



## BioChip-D (Order No. 08503)

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## General

Please check delivery for transport damage when unpacking.


## Description

Multiparametric BioChip for measurement (Impedance, pO<sub>2</sub>, pH and temperature) of cellular vitality and changes in impedance on glass substrate for optical access via microscope.

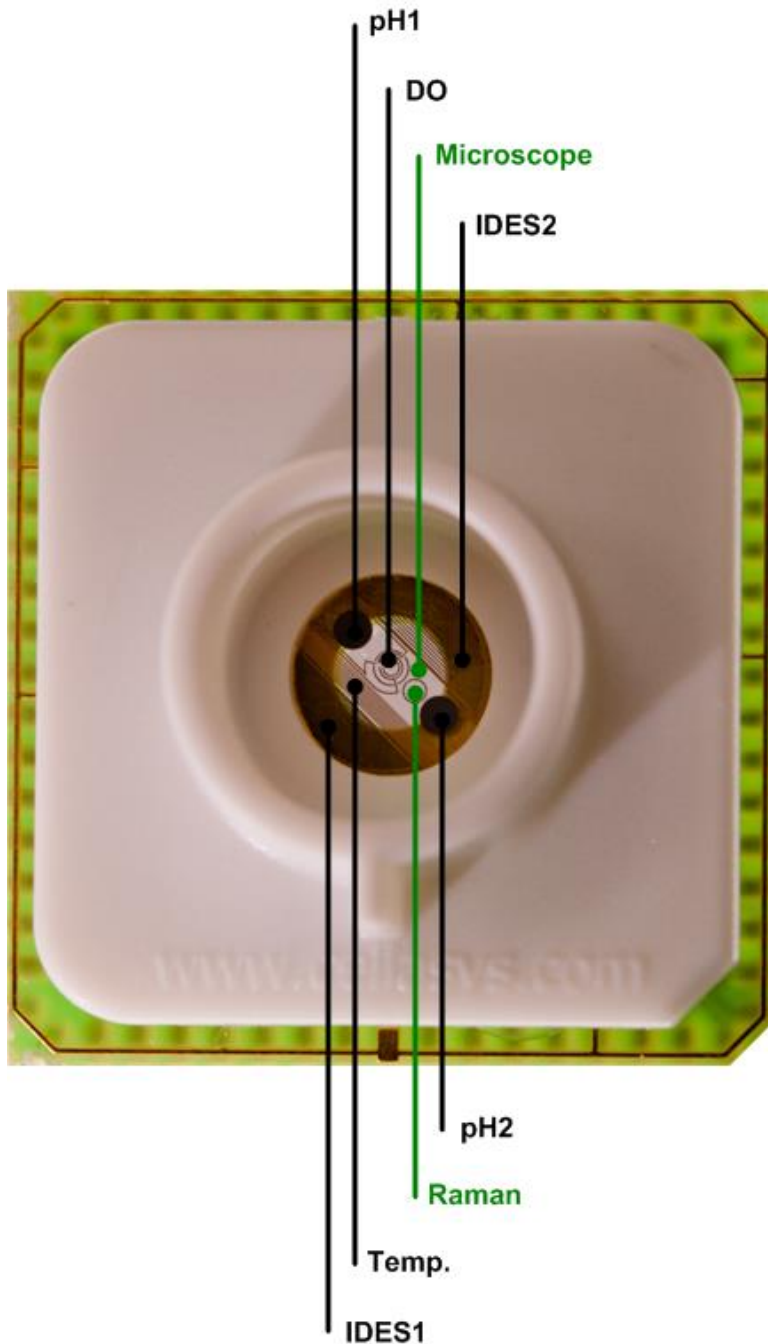
### Caution

Handle with care.

- Glass tends to break due to mechanical stress.

