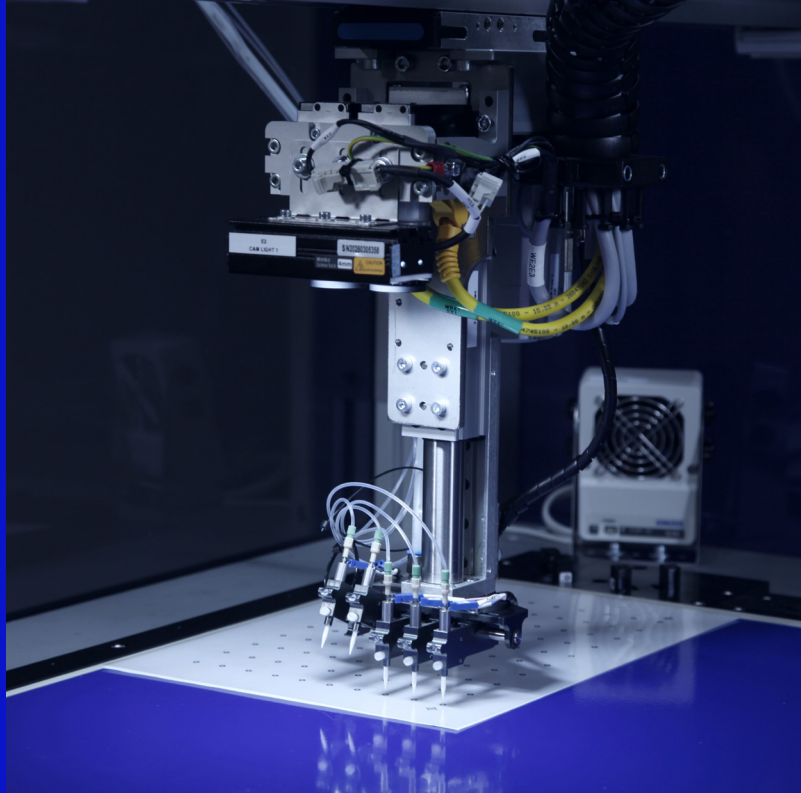


PRODUCT SHEET

Ginolis Kaste Core

Automated reagent dispensing
and inline inspection



1 nL - 1,5 mL

Dispensed volume per channel

1 - 8 pumps

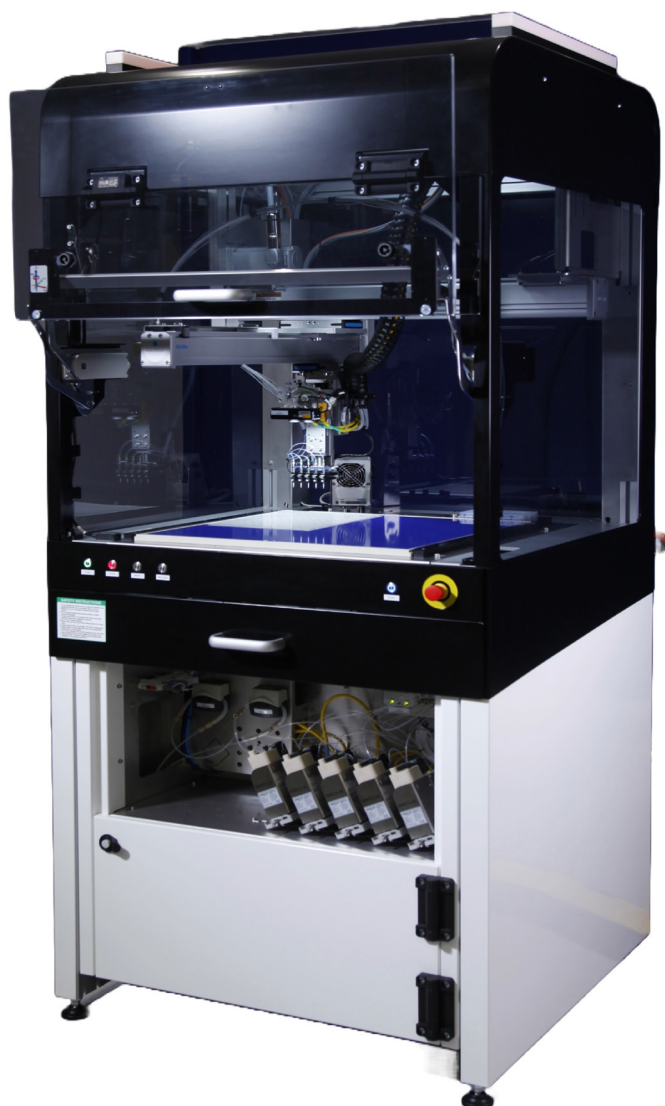
Kaste Nano dispensing units

100% droplet QC

Vision inspection of every deposit

ISO 7 Compatible

Laboratory and cleanroom ready



GINOLIS

Precision Robotics

PRECISION DISPENSING PLATFORM

Overview

The Kaste Core is a standalone platform for precision deposition of reagents. Sheets are held flat on a vacuum tray while a precision X-Y-Z gantry positions a multi-tip dispensing head over every product, guided by machine vision. Each droplet is inspected and recorded, so process development, pilot builds and production runs share one recipe, one quality standard and one traceable data set.

100%

Of Dispensed droplets vision-inspected and recorded

1-8

Dispensing channels, wiring and software pre-installed for expansion

CIP

Clean-in-place fluid path - no components removed for cleaning

CSV

Recipes authored off-line and version-controlled on the device

Precision fluidics

Kaste Nano pumps use the Ginolis bellows pumps: a piezo-driven, friction-free displacement principle with an integrated pressure sensor for clog, leak and air-in-line detection. Volumes from 1 nL to 1,5 mL per channel are dispensed repeatably.

