

MODULAR ION NANO 2.5

Modular ION nano 2.5.....	2
Nano electrode technical specifications.....	2
Nano reference electrode technical specifications	2
Technical specifications	3
Order codes.....	4

Modular ION nano 2.5

Half-cell microelectrodes, based on carbon nanotubes, a miniaturized version of our mini sensor.

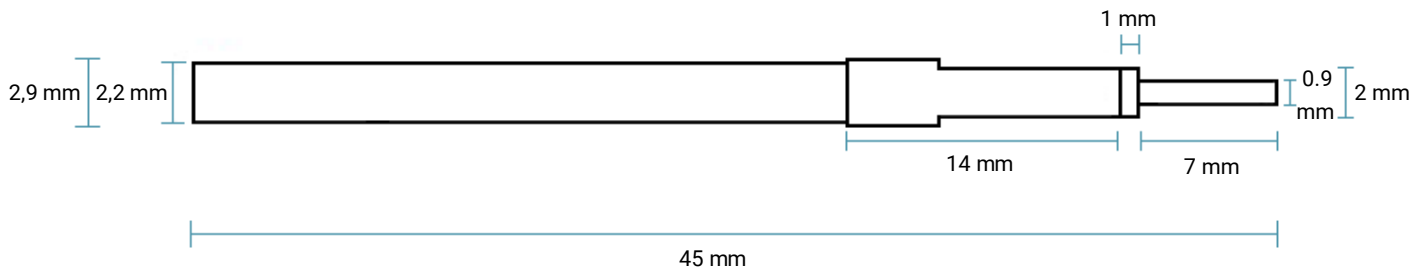
They are ideal for ultra-low volume research and applications, while maintaining robust and easy-to-use performance.



Nano electrodes need a standard reference electrode or a nano reference electrode to work. They can be used in combination with a connecting cable (CC-1BNC-SC2).

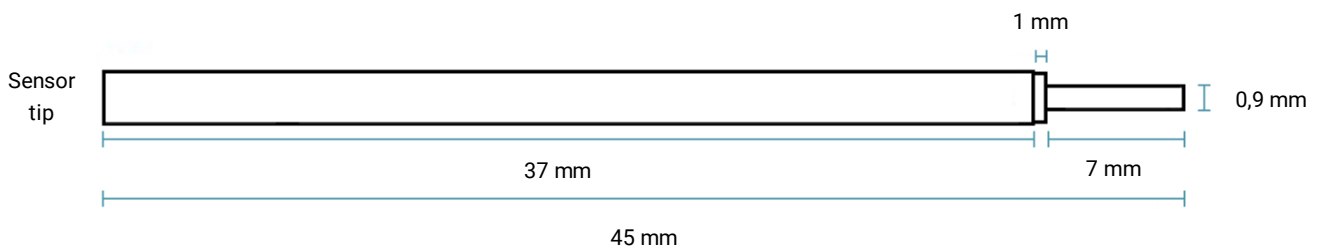
Nano electrode technical specifications

Electrode type	Nano ION 2.5
Body material	PVC
Diameter	2,2 mm
Length	45 mm
Connector diameter	0,90 mm
Connector length	7 mm
Protective shield diameter	2,9 mm
Protective shield length	14 mm
Maximum immersion level	15 mm



Nano reference electrode technical specifications

Electrode type	Reference Nano ION 2.5
Body material	PE
Diameter	2,5 mm
Length	45 mm
Connector diameter	0,90 mm
Connector length	7 mm
Maximum immersion level	15 mm



