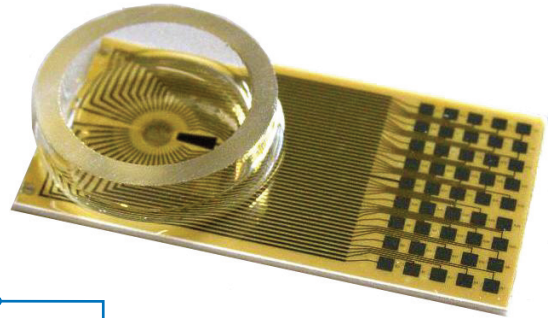


pMEA32S12-L1

for Use with MEA2100-32- or USB-MEA32-STIM4-System

Layout



Technical Specifications

Temperature compatibility	10 - 50 °C
Dimensions (W x D x H)	49 mm x 25 mm x 1.8 mm
Base material	Polyimide foil (2611) on ceramic carrier
Perforation:	
Total area of holes	0.8 mm ²
Diameter of holes	90, 75, 50, 30, 20 µm
Track material	Ti (Titanium)
Contact pads	TiN (Titanium nitride)
Electrode diameter	30 µm (recording), 50 µm (stimulation)
Interelectrode distance (center to center)	90 µm and 150 µm (recording), 100 µm and 125 µm (stimulation)
Electrode height	Planar
Electrode material	TiN (Titanium nitride)
Isolation material	Polyimide foil (2610) isolator
Electrode impedance	< 100 kΩ
Electrode layout grid	1 x 10 + 1 x 12 + 1 x 10 (recording), 2 x 6 (stimulation)
Number of recording electrodes	32
Number of stimulation electrode	12
Number of reference electrodes	1 internal reference electrode (iR)
Software	
Multi Channel Experimenter	MEA Configuration
MC_Rack	1 dimensional or Configuration
Channel map	pMEA-32S12-L1_12x3.cmp

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.

MEA Perfusion Chamber

(gr) Glass ring: ID +/- 19 mm, OD +/- 24 mm, height 6 / 12 mm

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Warning: Do not use ultrasonic bath!
Do not autoclave or sterilize pMEAs by heat. These pMEAs are not heat stable and will be irreversibly damaged.

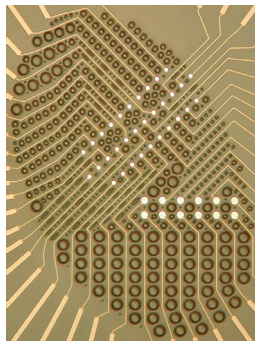
A = Number of recording electrode
S = Number of stimulation electrode
CH = Channel number in MC_Rack
STG = Internal stimulus generator connection

S 1	STG 23	STG 16	S 7
S 2	STG 25	STG 13	S 8
S 3	STG 22	STG 15	S 9
S 4	STG 24	STG 12	S 10
S 5	STG 21	STG 14	S 11
S 6	STG 26	STG 11	S 12

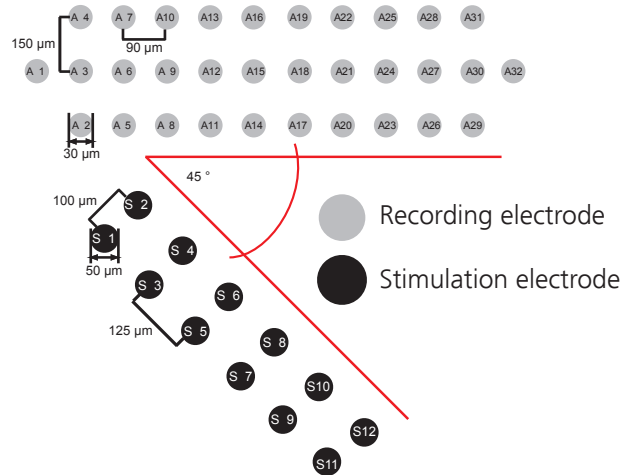
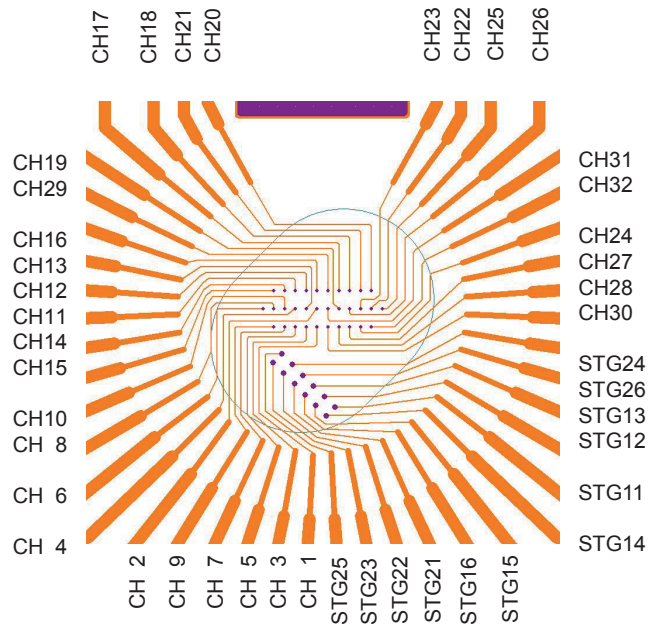
A 1	CH 6	CH 30	A 17
A 2	CH 9	CH 31	A 18
A 3	CH 8	CH 29	A 19
A 4	CH 15	CH 28	A 20
A 5	CH 7	CH 19	A 21
A 6	CH 10	CH 17	A 22
A 7	CH 14	CH 27	A 23
A 8	CH 5	CH 26	A 24
A 9	CH 4	CH 18	A 25
A 10	CH 11	CH 24	A 26
A 11	CH 3	CH 23	A 27
A 12	CH 13	CH 21	A 28
A 13	CH 12	CH 32	A 29
A 14	CH 1	CH 22	A 30
A 15	CH 2	CH 20	A 31
A 16	CH 16	CH 25	A 32

Cleaning

Rinse with distilled water, optional with ethanol 70 %.



Direction to Amplifier ↑



MC_Rack channel map: pMEA32S12-L1_12x3.cmp

	15	14	11	12	16	29	17	18	21	20	
6	8	10	4	13	2	31	19	26	23	22	25
	9	7	5	3	1	30	28	27	24	32	

The MC_Rack channel map is build analog to the layout of the recording electrodes in the grid.

	A4	A7	A10	A13	A16	A19	A22	A25	A28	A31	
A1	A3	A6	A9	A12	A15	A18	A21	A24	A27	A30	A32
	A2	A5	A8	A11	A14	A17	A20	A23	A26	A29	