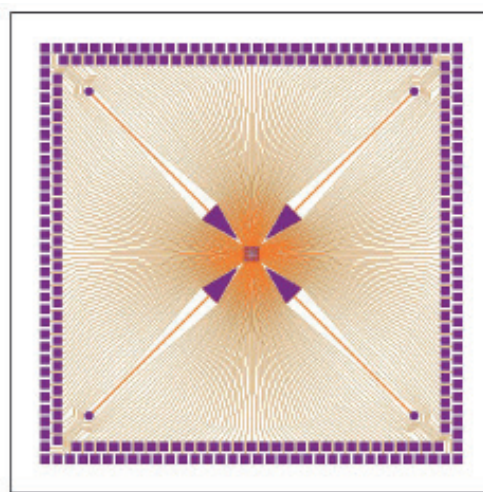


## 256MEA for USB-MEA256-System and MEA2100-256-Systems

256MEA30/8iR-ITO, 256MEA60/10iR-ITO, 256MEA100/30iR-ITO, 256MEA200/30iR-ITO, 256ThinMEA200/30iR-ITO

### Technical Specifications

Temperature compatibility	0 - 125 °C
Dimensions (W x D x H)	49 mm x 49 mm x 1 mm
Base material	Glass (or ceramic carrier for 256ThinMEA200/30-ITO)
Track material	ITO (Indium tin oxide)
Contact pads	ITO (Indium tin oxide)
Electrode diameter	8 µm, 10 µm or 30 µm
Interelectrode distance (center to center)	30, 60, 100 µm or 200 µm
Electrode height	Planar
Electrode material	TiN (Titanium nitride)
Isolation material	Silicon nitride 500 nm (PEVCD)
Electrode impedance	< 100 kΩ for 30 µm electrodes, 250 - 400 kΩ for 8 µm or 10 µm electrodes
Electrode layout grid	16 x 16
Number of recording electrodes	252
Number of reference electrodes	4 internal reference electrode (iR)
Contact pads for reference electrodes (connected to ground)	4
Software	
Multi Channel Experimenter	256MEA layout is loaded automatically
MC_Rack	Source layout: Configuration
Channel map in MC_Rack	16 x 16.cmp



### Advantages

- 256MEAs with flat round TiN (Titanium nitride) electrodes and tracks and contact pads made of transparent ITO (Indium tin oxide) for a perfect view of the specimen under the microscope, especially with the 256ThinMEA.
- The high number of 252 electrodes are the perfect for recording from cell cultures of cardiac or neuronal origin as well as for stem cells.
- The signal-to-noise ratio is excellent.

