

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⁻¹
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

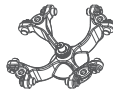
| | UNIVERSAL 320 non-refrigerated | UNIVERSAL 320 R refrigerated |
|--|---|---|
| voltage *) | 200 – 240 V 1 ~ | 200 – 240 V 1 ~ 240 V 1 ~ |
| frequency | 50 – 60 Hz | 50 – 60 Hz 60 Hz |
| consumption | 400 VA | 800 VA |
| emission, immunity | EN/IEC 61326-1, class B | EN/IEC 61326-1, class B |
| max. capacity | 4 x 200 ml / 6 x 94 ml | 4 x 200 ml / 6 x 94 ml |
| max. RPM | 16,000 min ⁻¹ | 16,000 min ⁻¹ |
| 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 |
| Cat. No. | 1401 | 1406 |
| 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 ⁻¹ | 4x200 ml | 1554 | 3 |
| swing-out rotor, 4-places | 90° | 5,000 min ⁻¹ | 4x100 ml | 1494 | 6 |
| swing-out rotor, 4-places | 90° | 4,000 min ⁻¹ | 4x100 ml | 1624 | 9 |
| swing-out rotor, 4-places | 90° | 4,500 min ⁻¹ | 4x100 ml | 1324 | 12 |
| swing-out rotor, 8-places | 90° | 4,000 min ⁻¹ | 8x15 ml | 1611 | 14 |
| swing-out rotor, 12-places | 55° / 60° / 80° | 4,000 min ⁻¹ | 12x15 ml | 1628 | 14 |
| swing-out rotor, 8-places | 45° | 5,000 min ⁻¹ | 8x50 ml | 1617 | 15 |
| swing-out rotor, 6-places | 90° | 4,000 min ⁻¹ | 6x50 ml | 1619 | 15 |
| swing-out rotor, 2-places | 90° | 4,000 min ⁻¹ | 10 plates | 1460 | 16 |
| swing-out rotor, 24-places | 90° | 13,000 min ⁻¹ | 24x2 ml | 1555 | 16 |
| ANGLE ROTORS | | | | | |
| angle rotor, 24-places | 50° | 16,000 min ⁻¹ | 24x2 ml | 1552 | 17 |
| angle rotor, 30-places | 45° | 14,150 min ⁻¹ | 30x2 ml | 1553 | 17 |
| angle rotor, 64-places | 45° | 13,000 min ⁻¹ | 64x0.2 ml | 1551 | 18 |
| angle rotor, 18-places | 45° | 14,150 min ⁻¹ | 18 x 5 ml | 1627 | 18 |
| angle rotor, 6-places | 35° | 9,000 min ⁻¹ | 6x94 ml | 1556 | 19 |
| angle rotor, 12-places | 35° | 6,000 min ⁻¹ | 12x15 ml | 1613 | 20 |
| angle rotor, 12-places | 35° | 12,000 min ⁻¹ | 12x15 ml | 1615 | 21 |
| angle rotor, 8-places | 45° | 4,500 min ⁻¹ | 8x50 ml | 1418 | 22 |


SWING-OUT ROTOR, 4-PLACE | 1554



| | |
|----------------------------------|---------------------------------|
| Rotor | |
| max. RPM max. RCF | 4,500 min ⁻¹ 3,328 |
| max. capacity | 4 x 200 ml |
| run-up run-down, braked in sec | 28 31 |
| angle max. noise level | 90° 60 dB (A) |
| temperature in °C ¹⁾ | -8 |
| Cat. No. | 1554 |



| | |
|-------------------------------|-------------|
| Bucket with clamp lock | |
| Lid bioseal ⁵⁾ | 1561 |
| Cat. No. | 1560 |



| | |
|--|-------------|
| Bucket without clamp lock¹⁴⁾ | |
| Cat. No. | 1565 |



| | | | | | | | | | | | | | | | |
|------------------------|-------------------------|---------|---------|---------------------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Vessels | | | | | | | | | | | | | | | |
| capacity in ml | 1.5 | 2.0 | 5 | 5 | 6 | 7 | 9 | 15 | 15 | 25 | 50 | 85 | 100 | 125 | 150 |
| Ø x L in mm | 11 x 38 | 11 x 38 | 17 x 59 | 12 x 75 | 12 x 82 | 12 x 100 | 14 x 100 | 17 x 100 | 18 x 102 | 24 x 100 | 34 x 100 | 38 x 101 | 44 x 100 | 51 x 100 | 51 x 116 |
| max. RCF ²⁾ | 3,328 | 2,332 | 3,328 | 3,215 | 3,215 | 3,215 | 3,215 | 3,215 | 3,260 | 3,056 | 3,147 | 3,260 | 3,124 | 3,328 | 3,328 |
| radius in mm | 147 | 103 | 147 | 142 | 142 | 142 | 142 | 142 | 144 | 135 | 138 | 144 | 138 | 147 | 147 |
| Cat. No. | microliter tubes | | | tubes²⁾ | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Adapter | | | | | | | | | | | | | | | |
| boring Ø x L in mm | 11.5 x 39 | 11.5 x 39 | 17 x 52 | 13.5 x 60 | 13.5 x 60 | 13.5 x 60 | 17.5 x 60 | 17.5 x 60 | 18.5 x 74 | 25.2 x 66 | 35.2 x 69 | 38.5 x 74 | 45.5 x 69 | 52 x 77 | 52 x 77 |
| vessels per rotor | 56 | 56 | 16 | 28 | 28 | 28 | 20 | 20 | 16 | 4 | 4 | 4 | 4 | 4 | 4 |
| Cat. No. | 1571 | 1571 | 1593 | 1589 | 1589 | 1589 | 1588 | 1588 | 1572 | 1573 | 1574 | 1575 | 1576 | 1594 | 1594 |


| | | | | | | | | | | | | | | | |
|------------------------|-------------|---|---------|---------|---------|---------|---------|---------|---------|----------|---------|----------|---------|----------|----------|
| Vessels | | | | | | | | | | | | | | | |
| capacity in ml | 200 | 1.1-1.4 | 2.6-3.4 | 4.9 | 2.7-3 | 4-5 | 4-5.5 | 7.5-8.2 | 9-10 | 10 | 1.6-5 | 4-7 | 4-7 | 8.5-10 | 12 |
| Ø x L in mm | 56 x 112 | 8 x 66 | 13 x 65 | 13 x 90 | 11 x 66 | 11 x 92 | 15 x 75 | 15 x 92 | 16 x 92 | 15 x 102 | 13 x 75 | 13 x 100 | 16 x 75 | 16 x 100 | 17 x 102 |
| max. RCF ²⁾ | 3,328 | 3,215 | 3,215 | 3,215 | 3,215 | 3,215 | 3,215 | 3,215 | 3,215 | 3,215 | 3,215 | 3,215 | 3,215 | 3,215 | 3,215 |
| radius in mm | 147 | 142 | 142 | 142 | 142 | 142 | 142 | 142 | 142 | 142 | 142 | 142 | 142 | 142 | 142 |
| Cat. No. | 0555 | blood collection / urine vessels | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|--------------------|----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Adapter | | | | | | | | | | | | | | | |
| boring Ø x L in mm | 57 x 77 | 13.5 x 60 | 13.5 x 60 | 13.5 x 60 | 13.5 x 60 | 13.5 x 60 | 17.5 x 60 | 17.5 x 60 | 17.5 x 60 | 17.5 x 60 | 13.5 x 60 | 13.5 x 60 | 17.5 x 60 | 17.5 x 60 | 17.5 x 74 |
| vessels per rotor | 4 | 28 | 28 | 28 | 28 | 28 | 20 | 20 | 20 | 20 | 28 | 28 | 20 | 20 | 12 |
| Cat. No. | - | 1589 | 1589 | 1589 | 1589 | 1589 | 1588 | 1588 | 1588 | 1588 | 1589 | 1589 | 1588 | 1588 | 1591 |

| | | | | | | | | | | | | | | | |
|------------------------|--------------------------|-----------------------------|----------|----------|----------|----------|---------|----------|----------|---------|---------|----------|----------|----------|--------------------------|
| Vessels | | | | | | | | | | | | | | | |
| capacity in ml | 11 | 15 | 15 | 30 | 50 | 12 | 25 | 30 | 50 | 10 | 30 | 50 | 85 | 94 | 30 |
| Ø x L in mm | 16 x 110 | 17 x 120 | 17 x 120 | 25 x 110 | 30 x 115 | 17 x 100 | 25 x 90 | 15 x 110 | 29 x 115 | 16 x 80 | 26 x 95 | 29 x 107 | 38 x 106 | 38 x 102 | 44 x 105 |
| max. RCF ²⁾ | 3,260 | 3,328 | 3,328 | 3,328 | 3,328 | 3,260 | 3,328 | 3,328 | 3,328 | 3,215 | 3,260 | 3,260 | 3,260 | 3,260 | 3,192 |
| radius in mm | 144 | 147 | 147 | 147 | 147 | 144 | 147 | 147 | 147 | 142 | 144 | 144 | 144 | 144 | 141 |
| Cat. No. | Nunc⁹⁾ | tubes with screw cap | | | | | | | | | | | | | 0534⁹⁾ |

| | | | | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Adapter | | | | | | | | | | | | | | | |
| boring Ø x L in mm | 17.5 x 74 | 17 x 77 | 17 x 77 | 26 x 77 | 30 x 77 | 17.5 x 74 | 26 x 65 | 26 x 65 | 30 x 77 | 16.5 x 60 | 26 x 74 | 29 x 74 | 38.5 x 74 | 38.5 x 74 | 45 x 71 |
| vessels per rotor | 16 | 8 | 12 | 4 | 4 | 16 | 4 | 4 | 4 | 20 | 4 | 4 | 4 | 4 | 4 |
| Cat. No. | 1581 | 1577 | 1595 | 1578 | 1579 | 1581 | 1582 | 1582 | 1583 | 1584 | 1585 | 1586 | 1575 | 1575 | 1587 |

