## Blue Cherry User Manual Version 1.2.2

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#### 1. General information about Blue Cherry

Blue Cherry <sup>™</sup> is a registered trade mark of Geratherm Respiratory and forms an easy to learn and intuitive user interface for Microsoft Windows<sup>®</sup>. Blue Cherry <sup>™</sup> also contains a powerful SQL database and optional interfaces to allow connection to various different hospital information systems.

#### 1.1 Installation



Do not install Blue Cherry if your computer does not meet the minimum requirements set out in the technical data section of this manual.

The medical devices from Geratherm Respiratory consists of hardware components as well as the software Blue Cherry. The following actions must be taken before being able to run spirometry tests:

- connect the device to the USB port of the computer
- Install and configure the Software Blue Cherry

#### 1.2 Connecting the equipment to the computer

Connect the devices to a free USB port of your computer. Microsoft Windows<sup>®</sup> will automatically recognize the device and install the appropriate windows driver.



The devices use a standard driver provided by Microsoft Windows<sup>®</sup>. No additional drivers are required in order to use the devices on a computer meeting the required specification.



#### 1.3 Installing the software

Insert the Blue Cherry Installation CD into an available CD drive on the computer. The installation software will start automatically. Should the Installation procedure not start automatically, press the windows "**START**" button, select "**RUN**" and type the command D:\setup.exe (where D is the CD drive containing the software).



After that the InstallShield Wizard will start. Please follow the instructions in the installation wizard by selecting the "Next" Button in the subsequent installation screens.

wanien	Sie eine Setup-Sprache aus	Ple
٢	Wählen Sie die Sprache dieser Installation aus der unten aufgeführten Auswahl aus.	lan
	Englisch (USA)	
	OK Abbrechen	

Please choose the language of the installation wizard



#### The installation wizard supports the following setup options:

Installation method	Description
Single workstation	Blue Cherry works with a local Database which is only used by this computer.
Server Installation	On this computer a database server is installed, which is to be used by other workstations on the network. Only the database server will be installed.
Client Installation	The database server already exists. Only the Blue Cherry Software is going to be installed as well as information of the database server which will be used.





You'll find more informations on that in the database installation describtion.

Cancel

Install



< Back

Before the actual installation begins, you must agree to the terms of the agreement.

By using the "change"-Button you can change the installation path. It is recommended to accept the default directory.



setup status		24
Blue Cherry is configuring you	ar new software installation.	
Creating folders		

## The necessary program files are being copied.

e Cherry - InstallShield	Wizard
SQL Server Select SQL Server	
Select the version of th	e Microsoft SQL Server to install and click "Next".
SUL Version	Microsoft SQL Server 2012 -
For security reasons the The password is require	SQLServer containing the database is protected with a password. d if other workstations want to access the database.
Password	Blue123Cherry
tallShield ————	
	< Back Next > Cancel
e Cherry - InstallShield	Wizard
EM.	Installation successfull
	The installation has finished successfully. Please click on "Finish" to install the database.
	< Back Finish Cancel

If you did select single workstation or server installation additional information concerning the SQL server are required. It is recommended to accept the default settings.

The installation of the Blue Cherry software has been finished. After selecting the "Finish"-Button the installation of SQL database will start.

SQL Server 2012 Setup		
Install Setup Files SQL Server Setup will no update will also be insta	ow be installed. If an update for SQL Server Setup is lied.	found and specified to be included, the
nstall Setup Files		
	SQL Server Setup files are being installed o	n the system.
	Task	Status
	Scan for product updates	Completed
	Etter Creating database	99 99
		< Back Install Cancel



The SQL Server and database will be installed.

After successful installation this window will appear. Please confirm by selecting the OK button.



on the desktop to allow

The installation procedure will place an Icon the user to launch the Blue Cherry application. Alternatively it is also possible to start Blue Cherry from the Windows <sup>®</sup> start menu by selecting START - PROGRAMS - GERATHERM RESPIRATORY GMBH - BLUE CHERRY.

12	Programme	💼 Geratherm Respiratory GmbH	🕨 🛄 Blue Che	rry
1000		microsoft Office	🕨 ன Blue Che	rry 🔹 🐔 Blue Cherry
Ó	Dokumente +	m Zubehör	> "	
	Einstellungen	m smartision bayconet	• •	
	Suchen +	microsoft SQL Server 2005	•	
?	Hilfe und Support	Actify ¥	•	
	Ausführen			
0	Herunterfahren			
Sta	art 🛛 🔞 🔍 🐚 🌈 🐼 😡 🕼	- 🖥 🕼 🔘 🔃 🕴 🔂 Posteing	ang - Micros	2007-11-22

The following screen will be shown:



During first start of Blue Cherry the following window will appear. The product key can be found inside the CD cover which you did receive together with the product. This key determines which options will be installed. Please ensure the key is entered completely and correctly.

Please enter product key			
Please enter the produc	ct key <mark>provi</mark> d	ded by your o	dealer.
Product key	AAAAA	BBBBB	ccccd
	Cance		Accept



#### 1.4 Software Registration

The Blue Cherry software installation must be registered. The following window will appear during the first start of the software:

	n process
Activate onli	n you are currently using is for
Enter code	ion only until it is activated.
En	ion only until it is activated.

The registration must take place within 30 days after the installation. If in this period no successful registration is completed, Blue Cherry can no longer be started. Clicking the close button allows the registration window to be closed for registration to be completed later.

The registration can be performed either online if an internet connection is available or off line by the manual input of a registration key.



#### 1.4.1 Online Registration

Clicking the online Registration button opens the following window:

To register at Geratherm Respiratory ple	ase enter your contact information.
Title	· · · · · · · · · · · · · · · · · · ·
First name	
Name	
Company	
Address	
Address 2	
Postal Code	
City	
State	
Country	
E-Mail	
Phone	
Env	

Complete the registration form and click the accept button. The entered data together with the product key and the machine code of the computer are sent to the registration data base at Geratherm Respiratory. The following window is shown:

Online act	ivation	in prog	ress.



#### 1.4.2 Offline Registration

After clicking the button "enter code" the following window will appear:

lease enter your activation keep Please enter the activation keep your local dealer or fax the f using the	ey. To get an orm using th ie "Fax" butto	n activation l le fax-templa on.	key contact ate created
Droduct key		DDDDD	00000
Workstation ID	UVEEK	AVFU4	NPH5X
Activation key			
	Cre	eate fax tem	plate
(	Cancel		Accept

Please type in the activation key, which you got from your local dealer, correctly and completely and confirm your entries by using the "apply" button.

After successful registration the Blue Cherry user interface will be started. The Chapter "Blue Cherry user interface" provides a detailed description of the buttons, the different display areas and the possibilities of Blue Cherry.

#### 1.5 Blue Cherry update, restore, repair and remove

Blue Cherry has an integrated manager for update, restore, repair and remove the software. In order to perform one of these functions simply run the setup program as described in one of the previous sections. Click the "**NEXT**" button to continue and Follow the instructions given on the screen to complete the installation of the Blue Cherry Software:



Function	Description
Install update	Update Blue Cherry to the new version
Restore version	Remove the update and restore one of the previous
	installed versions.
Repair porgram	Install again all the features from the latest update.
Remove programs	Remove Blue Cherry from this computer. Please note, the
	database will not be removed.



#### 2. Blue Cherry User Interface

The following section describes the different screen areas of the Blue Cherry software.



#### **Title Bar**

The title bar shows the name of the software. The buttons in the top right corner allow the user to minimize, maximize or close the program. The following section describes the different screen areas of the Blue Cherry software.

#### **Settings Bar**

The settings bar includes a drop-down menu for the selection of a patient as well as the buttons for "patient file" (show or change patient data), "print", "BTPS" (show or change the environmental conditions for temperature, air pressure and humidity), "setup" (calling up the Blue Cherry configuration settings), "Audit trail" and "help".

The print symbol in the settings bar offers a so called smart report function which allows the user to configure a summary report which could be printed with just a single click. The configuration of the report will be found in the setup of Blue Cherry.

#### Info Bar

The info bar shows information about the current patient. Left clicking the info bar will display the patient file together with the set header.

#### **Left Selection Area**

In the left selection area it is possible to choose one of the following buttons: Patient, Calibration or Blue Cherry Options. The buttons available in this section will vary depending upon the options purchased with the system.

#### **Right Selection Area**

Depending on the measurement or calibration selection additional possibilities will be available in the in the right selection area. This menu section may also vary depending upon configuration or software options.



Button	Description
	Start new measurement
Print immediately Print Print preview Save as .pdf Page setup	Print measurements Moving the mouse pointer over this button opens the print options sub menu, allowing choice of Print immediately, Print, Print preview, Save as .pdf or Page setup
ATS	Start ATS manager
	Switch into post mode with medication selection menu
	Switch into provocation mode with selection of provocation stage menu.
	Switch to the next step of provocation stage
	Enter volume of calibration syringe
	Enter the character string for the calibration factors

#### Graph area

The graph area shows the measurement graphs. The scale of the graph can be changed using the scroll wheel on the mouse.

At the top of the Graph area some further drop-down menus are available:



Button	Description
18.11.2007 14.11.2007	Date selection. For each test date a tab will be available to select.
Pre - Pre Post	Phase selection to select between Pre or Post stages.
All  All Only best Only accepted User defined	Measurement view selection. Allows for determination of which graphs are shown in the Graph area.
Accepted Best	Show the acceptability criteria of ATS/ERS. For each test a square will be shown. Click with the right mouse button will alter between acceptable and not acceptable.
Best	Selection which test is the best in the graph area. Each colour square represents the test graph in the same colour.

#### Help Text

Help text is available throughout the Blue Cherry software; if the mouse is left over a button a help text box will appear to describe the buttons purpose.

#### Popup-Menu

Blue Cherry contains popup menus with important functions in some areas. The popup menus appear after clicking the right mouse button. Popup menus are context sensitive and only the relevant possibilities for the selected area will be displayed.

For example after right clicking in the graph area the following options will appear:



Copy to clipboard allows the graph to be copied to the windows clipboard for use in other compatible software.

By clicking "Delete test" the test which should be deleted has to be selected. For safety there is a confirmation query. Please note, by confirm with "Yes" the test will be irrevocably removed from the database.

#### Status Bar

The status bar displays the current ambient conditions values and also informations about the connected hardware.

#### **Comment line**

Left clicking the comment line opens a new window which allows the user to access the footer, comment and interpretation.

#### Table area

The table area show the numeric results of the measurements. In the predicted column the reference of the selected author from the predicted set will be shown. For example (1) represents the use of ECCS 1993 predicted set.

The Mouse scroll button can be used to scroll through the table to view results.

Clicking the right mouse button over the table area opens a popup menu with additional useful functions like



"**Copy to clipboard**" Allows the graph to be copied to the windows clipboard for use in other compatible software.

"Change table direction" Automatically exchanges the Rows and Columns in the table to give an alternative view.

"**Open setup: Tables**" Opens the setup menu at Viewing – Tables to allow parameters in the table to be changed.

"Open setup: Parameters" Opens the setup menu at Parameters - Definitions to allow alteration of parameter setup.

"Open setup: References" Opens the setup menu at Parameters – Reference Values to allow alteration of Reference value sets.

**"Select Parameter"** Opens a window where the user can change the displayed parameter of one table row.



#### 2.1 Enter new patient data

Selecting the "**Patient**" button in the left selection area, will display an alternative icon menu in the Info Bar area.

2	BlueCh	erry - Patie	ent					
	Smith, J	ohn		Patient file	👃 втр	Setup ? He		
		Patient	cache					
	9	2,	-	& .	7	2		
	-	New	Search	Remove	Import	Export		

"New" Opens the patient data window for the input of new patient details. When entering new patient details it is important to ensure the values are correct to ensure the correct predicted values are calculated. "Accept" button will store the entered data. Empty required fields will be marked with a red exclamation mark as shown in the picture below.

"Additional" and "Address" allow entry of further patient information. All fields in these screens can be configured from the setup menu, where it is also possible to define new data fields for use in these sections:

Patient file	
General Additional	Address 4 b
Patient ID	6
Case number	
Name	Smith
First Name	John
Sex	⊙ male O female
Date of birth	12 04 64 M/D/YYY
Age	46
Height	186 cm
Weight	€¢g
BMI	kg/m²
BSA	- m²
	Cancel Accept

#### 2.2 Search for a patient

"Search" Opens the patient search window with the facility to search for patients using either the ID number or the patient surname. The displayed list will be changed as information is entered into the search criteria box. So called wildcards help searching for patient-ids or names, which are not exactly known. These are placeholders for other characters. The following wildcards are allowed:

Wildcard	Function
*	Any match search
?	Exact match search

The following are examples of the Wildcards:

After input of "M?ier" in the field name all patients with variants of the surname are shown, e.g. Meier and Maier.

After input of "\*son" all patients with this ending in the surname will be shown e.g. Jack<u>son</u>, Ander<u>son</u>, Peter<u>son</u>.

Once the desired patient is found using the search, clicking on the "Accept" button will open this patient file to begin testing. Clicking the button "New" will open the screen form for entering of new patient data.

		First Name	Date of birth	Sex
	Demo	Dirk	1/1/1966	M
000000017	Demo	James	6/23/1951	M
00000018	Geratherm	Demo	11/17/1983	M
109	Schrauth	Christoph	11/9/1983	M
2	Asthma	Patient	4/12/1966	M
}	Normal	Patient	12/1/1982	M
345678	Sauro	Seratini	1/6/1955	M
	Demo	Edward	2/23/1956	M
i	CPET	Patient	1/1/1964	M
86754	James	Tredicini	1/31/1947	M

#### 2.3 Remove patient from waiting list or database

"**Remove**" will remove the highlighted patient from the 'waiting list'. Clicking on the right hand side of the remove button opens a drop down menu allowing the user to choose if he will delete only the marked patient or the whole waiting list as well as the additional possibility of deleting the patient from the database.



Deleting from the waiting list will only remove the patient from the screen list. All patient data remain in the database.

Whereas "Delete patient completely" means the patient will be removed from the database. This operation would be followed by a request for confirmation prior to deleting any patient from the database.





#### 2.4 Import patient data

Clicking "**Import**" in the patient symbol bar opens a new windows explorer window. From this window the patient file for import can be selected Selecting "**Open**" at the bottom right of this window will read the information from the selected file and open the patient within Blue Cherry. It is only possible to import files of the data type GRP (\*.grp). GRP is a Geratherm Respiratory specific file format.

Suchen in:	Blue Cherry		•	G 👌 📂 🗔 •	
æ	Name		Änderungsdatum	Тур	Größe
Zuletzt besuchte Orte	🍌 Config 🍌 de 🍌 en		07.02.2008 11:12 07.02.2008 15:47 07.02.2008 15:47	Dateiordner Dateiordner Dateiordner	
Desktop	DemoPatien	t <mark>.</mark> grp	16.01.2008 12:50	Microsoft-Progra	3
Joachim					
Computer	4		m		,
	Dateiname:	DemoPatien	t.grp	- E	Öffnen
<u>.</u>	Dateityp:	Geratherm F	Respiratory Patient (*.grp)	✓ Ab	brechen



#### 2.5 Export patient data

Clicking "**Export**" will open a similar Explorer window allowing the user to select the destination folder and name for the exported patient file. After selecting **"Save"** from the bottom right corner of the window the export file will be generated. The exported file will have the Geratherm Respiratory specific format \*.GRP.

Suchen in:	🌗 Blue Cherry		•	G 🤌 📂 🗔 🗸	
(Pa)	Name	A	nderungsdatum	Тур	Größe
Zuletzt besuchte Orte	퉬 Config 🍺 de 🌗 en	0 0 0	7.02.2008 11:12 7.02.2008 15:47 7.02.2008 15:47	Dateiordner Dateiordner Dateiordner	
Desktop	DemoPatien	grp 1	6.01.2008 12:50	Microsoft-Progra	3
Joachim					
	-3172		10140		
Computer	•	-	III		•
	Dateiname:	DemoPatient.gr	p	• E	Öffnen
<u>_</u>	Dateityp:	Geratherm Res	piratory Patient (*.grp)	→ At	brechen

#### 2.6 Modify patient data

Clicking the button **"Patient file"** or double click at any point on a patient file within the patient file list will open that file for editing. From the opened screen it is possible to change the details within the patients' actual file. Changing any of the patient fields' sex, birth date, height, weight or race will immediately change the predicted values for the actual day.

