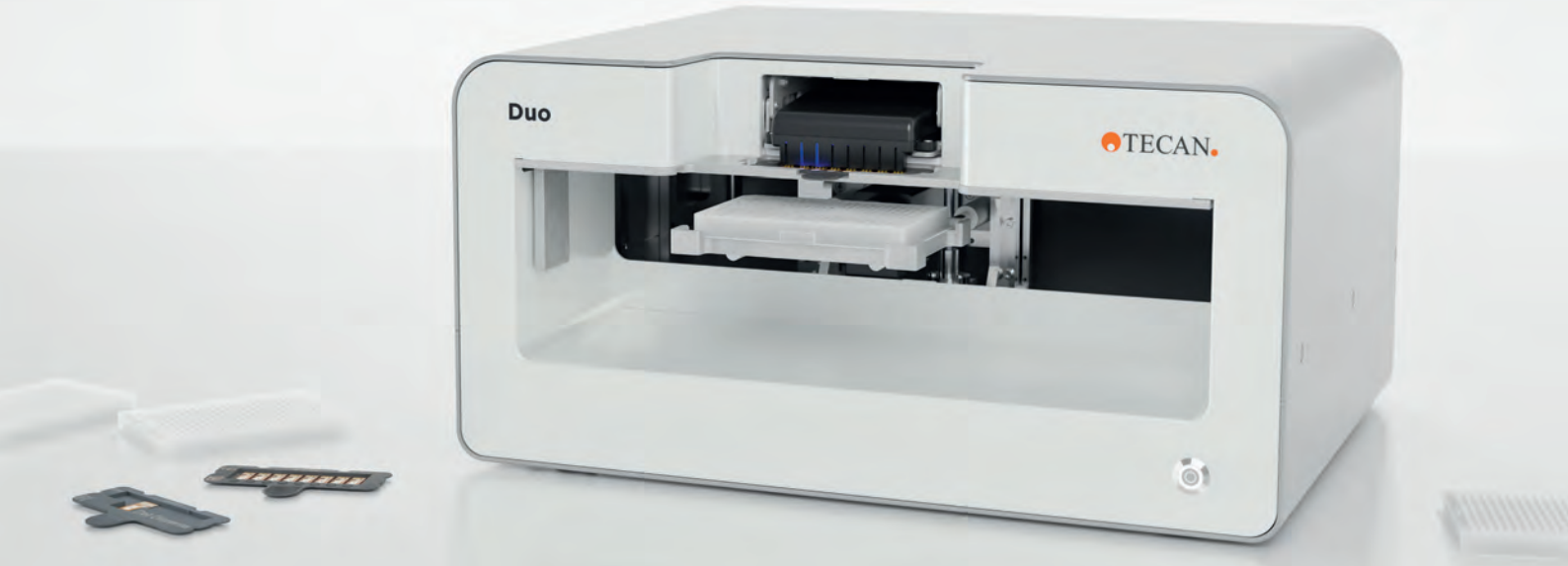
PICOLITER DISPENSING REDEFINED, NOW FOR SINGLE CELLS TOO.

Meet Duo Digital Dispenser™, the evolution of D300e.



TECAN.

PICOLITER DISPENSING REDEFINED, NOW FOR SINGLE CELLS TOO.

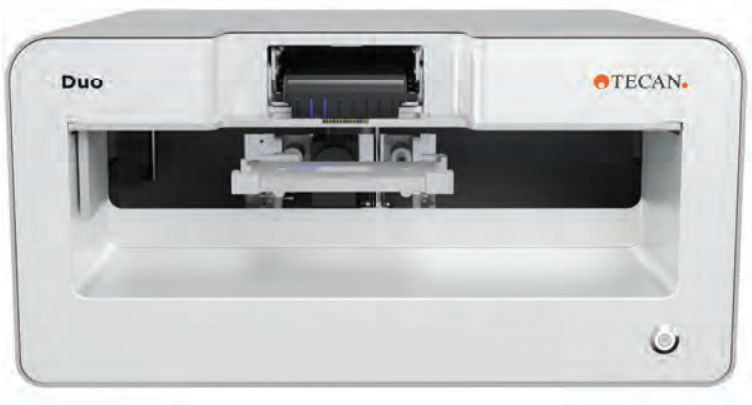
Meet Duo Digital Dispenser™, the evolution of D300e.

Duo combines single-cell isolation and reagent dispensing in one powerful, benchtop instrument — enabling faster, more reproducible experiments.