SWING-OUT ROTOR, 4-PLACE | 1554




| | |
|----------------------------------|---------------------------------|
| Rotor | |
| max. RPM max. RCF | 4,500 min ⁻¹ 3,328 |
| max. capacity | 4 x 50 ml |
| run-up run-down, braked in sec | 28 31 |
| angle max. noise level | 90° 58 dB (A) |
| temperature in °C ¹⁾ | -8 |
| Cat. No. | 1554 |



| | |
|-----------------|-------------|
| Bucket | |
| Cat. No. | 1559 |




| | | | | | | | | | | | | | | | |
|------------------------|---------------------------|-------|--------|--------|--------|--------|---|---------|---------|---------|-------|---------|----------|---------|--------|
| Vessels | | | | | | | | | | | | | | | |
| capacity in ml | 5 | 6 | 7 | 8 | 9 | 15 | 2.6 – 3.4 | 2.7 – 3 | 4 – 5.5 | 4.5 – 5 | 4.9 | 9 – 10 | 10 | 1.6 – 5 | 4 – 7 |
| Ø x L in mm | 12x75 | 12x82 | 12x100 | 16x125 | 14x100 | 17x100 | 13x65 | 11x66 | 15x75 | 11x92 | 13x90 | 16 x 92 | 15 x 102 | 13x75 | 13x100 |
| max. RCF ²⁾ | 3,215 | 3,215 | 3,215 | 3,328 | 3,260 | 3,260 | 3,215 | 3,215 | 3,215 | 3,215 | 3,215 | 3,260 | 3,260 | 3,215 | 3,215 |
| radius in mm | 142 | 142 | 142 | 147 | 144 | 144 | 142 | 142 | 142 | 142 | 142 | 144 | 144 | 142 | 142 |
| Cat. No. | tubes²⁾ | | | | | | blood collection / urine vessels | | | | | | | | |



| | | | | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|--------------|--------------|-------------|-------------|--------------|-------------|-------------|--------------|--------------|-------------|-------------|
| Adapter | | | | | | | | | | | | | | | |
| boring Ø x L in mm | 13.4x57.5 | 13.4x57.5 | 13.4x57.5 | 16.4x82 | 17.5x81 | 17.5x81 | 13.4x57.5 | 13.4x57.5 | 17.5x81 | 13.4x57.5 | 13.4x57.5 | 17.5x81 | 17.5x81 | 13.4x57.5 | 13.4x57.5 |
| vessels per rotor | 20 | 20 | 20 | 16 | 16 | 16 | 20 | 20 | 16 | 20 | 20 | 16 | 16 | 20 | 20 |
| Cat. No. | 1486 | 1486 | 1486 | 1488 | 1482A | 1482A | 1486 | 1486 | 1482A | 1486 | 1486 | 1482A | 1482A | 1486 | 1486 |

| | | | | | | | |
|------------------------|-------------------------------|----------|--------|-----------------------------|----------|--------|--------|
| Vessels | | | | | | | |
| capacity in ml | 4 – 7 | 8.5 – 10 | 12 | 15 | 50 | 12 | 50 |
| Ø x L in mm | 16x75 | 16x100 | 17x102 | 17x120 | 29 x 115 | 17x100 | 29x115 |
| max. RCF ²⁾ | 3,215 | 3,260 | 3,147 | 3,351 | 3,305 | 3,260 | 3,305 |
| radius in mm | 142 | 144 | 139 | 148 | 146 | 144 | 146 |
| Cat. No. | blood- / urine vessels | | | tubes with screw cap | | | |



| | | | | | | | |
|--------------------|--------------|--------------|-------------|--------------|-------------|--------------|--------------------------|
| Adapter | | | | | | | |
| boring Ø x L in mm | 17.5x81 | 17.5x81 | 17.5x74 | 17x100 | 30x98 | 17.5x81 | 30x98 |
| vessels per rotor | 16 | 16 | 12 | 16 | 4 | 16 | 4 |
| Cat. No. | 1482A | 1482A | 1487 | 1483A | 1484 | 1482A | 1484⁴⁾ |

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
 3.2) When using these tubes, bucket 1560 cannot be closed with lid 1561.
 4) Please remove the spacer.
 5) Tested by the TÜV in conformity with DIN EN 61010, section 2-020.
 6) A rubber stopper for closing the tube for agitating or mixing is available under Cat. No. 0535. The tube may not be centrifuged with the stopper.
 14) With the E3922 add-on kit and the 1561 lid, the 1565 carrier can be converted at a later time to a 1560 carrier with single-hand clamp lock.

— SWING-OUT ROTOR, 4-PLACE | 1554



Rotor

| | |
|----------------------------------|---------------------------------|
| max. RPM max. RCF | 4,500 min ⁻¹ 3,260 |
| max. capacity | 8 x 50 ml |
| run-up run-down, braked in sec | 28 31 |
| angle max. noise level | 90° 58 dB (A) |
| temperature in °C ¹⁾ | -8 |

Cat. No. 1554



Bucket

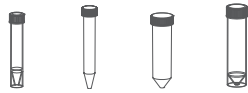
Cat. No.



1563



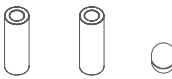
Vessels



| | | | | |
|------------------------|--------|--------|--------|--------|
| capacity in ml | 12 | 15 | 50 | 50 |
| Ø x L in mm | 17x100 | 17x120 | 29x115 | 29x115 |
| max. RCF ²⁾ | 3,260 | 3,260 | 3,260 | 3,260 |
| radius in mm | 144 | 144 | 144 | 144 |

Cat. No. tubes with screw cap

+ E 2109 +E2110-A



Adapter

| | | | | |
|--------------------|-------|-------|-------|-------|
| boring Ø x L in mm | 17x87 | 17x87 | 30x87 | 30x87 |
| vessels per rotor | 8 | 8 | 8 | 8 |

Cat. No. 1592 1592 - -

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

SWING-OUT ROTOR, 4-PLACE | 1494



Rotor

| | |
|----------------------------------|---------------------------------|
| max. RPM max. RCF | 5,000 min ⁻¹ 4,193 |
| max. capacity | 4 x 100 ml |
| run-up run-down, braked in sec | 30 32 |
| angle max. noise level | 90° 56 dB (A) |
| temperature in °C ¹⁾ | -10 |
| Cat. No. | 1494 |

Bucket

| | |
|-----------------|-------------|
| Cat. No. | 1425 |
|-----------------|-------------|



Vessels

| | | | | | | | | | | | | | |
|------------------------|-------------------------|---------------|---------------------------|---------|----------|-------|--------|--------|--------|--------|--------|----------------------|-------------------|
| | | | | | | | | | | | | | |
| capacity in ml | 1.5 | 2.0 | 1 | 3 | 5 | 6 | 7 | 9 | 15 | 25 | 50 | 100 | 1-8 |
| Ø x L in mm | 11 x 38 | 11 x 38 | 6 x 45 | 10 x 60 | 12/18x75 | 12x82 | 12x100 | 14x100 | 17x100 | 24x100 | 34x100 | 44x100 | simple / multiple |
| max. RCF ²⁾ | 3,885 | 3,885 | 3,969 | 3,913 | 3,913 | 3,913 | 3,913 | 3,913 | 3,913 | 3,913 | 3,913 | 3,801 | 2,879 |
| radius in mm | 139 | 139 | 142 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 136 | 103 |
| Cat. No. | microliter tubes | Rhesus | tubes²⁾ | | | | | | | | | cyto chambers | |



Adapter

| | | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | | | | | | | | | | | |
| boring Ø x L in mm | 11.2x38 | 11.2x38 | 6.5x34 | 10.5x40 | 13.4x50 | 12.5x60 | 12.5x60 | 17.5x84 | 17.5x84 | 25.5x84 | 35.5x84 | 45.5x80 | - |
| vessels per rotor | 36 | 36 | 144 | 56 | 28 | 48 | 48 | 28 | 28 | 8 | 4 | 4 | 4 |
| Cat. No. | 1444 | 1444 | 1432 | 1433 | 1438 | 1434 | 1434 | 1431 | 1431 | 1435 | 1436 | 1437 | 1452 |

Vessels

| | | | | | | | | | | | | |
|------------------------|---|-------|-------|-------|-------|---------|-------|-------|--------|-------|--------|----------|
| | | | | | | | | | | | | |
| capacity in ml | 2.6-3.4 | 2.7-3 | 4-5.5 | 4.5-5 | 4.9 | 7.5-8.2 | 9-10 | 1.6-5 | 4-7 | 4-7 | 8.5-10 | 50 |
| Ø x L in mm | 13x65 | 11x66 | 15x75 | 11x92 | 13x90 | 15x92 | 16x92 | 13x75 | 13x100 | 16x75 | 16x100 | 29x115 |
| max. RCF ²⁾ | 3,913 | 3,913 | 3,913 | 3,913 | 3,913 | 3,913 | 3,913 | 3,913 | 3,913 | 3,913 | 3,913 | 4,081 |
| radius in mm | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 146 |
| Cat. No. | blood collection / urine vessels | | | | | | | | | | | - |



Adapter

| | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | | | | | | | | | | |
| boring Ø x L in mm | 13.4x50 | 13.4x50 | 16.5x50 | 13.4x50 | 13.4x50 | 16.5x50 | 17x45 | 13.4x50 | 13.4x50 | 16.5x50 | 16.5x50 | 30x90 |
| vessels per rotor | 28 | 28 | 28 | 28 | 28 | 28 | 16 | 28 | 28 | 28 | 28 | 4 |
| Cat. No. | 1438 | 1438 | 1441 | 1438 | 1438 | 1441 | 1439 | 1438 | 1438 | 1441 | 1441 | 1443 |

CYTO

Cyto system available for this model.
More information on [page 180](#)

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

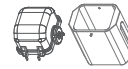
SWING-OUT ROTOR, 4-PLACE | 1494



Rotor

| | |
|----------------------------------|---------------------------------|
| max. RPM max. RCF | 5,000 min ⁻¹ 4,109 |
| max. capacity | 4 x 50 ml |
| run-up run-down, braked in sec | 30 32 |
| angle max. noise level | 90° 54 dB (A) |
| temperature in °C ¹⁾ | -7 |
| Cat. No. | 1494 |

Bucket



| | |
|-----------------|-------------|
| Lid | 1421 |
| Cat. No. | 1427 |



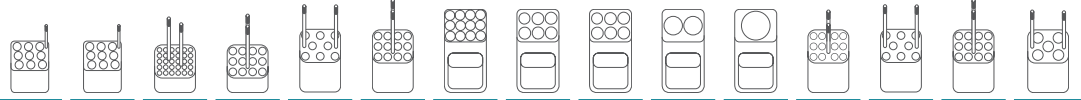
Vessels



| | 1.5 | 2.0 | 1 | 3 | 5 | 6 | 7 | 9 | 15 | 25 | 50 | 1.1-1.4 | 2.6-2.9 | 2.7-3 | 4-5.5 |
|------------------------|-------------------------|---------|--------|---------------|------------|---------|---------------------------|----------|----------|----------|----------|---|---------|---------|---------|
| capacity in ml | 1.5 | 2.0 | 1 | 3 | 5 | 6 | 7 | 9 | 15 | 25 | 50 | 1.1-1.4 | 2.6-2.9 | 2.7-3 | 4-5.5 |
| Ø x L in mm | 11 x 38 | 11 x 38 | 6 x 45 | 10 x 60 | 12/13 x 75 | 12 x 82 | 12 x 100 | 14 x 100 | 17 x 100 | 24 x 100 | 34 x 100 | 8 x 66 | 13 x 65 | 11 x 66 | 15 x 75 |
| max. RCF ²⁾ | 4,109 | 4,109 | 4,081 | 4,053 | 4,025 | 4,053 | 3,941 | 3,941 | 3,941 | 3,941 | 3,941 | 4,109 | 4,025 | 4,053 | 4,109 |
| radius in mm | 147 | 147 | 146 | 145 | 144 | 145 | 141 | 141 | 141 | 141 | 141 | 147 | 144 | 145 | 147 |
| Cat. No. | microliter tubes | | | Rhesus | | | tubes²⁾ | | | | | blood collection / urine vessels | | | |

