LORDERAN

TECHNICAL DATASHEET
DS-TDL-5A-EN · REV. B · NOV 2026

LABORATORY CENTRIFUGE

Benchtop **Low-Speed Refrigerated Centrifuge**

Cooled swing-out separation for clinical, cell and assay labs — blood tubes, conical tubes and 96-well plates at up to **5000 rpm** and **4390 × g**.

MODEL **TDL-5A**





FRONT



LID OPEN

5000 rpm MAX SPEED	**4390** × g MAX RCF	**4 × 2 × 100 ml** MAX CAPACITY	**−20…+40** °C TEMPERATURE RANGE
±1 °C TEMPERATURE ACCURACY	**±10** rpm SPEED ACCURACY	**4** ROTORS IN 2 TYPES	**1** year WARRANTY

01 Speed or force
Set rpm or × g directly — methods transfer between rotors without conversion.

02 Cold through the run
Refrigerated chamber from −20 to +40 °C, held to ±1 °C.

03 Tubes to plates
Blood tubes, 15/50 ml conicals, bottles and 96-well plates in 4 rotors.

APPLICATIONS
Clinical diagnostics · Cell culture · Immunology & ELISA · Sample preparation

1 year warranty
Major defects: full refund or replacement.

Free DDP shipping
Duties paid, no surprise import charges.

30-day returns
Most new, unopened items.

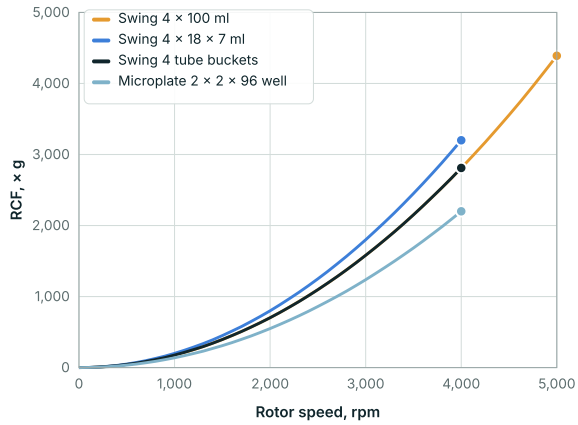
PRODUCT OVERVIEW

Cold, gentle separation for routine lab work

TDL-5A is a benchtop refrigerated centrifuge for clinical, biochemistry and immunology laboratories. Swing-out rotors carry blood collection tubes, conical tubes and 96-well microplates, while refrigeration holds the chamber anywhere from −20 to +40 °C through the whole run.

Protocols are written in × g because force, not speed, does the separating — and the same rpm gives more force in a larger rotor. Set **speed or force** directly, and a method moves between rotors and laboratories without conversion.

Speed vs. force. RCF rises with the square of speed. Each curve ends at that rotor's rated maximum.



HOW IT WORKS

01 Rotor recognition
Automatic, prevents overspeed.

02 Refrigeration
Imported compressor unit, R134a refrigerant; holds −20 to +40 °C through the run.

03 Drive control
9 up / 10 down: Acceleration and braking levels

04 Controller
7-inch LCD touch screen. 99 programs: Up to 10 steps each; 3 run modes: Program, curve or preset

05 Lid and protection
The lid stays locked while the rotor turns, and the protection system stops the run and alarms if anything goes outside safe limits.

MAX SPEED
5000 rpm
±10 rpm speed accuracy

MAX RCF
4390 × g
4 × 100 ml rotor, r ≈ 157 mm

TEMPERATURE
−20…+40 °C
±1 °C accuracy

NOISE
< 65 dB(A)
measured at the instrument

RELATIVE CENTRIFUGAL FORCE

$$RCF = 1.118 \times 10^{-6} \times r \times n^2$$

r = radius in mm · n = speed in rpm. Example: the 4 × 100 ml rotor at 5000 rpm, r ≈ 157 mm, gives **4390 × g**.

