



## Labware compatibility report

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<https://ibidi.com/12-labware>

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# 1. Introduction

The 3D Cell Explorer allows to measure the refractive index of biological samples internal components offering the researcher the possibility to acquire super resolution 3D images within seconds. The instrument is suitable for any kind of eukaryotic or prokaryotic cell and thin slices of tissues can be observed, too. Moreover, thanks to the no photo-toxic laser source and the stage-top incubation controlled environment, the 3D Cell Explorer is suitable for long-term live cell imaging.

All these imaging applications require clean optical conditions throughout the whole optical system, which comprises the microscope and the sample, and full accessibility for the 45 angle bent light reflected by the rotating arm. This means that the disposables' quality and geometrical shape are crucial for optimal imaging results. The aim of this document is to provide a list of tested labware for live cell imaging compatible with all Nanolive instruments.

Please note:

- Although all labware suggested in this document is ibidi branded, other glass bottom labware with identical quality and geometry can be used. In case of different plastic bottom labware please check the compatibility contacting our technical support ([luca@nanolive.ch](mailto:luca@nanolive.ch)).
- Thanks to the ibidi Free Sample Program (<https://ibidi.com/module/ibidifreesample/request>) you will have the possibility to choose up to 3 ibidi products as a free sample for testing.
- More details about coating procedures for ibidi  $\mu$ -Slides and  $\mu$ -Dishes are available in ibidi's application notes on their website ([https://ibidi.com/img/cms/support/AN/AN08\\_Coating.pdf](https://ibidi.com/img/cms/support/AN/AN08_Coating.pdf)).
- For more details about sample preparation and the acquisition procedure with the 3D Cell Explorer check the [Sample preparation manual](#) and tutorial videos on Nanolive's [support webpage](#).

## A. 35 mm dishes, high borders



	$\mu$ -Dish 35 mm, high	$\mu$ -Dish 35 mm, high	$\mu$ -Dish 35 mm, high
	Polymer Coverslip ibiTreat / Uncoated	Glass Bottom	Grid-500 Glass Bottom
<b>Cat.No</b>	81156, 81151	81158	81168
<b>Bottom Thickness</b>	180 $\mu\text{m}$ (+10/- 5 $\mu\text{m}$ )	170 $\mu\text{m}$ (+/- 5 $\mu\text{m}$ )	170 $\mu\text{m}$ (+/- 5 $\mu\text{m}$ )
<b>Bottom Material</b>	#1.5 Polymer coverslip (ibidi)	#1.5H glass coverslip (D 263 M Schott high precision glass)	#1.5H glass coverslip (D 263 M Schott glass)
<b>Lid</b>	Lid lock for minimal evaporation and safe handling	Lid lock for minimal evaporation and safe handling	Lid lock for minimal evaporation and safe handling
<b>Surfaces</b>	ibiTreat (tissue culture treated), Uncoated (hydrophobic), Plastic	Uncoated glass	Uncoated glass
<b>Gas permeable</b>	Yes	No	No
<b>Grid</b>	No	No	Grid-500



Suitable for:

- Cell culture and high resolution imaging
- Immunofluorescence staining
- Long term live cell imaging
- Transfection and fluorescence microscopy



- Image the center of the dish; the laser should not touch the borders of it
- Not compatible with DIC lid
- Avoid grid lines in the field of view

## B. 35 mm dishes, low borders



	<b>μ-Dish 35 mm, low</b>	<b>μ-Dish 35 mm, low Grid-500</b>
	Polymer Coverslip ibiTreat / Uncoated	Polymer Coverslip ibiTreat / Uncoated
<b>Cat.No</b>	80136	80156
<b>Bottom Thickness</b>	180 μm (+10/- 5 μm)	180 μm (+10/- 5 μm)
<b>Bottom Material</b>	#1.5 Polymer coverslip (ibidi)	#1.5 Polymer coverslip (ibidi)
<b>Lid</b>	Lid lock for minimal evaporation and safe handling	Lid lock for minimal evaporation and safe handling
<b>Surfaces</b>	ibiTreat (tissue culture treated), Uncoated (hydrophobic)	ibiTreat (tissue culture treated), Uncoated (hydrophobic)
<b>Gas permeable</b>	Yes	Yes
<b>Grid</b>	No	Grid-500

