Conductivity Cells

It is important to choose a cell with the right construction and geometry for your particular application and working conditions.
Radiometer Analytical offers conductivity cells for a wide variety of applications.

2-pole cells have a traditional design based on two plates of platinum. They are ideal for routine measurement of conductivity and for use with a sample changer due to the easy rinsing.

3-pole cells consist of 3 platinum rings which facilitate optimal shielding during measurement.

4-pole cells consist of 4 platinum rings. They ensure accurate results over several decades of conductivity with a single cell using just one calibration. They are particularly recommended when performing high conductivity measurements.

With a 4-pole cell, an alternating current is applied to the two outer rings and the voltage is measured on the 2 inner rings thereby avoiding errors due to polarisation effects and guaranteeing measurement accuracy. The CDC566T and CDC866T Conductivity Cells offer the advantages of this 4-pole design with a built-in temperature sensor. The tough epoxy body can be easily removed for rinsing which makes these cells ideal for measurements across a wide conductivity range even in harsh conditions.

Recommended conductivity cells by application

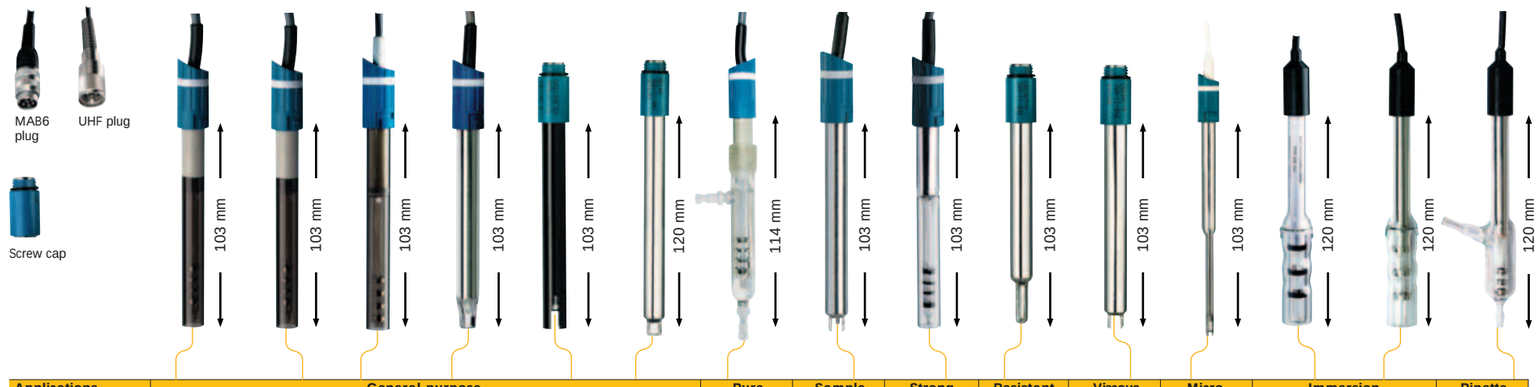
Applications/Characteristics	CDC566T	CDC866T	CDC565	CDC641T	CDC745-9	XE100	CDC511T	CDC741T	CDC861T	CDC267-9	CDC241-9	CDC749	CDC104	CDC304	CDC114
Wide conductivity range (general purpose)	✓	✓	✓					✓							
Various aqueous and non-aqueous media				✓		✓		✓				✓	✓		
Very strong acids and bases								✓							
Use with sample changer							✓								
Built-in temperature sensor	✓	✓		✓			✓	✓	✓						
Continuous measurements				✓		✓				✓					
Microsamples											✓				✓
Flow measurements							✓								✓
Titration										✓					
Salinity (high conductivity)		✓						✓							
Pure water							✓								
Meets requirements of USP 24-NF19			✓				✓								
Meets requirements of EP 2.2.38				✓											
Use in glass tubes											✓				
Plastic body	✓	✓	✓		✓		✓								
Viscous media										✓					
Highly resistant media									✓						
Field use	✓	✓	✓		✓										

Some tips

✓ Conductivity measurement is temperature dependent (if the temperature increases so does the conductivity value). When performing conductivity measurements, it is advisable to choose a cell with a built-in temperature sensor or use a separate sensor.

