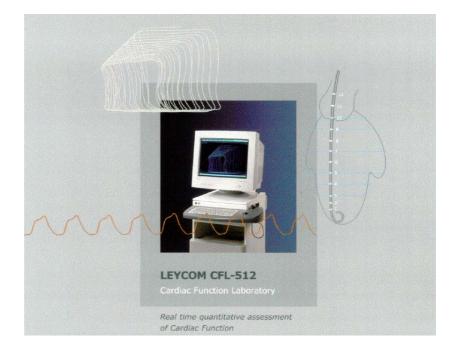
Leycom[®] CFL-512 and Conduct NT





The **LEYCOM[®] Cardiac Function Lab CFL-512** facilitates the on-line measurement and analysis of ventricular pressure and volume signals in clinical setting. The pressure and volume signals are obtained using a combined conductance and pressure catheter. The CFL-512 acquires and displays these signals on-line and continuously. The signals are digitized, stored and can be subsequently played back and analyzed the users convenience.

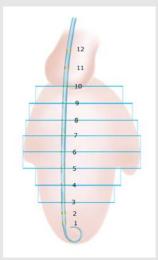
The **Leycom**[®] **CFL-512** is a stand-alone device, which can be easily used in different clinical environments. The system, including the software for data acquisition and analysis, has been developed in close co-operation with a group of clinical users of **Leycom**[®] equipment.

The **Leycom**[®] **CFL-512** consists of a bedside 'patient module' and a console. The bedside 'patient module' is a state of the art, battery powered, data acquisition module. The module, to which the conductance catheter is connected, contains sophisticated circuitry, which ensures optimal patient safety and extended battery life.

The 'patient module' is communicates with the **Leycom**[®] **CFL-512** console via a fibre optic cable; this provides complete patient isolation from electrical hazard.

The *dedicated computer* is Intel Pentium based, has a 40 Gb harddisk, enough for hundreds of hours of data acquisition, at 12 channels and 250 samples per second.

With the **Leycom**[®] **CFL-512** software, time-varying ventricular volume, pressure, ECG, a large number of hemodynamic variables and Pressure-volume loops can be displayed. The slope and intercept of the end-systolic pressure-volume relation (a measure of ventricular performance) are calculated, as well as other related variables.



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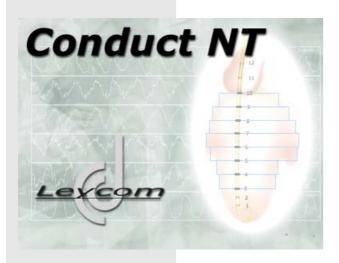
CO1

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Conduct NT – for clinical evaluation only

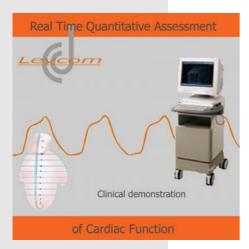


A Microsoft Windows based acquisition, display and analysis program has been developed for the Leycom[®] CFL-512. The Leycom[®] CFL-512 is the clinically approved system for quantitative cardiac function assessment in humans. The new program, Conduct NT, replaces and radically improves upon the old DOS based 'Conduct 2000' for the Leycom[®] CFL-512.

Conduct NT FOR CLINICAL EVALUATION ONLY Live Data from: CFL 512 Version 2.8.1 (Build 578) Copyright © 2001-2004 CD Leycom Windows NT 5.0 (Build 2195: Service Pack 4) Memory Available to Window: 113584 KB

Features

- Dyssynchrony calculation for each segment
- Many calculated indices, displayed in real time
- Operator independent parallel conductance calculation
- · Ability to show calibrated data in real time
- Improved screen and reports printouts
- Analysis of large files
- Easier to 'grab' screens for presentations or publications
- Improved study management
- Extended patient data input screen
- Extended views



Usage in the clinical setting:

- The quantitative assessment of systolic and diastolic heart failure
- Determination of heart failure treatment strategy
- Calculation of ventricular mechanical dyssynchrony
- To guide pacing strategies
- Status assessment of congenital heart disease
- Evaluation of surgical procedures (DOR procedure, mitral valve repair)
- Monitoring critical patients peri-operatively

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CFL-512

Conduct NT – Analyse Recorded Data

Catheter Settings				×
Current catheter: CA7110	I3PL	-		
Number of electrodes:	Distances:			Total volume:
C 10 electrodes	Electrode 3 · 4	10.00	mm	🔽 Segment 1
C 11 electrodes	Electrode 4 - 5	10.00	mm	🔽 Segment 2
12 electrodes	Electrode 5 · 6	10.00	mm	🔽 Segment 3
	Electrode 6 - 7	10.00	mm	🔽 Segment 4
Dual field ratio:	Electrode 7 - 8	10.00	mm	Segment 5
0.20	Electrode 8 - 9	10.00	mm	Segment 6
 0.25 	Electrode 9 - 10	10.00	mm	Segment 7
C 0.30	Election of To	10.00		j Segment 7
C 0.35		_		_
			OK	Cancel

Conductance Catheter Settings

Match the catheter with the actual heart size, exclude individual segments and optimize the dual field setting.



