

По вопросам продаж и поддержки обращайтесь:

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Единый адрес: [smg@nt-rt.ru](mailto:smg@nt-rt.ru) | <http://www.sigma.nt-rt.ru>



*Centrifuge*

# 3-16L



*Refrigerated Centrifuge*

# 3-16KL

**SIGMA 3-16L** No. 10355 (220-240 V, 50/60 Hz), No. 10356 (120 V, 60 Hz), No. 10357 (100 V, 50 / 60 Hz)

- Universal table top centrifuge; speed range up to 15.300 rpm
- Spincontrol L
- Various angle and swing-out rotors available
- Maximum capacity of 4 x 400 ml down to microtubes with different adapters in the same bucket
- Maintenance-free induction drive motor
- Magnetic rotor identification prevents the rotor from overspeeding, active rotor identification
- Stainless steel bowl
- Window in the lid for external speed control
- Backlit keys for start, stop, lid open
- Wearless electric fuse
- Imbalance switch
- Excess temperature cut-out for the motor
- Needless to open the casing for emergency lid lock release
- Easy lid opening through pneumatic spring support through
- Produced according to national and international safety regulations (e. g. EN 61010-2-020)

**SIGMA 3-16KL** No. 10360 (220-240 V, 50/60 Hz), No. 10361 (120 V, 60 Hz), No. 10362 (100 V, 50/60 Hz)

- Refrigerated version of 3-16L
- Universal refrigerated table top centrifuge
- Possibility of precooling the rotors during standstill; Refrigerant CFC-free (R 134 a)
- Fast cooling program: Rapid temp
- Guaranteed 4°C at max. speed with all rotors

<b>Biosafe Rotor</b>		<b>3-16L</b>		<b>3-16KL</b>	
<i>Rotor</i>		<i>max.</i>	<i>max.</i>	<i>max.</i>	<i>max.</i>
<i>No.</i>		<i>rpm</i>	<i>RCF</i>	<i>rpm</i>	<i>RCF</i>
<b>11180</b>	+ 2 x <b>13190</b>	4.200	3.392	4.500	3.894
<b>11180</b>	+ 2 x <b>13194</b>	4.200	3.313	4.500	3.803
<b>Complete rotor</b>					
<i>No. 11182: 12 x 50 ml (11180 + 2 x 13190 + 2 x 17346 + 12 x 15151)</i>					
<b>Adapters for bucket No. 13190, Biosafe sealable with cap No. 17190</b>					
<b>1 set = 2 pcs</b>					
<i>No.</i>	<i>Adapter</i>	<i>Tube No.</i>	<i>No.</i>	<i>Adapter</i>	<i>Tube No.</i>
<b>17350</b>	24 x <b>0.5 – 0.75 ml</b>	(15005)	<b>17376</b>	4 x <b>40 – 50 ml</b>	(15052)
<b>17361</b>	16 x <b>Microtainer</b>		<b>17375</b>	3 x <b>50 ml</b>	(15050)
<b>17353</b>	20 x <b>1.5 – 2.0 ml</b>	(15008, 15040)	<b>17346</b>	3 x <b>50 ml Culture</b>	(15151)
<b>17352</b>	25 x <b>5 ml RIA</b>	(15006)	<b>17377</b>	4 x <b>50 ml Culture</b>	(15151)**
<b>17356</b>	16 x <b>5 – 6 ml</b>		<b>17344</b>	3 x <b>50 ml Culture*</b>	
	RIA, Hemolyse, Vacutainer		<b>17385</b>	1 x <b>78 – 85 ml</b>	(15076)
<b>17354</b>	16 x <b>7 ml</b>	(15007)	<b>17390</b>	1 x <b>100 ml</b>	(15100)
<b>17351</b>	12 x <b>7 – 9 ml Monovette</b>		<b>17395</b>	1 x <b>125 ml</b>	(15125)
<b>17358</b>	12 x <b>9 – 10 ml Monov. +15 ml</b>	(15015)	<b>17393</b>	1 x <b>175 ml Culture</b>	(15174)**
<b>17355</b>	12 x <b>10 – 12 ml</b>	(15010)	<b>17400</b>	1 x <b>200 ml</b>	(15202)
<b>17345</b>	5 x <b>15 ml Culture</b>	(15115)	<b>17401</b>	1 x <b>200 ml**</b>	(15201)
<b>17359</b>	9 x <b>15 ml Culture</b>	(15115)**	<b>17347</b>	1 x <b>250 ml</b>	(15249)
<b>17370</b>	5 x <b>25 – 30 ml</b>	(15025)	<b>15401</b>	1 x <b>400 ml</b>	(15401)
<b>17362</b>	5 x <b>30 ml</b>				
<b>Adapter for bucket 13194</b>					
<i>No.</i>	<i>Adapter</i>		<i>No.</i>	<i>Adapter</i>	
<b>18310</b>	4 x <b>50 ml Culture**</b>	(15151)**	<b>18311</b>	10 x <b>15 ml Culture</b>	(15115)**
<b>18309</b>	4 x <b>50 ml Culture**</b>				



