Colo Science
Laboratory & Scientific Equipment

COLO.SCIENCE · TECHNICAL SPECIFICATION

LAVADO

Laboratory Glassware Washers · 158 L and 185 L chamber · two-tier or two-level loading · wash water up to 93 °C · hot-air drying with HEPA filter (LAVADO190)

LAVADO washers clean laboratory glassware automatically and reproducibly: pre-wash, detergent wash, neutralisation, rinsing with tap and purified water and — on LAVADO190 — hot-air drying through a HEPA filter, all in one programmed cycle. Narrow-neck glassware such as volumetric flasks, bottles, vials and pipettes is washed from the inside by injector nozzles; open glassware such as beakers and jars is washed in open baskets by rotating spray arms. The loading system is modular: each level carries one rack, and on the rack sits the module or basket chosen for the glassware. Chamber and water path in AISI 316L stainless steel, 8.8" touch screen, 30 standard and 120 user programs, automatic detergent dosing and a full cycle record.

158 L · 185 L | 2 TIERS · 2 LEVELS | UP TO 93 °C WASH | HOT-AIR DRYING + HEPA H13 | INJECTOR MODULES | 150 PROGRAMS | AISI 316L CHAMBER | AUDIT TRAIL

WASH WATER up to 93 °C

Document type: **Technical Specification Sheet**
Product series: **LAVADO Laboratory Glassware Washers**
Models: **LAVADO160 · PRO5884** | **LAVADO190 · PRO3696**
Format: **A4 landscape · CORE-TECHSPEC 1.2**

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LAVADO190 · 185 L, two levels, hot-air drying, door window



Two levels loaded with injector modules for narrow-neck glassware

SERIES
LAVADO

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LAVADO · product overview

Two washers, one loading system — choose the model by glassware quantity and drying, the modules by glassware type

INJECTOR WASHING | SPRAY-ARM WASHING | PURIFIED-WATER FINAL RINSE | DETERGENT DOSING — Reproducible cleaning instead of hand washing

Models

Which model

Characteristic	LAVADO160 · PRO5884	LAVADO190 · PRO3696
Chamber volume	158 L	185 L
Washing levels	1 rack, 2 tiers (loading height 374 mm)	2 (upper 251 mm, lower 244 mm)
Hot-air drying	—	0–120 °C, HEPA H13
Door window	—	yes
Circulation pump	0.37 kW · 0–400 L/min	0.75 kW · 0–500 L/min
Data	audit trail	audit trail · SD card · RS232 printer port
Exterior W × D × H	640 × 726 × 778 mm	670 × 691 × 940 mm
Best for	one batch type per cycle, tall glassware, drying not required	two glassware types per cycle, dry glassware at the end of the cycle



LAVADO160 · 158 L, one two-tier rack



LAVADO190 · 185 L, two levels, drying

Application profile

Analytical and QC laboratories: volumetric flasks, beakers, bottles, chromatography vials and pipettes.

Food, flavour and pharma laboratories: reproducible cleaning with a documented cycle record.

Microbiology: bottles, tubes and Petri dishes washed at high temperature.

Teaching and research laboratories: replaces daily hand washing of mixed glassware.

Key features

Two washing principles: injector nozzles wash narrow-neck glassware from inside; rotating spray arms wash open glassware in baskets.

Programs: 30 standard programs (e.g. quick wash, grease, protein, inorganic residues) and 120 user programs; each step with its own temperature, time and detergent dose.

Water: two inlets — tap water and purified water (built-in pump, 7 L/min) for the final rinse; drain pump.

Detergent dosing: two peristaltic pumps (alkaline detergent and neutraliser), 2.5 mL/s, low-level alarm.

Users and records: 3 users with 3 password levels, audit trail, basket recognition, cycle record.

Safety: electronic door lock, water over-temperature alarm (≥ 86 °C set limit), automatic door opening at the end of the cycle.

Values from the current manufacturer data for the standard configuration; the delivered configuration is the one confirmed in the COLO.Science quotation.

