



FRONTIER™ 5816&5816R

Multi-Pro Centrifuges



Powerful and Versatile High-throughput Centrifuges for Virtually Any Lab Application

Frontier 5816 and 5816R are designed for multipurpose use in various applications within research, industrial, and clinical laboratories. They can be combined with our range of rotors and accessories for customized use. The FC5816 and FC5816R are able to spin containers from 0.2 ml to 4 × 290 ml with swing-out and fixed angle rotors. They feature high-speed performance at maximum volume, automatic rotor identification, and multiple safety features. They can process large quantities and different sizes of blood collection tubes, conical cell culture tubes, plates, and various volumes and types of bottles.

Features:

- Thanks to its powerful motor, the FC5816 and FC5816R deliver precise separation results achieving values up to 16000 rpm and 21379/24326 G-force. This can be configured to fit workflow needs using a selection of rotors and accessories.
- The intuitive design of the centrifuges & accessories enable easy access to parameter settings, with the flexibility to change parameters during operation without the need to stop the machine. Features include automatic rotor recognition and backlit LCD.
- The performance of these centrifuges is propelled by German engineering, and high-quality components for reliable use. Rotor chamber constructed of chemical-resistant stainless steel to ensure durability in lab use.

FRONTIER™ 5816&5816R Multi-Pro Centrifuges

Maximum Application Flexibility

FC5816 and FC5816R centrifuges are designed for maximum application flexibility efficiently accommodate a wide variety of tubes and bottles, including microtubes, blood tubes, round bottom tubes, conical tubes, and microliter plates, ensuring versatile and reliable performance for diverse laboratory needs.

- Compatible with up to 12 optional rotors and 61 accessories
- Capacity of up to 6 x 250 ml with the ability to spin up to 56 blood tubes or 40 x 15 ml conical tubes and 16 x 50 ml conical tubes
- High-speed centrifugation (10000 rpm) from 0.2 ml up to 85 ml tubes
- FC5816R has refrigeration capabilities from 40 °C to -20 °C
 - R290, an environmentally friendly coolant, contributes to the eco-friendliness of refrigerated centrifuges by minimizing their environmental impact and supporting efforts to combat global warming
 - Pre-cool feature quickly lowers the temperature of rotor and chamber before a run

Intuitively Designed for Simple Operation

FC5816 and FC5816R were designed to make lab processes more efficient and easier, and includes many user-friendly features & software that allow for intuitive operation.

- Automatic rotor recognition (RFID) makes switching between applications extremely easy
- Simple one-hand operation enabled by the selection button/rotary knob combination – even when wearing gloves
- Large backlit LCD display shows centrifugation settings and real-time parameters on one interface
- Program storage up to 99 runs including parameter settings and rotor types

Solid Engineering Ensures Reliability

Manufactured with high-quality components for reliable use and German engineered for high performance.

- Maintenance-free induction motor provides maximum G-force of 21379 for FC5816 and 24326 for FC5816R
- Optimized airflow system to keep samples cool (FC5816)
- Chemical and corrosion-resistant stainless steel rotor chamber ensures durability in lab environments
- Self-diagnostic program to record usage and error history for easy maintenance and to minimize downtime

Safety Features for Increased Security

FC5816 and FC5816R centrifuges are equipped with protective features for redundancy in safety and reliable operation.

- Over-speed protection, immediately upon rotor insertion
- Active imbalance-detection with individual imbalance tolerances set for each rotor
- Motorized lid-locking system to protect operators from accidental injuries
- Sealed and TÜV certified rotors to safeguard operators from harmful aerosols