Write methods in × g

RCF = 1.118 × 10^{-6} × r × n^2. Quote force, and any rotor can reproduce the run.

Balance every load

Fill opposite positions with equal mass. Good balance protects the drive and the run.

Pre-cool for sensitive samples

Run the empty chamber and rotor down to temperature before loading heat-sensitive material.

FEATURES

Built for repeatable runs, operator after operator



Control panel
7-inch LCD touch screen



Chamber and rotor
Chamber -20 to +40 °C



Outer size
750 × 480 × 420 mm (L × W × H), 80 kg net

01 Operation & programs

- **7-inch touch screen** — Clear status and set-up
- **99 programs** — Up to 10 steps each
- **3 run modes** — Program, curve or preset
- **9 up / 10 down** — Acceleration and braking levels
- **USB and RS232** — Export and log run data

02 Drive & refrigeration

- Refrigeration holds the chamber at the set temperature, from −20 to +40 °C, through the whole run. Graded acceleration and braking protect delicate pellets.
- **Compressor standby** — Saves energy between runs

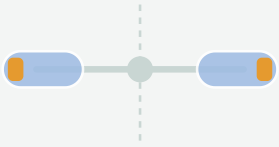
03 Safety

- The lid stays locked while the rotor turns, and the protection system stops the run and alarms if anything goes outside safe limits.
- **Lid and overspeed safety** — Plus an auto-closing quiet lid lock
- **Rotor recognition** — Automatic, prevents overspeed

04 Rotors & capacity

- **4 rotors in 2 types** — microplate, swing
- Max capacity **4 × 2 × 100 ml (800 ml)**
- Highest force: **swing 4 × 100 ml**, 5000 rpm / 4390 × g
- Every bucket, holder and adapter listed in the rotor table

ROTOR TYPES



Swing rotor
Buckets swing out level. A flat pellet at the bottom; best for blood, layers and large volumes.

Microplate rotor
Carries 96-well plates flat for plate washing and assay prep.

TECHNICAL SPECIFICATIONS

Technical specifications

Specification	
PERFORMANCE	
Max speed	5000 rpm
Max RCF	4390 × g
Max capacity	4 × 2 × 100 ml (800 ml)
Speed accuracy	±10 rpm
Time setting	1 s – 99 min 59 s / 1 min – 99 h 59 min
Temperature range	−20 to +40 °C
Temperature accuracy	±1 °C
Display	7-inch LCD touch screen

Specification	
POWER AND COOLING	
Compressor	Imported compressor unit, R134a refrigerant
Noise	< 65 dB(A)
Power supply	AC 220 V, 50 Hz
Power	1200 W
SIZE AND WEIGHT	
Outer size	750 × 480 × 420 mm (L × W × H)
Crate size	800 × 580 × 490 mm (L × W × H)
Net weight	80 kg

Specifications from the LORDERAN product documentation. Subject to change without notice for product improvement.

ROTORS AND ACCESSORIES

4 rotors, every bucket and adapter

Type	Rotor	Max rpm	Max × g	r, mm*	Buckets, holders and adapters
SWING	**4 × 100 ml**	5000	4390	157	4 × 100 ml tube rack
SWING	**4 tube buckets** Up to 4 × 2 × 100 ml	4000	2810	157	4 × 2 × 50 ml 2×1.5, 5/7, 5, 10, 15, 20 ml · 4 × 4 × 15 ml 1.5, 5, 5/7, 10 ml · 4 × 6 × 15 ml 1.5, 5, 5/7, 10 ml · 4 × 8 × 15 ml 1.5, 5, 5/7, 10 ml · 4 × 2 × 100 ml 50, 30, 20, 15, 10, 7 ml, tapered 50/15 ml, 4×6×5, 4×4×10, 8×3×1.5 ml
SWING	**4 × 18 × 7 ml** Blood collection tubes	4000	3200	179	4 × 18 × 7 ml rack · 4 × 12 × 7 ml rack
MICROPLATE	**2 × 2 × 96 well**	4000	2200	123	Includes 2 × 2 × 96 microplate carrier

* Effective radius calculated from the rated values, r = RCF / (1.118 × 10^{-6} × n^2). Reference figure for converting between rpm and × g; not measured rotor geometry.