### Applications

Cell manipulation and microinjection  
 Fluorescence microscopy of both living and fixed cells  
 Live cell imaging



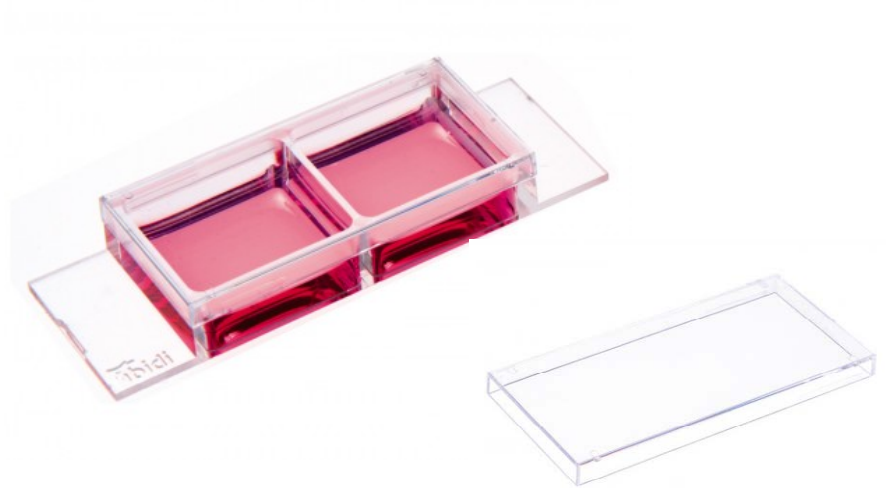
- High risk of medium spilling out



Suitable for **DIC Lid for μ-Dishes**  
**Special lid with a glass insert for use in Differential Interference Contrast (DIC)**

- Ideal for use in Differential Interference Contrast (DIC)
- Can be alcohol-sterilized and then be reused

## C. Open Slides: $\mu$ -Slide 2 Well Glass Bottom | Cat.No: 80287



<b>Number of wells</b>	2
<b>Dimensions of wells (w x l x h) in mm</b>	21.2 x 23.3 x 9.3
<b>Volume per well</b>	1500 $\mu$ l
<b>Total height with lid</b>	10.8 mm
<b>Growth area per well</b>	4.8 cm <sup>2</sup>
<b>Coating area per well</b>	7.5 cm <sup>2</sup>
<b>Bottom</b>	Glass coverslip No. 1.5H, selected quality, 170 $\mu$ m +/- 5 $\mu$ m

### Applications

- Cultivation and microscopy of cell cultures
- TIRF and single molecule applications



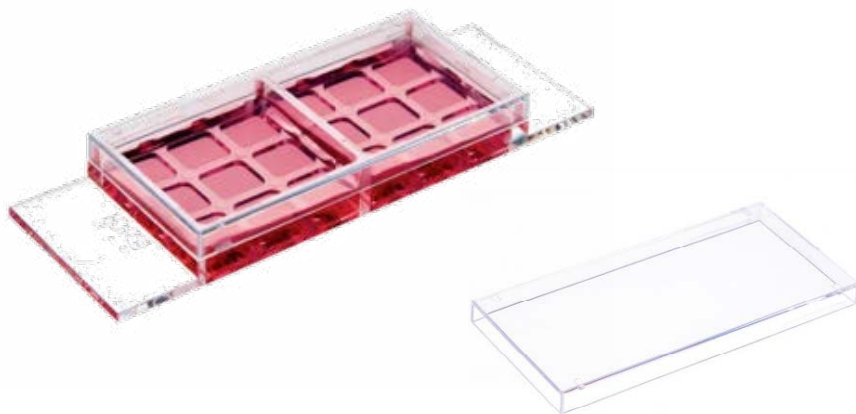
- It works only in the middle of the wells



