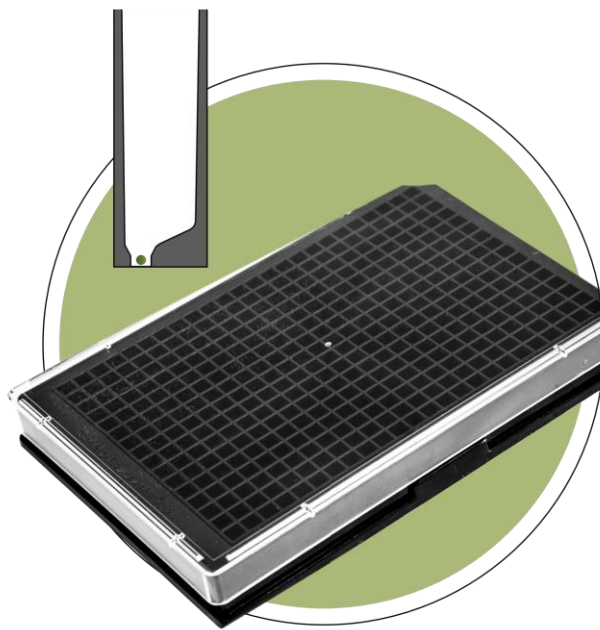




Akura™ 384 Spheroid

Microplate

# Technical Specifications



SPEC003, June 2022

## Akura™ 384 Spheroid Microplate Specifications

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<b>Article number:</b>	CS-09-003-02
<b>Product name:</b>	Akura™ 384 Spheroid Microplate
<b>Pack size:</b>	10x Akura™ 384 Plates with lid, sterile, ultra-low attachment (ULA) coated wells
<b>Plate &amp; lid material:</b>	Black-walled polystyrene body bonded to transparent, continuous, 25 µm gas-permeable membrane, polystyrene lid
<b>ULA coating:</b>	ULA coated Akura™ plate surfaces are hydrophilic, neutrally charged and promote the formation and long-term maintenance (>4 weeks) of 3D cell cultures.

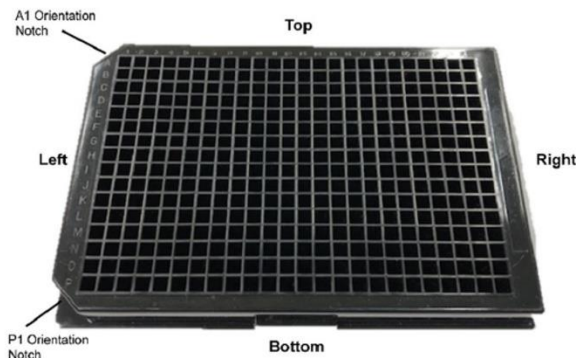
### Plate Dimensions:

Plate length:	127.76 mm
Plate width:	85.48 mm
Height of plate:	14.80 mm
Height of well:	11.93 mm
Skirt height:	2.87 mm
Diameter well bottom:	1.00 mm
Thickness well bottom:	0.025 mm
A1 to top offset:	9.89 mm
A1 to side offset:	12.13 mm
Well center to cavity center offset:	0.90 mm
Working volume:	40-50 µl
Well-to-well distance:	4.5 mm

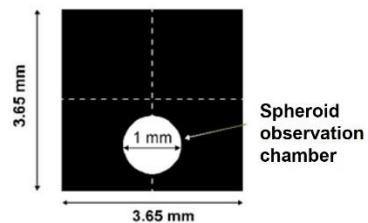
**Product Description:**

The Akura™ 384 Plate format is compliant with standard microplate definitions as specified by the SLAS Microplate Standards Advisory Committee ANSI SLAS 1-2004 (R2012). The 384 wells are arranged in 16 rows and 24 columns, identified by alphanumeric well markings on the left side from top to bottom (A-P) and on the top from left to right (1-24). Plate orientation notches are located at the A1 and P1 well corners (Figure 1A). Individual wells show a regular wide opening at the top narrowing down into a small, asymmetric cavity at the well bottom, with a flat optically clear base (Figure 1B), designed to accommodate spheroids of up to 1 mm in diameter. Spheroids in wells can be observed using standard imaging equipment (Figure 1C, D). The Akura™ 384 Spheroid Microplate Technical Specifications provides additional details about plate design and dimensions (Figure 2-4).