Inline Vision quality control

Two Gantry-mounted cameras with dedicated lightning locate the target, read the product or tray identifier, and image every dispensed droplet. Each deposit is scored against product criteria and given a pass or fail result

Recipe-driven changeover

Products, layouts and dispensing patterns are defined in CSV files and uploaded through a browser-based Recipe UI. Switching product is a recipe selection on the operator screen, not an engineering task.

Modular and upgradable

The platform scales from 1 to 8 dispensing channels, accepts customer-specific dispensing heads, and can be field-upgraded with automated tray feeding.

KEY SPECIFICATION

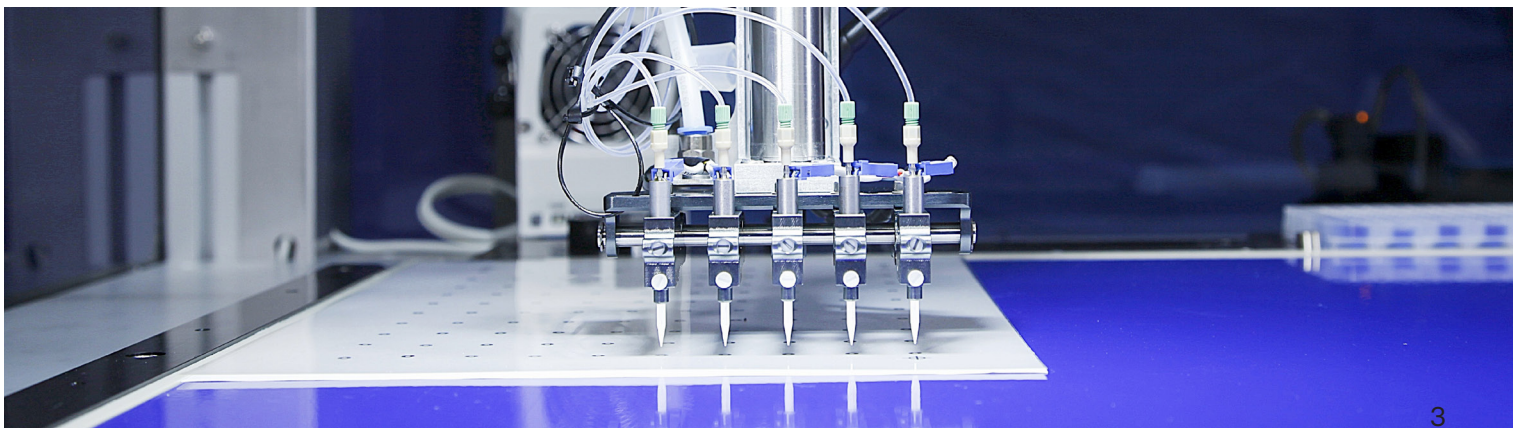
Dispensed volume	1nL - 1.5 mL per channel
Dispensing units	Kaste Nano, 1 to 8 pumps
Pump Technology	Ginolis Kaste Nano bellows pump
Wash pumps	2 x peristaltic
Positioning	X-Y-Z Gantry, stepper actuators with absolute encoders
Vision	2 x Camera with dedicated lighting, gantry mounted
Product hold down	Vacuum tray on process table jig
Acceptable product format	Up to 496 x 394 mm
Footprint (W x D x H)	850 x 1000 x 2000 mm
Environment	15 - 25 °C, 35-65% RH, ISO 7 compatible
Control system	Embedded industrial PC, Beckhoff Twincat 3
Data platform	Ginolis Kaiku (cloud)

