

# orto alresa

Centrifuges and laboratory products

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General applications: Centrifuges high capacity

## DILITCEN 22 R

# DILITCEN 22 R

TFT



**Max. capacity:** 4 x 1000 ml.

**Max. speed:** 21.948 xg / 14.300 RPM

The largest of our benchtop machines, with a capacity of up to 4 litres and an ergonomic design that enables easy loading of the rotor, as well as traceability of the positioning of the samples so as to balance the load and for easy identification. It has a wide range of accessories with capacity for four 1.000 ml. bottles, microplates, microtubes and a large number of positions for the most commonly used 15 ml. conical, 50 ml. conical, 15 ml., 10 ml. and 5 ml. tubes for clinical as well as biotechnology applications.

Its colour TFT touch screen offers performance that enables, in addition to controlling the equipment by operational parameters, the possibility of exporting data for analysis and timer programmed operation. The autonomy provided by this equipment facilitates automation of work cycles and modes. This also ensures traceability of the process, not leaving any parameter uncontrolled and maintaining the process at all times.

It has a refrigeration system that enables it to maintain the minimum temperature of the chamber below 4°C regardless of the type of rotor and the speed selected.

## Features

### TFT color touch screen, visible from more than 3 m.:

- Shows RPM and RCF, time, acceleration/deceleration values (PCBS) and unbalancing location system (ULS).
- Speed programming in 10 RPM/10 xg steps.
- Real RCF values on screen based in accessories configuration.
- Count up/down from "0" or at "set RPM/RCF" for test reproducibility.
- Timer countdown/up from "0" or at "set RPM/ RCF" for reproducible tests.
- Timer from 1 min to 99 hours programmable in 1 sec. steps and hold position.
- PCBS: Progressive controlled acceleration and braking system up to 175 selectable ramps that prevents sample homogenization after separation.
- ULS: Unbalancing location system indicating on the screen the number of the bucket which produces the unbalance switch off.
- 40 programmable memories, with protection under password.
- Several acoustic and visual messages warning the user the device situation.

## Easy to use

- Microprocessor controlled. PC connection.
- Induction motor maintenance free (brushless).
- Rotors and adapters list on memory.
- Noise level: below 60 dB.
- Start, stop, open lid and short spin with adjustable speed buttons.
- Option of free/locked adjustment of RPM/ RCF along the run.
- Automatic open lid, programmable.
- Last values remain in memory.
- Automatic rotor recognition. Over-speed protection.

## Safety

- Lid provided with security systems:
  - Automatic lid lock system, motorized with double lock.
  - Emergency lid-lock release.
  - Locking and protection against opening along the run.
  - Lid dropping protection.
  - Port in the lid for calibration and operation checking.
- Unbalance detection and switch off.
- Protection safety ring between the centrifugation chamber and the housing.
- Chamber of centrifugation in stainless steel (easy cleaning).
- Rotors can be removed with the lid closed. Hermetic lids.
- Rotors and adapters autoclavable, easy to install by the user.
- Forced ventilation to reduce temperature increasing.
- Automatic disconnection for energy saving up to 8 h., with deactivation option.

## Refrigeration

- Remains the refrigeration after centrifugation process.
- Precooling program with rotor spinning and temperature selectable.
- Guarantee 4 °C at maximum RPM.
- Temperature range from -20°C (-4°F) to 40°C (104°F) in 1°C/1°F steps. Programmable in °C o °F.
- Temperature sensor inside the chamber.
- Gas R 449A HFO (CFC free).

**EU Directives:** 2011/65/EU, 2012/19/EU, 2014/30/EU, 2014/35/EU, 98/79/EC.

**Regulation n°:** (EC) 1005/2009, (EU) 517/2014.





**Standards:** EN 61010-1, EN 61010-2-101, EN 61010-2-020, EN 61326-2-6, EN 61326-1.

## Versions







	Dimensions (mm)(w x d x h)			Net weight (Kg)	Voltage (V)	Frecuency (Hz)	Consumption (W)	Z max advisable (Hz)
CE 221	720	780	430	122	220-230	50-60	1050	<  0.446
CE 222	720	780	430	122	110-120	60	1050	<  0.446

