

MEAs for MEA2100-(2x)60-Systems or MEA2100-Mini-Systems and MEA1060 Amplifiers

	60MEA100/10iR-ITO, 60MEA200/10iR-ITO, 60MEA200/30iR-ITO	60MEA100/10iR-Ti 60MEA200/10iR-Ti, 60MEA200/30iR-Ti, (60MEA500/10iR-Ti, 60MEA500/30iR-Ti)	60SquareMEA200/50iR-Ti	60PedotMEA200/30iR-Au
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 mm x 49 mm x 1 mm	49 mm x 49 mm x 1 mm	49 mm x 49 mm x 1 mm	49 mm x 49 mm x 1 mm
Base material	Glass	Glass	Glass	Glass
Contact pad	Transparent: Indium tin oxide (ITO)	Opaque: Titanium nitride (TiN)	Opaque: Titanium nitride (TiN)	Opaque: Titanium / Gold (Ti-Au)
Track material	Transparent: Indium tin oxide (ITO)	Opaque: Titanium (Ti)	Opaque: Titanium (Ti)	Opaque: Titanium / Gold (Ti-Au)
Electrode diameter	10 µm	10 µm and 30 µm	Square electrodes: 50 x 50 µm	30 µm
Interelectrode distance (centre to centre)	200 µm	100 and 200 µm (500 µm: 6 x 10 grid)	200 µm	200 µm
Electrode height	Planar	Planar	Planar	Planar
Electrode type	Titanium nitride (TiN) electrodes	Titanium nitride (TiN) electrodes	Titanium nitride (TiN) electr.	PEDOT-CNT electrodes
Isolation type	Silicon nitride (SiN) 500 nm (PECVD)	Silicon nitride (SiN) 500 nm (PECVD)	Silicon nitride (SiN) 500 nm (PECVD)	Silicon nitride (SiN) 500 nm (PECVD)
Electrode impedance	< 100 kΩ for 30 µm electrodes 250 – 400 kΩ for 10 µm electrodes	< 100 kΩ for 30 µm electrodes 250 – 400 kΩ for 10 µm electrodes	< 100 kΩ for 30 µm electrodes	– 20 kΩ
Electrode layout grid	8 x 8	8 x 8 (6 x 10: 500/10iR-Ti, 500/30iR-Ti)	8 x 8	8 x 8
Number of recording electrodes	59 recording electrodes	59 recording electrodes	59 recording electrodes	59 recording electrodes
Number of reference electrodes	1 internal reference electrode (iR)	1 internal reference electrode (iR)	1 internal reference electrode (iR)	1 internal reference electrode (iR)
Ring	Without ring Glass ring	Without ring Glass ring	Without ring Glass ring	Without ring Glass ring
Ring Options:	Plastic ring without thread Plastic ring with thread	Plastic ring without thread Plastic ring with thread	Plastic ring without thread Plastic ring with thread	Plastic ring without thread Plastic ring with thread
Please see the last page				

MEAs for MEA2100-(2x)60-Systems or MEA2100-Mini-Systems and MEA1060 Amplifiers

	Thin MEA: 60ThinMEA30/10iR-ITO 60ThinMEA200/30iR-ITO 60ThinMEA100/10iR-ITO	EcoMEA: 60EcoMEA	Hexa MEA: 60HexaMEA40/10iR-ITO	High Dense MEA: 60HDMEA30/10iR-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 x 1 mm Glass part 180 µm	49 x 49 x 1 mm	49 x 49 x 1 mm	49 x 49 x 1 mm
Base material	Glass on ceramic base	PCB (prin. circuit board)	Glass	Glass
Contact pad	Indium tin oxide (ITO)	Gold (Au)	Titanium nitride (Ti)	Indium tin oxide (ITO)
Track material	Indium tin oxide (ITO)	Gold (Au)	-or- Indium tin oxide (ITO))	
Electrode diameter	10 µm and 30 µm	100 µm	10, 20, 30 µm (10 µm)	10 µm
Interelectrode distance	30 µm or 200 µm	700 µm	30, 60, 90 µm (40 µm)	30 µm
Electrode height	Planar	Planar	Planar	Planar
Electrode type	Titanium nitride (TiN)	Gold (Au)	Titanium nitride (TiN)	Titanium nitride (TiN)
Isolation type	Silicon nitride (SiN) 500 nm (PECVD)	PCB (printed circuit board)	Silicon nitride (SiN) 500 nm (PECVD)	Silicon nitride (SiN) 500 nm (PECVD)
Electrode impedance	< 100 kΩ for 30 µm electrodes 250 – 400 kΩ for 10 µm electrodes	< 100 kΩ	< 100 kΩ for 30 µm electrodes 250 – 400 kΩ for 10 and 20 µm electrode	hexagonal 250 - 400 kΩ
Electrode layout grid	8 x 8. ThinMEA100/10iR ThinMEA200/30iR 2 x (5 x 6): ThinMEA30/10iR 500 µm between fields	8 x 8		2 x (5 x 6) 500 or 150 µm between the electrode fields
Num. of record. electrodes	59 electrodes	59 electrodes	59 electrodes	59 electrodes
Num. of ref. electrodes	1 internal reference electrode (iR)	1 internal reference electrode (iR)	1 internal reference electrode (iR)	1 internal reference electrode (iR)
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	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