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Technical Parameters

Parameter	LAVADO160	LAVADO190
Model · order code	LAVADO160 · PRO5884	LAVADO190 · PRO3696
Chamber volume	158 L	185 L
Chamber W × D × H	547 × 575 × 507 mm	547 × 575 × 607 mm
Exterior W × D × H	640 × 726 × 778 mm	670 × 691 × 940 mm
Materials	chamber AISI 316L · housing AISI 304	chamber AISI 316L · housing AISI 304
Washing levels	1 rack, 2 tiers · loading height 374 mm	2 · upper 251 mm, lower 244 mm
Circulation pump	0.37 kW · 0–400 L/min, variable speed	0.75 kW · 0–500 L/min, variable speed
Wash water heating	4 kW · 0–93 °C	4 kW · 0–93 °C
Over-temperature alarm	water ≥ 86 °C (set limit)	water ≥ 86 °C (set limit)
Hot-air drying	—	1.5 kW heater · 0–120 °C · fan 110 m^3/h · HEPA H13
Water inlets	2 (tap + purified), hoses 2 m, tap water > 0.1 MPa	2 (tap + purified), hoses 2 m, tap water > 0.1 MPa
Purified water	built-in pump, 7 L/min	built-in pump, 7 L/min
Drain	drain pump 12 L/min · Ø 25 mm, hose 3 m · 1 outlet	drain pump 12 L/min · Ø 25 mm, hose 3 m · 2 outlets
Exhaust (steam) outlet	Ø 53 mm	Ø 70 mm
Detergent dosing	2 peristaltic pumps · 2.5 mL/s · low-level alarm · containers outside	2 peristaltic pumps · 2.5 mL/s · low-level alarm · containers outside
Controller	8.8" touch screen · 30 standard + 120 user programs	8.8" touch screen · 30 standard + 120 user programs
Users · records	3 users, 3 levels · audit trail · basket recognition	3 users, 3 levels · audit trail · basket recognition · SD card · RS232 printer
Door	electric lock · automatic opening · no window	electric lock · automatic opening · window
Power supply	220 V AC, 50 Hz · 5 kW	220 V AC, 50 Hz · 5 kW (10 kW version on request)

Installation requirements

Connection	Requirement
Electrical	220 V single-phase, 50 Hz, 5 kW; earthed socket or fixed connection
Water	cold tap water > 0.1 MPa; purified (deionised) water from a tank or system — fed by the built-in pump
Drain · steam	floor or wall drain within the 3 m hose; free space for the steam outlet at the back
Detergents	alkaline laboratory detergent and acidic neutraliser in containers next to the washer

Design and specifications may change without prior notice. The final configuration is stated in the COLO.Science quotation.

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Loading System — racks, modules and baskets

1 · Washer
LAVADO160: one two-tier rack · LAVADO190: two levels. Water enters each level from the back of the chamber.

→

2 · Rack on each level
Rack *with* spray arm for open baskets, rack *without* spray arm for injector modules.

→

3 · Module or basket
Chosen by glassware type: injectors wash narrow necks from inside, baskets hold open glassware.

Group	COLO item	Order code	Glassware
Racks (one per level)	R-US upper, with spray arm	PRO5632	carries baskets and modules; spray arm for open glassware
	R-U upper, without spray arm	PRO4868	carries injector modules
	R-L lower, without spray arm	PRO5633	carries injector modules
	R-LS two-tier, with spray arm (LAVADO160) · R-MS · R-UT / R-LT	PRO8354 · PRO8353 · PRO8355 · PRO8356	baskets and tube racks; special configurations
Open baskets	K-F full level · K-H half level	PRO5662 · PRO5659	beakers, jars, bottles 10–2000 mL, caps, rods
	K-PD half level, 30 Petri dishes · K-T · K-TS tube racks	PRO5663 · PRO5661 · PRO5660	Petri dishes Ø 60–150 mm; tubes 10–20 mL
Injector modules, bottles and flasks	M-B8 · 8 × 250–2000 mL	PRO4866	blue-cap bottles, Erlenmeyer, volumetric flasks
	M-B21 · 21 × 50–250 mL · M-B32 · 32 × 50–250 mL	PRO8345 · PRO8346	volumetric flasks 250 / 100 mL
	M-B50 · 50 × 10–100 mL · M-B66 · 66 × 10–50 mL	PRO8347 · PRO8348	volumetric flasks 50 / 25 mL
	M-W18 · M-W32 · M-W50 · M-W66 (cross holders)	PRO8349 – PRO8352	economy versions of the above
	M-S25 · 25 × 500 mL · M-S20 · 20 × 1000 mL	PRO5637 · PRO5638	sample bottles, one full level
Vials, tubes, pipettes	M-V150 · 150 × 2 mL vials · M-V102 · 102 vials	PRO5645 · PRO5646	chromatography vials
	M-T102 · 102 tubes · M-T66 · 66 tubes 10–20 mL	PRO5647 · PRO5643	test and centrifuge tubes
	M-P102 · 102 pipettes · M-P66 · 66 pipettes	PRO5648 · PRO5644	pipettes, graduated pipettes
	M-X102A–F · M-X48A/B · M-X74A/B hybrid	PRO5649 – PRO5658	vials, pipettes, tubes and 100 mL flasks together

Positions per module are the design capacity for the stated glassware size. Modules sit on the rack; one injector module or one full basket per level, two half baskets per level. Pictures of all items on page 5.