Patient file		
General Additional	Address	4 Þ
Patient ID	2	
Name	Smith	
First Name	John	
Sex	e male	⊙ female
Birthday	12 4 196	66 DD/MM/YYYY
Height	187 cm	
Weight	86 kg	
BMI	24,6 kg/r	n²
BSA	2,12 m²	
		Cancel Accept



#### 2.7 Set Ambient conditions

Clicking the button **"BTPS**" in the settings bar will open the ambient conditions window where it is possible to adjust the current values for ambient conditions of temperature, pressure and humidity. From these data, the so-called BTPS-Factor (<u>Body Temperature Pressure Saturated</u>) is calculated. It is needed for the conversion of ambient conditions (ATPS) to body conditions.



All Parameters measured by the Spirostik will be specified under BTPS conditions. In order to adjust measurements correctly it is very important to enter the correct ambient conditions. 2°C error in the temperature would cause a measurement error of 1%. The absolute pressure must be entered in the field ambient pressure.

BTPS	
Ambient temperature ( °C )	18,5
Ambient pressure ( hPa )	994
Ambient humidity (%)	51
Use Ambistik	Use Ambistik
	Cancel Accept

#### 2.8 Help Menu

Selecting the button **"Help"** will open a list of available user manuals for your device. The selected User manual will be shown in PDF viewer.





#### 2.9 Blue Cherry setup

Clicking the button **"Setup"** opens the configuration window for the Blue Cherry software. The setup screen allows the user to customise the appearance and performance of the Blue Cherry Suite.



Only experienced users should change the default settings of Blue Cherry.

Common buttons from the Setup Menu:

Button	Function
+	Add parameter or table
	Remove parameter or table
Ŷ	Change order of parameter move up
•	Change order of parameter move down
*	Setup, configure parameter values

The Setup menu is split into multiple sub-menus. The correct sub-menu is accessed automatically if setup is selected from within a test area of the Blue Cherry software.





#### 3. Setup Menus

In this section the user interface of the Blue Cherry Setup will be explained.

Selection are	a Selection field	Configuration window
Se up	Name Measurement type Unit Factor Decimal places Best is	
Patient data         PV0 cor ice           Patient data         PVC           Meximum         PVC           Medications         FEV15           Medications         FEV15           Medications         FEV15           Interfaces         FEV15           Interfaces         FEV15           Audit trail         FEV15           Devices         FEV3	verature sure sure idey X X X X X X X X X X X X X X X X X X X	d Renove Setup
Help Basic		Cancel Accept
Submenu	<ul> <li>Change between</li> <li>advanced and basic model</li> </ul>	Save or discard changes

#### 3.1 General

Clicking the **"Setup"** button will open the following display. The screen shows the verion number of Blue Cherry and the contact details for Geratherm Respiratory.

Setup		
General General Settings Product key Backups Databases	Cherry Version 1.2.2.1	Geratherm Respiratory GmbH Sparkassenpassage 1 97688 Bad Kissingen Germany Tel: +49 (0)971 / 785 70 43-0 Fax: +49 (0)971 / 785 70 43-30 support@geratherm-respiratory.com www.geratherm-respiratory.com
Parameters		
Patient data	_	
Printing	-	
Medications	_	
Measuring		
Comments		
Interfaces		
Devices		
Help	Basic	Cancel Accept

After opening the setup it will be displayed in the Basic mode, which allows changing the main settings of Blue Cherry. After clicking the "Advanced" button the advanced mode will open and offers the possibility to change all settings.

The following explanations for the setup program will only show the advanced mode.



#### 3.1.1 General – General

The General setup menu allows changing global settings of Blue Cherry and to view or change, by entering a new product key, the installed options. Subsequently the submenu will be explained.

General	Instructions	English
General		
Settings	Input assistance	None
Product key		
Backups		
Databases		
Parameters Patient data		
Viewing		
Printing		
Medications		
Measuring		
Comments		
Interfaces		

Settings	Function	
Instructions	Change the language for Blue Cherry	
Input assistance	It is possible to activate an input assistance for Blue	
	Cherry (useful with Tablet PC's or touch screens) The	
	User can choose between:	
	- None	
	- Built in on-screen keyboard	
	- External on-screen keyboard	



### 3.1.2 General – Settings

General	Export	Browse
General Settings	Import	Browse
Product key	Posot	
Backups	Nesei	Reset
Databases	Activate template	Browse
	Advanced Setup	Advanced setup as standard
	Advanced Setup	Login required
	Password	
	Repeat password	
Parameters		
Patient data		
Viewing		
Printing		
Medications		
Measuring		
Comments		
Interfaces		
Devices		

Settings	Function
Export	Choose a path and a name for the Export of all
	configuration settings of Blue Cherry. It is only
	possible to export files of the type GRS (*.grs).
	GRS is a Geratherm Respiratory specific format.
Import	Choose a path and a name for the Import of
	configuration settings. It is only possible to
	import files of the type GRS (*.grs). GRS is a
	Geratherm Respiratory specific format.
Reset	Reset all changes of Blue Cherry to the standard
	configuration.
Activate template	Choose a path and a name to activate a template
	with country-specific settings. It is only possible
	to activate files of the type GRS (*.grs). GRS is a
	Geratherm Respiratory specific format.
Advanced Setup	If selected, the setup will be started immediately
	in the advanced mode after clicking the setup
	button.



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Advanced Setup	If selected, a password key has to be entered in
	order to activate the advanced mode.
Password	Password to activate the advanced mode.
Repeat password	Repeat the password to activate the advanced
	mode.

Selecting the **"Import"** or **"Reset"** button will open a security question that has to be confirmed by clicking "Yes" in order to perform the changes.

#### Setup General Product key KVX21 **GVJEN** 4SLDI General Options SVC Settings F/V Product key MVV Backups Motivation Databases SpO2 Provocation Flow linearity check HR GDT-Interface CPET Lipox ECG-Interface Parameters REE Patient data Training planer ErgonizerInterface Viewing Body Printing CO Diffusion Medications MIP/MEP Measuring Breathing pattern Comments P0.1 Interfaces Compliance Devices Basic Cancel Accept Help

#### 3.1.3 General – Product Key

In the configuration field the product key as well as the corresponding software options for Blue Cherry will be displayed. This key can be changed to include further options; a new product key is available from the local Geratherm Respiratory partner.


### 3.1.4 General – Backups

Setup		
General General Settings Product key Backups Databases	Automatic backups Backup interval Differential backups Backup folder Backup file Contained backups	Automatic backups     Automatic backups     Differential backups     C:\Program Files (x86)\Microsoft S Browse Standard     GerathermRespiratory.bak
Parameters Patient data Viewing Printing Medications Measuring		
Comments Interfaces Devices	Create backup	Create
Help E	Basic	Cancel Accept

Settings	Function
Automatic backups	If activated, automated backups will be done
Backup interval	Backup interval for the automated backups
Incremental backups	If selected only files will be stored that had
	been changed or added after the last backup
Backup folder	Path to the backup file
Backup file	Name of the backup file
Contained backups	List of done backups
Create backup	Button to start the manual backup



### 3.1.5 General – Databases

General	Space limit	Limit size of databases	
Settings		40	GB
Product key	Auto orosto		
Backups	Auto-create	Automatically create a new database if necessary	
Databases	Databases	Add	
Parameters Patient data Viewing			
Printing			
Medications			
Comments			
Interfaces			
Devices			

Settings	Function	
Space limit	If activated the size of database will be limited tot he	
	entered value. Please note, the database size for SQL	
	Express installations is in general limited to 4GB.	
Auto-create	If activated a new database will be created if the	
	entered limit has been reached.	
Datenbanken	The currently used databases as well as their size will	
	be displayed. If Space limit has not been activated it's	
	possible to add a new database manually. This	
	database will only be used for ECG raw data.	



### 3.2 Parameters

In the menu section Parameter general settings for parameters as well as for the nominal values are possible. Subsequently the corresponding sub menu will be explained.

#### 3.2.1 Parameters – System of Units

General	Temperature	0
Parameters	rompordutio	<u> </u>
Systems of units	Pressure	hPa
Definitions	Length	
Reference values	Longui	Cui
Shared references	Weight	kg
Ethnic corr.	Speed	1
Additional test fields	Sheed	Km/n
Patient data Viewing		
Printing		
Medications		
Measuring		
Comments		
Interfaces		

Field	Description
Temperature	Set the unit for temperature
Pressure	Set the unit for pressure
Length	Set the Unit for length
Weight	Set the Unit for weight
Speed	Set the Unit for speed



# 3.2.2 Parameters – Definitions

Setup			
General Parameters Systems of units Definitions Reference values Shared references Ethnic corr. Additional test fields	F/V         •           FVCEx         •           FVCmax         •           IC         •           TY         IRV           ERV0.5         FEV0.55           FEV0.65         FEV0.65           FEV0.85         FEV0.85           FEV0.85         FEV3           FEV6         FEV3	Name Measurement type Unit Factor Offset Decimal places Best is Ranges	FEV1           F/V           I           1,000           0,000           2           Max of accepted           Add Remove Setup
Patient data Viewing Printing Medications Measuring Comments Interfaces Devices	HVT           FEV1/FVC           FEV1/FEV6           PEF           IPEF           PEF/FVC           PIF           Ev           EV           EV           MEF25           MEF50		1 2 3
Help	Basic		Cancel Accept

Field	Description
Name	Parameter Name
Measurement Type	Shows which measurement the parameter is
	associated with
Unit	Unit value used for parameter
Factor	Adjustment multiplication factor (this is usually
	required if the unit need to be changed)
Offset	Adjustment of an additive factor
Decimal places	Number of Decimal places to display
Best Is	Indicates how the best value is determined
Ranges	Allows to configure a bar graph with multiple
	colour areas similar to the FEV1 meter







Settings	Function
Name	Area name
Colour	Colour selection for the area
Lower limit	Value or formula for the lower limit of the area. The button "Setup" opens a powerful
	formula editor.
Upper limit	Value or formula for the upper limit of the area. The button "Setup" opens a powerful
	formula editor.



#### 3.2.3 Parameters – Reference Values

Setup			
General	4 • 🛉 🦊	Name	ECCS 1993
Parameters	Add Remove Up Down		2000 1000
Systems of units	ECCS 1993	Used	V Used
Definitions	ECCS 1993 extrapolated	Equations	
Reference values	Polgar 1971 Crapo 1981	Equations	Add Remove Setup
Shared references	Zapletal 2003 (3-6Y) Zapletal (6-17Y)		SVC, 18-24, m
Ethnic corr.	Forche 1995		SVC, 18-24, f SVC, 25+, m
Additional test fields	ALSM Ruhle AG Sproergometrie Wasserman/Hansen Cooper Inbar Jones 1985 Benedict Harris NHANES III Aerocnine Liverpool SFPAR (Sonin)	F	SVC. 25+, f ERV. 18-24m ERV. 12-4m ERV. 12-4m ERV. 12-4f ERV. 12-4f ERV. 12-4m FEV. 12-5m FEV. 12-5m FEV. 13-24f MEF25.25-5m MEF25.25-5m
Patient data	Stanojevic, AJRCCM 2008 (AI Ag		MEF25,18-24J MEF25,25+f
Viewing	Breuer		MEF50,18-24,m MEF50,25+,m
Printing	Stam		MEF50.18-24.f MEE50.25+ f
Medications	Quanjer 1971		MEF75,18-24,m MEE75,25, m
Measuring	Wilson 1984 Deutsche Atemwenslina		MEF75.18-24f
Comments	Hayot		MEF /5,25+f PEF,18-24,m
Interfaces	Pereira		PEF,25+,m PEF 18-24 f
Devices	Rosenthal		PEF.25+f
Help	Basic		Cancel Accept

In the selection range the list of authors appears. The first author in the list has the highest priority. By using the Up of Down button it is possible to change this priority. Any author unused will be shown in italics and greyed out in the list.

General	
Parameters	Add Remove Up Down
Systems of units	SEPAR (Spain) ECCS 1993
Definitions	ECCS 1993 extrapolated Polgar 1971
Reference values	Zapletal 2003 (3-6Y)

Field	Description
Name	Shows Authors Name
Used	Indicates if this author value set is used. In this system
	ticked box show the author is used.
Equations	Set the formulas for the nominal values.

Clicking the Setup button whilst having an equation selected will open the configuration window for that equation. The example shows the FEV1 value from the ECCS equation set for males with age higher than 25.

Reference set		
Name	FEV	1,25+,m
Parameter	FEV	1 Setup
Age (Min / Max)	25	70
Height (Min / Max)	0	999
Weight (Min / Max)	0	999
Sex	male	•
Ethnic group	Cauc	casian Setup
Condition		Setup
Reference value	4.30*	*(height/100)-0.029*age-2.49 Setup
RSD	0.51	Setup
ULN	ref(2	13)+0.84 Setup
LLN	ref(2	13)-0.84 Setup
L-Value		Setup
S-Value		Setup
		Cancel Accept

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Field	Description
Name	Name of the equation
Parameter	Parameter name
Age (Min / Max)	Age group for this equation
Height (Min / Max)	Height range for this equation
Weight (Min / Max)	Weight range for this equation
Sex	Selects the sex group for this equation Male,
	Female or Both
Ethnic Group	Selects the Ethnic group for this equation
	Caucasian, Black, Asian or all Ethnic groups
Condition	A condition for the use of this formula can be
	configured here.
Reference value	The formula for the reference equation
RSD	Shows the standard deviation from the desired
	middle value
ULN	Upper limit of Normal calculation
	(Normally + 1,64*SD)
LLN	Lower Limit of Normal calculation
	(Normally - 1,64*SD)

Clicking on the Setup keys will open a formula editor for each of the values.

Eq	uatic	'n									
				Equati	ion	4.30	)*(height/100)-	0.029*age-2	49		
	1	2	3		+		Power	Exp	Age	Pred.	Day
	4	5	6		·	7	Sqit	Min	Height	LLN	Best
	7	8	9		(	)	Ln	Мах	Weight	ULN	Effort
	0					7	Log	Abs	Smoker	RSD	
		Clear							Active		
									Car	icel	Accept



### 3.2.4 Parameters – Shared references

General		Name	VC
Parameters	Add Remove		
Systems of units	FVC	Parameters	4 • 1
Definitions	IC TV		Add Remove Up Down
Reference values	IRV		VC (SVC)
Shared references	TLC		VI (CO Diffusion)
Ethnic corr.	RV RV/TLC		VC (PFT) VCIn (PFT)
	Load (norm. weight) Load /ref Speed Elevation RPM HR HRR SpO2 SBP	E	
Patient data	DP		
Viewing	PaO2 PaCO2	/s02 PaC02	
Printing	Lactate		
Medications	HCO3		
Measuring	Mets		
Comments	Borg VO2		
Interfaces	VO2/kg VCO2		
Devices	RER	-	L

Field	Description
Name	Name of Parameter
Parameters	List of parameters which should use the same
	calculation for predicted value.



### 3.2.5 Parameters – Ethnic corr.

General	· · ·	Name	Caucasian-Asian: Lung volumos
Parameters	Add Remove		Caucasian Asian. Lung volumes
Systems of units	Caucasian-Black: Lung volumes Caucasian-Black: FRC	Convert from	Caucasian
Definitions	Caucasian-Black: Equal values	Convort to	
Reference values	Caucasian-North East Asian: Equal v	Convertito	Asian
Shared references	Caucasian-South East Asian: Lung V Caucasian-South East Asian: Equal v	Parameters	ф н
Ethnic corr.	Caucasian-Asian: Lung volumes Caucasian-Asian: Equal values		Add Remove
Additional test fields	Caucasian-Indian: Lung volumes Caucasian-Indian: Equal values		VC (SVC) VC (SVC) VDEx (SVC) PVDEx (F/V) PVDE (F/V) PEVD 5 (F/V) PEVD 5 (F/V) PEVD 5 (F/V)
		Reference factor	0,940
Patient data		LLN factor	0,940
Viewing		ULN factor	0.940
Madiantiana	_	B00 ( )	
Medications	_	RSD factor	0,940
Measuring	_		
Comments			
Devices			

Field	Description
Name	Name for the correction
Convert from	Select from which ethnic group you would like to
	convert
Convert to	Select into which ethnic group you would like to
	convert
Parameters	Select which parameters need to be converted
Reference factor	Correction factor to calculate reference value
LLN factor	Correction factor for Lower Limit of Normal
ULN factor	Correction factor for Upper Limit of Normal
RSD factor	Correction factor for standard deviation

In the above shown example the predicted value for Asian population for all parameters shown in the list will be calculated by multiplying the predicted value for Caucasion population by 0.94.



