

Sigma 4-16S

Sigma 4-16KS

Sigma 4-16KHS



Benchtop centrifuge

- ambient
- refrigerated
- refrigerated/
heatable

Sturdy, powerful and versatile

The Sigma 4-16S sets the standard for universal centrifuges. High speeds with fixed-angle rotors, gentle acceleration with swing-out rotors, and an extensive range of accessories and rotors enable a wide variety of application areas. Designed for continuous service, the Sigma 4-16S is as reliable and durable as a Switch watch. With easy operation thanks to the Spincontrol S controller and motorised lock, simple gas-spring assisted lid opening, microcontroller logic and LED backlit buttons, this benchtop centrifuge scores high with users. With its high quality finishing, the popular and proven Sigma 4-16S has been delivering top-class results for many years.

The Sigma 4-16KS version features impressive cooling capacity and can consistently maintain 4 °C at maximum speed. The supplementary integrated heater of the Sigma 4-16KHS enables rotor temperatures up to +40 to +60 °C, depending on the rotor and speed.



Sigma 4-16S centrifuge

220–240 V, 50/60 Hz	(Part No. 10380)
208 V, 60 Hz	(Part No. 10381)
120 V, 60 Hz	(Part No. 10382)
100 V, 50/60 Hz	(Part No. 10383)

Sigma 4-16KS centrifuge

220–240 V, 50 Hz	(Part No. 10385)
220–240 V, 60 Hz	(Part No. 10386)
208 V, 60 Hz	(Part No. 10387)
200 V, 50/60 Hz	(Part No. 10388)

Sigma 4-16KHS centrifuge

220–240 V, 50 Hz	(Part No. 10389)
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Device qualification

Sigma Laborzentrifugen GmbH offers various forms of device qualification. For more information, see Products > Qualification on our website: www.sigma-zentrifugen.de



WEEE-REG-No.
DE 76714077



Sigma 4-16S

- Universal ambient benchtop centrifuge with speed range up to 13,500 rpm
- User-friendly Spincontrol S controller
- Backlit Start, Stop, and Open Lid buttons
- Compatible with various swing-out and fixed-angle rotors
- Capacity: 4 x 750 ml
- Zero-maintenance induction motor
- Two motorised lid locks
- Suitable for low-speed operation (e.g. for cell centrifugation)
- Magnetic rotor identification
- Stainless-steel centrifuge chamber
- Motorised lid lock; easy lid opening with gas spring assistance
- Produced in compliance with the latest national and international standards (EN 61010-2-020)

Sigma 4-16KS

Refrigerated version of the Sigma 4-16S.

Additional features:

- Universal laboratory centrifuge with speed range up to 15,000 rpm
- Rotor cooling also possible at standstill; CFC-free R404a refrigerant
- Assured +4 °C at maximum speed with all rotors

Sigma 4-16KHS

Heatable version of Sigma 4-16KS.

Additional features:

- Maximum rotor temperature +40°C to +60°C, depending on rotor and speed



Rotors and accessories



11650



11660



11150



11148



11156



11118

			Sigma 4-16S		Sigma 4-16KS Sigma 4-16KHS	
Aluminium rotors		Matching accessories	Max. [rpm]	Max. RCF [x g]	Max. [rpm]	Max. RCF [x g]
Biosafe swing-out rotor ¹	(Part No. 11650)	Microtiter plate bucket	4,200	3,096	4,700	3,877
		Round bucket	4,200	3,708	4,700	4,643
Biosafe swing-out rotor ¹	(Part No. 11660)	Microtiter plate bucket	4,200	3,096	5,100	3,877
		Round bucket	4,200	3,708	5,100	5,467
Swing-out rotor ¹	(Part No. 11150)	Rectangular bucket	4,500	4,120	5,100	5,292
		Microtiter plate bucket	4,100	3,007	4,100	3,007
		Microtiter plate bucket	4,500	3,622	5,100	4,653
		RIA bucket	4,500	3,668	5,100	4,711
		4 x 100 ml bucket	4,300	3,680	4,300	3,680
		7 x 50 ml falcon bucket	4,500	4,302	5,100	5,525
		12 x 15 ml falcon bucket	4,500	4,256	5,100	5,467
Round bucket	4,500	4,302	5,100	5,525		
Swing-out rotor	(Part No. 11148)	32 x 1.5–2.0 ml reaction vial	12,000	13,523	13,200	16,363
Swing-out rotor	(Part No. 11156)	Rectangular bucket	4,500	4,324	4,800	4,920
Swing-out rotor ¹	(Part No. 11118)	Microtiter plate bucket	5,700	5,485	5,700	5,485

¹ Biosafe certificate in connection with bucket lid



More on the Web!