MEAs for MEA2100- (2x)60-Systems or MEA2100-Mini-Systems and MEA1060 Amplifiers

	Perforated MEA: 60pMEA100/30iR-Ti 60pMEA200/30iR-Ti	6 Well MEA: 6wellMEA200/30iR-Ti	Quadrant MEA: 4QMEA1000iR-Ti	Three dimensional MEA: 60-3DMEA200/12iR-Ti	Transparent MEA 60tMEA200/30iR-Ti
Temperature compatibility	10 °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 (2611) with perforation on ceramic or glass carrier	Glass	Glass	Glass	Glass
Contact pad	TiAu (Titan, Gold)	Titanium nitride (TiN)	Titanium nitride (TiN)	Titanium nitride (TiN)	Titanium nitride (TiN)
Track material	TiAuTi (Titan, Gold, Titan)	Titanium (Ti)	Titanium (Ti)	Titanium (Ti)	Indium Tin Oxide (ITO)
Electrode diameter	30 µm	30 µm	30 µm	Diameter Base: 100 µm, Total height: 50 µm Electrode: 12 µm, tip: 20 µm	30 µm
Interelectrode distance	200 µm: 8 x 8 grid 100 µm: 6 x 10 grid	200 µm	200, 500, 1000 µm	200 µm	200 µm
Electrode height	Planar	Planar	Planar	Three dimensional	Planar
Electrode type	TiN electrodes	TiN electrodes	TiN electrodes	TiN electrodes	Transparent TiN electrodes
Isolation type	(Titanium nitride) Polyimide foil (2610) isolator	(Titanium nitride) Silicon nitride (SiN) 500 nm (PECVD)	(Titanium nitride) Silicon nitride (SiN) 500 nm (PECVD)	(Titanium nitride) Silicon nitride (SiN) 500 nm (PECVD)	(Titanium nitride) Silicon nitride (SiN)
Electrode impedance	< 100 kΩ	< 100 kΩ	< 100 kΩ	< 150 kΩ	< 250 kΩ
Electrode layout grid	8 x 8: pMEA200/30iR-Ti 6 x 10: pMEA100/30iR-Ti	3 x 3 in each of the 6 wells	4 quadrants (13 electrodes each) and centre line (7 electrodes)	8 x 8	8 x 8
Num. of recording electrodes	59 electrodes	54 electrodes	59 electrodes	59 electrodes	59 electrodes
Num. of reference electrodes	1 internal reference electrode (iR)	6 internal reference electrodes (iR), one in each well	1 internal reference electrode (iR)	1 internal reference electrode (iR)	1 internal reference electrode (iR)
Ring	Without ring Glass ring Plastic ring w/o thread Plastic ring with thread	Without ring Macrolon ring 6 wells, with round chambers (rcr) or triangular chambers (tcr)	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	Without ring Glass ring Plastic ring w/o thread Plastic ring with thread

