B.LV5

Biosensor array

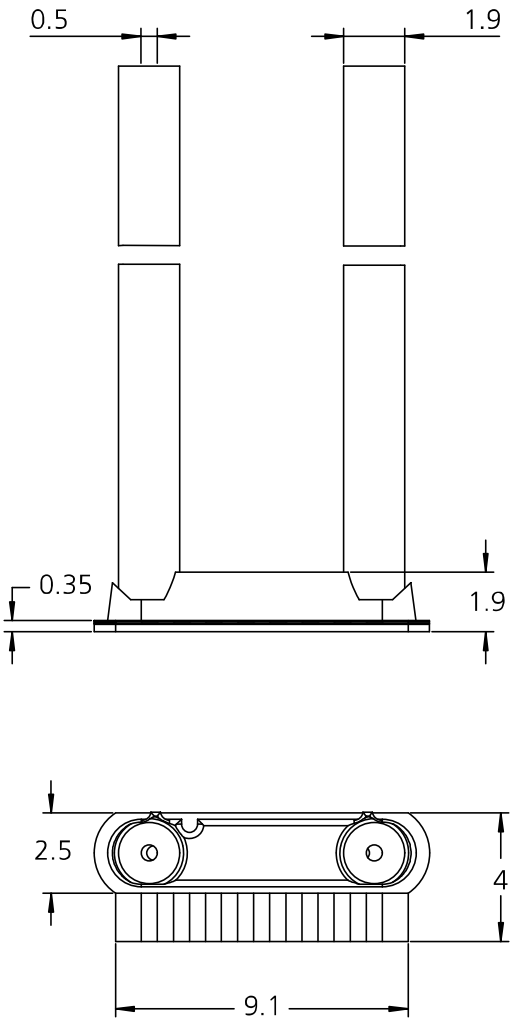
Flow-through sensor for bioanalytical applications

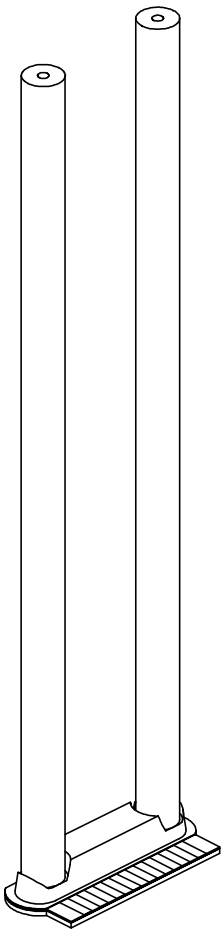
Benefits and characteristics

- Enzyme-based amperometric measurement
- Excellent long-term stability
- Stable in continuous monitoring and analyzer mode
- Reference, counter, and blank electrodes on-chip
- Integrated flow cell (small inner volume)
- Suitable for multiparametric measurements
- Outstanding reliability
- Fast response time
- Gamma and beta sterilization compatible
- Suitable for flow-through applications
- For industrial and research applications

