Advantages

- The 3D structure is particularly well suited for acute tissue slice preparations.
- The tip-shaped electrodes are able to penetrate through the initial outer dead cell layer arising from the slice preparation process.
- The 3D electrodes also allow more efficient electrical stimulation of the cells.

Technical Specifications

- Temperature compatibility: 0 - 125 °C
- Dimensions (W x D x H): 49 mm x 49 mm x 1 mm
- Base material: Glass
- Track material: Ti (Titanium)
- Contact pads: TiN (Titanium nitride)
- Electrode diameter: 12 µm
- Electrode height in total: 40, 50 or 100 µm (etched from glass)
- Electrode base: diameter: 100 µm
- Electrode tip: diameter: 12 µm, height: 20 µm
- Interelectrode distance (center to center): 100 µm, 200 µm or 250 µm
- Electrode material: TiN (Titanium nitride)
- Isolation material: Silicon nitride (SiN)
- Electrode impedance: 150 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
  - MC_Rack: 2 dim. (MEA) or Configuration

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

Warning:
The tips of the electrodes are fragile. Please avoid mechanical stress when mounting or removing a slice.
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.

**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.

**Note of the Manufacturer**

Because of the delicate etching process involved in 3D electrode production, 60-3DMEAs with one high impedance electrode are still considered 1st grade.

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 MEAs. It is replaced by a big internal reference electrode, connected to pin 15 of the amplifier.