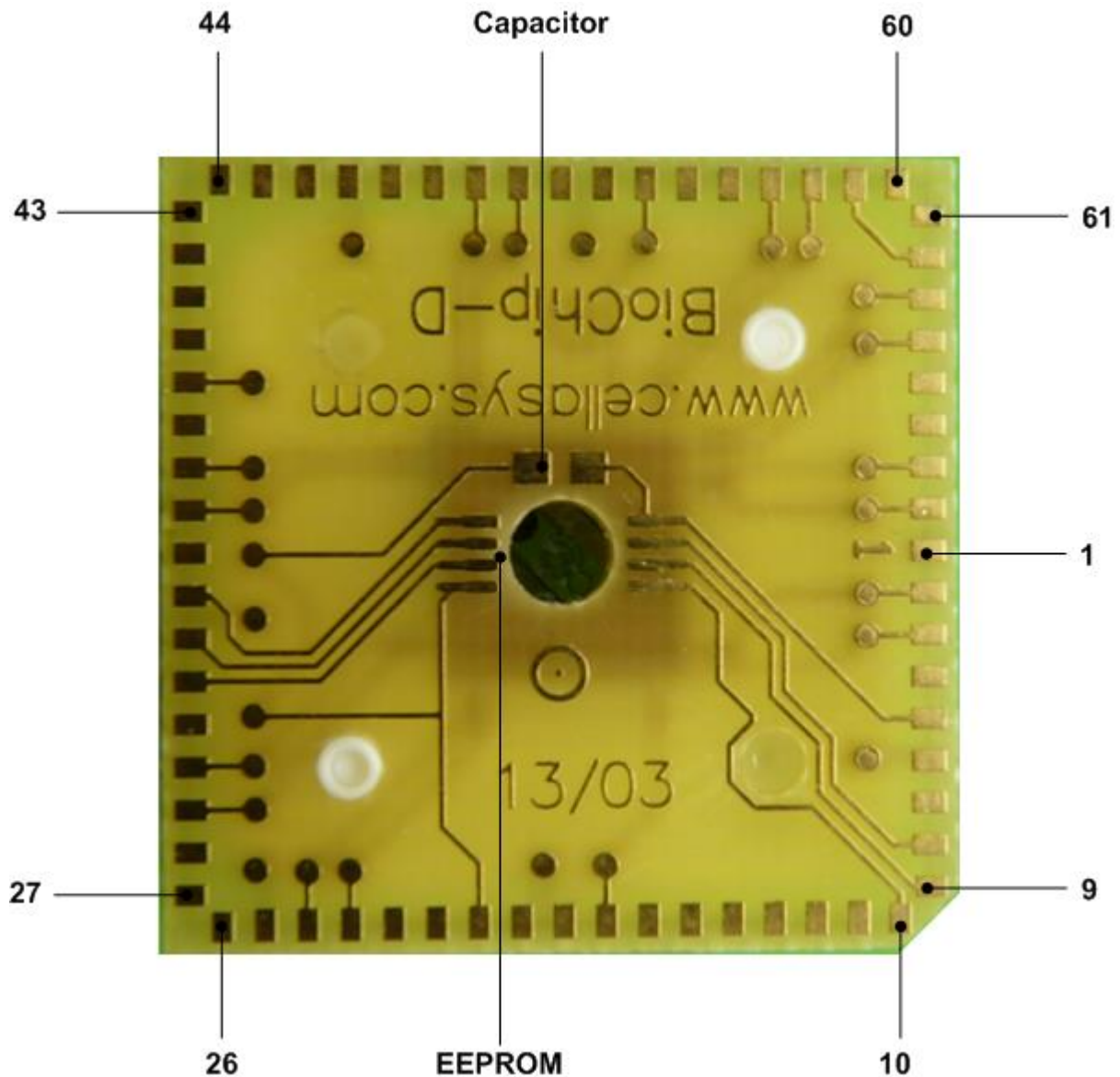
	<p>In general <b>BioChip-D</b> may only be used in combination with cellasys IMOLA-IVD by <b>qualified personnel</b> of a research or healthcare institution. Read the <b>IMOLA-IVD manual</b> thoroughly and carefully follow the instructions and guidelines provided.</p>
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##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

Data sheet

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 mm<sup>3</sup>  
Weight: 4.5 g

Operating temperature: 0 °C to +80°C

### ***pH (PH)***

Dimensions (MeOx-Spot): ~ 3 mm<sup>2</sup>  
Linear range: pH 5.0 to pH 11.0  
Sensitivity: ~ - 40 mV/pH  
Response time (t<sub>90</sub>): < 5 s

### ***Dissolved oxygen (O2)***

Dimensions: ~ 3 mm<sup>2</sup>  
Linear range: 0 to 120 %DO  
Sensitivity: 1 nA/pDO +/- 10 %  
Response time (t<sub>90</sub>): < 0.1 s

### ***Impedance (IDES)***

Dimensions: ~ 10 mm<sup>2</sup>  
Linear range: 10 Ω to 5 kΩ  
Geometry: IDES1: 50 μm width, 25 μm distance  
              IDES2: 50 μm width, 50 μm distance  
Response time (t<sub>90</sub>): < 1 s

### ***Temperature (TEMP)***

Dimensions: ~ 4 mm<sup>2</sup>  
Linear range: 0 °C to +80 °C  
Sensitivity: 2.2 Ω/°C +/- 10 %  
Response time (t<sub>90</sub>): < 1 s

## **Intended use**

The BioChip-D is designed to be used in combination with IMOLA-IVD, for multiparametric measurement (impedance, pO<sub>2</sub>, pH and temperature) of cellular vitality and impedance.

The BioChip-D is a single-use device; it must not be used for multiple applications.

## **Intended misuse**

The BioChip-D must not be used for purposes listed in Regulation (EU) 2017/746, Annex VIII 2.1, 2.2, 2.3 and 2.4.

## **Liability / Copyright**

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