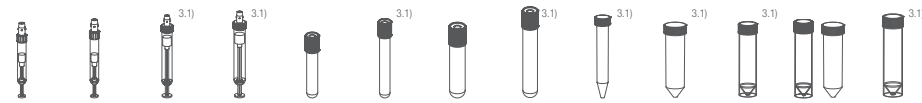


Adapter



| | 11.5 x 38 | 11.5 x 38 | 6.5 x 23 | 10.5 x 23 | 13.4 x 58 | 12.5 x 42 | 12.4 x 82.5 | 15 x 69.5 | 17.8 x 82.5 | 25.5 x 82.5 | 35.5 x 82.5 | 9 x 41 | 13.4 x 58 | 12.5 x 42 | 15.6 x 41 |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| boring Ø x L in mm | 11.5 x 38 | 11.5 x 38 | 6.5 x 23 | 10.5 x 23 | 13.4 x 58 | 12.5 x 42 | 12.4 x 82.5 | 15 x 69.5 | 17.8 x 82.5 | 25.5 x 82.5 | 35.5 x 82.5 | 9 x 41 | 13.4 x 58 | 12.5 x 42 | 15.6 x 41 |
| vessels per rotor | 36 | 36 | 120 | 48 | 32 | 48 | 48 | 24 | 24 | 8 | 4 | 48 | 32 | 48 | 20 |
| Cat. No. | 5277 | 5277 | 1357 | 1327 | 1732 | 5229 | 5230 | 5237 | 5231 | 5232 | 5233 | 5278 | 1732 | 5229 | 5279 |

Vessels



| | 4.5-5 | 4.9 | 7.5-8.2 | 9-10 | 1.6-5 | 4-7 | 4-7 | 8.5-10 | 15 | 50 | 25 | 30 | 50 |
|------------------------|---|---------|---------|---------|---------|----------|---------|----------|-----------------------------|----------|---------|----------|----------|
| capacity in ml | 4.5-5 | 4.9 | 7.5-8.2 | 9-10 | 1.6-5 | 4-7 | 4-7 | 8.5-10 | 15 | 50 | 25 | 30 | 50 |
| Ø x L in mm | 11 x 92 | 13 x 90 | 15 x 92 | 16 x 92 | 13 x 75 | 13 x 100 | 16 x 75 | 16 x 100 | 17 x 120 | 29 x 115 | 25 x 90 | 25 x 110 | 34 x 100 |
| max. RCF ²⁾ | 3,941 | 4,025 | 4,109 | 3,969 | 4,025 | 4,025 | 3,969 | 3,941 | 4,165 | 4,053 | 3,665 | 4,025 | 3,941 |
| radius in mm | 141 | 144 | 147 | 142 | 144 | 144 | 142 | 141 | 145 | 145 | 142 | 144 | 141 |
| Cat. No. | blood collection / urine vessels | | | | | | | | tubes with screw cap | | | | |



Adapter



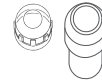
| | 12.4 x 82.5 | 13.4 x 58 | 15.6 x 41 | 17 x 66 | 13.4 x 58 | 13.4 x 58 | 17 x 66 | 17.8 x 82.5 | 17 x 90 | 30 x 90 | 25.5 x 72 | 25.5 x 85 | 35.5 x 82.5 |
|--------------------|-------------|-------------|-------------|--------------------------|-------------|-------------|--------------------------|-------------|-------------|-------------|-------------|-------------|--------------------------|
| boring Ø x L in mm | 12.4 x 82.5 | 13.4 x 58 | 15.6 x 41 | 17 x 66 | 13.4 x 58 | 13.4 x 58 | 17 x 66 | 17.8 x 82.5 | 17 x 90 | 30 x 90 | 25.5 x 72 | 25.5 x 85 | 35.5 x 82.5 |
| vessels per rotor | 48 | 32 | 20 | 20 | 32 | 32 | 20 | 24 | 4 | 4 | 8 | 4 | 4 |
| Cat. No. | 5230 | 1732 | 5279 | 5271⁴⁾ | 1732 | 1732 | 5271⁴⁾ | 5231 | 5275 | 5276 | 1731 | 5272 | 5233⁴⁾ |

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
 3.1) When using these tubes, carrier 1427 cannot be closed with lid 1421.
 4) Please remove the spacer.

SWING-OUT ROTOR, 4-PLACE | 1494



| | |
|----------------------------------|---------------------------------|
| Rotor | |
| max. RPM max. RCF | 5.000 min ⁻¹ 4.193 |
| max. capacity | 4 x 100 ml |
| run-up run-down, braked in sec | 30 32 |
| angle max. noise level | 90° 58 dB (A) |
| temperature in °C ¹⁾ | -10 |
| Cat. No. | 1494 |



| | |
|---------------------------|-------------|
| Bucket | |
| Lid bioseal ³⁾ | 1492 |
| Cat. No. | 1495 |



| | | | | | | | | | | | | | | |
|------------------------|------------------|-------------------------|-------|--------|----------------------------------|----------|-------|--------|--------|--------|--------|--------|--------|--------|
| Vessels | | | | | | | | | | | | | | |
| capacity in ml | 0.5 | 1.5 | 2.0 | 1 | 3 | 5 | 6 | 7 | 9 | 15 | 25 | 50 | 94 | 100 |
| Ø x L in mm | 10.7x46 | 11x38 | 11x38 | 6 x 45 | 10 x 60 | 12/13x75 | 12x82 | 12x100 | 14x100 | 17x100 | 24x100 | 34x100 | 38x102 | 44x100 |
| max. RCF ²⁾ | 3,745 | 3,857 | 3,857 | 4,081 | 4,137 | 4,025 | 4,025 | 4,025 | 3,997 | 3,997 | 3,829 | 3,801 | 4,109 | 4,025 |
| radius in mm | 134 | 138 | 138 | 145 | 148 | 144 | 144 | 144 | 143 | 143 | 137 | 136 | 147 | 144 |
| Cat. No. | Pediatric | microliter tubes | | | Rhesus tubes²⁾ | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Adapter | | | | | | | | | | | | | | | |
| boring Ø x L in mm | 11.2x38 | 11.2x38 | 11.2x38 | 6.5x34 | 10.5x40 | 13.4x45 | 13.4x45 | 13.4x45 | 13.4x45 | 17.6x89 | 17.6x89 | 25.2x77 | 35.2x77 | 38.5x92 | 45.6x98 |
| vessels per rotor | 20 | 20 | 20 | 108 | 36 | 20 | 20 | 20 | 20 | 16 | 16 | 4 | 4 | 4 | 4 |
| Cat. No. | 1351 | 1351 | 1351 | 1339 | 1343 | 1383 | 1383 | 1383 | 1383 | 1329 | 1329 | 1330 | 1331 | 1396 | 0761 |

| | | | | | | | | | | | | | | |
|------------------------|---|---------|---------|---------|---------|---------|---------|---------|----------|---------|----------|---------|----------|----------|
| Vessels | | | | | | | | | | | | | | |
| capacity in ml | 1.1-1.4 | 2.7-3 | 4.5-5 | 2.6-2.9 | 4.9 | 4-5.5 | 7.5-8.2 | 9-10 | 10 | 1.6-7 | 1.6-7 | 4-10 | 4-10 | 4-10 |
| Ø x L in mm | 8 x 66 | 11 x 66 | 11 x 92 | 13 x 65 | 13 x 90 | 15 x 75 | 15 x 92 | 16 x 92 | 15 x 102 | 13 x 75 | 13 x 100 | 16 x 75 | 16 x 100 | 16 x 100 |
| max. RCF ²⁾ | 4,053 | 4,025 | 4,025 | 4,025 | 4,025 | 4,053 | 4,053 | 3,997 | 4,193 | 4,025 | 4,025 | 4,025 | 4,025 | 4,025 |
| radius in mm | 145 | 144 | 144 | 144 | 144 | 145 | 145 | 143 | 150 | 144 | 144 | 144 | 144 | 144 |
| Cat. No. | blood collection / urine vessels | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------------|-------------|-------------|-------------|-------------|---------|
| Adapter | | | | | | | | | | | | | | |
| boring Ø x L in mm | 9x47 | 13.4x45 | 13.4x45 | 13.4x45 | 13.4x45 | 15.6x47 | 15.6x47 | 17.6x89 | 17.6x89 | 13.4x45 | 13.4x45 | 16.5x52 | 16.5x52 | 16.5x52 |
| vessels per rotor | 28 | 20 | 20 | 20 | 20 | 16 | 16 | 16 | 16 | 20 | 20 | 16 | 16 | 16 |
| Cat. No. | 1457 | 1383 | 1383 | 1383 | 1383 | 1459 | 1459 | 1329 | 1329⁴⁾ | 1383 | 1383 | 1348 | 1348 | |

| | | | | | | | | | | | | | |
|------------------------|-----------------------------|----------|----------|----------|---------|----------|---------|---------|----------|----------|----------|--------------------------|--|
| Vessels | | | | | | | | | | | | | |
| capacity in ml | 15 | 30 | 50 | 12 | 25 | 50 | 10 | 30 | 50 | 85 | 30 | | |
| Ø x L in mm | 17 x 120 | 25 x 110 | 29 x 115 | 17 x 100 | 25 x 90 | 29 x 115 | 16 x 80 | 26 x 95 | 29 x 107 | 38 x 106 | 44 x 105 | | |
| max. RCF ²⁾ | 4,193 | 4,193 | 4,193 | 4,193 | 3,689 | 4,193 | 4,025 | 3,857 | 4,137 | 4,109 | 3,997 | | |
| radius in mm | 150 | 150 | 150 | 150 | 132 | 150 | 144 | 138 | 148 | 147 | 143 | | |
| Cat. No. | tubes with screw cap | | | | | | | | | | | 0534⁶⁾ | |

| | | | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|--|
| Adapter | | | | | | | | | | | | | | |
| boring Ø x L in mm | 17x90 | 26x80 | 30x90 | 17x80 | 26x72 | 29.5x80 | 16.5x52 | 26x83 | 29x93 | 38.5x92 | 45.9x98 | | | |
| vessels per rotor | 4 | 4 | 4 | 4 | 4 | 4 | 16 | 4 | 4 | 4 | 4 | | | |
| Cat. No. | 1347 | 1365 | 1384 | 6311 | 1363 | 6318 | 1348 | 4417 | 4416 | 1396 | 0765 | | | |

- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
- 3) When using these tubes, bucket 1495 cannot be closed with lid 1492.
- 4) Please remove the spacer.
- 5) Tested by the TÜV in conformity with DIN EN 61010, section 2-Q20.
- 6) A rubber stopper for closing the tube for agitating or mixing is available under Cat. No. 0535. The tube may not be centrifuged with the stopper.

