

MEA Microelectrode Array

MEA type

Standard

Temperature compatibility

Dimension (W x D x H)

Base material

Contact pad

Track material

Electrode diameter

Interelectrode distance (centre to centre)

Electrode height

Electrode type

Isolation type

Electrode impedance

Electrode layout grid

Number of electrodes

Ring type

MEA perfusion chamber

Glass ring (gr): ID +/-20 mm, OD 24 mm, height 6 / 12 mm

Macrolon ring (mr): 6 wells, OD 30 mm, height 10 mm

Plastic ring (pr): ID 26 mm, OD 30 mm, height 6 / 3 mm

Plastic ring (pr-T): ID 25 mm, OD 30 mm, height 6 / 15 mm
with internal thread for a lid

**100/10-ITO, 200/10-ITO, 200/30-ITO,
200/10iR-ITO, 200/30iR-ITO**

0 °C – 125 °C

49 mm x 49 mm x 1 mm

Glass

Transparent: Indium tin oxid (ITO)

Transparent: Indium tin oxid (ITO)

10 µm and 30 µm

100 and 200 µm

Planar

TiN electrodes (Titanium nitride)

Silicon nitride 500 nm (PEVCD)

30 – 50 kΩ for 30 µm electrodes,
250 – 400 kΩ for 10 µm electrodes

8 x 8

60 electrodes

iR = with internal reference electrode

Without ring

Glass ring

Plastic ring without thread

Plastic ring with thread

**100/10-Ti, 200/10-Ti, 200/30-Ti
200/10iR-Ti, 200/30iR-Ti
(500/10iR-Ti, 500/30iR-Ti)**

0 °C – 125 °C

49 mm x 49 mm x 1 mm

Glass

Opaque: Titanium nitride (TiN)

Opaque: Titanium (Ti)

10 µm and 30 µm

100 and 200 µm (500 µm: 6x10 grid)

Planar

TiN electrodes (Titanium nitride)

Silicon nitride 500 nm (PEVCD)

30 – 50 kΩ for 30 µm electrodes,
250 – 400 kΩ for 10 µm electrodes

8 x 8 (6 x 10: 500/10iR-Ti, 500/30iR-Ti)

60 electrodes

iR = with internal reference electrode

Without ring

Glass ring

Plastic ring without thread

Plastic ring with thread

MEA Microelectrode Array

| MEA type | FlexMEA72 | FlexMEA36 | EcoFlexMEA36 | EcoFlexMEA24 |
|--------------------------------|---|---|---|---|
| FlexMEA | | | | |
| Temperature compatibility | 10 °C – 40 °C | 10 °C – 40 °C | 10 °C – 125 °C | 10 °C – 125 °C |
| Thickness | 12 µm | 12 µm | 50 µm | 50 µm |
| Base material | Polyimide 2611 foil | Polyimide 2611 foil | Polyimide (Kapton) | Polyimide (Kapton) |
| Contact pad and track material | Gold | Gold | Gold | Gold |
| Electrode diameter | 100 µm | 30 µm | 50 µm | 80 µm |
| Interelectrode distance | 625 µm to 750 µm with perforation, diameter of holes 100 µm | 300 µm with perforation, diameter of holes 30 µm | 300 µm | 300 µm |
| Electrode height | Planar | Planar | Planar | Planar |
| Electrode type | TiN electrodes (Titanium nitride) | TiN electrodes (Titanium nitride) | Gold electrodes | Gold electrodes |
| Isolation type | Polyimide 2611 foil | Polyimide 2611 foil | Polyimide (Kapton) | Polyimide (Kapton) |
| Electrode impedance | Approx.: 50 kΩ | Approx.: 50 kΩ | Approx.: 50 kΩ | Approx.: 50 kΩ |
| Electrode layout grid | 9 x 8 | 6 x 6 | 6 x 6 | 10 x 2 + 4 |
| Number of electrodes | 72 electrodes 72 electrodes including 4 reference electrodes and 4 ground electrodes | 36 electrodes 36 electrodes including 2 reference electrodes and 2 ground electrodes | 36 electrodes 36 electrodes including 2 reference electrodes and 2 ground electrodes | 24 electrodes 24 electrodes including 2 reference electrodes and 2 ground electrodes |