### 3.2.6 Parameters – Additional test fields

General	_  + - ↑ ↓	Name	
Parameters	Add Remove Up Down		
Systems of units		Data type	
Definitions			
Reference values			
Shared references			
Ethnic corr.			
Additional test fields			
Patient data			
Viewing	-		
Printing	-		
Medications	-		
Commonts	-		
Interfaces	-		
Devices	-1 1		
Devices			

Field	Description
Name	Name of test field
Data type	Data type of test field

-

#### 3.3 Patient Data

The section patient data allows changes in multiple settings for the patient data, patient cache, anonymisation and patient ID. Subsequently the corresponding sub menu will be explained.

#### General Creation Manual Parameters Length (max. 64) Patient data 20 Patient ID Leading zeros 📃 Leading zeros Patient cache Anonymisation Patient data fields Search masks Viewing Printing Medications Measuring Comments Interfaces Devices Help Basic Cancel Accept

#### 3.3.1 Patient Data – Patient ID

Settings	Description
Creation	Determines how the ID number is created:
	- Manual – User enters number for each subject
	- Sequential Number – Creates a sequential ID
	number
	- Patient informations – Automatic number
	created using characters from patient data: 3
	from name, 3 from first name and all date of
	birth.
Length (max. 64)	Length of the Patient ID number. A maximum of
	64 points is possible.
Leading zeros	If activated, the ID number will be filled up with
	leading zeros.



### 3.3.2 Patient Data – Patient Cache

lup		
General	Cache mode	Depends on user
Parameters	May search results	25
Patient data	Max. Sourch results	25
Patient to	Clear cache	Clear cache when program is closed
Anonymisation	Limit patients	Limit count of open patients
Patient data fields		
Search masks	Max. count	20
	Clear cache	Perform
Viewing		
Printing		
Medications		
Measuring		
Comments		
Interfaces		
Devices		
Help	Basic	Cancel Accept

Settings	Function
Cache mode	Select if the patient cache settings depend on
	user or workstation ID
Max. search results	Max. number of rows in the search results list
Clear cache	If activated the cache will be cleared if Blue
	Cherry is closed.
Limit patients	If activated, the number of opened patients
	will be set to the number defined in the row
	"Max. count".
Max. count	Max. number of opened patients
Clear cache	Clicking the "Perform" button clears the
	patient cache.



### 3.3.3 Patient Data – Anonymisation

-	Mode	Never anonymise
Parameters		
Patient data	Anonymisation	· · · · ·
Patient ID		Add Remove Setup
Patient cache		
Anonymisation		
Patient data fields		
Search masks		
Viewing		
Printing		
Medications		
MODELINDO	Single test export	Export stage information in single test export
Measuring		
Comments		

Settings	Function
Mode	Choose the anonymisation mode
Anonymisation	Shows how the patient files will be
	anonymised.

Never anonymise	~	Options for the
Always anonymise	4	field Mede
Ask for anonymisation		neid Mode
Never anonymise		

Settings	Function
Always anonymise	The patient files configured in the area
	"Anonymisation" will be anonymised before
	the export
Ask for anonymisation	Before anonymisation a question appears at
	export
Never anonymise	No anonymisation will be done





Options for the area Anonymisation

Settings	Function	
Element	Choose which patient files should be	
	anonymised	
Value	Define the way of anonymisation. In the	
	shown example the string "YYYYYYYYYYY" will	
	be shown instead of the first name.	

### 3.3.4 Patient Data – Patient data fields

Setup			and the second se
General Parameters	Add Remove Up Down	Name	Patient ID
Patient data	Patient ID Case number	Description	
Patient cache	First Name Sex	Store to	Patient +
Anonymisation	Date of birth Age	Show in	General •
Patient data fields Search masks	Height Weight BMI	Mandatory	Mandatory
	BSA IBW	Data type	Text -
	LastChangeDateDay LastChangeDateDay LastChangeDateMonth LastChangeDateYear Race Smoker Ex-Smoker Cigarettes/day Smoking years	Max. length	64
Viewing	Active		
Printing	Address 2		
Medications	ZIP		
Measuring	State		
Comments	_		
Devices			
Help	Basic		Cancel Accept



Settings	Description	
Name	Name of the patient data field	
Description	Description of the patient data field	
Store to	Determines where the data is saved	
	- Patient – store to the patient file	
	- Test date – stores specifically to the test date	
Show in	Determines where the data is shown in the	
	patient record:	
	- None – Data is not shown	
	- General – Shown under general tab	
	- Additional – Shown under additional tab	
	<ul> <li>- Advanced – Shown under advanced tab</li> </ul>	
	<ul> <li>- Address – Shown under address tab</li> </ul>	
Mandatory	Determines if the user is forced to complete this	
	field.	
Data type	Determine data type Select between; Boolean,	
	Value, List and Text	

Dependent upon which data type is selected further options may be available:



The data type Boolean sometimes known as the *logical data type*, is a data type having one of two values: for example on or off.

Examples of Boolean data type:

Smoker	Smok	ker	
Ex-Smoker	Ex-Sn	moker	
Data	type	Value	~
Mini	mum		
Maxi	mum		
	Unit		
Decimal pl	aces		



Field	Description
Minimum	Adjustment of the lower limit of the input value
Maximum	Adjustment of the Upper limit of the input value
Unit	Unit of input value
Digit	Number of decimal places for input value
Decimal places	Numer of decimal places

Data type	List
ltems	Add Remove
Enter new list	item
	Name
	Cancel Accept

The data type list allows the creation of a data type in the form of a selection list. Clicking on the 'ADD' button will allow entry of items to be included in the list.

Data type	Text	~
Max. length	-1	

Selection of the data type text allows a simple text field to be created; with the field **Max. length** the maximum allowable length of this field may be adjusted.



### 3.3.5 Patient Data – search masks

General	4 • 1	Name	
Parameters	Add Remove Up Down	Name	Exclosure:
Patient data	Basissuche	Visible	Visible
Patient ID	HL/	Search online	Soarch online
Patient cache		Search online	Search on mile
Anonymisation		Search criteria	+ = <b>↑</b>
Patient data fields			Add Remove Up Down
Search masks			Patient ID
Viewing		Shown columns	Add Remove Up Down Patient ID Name Fint Name Sev
Printing			Date of birth
Medications		Sorting the data	
Measuring		J	
Comments			Patient ID (ASC)
Interfaces			
Devices			

Field	Description	
Name	Name of the search mask. For each name a	
	selectable search mask will be shown in the	
	patient search window	
Visible	If activated, this search mask will be available	
Search online	If activated, the results of the search will be	
	shown immediately.	
Search criteria	Configuration of the criteria shown in the patient	
	search window	
Shown columns	Configuration of the columns shown in the	
	patient search window	
Sorting the data	Configuration of the sort sequence	

#### 3.4 Viewing

The viewing setup allows the configuration of the left selection area, the header and footer as well as the parameter tables and measurement options.

#### 3.4.1 Viewing – Pages



In

In the selection area there is a list of available buttons shown on the left side of Blue Cherry. By using the **Up** and **Down** button their position can be changed.

Field	Description	
Name	Name of the button	
Visible	If this box is not ticked then the relevant button will <u>not</u> appear in the left selection area of Blue Cherry.	
Pages	Button for adjustment of submenu order	





Using the **Up** and **Down** buttons it is possible to change the order of the sub menu. The button **Setup** opens a new configuration window where the selected sub menu can be made visible or invisible.

Pages	
Visible	Visible
	Cancel Accept



# 3.4.2 Viewing – Reports

General	4 • •	Name	Wasserman 9
Parameters	Add Remove Copy		Wassemano
Patient data	All	Caption	Wasserman 9
Viewing	SVC report (SVC)	Measurement type	CRET
Pages	F/V report (F/V) F/V challenge (F/V)	riododromoni (jpo	
Reports	F/V Intra-Day (F/V)	Shown procedures	SingleTest,PrePost,Prov Setup
Headers	SVC + F/V challenge report (SVC	Structure	Demenset
Patient info	Wasserman 9 (CPET)	Structure	Row count
SVC	Thresholds (CPET)		Wasserma Wasserma Wasserma
F/V	Lipox overview 2 (CPET)		n1 n2 n3
Resistance	CPET Breath-by-breath (CPET)		
TGV	Equidistant data (CPET)		Wasserma Wasserma Wasserma
CO Diffusion	Tidal loops (CPET)		
CPET	Blood gases (CPET)		Wassema Wassema Wassema
CPET Plots	ROCA (CPET) Training (CPET)		n7 n8 n9
CPET-Filtering	Training plan (CPET)		
Printing	Lactate (CPET)	Print comment	Print comment
Medications	Whipp 9 (CPET) Slopes (CPET)		
Measuring	Wasserman 9 (new) (CPET)		
Comments	Breath-by-Breath (REE)		
Interfaces	Body (Body) SVC (Body)		
Devices	FVC (Body) *		

Field	Description	
Name	Name of the report	
Caption	Caption of the report shown on the top	
Measurement type	Configuration of the measurements where this report will be available	
Shown procedures	Configuration of the test procedures where this report will be available	
Structure	Configuration of the report itself.	
Print comment	If activated the comment will appear on the report	



# 3.4.3 Viewing – Headers

General	- + · ·	Name	Default	
Parameters	Add Remove			
Patient data	(border	I emplate	-	•
Viewing		Height ( cm )	25	
Pages		Corothou	m Respiratory CmbH	
Reports		Gerathei	m Respiratory Gmbn	
Headers		D-9	arkassenpassage 1] 7688 Bad Kissingen	
Patient info		Ťel.:	+49 971 / 6 99 13 80	
SVC				
F/V				
Resistance				
TGV				
CO Diffusion				
CPET				
CPET Plots				
CPET-Filtering				
Printing				
Medications	_			
Measuring				
Comments				
Interfaces				
Devices				

Field	Description	
Name	Name of the header	
Template	Template selection for the header	
Height (cm)	Determines the height of the header in cm	

The text fields displayed in the header file can be individually selected for editing, the following window will open:

Setup text	and the second second
Text	Geratherm Respiratory GmbH
Font size	14
Colour	Setup
Font style	Bold
	🗖 Italic
	Cancel Accept

Field	Description	
Text	The Open text field	
Font size	Determines the font size used	
Colour	Determines the colour of the text; Setup button	
	will open a colour palette for choice.	
Font style	Determines the style of font to be used	



### 3.4.4 Viewing – Patient Info

General	Name	Tests
Parameters Add Remove	Multiple pages	Drint on overvinger
Patient data	Multiple pages	Philt off every page
Viewing	Height ( cm )	1,5
Pages	Eont cizo	
Reports	Fort Size	10
Patient info	Count of columns	3
SVC	Count of rows	
EN	Count of Tows	3
Resistance		Patient ID Sex Height
TGV		Name Date of birth Weight
C0 Diffusion		First Name Ade BMI
CPET		
CPET Plots		
CPET-Filtering		
Printing		
Medications		
Measuring		
Comments		
Interfaces		
Devices		

Field	Description	
Name	Name of patient info setting	
Multiple pages	If activated, the patient data will appear on every	
	page in protocols with multiple pages	
Height (cm)	Determines the height of the patient data fields	
Font size	Determines the font size	
Count of columns	Determines the number of columns	
Count of rows	Determines the number of rows	

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Patient ID	
Name	
First Name	
Sex	
Date of birth:	
BirthdayDay	
BirthdayWonth	
Ane	
Height	
Weight	
Race	
BMI	
BSA Smoker	
Fx-Smoker	
Cigarettes/day	
Smoking years	
Address	
Address 2	
7IP	
State	
Diagnosis	
Reference value	

When a field is selected a short selection menu is opened to allow the user to determine the contents of the selected field, thus configure the order of the patient data to the desired view.



# 3.4.5 Viewing – SVC

General	Values Best	According to ATS
Parameters		According to ATS
Patient data	Direction Ex	Downwards
Viewing	Graphics	1
Pages		Setup
Reports		SVC big
Headers		SVC smail
Patient info		
SVC		
F/V		
Resistance		
TGV		
CO Diffusion		
CPET		
CPET Plots		
CPET-Filtering		
Printing		
Medications		
Measuring		
Comments		
Interfaces		
Devices		

Field	Description	
Values Best	Choose whether the best values should be	
	calculated according to ATS or to the selected	
	best measurement	
Direction Ex	Allows configuration of the direction in which	
	expiratory flow is expressed.	
Graphics	Allows configuration of the Spirometry diagram.	
	The graph SVC big will be displayed in the	
	measurement SVC. The graph SVC small will be	
	displayed in the combined SVC + F/V	
	measurement.	

Selecting setup allows configuration of the spirometry diagram with a short menu.



Bar plot	Bar plot
Single stage	Best
Pre/Post	Setup
Provocation	Setup
Intra-Day	Setup

Field	Description	
Bar plot	If activated a bar chart will appear	
Single stage	Configuration for single stage test if the best, the	
	accepted or all test graph will be displayed	
Pre/Post	Configuration for pre/post test if the best, the	
	accepted or all test graph will be displayed	
Provocation	Configuration for provocation test if the best, the	
	accepted or all test graph will be displayed	
Intra-Day	Configuration for Intra-Day test if the best, the	
	accepted or all test graph will be displayed	



# 3.4.6 Viewing – F/V

General		
Patient data Viewing Page Reports Headers Patient info SVC F/V Resistance TGV	Values Best Direction Ex Graphics	According to ATS
Corr CPET Plots (PET-Filtering) Printing Medications Measuring Comments Interfaces Devices	ATS criteria	- EV tox Plateau

Field	Description	
Values Best	Choose whether the best values should be	
	calculated according to ATS or to the selected	
	best measurement	
Direction Ex	Allows configuration of the direction in which	
	expiratory flow is expressed default is Expiratory	
	Undefined	
Graphics	Allows configuration of the Spirometry diagram.	
	The graph <b>F/V big</b> will be displayed in the	
	measurement F/V small will be displayed in the	
	combined SVC + F/V measurement.	
ATS criteria	Allows to choose which ATS criteria's will be	
	proved to mark a F/V measurement as	
	"Acceptable". Multiple choices are possible.	

Selecting setup allows configuration of the Flow Volume diagram with a short menu:

Geratherm

F/V graphic	
Tidal loops	Tidal loops
FEV1 plot	No visualisation 👻
V/t: Only expiration	V/t: Only expiration
Time axis V/t	0-6 •
Single stage	Best
Pre/Post	Setup
Provocation	Setup
Intra-Day	Setup
	OK Cancel

Fields	Description	
Tidal Loops	If activated the tidal loops will be displayed in	
	the final Flow volume curve.	
FEV1 plot	Allows to choose whether no visualisation or a	
	Flow/Time plot or a FEV1 graph should be	
	displayed	
V/t Only expiration	Determines if the Volume time curve only	
	displays expiratory data.	
Time axis V/t	Allows selection of the time frame used for	
	display of the Volume time curve in the	
	flow/volume measurement. It is possible to	
	choose between 0-6s, 0-10s, 0-30s, 0-60s.	
Single stage	Configuration for single stage test if the best, 1	
	accepted or all test graph will be displayed	
Pre/Post	Configuration for pre/post test if the best, the	
	accepted or all test graph will be displayed	
Provocation	Configuration for provocation test if the best, the	
	accepted or all test graph will be displayed	
Intra-Day	Configuration for Intra-Day test if the best, the	
	accepted or all test graph will be displayed	



### 3.4.7 Viewing – Resistance

Setup		
General Parameters Patient data Viewing Page Repots Heades Patient info SVC F/V Resistance TGV CO Diffusion OPET OPET Filterion VECFFilterion Printing Medications Measuring Comments Interfaces Devices	Calculation Best is Reference lines Graphics	Ulmer
Help E	Basic	Cancel Accept

Settings	Function
Calculation	Configuration of the Resistance method. The User can select between: Ulmer, Matthys and R0.5
Best is	Configuration of the best value selection. The User can choose between: Selected and Mean of all accepted
Reference lines	Configuration of the Reference lines. The User can choose between: no reference lines, +/- 0,5 l/s and +/- 1 l/s
Graphics	Allows configuration of the resistance graph

Selecting setup allows configuration of the resistance diagram with a short menu.