— SWING-OUT ROTOR, 4-PLACE | 1624



Rotor

| | |
|----------------------------------|---------------------------------|
| max. RPM max. RCF | 4,000 min ⁻¹ 2,665 |
| max. capacity | 4 x 50 ml |
| run-up run-down, braked in sec | 20 25 |
| angle | 90° |
| Cat. No. | 1624 |



Vessels

| | | | | | | | | | | | | | |
|---------------------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------------|
| | | | | | | | | | | | | | |
| capacity in ml | 5 | 5 | 6 | 7 | 9 | 9 | 15 | 15 | 20 | 25 | 45 | 50 | 1-8 |
| Ø x L in mm | 12x75 | 12x75 | 12x82 | 12x100 | 14x100 | 14x100 | 17x100 | 17x100 | 21x100 | 24x100 | 31x100 | 34x100 | simple / multiple |
| max. RCF ²⁾ | 2,057 | 2,164 | 2,308 | 2,308 | 2,308 | 2,415 | 2,308 | 2,415 | 2,361 | 2,451 | 2,361 | 2,451 | 1,646 |
| radius in mm | 115 | 121 | 129 | 129 | 129 | 135 | 129 | 137 | 132 | 137 | 132 | 137 | 92 |
| temperature in °C ¹⁾ | -17 | -17 | -17 | -17 | -17 | -15 | -17 | -15 | -15 | -15 | -15 | -15 | -16 |

| | | | | | | | | | | | | | |
|-----------------|---------------------------|--|--|--|--|--|--|--|--|--|--|--|----------------------|
| Cat. No. | tubes²⁾ | | | | | | | | | | | | cyto chambers |
|-----------------|---------------------------|--|--|--|--|--|--|--|--|--|--|--|----------------------|



Carrier

| | | | | | | | | | | | | | |
|--------------------|----------------|-------------|----------------|----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | | | | | | | | | | | |
| boring Ø x L in mm | 12x75 | 13.5x65 | 12.5x71.5 | 12.5x71.5 | 14.6x74 | 14.6x78 | 17.6x71.5 | 17.6x78 | 21.5x74 | 26x78 | 32x74 | 35x78 | - |
| vessels per rotor | 16 | 68 | 16 | 16 | 20 | 40 | 16 | 28 | 8 | 8 | 4 | 4 | 4 |
| Cat. No. | 1369-91 | 1372 | 1369-92 | 1369-92 | 1370 | 1741 | 1369 | 1742 | 1346 | 1745 | 1345 | 1746 | 1660 |

Vessels

| | | | | | | | | | | |
|---------------------------------|---------|---------|-------|-------|-------|---------|----------|----------|----------|---------|
| | | | | | | | | | | |
| capacity in ml | 1.1-1.4 | 2.6-3.4 | 4.5-5 | 4.9 | 1.6-5 | 4-7 | 4-7 | 4-7 | 8.5-10 | 30 |
| Ø x L in mm | 8 x 66 | 13x65 | 15x75 | 13x90 | 13x75 | 16 x 75 | 13 x 100 | 13 x 100 | 16 x 100 | 26 x 95 |
| max. RCF ²⁾ | 2,415 | 2,325 | 2,325 | 2,451 | 2,325 | 2,325 | 2,361 | 2,451 | 2,308 | 2,451 |
| radius in mm | 135 | 130 | 130 | 137 | 130 | 130 | 132 | 137 | 129 | 137 |
| temperature in °C ¹⁾ | -15 | -15 | -15 | -15 | -15 | -15 | -15 | -15 | -17 | -15 |

| | | | | | | | | | | |
|-----------------|---|--|--|--|--|--|--|--|--|----------|
| Cat. No. | blood collection / urine vessels | | | | | | | | | - |
|-----------------|---|--|--|--|--|--|--|--|--|----------|



Carrier

| | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------------|-------------|--------------------------|-------------|
| | | | | | | | | | | |
| boring Ø x L in mm | 14.6x78 | 17.6x78 | 17.6x78 | 14.6x78 | 17.6x78 | 17.6x78 | 14.6x74 | 13.5x78 | 17.6x71.5 | 26x78 |
| vessels per rotor | 40 | 28 | 28 | 40 | 28 | 28 | 20 | 28 | 16 | 8 |
| Cat. No. | 1741 | 1742 | 1742 | 1741 | 1742 | 1742 | 1370⁴⁾ | 1739 | 1369⁴⁾ | 1745 |

CYTO

For more information about our Cyto accessory, see [page 178](#)

- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
- 4) Please remove spacer.
- 5) Tested by the TÜV in conformity with DIN EN 61010. section 2-020.
- 16) Packed in units of 10 pieces.
- 20) This combination permits no Vacutainers made of glass.

SWING-OUT ROTOR, 4-PLACE | 1624



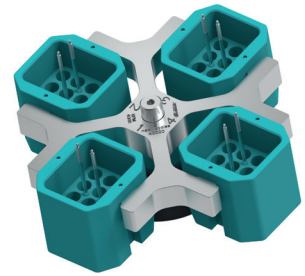
Rotor

| | | | |
|----------------------------------|---------------------------------|--|--|
| max. RPM max. RCF | 4,000 min ⁻¹ 1,968 | | |
| max. capacity | 48 x 4 ml | | |
| run-up run-down, braked in sec | 22 25 | | |
| angle max. noise level | 90° 48 dB (A) | | |
| temperature in °C | -15 | | |
| Cat. No. | 1624 | | |

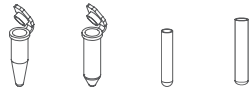


Bucket

| | |
|-----------------|-------------|
| Cat. No. | 1366 |
|-----------------|-------------|



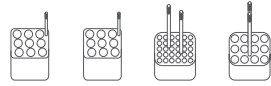
Vessels



| | | | | |
|------------------------|-------------------------|---------------|---------------------------|---------|
| capacity in ml | 1.5 | 2.0 | 1 | 4 |
| Ø x L in mm | 11 x 38 | 11 x 38 | 6 x 45 | 12 x 60 |
| max. RCF ²⁾ | 1,968 | 1,968 | 1,950 | 1,932 |
| radius in mm | 110 | 110 | 109 | 108 |
| Cat. No. | microliter tubes | Rhesus | tubes²⁾ | |



Adapter



| | | | | |
|--------------------|-------------|-------------|-------------|-------------|
| boring Ø x L in mm | 11.5 x 38 | 11.5 x 38 | 6.5 x 23 | 12.5 x 44 |
| vessels per rotor | 36 | 36 | 120 | 48 |
| Cat. No. | 5277 | 5277 | 1357 | 1326 |

SWING-OUT ROTOR, 4-PLACE | 1624



Rotor

| | | | |
|-----------------------------------|---------------------------------|--|--|
| max. RPM max. RCF ²⁾ | 4,000 min ⁻¹ 2,665 | | |
| max. capacity | 4 x 100 ml | | |
| run-up run-down, braked in sec | 20 25 | | |
| angle max. noise level | 90° 58 dB (A) | | |
| temperature in °C | -15 | | |
| Cat. No. | 1624 | | |



Bucket

| | |
|---------------------------|-------------|
| Lid bioseal ⁵⁾ | 1492 |
| Cat. No. | 1481 |



Vessels



| | | | | | | | | | | | | | | | |
|------------------------|------------------|-------------------------|---------|--------|---------------|---------|---------------------------|---------|----------|----------|----------|----------|----------|----------|----------|
| capacity in ml | 0.5 | 1.5 | 2.0 | 1 | 3 | 4 | 5 | 6 | 7 | 9 | 15 | 25 | 50 | 85 | 100 |
| Ø x L in mm | 10.7 x 46 | 11 x 38 | 11 x 38 | 6 x 45 | 10 x 60 | 10 x 88 | 12 x 75 | 12 x 82 | 12 x 100 | 14 x 100 | 17 x 100 | 24 x 100 | 34 x 100 | 38 x 106 | 44 x 100 |
| max. RCF ²⁾ | 2,379 | 2,451 | 2,451 | 2,594 | 2,630 | 2,630 | 2,558 | 2,558 | 2,558 | 2,540 | 2,540 | 2,433 | 2,415 | 2,612 | 2,558 |
| radius in mm | 133 | 137 | 137 | 145 | 147 | 131 | 143 | 143 | 143 | 142 | 142 | 136 | 135 | 146 | 143 |
| Cat. No. | Pediatric | microliter tubes | | | Rhesus | | tubes²⁾ | | | | | | | | |



Adapter



| | | | | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| boring Ø x L in mm | 11.2 x 38 | 11.2 x 38 | 11.2 x 38 | 6.5 x 34 | 10.5 x 43 | 13.4 x 45 | 13.4 x 45 | 13.4 x 45 | 13.4 x 45 | 17.6 x 89 | 17.6 x 89 | 25.2 x 77 | 35.2 x 75 | 38.5 x 92 | 45.9 x 98 |
| vessels per rotor | 20 | 20 | 20 | 108 | 36 | 20 | 20 | 20 | 20 | 16 | 16 | 4 | 4 | 4 | 4 |
| Cat. No. | 1351 | 1351 | 1351 | 1339 | 1343 | 1383 | 1383 | 1383 | 1383 | 1329 | 1329 | 1330 | 1331 | 1396 | 0761 |

Spacer

SWING-OUT ROTOR, 4-PLACE | 1624



Rotor

| | |
|----------------------------------|---------------------------------|
| max. RPM max. RCF | 4,000 min ⁻¹ 2,665 |
| max. capacity | 4 x 100 ml |
| run-up run-down, braked in sec | 20 25 |
| angle max. noise level | 90° 58 dB (A) |
| temperature in °C | -15 |
| Cat. No. | 1624 |

Bucket

| | |
|---------------------------|-------------|
| Lid bioseal ⁵⁾ | 1492 |
| Cat. No. | 1481 |



Vessels

| | | | | | | | | | | | | | |
|------------------------|---|---------|---------|---------|---------|---------|---------|---------|----------|---------|----------|---------|----------|
| capacity in ml | 1.1-1.4 | 2.7-3 | 4.5-5 | 2.6-2.9 | 4.9 | 4-8.5 | 7.5-8.2 | 9-10 | 10 | 1.6-5 | 4-7 | 4-7 | 8.5-10 |
| Ø x L in mm | 8 x 66 | 11 x 66 | 11 x 92 | 13 x 65 | 13 x 90 | 15 x 75 | 15 x 92 | 16 x 92 | 15 x 102 | 13 x 75 | 13 x 100 | 16 x 75 | 16 x 100 |
| max. RCF ²⁾ | 2,576 | 2,558 | 2,558 | 2,558 | 2,558 | 2,576 | 2,576 | 2,540 | 2,665 | 2,558 | 2,558 | 2,522 | 2,522 |
| radius in mm | 144 | 143 | 143 | 143 | 143 | 144 | 144 | 142 | 149 | 143 | 143 | 141 | 141 |
| Cat. No. | blood collection / urine vessels | | | | | | | | | | | | |



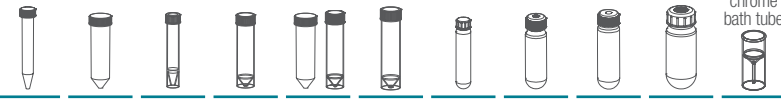
Adapter

| | | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------------|-------------|-------------|-------------|-------------|
| boring Ø x L in mm | 9x47 | 13.4x45 | 13.4x45 | 13.4x45 | 13.4x45 | 15.6x47 | 15.6x47 | 17.6x89 | 17.6x89 | 13.4x45 | 13.4x45 | 16.5x52 | 16.5x52 |
| vessels per rotor | 28 | 20 | 20 | 20 | 20 | 16 | 16 | 16 | 16 | 20 | 20 | 16 | 16 |
| Cat. No. | 1457 | 1383 | 1383 | 1383 | 1383 | 1459 | 1459 | 1329 | 1329⁴⁾ | 1383 | 1383 | 1348 | 1348 |