MEA Microelectrode Array

| MEA type | ThinMEA30/10-ITO ThinMEA100/10-ITO ThinMEA200/30iR-ITO | EcoMEA | HexaMEA-ITO HexaMEA-Ti (HexaMEA40/10iR-ITO) | HighDenseMEA: HD30/10-ITO HD30/10iR-ITO |
|---------------------------|---|---|---|---|
| Temperature compatibility | 0 °C – 125 °C | 0 °C – 125 °C | 0 °C – 125 °C | 0 °C – 125 °C |
| Dimension (W x D x H) | 49 x 49 mm x 180 µm (Glass part) | 49 x 49 x 1 mm | 49 x 49 x 1 mm | 49 x 49 x 1 mm |
| Base material | Glass on ceramic base | Polyimide (Kapton) | Glass | Glass |
| Contact pad | Indium tin oxide (ITO) | Gold (Au) | ITO -OR - TiN | Indium tin oxide (ITO) |
| Track material | Indium tin oxide (ITO) | Gold (Au) | ITO -OR - Titanium (Ti) (Indium tin oxide (ITO)) | Indium tin oxide (ITO) |
| Electrode diameter | 10 and 30 µm | 100 µm | 10, 20, 30 µm (10 µm) | 10 µm |
| Interelectrode distance | 30, 100, 200 µm | 700 µm | 30, 60, 90 µm (40 µm) | 30 µm |
| Electrode height | Planar | Planar | Planar | Planar |
| Electrode type | Titanium nitride (TiN) | Gold | Titanium nitride (TiN) | Titanium nitride (TiN) |
| Isolation type | Silicon nitride 500 nm (PEVCD) | Polyimide (Kapton) | Silicon nitride 500 nm (PEVCD) | Silicon nitride 500 nm (PEVCD) |
| Electrode impedance | 30 – 50 kΩ for 30 µm electrodes, 250 – 400 kΩ for 10 µm electrodes | Approx.: 30 kΩ | 30 kΩ – 400 kΩ, depending on electrode type and diameter (250 kΩ – 400 kΩ) | 250 - 400 kΩ |
| Electrode layout grid | 8 x 8 | 8 x 8 | hexagonal | 2 x (5x6); 500 µm between the fields |
| Number of electrodes | 60 electrodes iR = with internal reference electrode | 60 electrodes iR = with internal reference electrode | 60 electrodes iR = with internal reference electrode | 60 electrodes iR = with internal reference electrode |
| Ring | Without ring Glass ring Plastic ring without thread Plastic ring with thread | Without ring Glass ring Plastic ring without thread Plastic ring with thread | Without ring Glass ring Plastic ring without thread Plastic ring with thread | Without ring Glass ring Plastic ring without thread Plastic ring with thread |

MEA Microelectrode Array

| MEA type | Perforated MEA: pMEA100/30iR-Ti pMEA200/30iR-Ti | 6 Well MEA: 6well-MEA200/30iR-Ti | Stimulation MEA: 200/30-ITO-stim 200/30-Ti-stim | 256 Electrodes MEA: 256MEA60/10iR-ITO 256MEA100/30iR-ITO 256MEA200/30iR-ITO | Quadrant MEA: 4QMEA1000iR-Ti |
|---------------------------|--|--|--|--|---|
| Temperature compatibility | 0 °C – 50 °C | 0 °C – 125 °C | 0 °C – 125 °C | 0 °C – 125 °C | 0 °C – 125 °C |
| Dimension (W x D x H) | 49 x 49 x 1 mm | 49 x 49 x 1 mm | 49 x 49 x 1 mm | 49 x 49 x 1 mm | 49 x 49 x 1 mm |
| Base material | Polyimide foil with perforation on ceramic carrier | Glass | Glass | Glass | Glass |
| Contact pad | Titanium nitride (TiN) | Titanium nitride (TiN) | ITO -OR- TiN | Indium tin oxide (ITO) | Titanium nitride (TiN) |
| Track material | Titanium (Ti) | Titanium (Ti) | ITO -OR- Titanium (Ti) | Indium tin oxide (ITO) | Titanium (Ti) |
| Electrode diameter | 30 µm | 30 µm | 30 µm | 10, 30 µm | 30 µm |
| Interelectrode distance | 200 µm: 8x8 grid 100 µm: 6x10 grid | 200 µm | 200 µm | 60, 100, 200 µm | 200, 500, 1000 µm |
| Electrode height | Planar | Planar | Planar | Planar | Planar |
| Electrode type | TiN electrodes (Titanium nitride) | TiN electrodes (Titanium nitride) | TiN electrodes including 4 pairs of stimulation el. | TiN electrodes (Titanium nitride) | TiN electrodes (Titanium nitride) |
| Isolation type | Polyimide isolator | Silicon nitride 500 nm (PEVCD) | Silicon nitride 500 nm (PEVCD) | Silicon nitride 500 nm (PEVCD) | Silicon nitride 500 nm (PEVCD) |
| Electrode impedance | 30 - 50 kΩ | 30 - 50 kΩ | 30 - 50 kΩ | 30 - 50 kΩ (30 µm) 250 – 400 kΩ (10 µm) | 30 - 50 kΩ |
| Electrode layout grid | 8x8: pMEA200/30iR-Ti 6x10: pMEA100/30iR-Ti | 3x3 with internal reference electrode in each well | 8x8 | 16x16 | 4 quadrants (13 each) + centre line (7) |
| Number of electrodes | 60 electrodes iR = with internal reference electrode | 54 electrodes and 6 internal reference electrodes | 60 electrodes | 252 electrodes and 4 internal reference electrodes | 60 electrodes iR = with internal reference electrode |
| Ring | Without ring Glass ring, Plastic ring w/o thread Plastic ring with thread | Without ring Macrolon ring | Without ring Glass ring | Without ring Glass ring Plastic ring w/o thread Plastic ring with thread | Without ring Glass ring Plastic ring w/o thread Plastic ring with thread |

