The new Urodynamic Measuring System

Ceres lite
The Urodynamic Measuring System
Ceres lite

The mobile Ceres lite system allows clinicians to perform Urodynamic studies using a secure newly-developed wireless technology. This allows greater flexibility for the user especially in terms of room setup, and more privacy for the patient.

The following investigations and analysis can be performed:

**Mictiometry (Uroflowmetry)**

**Filling Cystometry**

**Voiding Cystometry (Pressure-Flow Studies)**

**UPP (Urethral Pressure Profiles, Rest & Stress)**

**EMG (Electromyography) – Wireless**

**Automatic Leak Detection**

**Video-Urodynamics**

**Anorectal Motility Studies**

**Biofeedback (Adult & Pediatric)**

Ceres lite is the most advanced, innovative and complete Urodynamic System in the market. Designed to be easy to use and easy to set-up, providing a new level of user configurability. Using the most advanced technology available, Ceres lite is able to perform the following studies:

**Uroflowmetry** Wireless connection allows patient comfort/privacy
- Liverpool, Siroky and Pediatric Nomograms

**Cystometry** Filling and Voiding
- Integrated filling pump and volume sensor
- Compliance and Pressure-Volume plot
- ICS, Schaefer, Abrams-Griffiths pressure flow nomograms

**Video-Urodynamics** (optional)
- Analogue or Digital input Signals
- Real-time digital recording and replay
- BNC and USB Connections

**Urethral Pressure Profile, Static and Dynamic. Puller (optional)**
- Extensive analysis including mean static and mid-urethral response
- High sensitivity Electromyography (optional)
  - Surface Electrodes, Bipolar Needles, Vaginal and Rectal probes
  - Wireless connection (Bluetooth)
  - Pelvic Floor Rehabilitation Software - Biofeedback (optional)
  - Electromyography Biofeedback
  - Biofeedback with pressure (Balloon)

Anorectal Manometry Software (optional)
- 5 pressure channels
- Integrated air perfusion pump
- Foot-pedal to allow hands free operation
- Step-by-step prompts to guide user through study process

**User Configurable Reports**
Based on Microsoft® Word, unlimited number of templates. Integrated PDF convertor.

**Connectivity**
Ceres lite allows the user to integrate with the Hospital Information System (H.I.S.). Using DICOM (optional) technology, allows DICOM worklist and DICOM store.

**Security (N.D.L.)**
Wiest Uropower Ltd. has developed the N.D.L. technology. N.D.L. technology allows data recovery even when studies have not been specifically saved. Real time data processing and online storing gives an added security level on data management.

**Database**
Ceres uses Microsoft® SQL as the database engine. Microsoft® SQL has been proven over the years as the most advanced database engine in the market allowing users to back up manually or automatically to any location. Intelligent patient search allows faster study upload and review.
Technical Specifications

Wireless Technology
XBee, double direction, multi device control.

Flow Sensor
Wireless (optional) or wired, specifically designed & sensitive for low flow-rates (i.e. pediatric or obstructed flow).

Technical Data
Capacity: 3 kg
Input Impedance: 415 Ohms
Output Impedance: 350 Ohms
Insulation: > 2 GOhms
Precision: +/- 0.25 ml
Cleaning: Replaceable plastic covers
Control/indication Led.

Puller
To allow urethral pressure profile studies. Control from software (start/stop & adjustable speed). Mounted on a fully adjustable stand (vertical/horizontal). Catheter holder is removable and can be sterilised via autoclave.

Technical Data
Length: 35 cm
Direction: Double (pull/push)
Cleaning: Autoclave

EMG (wireless)
Wireless Bluetooth connection. Separate module, connects to main system input via USB extension cable. Vaginal and rectal probes available. ‘Full Wave’ or ‘Envelope’ signal.