Vessels

| | | | | | | | | | | | | |
|------------------------|-----------------------------|----------|----------|---------|----------|----------|---------|---------|----------|----------|----------|--------------------------|
| capacity in ml | 15 | 50 | 12 | 25 | 30 | 50 | 10 | 30 | 50 | 85 | 30 | |
| Ø x L in mm | 17 x 120 | 29 x 115 | 17 x 100 | 25 x 90 | 25 x 110 | 29 x 115 | 16 x 80 | 26 x 95 | 29 x 107 | 38 x 106 | 44 x 105 | |
| max. RCF ²⁾ | 2,665 | 2,665 | 2,665 | 2,343 | 2,665 | 2,665 | 2,522 | 2,451 | 2,630 | 2,612 | 2,540 | |
| radius in mm | 149 | 149 | 149 | 131 | 149 | 149 | 141 | 137 | 147 | 146 | 142 | |
| Cat. No. | tubes with screw cap | | | | | | | | | | | 0534⁶⁾ |



chrome bath tube



Adapter

| | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| boring Ø x L in mm | 17x90 | 30x90 | 17x80 | 26x72 | 26x80 | 29.5x80 | 16.5x52 | 26x83 | 29x93 | 38.5x92 | 45.9x98 |
| vessels per rotor | 4 | 4 | 4 | 4 | 4 | 4 | 16 | 4 | 4 | 4 | 4 |
| Cat. No. | 1347 | 1384 | 6311 | 1363 | 1365 | 6318 | 1348 | 4417 | 4416 | 1396 | 0765 |



Spacer

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
 3.) When using these tubes, bucket 1752 or 5051 cannot be closed with lid 1751 or 5053.
 4) Please remove the spacer.
 5) Tested by the TÜV in conformity with DIN EN 61010, section 2-020.
 6) A rubber stopper for closing the tube for agitating or mixing is available under Cat. No. 0535. The tube may not be centrifuged with the stopper.

— SWING-OUT ROTOR, 4-PLACE | 1324



Rotor

| | |
|----------------------------------|---------------------------------|
| max. RPM max. RCF | 4,500 min ⁻¹ 3,328 |
| max. capacity | 4x 100 ml |
| run-up run-down, braked in sec | 27 30 |
| angle max. noise level | 90° 58 dB (A) |
| temperature in °C | -6 |
| Cat. No. | 1324 |

Bucket

| | |
|---------------------------|-------------|
| Lid bioseal ⁵⁾ | 1492 |
| Cat. No. | 1490 |



Vessels

| | | | | | | | | | | | | | | | |
|------------------------|------------------|-------------------------|-------|-------|---------------|-------|---------------------------|-------|--------|--------|--------|--------|--------|--------|--------|
| capacity in ml | 0.5 | 1.5 | 2.0 | 1 | 3 | 4 | 5 | 6 | 7 | 9 | 15 | 25 | 50 | 85 | 100 |
| Ø x L in mm | 10.7x46 | 11x38 | 11x38 | 6x45 | 10x60 | 10x88 | 12x75 | 12x82 | 12x100 | 14x100 | 17x100 | 24x100 | 34x100 | 38x106 | 44x100 |
| max. RCF ²⁾ | 2,966 | 3,056 | 3,056 | 3,237 | 3,283 | 3,283 | 3,192 | 3,192 | 3,192 | 3,170 | 3,170 | 3,034 | 3,011 | 3,260 | 3,192 |
| radius in mm | 131 | 135 | 135 | 143 | 145 | 145 | 141 | 141 | 141 | 140 | 140 | 134 | 133 | 144 | 141 |
| Cat. No. | Pediatric | microliter tubes | | | Rhesus | | tubes²⁾ | | | | | | | | |



Adapter

| | | | | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| boring Ø x L in mm | 11.2x38 | 11.2x38 | 11.2x38 | 6.5x34 | 10.5x43 | 10.5x43 | 13.4x45 | 13.4x45 | 13.4x45 | 17.6x89 | 17.6x89 | 25.2x77 | 35.2x77 | 38.5x92 | 45.9x100.5 |
| vessels per rotor | 20 | 20 | 20 | 108 | 36 | 36 | 20 | 20 | 20 | 16 | 16 | 4 | 4 | 4 | 4 |
| Cat. No. | 1351 | 1351 | 1351 | 1339 | 1343 | 1343 | 1383 | 1383 | 1383 | 1329 | 1329 | 1330 | 1331 | 1396 | 0761 |

Vessels

| | | | | | | | | | | | | | | |
|------------------------|---|---------|-------|-------|-------|-------|---------|-------|--------|-------|--------|-------|--------|--------|
| capacity in ml | 1.1–1.4 | 2.6–2.9 | 4.9 | 2.7–3 | 4.5–5 | 4–5.5 | 7.5–8.2 | 9–10 | 10 | 1.6–5 | 4–7 | 4–7 | 8.5–10 | 15 |
| Ø x L in mm | 8 x 66 | 13x65 | 13x90 | 11x66 | 11x92 | 15x75 | 15x92 | 16x92 | 15x102 | 13x75 | 13x100 | 16x75 | 16x100 | 17x120 |
| max. RCF ²⁾ | 3,215 | 3,192 | 3,192 | 3,192 | 3,192 | 3,215 | 3,215 | 3,170 | 3,328 | 3,192 | 3,192 | 3,147 | 3,147 | 3,328 |
| radius in mm | 142 | 141 | 141 | 141 | 141 | 142 | 142 | 140 | 147 | 141 | 141 | 139 | 139 | 147 |
| Cat. No. | blood collection / urine vessels | | | | | | | | | | | | | |



Adapter

| | | | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------------|-------------|-------------|-------------|-------------|-------------|
| boring Ø x L in mm | 9x47 | 13.4x45 | 13.4x45 | 13.4x45 | 13.4x45 | 15.6x47 | 15.6x47 | 17.6x89 | 17.6x89 | 13.4x45 | 13.4x45 | 16.5x52 | 16.5x52 | 17x90 |
| vessels per rotor | 28 | 20 | 20 | 20 | 20 | 16 | 16 | 16 | 16 | 20 | 20 | 16 | 16 | 4 |
| Cat. No. | 1457 | 1383 | 1383 | 1383 | 1383 | 1459 | 1459 | 1329 | 1329⁴⁾ | 1383 | 1383 | 1348 | 1348 | 1347 |

Vessels

| | | | | | | | | | | | | | |
|------------------------|-----------------------------|----------|----------|----------|---------|----------|----------|---------|---------|--------|--------|--------|-------------|
| Kapazität in ml | 15 ^{3,3)} | 30 | 50 | 12 | 25 | 30 | 50 | 10 | 30 | 50 | 85 | 30 | |
| Ø x L in mm | 17x120 | 25 x 110 | 29 x 115 | 17 x 100 | 25 x 90 | 25 x 110 | 29 x 115 | 16 x 80 | 26 x 95 | 29x107 | 38x106 | 44x105 | |
| max. RCF ²⁾ | 3,328 | 3,328 | 3,328 | 3,328 | 2,920 | 3,328 | 3,328 | 3,147 | 3,056 | 3,283 | 3,260 | 3,170 | |
| radius in mm | 147 | 147 | 147 | 147 | 129 | 147 | 147 | 139 | 135 | 145 | 144 | 140 | |
| Cat. No. | tubes with screw cap | | | | | | | | | | | | - 6) |



Adapter

| | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| boring Ø x L in mm | 17x107 | 26x80 | 30x90 | 17x80 | 26x72 | 26x80 | 29.5x80 | 16,5x52 | 26x83 | 29x93 | 38.5x92 | 45.9x100.5 |
| vessels per rotor | 12 | 4 | 4 | 4 | 4 | 4 | 4 | 16 | 4 | 4 | 4 | 4 |
| Cat. No. | 1356 | 1365 | 1384 | 6311 | 1363 | 1365 | 6318 | 1348 | 4417 | 4416 | 1396 | 0765 |

— SWING-OUT ROTOR, 4-PLACE | 1324



Rotor

| | |
|----------------------------------|--------------------------------|
| max. RPM max. RCF | 4,500 min ¹ 3,305 |
| max. capacity | 4 x 50 ml |
| run-up run-down, braked in sec | 27 30 |
| angle max. noise level | 90° 54 dB (A) |
| temperature in °C | -6 |
| Cat. No. | 1324 |



Bucket

| | |
|-----------------|-------------|
| Cat. No. | 1398 |
|-----------------|-------------|



Vessels

| | | | | | | | | | | | |
|------------------------|---------------------------|--------|---|-------|--------|-------|-----------------------------|----------|----------|----------|----------|
| | | | | | | | | | | | |
| capacity in ml | 9 | 15 | 4-4,5 | 9-10 | 10 | 4-7 | 8,5-10 | 15 | 50 | 12 | 50 |
| Ø x L in mm | 14x100 | 17x100 | 15x75 | 16x92 | 15x102 | 16x75 | 16x100 | 17 x 120 | 29 x 115 | 17 x 100 | 29 x 115 |
| max. RCF ²⁾ | 3,192 | 3,192 | 2,875 | 3,192 | 3,192 | 3,034 | 3,034 | 3,305 | 3,260 | 3,192 | 3,260 |
| radius in mm | 141 | 141 | 127 | 141 | 141 | 134 | 134 | 146 | 144 | 141 | 144 |
| Cat. No. | tubes²⁾ | | blood collection / urine vessels | | | | tubes with screw cap | | | | |



Adapter

| | | | | | | | | | | | |
|--------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|--------------------------|
| | | | | | | | | | | | |
| boring Ø x L in mm | 17.5x81 | 17.5x81 | 17.5x81 | 17.5x81 | 17.5x81 | 17.5x81 | 17.5x81 | 17x100 | 30x98 | 17.5x81 | 30x98 |
| vessels per rotor | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 4 | 16 | 4 |
| Cat. No. | 1482A | 1482A | 1482A | 1482A | 1482A | 1482A | 1482A | 1483A | 1484 | 1482A | 1484⁴⁾ |

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
 4) Please remove spacer.