Fields	Description	
Single stage	Configuration for single stage test if the best, the	
	accepted or all test graph will be displayed	
Pre/Post	Configuration for pre/post test if the best, the	
	accepted or all test graph will be displayed	
Provocation	Configuration for provocation test if the best, the	
	accepted or all test graph will be displayed	
Intra-Day	Configuration for Intra-Day test if the best, the	
	accepted or all test graph will be displayed	



# 3.4.8 Viewing – TGV

Setup		
General Parameters Patient data Viewing Pages Reports Reports Reports Reports Resistance FrV Resistance FrV Resistance FrV Resistance Frev Copifications Measuring Comments Interfaces USers Audit trail Devices	Shown curve Graphics	Inspiratory and Expiratory
Help E	lasic	Cancel Accept

Settings	Function
Shown curve	Configuration of how the TGV curve will be displayed.
	The User can select between only inspiration and
	inspiration and expiration
Graphics	Allows configuration of the TGV graph

Selecting setup allows configuration of the TGV diagram with a short menu.

Setup Resistance graphic	
Single stage	Best
Pre/Post	Setup
Provocation	Setup
Intra-Day	Setup
	OK Cancel



Fields	Description
Single stage	Configuration for single stage test if the best, the
	accepted or all test graph will be displayed
Pre/Post	Configuration for pre/post test if the best, the
	accepted or all test graph will be displayed
Provocation	Configuration for provocation test if the best, the
	accepted or all test graph will be displayed
Intra-Day	Configuration for Intra-Day test if the best, the
	accepted or all test graph will be displayed



# 3.4.9 Viewing – CO Diffusion

General	Gas/Volume	Show gas/volume-plot
Parameters	o	- 5 1
Patient data	Shown bars	According selected tests
Viewing	Hb correction	Show button for HB correction
Pages		
Reports	PaO2 correction	Show button for PaO2 correction
Headers	COHh correction	Show button for COHB correction
Patient info		
SVC	Post-Editing	Sample volume changeable
F/V	ATC antaria	
Resistance	ATS citteria	-
TGV		V//VC the
CO Diffusion		Breath hold
CPET		Valsalva
CPET Plots		Muller
CPET-Filtering		tEx
Printing		tSample
Medications		Breath hold time > 8s
Measuring		Breath hold time < 12s
Comments		No leak
Interfaces		Start or inspiration
Devices		

Settings	Function
Gas/Volume	If activated the graph Gas/Volume will be
	shown
Shown bars	Configuration of how the diffusion graph will
	be displayed. The User can select between
	selected test and only best.
Hb correction	If activated the button for Hb correction will be
	displayed
PaO2 correction	If activated the button for PaO2 correction will
	be displayed
COHb correction	If activated the button for COHb correction will
	be displayed
Post-Editing	If activated it is possible to change the sample
	volume after the measurement
ATS criteria	Selection which ATS criteria will be taken into
	account. It's possible to select multiple entries.

# 3.4.10 Viewing – CPET

General	Last load	Interpolate
Parameters Patient data	Exp. duration	120
Viewing	PaO2 @ EOL	No estimation
Pages	Paco2 @ EOI	
Header	1 4002 @ 202	No esumation
Patient info	HR/VO2-Range	Use measured resting values for HR/VO2-Range
SVC	Data editor	Enable test data editor
F/V Resistance	Editor login	Login required
TGV	Password	
CO Diffusion		
CPET	Repeat password	
CPET Plots	Quick info	Max. effort, Detection AT, Detection RCP, Training r Setup
Printing	Wizard	Max effort Detection AT Detection BCP Interpret: Setup
Medications		
Measuring	Max effort criteria	Plateau in VO2,RER,Lactate,HRR,Bf,Borg Setup
Comments	MaxVO2 Detection	Setup
Interfaces Devices	Detection AT	RER=1,VE/VO2 / Time,V-Slope,VE / VO2 Deflecti Setup

Settings	Function
Last load	If activated, the maximal reachable load will be
	calculated by using the real stage duration of
	the last load stage.
Exp. duration	Time in s after which point the final load level is
	taken as the maximum load level.
Blood gases	If activated the blood gases at maximum load
	will be interpolated with the last values
Data editor	If activated it is possible to edit the data
	manually after the measurement
Editor login	If activated a password is needed to start the
	data editor
Password	Password to log into the data editor
Repeat password	Repeat password to log into the data editor
Quick info	Configure which short information should be
	displayed during changing the measurement.
	All possible quick info can be opened by the
	Setup button. It's possible to select multiple
	entries by using the CTRL-Key.
Wizard	Configure which values the integrated wizard



	should display. All possible values can be
	opened by the Setup button. It's possible to
	select multiple entries by using the CTRL-Key.
Max. effort criteria	Configure which criteria should be displayed for
	the detection of a max effort. All possible
	criteria can be opened by the Setup button. It's
	possible to select multiple entries by using the
	CTRL-Key.
MaxVO2 detection	Configuration of filter settings used for
	VO2max detection
Detection AT	Configure which parameters should be
	displayed for the detection of the AT. All
	possible parameters can be opened by the
	Setup button. It's possible to select multiple
	entries by using the CTRL-Key.
Detection RCP	Configure which parameters should be
	displayed for the detection of the RCP. All
	possible parameters can be opened by the
	Setup button. It's possible to select multiple
	entries by using the CTRL-Key.
Name AT	Labeling for AT cursor can be modified
Name RCP	Labeling for RCP cursor can be modified


#### 3.4.11 Viewing – CPET Plots

Setup			
General Parameters Patient data Viewing Patient info SVC F/V Resistance ToV CODIFusion CPET CPET Mots CDET-Filtering Stress ECC Polis BET Filids VERTING Medications Measuring Comments Interfaces Devices	Add Renove Copy Vaserman 2 Vaserman 3 Vaserman 4 Vaserman 5 Vaserman 6 Vaserman 7 Vaserman 7 Vaserman 7 Vaserman 7 Vaserman 8 Stod pressure Lactate Bood pressure Lactate Bood pressure Lactate Exclamation 4 Bood pressure Lactate Exclamation 4 Lactate Exclamation 4 Bood pressure Exclamation 4 Bood pressure Lactate Exclamation 4 Bood pressure Lactate Exclamation 4 Bood pressure Lactate Exclamation 4 Bood pressure Lactate Exclamation 4 Bood pressure Lactate Exclamation 4 Bood pressure Lactate Exclamation 4 Bood pressure	Name X-Axis Y-Axis 1 Y-Axis 2 Y-Axis 3 Y-Axis 4 Cursors Regression	Wasserman 3       Time     Setup       VO2     Setup       VC02     Setup       Setup     Setup       AT,Begin peakVO2,End p     Setup       VO2 / Time     Setup
Help	Basic		Cancel Accept

Settings	Function
Name	Name of the graph
X-Axis	Parameter of the X-Axis
Y-Axis 1	Parameter of the Y-Axis 1
Y-Axis 2	Parameter of the Y-Axis 2
Y-Axis 3	Parameter of the Y-Axis 3
Y-Axis 4	Parameter of the Y-Axis 4
Cursors	Configure which cursor should be displayed in the
	graph. It is possible to choose multiple cursors by
	pressing and holding the STRG-key.
Regression	Preferences for regression lines

After clicking the **Setup** button for the X-Axis, the following settings could be done:



Setup x-axis	
Parameter	Time Setup
Ref. values	Add Remove Setup
Scaling	Add Renove Setup 0 - 500 0 - 720 0 - 300 0 - 1200
Load profile	✓ Load profile shown in graphic
Scaling	Load or Speed
	Cancel Accept

Settings	Function	
Parameter	Clicking the Setup button can choose the	
	parameter for the X-Axis.	
Ref. values	Configure the ref. values for the selected	
	parameter.	
Scaling	Configure the scaling	
Lastprofil	If activated the load profile will be shown in the	
	graphic	
Scaling	Choose the scaling for the X-Axis. The user can	
	chose between:	
	- Time	
	- Load	
	<ul> <li>Load or Speed</li> </ul>	
	<ul> <li>HR at end of load stage</li> </ul>	



After clicking the **Setup** button in of the lines of the Y-Axis the following settings can be made:

Parameter	VE	Setup
Colour		Setup
Curve mode	Line	1
Thickness	Normal	
Ref. values	Add Remove Solup Measured or predicted ( MVV )	
Scaling	Add Reaves Setup 0-80 0-105 0-125 0-155 0-155 0-150 0-200 0-200	
Filter mode	0 - 250 Combined Filter	-
Filter depth	11	-
Presentation mode	All data	1
Interval		
Phases	Rest,Warmup,Load,Recovery	Setup

Settings	Function
Parameter	Clicking the Setup button can choose the
	parameter for the Y-Axis.
Colour	Choose the colour for this Y-Axis
Curve mode	Choose whether lines or points should be
	displayed
Thickness	Configure the strength of the line
Ref. values	Configure the Ref. values for the selected
	parameter
Scaling	Configure the scaling
Filter mode	Configure the filter mode. Moving median
Filter depth	Configure the depth of the filter
Presentation mode	Configure which data should be displayed.
Interval	Time interval for the presentation in s
Phases	Choose which phases should be displayed. It is
	possible to choose multiple phases by pressing
	and holding the STRG-key

After clicking the pull-down menu in the row filter mode one of the following points can be selected:



Combined Filter	
No filtering	
Combined Filter	
Moving average Moving median	
Settings	Function
No filtering	No filtering; only the raw data will be displayed
Combined Filter	The data will be sorted and then the main of
	the middle area will be selected
Moving average	The data is summed up the whole time and
	divided by the amount of data.
Moving median	The data is sorted and only the main will be
	used.

After clicking the pull-down menu in the row of presentation the following will be displayed:

All data	~
All data	
Fix time intervals	
Average of load stage	
Begin of load stage	
End of load stage	

Settings	Function
All data	All measured data will be displayed
Fix time intervals	The measured values are shown averaged in
	accordance with the conditions laid down in
	the line time interval
Average of load stage	All measured values of a stage are averaged
	and presented in a value
Begin of load stage	All measured values of a load stage are shown
	averaged according to the scheduled time
	interval in the line interval to the start of stage.
End of load stage	All measured values of a load step are shown
	averaged according to the scheduled time
	interval in the line interval to the end of stage.

After clicking the **Setup** button in the phase line, the following settings could be done:





Choose which phases should be shown. It is possible to select multiple choices by pressing and holding the STRG-key

After clicking the **Setup** button in the cursor line of the CPET plot screen, the following settings could be done:

Selectionsons	and the second second
Table	
Begin Load	
AT	
RCP	
LTP1	
LIP2 Designment/02	
End peak/02	
MaxLoad	
Lipox	
Crossing	
Begin recovery	
Start Hest	
Endriest	
Cancel	Accept

Choose which cursors should be shown. It is possible to select multiple choices by pressing and holding the STRG-key



After clicking the **Setup** button in the regression line, the following settings could be done:

Y-Axis			Setup
Change direction	None		
Calc start		relative	
Calo, end		relative	
Change min x		relative	
Change max x		relative	
Calculation limits	Show cursor	s to limit calculation	
Show for line 1	C Offset	1 Digit	
	🗆 ind	1 Digit	
Show for line 2	Coffset	0 Digits	
	[] Ind	0 Digits	
Fix inclination	Use a ficincle	nation for line 1	
Inclination			
Min, offset			
Max offset			

Settings	Function	
Y-Axis	Choose the parameter for the calculation of	
	regression	
Change direction	Allows choosing the regression line(s). There	
	are:	
	- None: Only one line	
	- Both: 2. Line flatter or steeper	
	- Upwards: 2. Line has to be steeper	
	- Downwards: 2. Line has to be flatter	
Calc. start	Start of calculation of the regression as an	
	absolute value or relative to the maximal value	
Calc. end	End of calculation of the regression as an	
	absolute value or relative to the maximal value	
Change min x	Minimal position of the change point if the 2.	
	Line is calculated	
Change max x	Maximal position of the change point if the 2.	
	Line is calculated	
Calculation limits	If activated the LL and UL cursors will be shown	
Show for Line 1 - Offset	Show Offset to regression line 1	
Show for Line 1 - Incl	Show Incl to regression line 1	
Show for Line 2 - Offset	Show Offset to regression line 2	
Show for Line 2 - Incl	Show Incl to regression line 2	
Fix inclination	If activated, the regression line 1 has always	
	the specified slope	



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Min. Offset	Minimal Offset of regression line 1
Max. Offset	Maximal Offset of regression line 2
Allowed Y-deviation	Allowed Y-deviation at the calculation of the regression line

#### 3.4.12 Viewing – CPET filtering

The filter settings can be changed for each graphic separately as shown in the previous chapter or like explained in the following for all graphics globally, for all time-based graphics or for all not time-based graphics.

Setup		
General     All time based       Patient data     All non-time based       Patient info     All non-time based       SvC     F/V       Resistance     F/V       Co Diffusion     CPET-Filtering       Strese ECG     Strese ECG Polis       REE Polis     Printing       Medications     Measuring       Comments     Interfaces       Devices	Filter mode Filter depth Presentation mode Interval	Mxed   Mxed   Al data
Help Basic		Cancel Accept

Settings	Function
Filter mode	Define the filter mode
Filter depth	Define the filter depth
Presentation mode	Define which data should be
	presented
Interval	Time interval for display in s



# 3.4.13 Viewing – Stress ECG

etup		
General Parameters Patient data Viewing Patient info  SvC F/V Resistance TGV CO Diffusion CPET CPET Plots CPETFiltering Stress ECG Plots REE Plots REE Plots Printing Medications Measuring Comments Interfaces Devices	Last load Exp. duration PaO2 @ EOL PaCO2 @ EOL	Interpolate 120 No estimation No estimation
Help	Basic	Cancel Accept

Settings	Function
Last load	If activated, the maximal reachable load will be
	calculated by the real reached stage duration of
	the last load.
Exp. duration	Time in s after which point the final load level is
	taken as the maximum load level.
PaO2 at EOL	Configuration if PaO2 should be extrapolated at
	end of load
PaCO2 at EOL	Configuration if PaCO2 should be extrapolated
	at end of load



#### 3.4.14 Viewing – Stress ECG Plots

General 🔶 🖬	Name	Overview	
Parameters Add Remove Copy	X-Avis	Timo	Sotup
Viewing	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Time	Jeiup
Patient info	Y-Axis 1	HR	Setup
svc	Y-Axis 2	DBP	Setup
F/V	V Avia 2	0.00	
Resistance	1-1015 3	SpO2	Setup
TGV	Y-Axis 4	SBP	Setup
C0 Diffusion	Cureore		Ostur
CPET	Guisois		Setup
CPET Plots	Regression		Setup
CPET-Filtering			
Stress ECG Plate			
REF Plots			
Printing			
Medications			
Measuring			
Comments			
Interfaces			
Devices			

Settings	Function
Name	Name of the graph
X-Axis	Parameter of the X-Axis
Y-Axis 1	Parameter of the Y-Axis 1
Y-Axis 2	Parameter of the Y-Axis 2
Y-Axis 3	Parameter of the Y-Axis 3
Y-Axis 4	Parameter of the Y-Axis 4
Cursors	Configure which cursor should be displayed in the
	graph. It is possible to choose multiple cursors by
	pressing and holding the STRG-key.
Regression	Preferences for regression lines

The detailed possibility for settings has been described already in the chapter CPET.