AT A GLANCE

INSTRUMENT
TDL-5A
Outer size, L × W × H
750 × 480 × 420 mm
Net weight
80 kg
Power
AC 220 V, 50 Hz · 1200 W

SHIPPING
Crate
Crate size, L × W × H
800 × 580 × 490 mm
Delivery
Duty paid (DDP)
Ship date
Confirmed on order

PERFORMANCE
At full speed
Max speed / RCF
5000 rpm · 4390 × g
Max capacity
4 × 2 × 100 ml (800 ml)
Temperature
−20 to +40 °C

THE LORDERAN CENTRIFUGE RANGE · THIS MODEL HIGHLIGHTED

Model	Format	Max rpm	Max × g	Max capacity	Cooling
DL-5M	Floor	5000	4100	4 × 1000 ml	Refrigerated
D5B	Floor	5000	4640	4 × 1000 ml	Ambient
DL-5B	Floor	5000	3780	4 × 750 ml	Refrigerated
D5M	Floor	5000	3780	4 × 750 ml	Ambient
TDL-5A	**Bench**	**5000**	**4390**	**4 × 2 × 100 ml**	**Refrigerated**
TDL-8A	Bench	8000	9100	4 × 500 ml	Refrigerated
L580R	Bench	5800	5060	4 × 750 ml	Refrigerated
TGL-21M	Bench	21,000	30,642	4 × 750 ml	Refrigerated
H2500R	Floor	25,000	64,983	4 × 1000 ml	Refrigerated
H2100R	Floor	21,000	50,400	6 × 500 ml	Refrigerated
GL-25M	Floor	25,000	64,983	4 × 1000 ml	Refrigerated
GL-21M	Floor	21,000	50,400	6 × 500 ml	Refrigerated
BH2500R	Floor	25,000	64,983	4 × 1000 ml	Refrigerated
BH2300R	Floor	23,000	60,900	4 × 1000 ml	Refrigerated
BH2200R	Floor	22,000	52,000	6 × 600 ml	Refrigerated
BH2100R	Floor	21,000	50,400	6 × 500 ml	Refrigerated

APPLICATIONS & SERVICE

Where it works, and what comes with it

Clinical diagnostics

Separate serum and plasma from blood collection tubes in large batches, with cooling that protects temperature-sensitive analytes.

Cell culture

Pellet cells gently in 15 and 50 ml conical tubes. Soft acceleration and braking keep pellets intact and supernatants clear.

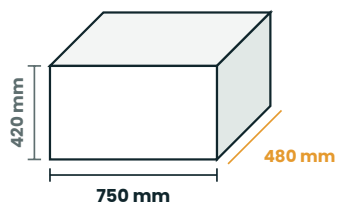
Immunology and ELISA

Spin 96-well microplates flat to remove bubbles and settle samples before reading or washing.

Sample preparation

Clarify extracts and suspensions in tubes and bottles, from 1.5 ml up to the largest bucket.

Footprint. Outer dimensions drawn from the specifications.



INSTALLATION

Floor or bench
Level, rigid surface rated for the 80 kg instrument plus rotor and load.

Power
AC 220 V, 50 Hz; 1200 W.

Clearance
Keep the air vents free so the refrigeration can reject heat.

Footprint
750 × 480 × 420 mm (L × W × H)

WARRANTY & SERVICE

1 year warranty
Major defects under warranty: full refund or replacement.

30-day returns
Return most new, unopened items within 30 days.

Free DDP shipping
Delivered duty paid, no surprise import charges.

Formal quotation
PDF quote on request, with a confirmed ship date.

Request a quotation

Send your application, model and quantity through www.lorderan.com and we will reply with a formal PDF quotation.

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Laboratory and environmental test equipment