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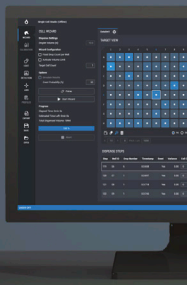
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# OSCAR

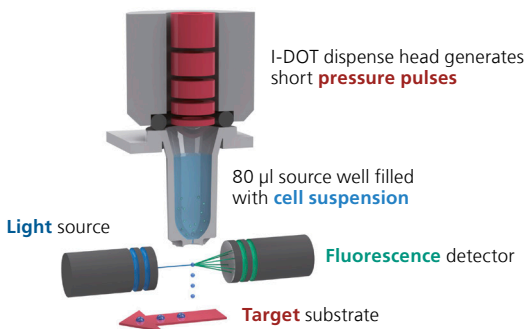
SINGLE CELL DISPENSING PLATFORM





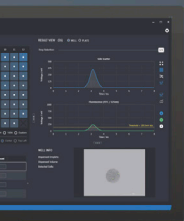
The **OSCAR Single Cell Dispensing Platform** is a combination of the I-DOT nano-dispensing technology and a newly developed in-flight fluorescence cell detection system – capable of dispensing viable single cells into virtually any target container at very high speed.

The **I-DOT dispensing method** is based on short pressure pulses that are applied to specifically designed wells with a little orifice at their bottom, 60  $\mu\text{m}$  or 90  $\mu\text{m}$  in diameter. With each pressure pulse, droplets are reproducibly ejected through that orifice, allowing precise dispensing in the lower nanoliter range. The process is exceptionally well suited for cell printing, since it has no impact on cell viability<sup>1</sup>.



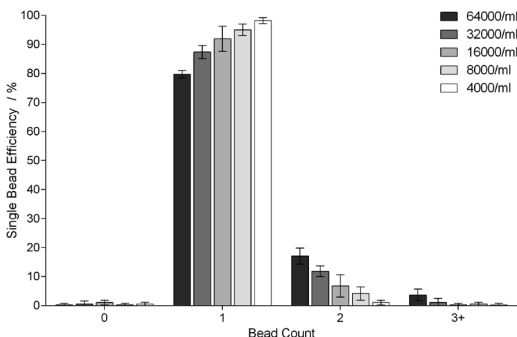
The OSCAR platform employs a **fluorescence based cell detection**, located just underneath the source well, which scans each droplet for the presence of a cell. When equipped with a relatively low cell concentration, the system dispenses mostly

<sup>1</sup> Schober, L. et al., Cell Dispensing in Low-Volume Range with the Immediate Drop-on-Demand Technology (I-DOT), JALA, 2014.



- »Easy-to-use software«
- »Short setup-time«
- »Various target formats«
- »Low-cost disposables«

empty droplets into the target until a cell is detected. In that case, the target carrier is moved to the next position and the dispensing is resumed. Ultimately, the systems single cell efficiency and throughput depend solely on the initial cell concentration.



### System Quick Facts

Source Well Capacity	80.0 $\mu$ l
Minimum Droplet Volume	2.0 nL
Target Formats	96, 384, 1536 + Custom
Device Size	60 x 48 x 40 cm
Excitation	488 nm LASER
Detection	Droplet Scatter, FITC / GFP, PE-Cy5 + 2 more channels

### Example Calculation

A **96 well plate** is filled with **single cells**<sup>2</sup> (8000 cells / mL) in **54 seconds** with a single cell efficiency of **~94 %**.

<sup>2</sup> Cell-sized polystyrene microbeads have been used for the reference test.



## **CONTACT**

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