instrumentTWO 300P
High Precision microarray-dispensing instrument

instrumentTWO 300P is a precise and versatile liquid handling solution with a high and flexible capacity for source and target plates.

- Precision of 5 µm for high density arrays
- 4 MTP sized positions for source or target holders (coolable or heatable possible) spottable area of 220 x 300 mm
- Automated target and microarray imaging
- Optional climate controlled conditions such as temperature, humidity and HEPA filter system
- Flexible deck configuration

Non-contact and contact dispensing within one hybrid system

This technology supports in a single instrument four different micro dispensers:

1. Piezo Driven Micro-Dispenser (PDMD) for pico- to low nanolitre applications (30 pL+; c.v. 2 %)
2. Solenoid Driven Micro-Dispenser (SDMD) for nano- to low millilitre applications (30 nL+; c.v. 10 %)
3. M2-Micro-Dispenser (M2MD) for low nano- to low millilitre applications (10 nL+; c.v. 2 %) different versions available
4. Pin Driven Micro-Dispenser (PinDMD) Pin head for split, hollow or solid/blunt end pins

iTWO 300P™ equipped with 2 wash stations for PDMD/SDMD (back) and PinDMD (front). PinDMD and a camera are mounted on the head. Deck can be choosen with different source and/or target adapter.

Deck shows a source vial adapter for 3x8 vials and 4 MTP sized positions for target holders. Here: 16 slides as targets; alternate a planar/vacuum table for up to 24 slides. PDMD is mounted on the head.
Intuitive User Interface

All instruments from M2-Automation have their own unique designed software package, which is easy to understand and simple to use.

The InDot software comes with a logical, intuitive interface and is flexible to meet specific individual needs, for the creation of customized procedures or personalized array layouts.

InDot is image-based, reflecting the instrument layout and providing a self-explanatory, systematic workflow to create an experiment.

- All designers can be used via drag & drop to define a sequence - flexibility in wash runs and runs
- Flexible parameters for every sample possible in one run
- Nested run sequences for convenient experiment set-up
- Support of dxf files
- Automatic climate control reflects current and historical conditions of temperature, desired humidity and cryostat temperature
- Support for all non-contact and contact spotting instruments

Instrument Applications

Our instruments are designed for a broad spectrum of applications.

- Diagnostic biochips, Lab-on-a-Chip
- DNA, protein and cell microarrays
- Glycan spotting
- Cell transfection arrays
- Diagnostic biomarker and microbiology assays on multiple substrates (e.g. slide, MTP, NC membranes)
- Drug discovery, e.g. small volume GPCR assays, immunoassays
- Screening of compound libraries
- Spotting to custom/specific substrates and formats
- Semi conductors

Technical Data

- Capacity:
  - 4 MTP sized target holders for e.g. each for 4 slides = 16 slides
  - or 1 planar target holder (vacuum possible) for up to 28 slides
  - or 1 planar target holder for wafers, membranes up to 180 x 300 mm or 215 x 215 mm
- Source: 96-, 384-, 1536-MTPs in one MTP sized holder or up to 2 source vial adaptor each for 24 wells of 100 µL or 65 wells of 25 µL and 2-4 reagent vials of 500 µL or and cartridge dispensing from 2-20 mL vial
- Dispense Modes: direct dispensing, aspirate (air gap possible for PDMD); dispense out of large volume source vials; resuspend samples
- Maximum speed: X=700 mm/s, Y=800 mm/s, Z=400 mm/s
- Maximum drive range: 250 x 300 mm, Z=100 mm
- Spottable Area: 220 x 300 mm
- Positioning of repeatability: 5 µm
- Self contained pneumatic system
- Power: 100-230 VAC, 780W with usual components

Dimensions:

- Version A stand alone:
  - W 60 cm, D 64 cm, H 62 cm
  - Weight ~40 kg
- Version B in safety housing with some optional components:
  - W 110 cm, D 75 cm, H 110 cm
  - Weight ~125 kg
- Version C in safety housing with mobility option and foldable computer desk:
  - W 160 cm, D 75 cm, H 180 cm
  - Weight ~180 kg

Options:

- Ergonomic user stand for keyboard, mouse and monitor:
  - W 44 cm, D 58 cm, H 175 cm
  - Weight: ~36 kg
- Temperature control (Cooling and warmings)
- Humidity Control
- Clean room conditions (HEPA-filter)
- Integration of custom-specific components