FRONTIER™ 5816&5816R Multi-Pro Centrifuges

Specifications

Model		FC5816		FC5816R	
Order No.		230: 83041563	120V: 83041564	230V: 83041565	120V: 83041566
Speed Range		200 rpm – 15000 rpm; 10 rpm / increments Angle Rotor: 15000 rpm Swing out Rotor: 4500 rpm		200 rpm – 16000 rpm; 10 rpm / increments Angle Rotor: 16000 rpm Swing out Rotor: 4500 rpm	
Maximum RCF		21379 x g; 10 x g / increments Angle Rotor: 21379 x g Swing out Rotor: 3780 x g		24325 x g; 10 x g / increments Angle Rotor: 24325 x g Swing out Rotor: 3780 x g	
Maximum Capacity (Rotor)		the same values for FC 5816 and FC5816R - please merge cells		Angle Rotor: 6 x 250 ml Swing out: 4 x 290 ml	
Temperature Range		Air cooled		-20 °C to 40 °C, 1 °C / increments	
Refrigerant		N/A		R290 (Propane)	
Running Time		Quick Spin, 10 sec to 99 hr 59 min, or continuous			
Noise Level (depending on the rotor)		≤ 61 + 2 dB(A)		≤ 63 + 2 dB(A)	
Acc/Dec Levels		10/10			
Allowable Density at Maximum Speed		1.2 g/ml			
Allowable Kinetic Energy		34363 Nm		34363 Nm	
AC Power		230 V/50-60 Hz	120 V/50-60 Hz	230 V/50-60 Hz	120 V/50-60 Hz
Voltage Fluctuation		± 10%			
Current Consumption		2.4 A	4.2 A	3.7 A	7.8 A
Power Consumption		530 W	520 W	785 W	850 W
Dimensions (W x D x H)		438 x 537 x 354 mm		721 x 537 x 354 mm	
Net Weight (without rotor)		52 kg		77 kg	
Shipping Dimensions (W x D x H)		590 x 700 x 410 mm		820 x 650 x 460 mm	
Shipping Weight (without rotor)		77 kg		87 kg	
Ambient conditions (EN/IEC 61010-1)	Environment	For indoor use only			
	Altitude	Use up to an altitude of 2000 m			
	Ambient temperature	5 °C up to 35 °C			
	Max. relative humidity	Max. relative humidity 80 % for temperatures up to 31 °C, Decreasing linearly to 50 % relative humidity up to 35 °C.			
EMC		EN/IEC 61326-1 Class B emissions, Basic immunity FCC Class B emissions			
Not suitable for use in hazardous environments.					

Rotors for FRONTIER™ FC5816 and FC5816R



Angle Rotor 6 x 250 ml	
Item No.	30314821
Rotor Capacity	6 x 250 ml
Rotor Type	Angle, 28°
Permissible Net Weight	6 x 355 g
Lowest Temp. at max. speed	6 °C

Accessory Specifications	n/a								
Accessory Item No.	n/a	30559414	30304369	30304370	30304371	30304372	30304373	30304374	30559412
Accessory Type	n/a	Adapter							
Max. RPM (FC5816/FC5816R)	8,000								
Quantity in Package	n/a	2 /pk							
Max. RCF (FC5816/FC5816R)	10,016 × g	10,016 × g	9,444 × g	9,515 × g	9,301 × g	8,943 × g	8,585 × g	8,371 × g	9,444 × g
Tube Specifications									
Tube Type	Flat Bottom	Conical Bottom	Microtube	Round Bottom	Conical Bottom	Round Bottom		Conical Bottom	Microtube
Tube volume	250 ml	175-225 ml	1.5/2.0 ml	10 ml	15 ml	30 ml	50 ml		1.5/2.0 ml
Tubes per Rotor	6	6	48	30	24	12	6		90
Max. Tube Diameter (mm)	62	61	11	16	17	26	29		11
Tube Height (mm)	122	118/137	40	80	120	92	103	116	40



Swing Out Rotor 4 x 290 ml	
Item No.	30314820
Rotor Capacity	4 x 290 ml
Rotor Type	Swing Out, 0-90°
Permissible Net Weight	4 x 533 g
Lowest Temp. at max. speed	1 °C

Accessory Specifications								
Accessory Item No.	30314901	30314902	83041037	30314903	30314904	30314905	30304367	30304368*
Accessory Type	Screw Cap	Spare O-ring	Bucket	Rack▲			Rack▲	Adapter
Max. RPM (FC5816/FC5816R)	4,500							
Quantity in Package	2/pk	10/pk	2/pk					
Max. RCF (FC5816/FC5816R)	n/a		3,645 x g	3,554 x g	3,599 x g	3,689 x g	3,689 x g	3,554 x g
Tube Specifications	n/a						 	 
Tube Type	n/a		Flat Bottom	Flat Bottom	Round Bottom		Vacutainer®/ Sarstedt®	Microtube
Tube volume	n/a		290 ml	250 ml	100 ml	50 ml	4-10 ml	1.5/2.0 ml
Tubes per Rotor	n/a		4	4		12	32	36
Max. Tube Diameter (mm)	n/a		62	62	41	29	16	11
Tube Height (mm)	n/a		137	110/130	95/120		75/100	40

*Only possible with Rack 30314903

▲Racks fits directly in the rotor. No bucket needed.