Rho measurement

The Rho cuvette is used to measure blood resistivity from a blood sample. Blood resistivity is required for the calibration of the volume measurements. The Rho cuvette is connected to the connector on the right side of the CFL-512. When the Rho cuvette is filled with 5 ml of blood the display will show the measured blood resistivity. By pressing the button next to the display this value is stored internally and used in the real-time volume calculation.

alibration			×
Channel	Name	Done M	Name: Pressure
Pressure ECG 2 Aux 1 Aux 2	Pressure ECG 2 Pressure 2 Aux 2		Min. Max. Full range: -20.00 200.00 Calibration values: 0.00 100.00 Voltage: -0.01 0.33
C Aux 3 C Aux4	Aux 3 Aux 4		Volts Apply Low [-1.56 Apply High C Automatic C Manual
		OK	Cancel

Calibration

Calibration of the volume signals from the conductance catheter is automatic. However, the 6 user defined signals connected to the external inputs, Pressure, ECG 2, Aux1, Aux2, Aux3 and Aux4 require initial calibration to enable the software to convert input signal voltages to user units (e.g. mmHg).

Display

Select display-mode and time-base for an optimal view of your chosen signals. View 'Segmental Volumes' to check and optimise the (segmental) volume signals. Use views with 'PV-Loop' to monitor the pressure-volume loops from beat to beat. Use views with 'Indices' to display real-time the calculated indices. Use 'Dyssynchrony' view to assess mechanical ventricular dyssynchrony.

Acquisition	Statistics		
Filename: Duration:	AUG20002.smp 0:00:16		2004-08-20 09:27:45
Comment: VCO: Ven	a Cava Occlusion		
Set: 1:			2
Type: Da	ta file 💌		
	Save Delete		

Acquire Data

Start data acquisition by clicking 'Acquire'. An audible signal every 1 s reminds the user that acquisition is in progress. Stop data acquisition by clicking acquire again. Enter a comment at the end of each acquisition run.



CFL-512

Conduct NT – Analyse Recorded Data

Study: Demons	ar50011							R.,
Data file name	Comment	Duration	Date	Time	Size	Туре	Set	I
MAR27001	sentron 0-100	00:00:08	2003-03-27	10:19:48	66 KB	Data	0	ſ
MAR27002	zero pap	00:00:04	2003-03-27	10:21:06	33 KB	Data	0	
MAR27003	sentron pao	00:00:09	2003-03-27	10:24:07	73 KB	Data	0	
MAR27004	lv	00:00:07	2003-03-27	10:26:23	52 KB	Data	1	
MAR27005	lvp fluid on aux1	00:00:03	2003-03-27	10:27:57	26 K.B	Data	0	
MAR27006	st st loops	00:00:16	2003-03-27	10:33:30	123 KB	Data	0	
MAR27007	co 4.2 L/min	00:00:25	2003-03-27	10:34:32	189 KB	Alpha	1	
MAR27008	co 4.5	00:00:10	2003-03-27	10:35:14	77 KB	Alpha	1	
MAR27009	co 4.1	00:00:20	2003-03-27	10:35:32	150 KB	Alpha	1	
MAR27010	vc 7ml 10%	00:00:27	2003-03-27	10:38:51	205 KB	Vc	1	
MAR27011	Vc 2nd run	00:00:28	2003-03-27	10:40:05	209 KB	Vc	1	
MAR27012	vc 3rd	00:00:23	2003-03-27	10:41:03	174 KB	Vc	1	
MAR27013	c	00:00:53	2003-03-27	10:42:59	394 KB	Data	0	

Select data file

Retrieve previously acquired data files for subsequent analysis.

The comment and some file characteristics are displayed in the list.

Pressure-volume analysis

The end-systolic and end-diastolic PV points are indicated with markers (blue and green lines). Appropriate (user-selected) functions can be fitted through these points taken and varying pressures and volumes to calculate contractility and compliance.

Print Report

Create your own print reports with indices. Select the reports you want to print. Use the short-cut button it to print the latest report.

Indices

Create your own indices-display by selecting the indices that are available in the list. Conduct NT has more than 50 parameters in his list of indices.

Volume calibration

Vc calculation (parallel conductance)

Vc will be calculated automatically from the data acquired during a hypertonic saline injection.

Alpha calculation

To correct the underestimation of true volume, the results measured by the conductance catheter should be compared to the results of an independent cardiac output measurement, thermodilution, echo or angiography for example.

Additional features in Conduct NT.....

- Interval measurement
 - Several filters can be used
- Exporting data and indices to comma-separated file
- Beat to beat analysis
- Complete file management
- Signals can be individually scaled.



Reports: Systolic Diastolic Vc Vc-report dinant Print Export... Cancel

Setup.

Print Repo

Printoptions:

\\w2ksvr01\HP Admin





Highlights

Hardware

Console

- Pentium, 1 GHz with 256 Mb RAM
- Dedicated hardware for: Acquisition of external signals Communication with patient module Patient module battery management
- Monitor, NEC Multisync XP 1750
- Data storage, 40 GB harddisk
- 250 Mb Zip drive
- Laser printer, HP LaserJet 2100
- Drip-proof keyboard with trackball and two buttons

Patient module

- All settings are software controlled
- Catheter connector: 16 pole Binder
- Battery powered to ensure patient safety
- More than 180 min continuous use when fully charged
- Communication with console via fiber optic cable
- AD conversion: 250 samples/sec, 12 bit

Patient safety

- Battery powered patient module
- Communication via fiber optic cable
- Inductive battery charger

Conduct NT

- Real-time display various display modes variable time-base
- Several filters
- Data acquisition automatic file naming attached comments
 250 samples/sec, 12 bit accuracy
 8 internal (patient module) and 6 external channels

Software

- Calibration of external signals conversion to user units optimize resolution
- Display of acquired data
- Calculation of calibration factors for conductancevolume
- Analysis of pressure-volume relations
- Calculation of hemodynamic indices
- Print/save graphs and own reports
- Printer settings
- Data export



CD Leycom

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