		<b>3-16L</b>		<b>3-16KL</b>	
<i>Rotor</i>		<i>max.</i>	<i>max.</i>	<i>max.</i>	<i>max.</i>
<i>No.</i>		<i>rpm</i>	<i>RCF</i>	<i>rpm</i>	<i>RCF</i>
<b>11180</b>	+ 2 x <b>13180</b>	4.200	3.372	4.500	3.871
<b>Complete rotor</b>					
<i>No. 11181: 48 x 15 ml (11180 + 2 x 13180 + 2 x 18015 + 48 x 15023)</i>					
<b>Adapters for bucket No. 13180, sealable with cap No. 17112</b>					
<b>1 set = 2 pcs</b>					
<i>No.</i>	<i>Adapter</i>	<i>Tube No.</i>	<i>No.</i>	<i>Adapter</i>	<i>Tube No.</i>
<b>18002</b>	20 x <b>1.5 – 2.0 ml</b>	(15008, 15040)	<b>18025</b>	5 x <b>25 ml</b>	(15025)
<b>18005</b>	20 x <b>5 ml RIA</b>	(15006)	<b>18030</b>	5 x <b>25 – 30 ml</b>	(15030)
<b>18009</b>	20 x <b>5 – 6 ml Hemolyse</b>		<b>18022</b>	4 x <b>30 ml Sterilin</b>	
<b>18012</b>	12 x <b>5 – 7 ml Vacutainer</b>		<b>18050</b>	2 x <b>50 ml</b>	(15050)
<b>18007</b>	20 x <b>7 ml</b>	(15007)	<b>18051</b>	2 x <b>40 – 50 ml</b>	(15052)
<b>18017</b>	10 x <b>9 – 15 ml Monov. +15 ml</b>	(15015)	<b>18052</b>	2 x <b>50 ml Culture</b>	(15151)
<b>18010</b>	12 x <b>9 – 12 ml</b>	(15010)	<b>18053</b>	2 x <b>50 ml Culture*</b>	
<b>18015</b>	12 x <b>15 ml</b>	(15015)	<b>18085</b>	1 x <b>78 – 85 ml</b>	(15076)
<b>18016</b>	4 x <b>15 ml Culture</b>	(15115)	<b>18100</b>	1 x <b>100 ml</b>	(15100)
<b>18018</b>	6 x <b>15 ml Culture**</b>	(15115)	<b>18125</b>	1 x <b>125 ml</b>	(15125)
			<b>18200</b>	1 x <b>200 ml</b>	(15202)