Built on proven microfluidic technology, it merges the strengths of the D300e Digital Dispenser and the Uno Single Cell Dispenser™.

The Duo drastically reduces the time to conduct drug discovery experiments cutting dosing time from 10 minutes to just 15 seconds and eliminates the need for surfactants in reagent dispensing. Single-cell isolation is completed in under 5 minutes.

Unbox, plug in, and get started instantly. Duo automates performance — so you can focus on results.



Streamline your workflow.

Highest precision and speed:
Dispense volumes from picoliters to microliters with picoliter precision. Isolate single cells in ~5 minutes across a 384-well plate, with >90% isolation success and dispense reagents in <3 minutes.

Gentle on cells:
The microfluidic technology ensures robust 90% cell viability and clonal outgrowth efficiency comparable to manual pipetting, without any risk of cross-contamination.*

Accessible and flexible:
Use the Duo Digital Dispenser to fit your needs. Get your instrument at an affordable rate and purchase cassettes based on your specific dispensing needs - be it for single-cell dispensing, general liquid dispensing or both.

Rely on proven technology:
Powered by HP's proven microfluidic digital dispensing technology, it is trusted by over 1,000 industry-leading customers. Expect consistent performance and a durable instrument built to last.

Truly plug-and-play:
Ready within minutes after unboxing. Simply plug in the cable, install the user-friendly software, define your plate layout and dispensing pattern and hit run.

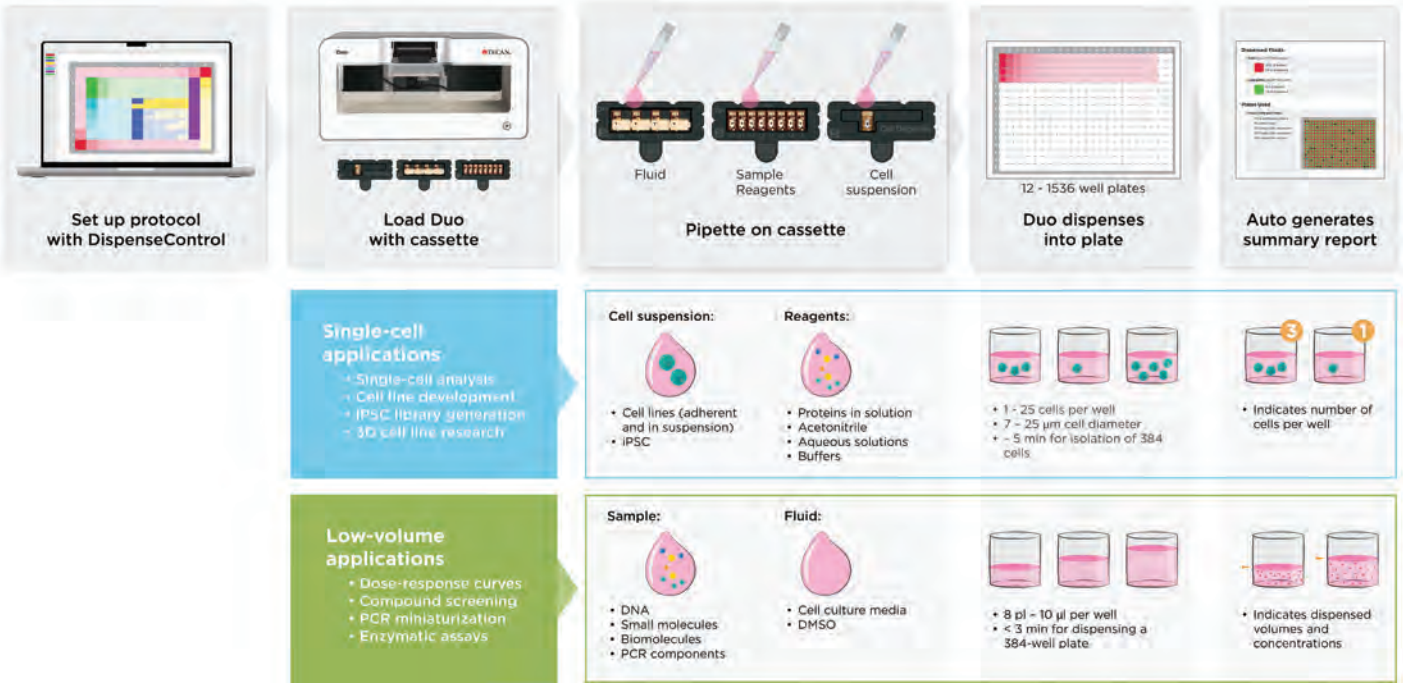
* <1 hour post-dispense

PRODUCT FEATURES.

