opentrons *FLEX* ™

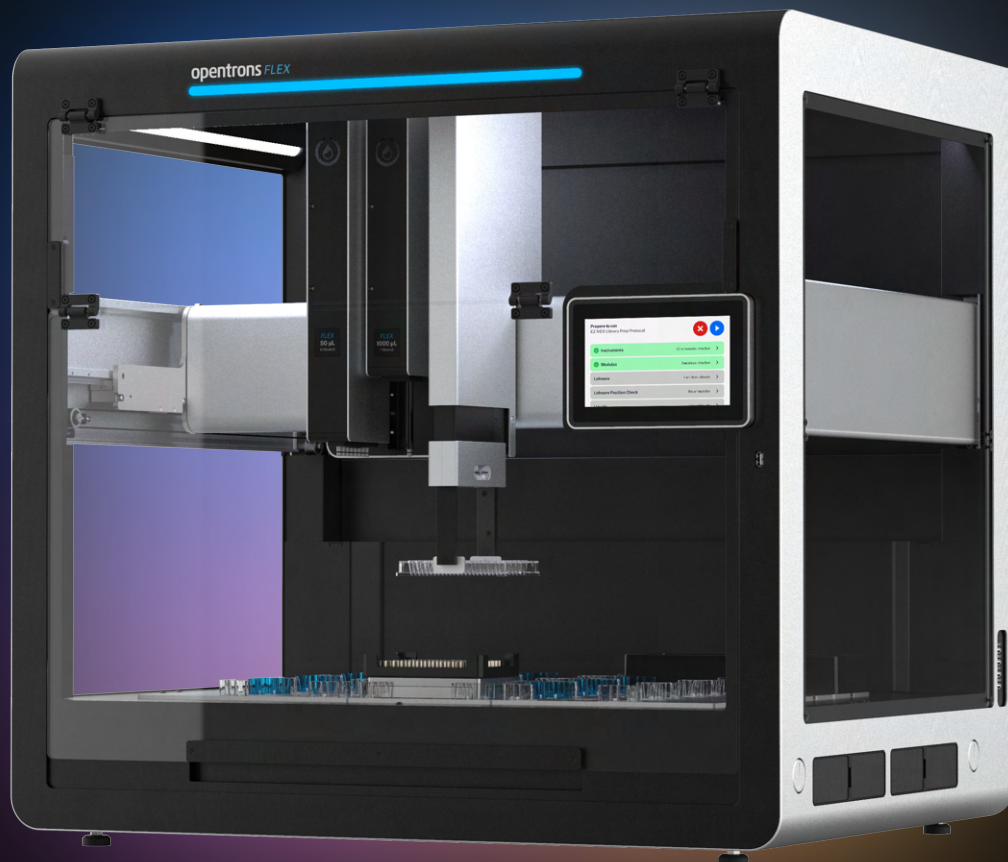# Flex fits you,
not the other way around

Flex Fits You

Legacy lab automation promises to free up your time so you can focus on your science, but often has the opposite effect of restricting and limiting you. There's a steep learning curve, high upfront and ongoing costs, and the need to redesign workflows around systems. What if there was a way to put you and your science back at the center of your automation? At Opentrons, we believe we can help scientists scale their science without having to make huge investments of time and money.
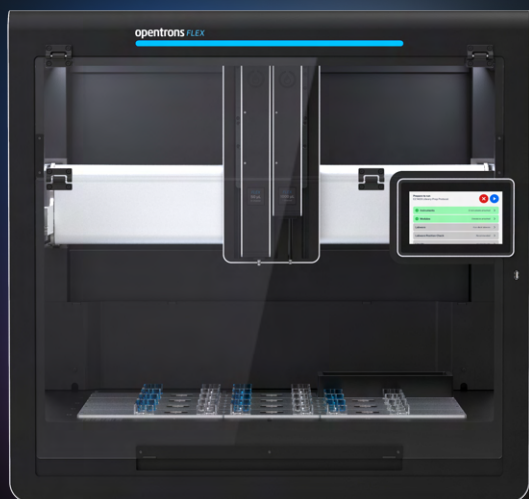
Opentrons Flex is everything today's lab automation systems are not. It's flexible — adapting to your protocol. It's versatile — fitting into any project or workflow your science needs. It's liberating — releasing scientists from automation systems that overburden their time, reduce their throughput, and limit the scope of their programs.

No more fitting a round peg into a square hole. No more spending precious hours and resources adapting your breakthrough science to obsolete systems. More flexibility for your protocols. More freedom for your lab automation.

Flex fits you, not the other way around.

Flex Fits Your Needs

Flex Specifications

NUMBER OF DECK SLOTS
12 main deck slots, plus 4 additional slots for staging tips and labware

VOLUME RANGE
1 – 1000 µL

ACCURACY*
8% accuracy at 1 µL
5% precision at 1 µL

PIPETTE CONFIGURATION
Any two Flex 1-Channel or 8-Channel Pipettes, or the Flex 96-Channel Pipette alone

LABWARE COMPATIBILITY
Any automation-compatible, ANSI/SLAS standard footprint well plates, plus a wide range of other labware, including reservoirs and tubes up to 50 mL conical

CONNECTIVITY
USB, Ethernet, and Wi-Fi

DIMENSIONS
87 cm x 69 cm x 84 cm (W, D, H)

*Measured with the Opentrons Flex 1-Channel Pipette (1–50 µL) using a 50 µL tip

UNIQUELY FLEXIBLE
Modular pipettes, gripper, and on-deck hardware that you can swap out yourself

UNIQUELY ACCESSIBLE
Configurations starting from <$20,000, and our Flex NGS Workstation at <$50,000

UNIQUELY OPEN
Fully open source software and firmware, and reagent- and labware-agnostic

UNIQUELY FUTURE-FACING
Extensive API compatible with "design-of-experiment" programs, including AI-driven agents

Flex Fits Your Application

Opentrons Flex workstations come with the Flex robot and accessories, pipettes and gripper, on-deck modules, and labware you need to automate your chosen application.* You can configure each workstation with either Flex 1- and 8-Channel Pipettes or the Flex 96-Channel Pipette to suit your scale. The workstations are reagent- and kit-agnostic to minimize changes to your current workflow.

