

CSpin

CONTINUOUS CENTRIFUGATION WITHIN THE ATRAS WORKFLOW



CSpin brings continuous, high-throughput centrifugation directly into the ATRAS workflow. By automating centrifugation and sample handling, it eliminates manual intermediate steps and maintains a continuous sample flow. Its modular, open design enables seamless integration into existing laboratory environments and allows the system to be configured to meet individual workflow and throughput requirements.

THROUGHPUT

500

SAMPLES/HOUR/MODULE
at 8-min. centrifugation time

NOISE LEVEL ≤

68

DB (A)

CAPACITY

96

SAMPLES/CYCLE

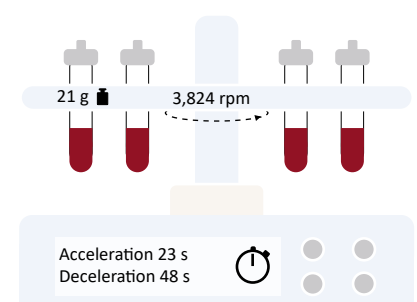
WEIGHT

457

KG approx.

SPECIFICATIONS

Dimensions (WxHxD)	903 x 1,760 x 800 mm
Maximum centrifugal force (RCF)	3,500 g
Maximum speed n_{max} RPM	3,824 rpm
Maximum sample weight	21 g
Acceleration to maximum speed	approx. 23 s
Deceleration time from maximum speed	approx. 48 s
Sample input	via ATRAS conveyor or input racks
Sample output	into bulk target bins ¹ , racks or via conveyor/InTrac ¹



¹ for centrifuged gel-separator tubes or non-centrifuged samples

DESIGNED FOR DURABILITY

Rotor designed for continuous operation – no routine replacement required

Swing-out buckets rated for 35,000 centrifugation cycles

REQUIREMENTS

Ambient temperature	15°–32°C
Power consumption	1,600–2,000 VA (maximum load)
Supply voltage	230 V
Frequency	50–60 Hz
Mains connection	Type F plug (Schuko)
Circuit protection	16 A, type C circuit breaker
Not an IVDR product (under Regulation (EU) 2017/746 IVDR)	

CAPACITY

Number of target bins	1
Capacity per target bin	150–200 samples
Rack area capacity	up to 8 individual racks

[View validated racks](#)

Adaptable to individual workflows

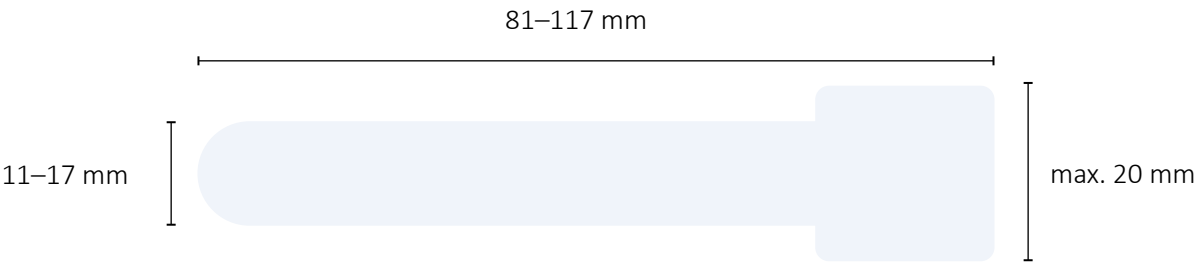
The ATRAS family features a modular, open architecture that allows each system to be configured according to laboratory layout, workflow requirements and throughput needs – regardless of the analyser manufacturer.

CSpin can also be integrated into existing ATRAS R4 systems. While routine samples are processed according to the FIFO principle, urgent STAT samples are given priority. The rack plate is manufactured according to customer-specific requirements. The duration of centrifugation, *g*-force (RCF), acceleration and deceleration ramp can be configured individually and saved as centrifugation profiles. Multiple CSpin modules – up to four – enable higher throughput or the parallel processing of different centrifugation profiles.



TUBE DIMENSIONS

For centrifugation and automated handling, sample tubes must comply with the following dimensions.



CENTRIFUGATION

Length (including cap) :	81–117 mm
Tube diameter (without cap):	11–17 mm
Maximum cap diameter:	20 mm

PASS-THROUGH/SORTING ONLY (without centrifugation)

Length (including cap) :	75–120 mm
Tube diameter (without cap):	11–18 mm
Maximum cap diameter:	20 mm

How centrifugation time affects throughput

Sample loading and unloading, centrifugation and bucket changeover operate as one coordinated process. The 8-minute profile provides the ideal balance between these steps, enabling maximum throughput. The comparison below shows how the three profiles affect system performance.

12-MINUTE PROFILE

Longer cycle time, lower throughput

The buckets for the next cycle are fully loaded after 8 minutes. As the current centrifugation cycle continues for another 4 minutes, the loaded buckets have to wait before they can be transferred to the centrifuge.



12 min centrifugation: centrifuge running at full capacity²

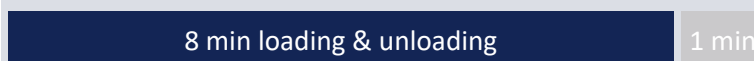
approx.

-25%
lower throughput

8-MINUTE PROFILE

Maximum throughput

The centrifugation cycle takes exactly as long as it takes to unload and reload the centrifuge buckets: 8 minutes. This eliminates waiting time and enables maximum throughput.



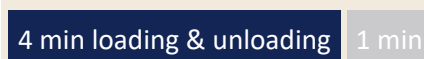
8 min centrifugation: centrifuge running at full capacity²

500³
samples/hour

4-MINUTE PROFILE

Shorter cycle time, lower throughput

After 4 minutes, the unloading and reloading process is still in progress. As not all buckets are ready for the next cycle, the centrifuge starts at partial capacity.



4 min centrifugation: centrifuge running at partial capacity²

approx.

-10%
lower throughput

 Loading and unloading samples into/from buckets

 Waiting time for loaded buckets

 Replacement of centrifuged buckets with buckets ready for centrifugation

²plus an additional deceleration time of approx. 48 seconds

³provided that the sample mix contains a sufficient number of samples requiring centrifugation