Duo Digital Dispenser Specifications.

Specification	Cell dispensing	Reagent dispensing
Cell size range	7–25 µm	_
Sample type	Wide variety of cell types*	Biomolecules, small molecules, nanoparticles
Qualified fluid classes	Cell suspension	DMSO, acetonitrile, aqueous solutions, proteomics solutions (such as trypsin or TEAB), master mixes**
Formats to dispense on	• 12–1536 well plates • Customizable substrate, such as microscope slides • Plate height 4-47mm	
Dispensing technology	Cell isolation based on impedance signal	Reagent dispensing based on inkjet microfluidics technology
Dispensing speed	384-well plate in ~5 minutes	384-well plate in < 3 minutes
Cell dispensing	Dispense 1 to 25 cells per well	_
Cell viability after dispensing	90% or greater***	_
Software	• Intuitive and easy to set-up protocols • Automatically generates summary report, indicating wells with single cells as well	• Intuitive and easy to set-up protocols • Automatically generates summary report, indicating volumes and concentrations
Instrument dimensions	47 x 37 x 23 cm	
Instrument weight	16.1 kg	

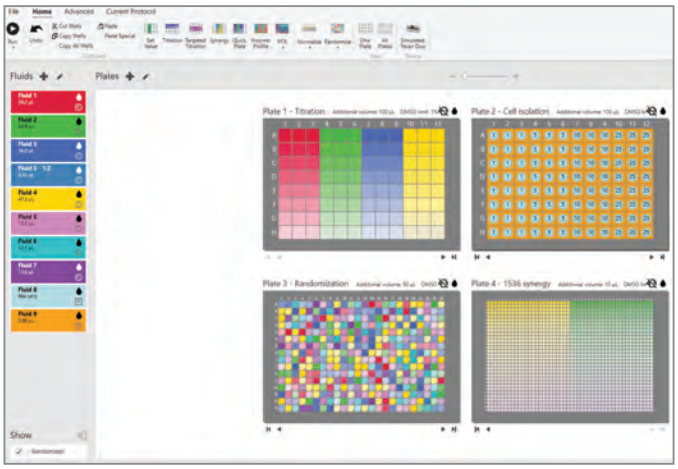
Featured Workflow.



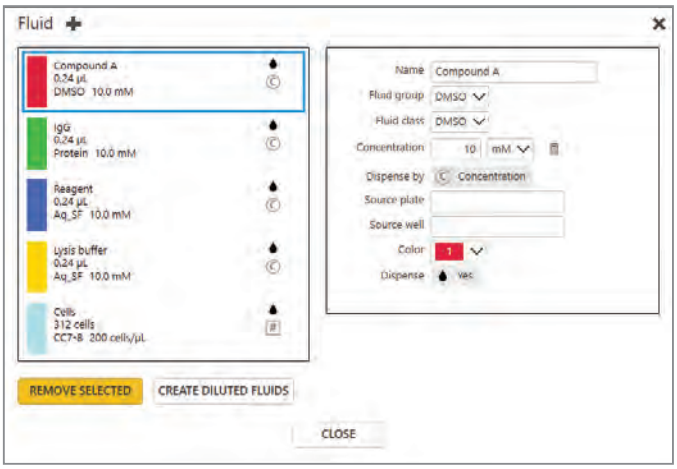
*For a detailed list of cell types, please refer to the cells table (p07)
**This list includes common compatible fluids but is not exhaustive. For inquiries about additional fluids, please contact Tecan customer support.
***At day zero

Duo DispenseControl Software.

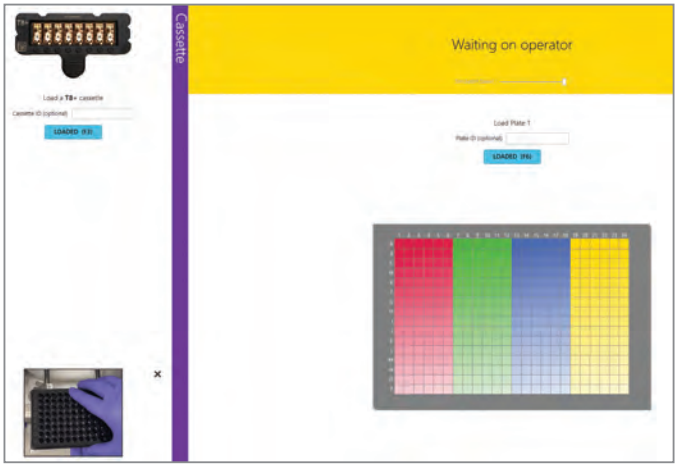
The software behind Duo combines the trusted features of D300eControl and UnoControl to streamline your laboratory workflows with enhanced capabilities and efficiency. Experience the power of this advanced software and transform your experimental processes with ease.