MEAs for MEA2100-120-Systems or MEA2100-Mini-120-System

	120MEA: 120MEA200/30iR-Ti 120MEA100/30iR-ITO	Perforated 120MEA: 120pMEA200/30iR-Ti	120MEA1000-1500/30iR- Ti	120tMEA100/30iR-Ti	Three dimensionale MEA: 120- 3DMEA250/12/100iR-Ti
Temperature compatibility	10 °C – 50 °C	10 °C – 50 °C	10 °C – 50 °C	10 °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	Glass	Glass	Glass	Glass	Glass
Contact pad	Ti (Titanium) or ITO (Indium tin oxide)	TiAu (Titan, Gold)	Ti (Titanium)	ITO (Indium tin oxide)	Titanium nitride (TiN) Titanium (Ti) Diameter Base: 250 µm, Total height: 100 µm Electrode: 12 µm, tip: 20 µm 100 µm
Track material	Ti (Titanium) or ITO (Indium tin oxide)	TiAuTi (Titan, Gold, Titan)	Ti (Titanium)	ITO (Indium tin oxide)	
Electrode diameter	30 µm	30 µm	30 µm	30 µm	100 µm
Interelectrode distance	100 or 200 µm	200 µm	1000 µm vertical and 1500 µm horizontal	100 µm	250 µm
Electrode height	Planar	Planar	Planar	Planar	Three dimensional
Electrode type	TiN electrodes (Titanium nitride)	TiN electrodes (Titanium nitride)	TiN electrodes (Titanium nitride)	Transparent TiN electrodes (Titanium nitride)	TiN electrodes (Titanium nitride)
Isolation type	Silicon nitride (SiN) 500 nm (PEVCD)	Silicon nitride (SiN) 500 nm (PEVCD)	Silicon nitride (SiN) 500 nm (PEVCD)	Silicon nitride (SiN) 500 nm (PEVCD)	Silicon nitride (SiN) 500 nm (PEVCD)
Electrode impedance	< 100 kΩ	< 100 kΩ	< 100 kΩ	< 250 kΩ	< 150 kΩ
Electrode layout grid	12 x 12	12 x 12	12 x 10	12 x 12	12 x 12
Number of recording electrodes	120 electrodes	120 electrodes	120 electrodes	120 electrodes	120 electrodes
Number of reference electrodes	4 internal reference electrodes (iR)	4 internal reference electrodes (iR)	4 internal reference electrodes (iR)	4 internal reference electrodes (iR)	4 internal reference electrode (iR)
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	Without ring Plastic ring w/o thread Plastic ring with thread	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

Perforated MEAs for MEA2100-32- and USB-MEA32-STIM4-Systems

	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	< 100 kΩ	< 100 kΩ	< 100 kΩ	< 100 kΩ
Electrode layout grid	1x10+1x12+1x10 (record. el.) 2x6 (stimulation electrodes)	1x10+1x12+1x10 (record. el.) 2x6 (stimulation electrodes)	1x10+1x12+1x10 (record. el.) 3x4 (stimulation electrodes)	4x8 (recording electrodes) 2x6 (stimulation electrodes)
Number of recording electrodes	32 recording electrodes	32 recording electrodes	32 recording electrodes	32 recording electrodes
Number of stimulus electrodes	12 stimulation electrodes	12 stimulation electrodes	12 stimulation electrodes	12 stimulation electrodes
Number of reference electrodes	1 internal reference electrode	1 internal reference electrode	1 internal reference electrode	1 internal reference electrode
Ring	Without ring Glass ring	Without ring Glass ring	Without ring Glass ring	Without ring Glass ring

