 ml / 6 x 94 ml	4 x 200 ml / 6 x 94 ml
max. RPM	16,000 min <sup>-1</sup>	16,000 min <sup>-1</sup>
max. RCF	24,900	24,900
running time	1sec – 99 min: 59 sec, ∞ continuous run, short cycle mode (impulse button)	1sec – 99 min: 59 sec, ∞ continuous run, short cycle mode (impulse button)
dimensions (W x D x H)	401 x 529 x 346 mm	407 x 698 x 346 mm
weight	approx. 31 kg	approx. 52 kg
noise level	48 dB (A) with rotor 1611	50 dB (A) with rotor 1611
temperature control, infinitely variable	-	from -20 to +40 °C
<b>Cat. No.</b>	<b>1401</b>	<b>1406</b>
100 – 127 V 1 ~ / 50–60 Hz *)	1401-01	1406-01
consumption	400 VA	950 VA
emission, Immunity	FCC class B	FCC class B

\*) Other voltages on request.

## AVAILABLE ROTORS

SWING-OUT ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
swing-out rotor, 4-places	90°	4,500 min <sup>-1</sup>	4x200 ml	<b>1554</b>	3
swing-out rotor, 4-places	90°	5,000 min <sup>-1</sup>	4x100 ml	<b>1494</b>	6
swing-out rotor, 4-places	90°	4,000 min <sup>-1</sup>	4x100 ml	<b>1624</b>	9
swing-out rotor, 4-places	90°	4,500 min <sup>-1</sup>	4x100 ml	<b>1324</b>	12
swing-out rotor, 8-places	90°	4,000 min <sup>-1</sup>	8x15 ml	<b>1611</b>	14
swing-out rotor, 12-places	55° / 60° / 80°	4,000 min <sup>-1</sup>	12x15 ml	<b>1628</b>	14
swing-out rotor, 8-places	45°	5,000 min <sup>-1</sup>	8x50 ml	<b>1617</b>	15
swing-out rotor, 6-places	90°	4,000 min <sup>-1</sup>	6x50 ml	<b>1619</b>	15
swing-out rotor, 2-places	90°	4,000 min <sup>-1</sup>	10 plates	<b>1460</b>	16
swing-out rotor, 24-places	90°	13,000 min <sup>-1</sup>	24x2 ml	<b>1555</b>	16
<b>ANGLE ROTORS</b>					
angle rotor, 24-places	50°	16,000 min <sup>-1</sup>	24x2 ml	<b>1552</b>	17
angle rotor, 30-places	45°	14,150 min <sup>-1</sup>	30x2 ml	<b>1553</b>	17
angle rotor, 64-places	45°	13,000 min <sup>-1</sup>	64x0.2 ml	<b>1551</b>	18
angle rotor, 18-places	45°	14,150 min <sup>-1</sup>	18 x 5 ml	<b>1627</b>	18
angle rotor, 6-places	35°	9,000 min <sup>-1</sup>	6x94 ml	<b>1556</b>	19
angle rotor, 12-places	35°	6,000 min <sup>-1</sup>	12x15 ml	<b>1613</b>	20
angle rotor, 12-places	35°	12,000 min <sup>-1</sup>	12x15 ml	<b>1615</b>	21
angle rotor, 8-places	45°	4,500 min <sup>-1</sup>	8x50 ml	<b>1418</b>	22