83041627 Package Cell Culture available. For more info check our website.

Rotors for FRONTIER™ FC5816 and FC5816R

Accessory Specifications							
Accessory Item No.	30314906	30314907	30314908	30314909	30314910	30314911	30314912
Accessory Type	Rack▲						
Max. RPM (FC5816/FC5816R)	4,500						
Quantity in Package	2/pk						
Max. RCF (FC5816/FC5816R)	3,780 x g	3,576 x g		3,644 x g		3,508 x g	3,689 x g
Tube Specifications							
Tube Type	Conical Bottom	Round Bottom	Skirted Conical Bottom		Round Bottom	Skirted Conical Bottom	Round Bottom
Tube volume	50 ml				25 ml		15 ml
Tubes per Rotor	12	4	8	4	20	12	36
Max. Tube Diameter (mm)	29	34	29		24.5		17
Tube Height (mm)	116	100/120		116	100/120	85/100	76/115

▲Racks fits directly in the rotor. No bucket needed.

Accessory Specifications						
Accessory Item No.	30314913	30314914	30314915	83041590	30314916	30314917
Accessory Type	Rack▲					
Max. RPM (FC5816/FC5816R)	4,500					
Quantity in Package	2/pk					
Max. RCF (FC5816/FC5816R)	3,712 x g	3,644 x g	3,689 x g		3,599 x g	
Tube Specifications						
Tube Type	Conical Bottom	Skirted Conical Bottom	Round Bottom	Vacutainer®	Round Bottom	Vacutainer®/ Sarstedt®
Tube Volume	15 ml		10 ml	8 ml	5-7 ml	1.6-7 ml
Tubes per Rotor	28		32	36	56	40
Max. Tube Diameter (mm)	17		16		13	
Tube Height (mm)	95/120	100/120	80/100	125	65/120	65/100

▲Racks fits directly in the rotor. No bucket needed.

Swing Out Rotor 4 x 250 ml	
Item No.	30314828
Rotor Capacity	4 x 250 ml
Rotor Type	Swing Out, 0-90°
Permissible Net Weight	4 x 557 g
Lowest Temp. at max. speed	2 °C

Accessory Specifications							
Accessory Item No.	83041039	30304375	30314583	83041592	30314584	30314585	83041038
Accessory Type	Rack						
Max. RPM (FC5816/FC5816R)	4,500						
Quantity in Package	2/pk						
Max. RCF (FC5816/FC5816R)	3,531 x g	3,735 x g			3,599 x g	3,531 x g	3,577 x g
Tube Specifications							
Tube Type	Flat Bottom	Conical Bottom		Vacutainer®	Vacutainer® / Sarstedt®		Sarstedt®
Tube Volume	250 ml	50 ml	15 ml	8 ml	5-7 ml	4-10 ml	1.1-5 ml
Tubes per Rotor	4	16	40	24	56	48	72
Max. Tube Diameter (mm)	62	29	17	16	13	16	11
Tube Height (mm)	122	116	120	125	75/100		92

Rotors for FRONTIER™ FC5816 and FC5816R



Angle Rotor 6 × 85 ml	
Item No.	30314826
Rotor Capacity	6 x 85ml
Rotor Type	Angle, 38°
Permissible Net Weight	6 x 140 g
Lowest Temp. at max. speed	15 °C

Accessory Specifications	n/a							
Accessory Item No.	n/a	30314893	30314894	30314895	30314896	30314897	30314898	30314899
Accessory Type	n/a	Adapter						
Max. RPM (FC5816/FC5816R)	11,000/13,000							
Quantity in Package	n/a	2/pk						
Max. RCF (FC5816/FC5816R)	15,555 /21,762 x g	14,338 /20,025 x g	14,067 /19,647 x g	14,743 /20,592 x g	14,338 /20,025 x g	14,067 /19,647 x g	15,014 /20,970 x g	14,067 /19,647 x g
Tube Specifications								
Tube Type	Round Bottom				Conical Bottom		Round Bottom	
Tube volume	85 ml	15 ml	30 ml	50 ml		15 ml		16 ml
Tubes per Rotor	6						12	6
Max. Tube Diameter (mm)	38	17	25	29		17		18
Tube Height (mm)	113	103/110	90/103	105	116	120	95/100	103/110



