



BioChip-D (Order No. 08503)

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General

Please check delivery for transport damage when unpacking.

Description

Multiparametric BioChip for measurement (Impedance, pO₂, pH and temperature) of cellular metabolism and morphology on glass substrate for optical access via microscope.

Caution

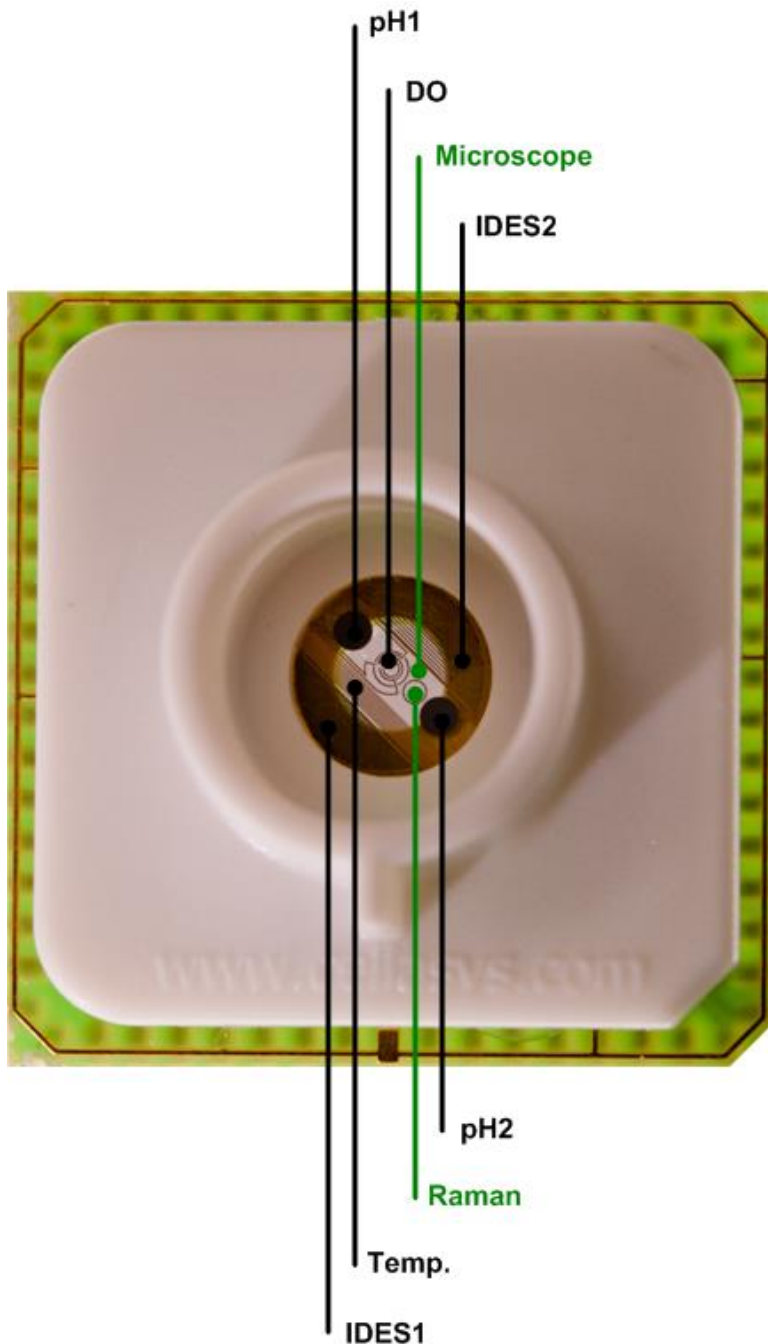
Handle with care.

- Glass tends to break due to mechanical stress.