\* with skirt \*\*without bucket cap



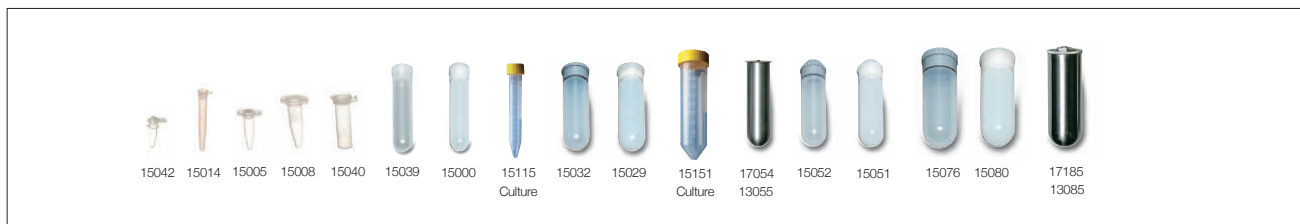
		<b>3-16L</b>		<b>3-16KL</b>	
Rotor No.		max. rpm	max. RCF	max. rpm	max. RCF
<b>11133</b>	<b>+ 2 x 13104</b>	5.000	4.332	5.500	5.242
<b>11133</b>	<b>+ 2 x 13130</b>	5.000	4.472	5.500	5.411
<b>Complete rotor</b>					
No. 11132: 28 x 15 ml (11133 + 2 x 13104 + 2 x 17015 + 28 x 15023)					
<b>Adapters for bucket No. 13104, sealable with cap No. 17111</b>					
<b>1 set = 2 pcs</b>					
No.	Adapter	Tube No.	No.	Adapter	Tube No.
<b>17008</b>	<b>12 x 1.5 – 2.0 ml</b>	(15008, 15040)	<b>17032</b>	<b>1 x 30 ml Sterilin</b>	
<b>17006</b>	<b>12 x 5 ml RIA, Hemolyse</b>	(15060)	<b>17049</b>	<b>1 x 50 ml Culture (15151)</b>	
<b>17027</b>	<b>7 x 5 – 7 ml Vacutainer</b>		<b>17048</b>	<b>1 x 50 ml Culture*</b>	
<b>17007</b>	<b>12 x 7 ml</b>	(15007)	<b>17050</b>	<b>1 x 50 ml (15050)</b>	
<b>17012</b>	<b>6 x 10 ml</b>	(15010)	<b>17052</b>	<b>1 x 40 – 50 ml (15052)</b>	
<b>17018</b>	<b>4 x 9 – 10 ml Monov. +15 ml</b>		<b>17085</b>	<b>1 x 78 – 85 ml (15076)</b>	
<b>17015</b>	<b>7 x 15 ml</b>	(15015)	<b>17100</b>	<b>1 x 100 ml (15100)</b>	
<b>17019</b>	<b>3 x 15 ml Culture**</b>	(15115)	<b>17101</b>	<b>1 x 100 ml (15102)</b>	
<b>13130</b>	<b>3 x 15 ml Culture</b>	(15115)	<b>17125</b>	<b>1 x 125 ml (15125)</b>	
<b>17025</b>	<b>2 x 25 ml</b>	(15025)	<b>15202</b>	<b>PP-bottle 190 ml</b>	
<b>17030</b>	<b>2 x 25 – 30 ml</b>	(15030)			

\* with skirt \*\*without bucket cap



<b>4 x Cyt rotor</b>					
		<b>3-16L</b>		<b>3-16KL</b>	
Rotor No.		max. rpm	max. RCF	max. rpm	max. RCF
<b>11224</b>		3.000	1.137	3.000	1.137
<b>MTP Swing-out rotor</b>					
		<b>3-16L</b>		<b>3-16KL</b>	
Rotor No.		max. rpm	max. RCF	max. rpm	max. RCF
<b>11222</b>		3.000	1.238	3.000	1.238
	max. H. = 56 mm				
<b>11241</b>		4.200	2.505	4.200	2.505
	max. H. = 60 mm				
<b>24 x 1.5 – 2.0 ml Swing-out rotor</b>					
		<b>3-16L</b>		<b>3-16KL</b>	
Rotor No.		max. rpm	max. RCF	max. rpm	max. RCF
<b>11135</b>		12.500	12.927	14.000	16.215
No.	Adapter	1 set = 2 pcs			
<b>13021</b>	<b>0.2 ml PCR</b>				
<b>13000</b>	<b>0.4 ml reaction vials</b>				
<b>13002</b>	<b>0.5 – 0.75 ml reaction vials</b>				
<b>0.2 – 2.0 ml Drumrotor</b>					
		<b>3-16L</b>		<b>3-16KL</b>	
Rotor No.		max. rpm	max. RCF	max. rpm	max. RCF
<b>11136</b>		13.000	13.226	14.500	16.454
Capacity: 6 x adapter					
No.	Adapter	1 set = 2 pcs			
<b>14021</b>	<b>8 x 4 x 0.2 ml PCR</b>				
<b>14020</b>	<b>10 x 0.2 – 0.5 ml PCR</b>				
<b>14000</b>	<b>20 x 0.25 – 0.4 ml reaction vials</b>				
<b>14002</b>	<b>10 x 1.5 – 2.0 ml reaction vials</b>				