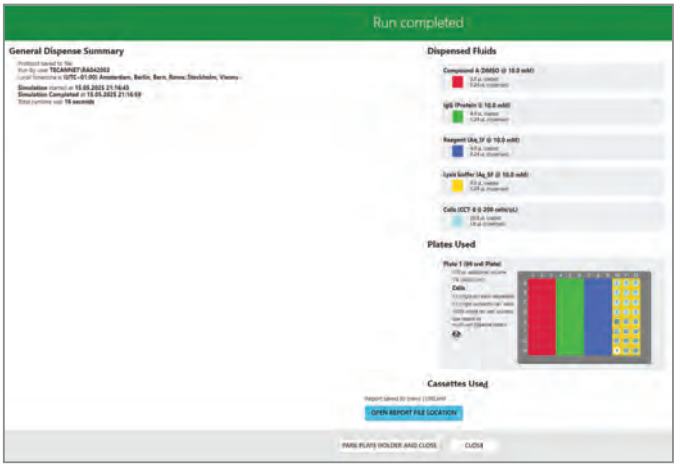
Conduct titration, synergy experiments or cell isolation with ease using Duo. Create precise, customized plate layouts and randomize them with a single click, optimizing your experimental design and efficiency.



Easily select the optimal fluid class for your experiments. Customize dispensing of DMSO, aqueous solutions or even cells to match your specific needs, ensuring precision and reliability across diverse applications.



Step-by-step protocol guidance ensures smooth navigation through each phase of your experiment, while built-in features minimize human errors, enhancing efficiency and accuracy in your research process.



Auto generated summary reports reporting key metrics such as volumes dispensed, concentration levels, cell isolation success rates and cassette consumption. Gain valuable insights to optimize your workflows and ensure consistent, high-quality results in your experiments.

- **Effortless experiment setup:** Quickly configure a wide range of experiments, including cell isolation, synergistic studies and randomized plate layouts, in minutes.
- **Intuitive protocol guidance:** Step-by-step assistance for single cell or reagent dispense protocols.
- **Immediate insights:** Auto-generated summary reports provide detailed information on dispensed reagent volumes, utilized plates and cassettes, single-cell isolation success rates, and cell concentration metrics.
- **Enhanced workflow efficiency:** Save time without compromising on quality, thanks to the software's user-friendly design and advanced features.

Duo Dispensehead Cassettes.

The Duo Dispensehead Cassettes enables dispensing of cell suspension for cell isolation as well as small molecules and biomolecules in DMSO or aqueous solutions.

Overview.

C1a+ cell dispensing cassette	T8+ and D4+ cassettes	T8 surfactant-free and D4 surfactant-free cassettes
• Cassette for cell isolation. • Only compatible with the Duo Digital Dispenser.	• Cassette for dispensing both DMSO and aqueous solutions with surfactant. • Dispensing capabilities are unchanged and backwards compatible with the D300e.	• Cassette for dispensing aqueous solutions and buffers. • No addition of surfactant required. • Only compatible with the Duo Digital Dispenser.

Duo Dispensehead Cassettes Specification.

	C1a+ cassette	T8+ cassette	D4+ cassette
Product number	30253251	30253252	30253253
Qualified fluid classes	Cell suspension	• DMSO, Acetonitrile • Aqueous solutions (requires surfactant) • Master mixes	
Key capabilities	Isolation of 1 to 25 cells per well	Titration, low volume dispensing	Normalization of aqueous solutions and DMSO
Dispenseheads per cassette	1	8	4
Fill cup volume	20 µl	20 µl	200 µl
Min dispensing volume (per well)	480 pl/cell	11 pl	1 nl
Dispensing volume increments	As low as 480 pl	As low as 11 pl	As low as 400 pl
CV	-	< 8%*	< 8%*

* For volumes > 100 pl and test fluid of 100% DMSO without other additives or for volumes > 100 pl and aqueous test fluid of 0.1% Brij 35 without other additives.