### Compatible with: DIC Lid for $\mu$ -Slides

- For use in Differential Interference Contrast (DIC)
- Suitable for use with all ibidi  $\mu$ -Slides (except Channel and Ph+ versions)
- Made from special plastic with low birefringence

## C. Open Slides: $\mu$ -Slide 2 Well Glass Bottom | Cat.No: 80287



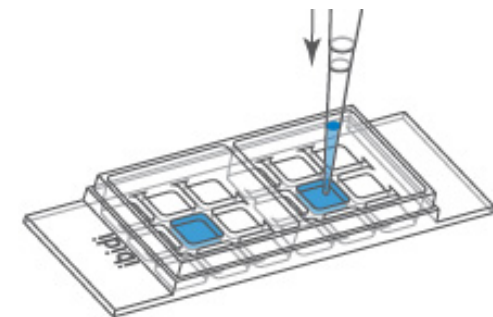
<b>Number of major wells</b>	2
<b>Volume per major well</b>	600 $\mu$ l
<b>Dimensions of major wells (w x l x h) in mm</b>	21.5 x 23.6 x 6.8
<b>Number of minor wells</b>	2 x 9
<b>Volume of each minor well</b>	70 $\mu$ l
<b>Dimensions of minor wells (w x l x h) in mm</b>	6.1 x 6.8 x 1.3
<b>Growth area per minor well</b>	0.4 cm <sup>2</sup>
<b>Coating area per minor well</b>	0.55 cm <sup>2</sup>
<b>Bottom</b>	ibidi Polymer Coverslip

### Applications

- Co-cultivation of different cell lines or primary cells
- Mesenchymal-epithelial interactions
- Paracrine interaction of different cell populations *in vitro*
- Cell or spheroid culture in gel matrices



- It works only in the central well



### Compatible with: DIC Lid for $\mu$ -Slides

- For use in Differential Interference Contrast (DIC)
- Suitable for use with all ibidi  $\mu$ -Slides (except Channel and Ph+ versions)
- Made from special plastic with low birefringence

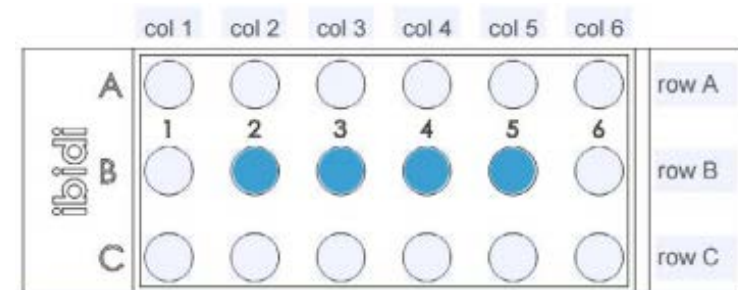
## C. Open Slides: $\mu$ -Slide 18 Well - Flat | Cat.No: 81826



<b>Number of wells</b>	18
<b>Height with / without lid</b>	5.0 / 1.6 mm
<b>Volume per reservoir</b>	30 $\mu$ l
<b>Well diameter</b>	5 mm
<b>Growth area per well</b>	0.2 cm <sup>2</sup>
<b>Coating area per well</b>	0.25 cm <sup>2</sup>
<b>Bottom</b>	ibidi Polymer Coverslip

### Applications

- Quick immunofluorescence staining of adherent cells
- Optimization of both surface functionalization and coatings
- Fast toxicological screening of small microscopy samples
- Spotting samples such as RNA assays
- Cultivation of small organisms



- It works only in wells 2,3,4,5 in rowB



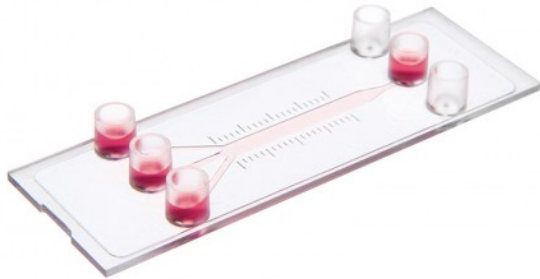
### Compatible with: DIC Lid for $\mu$ -Slides