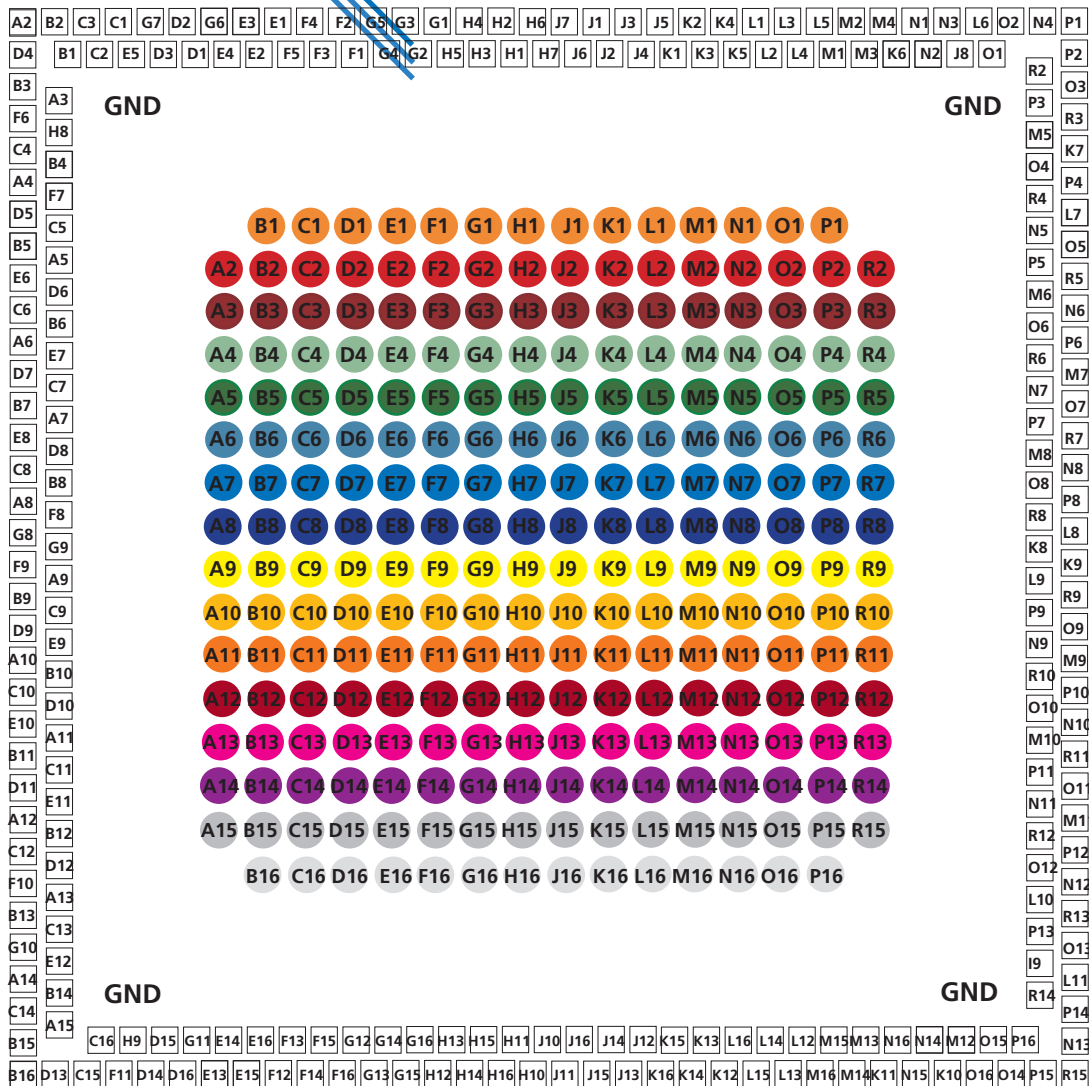
### MEA Perfusion Chamber

- (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

## 256MEA for USB-MEA256-System and MEA2100-256-Systems

Layout

The 256MEA is the only MEA type, which is rotationally symmetric.