*Not all workstations contain gripper or modules; ask your sales rep for further details.

✧✦ **Automate up to 96 samples**

Choose from these workstations covering some of our most popular applications:

OPENTRONS FLEX NGS WORKSTATION
For end-to-end NGS library prep

OPENTRONS FLEX PCR WORKSTATION
For PCR setup and thermocycling

OPENTRONS FLEX NUCLEIC ACID EXTRACTION WORKSTATION
For nucleic acid extraction

OPENTRONS FLEX MAGNETIC BEAD PROTEIN PURIFICATION WORKSTATION
For small-scale protein purification using magnetic beads

OPENTRONS FLEX ALIQUOTING WORKSTATION
For aliquoting samples from 2 mL, 12 mL, or 15 mL tubes to plates

Flex Fits Your Expectations

OPENTRONS FLEX 1-CHANNEL PIPETTES	OPENTRONS FLEX 8-CHANNEL PIPETTES	OPENTRONS FLEX 96-CHANNEL PIPETTE
1–50 µL	1–50 µL	5–1000 µL
5–1000 µL	5–1000 µL	

Flex pipettes use air displacement technology to offer highly accurate pipetting from 1 to 1000 µL. Smart sensors support automatic calibration, real-time positioning, and error detection. Choose the pipettes that fit your workflow — the gantry supports any two Flex 1-Channel or 8-Channel Pipettes, or the Flex 96-Channel Pipette alone — and swap them out yourself when your workflow changes.

	VOLUME (µL)	SPECIFICATION	
		D (%)	CV (%)
OPENTRONS FLEX 1-CHANNEL PIPETTE (1–50 µL)[*†]	1	8.00	5.00
	10	1.50	0.50
	50	1.25	0.40
OPENTRONS FLEX 1-CHANNEL PIPETTE (5–1000 µL)[‡]	5	5.00	2.50
	50	0.50	0.30
	200	0.50	0.15
	1000	0.50	0.15

[*]Flex 8-Channel and 96-Channel Pipette specifications available from info@opentrons.com

[†]All volumes tested with 50 µL tip

[‡]5 and 50 µL volumes tested with a 50 µL tip; 200 µL volume tested with a 200 µL tip; 1000 µL volume tested with a 1000 µL tip

Flex Fits Your Workflow

Opentrons hardware modules are designed, tested and built by Opentrons. They work seamlessly with Opentrons robots and software. Every Opentrons Flex module has a caddy that fits it securely into the deck, putting labware close to the deck surface and keeping cables out of the way.

GRIPPER

The Opentrons Flex Gripper attaches to the gantry and is capable of moving labware across the deck and on or off modules such as the Magnetic Block or Thermocycler. It can also access the additional slots to the side of the main deck to replenish tips or labware.
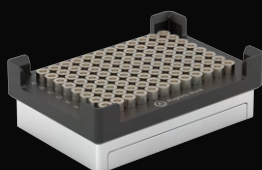
THERMOCYCLER MODULE

The Opentrons Thermocycler Module GEN2 is a fully automated on-deck thermocycler, providing hands-free PCR in a 96-well plate format. The heated lid and disposable seal fit tightly over the plate, ensuring efficient sample heating and minimal evaporation.

TEMPERATURE MODULE

The Opentrons Temperature Module GEN2 is an easy-to-use hot and cold plate that can maintain constant temperatures from 4 to 95 °C. Each module comes with aluminum blocks to hold labware, including 1.5 mL tubes, 2 mL tubes, PCR plates and strips, and most flat bottom well plates.

MAGNETIC BLOCK

The Opentrons Flex Magnetic Block is a 96-well magnetic well plate holder containing static ring magnets. Use it with the Flex Gripper and skirted 96-well PCR or deep-well plates to facilitate quick and efficient separation using magnetic beads.

HEATER-SHAKER MODULE

The Opentrons Heater-Shaker Module provides on-deck heating and orbital shaking of microplates. The module can be heated to 95 °C, and can shake samples from 200 to 3000 rpm. It is compatible with a number of deep-well and 96-well plates.

Flex Fits Your Laboratory

ON-INSTRUMENT GUIDED SETUP

Dynamic deck maps match your protocol and guide you through protocol setup

PROTOCOL SELECTION ON THE FLEX

Send protocols from the desktop app to Flex for easy browsing and initiation

AUTOMATED CALIBRATION

One-touch automated pipette and gripper positional calibration

PROTOCOL DEVELOPMENT YOUR WAY

No-code Protocol Designer app, Protocol Library, Python API, or design services to build your protocol

THIRD-PARTY INTEGRATIONS

Open source platform enables easy integrations

STATUS LIGHTS & REMOTE MONITORING

Check the status from across the room or from your desktop app

WolfLabs

Pricing on any accessories shown can be found by keying the part number into the search box on our website.

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct.
If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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Please contact us if this literature doesn't answer all your questions.