#### 3.4.15 Viewing – REE Plots

Setup			
General	Name X-Axis Y-Axis 1 Y-Axis 2 Y-Axis 3 Y-Axis 4	Overview Time VO2 HR VCO2	Setup Setup Setup Setup Setup
Help Basic		Cancel	Accept

Settings	Function	
Name	Name of the graph	
X-Axis	Parameter of the X-Axis	
Y-Axis 1	Parameter of the Y-Axis 1	
Y-Axis 2	Parameter of the Y-Axis 2	
Y-Axis 3	Parameter of the Y-Axis 3	
Y-Axis 4	Parameter of the Y-Axis 4	

The detailed possibility for settings has been described already in the chapter CPET.



#### 3.4.16 Viewing - Tables

Setup				
General	Add Remove	Name	SVC	ŀ
Patient data	SVC + F/V	Parameters	4 = <b>†</b> 4	
Viewing Stress ECG	MVV Body		Add Remove Up Down	Ш
Stress ECG Plots	TGV Resistance		ERV TV	Ш
REE Plots	Resistance + TGV CO Diffusion		IVC VCEx	ш
Tables	CO-Diffusion online Respiratory drive		IRV	
Tables general	P0.1 MIRIMER			
Trends	Compliance			
Text fields	Static compliance online Dynamic compliance online			=
Footers	CPET: Pre F/V Challenge F/V			
Training ranges	Challenge SVC			
Training units	Challenge Body Challenge Body	Printout zoom	75 %	ш
Training plans	SVC trend	Disastian		11
	SVC + F/V trend	Direction	Left> Right ···	11
Printing	Trend CPET	Parameter infos	Unit.Pred. Setup	ш
Medications	Trend Body	Data		11
Measuring	Trend CO Diffusion	Data rows	Setup	
Comments	TGV trend	Test caption	Medication	
Interfaces	Compliance			
Devices	Stress ECG *	Test information	Setup	-
Help	Basic		Cancel Accept	

For each table of Blue Cherry there is an entry in the selection area available. The following settings can be done in the configuration area:

Field	Description
Name	Name of Table
Parameters	Parameters may be added or removed from
	tables as desired using the buttons at the top of
	the section. The order in which the parameter
	appears in the table may also be adjusted.
Printout Zoom	Zoom in or out of the table for the expression
Direction	Configure the direction of the table; parameters
	may be displayed from Left to Right or Top to
	Bottom.
Parameter Info	Determines which values for the parameter will
	be displayed.
Data Rows	Adjust the information to be displayed to the
	parameter
Test Caption	Adjust the header information for the test
Test Information	Determines which additional information for
	each measurement should be displayed



Clicking the **Add** button will open a selection window for adding parameters to the selected table.

Select parameter       Al       VCCx       TV       IC       IRV       ERV       TLC       RR       Ambert pressure       Ambert pressure       Ambert pressure       Ambert pressure       PCD       FEV0.55       FEV0.55       FEV0.85       FEV0.85       FEV0.85       FEV0.85       FEV0.85       FEV0.85       FEV0.95       FEV1.7PC       FEV1.7PC	<ul> <li>Drop down Menu for selection of parameter group, by default all available parameters are displayed</li> <li>List of available parameters for adding to the table</li> </ul>
Select shown element(s)	hisplayed window after clicking he setup button in the line arameter infos. Multiple choices re possible by pressing and olding the STRG-Key.
ettings	Function
	Blank line
Init	Displays the parameter unit
red.	Displays the predicted value
LN	Display lower set point limit
ILN	Display upper set point limit
SD	Display relative standard deviation
xpected range	Displays the expected range in
	which the value should lie

Respiratory

Geratherm

Setup shown values		
Shown efforts	According to selection	~
Pre, Efforts	Value,%Pred.	Setup
Pre, Stage	Value,%Pred.	Setup
Placebo, efforts	Value,%Pred.	Setup
Placebo, stage	Value,%Pred.	Setup
Post, efforts	Value,%Pred.,%Change	Setup
Post, stage	Value,%Pred.,%Change	Setup
Provocation, efforts	Value,%Base	Setup
Provocation, stage	Value,%Base	Setup
Intra-Day Efforts	Value,%Change	Setup
Intra-Day Slots	Value,%Change	Setup

Display after clicking the setup button of the line data rows.

Fields	Description
Shown effort	Adjust which efforts should be shown
Pre, Efforts	Adjust the values shown with each pre
	measurement
Pre, Stage	Adjust values displayed in Best of stage pre
Placebo, efforts	Adjust the values shown with each placebo
	measurement
Placebo, stage	Adjust values displayed in Best of stage placebo
Post, efforts	Adjust the values shown with each Post
	measurement
Post, stage	Adjust values displayed in Best of stage post
Provocation, efforts	Adjust the values shown with each provocation
	measurement
Provocation, stage	Adjust values displayed in Best of stage
	provocation
Intra-Day, efforts	Adjust the values shown with each intra-day
	measurement
Intra-Day, slots	Adjust values displayed in Best of slot intra-day



Clicking the **setup** button in each line opens this selection menu. It is possible to select multiple elements by pressing and holding the STRG-Key.



Test caption	Medication	~
lest information	Stage Time Medication	4

Display after clicking the pulldown menu in the line **test caption**.

Field	Description
-	Blank line
Value	Displays the measured value
%Pred	Displays percentage of predicted
% Base	Displays the percentage of the base value (e.g.
	85%)
Z-Score	Displays the Z-Score
	Z-Score = (Value – Predicted)/Standard devation
% Change	Displays the percentage change (e.g15%)
Change	Displays the absolute change
Stage diff.	Displays the absolute stage difference
%Diff. Stage	Displays the percentage change of the stage
Option	Description
Stage	Indicate the stage designation e.g. Pre / Post
Time	Indicate the time
Medication	Indicate the medication in use



Stage	
lime	

Display after clicking the Setup button in the line **Test infos**. Multiple choices can be made by pressing and holding the STRG-Key or Mouse.

Option	Description
-	Blank line
Stage	Indicate the stage designation e.g. Pre / Post
Time	Indicate the measurement time
Medication	Indicate the medication in use
Quality Class	Indicate the Quality Class (A, B, C, D or F) from
	ATS



### 3.4.17 Viewing – Tables general

General	Reference authors	☑ Footnotes for reference authors
Parameters Patient data	Reference conversion	Footnotes for references converted from other ethnic group
Viewing	Guidelines	Footnotes for calculation not according to guidelines
Stress ECG   Stress ECG Plots	Interpolation	✓ Interpolation
REE Plots	Extrapolation	Footnotes for extrapolated values
Tables general		
Trends		
Text fields		
Footers		
Training ranges		
Training units		
Training plans		
Printing		
Medications		
Measuring		
Comments		
Interfaces		
Devices		

Fields	Description
Reference authors	If activated the footnote will show information about
	used reference authors
Reference conversion	If activated the footnote will show information about
	conversion of predicted values from other ethnical
	groups
Guidelines	If activated footnote will show information about
	calculations which are not according to guidelines
Interpolation	If activated footnote will show information about
	interpolated values
Extrapolation	If activated footnote will show information about
	extrapolated values



#### 3.4.18 Viewing - Trends

General	F/V challenge	Y-Axis 1	FEV/1	Sotu
Parameters	F/V trend			Jeta
Patient data	MVV trend	Y-Axis 2	-	Setu
Viewing	CPET trend REE trend	Y-Avis 3		Sotu
Stress ECG	Trend Body Challenge Body	1 / 040 0		Jeiu
Stress ECG Plots	CO Diffusion trend	Y-Axis 4	-	Setu
REE Plots	F/V Intra-Day			
Tables	Compliance Stress ECG			
Tables general				
Trends				
Text fields				
Footes				
Training ranges				
Training units				
Training plans				
Printing				
Medications				
Measuring				
Comments				
Interfaces				
Devices				

For every trend in Blue Cherry exists an entry in the selection area. Up to 4 trend parameters (Y-Axis 1 to Y-Axis 4) can be defined in the configuration area. After clicking the **Setup** button in one of these lines the following configuration window will be displayed:

1 Grannerer	1 1 4 4	
	Sector Contraction	ovidp
Colour	8	Setup
Thickness	Normal	~
Scaling	Add Remove Setup	
Trend mode	Percent base	~
Lower limit	Show limit	
Upper limit	Show limit	
Extrapolate	Extrapolate	
Ranges	Add Remove Setup	



Field	Description
Parameter	The setup button opens a new window where
	the parameter can be selected
Colour	Select the colour. After clicking the setup button
	a window for the selection of the colour appears.
Thickness	Configure the thickness of the line
Scaling	Configure the scaling
Trend Mode	Drop down menu for Trend Mode
Colour	Select the colour for the display of the trend line
Lower Limit	Selection for display of lower limit, if active the
	lower limit value can be entered into the text
	box
Upper Limit	Selection for display of Upper limit, if active the
	Upper limit value can be entered into the text
	box
Extrapolate	Selection for extrapolation if activated the trend
	curve will be extrapolated.
Ranges	A display range can be defined for the parameter



Display after clicking the drop down menu of the trend mode.

Option	Description
Absolute	Selects the absolute measured value
Percent reference	Selects the percent of reference value (e.g. 85%)
Percent Base	Selects the percent of base value (e.g. 85%)
Delta percent	Indicates percent deviation from reference (e.g
reference	15%)
Delta percent base	Indicates the percent deviation from Base (e.g
	15%)



#### 3.4.19 Viewing – Text fields

Using the function text fields, which is described below, a very powerful tool is available to create custom reports.

General	4 • •	Name	Linox Report 1
Parameters	Add Remove Copy		Elport toport 1
Patient data	Lipox Report 1	Main measurement	CPET
Viewing	Missing license	Editor	Open
Stress ECG [	Spirometry table Body table	Luitor	Open
Stress ECG Plots	Diffusion table		
REE Plots	Training leaflet paragraph 2		
Tables	Training leaflet paragraph 3 Training leaflet paragraph 4		
Tables general	Training leaflet paragraph 5		
Trends			
Text fields			
Footers			
Training ranges			
Training units			
Training plans			
Printing			
Medications			
Measuring			
Comments			
Interfaces			
Devices			

For every text field exists an entry in the selection area. The following settings can be made in the configuration area:

Settings	Function
Name	Name of the text field
Measurement	Configuration of the measurement where
	the text field will be available
Editor	Button to open the settings of the text field



After clicking the **Open** button the settings of the selected text field will be displayed.

	Row count	8
2 ×	<localte< th=""><th>xt 1172&gt;</th></localte<>	xt 1172>
2 <loc< th=""><th>alText 1173&gt;</th><th><effort 717=""> <unit 717=""></unit></effort></th></loc<>	alText 1173>	<effort 717=""> <unit 717=""></unit></effort>
2 <loc: 719&gt;</loc: 	alText 1174>: <effort 719=""> <unit< td=""><td><effort 718=""> <unit 718=""> <localtext 1176&gt; <localtext 1408=""></localtext></localtext </unit></effort></td></unit<></effort>	<effort 718=""> <unit 718=""> <localtext 1176&gt; <localtext 1408=""></localtext></localtext </unit></effort>
* <loc< td=""><td>alText 1175&gt;</td><td><effort 713=""> <unit 713=""></unit></effort></td></loc<>	alText 1175>	<effort 713=""> <unit 713=""></unit></effort>
Image: Second s	alText 1174>: <effort 715=""> 715&gt;</effort>	<effort 714=""> <unit 714=""> <localtext 1178&gt; <localtext 1408=""></localtext></localtext </unit></effort>

By clicking the **Row count** button the number of rows for each row could be changed. By clicking on the left side the number of columns can be changed. And by pressing the arrow keys it is possible to change the order of the rows.

Clicking one of the text fields opens the following window:

Setup text	
Width	100.0 %
Text	Auto Info (LocalTex 172)
Font size	14
Background	Setup
Colour	Setup
Font style	☑ Bold
	□ Italic
Horizontal alignment	Center
Vertical alignment	Тор
	Cancel Accept



Settings	Function
Width	Text field width in percent of the entire width
Text	Configuration of the displayed text
Font size	Adjust the font size
Background	Adjust whether the text field should have a
	background
Colour	Clicking the setup button opens a window
	where the text colour can be selected
Font style	Adjust the font style
Horizontal alignment	Adjust whether the text should be displayed on
	the left, in the center or on the right
Vertical alignment	Adjust whether the text should be displayed on
	the left, in the center or on the right

It is possible to display text as well as Auto Information within the text fields. Auto Informations can include patient data, measurement results, user-defined selection areas as well as other information's on the performed measurements. The following displays the possible Auto Information types:



Depending on the selected information type, different choices are available in the field **Parameter**.



#### 3.4.20 Viewing – Footers

Setup		
General     Add Remove       Parameters     Add Remove       Patient data     Calibrations       Viewing     Stress ECG Poils       Stress ECG Poils     Efficies       Tables     Tables       Tables     Tables       Training name     Training name       Training name     Training name       Training name     Printing       Medications     Measuring       Comments     Interfaces       Devices     Devices	Name Show authors Count of columns Count of rows	Tests Show authors
Help Basic		Cancel Accept

Blue Cherry allows the configuration of footers for the bottom of the printed report these can be configured under the menu Viewing – Footers.

Settings	Function
Show Authors	Shows the list of authors used for the reference
	value set
Count of Columns	Determines the number of columns in the
	footer
Count of Rows	Determines the number of Rows in the footer

After clicking a footer element a selection windows opens. Here it is possible to select an element and by clicking the **Accept** button it is possible to include the selected element into the footer.



#### 3.4.21 Viewing – Training ranges

	Name	Threshold (RCP) modell	
Parameters Add Remove Copy Patient data Viewing Viewing Viewing	Min. requirements Sport	RCP determined	
Stress EGG Pota Stress EGG Pota REF Pota Tables Tables Tables Tables Training offer Training offer Printing Medications Measuring Comments Interfaces	Regeneration Extensive Intervall training	<82,5% RCP 82,5% - 92,5% RCP 92,5% - 100% RCP 100% RCP - Max HR	Setup Setup Setup

For every training range there is an entry in the selection area. For every additional added training range the following settings can be made:

Settings	Function
Min. requirements	Selection of minimum requirements for this training
	range: None, Max. HR reached, AT determined, RCP
	determined and AT and RCP determined
Sport	Selection of sports. Possibility to select between
	running and cycling
Regeneration	Configuration of Regeneration training area
Extensive	Configuration of Extensive training area
Intensive	Configuration of Intensive training area
Intervall training	Configuration of Interval training area

After selecting setup the following screen appear:

# Geratherm Respiratory

Setup training range	
HR range description Intensity description	
Training desciption	
Lower HR	HR determined directly
	HR determined directly  Setup Cancel Accept

It's possible to enter description for HR range, Intensity, Training description, lower and upper HR. After selecting the "Setup" button, a formula editor appear which allow to enter the calculation method.



#### 3.4.22 Viewing – Training units

etup			
General	<b>4 -</b>	Name	Regenerative training (Running)
Parameters	Add Remove Copy	01	
Patient data	Regenerative training (Running) Regenerative training (Cycling)	Sport	Running
Viewing	Extensive training (Running)	Intensity	Low
Stress ECG	Intensive training (Cycling)	,	2011
Stress ECG Plots	Intensive training (Cycling)	Colour	Setup
REE Plots		Duration	Use fix duration
Tables		Durauon	
Tables general			- [min]
Trends			
Text fields		Description	<b>•</b>
Footers			Auto into Puesias ( «Resencentival and Second 76».)
Training ranges			numming (chegeneraliveLuadopeed 757)
Training units			
Training plans			
Printing			
Medications			
Measuring			
Comments		Minimal HR	0% Regeneration
Interfaces		Maximal HR	100% Percentration Setup
Devices		Maximarrity	100 % Regeneration Setup
Help E	lasic		Cancel Accept

For every training unit there is an entry in the selection area. For every training unit the following settings can be made:

Settings	Function
Sport	Selection of sports. Possibility to select between
	running and cycling
Intensity	Enter the intensity
Colour	Selection of colour
Duration	If activated the entered duration will be used. If not
	activated the duration will be set automatically.
Description	Description of training unit
Minimal HR	Setting for minimum HR
Maximal HR	Setting for maximum HR
Energieverbrauch	If activated the energy consumption will be calculated
	taking the total duration of training unit into account.