- For use in Differential Interference Contrast (DIC)
- Suitable for use with all ibidi  $\mu$ -Slides (except Channel and Ph+ versions)
- Made from special plastic with low birefringence





## D. Channel Slides: $\mu$ -Slide III 3in1 | Cat.No: 80316



<b>Adapters</b>	Female Luer
<b>Volume per reservoir</b>	60 $\mu$ l
<b>Number of channels</b>	3 in 1
<b>Total channel volume</b>	60 $\mu$ l
<b>Height of all channels</b>	0.4 mm
<b>Width of channels thin/thick</b>	1/3 mm
<b>Total growth area</b>	1.23 cm <sup>2</sup>
<b>Coating area</b>	3.05 cm <sup>2</sup>
<b>Distance of scale bars</b>	1 mm
<b>Bottom</b>	ibidi Polymer Coverslip

### Applications

- Fluidic assays with up to three different liquids
- Cell sorting with laser traps
- Fluidic focusing of inner lane



Compatible with: **ibidi Pump System**



## D. Channel Slides: $\mu$ -Slide I Luer | Cat.No: 80176



<b>Channel length</b>	50 mm
<b>Channel width</b>	5 mm
<b>Adapters</b>	Female Luer
<b>Volume per reservoir</b>	60 $\mu$ l
<b>Growth area</b>	2.5 cm <sup>2</sup>
<b>Coating area</b>	5.2 / 5.4 / 5.6 / 5.8 cm <sup>2</sup>
<b>Bottom</b>	ibidi Polymer Coverslip

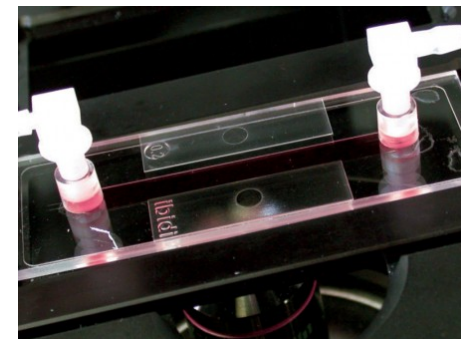
### Applications

- Adherent cells under flow conditions
- Cell culture (static or stop-flow)
- 3D cell culture in gels brought into the channels
- High-resolution microscopy of living and fixed cells



### Compatible with: ibidi Pump System

- Defined shear stress in long-term cell culture (e.g., endothelium, kidney, or biofilm)
- Live cell imaging and immunofluorescence for analyzing shear stress response
- Mimicking shear stress conditions in microcapillary, venous, and arterial flow
- Rolling and adhesion of suspended cells on substrates
- Stop flow experiments
- 3D cell culture: interstitial flow



## D. Channel Slides: $\mu$ -Slide y-shaped | Cat.No: 80126

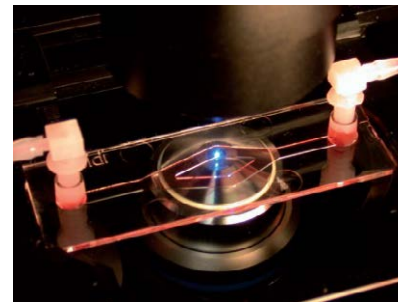


### Specifications:

<b>Adapters</b>	Female Luer
<b>Volume per reservoir</b>	60 $\mu$ l
<b>Volume of the channel</b>	110 $\mu$ l
<b>Height of all channel</b>	0.4 mm
<b>Width of channel</b>	3 mm
<b>Growth area</b>	2.8 cm <sup>2</sup>
<b>Coating area</b>	5.6 cm <sup>2</sup>
<b>Bottom</b>	ibidi Polymer Coverslip