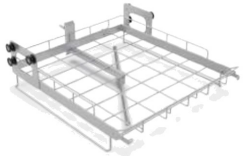
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Loading System — all racks, baskets and modules

Racks



R-U
PRO4868
upper, no spray arm · for injector modules



R-US
PRO5632
upper, with spray arm · for baskets



R-L
PRO5633
lower, no spray arm · for injector modules



R-LS
PRO8354
two-tier, with spray arm · module above, basket below



R-MS
PRO8353
upper/middle, with spray arm · for Petri dish racks

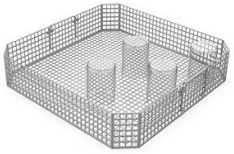


R-UT
PRO8355
upper, with spray arm · for baskets and tube racks



R-LT
PRO8356
lower, no spray arm · for baskets and tube racks

Open baskets and racks



K-F
PRO5662
full level · beakers, jars, bottles, caps



K-H
PRO5659
half level · beakers, jars, rods, caps



K-PD
PRO5663
half level · 30 Petri dishes Ø 60–150 mm



K-T
PRO5661
quarter rack · tubes 10–20 mL



K-TS
PRO5660
quarter rack with springs · tubes 10–20 mL

Injector modules



M-B8
PRO4866
8 × bottles and flasks 250–2000 mL



M-B21
PRO8345
21 × flasks 50–250 mL



M-B32
PRO8346
32 × flasks 50–250 mL



M-B50
PRO8347
50 × flasks 10–100 mL



M-B66
PRO8348
66 × flasks 10–50 mL



M-S25
PRO5637
25 × sample bottles 500 mL, full level



M-S20
PRO5638
20 × sample bottles 1000 mL, full level



M-V150
PRO5645
150 × 2 mL chromatography vials



M-V102 · M-T102 · M-P102
PRO5646 · 5647 · 5648
102 × vials (M-V102), tubes (M-T102) or pipettes (M-P102)



M-T66 · M-P66
PRO5643 · 5644
66 × tubes (M-T66) or pipettes (M-P66), 0.1–50 mL



M-X48A · M-X48B
PRO5655 · 5656
hybrid · 24 pipettes or vials + 24 flasks 100 mL



M-X74A · M-X74B
PRO5657 · 5658
hybrid · 50 vials or pipettes + 24 flasks 100 mL



M-X102A – F
PRO5649 – 5654
hybrid · vials, pipettes and tubes, 102 positions (A–F)

M-W18 · M-W32 · M-W50 · M-W66 (PRO8349 – PRO8352): economy versions of M-B21 – M-B66 with cross holders. One rack per level; injector modules need a rack without spray arm, open baskets a rack with spray arm. Design may change without prior notice.

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Configuration Examples, Ordering and Support

Typical configurations (LAVADO190, two levels)

Laboratory need	Upper level	Lower level
Beakers + volumetric flasks	R-US + K-F open basket	R-L + M-B21 (21 × 50–250 mL)
Beakers + chromatography vials	R-US + K-F open basket	R-L + M-V150 (150 × 2 mL)
Flasks + vials alternately	R-US + K-F open basket	R-L + M-B21, exchangeable M-V150
Bottles and sample bottles	R-U + M-B8 (8 × 250–2000 mL)	R-L + M-S25 (25 × 500 mL)
Pipettes + tubes	R-U + M-P102	R-L + M-T102

LAVADO160 takes one module above and one basket below on its R-LS two-tier rack (374 mm in total).

Ordering information

Item	Order code	Includes
LAVADO160	PRO5884	washer 158 L, one two-tier rack (module above, basket below), detergent pumps; racks and modules ordered separately
LAVADO190	PRO3696	washer 185 L, two levels, drying with HEPA; racks and modules ordered separately
Loading system	pages 4–5	one rack + one module or basket per level

Configuration checklist

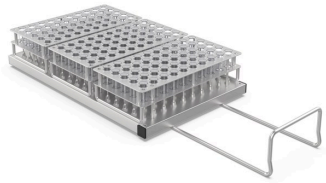
Glassware: types and sizes (beakers, volumetric flasks, bottles, vials, pipettes, tubes) and pieces per day.

Drying: glassware needed dry at the end of the cycle → LAVADO190.

Residues: organic, fat, protein or inorganic — decides program and detergent.

Water: purified water available for the final rinse (tank or system).

Site: 220 V / 5 kW, tap water, drain within 3 m, space for the steam outlet.



M-V150 · 150 injectors for 2 mL chromatography vials

SUPPLIER AND SUPPORT

COLO Lab Experts

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Selection guidance: send the list of glassware and the daily quantity — COLO.Science proposes the washer and the modules for each level.

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Ask us: price and delivery time, installation and commissioning, detergents, IQ/OQ documentation — write to sales@colo.si or call us.

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