#### 3.4.23 Viewing – Trainings plans

Setup		
General       Parameters       Patient data       Viewing       Stress ECC Pols       REE Plots       Tables       Tables       Tables general       Trends	Name Sport Days / Week Weeks Duration / Unit	to     v     to     v
Text fields Footers Training ranges Training units Training plans Printing Medications Measuring Comments Interfaces	Definition mode Units	Add Remove Up Down Setup
Help Basic		Cancel Accept

For every training plan there is an entry in the selection area. For every training plan the following settings can be made:

Settings	Function
Sport	Selection of sports. Possibility to select between
	running and cycling
Days/Week	Selection of lower and upper limit for training days
	per week
Weeks	Selection of lower and upper limit for total duration
	of training in weeks
Duration/Unit	Selection of lower and upper limit for duration of
	single training unit
Definition mode	Selection if the training plan should be created cyclic
	or per week
Units	Possibility to add the predefined training units
General hints	Possibility to add general comments to the training
	plan.

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#### 3.5 Printing

The Printing section allows configuring the printer as well as smart report templates for summary reports.

#### 3.5.1 Printing – General

General	ASCII report	Setup
Parameters		
Patient data		
Viewing		
Printing		
General		
Printers		
Template sets		
Medications		
Measuring		
Comments		
Interfaces		
Devices		

Settings	Function
ASCII report	The "Setup" Button will allow to configure the
	ASCII report



- 1

The following settings are possible:

Pauent Gata	Add Remove Up Down Patient ID Name First Name Sex Date of birth Height Weight
Table columns	Fix width for columns
Headers width	12

Settings	Function
Patient data	Configuration of patient data content
Table columns	Configuration of table columns. You can select
	between "Fix width for columns" and "Columns
	separated by tabs".
Headers width	Setting of header width
Content width	Setting of data width



# 3.5.2 Printing – Printers

Default printer Name Printer Supports colour	Use as default printer Default Default Automatic
	Default printer Name Printer Supports colour

Settings	Function
Default printer	If activated, the selected printer will be the
	default printer for Blue Cherry
Name	Name of the printer
Printer	Selection of the installed windows printers
Supports colour	Configuration of the colour support. User can
	select between
	<ul> <li>Automatic(colour setting as defines in</li> </ul>
	windows)
	- Yes (always use colour)
	- No (black and white)



# 3.5.3 Printing – Template Sets

Name Reports	Standard
	Add Remove Up Down Setup SVC + F/Y report (SVC + FVC)
Printer Auto print Auto pdf export	Default  Print automatically when patient Auto pdf export
Pdf export path Scheme Header	.pdf Insert
	Printer Auto print Auto pdf export Pdf export path Scheme Header

Settings	Function
Name	Name of the report template
Reports	Configuration of the reports included in the
	template
Printer	Configuration of the printer used for this report
Auto print	If activated Blue Cherry will print automatically
	when the patient will be closed
Auto pdf export	If activated Blue Cherry will automatically print
	when the program will be closed
PDF export path	Configuration of the folder where the PDF will
	be created
Scheme	Setting of the filename content
Header	Configuration of the Header used for this
	report
Footer	Configuration of the Footer used for this report

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# 3.6 Medications

The Medications section allows configuration of any medication or provocation agent that may be used during testing

#### 3.6.1 Medications – Brochodilators

General	Add Remove	Name	Bronchodilator
Parameters	Bronchodilator	Linit	
Patient data		Olin	
Viewing	_	Decimal places	1 -
Printing		Amount	
Medications		Amount	Add Pamous Satur
Bronchodilators			Add Nenove Setup
Placebos			
Provocations			
Nebulizers			
Protocols			
Measuring			
Comments			
Interfaces			
Devices			

For every Bronchodilator in Blue Cherry there is an entry in the selection area. By using the buttons at the top of the selection area it is possible to add or delete bronchodilators. The following settings are displayed in the configuration area:

Settings	Function
Name	Name of the Bronchodilator
Unit	Unit type for this Bronchodilator
Decimal places	Number of decimal places (0 – 3) to show in
	dosage measurement
Amount	Displays the quantities or dosage in which the
	Bronchodilator is to be given.



Selecting the **Add** button will open the following window to allow the input of new dosage values.

1	Name		
Ar	nount		

Settings	Function
Name	Name for the dosage value, if no name is
	entered only the quantity value appears in the
	list. Otherwise the name will be displayed before
	the quantity.
Amount	Amount of dosage.



#### 3.6.2 Medications – Placebos

Setup			
General Parameters Patient data Viewing Printing Medications Bronchodiatos Procectors Nebulizers Proceols General Measuring Comments Interfaces Devices	Add Remove NacC Placebo Manniol	Name Unit Decimal places Amount	NaCl % 1 Add Remove Setup 0.9 %
Help	Basic		Cancel Accept

For every Placebo in Blue Cherry there is an entry in the selection area. By using the buttons at the top of the selection area it is possible to add or delete placebos. The following settings are displayed in the configuration area:

Settings	Function
Name	Name for the Medication Placebo
Unit	Adjust the unit
Decimal places	Number of decimal places (0 – 3) to show in
	dosage measurement
Amount	Displays the quantities or dosage in which the
	Placebo is to be given.



Selecting the **Add** button will open the window as illustrated to allow input of new dosage values:

New amount	
Name	
Cancel	Accent

Field	Description
Name	Name for the dosage value, if no name is
	entered only the quantity value appears in the
	list. Otherwise the name will be displayed before
	the quantity.
Amount	Amount of dosage.



#### 3.6.3 Medications – Provocation

General	• •	Name	Methacholin
Parameters	Add Remove Methacholin		The case of the ca
Patient data	Mannitol	Cumulative	V Cumulative
Viewing	Exercise	Unit for dose	uq
Printing		Disite for dama	
Medications		Digits for dose	0 -
Bronchodilators		Unit for conc.	mg/ml
Placebos		Digits for conc	
Vebulizer	_	Digits for conc.	3 -
Protocols		Concentrations	+ • •
General			Add Remove Setup
			Concentration 2 (0,250 mg/ml) Concentration 2 (1,200 mg/ml)
			Concentration 4 (4,000 mg/ml)
			Concentration 5 (10,000 mg/m/)
Measuring			
Comments			
Interfaces			
Devices			

For every Provocation in Blue Cherry there is an entry in the selection area. By using the buttons at the top of the selection area it is possible to add or delete provocations. The following settings are displayed in the configuration area:

Field	Description
Name	Name of the provocation
Cumulative	Selection for Cumulative dose; If activated doses
	are cumulated for display in each stage.
Unit for dose	Unit type for dosage
Digits for Dose	Number of Decimal places (0 – 3) shown for
	dosage
Unit for conc.	Unit type for concentration
Digits for conc.	Number of decimal places shown for
	concentration
Concentrations	Concentrations of the dosage



Selecting the **Add** button will open the window as illustrated to allow input of new dosage values:

New amount	
Name Amount	
Cance	el Accept

Field	Description
Name	Name for the dosage value, if no name is
	entered only the quantity value appears in the
	list. Otherwise the name will be displayed before
	the quantity.
Amount	Amount of dosage.


#### 3.6.4 Medications – Nebulisers

General	+ •	Name	Douilbio 646
Parameters	Add Remove		Deviibis 040
Patient data	Devilbis 646 Mannitol Capsule	Unit	μ
Viewing	Exercise	Nebulized amount	0
Printing		Nobulzed amount	9
Medications		Decimal places	0 -
Bronchodilators			
Placebos			
Provocations			
Nebulizers			
Protocols			
General			
Measuring	_		
Comments Interfaces Devices			

For every Nebulizer in Blue Cherry there is an entry in the selection area. By using the buttons at the top of the selection area it is possible to add or delete nebulizers. The following settings are displayed in the configuration area:

Field Description	
Name Name of the Nebuliser Protocol	
Unit	Unit of nebulizer performance
Nebulized amount	Amount of medication to be nebulised
Decimal places	Number of decimal places selectable from 0 to 3



### 3.6.5 Medications – Protocols

General		Name	Metacholin
Parameters	Add Remove		
Patient data	Mannitol	Medication	Methacholin
Viewing	Exercise	Nebuliser	Devilbis 646
Printing			Devilois 040
Medications		Parameter 1	FEV1 Setup
Broncho dilators		Limit 1	-20 absolute or
Placebos		Constant of the second s	20
Provocations			0 between stages
Nebulizers		Parameter 2	sBawtot Setup
Protocols			
General		LImit 2	100 absolute or
			0 between stages
		Placebo	NaCl
		Placebo puffs	5
Measuring		Placebo timers	Setup
Comments		Staros	
Interfaces		Stayes	Add Remove Setup
Devices			Step 1 (Methacholin 0.063 mg/ml, 5 * Devilbis 646)

For every Protocol in Blue Cherry there is an entry in the selection area. By using the buttons at the top of the selection area it is possible to add or delete protocols. The following settings are displayed in the configuration area:

Field	Description	
Name	Name of the Protocol	
Medicament	Selection of the Medicament used for this	
	protocol	
Nebulizer	Selection of the Nebulizer used for this protocol	
Parameter 1	Configuration of parameter 1 used for this	
	protocol	
Limit 1	Configuration of PD20 threshold calculation. The	
	threshold will be calculated if the parameter	
	exceeds the absolute difference in percentage of	
	base or the difference between 2 stages exceed	
	the entered value between stages.	
Parameter 2	Configuration of parameter 2 used for this	
	protocol	
Limit 2	Configuration of PD100 threshold calculation.	
	The threshold will be calculated if the parameter	



	exceeds the absolute difference in percentage of	
	base or the difference between 2 stages exceed	
	the entered value between stages.	
Placebo	Selection of the Placebo used for this protocol	
Placebo puffs	Number of nebulization for the Placebo	
Placebo timers	Configuration of the timer used in the placebo	
	phase	
Stages	Configuration of the provocation phases	
Provo timers	Configuration of the timers used during	
	provocation	
Provostik	Settings for the Provostik	

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Clicking the add button in the section phases will open a menu to configure

a new stage of the provocation test.

Name	Step 5
Medication	Metacholin - Setup
Dose	959
	Proposal
Concentration	Concentration 5 (11 - Setup
Nebuliser	Devilbis 646 - Setup
Nebulisations	5

Settings	Function	
Name	Stage Name	
Medication	Selection of the medication for given stage.	
	Medication can be selected from the drop down	
	menu.	
Dose	Input or calculation of cumulative dose. By	
	clicking the Proposals button the software will	
	show a table with proposals of dosage,	
	concentration, nebulisations and nebulizer after	
	entering the desired dosage. After selecting one	
	line and clicking the Accept button the	
	corresponding configuration will be taken over	
	to the previous menu. By clicking the headlines it	
	is possible to sort the list ascending and	
	descending after dosage, concentration,	
	nebulisations as well as nebulizer.	
Concentration	Selection of the concentration for the stage; can	
	be selected from the drop down menu	
Nebuliser	Selection of the nebuliser type for the given	
	stage; can be made from the drop down menu	



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Nebulisations

Configure the number of nebulisations for the given stage

Clicking the Provostik button will open a menu to configure the Provostik device. Prior to the configuration menu a warning screen will appear.

Wrong settings of the dangerous for the par Do you really want to Provostik?	Provostik device can be ient! change the settings of the	
]	Yes No	
tup Provostik settings		
In use	Provostik used for nebulization	
Nebulization duration	600	ms
linimum nebulization	0	ms
inish incomplete puff	<ul> <li>Finish incomplete puffs with an extra puff</li> </ul>	
Inspiration time	3,0	S
Min. Flow	0,5	l/s
Max. Flow	1,0	
	Start stage timer automatically	
Stage timer	Start test timer automatically	

Settings	Function	
In use	If activated, Blue Cherry will use the Provostik	
	device	
Nebulization duration	Configuration of the nebulization duration in ms	
Minimum nebulization	Configuration of the minimum nebulization	
	duration in ms	
Finish incomplete puff	If activated, a nebulization shorter than the	
	configured nebulization time will be completed	
	with the next inspiration	
Inspiration time	Recommended inspiration time for each breath	
Min. Flow	Recommended minimum flow for each breath	
Max. Flow	Recommended maximum flow for each breath	
Stage timer	If activated, the stage timer will be started	



	automatically after the stage has been	
	completed	
Test timer	If activated, the stage timer will be started	
	automatically after the stage has been	
	completed	

Please see the following table giving important information with regards to stage and test timer according to the ERS recommendation.

Settings	Function
Stage timer	Adjust time between 2 stages, according to ATS
	/ERS the stage should be kept constant at 5
	minutes (300 seconds)
Test timer	Determine time interval after inhalation of the
	provocation and before measurement. According
	to ATS/ERS measurements should be made at 30
	seconds and 90 seconds after the inhalation. By
	using the available buttons further intervals can
	be added or removed.



# 3.6.6 Medications – General

Coporal	_	
Derometero	Base	Pre
Parameters	Trend X-Avis	Deep
Patient data	TOTOTOTO	Dose
Viewing		
Printing		
Medications		
Bronchodilators		
Placebos		
Provocations		
Nebulizers		
Protocols		
General		
Measuring		
Comments		
Interfaces		
Devices		
Devices		

Settings	Function	
Base	Adjust whether the pre or placebo	
	measurement should be the base	
	measurement for the provocation	
Trend X-Axis	Adjust whether the dosage or the	
	concentration specifies the X-Axis label.	

# Geratherm Respiratory

## 3.7 Measuring

The Measuring section allows the configuration of the measurements within Blue Cherry.

#### 3.7.1 Measuring – General

General	Sensor code	enter per patient	
Parameters Patient data	Auto BTPS entry	Never	
Viowing		INGVEI	
Printing	BTPS Interval	30	Minutes
Medications	Save auto tests to	Selected patient at test start	
Measuring	Index days		
General	intra day	Intra day button visible	
Instructions			
SVC			
F/V			
Body			
CO Diffusion			
Respiratory drive			
MVV			
Compliance			
Load profiles			
Exercise stop			
CPET 💌			
Comments			
Interfaces			
Devices			

Settings	Function
Sensor code	If activated, the user will be asked to input
	the sensor code of the flow sensor before the
	first measurement with a new patient.
Auto BTPS entry	Adjust whether the BTPS window should be
	displayed automatically
BTPS Interval	Time interval for the BTPS entry window
Save auto tests to	Adjust where the automatic measurements
	should be saved to
Intra Day	If activated, Blue Cherry will allow to perform
	Intra Day test

In the line Auto-BTPS the following selections are available:



Never Never

For every patient Fix interval Before first test of day

Settings **Function** The BTPS entry window will not be shown Never automatically to enter the ambient conditions With every new patient the BTPS entry window For every patient will be shown automatically before the measurement The BTPS entry window will appear in fix time Fix interval intervals. This interval can be defined in the line BTPS Interval. Before first test of day The BTPS entry window appears once a day before the first measurement is done

#### In the line save auto tests to the following settings can be done:

Selected patient at test start	~
Selected patient at test start	
Selected patient at test start, confirmation when saving	
Selection when saving patient	

Settings	Function
Selected patient at test start	The measurement will be saved to
	the patient who is selected by the
	start of the test
Selected patient at test start,	The measurement will be saved to
confirmation when saving	the patient who is selected by the
	start of the test but has to be
	confirmed before saving
Selection when saving patient	When saving the test may be
	assigned to a user selected patient



# 3.7.2 Measuring – Instructions

General	Activo	Instruction texts active
Parameters	7 IGUVG	
Patient data		
Viewing		
Printing		
Medications		
Measuring		
General		
Instructions		
SVC		
F/V		
Body		
CO Diffusion		
Respiratory drive		
MVV		
Compliance		
Load profiles		
Exercise stop		
CPET		
Comments		
Interfaces		
Devices		

Field	Description
Active	If activated help texts will be displayed at the top
	of the screen during measurements.



