

DECADE Elite

Electrochemical detector

- **Most sensitive electrochemical detector**
- **Temperature stabilized cell compartment**
- **ADF to improve S/N ratio**
- **Wide selection of flow cells**

Highest sensitivity

The DECADE™ Elite detector offers flexibility and stable working conditions for all applications using Electrochemical Detection (ECD). It has a highly stable Faraday-shielded oven compartment accommodating the column and the electrochemical flow cell, to guarantee highest stability. To achieve unprecedented sensitivity in UHPLC/ECD the detector is equipped with a unique ADF filter to assure lowest noise level. Limits of detection (LOD) better than 0.5 fmol on-column are achieved routinely.

Flexibility and versatility

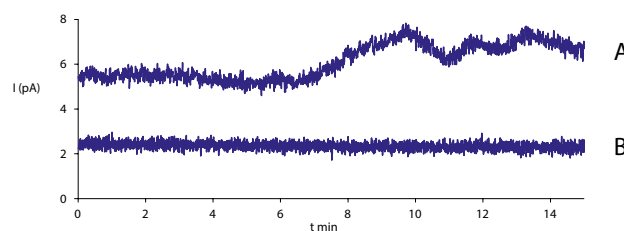
The DECADE Elite has a potential range of up to ± 2.5 V for optimal use of Magic Diamond™ (boron doped diamond) electrodes and can control up to 4 flow cells. They can be used in a parallel or serial configuration. The flow cells are known for their robustness, ease in maintenance and come with a 5 years warranty for GC electrodes. The DC mode is used for many high sensitivity applications such as neurotransmitters, vitamins, phenols, etc. The pulse mode is important for PAD (Pulsed Amperometric Detection) used in the detection of carbohydrates. The scan mode is used to obtain a voltammogram in method optimization.



DECADE Elite available in blue or white colored housing. SenCell in front. Blue: salt bridge (Ag/AgCl), green: ISAAC (in situ Ag/AgCl) reference electrode.

Integrated temperature control

Baseline without temperature control (A) and baseline of DECADE Elite with temperature control (B).
Separation and Detection in one compartment.



DECADE Elite

Flow cells for use in DECADE Elite

SenCell

High sensitivity Wall Jet Flow Cell

- Highest sensitivity
- Adjustable volume/spacing
- Fast stabilization
- 5 years warranty

The SenCell™ is a new generation electrochemical flow cell specifically designed for highest sensitivity. The tool free assembly and the continuously adjustable working volume guarantee ease of use and fast noise stabilization. The volume of the cell can be adjusted between 0 and 300 nL.



Color coded reference electrodes
 black: HyRef (Pd/H₂)
 green: ISAAC (in situ Ag/AgCl)
 blue: Salt bridge (Ag/AgCl)

FlexCell

The most versatile flow cell for Electrochemical Detection

- Exchangeable working electrode
- Working electrodes: GC, Pt, Au, Ag, Cu, MD
- Low cost of ownership

The name FlexCell™ underlines the versatility and service-ability of this thin-layer flow cell in the Antec program. With its unrivaled design working electrodes can be serviced or replaced in a few minutes. The low cost of ownership is also attributed to the concept that different working electrode materials can be applied in the same cell. This makes the Flex-cell suitable for all sorts of electrochemical analyses like the usual biogenic amines (glassy carbon), but also carbohydrates (gold), peroxides (platinum), halides (silver), sulfides (Magic Diamond) etc.



Top: Assembled FlexCell
 Bottom: Working electrode holder with working electrodes (from left to right): Pt, Au, MD, GC

DECADE Elite

Specifications

Environmental, dimensions, weight & power requirements

Working temperature	10 - 40°C (indoor use only)
Safety and EMC	According to EC-directives; Emission Group I Class A; cMETus approved
Dimensions	43 (D) x 22 (W) x 44 (H) cm = 16.9" (D) x 8.7" (W) x 17.3" (H)
Weight	max 14.4 kg (32 lbs) without flow cell and column
Power requirements	100-240 VAC, 50/60 Hz, 260 VA, auto-sens-ing

For optimum analytical performance it is recommended that the ambient temperature of the laboratory be between 20-25 °C and be held constant to within ± 2 °C throughout the entire working day. Note: that for optimal performance of the oven the oven temperature should be set at least 7 degrees higher as ambient temperature.