SWING-OUT ROTOR, 8-PLACE | 1611



| | |
|----------------------------------|---------------------------------|
| Rotor | |
| max. RPM max. RCF | 4,000 min ⁻¹ 2,415 |
| max. capacity | 8 x 15 ml |
| run-up run-down, braked in sec | 20 20 |
| angle max. noise level | 90° 48 dB (A) |
| temperature in °C ¹⁾ | -16 |
| Cat. No. | 1611 |

| | | | | | | | | | | | | | | | | |
|------------------------|--|----------------------------|---------|----------|----------|----------|---|---------|---------|---------|---------|---------|----------|---------|----------|--|
| Vessels | | | | | | | | | | | | | | | | |
| capacity in ml | | 5 | 6 | 7 | 10 | 15 | 2.6-2.9 | 2.7-3 | 4-5.5 | 4.5-5 | 7.5-8.2 | 1.6-5 | 4-7 | 4-7 | 8.5-10 | |
| Ø x L in mm | | 12/13 x 75 | 12 x 82 | 12 x 100 | 13 x 100 | 17 x 100 | 13 x 65 | 11 x 66 | 15 x 75 | 11 x 92 | 15 x 92 | 13 x 75 | 13 x 100 | 16 x 75 | 16 x 100 | |
| max. RCF ²⁾ | | 1,914 | 1,914 | 2,415 | 2,415 | 2,415 | 1,914 | 1,914 | 1,914 | 2,415 | 2,415 | 1,914 | 2,415 | 1,914 | 2,415 | |
| radius in mm | | 107 | 107 | 135 | 135 | 135 | 107 | 107 | 107 | 135 | 135 | 107 | 135 | 107 | 135 | |
| Cat. No. | | tubes ²⁾ | | | | | blood collection / urine vessels | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|--------------------|--|---------------|---------------|-------------|-------------|-------------|---------------|---------------|---------------|-------------|-------------|---------------|-------------|---------------|-------------|
| Bucket | | | | | | | | | | | | | | | |
| boring Ø x L in mm | | 13 x 53 | 13 x 53 | 13.2 x 81 | 13.2 x 81 | 17.5 x 81 | 13 x 53 | 13 x 53 | 17.5 x 53 | 13.2 x 81 | 17.5 x 81 | 13 x 53 | 13.2 x 81 | 17.5 x 53 | 17.5 x 81 |
| vessels per rotor | | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Cat. No. | | 1131-A | 1131-A | 1643 | 1643 | 1644 | 1131-A | 1131-A | 1132-A | 1643 | 1644 | 1131-A | 1643 | 1132-A | 1644 |

SWING-OUT ROTOR, 12-PLACE | 1628



| | |
|-----------------------------------|---------------------------------|
| Rotor | |
| max. RPM max. RCF ²⁾ | 5,000 min ⁻¹ 4,193 |
| max. capacity | 12 x 15 ml |
| run-up run-down, braked in sec | 16 16 |
| angle max. noise level | 55° / 60° / 80° 54 dB (A) |
| Cat. No. | 1628 |

| | | | | | | | | | | | | |
|---------------------------------|--|----------------------------|----------|----------|---|---------|---------|---------|---------|---------|----------|--|
| Vessels | | | | | | | | | | | | |
| capacity in ml | | 5 | 10 | 15 | 2.6-2.9 | 2.7-3 | 4-5.5 | 7.5-8.2 | 1.6-5 | 4-7 | 8.5-10 | |
| Ø x L in mm | | 12/13 x 75 | 17 x 100 | 17 x 100 | 13 x 65 | 11 x 66 | 15 x 75 | 15 x 92 | 13 x 75 | 16 x 75 | 16 x 100 | |
| max. RCF ²⁾ | | 3,466 | 3,522 | 4,193 | 3,466 | 3,466 | 3,522 | 4,193 | 3,466 | 3,522 | 4,193 | |
| radius in mm | | 124 | 126 | 150 | 124 | 124 | 126 | 150 | 124 | 126 | 150 | |
| temperature in °C ¹⁾ | | -10 | -10 | -10 | -15 | -15 | -15 | -10 | -15 | -15 | -10 | |
| Cat. No. | | tubes ²⁾ | | | blood collection / urine vessels | | | | | | | |

| | | | | | | | | | | | |
|--------------------|--|---------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|-------------|-------------|
| Bucket | | | | | | | | | | | |
| boring Ø x L in mm | | 13.2 x 53 | 17.5 x 53 | 17.5 x 79 | 13.2 x 53 | 13.2 x 53 | 17.5 x 53 | 17.5 x 79 | 13.2 x 53 | 17.5 x 53 | 17.5 x 79 |
| vessels per rotor | | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Cat. No. | | 1127-A | 1122 | 1621 | 1127-A | 1127-A | 1122 | 1621 | 1127-A | 1122 | 1621 |

- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

— SWING-OUT ROTOR, 8-PLACE | 1617

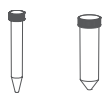


Rotor

| | | |
|----------------------------------|---------------------------------|--|
| max. RPM max. RCF | 5,000 min ⁻¹ 3,857 | |
| max. capacity | 8 x 50 ml | |
| run-up run-down, braked in sec | 20 19 | |
| angle max. noise level | 45° 50 dB (A) | |
| temperature in °C ¹⁾ | -10 | |
| Cat. No. | 1617 | |



Vessels



| | | |
|------------------------|-----------------------------|----------|
| capacity in ml | 15 | 50 |
| Ø x L in mm | 17 x 120 | 29 x 115 |
| max. RCF ²⁾ | 3,857 | 3,857 |
| radius in mm | 138 | 138 |
| Cat. No. | tubes with screw cap | |



Adapter



| | | |
|--------------------|---------------|-----------|
| boring Ø x L in mm | 17 x 84 | 30 x 94.5 |
| vessels per rotor | 8 | 8 |
| Cat. No. | 1462-A | - |

— SWING-OUT ROTOR, 6-PLACE | 1619

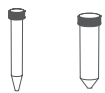


Rotor

| | | |
|----------------------------------|---------------------------------|--|
| max. RPM max. RCF | 4,000 min ⁻¹ 2,701 | |
| max. capacity | 6 x 50 ml | |
| run-up run-down, braked in sec | 20 22 | |
| angle max. noise level | 90° 50 dB (A) | |
| temperature in °C ¹⁾ | -15 | |
| Cat. No. | 1619 | |



Vessels



| | | |
|------------------------|-----------------------------|----------|
| capacity in ml | 15 | 50 |
| Ø x L in mm | 17 x 120 | 29 x 115 |
| max. RCF ²⁾ | 2,701 | 2,701 |
| radius in mm | 151 | 151 |
| Cat. No. | tubes with screw cap | |



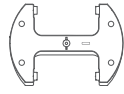
Adapter



| | | |
|--------------------|---------------|-----------|
| boring Ø x L in mm | 17 x 84 | 30 x 87.5 |
| vessels per rotor | 6 | 6 |
| Cat. No. | 1462-A | - |

- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

— SWING-OUT ROTOR, 2-PLACE | 1460



| | |
|----------------------------------|---------------------------------|
| Rotor | |
| max. RPM max. RCF | 4,000 min ⁻¹ 2,218 |
| max. capacity | 10 plates |
| run-up run-down, braked in sec | 40 45 |
| angle max. noise level | 90° 55 dB (A) |
| temperature in °C ¹⁾ | -6 |
| Cat. No. | 1460 |



| | | | | | | |
|------------------------|------------|-----------|-------------|-----------|----------------------------|-------------------|
| Vessels | | | | | | |
| capacity in ml | - | - | - | - | - | 0,2 |
| W x D x H in mm | 128x86x15 | 128x86x22 | 128x86x44.5 | 128x86x46 | 124x82x20 | - |
| max. RCF ²⁾ | 2,433 | 2,433 | 2,433 | 2,433 | 2,433 | 2,433 |
| radius in mm | 136 | 136 | 136 | 136 | 136 | 136 |
| Cat. No. | MTP | CP | DWP | MS | PCR plate, 96 wells | PCR strips |

| | | | | | | |
|--------------------|---------------|---------------|---------------|---------------|----------------------|----------------------|
| + | | | | | | |
| Bucket | | | | | | |
| boring Ø x L in mm | - | - | - | - | - | - |
| vessels per rotor | 10 | 8 | 2 | 2 | 2 | 24 x 8 |
| Cat. No. | 1453-A | 1453-A | 1453-A | 1453-A | 1453-A + 1485 | 1453-A + 1485 |

— SWING-OUT ROTOR, 24-PLACE | 1555



| | |
|----------------------------------|-----------------------------------|
| Rotor | |
| max. RPM max. RCF | 13,000 min ⁻¹ 18,327 |
| max. capacity | 24 x 2 ml |
| run-up run-down, braked in sec | 36 31 |
| angle | 90° |
| temperature in °C ¹⁾ | 3 |
| Cat. No. | 1555 |

Lid bioseal[®], phenol-resistant



Cat. No. **INCLUSIVE**



| | | | | | | |
|------------------------|-------------------------|--------|--------|--------|--------|--------|
| Vessels | | | | | | |
| capacity in ml | 0.2 | 0.4 | 0.5 | 0.8 | 1.5 | 2 |
| Ø x L in mm | 6x18 | 6x45 | 8x30 | 8x45 | 11x38 | 11x38 |
| max. RCF ²⁾ | 18,327 | 18,327 | 18,327 | 18,327 | 18,327 | 18,327 |
| radius in mm | 97 | 97 | 97 | 97 | 97 | 97 |
| Cat. No. | microliter tubes | | | | | |

| | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|--------------------------|-----------|
| + | | | | | | |
| Adapter | | | | | | |
| boring Ø x L in mm | 6x40 | 6x40 | 8x40 | 8x40 | 10.2x19.3 | 11.5x38.5 |
| vessels per rotor | 24 | 24 | 24 | 24 | 24 | 24 |
| Cat. No. | 2024 | 2024 | 2023 | 2023 | 2031⁷⁾ | - |

- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
- 5) Tested by TÜV in conformity with DIN EN 61010, section 2-020.
- 7) For centrifugation at high speeds, we recommend to use conical, phenol-resistant adapters. Cat. No. 2031.

— ANGLE ROTOR, 24-PLACE | 1552



Rotor

| | |
|----------------------------------|-----------------------------------|
| max. RPM max. RCF | 16,000 min ⁻¹ 24,900 |
| max. capacity | 24 x 2 ml |
| run-up run-down, braked in sec | 30 29 |
| angle max. noise level | 50° 58 dB (A) |
| temperature in °C ¹⁾ | 2 |

| | |
|-----------------|-------------|
| Cat. No. | 1552 |
|-----------------|-------------|

+ Lid bioseal[®], phenol-resistant

| | |
|-----------------|------------------|
| Cat. No. | INCLUSIVE |
|-----------------|------------------|



Vessels



| | | | | | | | |
|------------------------|--------|--------|--------|--------|--------|--------|-----------|
| capacity in ml | 0.2 | 0.4 | 0.5 | 0.8 | 1.5 | 2 | 0.5 |
| Ø x L in mm | 6x18 | 6x45 | 8x30 | 8x45 | 11x38 | 11x38 | 10,7 x 46 |
| max. RCF ²⁾ | 24,900 | 24,900 | 24,900 | 24,900 | 24,900 | 24,900 | 23,755 |
| radius in mm | 87 | 87 | 87 | 87 | 87 | 87 | 83 |

| | | | | | | | |
|-----------------|-------------------------|--|--|--|--|--|------------------|
| Cat. No. | microliter tubes | | | | | | Pediatric |
|-----------------|-------------------------|--|--|--|--|--|------------------|



Adapter

| | | | | | | | |
|--------------------|------|------|------|------|-----------|-----------|---------|
| boring Ø x L in mm | 6x40 | 6x40 | 8x40 | 8x40 | 10,2x19,3 | 11,2x42,6 | 11,2x39 |
| vessels per rotor | 24 | 24 | 24 | 24 | 24 | 24 | 12 |

| | | | | | | | |
|-----------------|-------------|-------------|-------------|-------------|--------------------------|----------|---------------------------|
| Cat. No. | 2024 | 2024 | 2023 | 2023 | 2031⁷⁾ | - | 0788¹⁷⁾ |
|-----------------|-------------|-------------|-------------|-------------|--------------------------|----------|---------------------------|