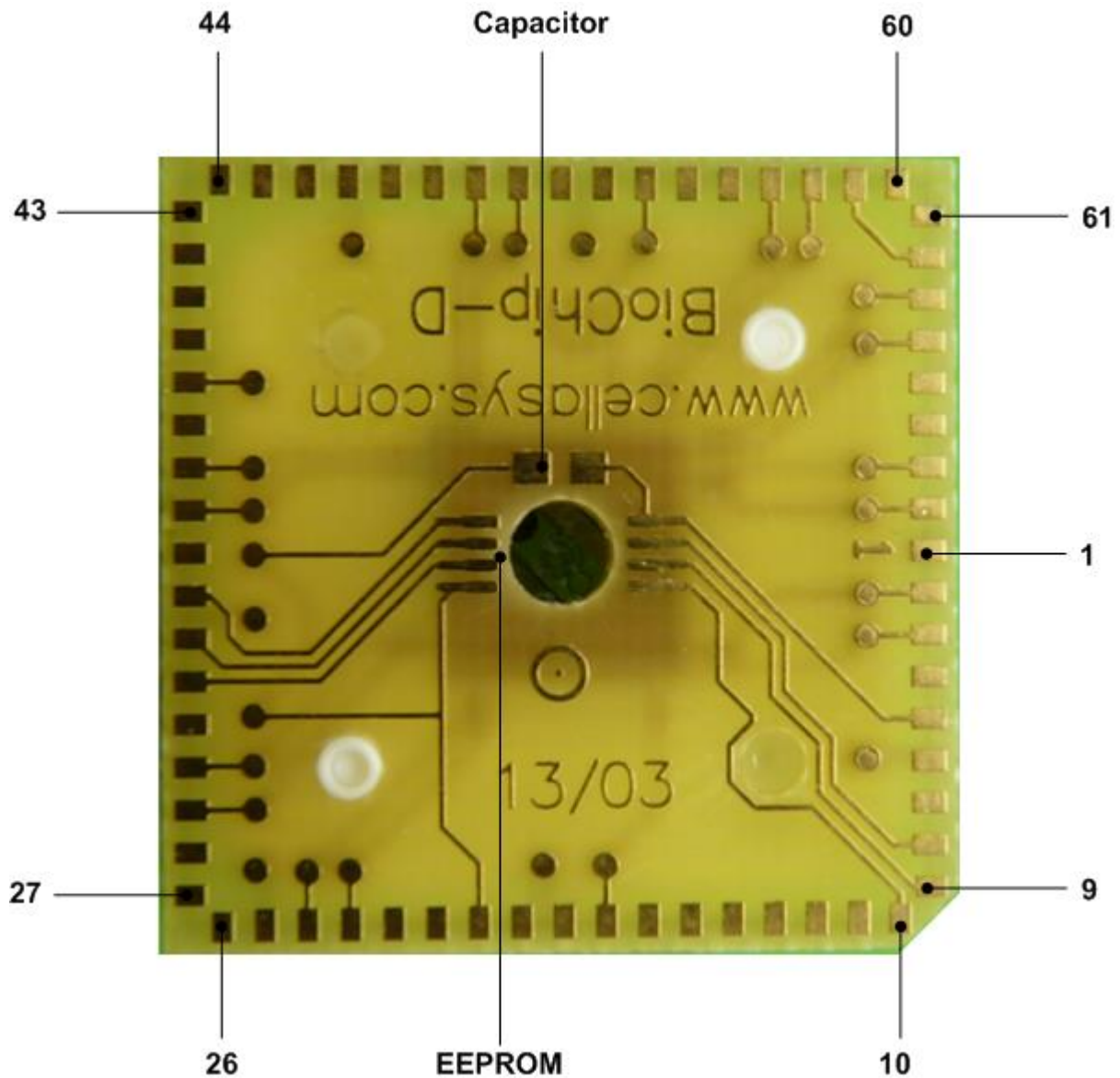
In general **BioChip-D** may only be used in combination with cellasys IMOLA by **qualified personnel** of a research or healthcare institution. Read the **IMOLA manual** thoroughly and carefully follow the instructions and guidelines provided.

View from top side



IDES: Interdigitated electrode structure
 DO: Dissolved oxygen
 Temp: Temperature

View from bottom side



EEPROM*: M24C01 (TSSOP) – 401RP KTK726
24AA08 (MSOP) – 4A08I 5123M1

Capacitor*: 100nF (0603)

*Note: The BioChip is not equipped with an EEPROM and not equipped with a capacitor. This functionality is optional.