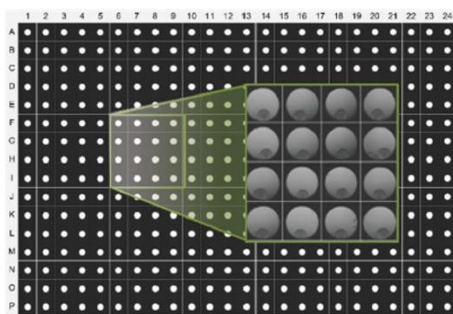
**A Akura™ 384 Plate design**



**B Well dimensions and spheroid position**



**C Imaging scans of spheroids in wells**



**D Spheroid in 1 mm observation chamber**

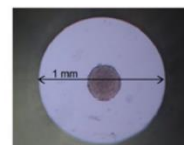


Figure 1: A. Akura™ 384 Plate. B. Overhead view of well dimensions and 1 mm spheroid observation chamber. C. Imaging scan of an Akura™ 384 Plate shows one spheroid per well and the position of each spheroid within the observation chamber. D. Image of a spheroid within the 1 mm spheroid observation chamber.

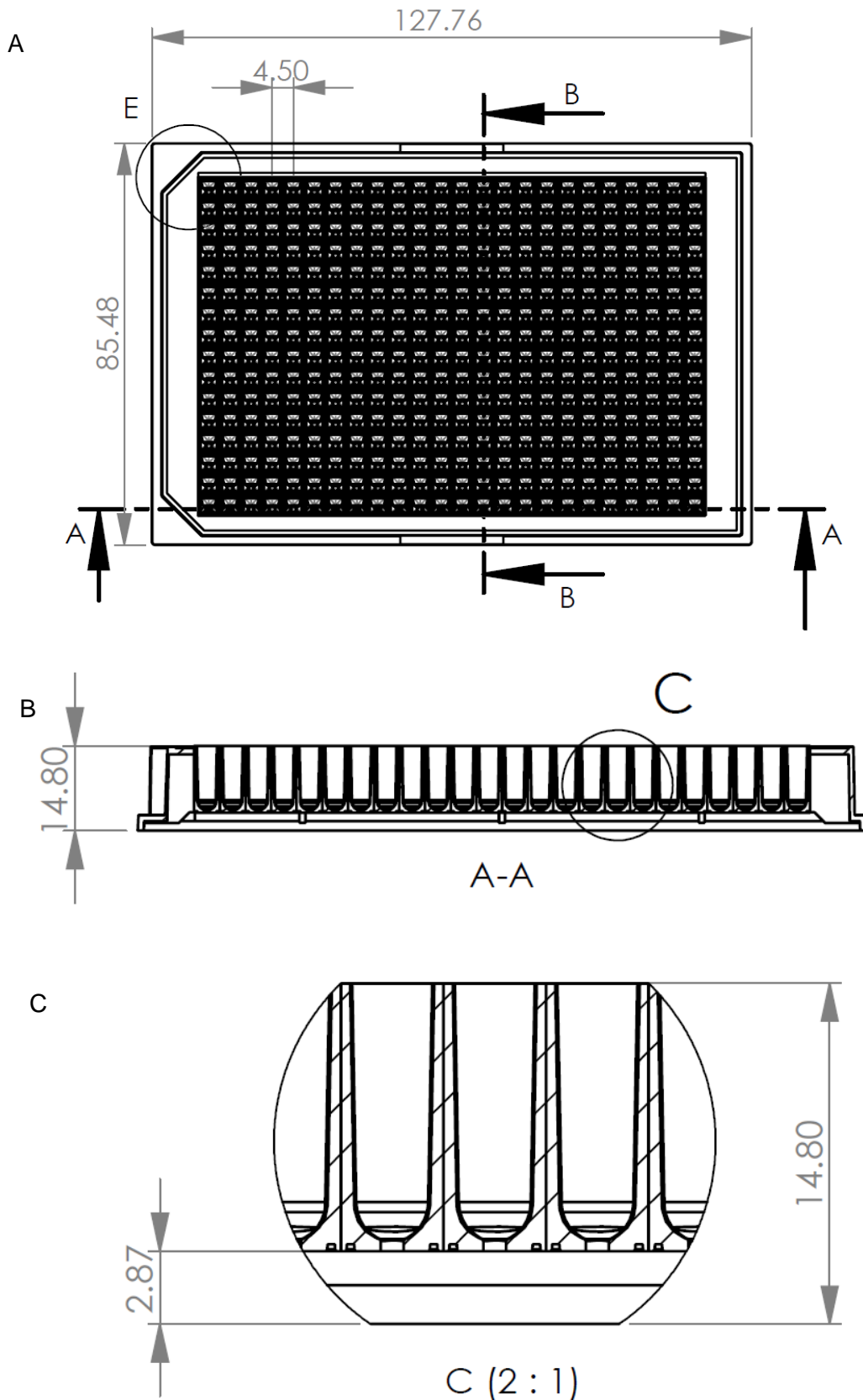


Figure 2: A. Plate layout. B. Row cross section with plate height and C. Skirt height (distance between plate bottom and rim).

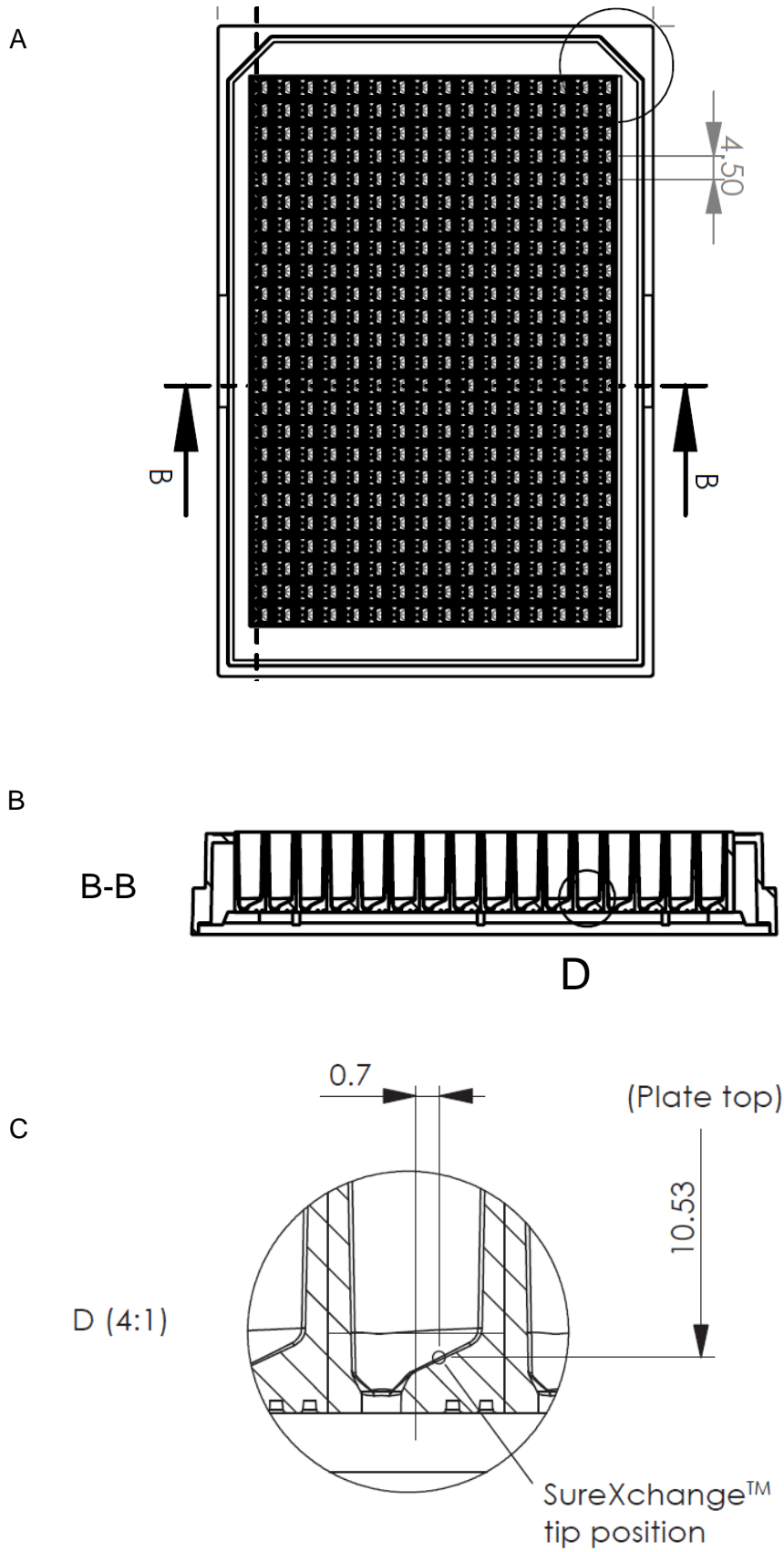


Figure 3: A. Vertically oriented plate layout. B. Row cross section and C. Well cross section with SureXchange™ tip position in mm.

