

# RASTRUM™ features and technical specifications



# RASTRUM

## Features and Specifications



### ✓ **Advanced drop-on-demand printing**

At the core of **RASTRUM™** is patented drop-on-demand printing technology that powers highly precise and gentle deposition of cell and matrix components with nanolitre precision

### ✓ **8 independently addressable nozzles**

Enabling the deposition of numerous cell and matrix components simultaneously for the formation of complex 3D cell models

### ✓ **Tunable biofunctional hydrogels**

**RASTRUM™** hydrogels mimic the extracellular matrix with a tailored stiffness and biofunctionality for each tissue type. They are consistent batch-to-batch and compatible with *in situ* and downstream analysis

### ✓ **Intuitive user experience**

This technology is packaged in an award-winning benchtop device with a highly intuitive user experience. Pre-validated structures and printing protocols enabled by workflow-driven software means there is no fuss with printing parameters or 3D structure design. Even the cleaning is automated

### ✓ **Integrated laminar flow**

Featuring a built-in laminar flow system is equipped with dual medical grade class H14 HEPA filters, **RASTRUM™** maintains sterility of your printed 3D cell models while sitting on any bench

### ✓ **Low-volumes enabled**

The **RASTRUM™** cartridge and fluidics operate with a starting volume as little as 200  $\mu$ L, with zero dead volume and minimal priming loss, meaning you can print precious cell samples with confidence

### ✓ **Fly-by printing**

With rapid non-contact droplet deposition, **RASTRUM™** can generate a full well plate of 3D cell models in under 30 minutes

### ✓ **Plug-and-play**

The **RASTRUM™** 3D cell culture platform comes with everything required to get you started, including a computer preloaded with **RASTRUM™** software, air compressor, onboarding consumables and 1 year of complementary Service & Support



## PRINTING SPECIFICATIONS

Minimum drop volume	15 nl*
Minimum drop diameter	150 µm*
Minimum layer thickness	50 µm*
Active printing nozzles	8
Drop placement resolution	20 µm
Maximum print frequency	1,000 drops per second (1,000 Hz)
Typical print frequency	300 drops per second (300 Hz)
Substrate	SBS-standard micro plates: 6, 12, 24, 48, 96 (custom fixtures on request)

## OPERATING ENVIRONMENT

Electrical	Input: 100-240VAC, 50/60Hz, Output: 24VDC, 6.67A
Weight	Approx. 50 kg (total)
Unit dimensions (D × W × H)	560 × 482 × 491 mm
Air supply	Minimum: 300 kPa (3 bar), Maximum: 800 kPa (8 bar)
Mini air compressor (optional)	240V AC, 300 kPa (3 bar) maximum air pressure
Laminar Air Filter Class	Dual HEPA filtration
Cleaning	Automatic flush with ethanol followed by Milli-Q water. Sterilisation clean.

## PC & SOFTWARE

Supplied PC	Dell OptiPlex 7460 All-in-One
Connectivity cable	USB-A to USB-B
Supported operating system	Windows™ 10

\* Dependent on 3D cell model and matrix type



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**I&L Biosystems Campus**  
Mottmannstrasse 2  
53841 Troisdorf  
Germany  
Tel.: +49 2223 9192-0  
info@il-biosystems.de  
[www.il-biosystems.com](http://www.il-biosystems.com)