MEAs with 256 Electrodes for MEA2100-256-Systems or USB-MEA256-Systems

	256MEA: 256MEA30/8iR-ITO 256MEA60/10iR-ITO 256MEA100/30iR-ITO 256MEA200/30iR-ITO	9 Well MEA: 256-9wellMEA300/30iR-ITO	6 Well MEA: 256-9wellMEA200/30iR-ITO	256 Thin MEA: 256ThinMEA200/30iR-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 x 1 mm	49 x 49 x 1 mm	49 x 49 x 1 mm	49 x 49 x 1 mm
Base material	Glass	Glass	Glass	Glass on ceramic carrier
Contact pad	Indium tin oxide (ITO)	Indium tin oxide (ITO)	Indium tin oxide (ITO)	Glass part 180 µm Indium tin oxide (ITO)
Track material	Indium tin oxide (ITO)	Indium tin oxide (ITO)	Indium tin oxide (ITO)	Indium tin oxide (ITO)
Electrode diameter	8, 10, 30 µm (recording electrodes)	30 µm (recording electrodes) 50 x 200 µm (stimulation electrodes)	30 µm (recording electrodes)	30 µm (recording electrodes)
Interelectrode distance	30, 60, 100, 200 µm	300 µm	200 µm	200 µm
Electrode height	Planar	Planar	Planar	Planar
Electrode type	TiN electrodes (Titanium nitride)	TiN electrodes (Titanium nitride)	TiN electrodes (Titanium nitride)	TiN electrodes (Titanium nitride)
Isolation type	Silicon nitride (SiN) 500 nm (PECVD)	Silicon nitride (SiN) 500 nm (PECVD)	Silicon nitride (SiN) 500 nm (PECVD)	Silicon nitride (SiN) 500 nm (PECVD)
Electrode impedance	< 100 kΩ for 30 µm electrodes 250 – 400 kΩ for 8 and 10 µm	< 100 kΩ	< 100 kΩ	< 100 kΩ for 30 µm electrodes
Electrode layout grid	16 x 16	9 x (6 x 5) recording electrodes 9 x (2 x 1) stimulation electrodes	6 x (6 x 7) recording electrodes	16 x 16
Number of recording electrodes	252 electrodes	252 electrodes	252 electrodes	252 electrodes
Number of reference electrodes	4 internal reference electrodes (iR)	4 internal reference electrodes (iR)	4 internal reference electrodes (iR), 4 internal reference electrodes (iR)	4 internal reference electrodes (iR)
Ring	Without ring Glass ring Plastic ring w/o thread Plastic ring with thread	Without macrolon quadrate Macrolon quadrate with 9 wells	Without 6 well ring 6 well triangle chamber ring 6 well round chamber ring	Without ring Glass ring Plastic ring w/o thread Plastic ring with thread

Flexible MEAs for MPA32I or for ME2100-HS32-Systems (Eco-/ FlexMEA36)

	FlexMEA72	FlexMEA36	EcoFlexMEA36	EcoFlexMEA24
Temperature compatibility	10 °C – 125 °C	10 °C – 125 °C	0 °C – 125 °C	0 °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 (2610) foil	Polyimide (2610) foil	Polyimide (Kapton)	Polyimide (Kapton)
Electrode impedance	< 150 kΩ	< 150 kΩ	< 150 kΩ	< 150 kΩ
Electrode layout grid	9 x 8	6 x 6	6 x 6	10 x 2 + 4
Number of electrodes:	72 electrodes	36 electrodes	36 electrodes	24 electrodes
Recording electrodes	64	32	32	23
Reference electrodes	4	2	2	1
Ground electrodes	4	2	2	

Ring type

Glass ring (gr):
 Macrolon ring (rcr or tcr):
 Macrolon quadrate (mq):
 Plastic ring (pr):
 Plastic ring (pr-T):

MEA perfusion chamber

ID ±19 mm, OD 24 mm, height 6 / 12 mm
 6 wells, round or triangular chamber ring, OD 30 mm, height 10 mm
 9 wells, OD 24 x 24 mm, height 9 mm
 ID 26.5 mm, OD 30 mm, height 6 / 3 mm
 ID 26 mm OD 30 mm, height 6 / 15 mm, with internal thread for a lid

MEA Ring Options



	Glass rings (-gr)	Plastic rings (-pr)	Plastic rings with thread (-pr-T)	6-well rings	9-well rings
Culture chambers/ lids to be placed on rings	ALA MEA-MEM 		Culture chamber lid (CCL) 	ALA MEA-MEMMR (for 6-well MEAs with triangle chamber ring) ALA MEA-MEMMR5-06 (for 6-well MEAs with round chamber ring) Culture chamber (CC) 	Culture chamber (9well-CCL) + ALA MEA-MEM-SHEET
	ALA MEA-INSERT 		Culture chamber interface ring (CCIR) 		
	ALA MEA-MEM-PL 				
Rings (standard)	Glass ring (-gr) 6 mm high ID: 19 mm, OD: 24 mm 	Plastic ring (-pr) 6 mm high ID: 26.5 mm, OD: 30 mm 	Plastic ring with thread (-pr-T) 6 mm high ID: 26 mm, OD: 30 mm 	Triangle chamber ring (-tcr), 10 mm high OD: 30 mm 	Plastic quadrate (-mq), 9 mm high OD: 24 mm
				Round chamber ring (-rcr), 10 mm high OD: 30 mm 	
Rings (optional, on request)	Glass ring 12 mm high ID: 19 mm, OD: 24 mm 	Plastic ring 3 mm high ID: 26.5 mm, OD: 30 mm 	Plastic ring with thread 15 mm high ID: 26 mm, OD: 30 mm 		