	T8 surfactant-free cassette	D4 surfactant-free cassette
Product number	30253254	30253255
Qualified fluid classes	• Aqueous solutions (does not require addition of surfactant) • Proteomics solutions (such as trypsin or TEAB) • Protein solutions (such as IgG, ADC or nanobodies)	
Key capabilities	• Titration, low volume dispensing	Normalization of aqueous fluids without surfactant
Dispenseheads per cassette	8	4
Fill cup volume	20 µl	200 µl
Min dispensing volume (per well)	8 pl	1 nl
Dispensing volume increments	As low as 8 pl	As low as 440 pl
CV	< 8%*	< 8%*

Fluid Classes.

Qualified fluid concentrations and recommended fluid classes.

Sample type	Recommended concentration	Recommended fluid
Cell suspension	100–200 cells/µl**	Cells resuspended in PBS (without Ca^{2+} and Mg^{2+})
Biomolecules***	≤300 kDa or ≤10,000 basepairs ≤3 mg/ml; 10 µl fill volume using T8+ ≤1 mg/ml; 20 µl fill volume using T8+ ≤0.3 mg/ml; 200 µl fill volume using D4+	Aqueous solution with surfactant
Biomolecules***	≤300 kDa or ≤10,000 basepairs ≤1 mg/ml; 10 µl fill volume using T8SF ≤0.5 mg/ml; 20 µl fill volume using T8SF ≤0.1 mg/ml; 200 µl fill volume using D4SF	Aqueous solution without surfactant
Small molecules	≤800 Da and ≤10 mM	70–100% DMSO
Nanoparticles	<1 micron in diameter in suspension at concentration of <0.5%	70-100% DMSO, aqueous solution

Total buffer components <150 mM.

* For volumes > 100 pl and aqueous test fluid of 100 mM PBS without other additives.
** Recommended concentration: approx. 100 cells/µl for a 96 well-plate; approx. 200 cells/µl for a 384 well-plate.
*** Biomolecules include but not limited to proteins, antibodies, enzymes, nucleic acids, lipids and oligonucleotides.

Cells.

Software cell size selection recommendation for Duo.*

Cell line	Origin	Culture type	Average diameter (µl)	Recommended cell size setting
A431	Human Epidermal Carcinoma	Adherent	Variable	12-25 µm
A549	Human Lung Adenocarcinoma	Adherent	Variable	12-25 µm
C2C12	Mouse Myoblast	Adherent	15	15-17 µm
CaSki	Human Cervical Cancer	Adherent	22	21-25 µm
CHO GFP+	Chinese Hamster Ovary	Adherent	14	12-14 µm
GM12878	Human B cell	Suspension	10	9-11 µm
H9 (HuT 78 derivative)	Human T Cell Lymphoma	Suspension	10	9-11 µm
HCT116	Human Colorectal Carcinoma	Adherent	14	12-14 µm
HEC-1Av	Human Endometrial Cancer	Adherent	9	9-11 µm
HEK293T GFP+	Human Embryonic Kidney	Adherent	14	12-14 µm
HEK293T	Human Embryonic Kidney	Adherent	14	12-14 µm
HeLa	Human Cervical Tumor	Adherent	16	15-17 µm
hiPSC	Variable	Adherent	Variable	15-20 µm
hMVEC	Human Microvascular Endothelial	Adherent	18	18-20 µm
hUVEC	Human Umbilical Vein Endothelial	Adherent	17	15-17 µm
Jurkat	Human T Cell Leukemia	Suspension	11	9-11 µm
MCF-7 GFP+	Human Breast Cancer	Adherent	20	Sticky cells - 18-20 µm
MDA-MB-231 GFP+	Human Breast Cancer	Adherent	16	15-17 µm
MOLM13	Acute Myeloid Leukemia	Suspension	12	12-14 µm
Neutrophil	Primary sample	Adherent	11	9-11 µm
PBMC	Primary sample	Mix	7	7-8 µm
PC12	Rat Pheochromocytoma	Adherent	12	12-14 µm
PC3	Human Prostate Adenocarcinoma	Variable	16	15-17 µm
SiHa	Human Cervical Cancer	Adherent	16	15-17 µm
SKBR3	Human Breast Cancer	Adherent	14	12-14 µm
T-cell	Primary sample	Adherent	7	7-8 µm
THP-1	Human Acute Monocytic Leukemia	Suspension	13	12-14 µm
U-937	Human Histiocytic Lymphoma	Adherent	12	12-14 µm
Vero E6	Monkey Kidney	Adherent	17	15-17 µm

*Example list of cells. Individual clonal populations may vary in size and setting selection.

Learn more!

Schedule an online software demo.

For research use only. Not for use in diagnostic procedures.

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