Rotor No.	Capacity	Tube No.	3-16L		3-16KL	
			max. rpm	max. RCF	max. rpm	max. RCF
12115	12 x 8 x <b>0.2 ml</b> PCR	15042	14.000	21.475	14.000	21.475
12154	24 x <b>1.5 – 2.0 ml</b>	15008, 15040	15.300	21.460	15.300	21.460
12131	30 x <b>1.5 – 2.0 ml</b>	15008, 15040	13.200	19.480	14.000	21.913
12349	48 x <b>1.5 – 2.0 ml</b>	15008, 15040	13.000	18.894	14.000	21.913
12111	10 x <b>10 ml</b>	15000, 15039	15.300	19.890	15.300	19.890
12157	20 x <b>10 ml</b>	15000, 15039	9.000	8.875	10.000	10.956
12171	12 x <b>15 ml</b> Culture	15115	9.000	8.965	9.500	9.989
12158	6 x <b>30 ml</b>	15032, 15029	15.300	20.675	15.300	20.675
19776	6 x <b>50 ml</b> Culture	15151	9.000	8.422	9.500	9.384
12150	6 x <b>50 ml</b>	15051, 15052	10.000	9.391	11.000	11.363
12156	8 x <b>50 ml</b>	15051, 15052	9.000	8.694	10.000	10.733
12155	4 x <b>85 ml</b>	15076, 15080	10.000	10.174	10.000	10.174
12159	6 x <b>85 ml</b>	15076, 15080	8.000	7.012	8.000	7.012

All rotors incl. hermetic aluminium lid

### Adapters for angle rotors 1 set = 2 pcs

Rotor Type	No.	Adapter	Tube No.	No.	Adapter	Tube No.
<b>1.5 – 2.0 ml</b>	13021	<b>0.25 – 0.4 ml</b>	(15042)	13002	<b>0.5 – 0.75 ml</b> PCR	(15005)
	13000	<b>0.4 ml</b>	(15014)			
<b>30 ml</b>	13059	<b>10 ml</b>	(15000, 15039)			
<b>50 ml</b> Culture	13060	<b>15 ml</b> Culture	(15115)	13079	<b>50 ml</b>	(15051, 15052)
<b>50 ml</b>	16018	<b>15 ml</b> Glass	(15085)	16030	<b>30 ml</b> Glass	(15086)
	13062	<b>15 ml</b> Greiner				
<b>85 ml</b>	13084	<b>10 ml</b>	(15000, 15020)	13083	<b>30 ml</b>	(15029, 15032)
	16019	<b>15 ml</b> Glass	(15085)	16031	<b>30 ml</b> Glass	(15086)
	13081	<b>15 ml</b> Culture	(15115)	13080	<b>50 ml</b> Culture	(15151)
	13063	<b>15 ml</b> Round bottom		13082	<b>50 ml</b>	(15051, 15052)



**Sigma 3-16L**



**Sigma 3-16KL**

## Spincontrol L

Display	LCD with backlight
Permanent display set and current values	+
Display of dimensions	+
Timer	10 sec - 99h 59 min
Runtime starts after set speed has been reached	+
Time increments [sec]	1
Short run	+
Continuous run	+
Speed increments [rpm]	100
Display speed or g-force	+
g-force increments [xg]	10
Programs	50
Acceleration curves	10
Deceleration curves	10
Brakeless	+
Acoustic signal, switchable	+, +
Optical display standstill	+
Cycle counter	+
Signal expired rotor life time	+
Automatic lid opening at the end of the run, switchable	+, +
Control unit lockable	+
Micorprocessor controlled	+



### *Created during production. Centrifuge with one rotor*

	<b>Sigma 3-16L</b>	<b>Sigma 3-16KL</b>
<i>Calibration certificate for speed and time</i>	No. 17714	No. 17714
<i>Calibration certificate for temperature speed and time</i>	–	No. 17715
<i>IQOQ</i>	No. 17710	No. 17711
<i>For a further rotor</i>	No. 17712	No. 17712



17927 Trolley  
(W x H x D, 490 x 497 x 647 mm)



17926 Trolley  
(W x H x D, 670 x 497 x 650 mm)

Technical data	3-16L	3-16KL
Power consumption [W]	440	1010
Max. capacity [ml]	4 x 400	4 x 400
Max. speed [rpm]	15.300	15.300
Min. speed [rpm]	100	100
Height x Width x Depth [mm]	355 x 460 x 600	355 x 630 x 600
Height with open lid [mm]	770	785
Interference suppression	EN 61326	EN 61326
Weight without rotor [kg]	48	78
Kinetic energy max. [Nm]	9.530	9.970
Noise level at max. speed (approx.)		
Rotor 12154 at 15.300 rpm	60 dB (A)	66 dB (A)
Rotor 11132 at 5.000 rpm	66 dB (A)	60 dB (A)
Max. acceleration rotor 12154 [sec]	29	28
rotor 11132 [sec]	22	20
Max deceleration rotor 12154 [sec]	46	53
rotor 11132 [sec]	11	12
Temperature setting range	-	-10°C – +40°C

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