Compatible with: **ibidi Pump System**



## D. Channel Slides: $\mu$ -Slide III 3D Perfusion | Cat.No: 80376



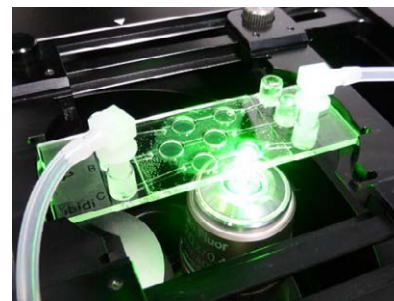
<b>Number of wells</b>	6
<b>Volume of wells</b>	30 $\mu$ l
<b>Well diameter</b>	5.5 mm
<b>Well depth</b>	1.2 mm
<b>Well depth total</b>	1.7 mm
<b>Growth area per well</b>	25 mm <sup>2</sup>
<b>Number of channels</b>	3
<b>Total channel volume</b>	130 $\mu$ l
<b>Channel width</b>	1.0 mm
<b>Adapters</b>	Female Luer
<b>Volume per reservoir</b>	60 $\mu$ l
<b>Coating area using 130 <math>\mu</math>l</b>	2.4 cm <sup>2</sup> per channel
<b>Bottom</b>	ibidi Polymer Coverslip

### Applications

- Correlative light and electron microscopy (CLEM)
- Observation of single cells in 3D matrices or tissue samples (e.g., spheroids, small organoids, or organisms)
- Perfusion of samples
- Long-term cultivation of cells in 3D matrices



Compatible with: **ibidi Pump System**



## E. Removable Chambers: Culture-Insert 2 Well in $\mu$ -Dish 35 mm | Cat.No: 81176



<b>Number of wells</b>	2
<b>Outer dimensions (w x l x h) in mm</b>	8.4 x 8.4 x 5
<b>Volume per well</b>	70 $\mu$ l
<b>Growth area per well</b>	0.22 cm <sup>2</sup>
<b>Coating area per well</b>	0.82 cm <sup>2</sup>
<b>Width of cell free gap</b>	500 $\mu$ m +/- 50 $\mu$ m
<b>Material</b>	Biocompatible silicone
<b>Bottom</b>	No bottom - sticky underside

### Applications

- Wound healing assays
- Migration assays
- 2D invasion assays
- Co-cultivation of cells



- It works only after the inserts removal

## E. Removable Chambers: Culture-Insert 3 Well in $\mu$ -Dish 35 mm, high | Cat.No: 80366



<b>Number of wells</b>	3
<b>Outer dimensions</b>	8.4 x 12.15 x 5
<b>Volume per well</b>	70 $\mu$ l
<b>Growth area per well</b>	0.22 cm <sup>2</sup>
<b>Coating area per well</b>	0.82 cm <sup>2</sup>
<b>Width of cell free gap</b>	500 $\mu$ m +/- 50 $\mu$ m
<b>Material</b>	Biocompatible silicone
<b>Bottom</b>	No bottom - sticky underside

### Applications

- Wound healing assays
- Migration assays
- 2D invasion assays
- Co-cultivation of cells



- It works only after the inserts removal

## E. Removable Chambers: Culture-Insert 4 Well in $\mu$ -Dish 35 mm, high | Cat.No: 80466



<b>Number of wells</b>	4
<b>Outer dimensions</b>	Ø 17 mm
<b>Volume per well</b>	110 $\mu$ l
<b>Growth area per well</b>	0.35 cm <sup>2</sup>
<b>Coating area per well</b>	1.23 cm <sup>2</sup>
<b>Width of cell free gap</b>	
- Two cell fronts	500 $\mu$ m +/- 50 $\mu$ m
- Four cell fronts (center)	1000 $\mu$ m +/- 100 $\mu$ m
<b>Material</b>	Biocompatible silicone
<b>Bottom</b>	No bottom - sticky underside

### Applications

- Wound healing assays
- Migration assays
- 2D invasion assays
- Co-cultivation of cells



- It works only after the inserts removal