— ANGLE ROTOR, 30-PLACE | 1553



Rotor

| | |
|----------------------------------|-----------------------------------|
| max. RPM max. RCF | 14,150 min ⁻¹ 21,713 |
| max. capacity | 30 x 2 ml |
| run-up run-down, braked in sec | 35 32 |
| angle | 45° |
| temperature in °C ¹⁾ | -1 |

| | |
|-----------------|-------------|
| Cat. No. | 1553 |
|-----------------|-------------|

+ Lid bioseal[®], phenol-resistant

| | |
|-----------------|------------------|
| Cat. No. | INCLUSIVE |
|-----------------|------------------|



Vessels



| | | | | | | | |
|------------------------|--------|--------|--------|--------|--------|--------|-----------|
| capacity in ml | 0.2 | 0.4 | 0.5 | 0.8 | 1.5 | 2 | 0.5 |
| Ø x L in mm | 6x18 | 6x45 | 8x30 | 8x45 | 11x38 | 11x38 | 10,7 x 46 |
| max. RCF ²⁾ | 21,713 | 21,713 | 21,713 | 21,713 | 21,713 | 21,713 | 20,818 |
| radius in mm | 97 | 97 | 97 | 97 | 97 | 97 | 93 |

| | | | | | | | |
|-----------------|-------------------------|--|--|--|--|--|------------------|
| Cat. No. | microliter tubes | | | | | | Pediatric |
|-----------------|-------------------------|--|--|--|--|--|------------------|



Adapter

| | | | | | | | |
|--------------------|------|------|------|------|-----------|-----------|---------|
| boring Ø x L in mm | 6x40 | 6x40 | 8x40 | 8x40 | 10,2x19,3 | 11,2x40,9 | 11,2x39 |
| vessels per rotor | 30 | 30 | 30 | 30 | 30 | 30 | 15 |

| | | | | | | | |
|-----------------|-------------|-------------|-------------|-------------|--------------------------|----------|---------------------------|
| Cat. No. | 2024 | 2024 | 2023 | 2023 | 2031⁷⁾ | - | 0788¹⁷⁾ |
|-----------------|-------------|-------------|-------------|-------------|--------------------------|----------|---------------------------|

- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
- 5) Tested by TÜV in conformity with DIN EN 61010, section 2-020.
- 7) For centrifugation at high speeds, we recommend to use conical, phenol-resistant adapters. Cat. No. 2031.
- 17) Packed in units of 15 pieces.

— ANGLE ROTOR, 8-PLACE | 1551



Rotor

| | |
|----------------------------------|-----------------------------------|
| max. RPM max. RCF | 13,000 min ⁻¹ 13,604 |
| max. capacity | 8 x PCR-Strips |
| run-up run-down, braked in sec | 36 31 |
| angle max. noise level | 45° 58 dB (A) |
| temperature in °C ¹⁾ | -4 |
| Cat. No. | 1551 |



Lid bioseal[®], phenol-resistant

Cat. No.



INCLUSIVE

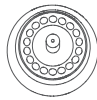


Vessels

| | | |
|------------------------|----------|-------------------|
| capacity in ml | 0.2 | 0.2 |
| Ø x L in mm | 6x18 | - |
| max. RCF ²⁾ | 13,604 | 13,604 |
| radius in mm | 64 | 8x8 |
| Cat. No. | - | PCR-Strips |



— ANGLE ROTOR, 18-PLACE | 1627



Rotor

| | |
|----------------------------------|-----------------------------------|
| max. RPM max. RCF | 14,150 min ⁻¹ 22,161 |
| max. capacity | 18 x 5 ml |
| run-up run-down, braked in sec | 35 32 |
| angle | 45° |
| temperature in °C ¹⁾ | 2 |
| Cat. No. | 1627 |



Lid bioseal[®], phenol-resistant

Cat. No.



INCLUSIVE



Vessels

| | |
|------------------------|----------|
| capacity in ml | 5 |
| Ø x L in mm | 17x59 |
| max. RCF ²⁾ | 22,161 |
| radius in mm | 18 |
| Cat. No. | - |



- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
- 5) Tested by TÜV in conformity with DIN EN 61010, section 2-020.

— ANGLE ROTOR, 6-PLACE | 1556



Rotor

| | |
|----------------------------------|----------------------------------|
| max. RPM max. RCF | 9.000 min ⁻¹ 10.595 |
| max. capacity | 6 x 94 ml |
| run-up run-down, braked in sec | 36 32 |
| angle max. noise level | 35° 60 dB (A) |
| temperature in °C ¹⁾ | 0 |
| Cat. No. | 1556 |



Lid bioseal[®], phenol-resistant

Cat. No.

INCLUSIVE



Vessels

| | | | | | | | | | | | | | | | |
|------------------------|-------------------------|---------|---------------------------|----------|----------|---|---------|---------|----------|-----------------------------|----------|----------|---------|---------|----------|
| | | | | | | | | | | | | | | | |
| capacity in ml | 1.5 | 2 | 15 | 50 | 50 | 85 | 7.5-8.2 | 9-10 | 10 | 8.5-10 | 15 | 50 | 10 | 30 | 50 |
| Ø x L in mm | 11 x 38 | 11 x 38 | 17 x 100 | 35 x 105 | 34 x 100 | 38 x 101 | 15 x 92 | 16 x 92 | 15 x 102 | 16 x 100 | 17 x 120 | 29 x 115 | 16 x 80 | 26 x 95 | 29 x 107 |
| max. RCF ²⁾ | 10,324 | 10,324 | 10,052 | 10,414 | 10,414 | 10,595 | 10,052 | 10,052 | 10,052 | 10,052 | 10,052 | 10,052 | 10,414 | 9,690 | 10,142 |
| radius in mm | 114 | 114 | 111 | 115 | 115 | 117 | 111 | 111 | 111 | 111 | 111 | 111 | 115 | 107 | 112 |
| Cat. No. | microliter tubes | | tubes³⁾ | | | blood collection / urine vessels | | | | tubes with screw cap | | | | | |



Adapter

| | | | | | | | | | | | | | | | |
|--------------------|-------------|-------------|-------------|-------------|-------------|----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | | | | | | | | | | | | | |
| boring Ø x L in mm | 11.4 x 39 | 11.4 x 39 | 17.5 x 78 | 35 x 89 | 35 x 89 | - | 17.5 x 78 | 17.5 x 78 | 17.5 x 78 | 17.5 x 78 | 17 x 106 | 29.8 x 97 | 16.5 x 72 | 26 x 85 | 29 x 92 |
| vessels per rotor | 24 | 24 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 12 | 6 | 6 |
| Cat. No. | 1449 | 1449 | 1478 | 1463 | 1463 | - | 1478 | 1478 | 1478 | 1478 | 1466 | 1454 | 1477 | 1447 | 1446 |

Vessels

| | | |
|------------------------|-----------------------------|----------|
| | | |
| capacity in ml | 85 | 94 |
| Ø x L in mm | 38 x 106 | 38 x 102 |
| max. RCF ²⁾ | 10,595 | 10,595 |
| radius in mm | 117 | 117 |
| Cat. No. | tubes with screw cap | |



Adapter

| | | |
|--------------------|----------|----------|
| | | |
| boring Ø x L in mm | - | - |
| vessels per rotor | 6 | 6 |
| Cat. No. | - | - |

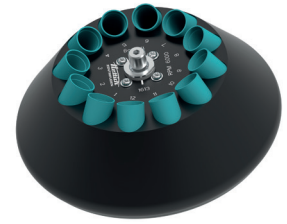
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
 5) Tested by TÜV in conformity with DIN EN 61010, section 2-020.

— ANGLE ROTOR, 12-PLACE | 1613



Rotor

| | |
|----------------------------------|---------------------------------|
| max. RPM max. RCF | 6,000 min ⁻¹ 4,146 |
| max. capacity | 12 x 15 ml |
| run-up run-down, braked in sec | 15 15 |
| angle max. noise level | 35° 50 dB (A) |
| temperature in °C ¹⁾ | -16 |
| Cat. No. | 1613 |



Vessels

| | | | | | | | | | | | | | | | |
|------------------------|------------------|-------------------------|---------|---------|---------------------------|---------|----------|---|-----------|---------|---------|---------|-----------|---------|----------|
| | | | | | | | | | | | | | | | |
| capacity in ml | 0.5 | 1.5 | 2.0 | 4 | 5 | 6 | 15 | 1.1 – 1.4 | 2.6 – 2.9 | 2.7 – 3 | 4.5 – 5 | 4.9 | 7.5 – 8.2 | 9 – 10 | 10 |
| Ø x L in mm | 10.7 x 46 | 11 x 38 | 11 x 38 | 10 x 88 | 12/13 x 75 | 12 x 82 | 17 x 100 | 8 x 66 | 13 x 65 | 11 x 66 | 11 x 92 | 13 x 90 | 15 x 92 | 16 x 92 | 15 x 102 |
| max. RCF ²⁾ | 2,777 | 2,737 | 2,737 | 3,502 | 3,300 | 3,300 | 4,146 | 3,300 | 3,300 | 3,300 | 4,146 | 4,146 | 4,146 | 4,146 | 4,146 |
| radius in mm | 69 | 68 | 68 | 87 | 82 | 82 | 103 | 82 | 82 | 82 | 103 | 103 | 103 | 103 | 103 |
| Cat. No. | Pediatric | microliter tubes | | | tubes²⁾ | | | blood collection / urine vessels | | | | | | | |



Adapter

| | | | | | | | | | | | | | | | |
|--------------------|----------------------------|---------|---------|-------------|---------------|---------------|-----------|---------------|---------------|---------------|-----------|-----------|-----------|-----------|-----------|
| | | | | | | | | | | | | | | | |
| boring Ø x L in mm | 11 x 35 | 11 x 35 | 11 x 35 | 11.5 x 67.5 | 13.5 x 59 | 13.5 x 59 | 17.7 x 88 | 13.5 x 59 | 13.5 x 59 | 13.5 x 59 | 17.7 x 88 | 17.7 x 88 | 17.7 x 88 | 17.7 x 88 | 17.7 x 88 |
| vessels per rotor | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Cat. No. | 2 x 1063-6 (6 pcs.) | | | 6305 | 1054-A | 1054-A | - | 1054-A | 1054-A | 1054-A | - | - | - | - | - |

Vessels

| | | | | | | |
|------------------------|---|----------|----------|----------|----------|----------|
| | | | | | | |
| capacity in ml | 1.6 – 5 | 4 – 7 | 8 | 8.5 – 10 | 5 | 15 |
| Ø x L in mm | 13 x 75 | 13 x 100 | 16 x 125 | 16 x 100 | 17 x 59 | 17 x 120 |
| max. RCF ²⁾ | 3,300 | 4,146 | 4,146 | 4,146 | 3,180 | 4,146 |
| radius in mm | 82 | 103 | 103 | 103 | 79 | 103 |
| Cat. No. | blood collection / urine vessels | | | | - | - |