Illustration

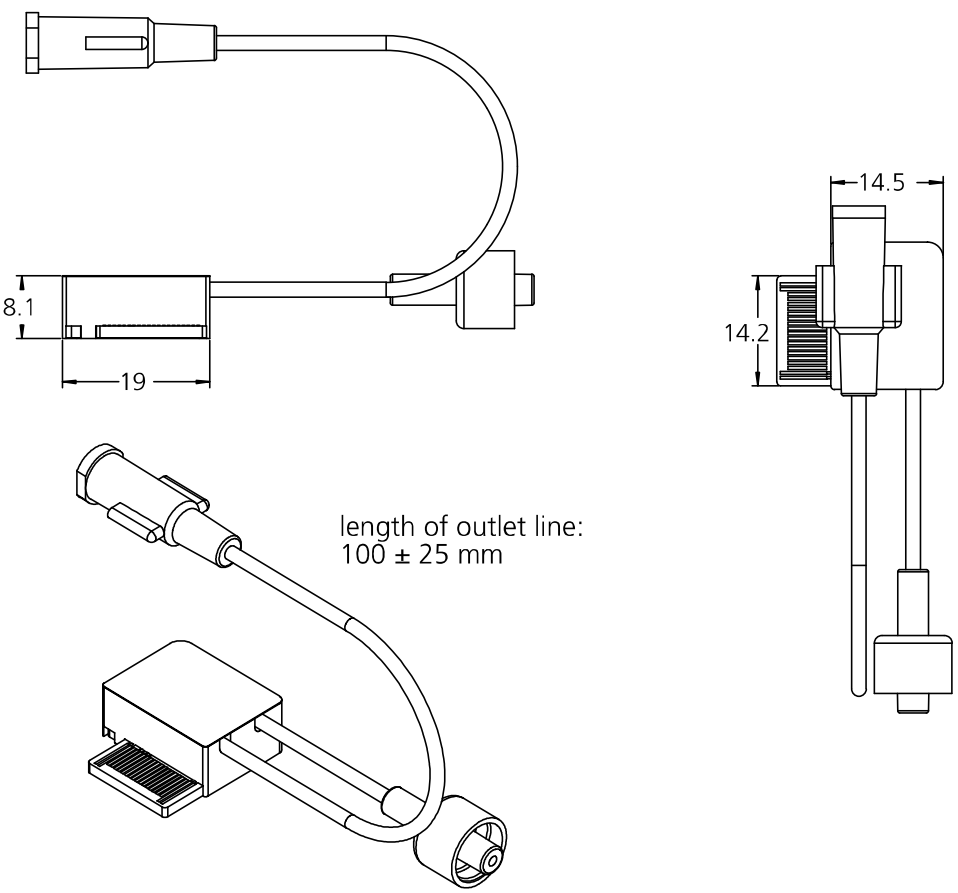
B.LV5 internal construction





B.LV5 sensor chip with tubes. All dimensions in mm.

B.LV5 ruggedized (Luer)



B.LV5 sensor in ruggedized housing and edge card connector compatible to B.SIX transmitter. All dimensions in mm.

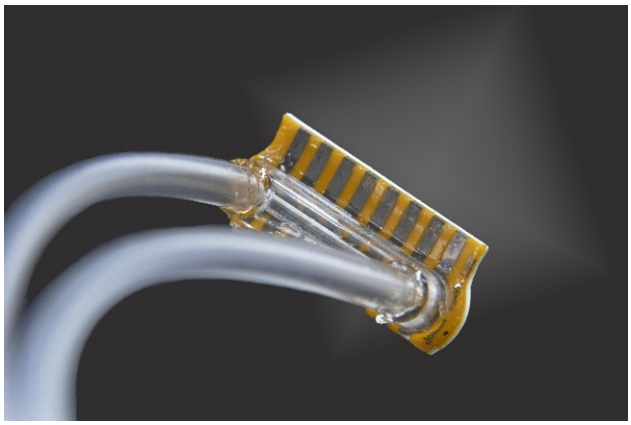
Technical data

Dimensions:	See illustration above. Dimensions in mm	
Measurement principle:	Enzymatic amperometric (oxidase enzymes and H_2O_2 oxidation)	
Working electrode:	Platinum covered with enzyme membrane	
Blank electrode:	For background compensation	
Reference electrode:	Silver/silver chloride	
Counter electrode:	Platinum	
Analytes and measurement range:	Glucose	0.1 mM to 50 mM
	Lactate	0.05 mM to 25 mM
	Glutamine	Contact iST Jobst
	Glutamate	Contact iST Jobst
	Pyruvate	Contact iST Jobst
	Notes:	- measured in acetate buffer at 37 °C - contact IST AG for buffer composition - other measurement ranges and analytes on request
Sensitivity (typical):	Glucose	0.8 nA/mM
	Lactate	2 nA/mM