MEA Microelectrode Array

| MEA type perforated MEA for USB-MEA32-STIM4-System | pMEA-32S12 Layout 1 | pMEA-32S12 Layout 2 | pMEA-32S12 Layout 3 | pMEA-32S12 Layout 4 |
|---|--|--|--|--|
| Temperature compatibility | 10 °C – 50 °C | 10 °C – 50 °C | 10 °C – 50 °C | 10 °C – 50 °C |
| Dimension (W x D x H) | 49 x 25 mm x 180 µm | 49 x 25 mm x 180 µm | 49 x 25 mm x 180 µm | 49 x 25 mm x 180 µm |
| Base material | Polyimide foil on ceramic carrier with perforation | Polyimide foil on ceramic carrier with perforation | Polyimide foil on ceramic carrier with perforation | Polyimide foil on ceramic carrier with perforation |
| Perforation | | | | |
| Total area of perforation | 0.8 mm ² | 0.8 mm ² | 0.8 mm ² | 0.8 mm ² |
| Diameter of the holes | 20, 30, 50, 75 and 90 µm | 20, 30, 50, 75 and 90 µm | 20, 30, 50, 75 and 90 µm | 20, 30, 50, 75 and 90 µm |
| Contact pad | Titanium nitride (TiN) | Titanium nitride (TiN) | Titanium nitride (TiN) | Titanium nitride (TiN) |
| Track material | Titanium | Titanium | Titanium | Titanium |
| Electrode diameter | 30 µm (recording electrode) 50 µm (stimulation electrode) | 30 µm (recording electrode) 50 µm (stimulation electrode) | 30 µm (recording electrode) 50 µm (stimulation electrode) | 30 µm (recording electrode) 50 µm (stimulation electrode) |
| Interelectrode distance | 90 and 150 µm (recording el.) 100 and 125 µm (stim. elect.) | 90 and 150 µm (recording el.) 90 and 150 µm (stim. elect.) | 90 and 150 µm (recording el.) 90 and 100 µm (stim. elect.) | 100 and 100 µm (record. el.) 100 and 100 µm (stim. elect.) |
| Electrode height | Planar | Planar | Planar | Planar |
| Electrode type | Titanium nitride (TiN) | Titanium nitride (TiN) | Titanium nitride (TiN) | Titanium nitride (TiN) |
| Isolation type | Polyimide foil | Polyimide foil | Polyimide foil | Polyimide foil |
| Electrode impedance | 30 – 50 kΩ | 30 – 50 kΩ | 30 – 50 kΩ | 30 – 50 kΩ |
| Electrode layout grid | 1x10+1x12+1x10 (rec.el.) 2x6 (stimulation electrodes) | 1x10+1x12+1x10 (rec.el.) 2x6 (stimulation electrodes) | 1x10+1x12+1x10 (rec.el.) 3x4 (stimulation electrodes) | 4x8 (recording electrodes) 2x6 (stimulation electrodes) |
| Number of electrodes | 32 recording electrodes 12 stimulation electrodes iR = with internal reference electrode | 32 recording electrodes 12 stimulation electrodes iR = with internal reference electrode | 32 recording electrodes 12 stimulation electrodes iR = with internal reference electrode | 32 recording electrodes 12 stimulation electrodes iR = with internal reference electrode |
| Ring | Without ring Glass ring | Without ring Glass ring | Without ring Glass ring | Without ring Glass ring |