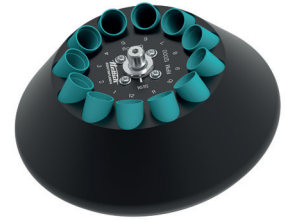
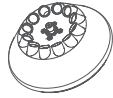
Adapter

| | | | | | | |
|--------------------|---------------|-----------|-----------|-----------|-----------|-----------|
| | | | | | | |
| boring Ø x L in mm | 13.5 x 60 | 17.7 x 88 | 17.7 x 88 | 17.7 x 88 | 17.7 x 88 | 17.7 x 88 |
| vessels per rotor | 12 | 12 | 6 | 12 | 12 | 6 |
| Cat. No. | 1054-A | - | - | - | - | - |

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

— ANGLE ROTOR, 12-PLACE | 1615



Rotor

| | |
|----------------------------------|-----------------------------------|
| max. RPM max. RCF | 12,000 min ⁻¹ 16,582 |
| max. capacity | 12 x 15 ml |
| run-up run-down, braked in sec | 40 40 |
| angle max. noise level | 35° 52 dB (A) |
| temperature in °C ¹⁾ | -2 |
| Cat. No. | 1615 |

Vessels

| | | | | | | | | | | | | | | |
|------------------------|------------------|-------------------------|---------|---------|----------------------------|---------|----------|---|-----------|---------|---------|---------|------------|----------|
| | | | | | | | | | | | | | | |
| capacity in ml | 0.5 | 1.5 | 2.0 | 4 | 5 | 6 | 15 | 1.1 - 1.4 | 2.6 - 2.9 | 2.7 - 3 | 4.5 - 5 | 4.9 | 7.5 - 10 | 10 |
| Ø x L in mm | 10.7 x 46 | 11 x 38 | 11 x 38 | 10 x 88 | 12/13 x 75 | 12 x 82 | 17 x 100 | 8 x 66 | 13 x 65 | 11 x 66 | 11 x 92 | 13 x 90 | 15/16 x 92 | 15 x 102 |
| max. RCF ²⁾ | 11,108 | 10,947 | 10,947 | 14,006 | 13,201 | 13,201 | 16,582 | 13,201 | 13,201 | 13,201 | 16,582 | 16,582 | 16,582 | 16,582 |
| radius in mm | 69 | 68 | 68 | 87 | 82 | 82 | 103 | 82 | 82 | 82 | 103 | 103 | 103 | 103 |
| Cat. No. | Pediatric | microliter tubes | | | tubes ²⁾ | | | blood collection / urine vessels | | | | | | |



Adapter

| | | | | | | | | | | | | | | |
|--------------------|----------------------------|---------|---------|-------------|---------------|---------------|-----------|---------------|---------------|---------------|-----------|-----------|-----------|-----------|
| | | | | | | | | | | | | | | |
| boring Ø x L in mm | 11 x 35 | 11 x 35 | 11 x 35 | 11.5 x 67.5 | 13.5 x 59 | 13.5 x 59 | 17.7 x 88 | 13.5 x 59 | 13.5 x 59 | 13.5 x 59 | 17.7 x 88 | 17.7 x 88 | 17.7 x 88 | 17.7 x 88 |
| vessels per rotor | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Cat. No. | 2 x 1063-6 (6 pcs.) | | | 6305 | 1054-A | 1054-A | - | 1054-A | 1054-A | 1054-A | - | - | - | - |

Vessels

| | | | | | | |
|------------------------|---|----------|----------|----------|----------|----------|
| | | | | | | |
| capacity in ml | 1.6 - 5 | 4 - 7 | 8.5 - 10 | 8 | 5 | 15 |
| Ø x L in mm | 13 x 75 | 13 x 100 | 16 x 100 | 16 x 125 | 17 x 59 | 17 x 120 |
| max. RCF ²⁾ | 13,201 | 16,582 | 16,582 | 16,582 | 12,718 | 15,455 |
| radius in mm | 82 | 103 | 103 | 103 | 79 | 96 |
| Cat. No. | blood collection / urine vessels | | | - | - | - |



Adapter

| | | | | | | |
|--------------------|---------------|-----------|-----------|-----------|-------------|----------------------------|
| | | | | | | |
| boring Ø x L in mm | 13.5 x 59 | 17.7 x 88 | 17.7 x 88 | 17.7 x 88 | 17 x 25 | 17 x 104 |
| vessels per rotor | 12 | 12 | 12 | 6 | 12 | 6 |
| Cat. No. | 1054-A | - | - | - | 1064 | 1647 ²⁵⁾ |

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

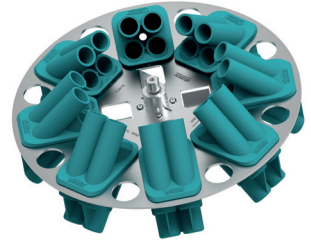
25) Adapter (set), 6-place: For conical 15 ml tubes with screw cap, remove carriers from rotor and replace them with adapters.

— ANGLE ROTOR, 8-PLACE | 1418



Rotor

| | |
|----------------------------------|---------------------------------|
| max. RPM max. RCF | 4,500 min ⁻¹ 3,305 |
| max. capacity | 8 x 50 ml |
| run-up run-down, braked in sec | 30 31 |
| angle max. noise level | 45° 54 dB (A) |
| temperature in °C ¹⁾ | -5 |
| Cat. No. | 1418 |



Vessels

| | | | | | | | | | | | | | | |
|------------------------|----------|--------|---------|---------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| | | | | | | | | | | | | | | |
| capacity in ml | 5 | 15 | 1.1–1.4 | 2.6–2.9 | 2.7–3 | 9–10 | 1.6–5 | 4–7 | 8.5–10 | 12 | 15 | 50 | 12 | 50 |
| Ø x L in mm | 12/13x75 | 17x100 | 8x66 | 13x65 | 11x66 | 16x92 | 13x75 | 13x100 | 16x100 | 17x102 | 17x120 | 29x115 | 17x100 | 29x107 |
| max. RCF ²⁾ | 2,762 | 3,215 | 2,762 | 2,762 | 2,762 | 3,215 | 2,762 | 3,215 | 3,215 | 3,215 | 3,283 | 3,147 | 3,215 | 3,147 |
| radius in mm | 122 | 142 | 122 | 122 | 122 | 142 | 122 | 146 | 142 | 142 | 145 | 139 | 142 | 139 |

| Cat. No. | tubes ²⁾ | | | | blood collection / urine vessels | | | | tubes with screw cap | | | | | |
|--------------------|---------------------|-------------|-------------|-------------|----------------------------------|-------------|-------------|-------------|----------------------|-------------|-------------|-------------|-------------|-------------|
| | + 1054-A | + 0716 | + 1054-A | + 1054-A | + 1054-A | + 0716 | + 1054-A | + 0716 | + 0716 | + 0716 | + E2109 | + E2110-A | + 0716 | |
| | | | | | | | | | | | | | | |
| boring Ø x L in mm | 17.4x91 | 17.4x91 | 17.4x91 | 17.4x91 | 17.4x91 | 17.4x91 | 17.4x91 | 17.4x91 | 17.4x91 | 17.4x91 | 17.4x91 | 30.2x92 | 17.4x91 | 30.2x92 |
| vessels per rotor | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 8 | 32 | 8 |
| Cat. No. | 1467 | 1467 | 1467 | 1467 | 1467 | 1467 | 1467 | 1467 | 1467 | 1467 | 1467 | 1468 | 1467 | 1468 |

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

CERTIFICATIONS / REGISTRATIONS

Product certification:



Product registration:

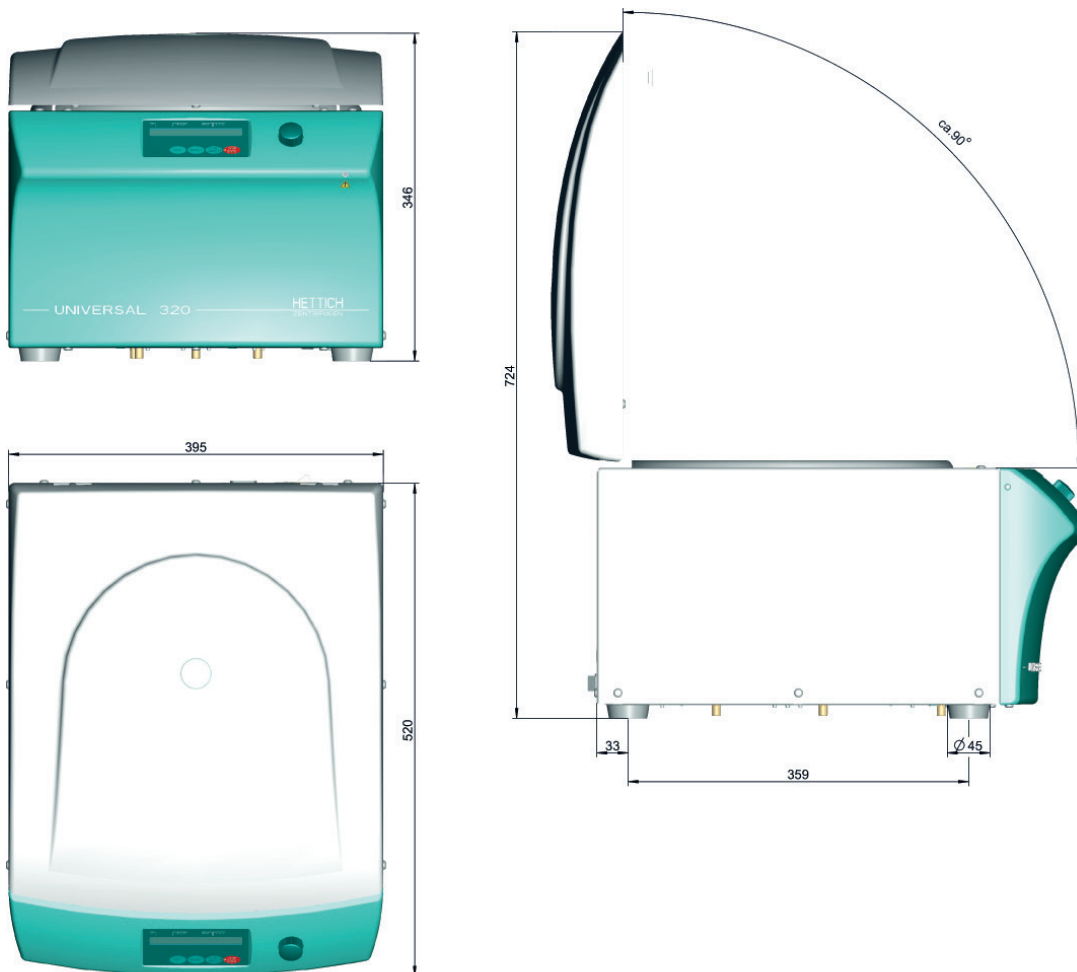


according to regulation (EU) 2017/746

Company certifications:



DIMENSIONS – UNIVERSAL 320



— DIMENSIONS – UNIVERSAL 320 R