A PDF document with information about compatible vials and capacities and a link to the interactive product configuration tool are available on the product website:

www.sigma-zentrifugen.de

> Sigma 4-16S

> Sigma 4-16KS

> Sigma 4-16KHS



			Sigma 4-16S		Sigma 4-16KS Sigma 4-16KHS	
Aluminium rotors		Description	Max. [rpm]	Max. RCF [x g]	Max. [rpm]	Max. RCF [x g]
Biosafe fixed-angle rotor ¹	(Part No. 12449)	48 x 1.5–2.0 ml reaction vial	13,500	20,376	15,000	25,155
Fixed-angle rotor ²	(Part No. 12201)	100 x 1.5–2.0 ml reaction vial	9,000	14,761	9,600	16,795
Fixed-angle rotor ²	(Part No. 12168)	20 x 10 ml round-bottom tube	12,500	17,119	14,000	21,475
Fixed-angle rotor ²	(Part No. 12170)	12 x 15 ml falcon tube	12,500	17,496	13,500	20,376
Fixed-angle rotor ²	(Part No. 12174)	24 x 15 ml falcon tube	10,000	15,531	12,000	20,285
Fixed-angle rotor ²	(Part No. 12172)	12 x 30 ml round-bottom tube	12,500	19,216	14,000	21,475
Biosafe fixed-angle rotor ¹	(Part No. 12266)	8 x 50 ml round-bottom tube	12,500	17,469	14,000	21,913
Biosafe fixed-angle rotor ¹	(Part No. 12269)	8 x 50 ml falcon tube	12,500	18,168	13,500	21,191
Biosafe fixed-angle rotor ¹	(Part No. 12265)	6 x 85 ml round-bottom tube	12,500	18,517	14,000	23,228
Biosafe fixed-angle rotor ¹	(Part No. 12356)	6 x 250 ml bottle	8,000	10,375	9,000	13,131

¹ With bayonet lid and Biosafe certificate ² With hermetic aluminium lid

Setting standards in control technology

Unique features, diverse application areas

The Spincontrol S sets standards for laboratory centrifuge control technology. This high-performance controller offers versatile and unique options for a wide range of application areas. The patented controller only needs three buttons: Start, Stop and Open Lid. The central turn/push knob for setting or modifying all operating parameters – speed, RFC, temperature, etc. – is unique. Along with manual configuration capability, previously entered programs can be recalled using shortcuts, with all parameters shown in a separate window. The program status display with progress bars, easily readable at a distance, is also very practical.

The uncluttered display constantly shows all setpoint and actual values. Users are enthusiastic about the countless features, including a timer from the setpoint speed point, 60 program memories, user-selectable program names, password protection for programs, visual standstill indication, rotor cycle counter, adjustable start delay, and even more. This highly flexible system helps you meet the requirements of today's and tomorrow's laboratory tasks.

Sigma's premium controller supports internal quality management functions as well as external communication with a laboratory information management system (LIMS). In this way, Spincontrol S facilitates traceability and professional reporting.



More on the Web!

View our video to learn more about Spincontrol S. Simply scan the QR code or visit our centrifuge products website:

www.sigma-zentrifugen.de

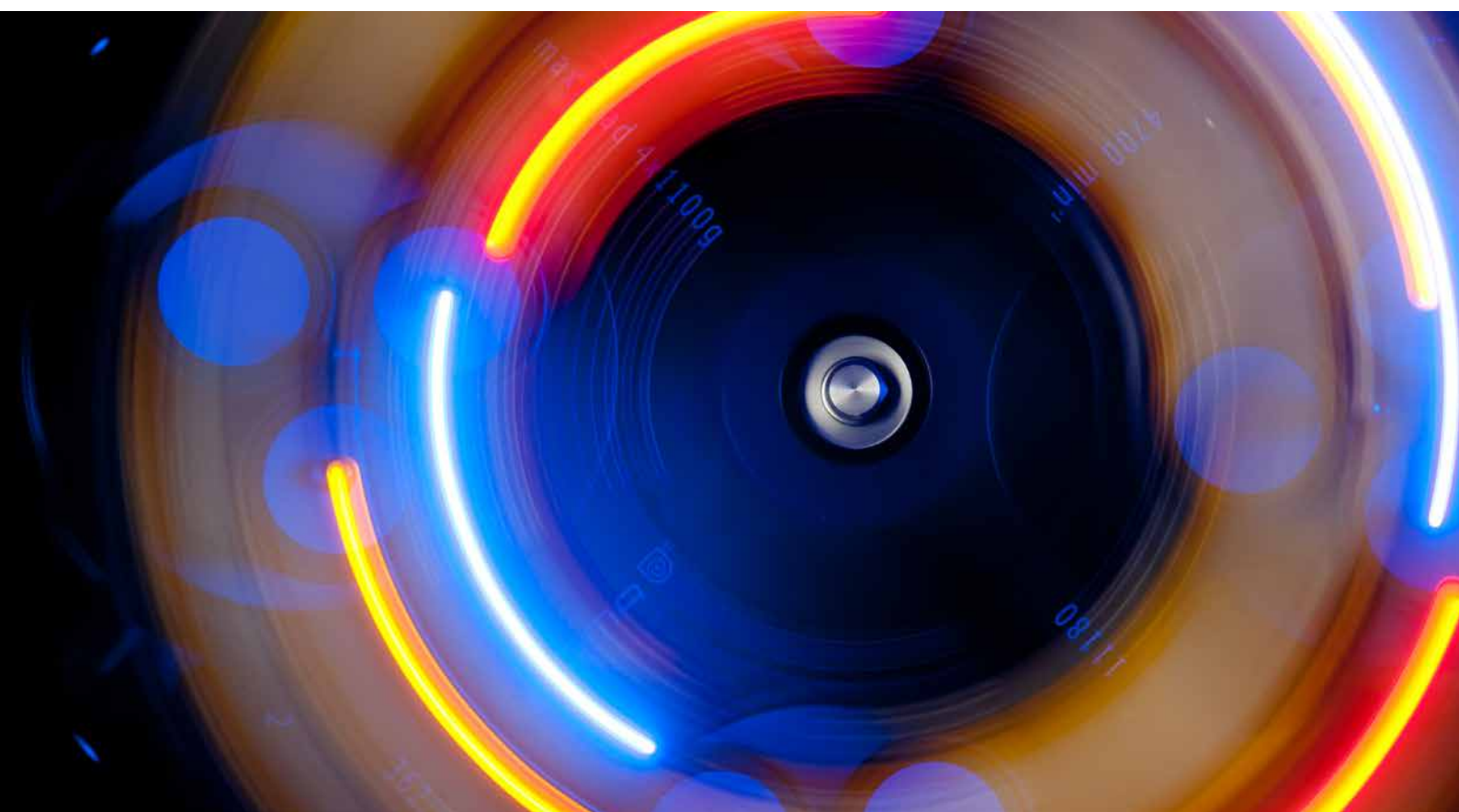
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Display	TFT
Message window	+
Constant display of setpoints and actual values	+
Languages	DE, GB, FRA, ES, PRT, SWE
Timer (s; h:min)	10 – 99:59
Timer tracks time after setpoint speed is reached; switchable	+, +
Time increment [s]	60; 1
Intermittent operation	+
Continuous operation	+
Speed increment [rpm]	10; 1
RFC increment [x g]	10; 1
Temperature increment [°C]	1
Standstill cooling; switchable	+, +
Standstill heating; switchable*	+, +
Quick cooling program (RapidTemp)	+
Start lockout for overtemperature condition; adjustable tolerance	+
Programs	60
User-definable program names	+
Program list, preview of all parameters	+, +
Linear acceleration curves	10
Quadratic acceleration curves	10
User-definable acceleration curves	10
Linear braking curves	10
Quadratic braking curves	10
User-definable braking curves	10
Free run-out	+
Automatic lid opening, switchable	+, +
Audible signal, switchable	+, +
Visual standstill indication	+
Rotor cycle monitoring	+
Rotor end-of-life warning	+
Automatic lid unlocking at end of run, switchable	+, +
Configurable for liquids > 1.2 g/cm ³	+
Start delay	+
Lockable controller	+
Microprocessor control	+

Specifications

	Sigma 4-16S	Sigma 4-16KS	Sigma 4-16KHS
Power consumption [W]	1,050	2,000	2,000
Maximum capacity [ml]	4 x 750	4 x 750	4 x 750
Maximum speed [rpm]	13,500	15,000	15,000
Minimum speed [rpm]	100	100	100
Height x width x depth [mm]	489 x 496 x 650	489 x 670 x 650	489 x 670 x 650
Height with open lid [mm]	940	940	940
RFI suppression	EN 61326	EN 61326	EN 61326
Weight without rotor [kg]	82	124	124
Maximum kinetic energy [Nm]	50,486	63,897	63,897
Noise level at maximum speed (approximate) Rotor 12449 at 13,500 rpm [dB(A)]	73	62	62
Noise level at maximum speed (approximate) Rotor 11150 at 4,500 rpm [dB(A)]	73	62	62
Maximum acceleration, rotors 11150 & 13350 [s]	24 ¹	41 ²	41 ²
Maximum acceleration, rotor 12356 [s]	75 ³	55 ⁴	55 ⁴
Maximum braking, rotors 11150 & 13350 [s]	29 ¹	43 ²	43 ²
Maximum braking, rotor 12356 [s]	58 ³	73 ⁴	73 ⁴
Temperature adjustment range [°C]	–	-20 to +40	-20 to +60

¹ 4,500 rpm ² 5,100 rpm. ³ 8,000 rpm. ⁴ 9,000 rpm.





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