## Accessories

### Centrifuge Dilicen 22 R

								MICROTITER PLATES							
		RT 279		RT 278		RT 299		RT 277		RT 265		RT 284		RT 297	
		 (6)						 (1)(4)		 (7)		 (4)		 (4)	
ROTOR		SWING OUT		SWING OUT		SWING OUT		SWING OUT		SWING OUT		SWING OUT		SWING OUT	
Max. capacity		104 x 10 ml.		4 x 250 ml.		6 x 250 ml.		4 x 750 ml.		4 x 1.000 ml.		12/8/4 microtiter		10/6/2/2 microtiter	
RPM Max.		3.800		4.200		2.500		3.700		4.000		3.700		4.500	
Radius (mm)		185		202		212		204		205		182 (3)		166	
RCF Max. (xg)		2.987		3.984		1.481		3.122		3.667		2.786		3.758	
Min. temp. at max. speed (°C)		0		1		-5		0		2		-4		4	
SAMPLE VOLUME	Dim (mm) approx.	ADAPTERS		ADAPTERS		ADAPTERS		ADAPTERS		ADAPTERS		ADAPTERS		ADAPTERS	
		Tubes	Ref.	Tubes	Ref.	Tubes	Ref.	Tubes	Ref.	Tubes	Ref.	Tubes	Ref.	Tubes	Ref.
1.000 ml.	ø110 x 122	-	-	-	-	-	-	-	-	4	-	-	-	-	-
750 ml.	ø96 x 130	-	-	-	-	-	-	4	RE 434	4	RE 522	-	-	-	-
500 ml.	ø90 x 120	-	-	-	-	-	-	4	RE 310	4	(4)	-	-	-	-
250 ml.	ø62 x 120	-	-	4	RE 449	6	RE 530	4	RE 330	4	RE 543	-	-	-	-
100 ml.	ø48 x 100	-	-	4	RE 327	6	RE 558	4	RE 409	12	RE 544	-	-	-	-
85 ml. (hs) / 80 ml. (hs)	ø38 x 112	-	-	4	RE 498	6	RE 559	12	RE 500	-	-	-	-	-	-
80 ml.	ø44 x 100	-	-	4	RE 422	6	RE 560	8	RE 352	12	RE 557	-	-	-	-
50 ml.	ø34 x 100	-	-	4	RE 334	6	RE 561	16	RE 317	24	RE 545	-	-	-	-
50 ml. conical	ø29 x 117	-	-	4	RE 340	6	RE562	20	RE 472	32	RE 546	-	-	-	-
30 ml. / 30 ml. (hs)	ø25 x 98	-	-	12	RE 312	18	RE 563	24	RE 322	40	RE 547	-	-	-	-
15 ml.	ø16 x 100	-	-	28	RE 376	42	RE 564	72	RE 348	112	RE 551	-	-	-	-
15 ml. conical	ø17 x 122	-	-	20	RE 321	30	RE 565	52	RE 347	76	RE 548	-	-	-	-
15 ml. blood sample	ø16 x 132	-	-	28	RE 376	-	-	32	RE 441	-	-	-	-	-	-
10 ml.	ø13 x 100	104	RE 309	40	RE 343	60	RE 566	100	RE 354	168	RE 552	-	-	-	-
10 ml. blood sample	ø16 x 107	-	-	28	RE 376	42	RE 564	72	RE 348	104	RE 549	-	-	-	-
7/10 ml. blood sample	ø13 x 107	104	RE 309	28	RE 324	42	RE 567	72	RE 349	104	RE 550	-	-	-	-
5 ml.	ø13 x 75	104	-	40	RE 343	60	RE 566	100	RE 354	168	RE 552	-	-	-	-
5 ml. blood sample	ø13 x 82	104	-	28	RE 324	42	RE 567	72	RE 349	104	RE 550	-	-	-	-
10 x 100 mm	ø10 x 100	-	-	52	RE 346	78	RE 568	144	RE 315	168	RE 553	-	-	-	-
Microtubes 1,5-2 ml.	ø11x42	-	-	24	RE 440	36	RE 569	72	RE 426	132	RE 554	144	RE 460	72	RE 401
Microtubes 0,5-0,6 ml.	ø8x30	-	-	24	RE 523	36	RE 570	72	RE 466	132	RE 555	144	RE 584	72	RE 580
Microtubes 0,2-0,4 ml.	ø6x45	-	-	24	RE 458	36	RE 571	72	RE 524	132	RE 556	144	RE 585	72	RE 581
Microtiter plates	128x86x15/21/45	-	-	-	-	-	-	12/8/4	RE 307	-	-	12/8/4	-	10/6/2	-
Microtiter plates (h:80 mm)	128x86x80	-	-	-	-	-	-	-	-	-	-	-	-	2	-

(1) This rotor can be supplied with hermetic lids (RE 356). (2) This rotor can fit adapters for blood bags (RE 308). (3) Medium radius on bucket. (4) Allows different configurations depending of the microplates height. (5) RE 541 for 4 x 500 ml. (80x131 mm), only for plastic bottles.(6) Available RT 301 for 104 x 7/10 ml. bs y 10 ml. (7) This rotor can be supplied with hermetic lids (RE 572).