Sterilization	Irradiation (beta, gamma) - recommended dose: < 25 kGy - sensitivity increases according to applied dose - lifetime decreases according to applied dose Initial bioburden < 1 CFU per sensor Do not use organic solvents, for more information, contact iST Jobst	
Time ($t_{90\%}$) to first measurement:	~ 15 min at 37 °C in acetate buffer after storage	
Response time ($t_{90\%}$):	< 25 s at 37 °C in acetate buffer	
Temperature influence:	Glucose: ~3.8 %/K Lactate: ~3.2 %/K	
Storage conditions:	+4 °C to +35 °C, desiccated	
Shelf life at recommended storage conditions:	> 6 months (from delivery) > 2 years from fabrication	
Operational lifetime:	Glucose: > 60 days at 20 mM Lactate: > 7 days at 8 mM Notes: - measured in acetate buffer at 37 °C - lifetime may vary in other buffer systems	
Operating temperature:	15-42 °C	
pH range:	6-8	
Drift at 37 °C:	< 5 %/day	
Suitable pH buffer systems:	Bicarbonate, acetate, imidazole, for more information, contact iST Jobst - to be used in buffered media only; not suitable for use with tap- or DI-water - buffer must contain chloride, [Cl^-] ca. 110 mM - not suitable for direct use in tap water or DI-water	
Flow cell internal volume:	approx. 1 µl (other volumes available on request)	
Tubing inner diameter:	0.5 mm 0.3 mm 0.15 mm available on request	
Fluidic connection:	Inlet:	male Luer lock (only with 0.5-mm tubing)
	Outlet:	female Luer lock (only with 0.5-mm tubing)
	Minimal:	0.3 µl/min
	Maximal:	10 ml/min
	Recommended:	> 30 µl/min
	Pressure drop:	~ 33 mbar/(ml/min) Note: measured with a 1 µl flow cell and 0.5 mm tubing with Luer locks
Electrical connection:	B.LV5 Sensor bare chip (FPC) flex-print circuit, 8 pins, 1 mm pitch, 0.3 mm thickness, compatible with FFC/FPC ZIF connectors	
	B.LV5 Sensor ruggedized (EC) edge-card, 40 pins in two rows (only 8 are used), 0.635 mm pitch, 1.6 mm thickness, compatible with MEC6-RA socket	

General note: Performance data in this document was determined in acetate buffer at 37 °C, pH 7 and normal atmospheric conditions. All parameters may vary in other media.

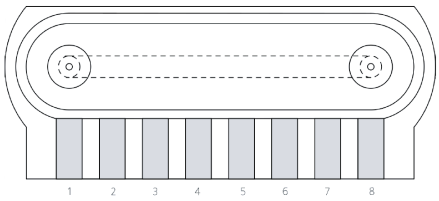
Product photos

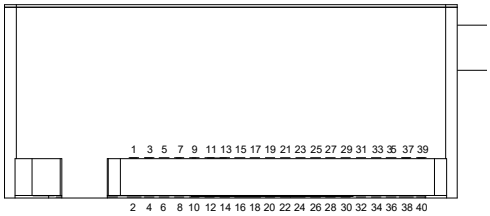


B.LV5 sensor chip with tubes

B.LV5 sensor ruggedized (Luer)

Pin assignment





Electrode	B.LV5 Sensor chip	B.LV5 Sensor ruggedized (Luer)
Blank 1	8	26
Glucose1	7	22
Lactate 1	6	28
Blank 2	5	20
Glucose 2	4	16
Lactate 2	3	14
Reference	2	11
Counter	1	7

Order information

Product description	Measured analytes, membrane technology	Product name	Product number	Order code iST
B.LV5 sensor ruggedized (0.5 mm luer)	Glucose, Lactate, standard range	B.LV5.GL.C010.ST.L050.EC.R	1.00101.003	105128
B.LV5 sensor ruggedized (0.5 mm luer)	Glucose, Lactate, xx-range	B.LV5.GL.C010.2X.L050.EC.R	1.00101.010	151522
B.LV5 sensor ruggedized (0.5 mm luer)	Glucose, Lactate, Glutamine, Glutamate standard-range	B.LV5.GLNT.C010.ST.L050.EC.R	1.00101.006	105146
Other constructions	Other analytes Other membranes	On request	On request	On request

Disclaimer

Evaluation product for professionals to be used solely for research and development purposes! Not for medical and diagnostic use. Not to be used on humans. For more information, contact iST Jobst.

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