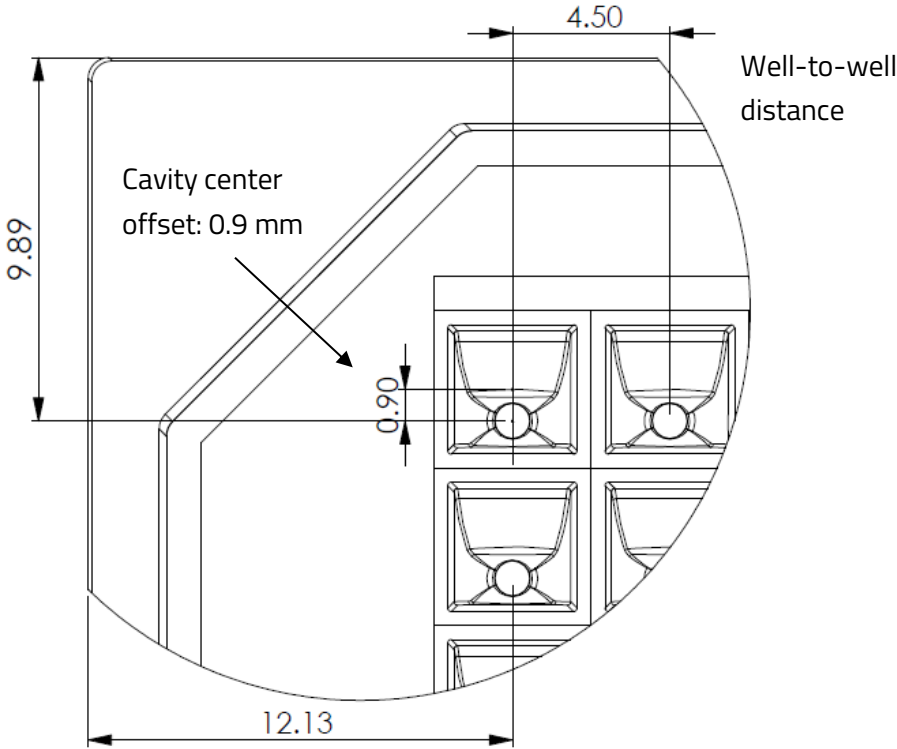


Figure 4: Top-down view showing cavity center offset.

**Akura™ 384 Spheroid Microplate restrictions:**

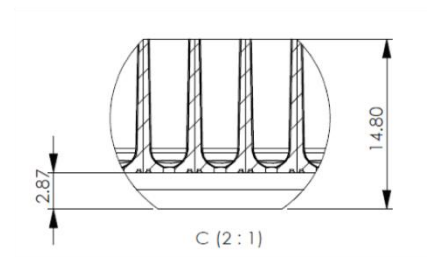
Biocompatible glue is used to adhere the gas-permeable membrane to the plate frame. The glue shows auto-fluorescent properties at low wavelengths (e.g. DAPI/Hoechst). Depending on the imaging parameter and staining conditions used, a fluorescent ring around the well may be detected (Figure 5A).

The skirt height of the Akura™ 384 Plate is 2.87 mm. The skirt height is the distance between the well bottom (the 25 µm gas-permeable membrane) and the plate skirt (Figure 5B). This design may restrict certain high NA objectives and immersion objectives to reach the outer wells of the plate.

**A Fluorescent ring around well**



**B Plate Skirt Height**



*Figure 5: A. Fluorescent ring around well in DAPI/Hoechst channel. B. Skirt height of 2.87 mm does not allow high NA and water immersion objectives to be used for outer wells.*



**InSphero AG**  
Schlieren, Switzerland

**InSphero Inc.**  
Brunswick, ME, USA

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