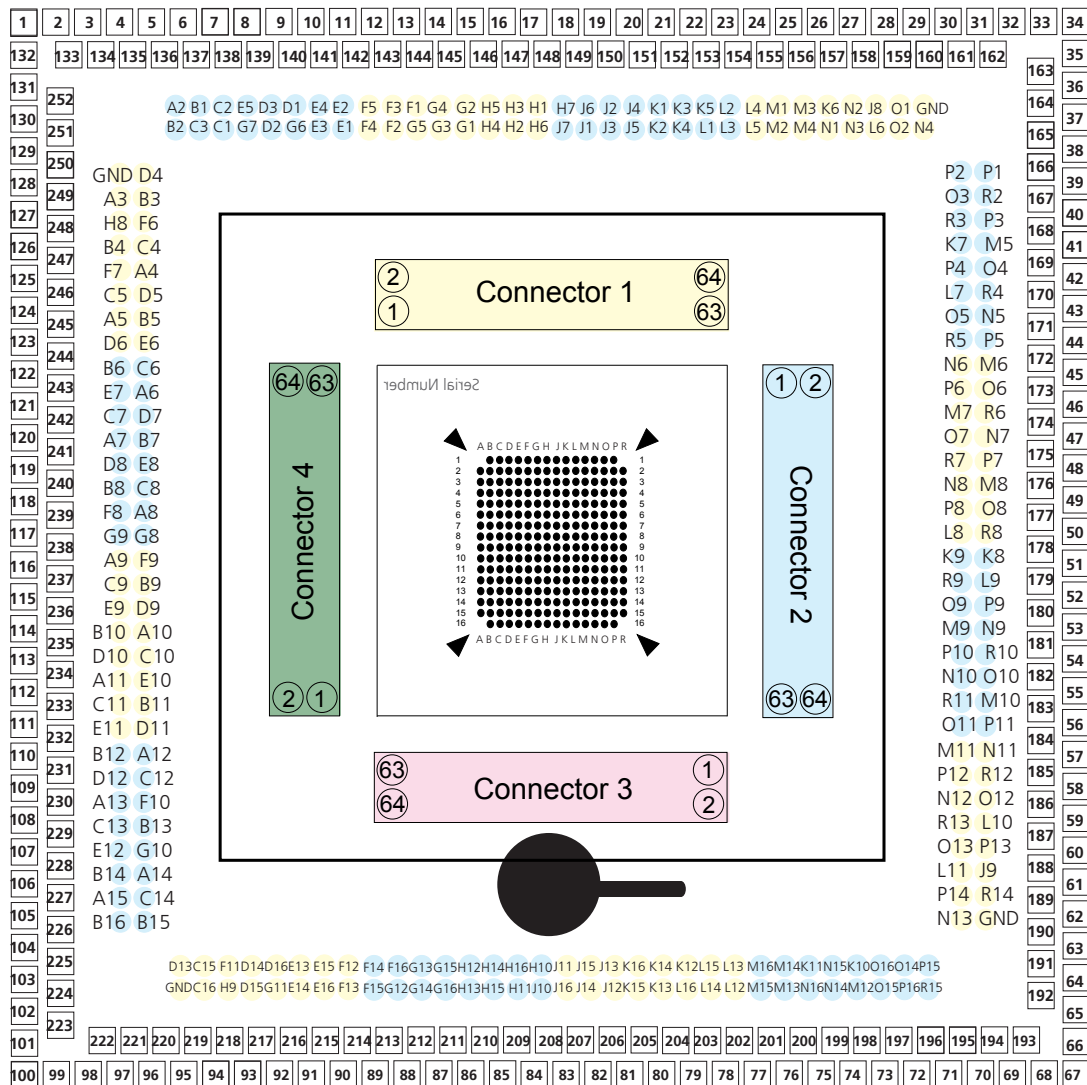
The letter digit code is the electrode identifier and refers to the position of the electrode in the 16 x 16 layout grid. To correlate the electrode pin layout with the stimulation sockets and the spring contacts in the lid of the headstages, please see the table on the last page. The MEA is rotationally symmetrical, so the orientation does not matter. If the orientation is important for your experiments, you can use the engraved serial number as marker. The serial number is on the backside of the MEA in the upper right edge. In the USB-MEA256 amplifier or the MEA2100-256 headstage the mirrored number has to be placed in the left upper edge. This way the 256-electrode layout will match the channel layout of the data acquisition software Multi Channel Experimenter or MC\_Rack.

August 2019

## 256MEA for USB-MEA256-System and MEA2100-256-Systems

- Stimulation with USB-MEA256 Headstage:**  
 Please see the scheme below and use the table to correlate the stimulation electrodes on the 256MEA.
- Stimulation with MEA2100-256-Headstage:**  
 Select any stimulation electrode via software.

### Scheme for Stimulation: USB-MEA256 Headstage



Spring Contact in the lid of the headstage

## 256MEA for USB-MEA256-System and MEA2100-256-Systems

### Layout

Stimulation Socket = Stimulation socket number of the stimulation connectors 1 to 4  
 Spring Contact = Spring contacts in the lid of the headstage  
 Electrode ID = Electrode ID of the 256MEA electrode in the 16 x 16 layout grid