Technical specifications

ELECTRODE	Slope mV/ decade	Linear Range (mg/L)	Response time	pH range	Accuracy *	Repeatability **	Main interferences Selectivity coefficient
AMMONIUM	54 ± 5	0.09 - 9.000	< 60"	4 - 8.5	± 4%	± 10%	K(K ⁺)= 10 ^{-1.0} K(Ca ²⁺)= 10 ^{-4.0} K(Na ⁺)= 10 ^{-2.9} K(Mg ²⁺)= 10 ^{-3.2}
BROMIDE	-54 ± 5	0.4 - 8.000	< 60"	1 - 12	± 4%	± 10%	Trace of Ag, S o Hg. To avoid I- and CN K(OH ⁻)=10 ^{-4.5} K(Cl ⁻)=10 ^{-2.7}
CALCIUM	24 ± 5	0.4 - 4.000	< 60"	3.5 - 8	± 8%	± 20%	K(H ⁺)= 10 ^{-2.9} K(Na ⁺)= 10 ^{-3.7} K(K ⁺)= 10 ^{-3.6} K(NH ₄ ⁺)= 10 ^{-3.0}
CHLORIDE	-54 ± 5	1,3 - 35.000	< 60"	2 - 12	± 4%	± 10%	Iodide ions cause irreversible damage to the membrane. The sensor will not provide reliable readings if the solution contains more than trace amounts of silver (Ag) or sulfur (S) ions.
COPPER	25 ± 5	0.06 - 3.000	<30" >10mg/L <5' <10mg/L	2 - 7	± 8%	± 20%	The results may be unreliable in the presence of Ag, S, or H. Additionally, Br and Cl ions can cause interference if their concentrations are similar to those of copper ions.
FLUORIDE	-54 ± 5	0.02 - 19.000	< 60"	4 - 8	± 4%	± 10%	Fluoride measurement is only affected by hydroxide ions (OH ⁻). To avoid this interference, the pH must be maintained below 8. Additionally, due to the strong complexation of fluoride ions in real samples, a special TISAB solution must be used.
IODIDE	-54 ± 5	0.1 - 10.000	< 60"	2 - 12	± 4%	± 10%	Trace of Ag, S o Hg. To avoid CN ⁻ In less significance Br 10 ^{-3.4} y Cl 10 ⁻⁶
LITHIUM	54 ± 5	0.1 - 5.000	< 60"	2 - 12	± 4%	± 10%	K(Na ⁺)=10 ^{-2.3} K(K ⁺)=10 ^{-2.4} K(H ⁺)= 10 ^{-3.0}
MAGNESIUM	24 ± 5	2.4 - 2.400	< 120"	3...8.5	± 8%	± 20%	K(K ⁺)=10 ^{-3.6} K(Ca ²⁺)= 10 ^{-1.0}
NITRATE	-54 ± 5	0.6 - 31.000	< 60"	2...11	± 4%	± 10%	K(Br ⁻)= 10 ^{-1.5} , K(NO ₂ ⁻)= 10 ^{-1.7} K(OH ⁻)= 10 ^{-1.8} K(CH ₃ COO ⁻)=10 ^{-2.2}
NITRITE	-54 ± 5	0.5 - 1.000	< 120"	4...8	± 4%	± 10%	K(SCN ⁻)= 10 ^{-0.2} K(ClO ₄ ⁻)= 10 ^{-2.4} K(I ⁻)= 10 ^{-2.2} K(Br ⁻)= 10 ^{-3.3}
PERCHLORATE	-54 ± 5	0.1 - 10.000	< 60"	1...11	± 4%	± 10%	K(SCN ⁻)= 10 ^{-1.7} K(I ⁻)= 10 ^{-1.7} K(NO ₃ ⁻)= 10 ^{-1.7}
POTASSIUM	54 ± 5	0.3 - 39000	< 60"	1...9	± 4%	± 10%	K(NH ₄ ⁺)=10 ^{-2.1} K(Li ⁺)=10 ^{-4.3} K(Na ⁺)=10 ^{-4.6} K(Ca ²⁺)= 10 ^{-3.9}
SODIUM	54 ± 5	2.3 - 23.000	< 60"	1 - 9	± 4%	± 10%	K(Li ⁺)= 10 ^{-3.2} K(K ⁺)= 10 ^{-2.5} K(Ca ²⁺)= 10 ^{-4.0}

Order codes

ION	Parameter	Order code
NH ₄ ⁺	Ammonium	M018
Br ⁻	Bromide	M080
Ca ²⁺	Calcium	M040
Cl ⁻	Chloride	M035
Cu ²⁺	Copper	M063
F ⁻	Fluoride	M019
pH	Hydrogen	M001
I ⁻	Iodide	M127
Li ⁺	Lithium	M007
Mg ²⁺	Magnesium	M024
NO ₃ ⁻	Nitrate	M062
NO ₂ ⁻	Nitrite	M046
ClO ₄ ⁻	Perchlorate	M099
K ⁺	Potassium	M039
REF	Reference	MRX11
Na ⁺	Sodium	M023

Product	Order code
Connection cable for 2 nano electrodes	CC-1BNC-SC2