Angle Rotor 10 × 50 ml	
Item No.	30314829
Rotor Capacity	10 x 50 ml
Rotor Type	Angle, 38°
Permissible Net Weight	10 x 76 g
Lowest Temp. at max. speed	9 °C

Accessory Specifications						
Accessory Item No.	n/a	30130886*	30130889*	30130890*	30472300	30472307
Accessory Type	n/a	Adapter				
Max. RPM (FC5816/FC5816R)	9,000/10,500					
Quantity in Package	n/a	6/pk	2/pk			
Max. RCF (FC5816/FC5816R)	11,771 / 16,022 x g	7,515 / 10,229 x g	10,322 / 14,050 x g	8,874 / 12,078 x g	11,499 / 15,652 x g	11,590 / 15,775 x g
Tube Specifications						
Tube Type	Conical Bottom	Microtube	Round Bottom/ Vacutainer®	RIA/Vacutainer®/ Sarstedt®	Round Bottom/ Vacutainer®	Conical Bottom
Tube Volume	50 ml	1.5/2.0 ml	7 ml	5 ml	15 ml	
Tubes per Rotor	10					
Max. Tube Diameter (mm)	29	11	13		17	
Tube Height (mm)	116	40	95/115	65/75	97/123	120

*Only possible with adapter 30472300

Rotors for FRONTIER™ FC5816 and FC5816R



Angle Rotor 30 × 15 ml	
Item No.	30314832
Rotor Capacity	30 x 15 ml
Rotor Type	Angle, 35°
Permissible Net Weight	30 x 32 g
Lowest Temp. at max. speed	-8 °C

Accessory Specifications	n/a				
Accessory Item No.	n/a	30211180	30130886	30130889	30130890
Accessory Type	n/a	Adapter			
Max. RPM (FC5816/FC5816R)	4,500/4,500				
Quantity in Package	n/a	2/pk	6/pk	2/pk	
Max. RCF (FC5816/FC5816R)	2,830 x g	2,716 x g / 2,354 x g	2,038 x g	2,762 x g	2,377 x g
Tube Specifications					
Tube Type	Round Bottom/Conical Bottom	Vacutainer® / Sarstedt®	Microtube	Round Bottom/ Vacutainer®	RIA/Vacutainer®/Sarstedt®
Tube Volume	15 ml	9-10ml	1.5/2.0 ml	7 ml	5 ml
Tubes per Rotor	30 Glass Tubes or 20 Conical Tubes	30	30	20	
Max. Tube Diameter (mm)	17	16	11	13	
Tube Height (mm)	95/120	92/107	40	95/115	65/75



Swing Out Rotor 2 × 3 MTP (Buckets included)	
Item No.	30314824
Rotor Capacity	2 x 3 MTP
Rotor Type	Swing Out, 0-90°
Permissible Net Weight	2 x 310 g
Lowest Temp. at max. speed	-3 °C

Accessory Specifications		
Accessory Item No.	30314890	30314891
Accessory Type	Bucket (included)	Adapter
Max. RPM (FC5816/FC5816R)	4,500	
Quantity in Package	2/pk	
Max. RCF (FC5816/FC5816R)	2,716 x g	
Tube Specifications	n/a	
Tube Type	Microplate	Microtube
Tube volume	MTP	1.5/2.0 ml
Tubes per Rotor	6 Standard Microplates or 2 Deepwell Plates	96
Max. Tube Diameter (mm)	87 x 128	11
Tube Height (mm)	63	42

Rotors for FRONTIER™ FC5816 and FC5816R



Angle Rotor 4 × 85 ml	
Item No.	30314827
Rotor Capacity	4 x 85 ml
Rotor Type	Angle, 30°
Permissible Net Weight	4 x 140 g
Lowest Temp. at max. speed	5 °C