Table

Stimulation Electrode ID	Connector Stimulation Socket	Socket 1 Spring Contact	Stimulation Electrode ID	Connector Stimulation Socket	Socket 2 Spring Contact	Stimulation Electrode ID	Connector Stimulation Socket	Socket 3 Spring Contact	Stimulation Electrode ID	Connector Stimulation Socket	Socket 4 Spring Contact
A2	2	1	J9	60	191	C15	61	98	A10	25	113
B1	4	133	K7	7	38	C16	62	222	A11	22	232
B2	1	2	K8	34	178	D13	63	99	A12	15	108
C1	5	4	K9	33	51	D14	57	96	A13	12	227
C2	6	134	L10	56	189	D15	58	220	A14	5	103
C3	3	3	L11	59	64	D16	55	95	A15	4	223
D1	12	137	L7	11	40	E13	53	94	A3	62	252
D2	9	6	L8	31	50	E14	54	218	A4	55	128
D3	10	136	L9	36	179	E15	51	93	A5	52	247
E1	15	9	M10	46	184	E16	52	217	A6	45	123
E2	16	139	M11	49	59	F11	59	97	A7	42	242
E3	13	8	M5	8	165	F12	49	92	A8	35	118
E4	14	138	M6	18	170	F13	50	216	A9	32	237
E5	8	135	M7	21	45	F14	47	91	B10	26	234
F1	22	142	M8	28	175	F15	48	215	B11	19	110
F2	19	11	M9	39	54	F16	45	90	B12	16	229
F3	20	141	N10	43	56	G11	56	219	B13	9	105
F4	17	10	N11	50	186	G12	46	214	B14	6	224
F5	18	140	N12	53	61	G13	43	89	B15	1	101
G1	25	14	N13	63	66	G14	44	213	B16	2	100
G2	26	144	N5	14	168	G15	41	88	B3	61	131
G3	23	13	N6	17	43	G16	42	212	B4	58	250
G4	24	143	N7	24	173	H10	33	84	B5	51	126
G5	21	12	N8	27	48	H11	36	209	B6	48	245
G6	11	7	N9	40	181	H12	39	87	B7	41	121
G7	7	5	O10	44	183	H13	40	211	B8	38	240
H1	32	147	O11	47	58	H14	37	86	B9	29	115
H2	29	16	O12	54	188	H15	38	210	C10	23	112
H3	30	146	O13	57	63	H16	35	85	C11	20	231
H4	27	15	O3	3	36	H9	60	221	C12	13	107
H5	28	145	O4	10	166	J10	34	208	C13	10	226
H6	31	17	O5	13	41	J11	31	83	C14	3	102
H7	34	148	O6	20	171	J12	28	205	C4	57	129
J1	35	19	O7	23	46	J13	27	81	C5	54	248
J2	38	150	O8	30	176	J14	30	206	C6	47	124
J3	37	20	O9	37	53	J15	29	82	C7	44	243
J4	40	151	P1	2	34	J16	32	207	C8	37	119
J5	39	21	P10	41	55	K10	7	71	C9	30	236
J6	36	149	P11	48	185	K11	11	73	D10	24	233
J7	33	18	P12	51	60	K12	21	78	D11	17	109
J8	60	161	P13	58	190	K13	24	203	D12	14	228
K1	42	152	P14	61	65	K14	23	79	D4	63	132
K2	41	22	P2	1	35	K15	26	204	D5	53	127
K3	44	153	P3	6	164	K16	25	80	D6	50	246
K4	43	23	P4	9	39	L12	18	200	D7	43	122
K5	46	154	P5	16	169	L13	17	76	D8	40	241
K6	56	159	P6	19	44	L14	20	201	D9	27	114
L1	45	24	P7	26	174	L15	19	77	E10	21	111
L2	48	155	P8	29	49	L16	22	202	E11	18	230
L3	47	25	P9	38	180	M12	8	195	E12	8	225
L4	50	156	R10	42	182	M13	14	198	E6	49	125
L5	49	26	R11	45	57	M14	13	74	E7	46	244
L6	59	31	R12	52	187	M15	16	199	E8	39	120
M1	52	157	R13	55	62	M16	15	75	E9	28	235
M2	51	27	R14	62	192	N14	10	196	F10	11	106
M3	54	158	R2	4	163	N15	9	72	F6	59	130
M4	53	28	R3	5	37	N16	12	197	F7	56	249
N1	55	29	R4	12	167	O14	3	69	F8	36	239
N2	58	160	R5	15	42	O15	6	194	F9	31	116
N3	57	30	R6	22	172	O16	5	70	G10	7	104
N4	63	33	R7	25	47	P15	1	68	G8	33	117
O1	62	162	R8	32	177	P16	4	193	G9	34	238
O2	61	32	R9	35	52	R15	2	67	H8	60	251
GND	64	253	GND	64	254	GND	64	255	GND	64	256