

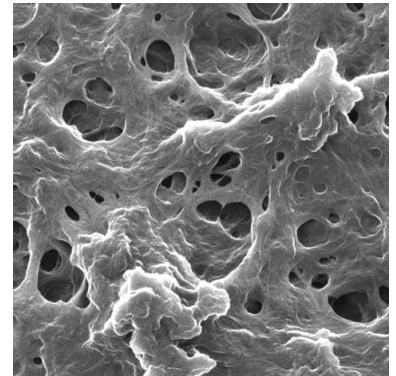
60PEDOT-pMEA200/30iR-Ti-Au 60PEDOT-pMEA200/30iR-Ti-Au

Layout

Technical Specifications

Temperature compatibility	0 - 50 °C
Dimensions (W x D x H)	49 mm x 49 mm x 1 mm
Base material	Polyimide foil (2611) on glass or ceramic carrier
Perforation:	
Diameter of innermost area	2 mm
Total area of holes	35 % (according to 2 mm)
Diameter of holes	16, 30, 40, 68, 84 µm
Track material	Ti-Au-Ti (Titanium, Gold, Titanium)
Contact pads	Ti-Au (Titanium, Gold)
Electrode diameter	30 µm
Interelectrode distance (center to center)	200 µm
Electrode height	Planar
Electrode material	PEDOT-CNT (carbon nanotube – poly 3,4-ethylene-dioxythiophene)
Isolation material	Polyimide foil (2610) isolator
Electrode impedance	< 100 kΩ
Electrode layout grid	8 x 8
Number of recording electrodes	59
Number of reference electrodes	1 internal reference electrode (iR)
Software	
Multi Channel Experimenter	MEA Configuration
MC_Rack	2 dim. (MEA) or Configuration
Channel map	Default

PEDOT-CNT: Carbon-nanotube structure



Advantages

- Acute slice recordings on common glass MEAs are done from the cells at the bottom of the slice, which are in contact with the MEA electrodes.
- These cells get less oxygen and nutrients from the perfusion medium, and therefore are likely to give smaller signals and might eventually die first.
- Perforated MEAs present a solution to this problem as they allow a perfusion of the tissue from both sides at the same time, thereby optimizing the oxygen supply of the acute slice.
- Pedot-CNT MEAs have excellent biocompatibility and cell adhesion and very low impedance values of approximately 20 kΩ.

MEA Perfusion Chamber

- (w/o) Without ring
- (gr) Glass ring ID +/- 19 mm, OD +/- 24 mm, height 6 / 12 mm
- (pr) Plastic ring without thread ID 26.5 mm, OD 30 mm, height 6 / 15 mm
- (pr-T) Plastic ring with thread ID 26 mm, OD 30 mm, height 6 / 15 mm

June 2020

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Numbering

The numbering of MEA electrodes in the 8 x 8 grid follows the standard numbering scheme for square grids:

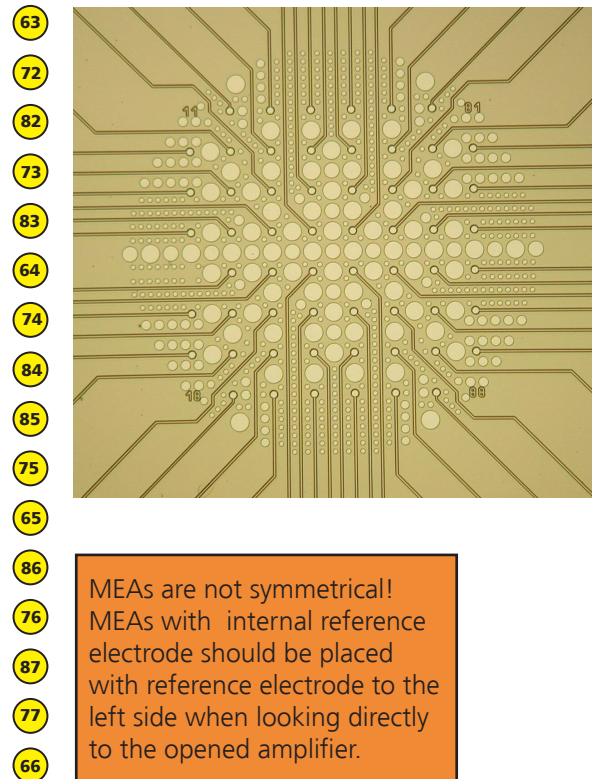
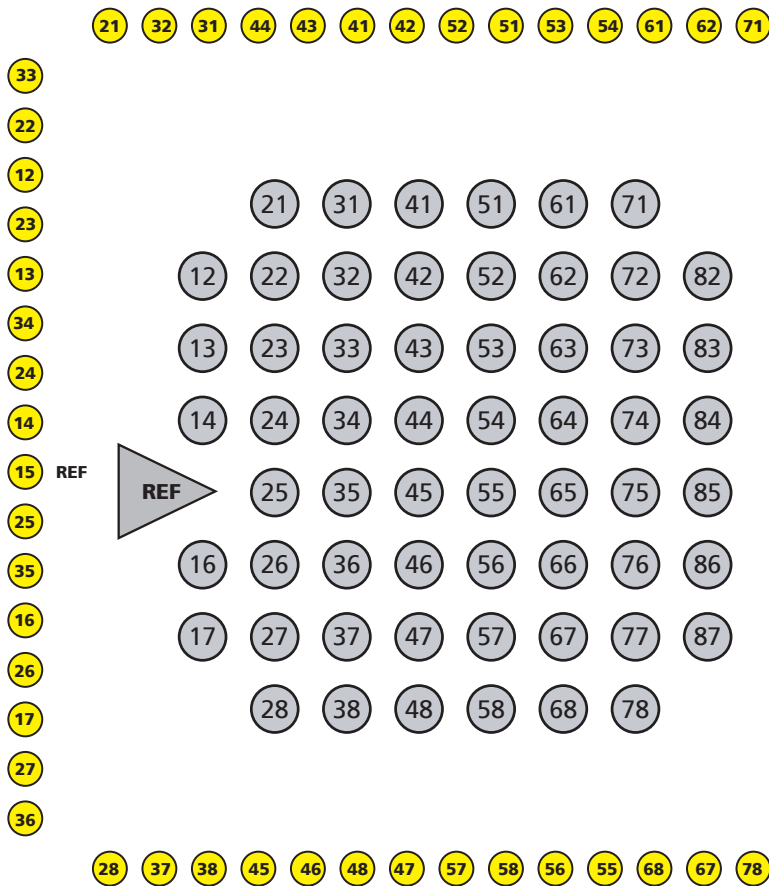
The first digit is the column number, and the second digit is the row number. For example, electrode 23 is positioned in the third row of the second column.

Cleaning

Rinse with distilled water.

Do not use ultrasonic bath!

These pMEAs are not heat stable, and should not be autoclaved!



MEAs are not symmetrical!
MEAs with internal reference electrode should be placed with reference electrode to the left side when looking directly to the opened amplifier.

The MEA Electrode IDs are the channel numbers that are used in the data acquisition program. When using MC_Rack software, please select the 2 dimensional layout or Configuration in the "Data Source Setup". Electrode 15 is missing in this MEAs. It is replaced by a big internal reference electrode, connected to pin 15 of the amplifier.

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