Accessory Specifications	n/a							
Accessory Item No.	n/a	30314893	30314894	30314895	30314896*	30314897*	30314898	30314899
Accessory Type	n/a	Adapter						
Max. RPM (FC5816/FC5816R)	12,000							
Quantity in Package	n/a	2/pk						
Max. RCF (FC5816/FC5816R)	14,809 x g	13,682 x g	13,521 x g	14,326 x g	13,843 x g	13,360 x g	12,073 x g	13,360 x g
Tube Specifications								
Tube Type	Round Bottom				Conical Bottom		Round Bottom	
Tube volume	85 ml	15 ml	30 ml	50 ml		15 ml		16 ml
Tubes per Rotor	4						8	4
Max. Tube Diameter (mm)	38	17	25	29		17		18
Tube Height (mm)	113	103/110	90/103	105	116	120	95/100	103/110

*Only without rotor lid



Angle Rotor 6 × 50 ml	
Item No.	30314831
Rotor Capacity	6 x 50 ml
Rotor Type	Angle, 26°
Permissible Net Weight	6 x 94 g
Lowest Temp. at max. speed	0 °C

Accessory Specifications	n/a				
Accessory Item No.	n/a	30130891	30130892	30130893	30314892*
Accessory Type	n/a	Adapter			
Max. RPM (FC5816/FC5816R)	13,000				
Quantity in Package	n/a	2/pk			
Max. RCF (FC5816/FC5816R)	15,869 × g	14,649 × g	13,777 × g	13,951 × g	13,428 × g
Tube Specifications					
Tube Type	Round Bottom Oakridge	Round Bottom			Conical Bottom
Tube Volume	50 ml	30 ml	16 ml	15 ml	
Tubes per Rotor	6				
Max. Tube Diameter (mm)	29	25	18	17	
Tube Height (mm)	95/115	92/95	100/105		120

*Only without rotor lid

Rotors for FRONTIER™ FC5816 and FC5816R



Angle Rotor 20 × 10 ml	
Item No.	30314833
Rotor Capacity	20 x 10 ml
Rotor Type	Angle, 30°
Permissible Net Weight	20 x 18 g
Lowest Temp. at max. speed	0 °C

Accessory Specifications	n/a
Accessory Item No.	n/a
Accessory Type	n/a
Max. RPM (FC5816/FC5816R)	12,000
Quantity in Package	n/a
Max. RCF (FC5816/FC5816R)	15,775 × g
Tube Specifications	
Tube Type	Round Bottom
Tube volume	10 ml
Tubes per Rotor	20
Max. Tube Diameter (mm)	16
Tube Height (mm)	80



Angle Rotor 44 × 1.5/2.0 ml	
Item No.	30372718
Rotor Capacity	44 x 1.5/2.0 ml
Rotor Type	Angle, 30°/55°
Permissible Net Weight	44 x 3.4 g
Lowest Temp. at max. speed	4 °C

Accessory Specifications	n/a		
Accessory Item No.	n/a	30130884	30130885
Accessory Type	n/a	Adapter	
Max. RPM (FC5816/FC5816R)	15,000/16,000		
Quantity in Package	n/a	6/pk	
Max. RCF (FC5816/FC5816R)	21,379/24,325 x g	20,625/23,466 x g	18,864/21,463 x g
Tube Specifications			
Tube Type	Microtube		
Tube volume	1.5/2.0 ml	0.2/0.4 ml	0.5 ml
Tubes per Rotor	44		
Max. Tube Diameter (mm)	11	6	8
Tube Height (mm)	40	45	

Rotors for FRONTIER™ FC5816 and FC5816R

	Angle Rotor 24 × 1.5/2.0 ml ID BIOSEALS		
	Item No.	83041238	
	Rotor Capacity	24 x 1.5/2.0 ml	
	Rotor Type	Angle, 45°	
	Permissible Net Weight	24 x 3.4 g	
	Lowest Temp. at max. speed	5 °C	
Accessory Specifications	n/a		
Accessory Item No.	n/a	30130884	30130885
Accessory Type	n/a	Adapter	
Max. RPM (FC5816/FC5816R)	14,000/16,000		
Quantity in Package	n/a	6/pk	
Max. RCF (FC5816/FC5816R)	18,624/24,325 x g	16,369 /21,463 x g	16,368/23,466 x g
Tube Specifications			
Tube Type	Microtube		
Tube volume	1.5/2.0 ml	0.2/0.4 ml	0.5 ml
Tubes per Rotor	24		
Max. Tube Diameter (mm)	11	6	8
Tube Height (mm)	40	45	