# 3.7.3 Measuring – SVC

Setup		
General Parameters Patient data Viewing Printing Medications Measuring General Instructions Svc F/V Body CC Diffusion Respiratory dive MVV Compliance Load profiles Exercise stop CFFT Comments Interfaces Devices	Breaths before manoe Manoeuvre Test start Plateau meter	3 Expiration - Inspiration ■ Delay until flow is detected ■ Show only expiratory plateau
Help	Basic	Cancel Accept

Settings	Function
Breaths before	Configure the number of tidal breaths before
manoeuvre	the maximal manoeuvre
Manoeuvre	Configuration of the maximal manoeuvre.
	Using the drop down menu it is possible to
	select whether after tidal breathing a deep
	expiration is followed by a slow maximal
	Inspiration (IVC) or whether a slow deep
	inspiration followed by a slow maximal
	exhalation (Vcex) should be done.
Test start	If activated, a measurement curve will be
	displayed after detecting the flow signal.
Plateau meter	If activated, only the speedometer of the
	expiratory plateau will be displayed.



## 3.7.4 Measuring – F/V

etup		
General	Breaths before manoe	3
Parameters	Complete Expiration	Complete expiration before manageure
Patient data	Complete Expiration	
Printing	Additional graphs	Volume / Time plot + FEV1 Meter
Medications	Motivation plots	Show F/V plot during motivation
Measuring	Tost start	Delayuptil flaw is detected
General	Test start	Delay until now is detected
Instructions	Plateau meter	Show only expiratory plateau
SVC		
F/V		
Body		
CO Diffusion		
Respiratory drive		
MVV		
Compliance		
Load profiles		
Exercise stop		
CPET		
Comments		
Interfaces		
Devices		
Help	Basic	Cancel Accept

Settings	Function
Breaths before manoeuvre	Configure the number of tidal breaths
	before the maximal manoeuvre
Complete Expiration	If activated, a slow deep expiration has to be
	performed before the maximal manoeuvre
	starts
Additional graphs	Configuration of additional graphs
Motivation plots	If activated, the F/V graph will be shown
	additionally to the motivation plots
Test start	If activated, a measurement curve will be
	displayed after detecting the flow signal.
Plateau meter	If activated, only the speedometer of the expiratory plateau will be displayed.

The following selections can be made in the line additional graphs:

~

Volume / Time plot + FEV1 Meter Volume / Time plot FEV1 Meter Volume / Time plot + FEV1 Meter



Settings	Function	
Volume/Time plot	Only the Volume/Time curve will be shown	
	additionally to the F/V graph	
FEV1 Meter	Only the FEV1 bar chart will be shown	
	additionally to the F/V graph	
Volume/Time plot +	Both, the Volume/Time curve and the FEV1 bar	
FEV1 Meter	chart will be shown additionally to the F/V	
	graph	



# 3.7.5 Measuring – Body

General	Measurements chain	
Parameters		Add Demons He Dave
Patient data		Resistance (5 Loops)
Viewing		TGV (1 Manceuvres) + SVC
Printing		TGV (1 Manoeuvres) + SVC
Medications		SVC + FVC
Measuring		
General		
Instructions		
SVC		
F/V	Recording SVC	Setup
Body	Recording EVC	Satun
CO Diffusion	· · · · · · · · · · · · · · · · · · ·	Stup
Respiratory drive	Recording TGV	Setup
MVV	Description Descriptions	
Compliance	Recording Resistance	Setup
Load profiles	Door	Open door after measurement
Exercise stop		
CPET L		
Comments	-	
intenaces	-	
Devices		

Settings	Function
Measurements chain	Allows to set when a test has to be done
Recording SVC	Allows the adjustment of the SVC test
Recording FVC	Allows the adjustment of the FVC test
Recording TGV	Allows the adjustment of the TGV test
Recording Resistance	Allows the adjustment of the Resistance test
Door	If activated, the cabin door will be opened after
	the performed tests

After clicking the **Setup** button in the SVC line the following window will appear:

Practice before monage	
breams before manoeu	3
Manoeuvre	Expiration - Inspiration
Breaths after manoeuvre	3
Save automatically	Save automatically

Settings	Function
Breaths before	Number of breaths that had to be performed
manoeuvre	before the manoeuvre
Manoeuvre	Configure the test manoeuvre
Breaths after	Number of breaths that had to be performed
manoeuvre	after the manoeuvre
Save automatically	If activated, the test will be saved automatically

After clicking the **Setup** button in the FVC line the following window will appear:

Breaths before manoeu	3
Complete Expiration	Complete expiration before manoeuvre
Breaths after manoeuvre	3
Save automatically	Save automatically

Settings	Function
Breaths before	Number of breaths that had to be performed
manoeuvre	before the manoeuvre
Complete expiration	If activated, the patient has to perform a
	complete exhalation before the test
Breaths after	Number of breaths that had to be performed
manoeuvre	after the manoeuvre
Save automatically	If activated, the test will be saved automatically

After clicking the **Setup** button in the TGV line the following window will appear:

# Geratherm

Breaths before TGV	9	
Shutter	Close shutter auton	natically
Shutter duration	Fix count of breaths	
	2	Breaths
Open shutter	Immediately	
Manoeuvres / Test	1	
Breaths between man	2	
Resting expiratory pos	Correct changes in	resting expiratory position
TGV followed by	ERV and SVC manoe	uvre
Breaths after manoeu	3	
Save automatically	Save automatically	
V/t of TGV-Effort	Save V/t of TGV eff	ort as SVC effort

Settings	Function
Breaths before	Define the number of breaths that had to be
TGV	performed before the test
Shutter	If activated, the shutter will be triggered automatically
Shutter duration	Choice whether the shutter duration should be
	displayed as Fix time or Fix count of breaths and how
	long or for how much breaths the shutter will be
	closed
Open shutter	Choose when to open the shutter. Immediately, Next
	expiration or Next inspiration
Manoevres / Test	Number of TGV manoevres per test
Breath between	Number of tidal breathing cycles between TGV
manoevres	manoevres
Resting expiratoy	If activated Blue Cherry will correct volume drift
pos.	between different TGV manoevres
TGV followed by	Adjust which tests should be done after TGV. There are
	IC manoeuvre, ERV manoeuvre, IC and SVC
	manoeuvre, ERV and SVC manoeuvre and No
	manoeuvre
Breaths after	Define the number of breaths that had to be done
manoeuvre	after the manoeuvre
Save automatically	If activated, the test will be saved automatically
V/t of TGV-Effort	If activated, the V/t diagram of the TGV test will be
	saved as SVC test

# Geratherm Respiratory

After clicking the Setup button in the Resistance line the following window will appear:

Min. Bf	15
Max. Bf	30
Metronome	Show metronome
Breaths before resista	5
Loops to save	All loops
Save automatically	✓ Save automatically
Save as soon as	Defined count of loops recorded
Count of loops	5

Settings	Function
Min. Bf	Recommended minimal breathing frequency
Max. Bf	Recommended maximal breathing frequency
Metronome	If activated, a metronome will be displayed
	during the test
Breats before resistance	Define the number of breaths that had to be
	performed before the test
Max. Loops/Test	Adjust the number of loops that hat to be
	performed per test
Save automatically	If activated, the test will be saved automatically
Save as soon as	Selection of when to save the test. There are
	Defined count of loops recorded, All recorded
	loops are acceptable and All recorded loops
	are acceptable and reproduceable
Count of loops	Number of loops strored for each resistance
	test



# 3.7.6 Measuring – CO Diffusion

etup			
General	Breaths before manoe	4	
Parameters	Tost start	Delay until flaw is datacted	
Patient data	Test start		
Viewing	Shutter	Close shutter automatically	
Printing	Proath hold time	0	
Medications	Dieau-rioid une	δ	
Measuring	Method for breath-hol	Jones and Meade	-
General	Incoiration time	Deduct inspiration time from countdown	
Instructions	inspiration time	Deduct inspiration time from countdown	
EA/	Washout volume	Until plateau	+
Body		0.75	_
CO Diffusion		0,75	
Respiratory drive	Sample volume	Fix volume	-
MVV		0.75	
Compliance		0,75	
Load profiles	Test hints	Show test hints after measurement	
Exercise stop		tin Valsalva Muller tEx Breath hold time > 8s Breat	
Commonte	-		<u> </u>
Interfaces	Tests / Day	10	
Devices	Pause	$\ensuremath{\mathbb{Z}}$ Show warning if pause between tests is too short	
Help	Basic	Cancel	ept

Settings	Function
Breaths before	Define the number of breaths that had to be
manoeuvre	performed before the test
Test start	If activated, the start will be delayed until a
	flow is measured
Shutter	Define the number of breaths that had to be
	performed before the test
Breath-hold time	Adjust how long the patient has to hold breath
Method for breath-hold	Choose the method that defines the breath-
time	hold time. There are Epidemiologic
	Standardization Project, Jones and Meade or
	Ogilvie
Washout volume	Choose the washout volume. There are <b>Fix</b>
	volume, First third or Until plateau
Sample volume	Choose the sample volume. There are <b>Fix</b>
	volume or VCEx Third
Test hints	If activated, hints will be shown after the test
Tests/Day	Define the number of tests per day
Pause	If activated, a warning will be shown after a too



	short pause
Pause duration	Define the pause duration in minutes
Ex trigger	Pressure threshold in KPa which will open the
	shutter at the end of breath hold, if exceeded
Security trigger	Pressure threshold in KPa which will
	automatically open the shutter during breath
	hold, if exceeded

After clicking the **Setup** button in the line test hints, the following window will appear:



By pressing and holding the CTRL-Key, multiple points can be selected.



## 3.7.7 Measuring – Respiratory Drive

General	MIP duration	1500	ms
Parameters	Pin duraborr	1500	113
Patient data	MEP duration	1500	ms
Viewing	P0.1 duration	120	ms
Printing	10.10010001	120	
Medications			
Measuring			
General			
Instructions			
SVC			
F/V			
Body			
C0 Diffusion			
Respiratory drive			
MVV			
Compliance			
Load profiles			
Exercise stop			
CPET			
Comments			
Interfaces			
Devices			

Settings	Function
MIP duration	Define the duration of shutter occlusion during
	MIP test in ms
MEP duration	Define the duration of shutter occlusion during
	MEP test in ms
P0.1 duration	Define the duration of shutter occlusion during
	P0.1 test in ms



# 3.7.8 Measuring – MVV

General	MV/ Period	10
Parameters	NIV I CIIOU	10
Patient data	Test start	Delay until flow is detected
Viewing		
Printing		
Medications		
Measuring		
General		
Instructions		
SVC		
F/V		
Body		
CO Diffusion		
Respiratory drive		
MVV		
Compliance		
Load profiles		
Exercise stop		
CPET		
Comments		
Interfaces		
Devices		

Settings	Function
MVV Period	Duration of the MVV test in s
Test start	If activated, the measuring curve is delayed
	until a flow signal is detected



# 3.7.9 Measuring – Compliance

General	Start static after	[1]-d-fd
Parameters	Start Static after	Undefined
Patient data	Static loops	5
Viewing	Max Flow (Static)	1.00
Printing	max rion (orado)	1,00
Medications	Start dynamic after	Undefined
Measuring	Dynamic loops	5
General	- /	
Instructions	Min. Bf (Dynamic)	10
SVC	Max, Bf (Dynamic)	30
F/V		
Body CO Diffusion		
Co Diriusion Respiratory days		
MVV		
Compliance		
Load profiles		
Exercise stop		
CPET 💌		
Comments		
Interfaces		
Devices		

Settings	Function
Start static after	Number of breathing cycles after static
	compliance loops will be stored
Static loops	Number of loops the software will store
Max. Flow (Static)	Maximal allowed flow during static
	compliance manoeuvre
Start dynamic after	Number of breathing cycles after dynamic
	compliance loops will be stored
Dynamic loops	Number of loops the software will store
Min. BF (Dynamic)	Minimal breathing frequency for dynamic
	compliance test
Max. BF (Dynamic)	Maximal breathing frequency for dynamic
	compliance test



## 3.7.10 Measuring - Load Profiles

-	1	
General	Ergometer protocols	4 · B \
Parameters		Add Remove Copy Setup
Patient data		Ramp 10W/min (Ergometer)
Viewing		Ramp 15W/min (Ergometer)
Printing		Ramp 20W/min (Ergometer)
Medications		Ramp 25W/min (Ergometer)
Measuring		Ramp 30W/min (Ergometer)
General		Ramp 35W/min (Ergometer)
Instructions		Ramp 40W/min (Ergometer)
SVC	Traadmill protocole	
F/V	rreadmin protocois	e = B >
Body		Add Remove Copy Setup
CO Diffusion		Bruce (Treadmill)
Respiratory drive		Bruce modified (Treadmill)
MVV		Baikeo (Treadmili)
Compliance		
Load profiles		
Exercise stop		
CPET		
Comments	Treadmill start	Show warning before treadmill starts
Interfaces		-
Devices		

Settings	Function
Ergometer protocols	Add, remove, copy or configure load profiles
	of cycle or hand crank ergometer
Treadmill protocols	Add, remove, copy, or configure load
	profiles of treadmills
Treadmill start	If activated, a warning will be shown before
	the treadmill will starts

By clicking the available buttons it is possible to add, remove, copy or change profiles.



Clicking the Add button in the Ergometer protocol area, a new load profile can be generated. This window will appear:

Belastungsproft einnichten		
	1500 2000 ped	
Name	Ramp 10///min	
Test type	Max. VO2	~
Manual load inc.	5 W	
Stages	* * * = > + +	
	New stage Stage profile Ramp Remove Configure Up Down	
	Read (5 00) 0 4 V Loss (0 012 1 4 W Loss (0 012 2 W Loss (0 012 1 W Loss (0 012	8
Events	Add Remove Configure	
	Cancel	Accept

Field	Description
Name	Name of Protocol
Test type	Choose the test type for which the load
	profile should be generated an later
	displayed
Manual load inc.	Increment for the manual load change
Stages	Display or configuration of load profiles
Events	List of predefined events within selected
	protocol

Clicking 'New stage' from the top of the stages list opens a stage input window; this window allows the user to create a single new stage within the existing protocol:



I	Phase	Rest		
Du	iration	0 : 0 min : sec		
	Load		w	Equation

Settings	Function
Phase	Selection of the load phase. There are <b>Rest</b> ,
	Warmup, Load of Recovery
Duration	Define the length of time of this stage
Load	Define the load level during this stage. By
	clicking the <b>Equation</b> button a formula
	editor can be opened which calculates the
	load value.

Clicking the **Stage profile** button opens the stage configuration window. This allows configuration of multiple stages within a set phase of exercise:

Phase	Load		
Stage duration	0 ; 0	min : sec	
Count of stages			
Initial load		W	Equati
Load increment		W	Equati

Settings	Function
Phase	Selection of the load phase. There are <b>Rest</b> ,
	Warmup, Load of Recovery
Stage duration	Define the length of time of each stage
Count of Stages	Determine the number of stages within
	phase
Initial load	Set the start load value
Load increment	Set the load increment per stage

Clicking the **Ramp** button opens the ramp configuration window. This allows the configuration of a ramp protocol:



Phase	Load
Total duration	0 : 0 min:sec
Stage duration	0 : 0 min : sec
Initial load	W Equation
Load increment	W (/ min) Equation

Field	Description
Phase	Selection of the load phase. There are Rest,
	Warmup, Load of Recovery
Total duration	Total duration of the ramp load
Stage duration	Duration of one stage
Initial load	Set the start load value
Load increment	Set the load increment per stage

Clicking the **Remove** button will remove the selected stage out of the profile. The button **Configure** allows to change the settings of a selected stage and by clicking the up or down button the order of the list can be changed.

The area Events allows configuring events for the load profile. Events are for example enter or measure blood pressure, record tidal loops or mark or entry blood gases. With the available buttons it is possible to add, remove of change events.



Trigger	Fix timepoint	~
Phases	Rest Warmup Load Recovery	
Event	Measure blood pressure	~
Timepoint	0 : 0 min : sec	

Settings	Function
Trigger	Configure when the events should be started.
	There are Fix Intervalls, Fix timepoint and
	Trigger by load stage.
Phases	Adjust in which phase the event should be
	triggered. By pressing and holding the CTRL-Key
	it is possible to select multiple selections.
Event	Adjust which event should be triggered. There
	are Measure blood pressure, Record tidal
	breathing and Measure blood gases
Timepoint	Specify the interval at which the event should
	be triggered.