		RT 283		RT 280		RT 281		RT 282		HIGH SPEED			
													
		(1)(2)	(4)										
ROTOR		SWING OUT		ANGLE FIXED 45°		ANGLE FIXED 45°		ANGLE FIXED 30°		ANGLE FIXED 45°		ANGLE FIXED 30°	
Max. capacity		4 blood bags		8 x 50 ml.		4 x 100 ml.		4 x 250 ml.		30 x 1,5-2 ml.		6 x 85 ml	
RPM Max.		3.700		6.000		5.600		4.700		14.300		9.000	
Radius (mm)		204		149		138		153		96		112	
RCF Max. (xg)		3.122		5.997		4.838		3.779		21.948		10.142	
Min. temp. at max. speed (°C)		0		0		-1		-4		-1		1	
SAMPLE VOLUME	Dim (mm) approx.	ADAPTERS		ADAPTERS		ADAPTERS		ADAPTERS		ADAPTERS		ADAPTERS	
		Tubes	Ref.	Tubes	Ref.	Tubes	Ref.	Tubes	Ref.	Tubes	Ref.	Tubes	Ref.
1.000 ml.	ø110 x 122	-	-	-	-	-	-	-	-	-	-	-	-
750 ml.	ø96 x 130	4	RE 434	-	-	-	-	-	-	-	-	-	-
500 ml.	ø90 x 120	4	RE 310	-	-	-	-	-	-	-	-	-	-
250 ml.	ø62 x 120	4	RE 330	-	-	-	-	4	RE 449	-	-	-	-
100 ml.	ø48 x 100	4	RE 409	-	-	4	RE 446	4	RE 327	-	-	-	-
85 ml. (hs) / 80 ml. (hs)	ø38 x 112	12	RE 500	-	-	4	RE 380	4	RE 498	-	-	6	-
80 ml.	ø44 x 100	8	RE 352	-	-	4	RE 338	4	RE 422	-	-	-	-
50 ml.	ø34 x 100	16	RE 317	8	RE 448	4	RE 335	4	RE 334	-	-	6	RE 490
50 ml. conical	ø29 x 117	20	RE 472	8	RE 375	4	RE 341	4	RE 340	-	-	6	RE 483
30 ml. / 30 ml. (hs)	ø25 x 98	24	RE 322	8	RE 370	4	RE 332	12	RE 312	-	-	6	RE 493
15 ml.	ø16 x 100	72	RE 348	8	RE 369	16	RE 316	28	RE 376	-	-	18	RE 485
15 ml. conical	ø17 x 122	52	RE 347	8	RE 369	4	RE 339	20	RE 321	-	-	6	RE 484
15 ml. blood sample	ø16 x 132	32	RE 441	8	RE 369	-	-	28	RE 376	-	-	-	-
10 ml.	ø13 x 100	100	RE 354	24	RE 366	20	RE 320	40	RE 343	-	-	30	RE 497
10 ml. blood sample	ø16 x 107	72	RE 348	8	RE 369	16	RE 316	28	RE 376	-	-	18	RE 485
7/10 ml. blood sample	ø13 x 107	72	RE 349	8	RE 373	20	RE 320	28	RE 324	-	-	18	RE 503
5 ml.	ø13 x 75	100	RE 354	24	RE 366	20	RE 320	40	RE 343	-	-	30	RE 501
5 ml. blood sample	ø13 x 82	72	RE 349	8	RE 373	20	RE 320	28	RE 324	-	-	18	RE 492
10 x 100 mm	ø10 x 100	144	RE 315	24	RE 367	36	RE 326	52	RE 346	-	-	-	-
Microtubes 1,5-2 ml.	ø11x42	72	RE 426	24	RE 465	20	RE 408	24	RE 440	30	-	24	RE 494
Microtubes 0,5-0,6 ml.	ø8x30	72	RE466	24	RE 535	20	RE 519	24	RE 523	30	RE 428	24	RE 495
Microtubes 0,2-0,4 ml.	ø6x45	72	RE 524	24	RE 526	20	RE 473	24	RE 458	30	RE 427	24	RE 496
Microtiter plates	128x86x15/21/45	12/8/4	RE 307	-	-	-	-	-	-	-	-	-	-
Microtiter plates (h:80 mm)	128x86x80	-	-	-	-	-	-	-	-	-	-	-	-



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