General

Operating modes	DC, PULSE SCAN (Lite: DC mode only)
Other mode	CONFIG, DIAG and SERVICE
Sensors	Up to 3 flow cells (Lite: single cell only)
Autozero	triggered by keyboard (Elite only), rear panel TTL, or remote PC control (LAN)
Max. current compensation (Autozero)	25 nA - 2.5 mA in DC and PULSE mode de-pendent on range setting
Offset	+50% to - 50% of max. output voltage, 5% steps
PC control	Parametric control and data-acquisition via LAN port (USB service port)
Embedded software	Flash technology, upgradeable via PC (USB)
Oven	+7°C above ambient to 60°C, accuracy 0.5°C, stability 0.1°C; accommodates column and flow cell(s)
Rear panel connectors	1x IEC inlet (Mains), 1x USB B, 1x RJ45 LAN, 1x 9-pins sub-D Male (Valve), 1x 9-pins sub-D Female (Analog output), 1x 25-pins sub-D Female (Digital I/O)
Analog output (DAC)	-1 to +1 V full scale (via 16-bit D/A converter)
Analog output (I/E)	-2.5 to +2.5 V full scale (unprocessed I/E con-verter signal)
Digital I/O (HW)	2x Relay, 5x TTL outputs (CMOS 3.3V logic), 13 TTL inputs (programmable), 1x GND
Programmable I/O functionality	Cell on, Cell off, Autozero, Start, Overload, Relay, Auxiliary
Valve control	VICI valco 2-pos electrically-actuated valve (E2CA, EHCA) via serial cable, Manual valve, 1x inject marker output

DECADE Elite

Specifications (cont.)



DC mode

Range	10 pA - 200 μ A in 1, 2, 5 increments
Filter (ADF)	10 - 0.001 Hz in 1, 2, 5 increments RAW and OFF: for unprocessed data
Potential (Ec)	-2.50 V to + 2.50V with 10 mV increments
Data Rate	1 - 100 Hz in 1, 2, 5 increments, dependent on filter setting
Noise	< 2 pA with dummy cell (load of 300 M Ω /470 pF) in 1 nA range, filter off, Ec +800mV and temperature of 35 $^{\circ}$ C.

PULSE mode (Elite only)

Range	10 nA - 200 μ A in 1, 2, 5 increments
Filter (ADF)	0.5 - 0.001 Hz in 1, 2, 5 increments OFF: for unprocessed data
Potential (Ec)	-2.50 V to + 2.50 V with 10 mV increments
Data Rate	1/(pulse duration) Hz
Waveform	Max 5 potential steps
Pulse times (t1-t5)	t1: 100 ms - 2000 ms; t2, t3, t4, t5: 0 - 2000 ms in 10 ms increments
Sampling times (ts)	20 ms - [t1 - 60] ms

SCAN mode (Elite only)

Range	10 nA - 200 μ A in 1, 2, 5 increments
Potential (Ec)	-2.50 V to + 2.50V with 10 mV increments
Data Rate	1 Hz
Scan rate	1 - 100 mV/s in 1, 2, 5 increments
Cycle	Half, Full, Continuous

Part no	Description
175.0035	DECADE Elite SCC
175.0035D	DECADE Elite DCC
175.0035T	DECADE Elite TCC
176.0035	DECADE Elite SCC white color housing
176.0035D	DECADE Elite DCC white color housing

For the ordering information of a flow cell, see the dedicated SenCell or FlexCell product flyer.

Antec Scientific (USA)
info@AntecScientific.com
www.AntecScientific.com
 T 888 572 0012

Antec Scientific (worldwide)
info@AntecScientific.com
www.AntecScientific.com
 T +31 71 5813333