✓ Remember to calibrate your conductivity cell regularly as the cell constant may vary due to changes in electrode surface due to contamination, for example.

✓ If your cell is to be used with one of the conductivity meters in our current range, the user-friendly CDM210 or the high-performance CDM230, order a cell with a MAB6 plug. This plug type is also suitable for the CDM92 Conductivity Meter. For older meters (CDM80 or CDM83), choose a cell with a UHF plug.



Applications	General-purpose						Pure water	Sample changer	Strong acids, bases	Resistant media	Viscous Titration	Micro-samples	Immersion		Pipette
Type	CDC566T	CDC866T	CDC565	CDC641T	CDC745-9	XE100	CDC511T	CDC741T	CDC861T	CDC267-9	CDC241-9	CDC749	CDC104	CDC304	CDC114
Part no. UHF													945-000	945-002	945-001
Part no. MAB6	E61M010	E61M015	E61M003	B15B001			E61M009	E61M012	E61M016			E61M014			
Part no. screw cap					E61M013	B60E100				E61M011	E61M008				
Body	Epoxy[1]	Epoxy[1]	Epoxy	Glass	Epoxy	Glass	TPX[5]	Glass	Glass	Glass	Glass	Glass	Glass	Glass	Glass
Cell. constant (cm^{-1}) [9]	1.0	1.0	1.0	0.85	1.0	1.0	1.0	1.0	1.0	0.1	1.0	1.7	1.0	1.0	1.0
Number of poles	4	4	4	2	2	2	4	2	4	2	2	2	3	3	3
Platinised	NO	YES	NO	YES	YES	YES	NO	YES	YES	NO	NO	YES	YES	NO	YES
Temperature sensor	YES	YES	NO	YES	NO	NO	YES	YES	YES	NO	NO	NO	NO	NO	NO
Diameter	12 mm	12 mm	12 mm	12 mm	12 mm	12 mm	12 mm	12 mm	12 mm	12 mm	12 mm	4 mm	10.5 mm[7]	10.5 mm[7]	10.5 mm[7]
Max. temperature	80°C	80°C	80°C	100°C	100°C	100°C	80°C	100°C	100°C	100°C	100°C	100°C	100°C	100°C	100°C
Min. immersion depth	35 mm	35 mm	30 mm	14 mm	14 mm	10 mm	3 ml[6]	10 mm	35 mm	26 mm	10 mm	4 mm	55 mm	55 mm	0.6 ml[6]
CDM210/CDM230	YES	YES	YES	YES	YES[3]	YES[3]	YES	YES	YES	YES[3]	YES[3]	YES	YES[8]	YES[8]	YES[8]
CDM92	YES	YES	YES	YES	YES[3]	YES[3]	YES	YES	YES	YES[3]	YES[3]	YES	YES[8]	YES[8]	YES[8]
CDM80	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES[4]	NO	YES	YES	YES
CDM83	NO	NO	NO	YES[2]	YES[4]	YES[4]	NO	YES[2]	NO	YES[4]	YES[4]	YES[2]	YES	YES	YES

1) Removable epoxy tube for easy rinsing (can be replaced by glass tube - see accessories)
2) Use adapter part no. A94P002
3) Use cable part no. A94L136
4) Use cable part no. A94L119
5) Polymethylpentene. Removable part for easy rinsing
6) Minimum sample volume
7) Diameter below the head
8) Use adapter part no. A94P001
9) The cell constant is determined experimentally for each cell and the value is given as a guideline only

Part no.	Accessory
X31M013	Epoxy tube for CDC566T/CDC866T, diameter 12 mm
X51M001	Glass tube for CDC566T/CDC866T, diameter 12 mm
X51M002	Flow cell for 12 mm diameter sensors
X91M001	Set of accessories for CDC511T (pipe, adapters, syringe, stoppers)
X31M014	Circulation/pipette piece for CDC511T with set of accessories

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