The machine at a glance

The frame is built in aluminum with electrostatic epoxy powder coating. The front and the side windows are transparent acrylic, the front hatch carries a safety switch. The control system sits in a secured compartment in the lower cabinet and the pneumatics unit is fixed at the rear, keeping the process volume clean and serviceable.



1. X-Y-Z Gantry
2. Vision QC cameras and lighting
3. Dispensing head and tips
4. Process table
5. Function buttons
6. Emergency stop
7. HMI Touch screen drawer
8. Electrical cabinet and vision PC
9. Liquid handling module
10. Process liquid cabinet



Technical specification

GENERAL

Mobility	Standalone
Equipment type	Laboratory equipment
Environment	Indoor use, laboratory
Access	User accessible, 100 cm clearance each side
Flammable liquid	Equipment may contain flammable liquids
Frame and finish	Aluminum, epoxy powder coating
Windows	Acrylic, front hatch safety switch

PHYSICAL DIMENSIONS

Width	850 mm
Depth	1000 mm
Height (max)	2000 mm
Weight	Approx 300-400 kg, configuration dependant

DISPENSING

Dispensing units	Kaste Nano, 1 - 8 pcs
Pump principle	Kaste Nano piezo-driven bellows, closed chamber
Volume per dispensing	1 nL to 1,5 mL
Max dosing speed	100 doses / s per channel
Wash pumps	2 pcs peristaltic
Dispense power input	24 VDC
Cleaning	Clean-in-place fluid path

MOTION AND VISION

Axes	X-Y-Z Gantry, industrial grade
Actuation	Stepper motor, integrated absolute encoders
Cameras	2 pcs with dedicated camera lightning, gantry mounted
Product hold-down	Vacuum tray on process table jig

SAFETY

Emergency stop	Front operator panel
Access guarding	Interlocked front hatch, fixed acrylic side windows
Electrical isolation	Lockable main switch
Documentation	Produced to conform with the applicable EU directives and machinery regulations

POWER CONNECTIONS

Mains (EU/US)	1-phase 100-240 VAC, 20 A, 50-60 Hz
Supply point	Single drop, phase + neutral + ground, 20 A
DC output (secondary)	24 VDC per power supply
PSU approvals	UL / CSA / CE
Main switch	Lockable, rated 40A
Short circuit current rating	10 kA
Bottle cabinet sockets	Ground fault circuit interrupter (GFCI)

UTILITIES

Compressed air	6 bar, estimated consumption 50 l / min
Network	1 connection, cloud services and remote support

COMMUNICATION

LAN	2 x RJ45 CAT6a
Other interfaces	USB, WLAN

OPERATING CONDITIONS

Temperature	15°C to 25 °C, ISO 7 cleanroom compatible
Relative humidity	35-65 % RH, non-condensing
Altitude	2000m / 6561 ft

TRANSPORT AND STORAGE

Temperature range	-20°C to 60°C, 2h recovery to operating temperature
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ENCLOSURE AND INSTALLATION

Degree of protection (IEC 60529)	IP 20
Electrical cabinet	IP 54, NEMA Type 3R
Overvoltage category	OVC II
Pollution degree	PD 2

Noise level at the workstation is measured according to EN ISO 11201 and reported per configuration. Specifications are subject to change, the binding configuration is agreed in the project URS / FRS