Pin configuration

Pin No.	Name	Description
1	-	Not connected
2	TEMPAU	Temperature sensor, voltage connector A
3	TEMPAI	Temperature sensor, current connector A
4	-	Not connected
5	MEMGND	EEPROM GND
6	-	Not connected
7	-	Not connected
8	MEME2	EEPROM chip enable 2
9	MEME1	EEPROM chip enable 1
10	MEME0	EEPROM chip enable 0
11	-	Not connected
12	-	Not connected
13	-	Not connected
14	-	Not connected
15	-	Not connected
16	-	Not connected
17	PH2	pH sensor 2
18	-	Not connected
19	-	Not connected
20	MEMVCC	EEPROM VCC (2.5V – 5.5V)
21	-	Not connected
22	-	Not connected
23	IDES2AU	Impedance sensor 1, voltage connector A
24	IDES2AI	Impedance sensor 1, current connector A
25	-	Not connected
26	-	Not connected
27	-	Not connected
28	-	Not connected
29	IDES2BI	Impedance sensor 1, current connector B
30	IDES2BU	Impedance sensor 1, voltage connector B
31	-	Not connected
32	MEMWC	EEPROM write control
33	MEMSCL	EEPROM serial clock
34	MEMSDA	EEPROM serial data
35	-	Not connected
36	O2REF	Dissolved oxygen sensor, reference electrode
37	PH1	pH sensor 1
38	-	Not connected
39	-	Not connected
40	-	Not connected

Pin No.	Name	Description
41	-	Not connected
42	-	Not connected
43	-	Not connected
44	-	Not connected
45	-	Not connected
46	-	Not connected
47	-	Not connected
48	-	Not connected
49	-	Not connected
50	O2WK	Dissolved oxygen sensor, work electrode
51	O2AUX	Dissolved oxygen sensor, auxiliary electrode
52	-	Not connected
53	-	Not connected
54	-	Not connected
55	-	Not connected
56	-	Not connected
57	IDES1AU	Impedance sensor 2, voltage connector A
58	IDES1AI	Impedance sensor 2, current connector A
59	SC	Shortened to 62
60	-	Not connected
61	-	Not connected
62	SC	Shortened to 59
63	IDES1BI	Impedance sensor 2, current connector B
64	IDES1BU	Impedance sensor 2, voltage connector B
65	-	Not connected
66	-	Not connected
67	TEMPBI	Temperature sensor, current connector B
68	TEMPBU	Temperature sensor, voltage connector B

Technical data

Dimensions: 24.0 x 24.0 x 10.0 mm³
 Weight: 4.5 g
 Well diameter: 10 mm
 Cell culture area: Ø 6 mm

Operating temperature: 0 °C to +80°C

pH (PH)

Dimensions (MeOx-Spot): ~ 3 mm²
 Linear range: pH 5.0 to pH 11.0
 Sensitivity: ~ - 40 mV/pH
 Response time (t₉₀): < 5 s

Dissolved oxygen (O2)

Dimensions: ~ 3 mm²
 Linear range: 0 to 120 %DO
 Sensitivity: 1 nA/pDO +/- 10 %
 Response time (t₉₀): < 0.1 s

Impedance (IDES)

Dimensions: ~ 10 mm²
 Linear range: 10 Ω to 5 kΩ
 Geometry: IDES1: 50 µm width, 25 µm distance
 IDES2: 50 µm width, 50 µm distance
 Response time (t₉₀): < 1 s

Temperature (TEMP)

Dimensions: ~ 4 mm²
 Linear range: 0 °C to +80 °C
 Sensitivity: 17.5 Ω/°C +/- 10 % (1.75 mV/°C +/- 10 % @ 100µA)
 Response time (t₉₀): < 1 s

Intended use

The BioChip-D is designed to be used in combination with IMOLA, for multiparametric measurement (impedance, pO₂, pH and temperature) of cellular metabolism and morphology.

Intended misuse

The BioChip-D must not be used for diagnostic or therapeutic purposes.

Liability / Copyright

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