Technical Data
1 EMG Channel
2 electrodes, 1 reference electrode.
Patient input protection: ~ 6 kOhms
Input range: 1 mV full scale
Input resolution: > 100 nV (averaged)
Acceptable DC voltage: 600 mV maximum
Input impedance: 1010 ohms // 1pF
Input impedance imbalance: > 40 %
Common mode rejection: > 100 dB.
Bandwidth: 10 Hz ~1000 Hz
Optional Notch: 50 Hz
Input referred noise level: 2 µV (averaged)
Infusion Pump
3 roller peristaltic filling pump. Software control (start/stop & speed selection). A separate filling volume sensor calculates exactly how much fluid has been infused into patient.

Technical Data
Filling range: 1–150 ml/min
Tubing: Ref 288705 from Wiest Uropower Ltd.

Air Pump
Automatic air pump which maintains a constant pressure inside a pressure-infusor – to regulate the infusion rate required for UPP studies. Integrially mounted inside the Ceres lite unit, with an accessible connector for connection to a pressure infusor.

Technical Data
Voltage: DC 6 V
Software controlled: Start/stop and pressure required
Tubing and pressure infusor available from Wiest Uropower Ltd.

Remote Control
Hand-held remote control to allow system operator to control Ceres lite urodynamics system without having to touch the PC/mouse.

Functions
Recording start/stop
Pump start/stop
Puller start/stop
Video clip start/stop
Record video snapshot
Zero channels
5 additional buttons (1–5) that can be programmed by the user

Video Urodynamics
Allows x-ray images to be combined with the urodynamics traces. Display/record/print options all available within Ceres lite software.
X-ray system is connected to Ceres lite via an adapter cable.

Technical Data
Composite video input (RCA/Phono) PAL, SECAM, NTSC
S-Video input (mini-DIN) PAL, SECAM, NTSC
Adapter cable (BNC to RCA) supplied
Urodynamics Kit
Pressure transducers for urodynamic testing.
Colour coded labels and cables (Vesical, Abdominal and Urethral channels).
Auto 100 mm Hg test/calibration button.
Fitted to bracket/clamp.

Technical Data
Method: Water filled
Sensitivity: 5.0 Nominal uV/V/mm Hg
Range: -50 – 350 mm Hg
Reversible transducer (single use dome)

Micturition Chair
Height adjustable, detachable seat and cover, removable funnel.

Micturition Stand for male voiding studies, height adjustable, removable funnel.

Trolley Workstation
Can be used with Ceres lite to mount desktop or laptop PC, monitor, printer, keyboard etc. Matching colour with Ceres lite.

Automatic Leak Detector
Detects leaks during procedure and Ceres lite software automatically marks trace with a ‘Leak’ event.

Technical Data
Detection method: Temperature
Number of detections: Unlimited
Compatible catheters: 6 CH – 10 CH

Pressure Transducers for use with air-charged catheters

Technical Data
Method: Air-charged
Connector: Lemo 18 pin
Sensitivity: 5.0 Nominal uV/V/mm Hg
Drift: < 1.5 mm Hg over 4 Hrs

PC, Monitor, Printer
Latest specifications, various options available, laptop or desktop

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Software Characteristics

- Windows platform, multi-language
- Powerful SQL Server database
- Standards and terminology as according the ICS (International Continence Society)
- Nomograms → Liverpool, ICS, Pediatric, Siroky, Abrams-Griffiths, Werner Schaefer, Pressure-Flow loop, Pressure-Volume, Compliance
- N.D.L. Security Protocol – no data loss even in the event of power failure during study
- Reports 100% user-configurable, using Microsoft® Word format
- Connectivity to Hospital information system and PACS DICOM work-list and DICOM Storage
- Rehabilitation software – Biofeedback for adult and pediatric usage, using surface, needle or plug electrodes
- Procedure setup – user configurable procedures, traces, colours, layout etc.
- Event markers – user configurable toolbars and event markers (icons and/or text)
- Archiving capabilities – possibilities to export/import datafiles to other PC’s using the same software
- Automatic database backup
- Network capability
- Activity report