#### 3.7.11 Measuring - Exercise stop

General	4	Namo	Producted HD reported
Parameters	Add Remove	Hamo	
Patient data	Predicted HR reached Predicted load reached	Parameter	HR Setu
Viewing		Limit	rof/8011) Solur
Printing			
Medications		Condition	Bigger
Measuring		Reaction	Stop exercise automatically
General			datemationly
Instructions			
SVC			
F/V			
Body			
CO Diffusion			
Respiratory drive			
MVV			
Compliance			
Load profiles			
Exercise stop			
CPET			
Comments			
Interfaces			
Devices			

In the selection area it is possible to add or remove exercise stop reasons. The following settings are available:

Settings	Function
Name	Name of the reason for stopping
Parameter	Adjust the parameter, which is being
	monitored for load termination
Limit	Set the limit used for determination of
	stopping the test.
Condition	Adjust the condition. There is a choice
	between <b>bigger</b> and <b>smaller</b> .
Reaction	If activated, the load will be stopped by
	reaching the exercise stop reason



# 3.7.12 Measuring - CPET

General	MVV from FEV1	35,0	
Parameters			
Patient data	Mask deadspace (mi)		
Viewing		Mouthpiece (25 ml)	
Printing		Mask (Pediatric small) (45 ml) Mask (Pediatric small) (65 ml)	
Medications		Mask V2 (P) (103 m)	
Measuring		Mask V2 (XS) (113 ml) Mask V2 (S) (124 ml)	
CO Diffusion		Mask V2 (M) (150 ml) Mask (XS) (85 ml)	
Respiratory drive		Mask: (S) (100 ml)	
MVV		Mask (L) (140 ml)	
Compliance		Custom (? ml)	
Load profiles	Tube length	200cm	
Exercise stop	Disad annual ann fa		
CPET	Biood pressure comir	Always confirm blood pressure measurement	
Events	Insp. Deadspace	15	ml
CPET views			
REE	FiO2	FiO2 nearly constant throughout the test	
Resting values	Enable logging	Enable logging	
Commente		Endbio logging	
Comments	-		
Internaces	-		
Devices			

Settings	Function
MVV from FEV1	Adjust how the MVV should be calculated. In
	this example 35 x FEV1 (measured)
Mask deadspace (ml)	Configure the dead space value of the mask
	or mouthpiece being used for testing
Tube length	Adjust the length of the tube
Blood pressure confir	If activated the result of automatic BP
	measurement need to be confirmed
Insp. Totraum	Setting of inspiratory dead space. Need to be
	adjusted if apparatus in front of flowsensor will
	be added to manage different source of inspired
	gas concentration.
FIO2	If activated FiO2 will be set to 20.94
Enable logging	If activated, the raw data of the CPET
	measurement will be saved additionally.



## 3.7.13 Measuring - Events

General	Borg scale	Show button online	
Parameters		onen patten en inte	
Patient data		Show data entry form online	
Viewing		CP10 extended	1
Printing		Ch to extended	1
Medications		*	
Measuring		Setup D. Mathian	
CO Diffusion		0.5	ì
Respiratory drive		2 Weak	-
MVV		3 Moderate 4 Somewhat strong	+
Compliance	D1 1		
Load profiles	Blood pressure	Show button online	
Exercise stop		Show data entry form online	
CPET			
Events	Blood gases	Show button online	
CPET VIEWS		Show data entry form online	
REE Parting values			
Reating volues		Pause treadmill (only without external ECG)	
Comments		4 - 1 I	
Interfaces		Add Remove Up Down	
Devices		Pa02	

Here it is possible to adjust how the events Borg input, blood pressure and blood gases should be treated during the test. It is possible to create and enter all the events after the test.

Settings	Function		
Borg Scale	Adjust whether the button should be displayed during		
	the test and what to do after clicking the button. If		
	activated the Borg scale will be shown during the test.		
	From the drop down menu at the bottom of this section		
	the Borg scale type can be selected. There are from 0 to		
	10 ( <b>CR 10</b> ), from 0 with 0.5 to 10 ( <b>CR 10 extended</b> ) and		
	from 6 to 20 (RPE). The "Setup" button will allow		
	changing the Text shown in the Borg scale.		
Blood pressure	Adjust whether the button should be displayed during		
	the test and what to do after clicking the button. If		
	activated, the entry window for the blood pressure will		
	be displayed during the test.		
Blood gases	Adjust whether the button should be displayed during		
	the test and what to do after clicking the button. If		
	activated, the entry window for the blood gases will be		
	displayed during the test. The parameters of the blood		
	gas input and the order can be configured separately.		



#### 3.7.14 Measuring - CPET views

General	- + • 1 +	Name Wasserman 9
Parameters	Add Remove Up Down	10.11
Patient data	Wasserman 9 Overview	VISIDIE VISIDIE
Viewing	Lipox	View Bow count
Printing	Tidal breathing	
Medications	Synchronisation	n1 n2 n3
Measuring		Wassema Wassema Wassema
CO Diffusion		n4 n5 n6
Respiratory drive		🛄 🛌 🔍 Wasserma 🛛 Wasserma 🕅 Wasserma
MVV		n/ n8 n9
Compliance		Breath-by-breath online (CPET)
Load profiles		Describer
Exercise stop		Parameters 💠 🖷 🍸 🦊 🤸
CPET		Add Remove Up Down Setup
Events		
CPET views		
REE	_	
Resting values		
Commonto	_	
Interfaces		
Devices	-	
Devices		

In the selection area it is possible to add or remove CPET views as well as changing their order. The following settings are available:

Settings	Function	
Name	Name of the configuration	
Visible	If activated the configuration will be visible	
	as a tab during the CPEx test	
View	Configuration of the display	
Parameters	Configuration of the parameters	

In the view section it is possible to change the number as well as the type of the displayed elements. By clicking the Row count button it is possible to define the number of the displayed rows. The button on the left of every row allows changing the number of elements per row as well as to define the height of the row in percent of the overall height. After clicking one element the following settings are available: Geratherm Respiratory

Width	33.0	
Туре	CPET graphic	
CPET graphic	Wasserman 1	

Settings	Function	
Width	Width of the element in percent of the overall width	
Туре	Adjust the element type	
CPET graphic	Adjust the element	

The following element types are available:

Test data table	~
Interpretation table	<u>^</u>
Test data table	
Thresholds table	
Tidal loops table	
Tidal loops	3
Lung function table	
Signal synchronisation	
SpO2 Plethysmogram	

Depending on the chosen element type several elements are available in the CPET graphics line. The following picture shows the choices for the element type test table data:





# 3.7.15 Measuring REE

Setup		
General Parameters Patient data Viewing Printing Medications Measuring Coolfision Coolfision Wv Compliance Lead profes Detroise stop CPET Pents CCPETviews REE Resting values Comments Interfacess Devices	Canopy Fan-Speed Enable logging	No   Preset Fan-Speed according to reference REE  Enable logging
Help	Basic	Cancel Accept

Settings	Function	
Canopy	Select weather the test will be done with	
	Canopy. Customer can select between yes, no	
	and ask before test	
Fan-Speed	If activated Blue Cherry will set fan speed	
	automatically according to predicted REE. In	
	addition the fan speed can be adjusted	
	manually during test.	
Enable logging	If activated, the raw data of the REE	
	measurement will be saved additionally	



#### 3.7.16 Measuring – Resting values

General	Saving HR/SpO2	Manual, a	utomatic after 30 seconds	
Parameters	Saving SpO2	[Manual a	terretic effect 00 er er de	
Patient data	Saving Spoz	Manual, a	iutomatic after 30 seconds	
Viewing	Saving HR	Manual, a	utomatic after 30 seconds	
Medications	Determination SpO2	End of te	st	
Measuring	Averaging SpO2	20	seconds	
CO Diffusion	Averaging opoz	30	3600103	
Respiratory drive	Determination HR	End of te	st	
MVV	A			
Compliance	Averaging HR	30	seconds	
Load profiles				
Exercise stop				
CPET				
Events				
CPET views				
REE				
Resting values				
Commente				
Comments				
Interfaces				
Devices				

Settings	Function
Saving HR/SpO2	Adjust how or after which time the HR/SpO2
	measurement should be saved.
Saving SpO2	Adjust how or after which time the SpO2
	measurement should be saved.
Saving HR	Adjust how or after which time the HR
	measurement should be saved.
Determination SpO2	Adjust how the parameter SpO2 should be
	calculated
Averaging SpO2	Adjust the time-based averaging
Determination HR	Adjust how the parameter SpO2 should be
	calculated
Averaging HR	Adjust the time-based averaging



In the lines Saving HR/SpO2, Saving SpO2 and Saving HR there are the

## following choices available:

Manual, automatic after	30 seconds	~
Only manual saving		^
Manual, automatic after	10 seconds	
Manual, automatic after	20 seconds	
Manual, automatic after	30 seconds	=
Manual, automatic after	45 seconds	
Manual, automatic after	60 seconds	
Manual, automatic after	90 seconds	
Manual, automatic after	120 seconds	~

Here it is possible to choose whether the measurement should be saved manually or automatically after a set time.

#### In the lines Determination SpO2 and Determination HR there are the

following choices available:

End of test	×
End of test	
Average of test	
Minimum of test	
Maximum of test	

Here it is possible to define how the corresponding parameter should be calculated.

Settings	Function	
End of test	The current value when you save and end the	
	test will be saved.	
Average of test	The average of the test will be saved	
Minimum of test	The minimum value is stored	
Maximum of test	The maximum value is stored	

# Geratherm Respiratory

#### 3.8 Comments

The comments section allows the configuration of the comments and interpretation sections of the software.

## 3.8.1 Comments - General

Setup		
General Parameters Patient data Viewing Printing Medications Measuring Comments Comments Text Fields Stopping reaces Interpretation Interfaces Devices	Copy comment Font size	Copy comment of previous study day           11
Help E	Basic	Cancel Accept

Settings	Function
Copy comment	If activated Blue Cherry will carry comment
	from previous study day
Font size	Define the font size for the comment


#### 3.8.2 Comments - Comments

General		Name	Normal
Parameters	Add Remove		
Patient data	Restriction	Measurement type	Unspecific
Viewing	Test	Comment	4
Printing			Auto info
Medications			Normal
Measuring			
Comments			
General			
Comments			
Text fields			
Stopping reasons			
Interpretation			
Interfaces Devices	_		

For every comment there is an entry in the selection area where it is possible to add or remove comments. The following settings are available in the configuration area:

Settings	Function	
Name	Define the name of the comment	
Measurement type	Define which measurement type the comment is applicable to. The relevant measurement type can be selected from the drop down menu	
Comment	Determine the text value applicable to the pre- determined comment	

In the comment text box it is possible to enter both text as well as Auto Info by clicking the identical button. Auto Info can include patient data, test results, user-defined selection areas and other information of performed tests.



#### 3.8.3 Comments – Text fields

General		Name	
Parameters	Add Remove		
Patient data		Predefined texts	4 m 1
Viewing			Add Remove Setup
Printing			
Medications			
Measuring			
Comments			
General			
Comments			
Text fields			
Stopping reasons		Shown parameters	4 • 4 ÷
Interpretation			Add Remove Up Down
Interfaces			
Devices			

For every text field there is an entry in the selection area where it is possible to add or remove comments. The following settings are available in the configuration area:

Settings	Function
Name	Name of the text field
Predefined texts	Configuration of predefined text fields
Shown parameters	Configuration of parameters that appear in
	addition to the text fields



#### 3.8.4 Comments – Stopping reasons

General	- + ·	Name	
Parameters	Add Remove		
Patient data		Measurement type	
Viewing		Comment	
Printing		Common	Auto info
Medications			
Measuring			
Comments			
General			
Comments			
Text fields			
Stopping reasons			
Interpretation			
Interfaces Devices	_		

For every stopping reason there is an entry in the selection area where it is possible to add or remove comments. The following settings are available in the configuration area:

Settings	Function
Name	Name of the stopping reason
Measurement type	Configure in which measurement type the
	stopping reason will appear
Comment	Input field for the text of the stopping reason.



#### 3.8.5 Comments - Interpretation

etup		
General	Print always	×
Parameters	,	Setup
Patient data		
Viewing		Liverpool algorithm
Printing		Wasseman
Medications		
Measuring		
Comments		
General		
Comments		
Text fields		
Stopping reasons		
Interpretation		
Interference		
Devices		
Devices		
Help Basic	;	Cancel Accept

Here the automatic interpretation can be edited. In the configuration area it is possible to choose one of the available interpretation algorithms or no automatic interpretation. The resulting interpretation text is inserted automatically into the comment field of Blue Cherry, but can be deselected there. The following table shows the possible interpretation texts of the Liverpool algorithm:

Interpretation	Text	
Normal	Normal lung function. For a further	
	interpretation the determination of the DLCO	
	(Diffusion capacity) is recommended.	
Restriction	Assuming optimal cooperation a restrictive	
	lung disease is suspected. For a further	
	interpretation the determination of the DLCO	
	(Diffusion capacity) is recommended.	
Obstruction	Assuming optimal cooperation an obstructive	
	lung disease is suspected. For a further	
	interpretation the determination of the DLCO	
	(Diffusion capacity) is recommended.	
Mixed ventilatory defect	Assuming optimal cooperation a mixed	
	ventilatory defect is suspected. For a further	
	interpretation the determination of the DLCO	



(Diffusion capacity) is recommended.

The following diagram shows the interpretation algorithm from the ATS/ERS European Respiratory Journal 2005; 26: 948–968:





The interpretation text is only an interpretation suggestion and must always be confirmed by a physician or physiologist.

#### 3.9 Interfaces

Geratherm

In this section it is possible to configure the different Blue Cherry Interfaces.

# 3.9.1 Interfaces – GDT- Interface

Respiratory

General	Enabled	Interface enabled
Parameters Patient data	Input folder	Browse
Viewing	Input filename	nationt
Printing		patent
Medications	Input extension	Sequential number001, .002
Measuring	Output folder	Browse
Interfaces	Output filename	
Interface	Output extension	Sequential number001_002
Data reports		
MediConnect	File encoding	ANSI (1252)
Stetho	Overriding	Override existing files
Seca	Own ID	
External ECG		
Ergonizer	PCSID	
Winlactat	Run watchdog	Run watchdog
Users	Close button	Close button only puts Blue Cherry to Standby
Audit trail	Datasets per file	Multiple datasets allowed

Settings	Function
Enabled	If activated, the GDT-Interface is active.
Input folder	Set the folder for ingoing GDT files
Input filename	Set the name for ingoing GDT files
Input extensions	Adjust the extension for ingoing GDT files. It is
	possible to choose between continuous
	numbers and *.GDT
Output folder	Set the folder for outgoing GDT files
Output filename	Set the name for outgoing GDT files
Output extension	Adjust the extension for outgoing GDT files. It is
	possible to choose between continuous
	numbers and *.GDT
File encoding	Set the character set for the GDT transfer.
Overriding	If activated, existing files will be overwritten by
	the next export.
Own ID	Set the ID for the measurement system



# User Manual Blue Cherry

	which will be transferred by GDT.
PCS ID	Selectable receiver ID for the hospital
	information system which will be transferred
	via GDT
Run wathdog	If activated, a windows auto start routine will
	scan the selected input folder and Blue Cherry
	will start automatically if a GDT file can be
	found.
Close button	If activated, Blue Cherry will be minimized by
	clicking the close button. This reduces the GDT
	call of Blue Cherry.
Datasets per file	If activated, only one GDT file will be exported
	at a patient with multiple measurements.
	Otherwise, for each measurement, a single GDT
	file.
Data size (8100)	Select whether to generate an entry with the
	GDT identifier 8100 for each transmitted data
	set or the identifier is used only once to
	transfer the file size.
Existing patient	If activated, already existing patient data will
	be overwritten by importing a patient with the
	same data.
Patient data	If activated, the software will include patient
	data into GDT file. Otherwise the GDT file will
	not contain patient information.
After review	If activated, a review has to be performed in
	front of exporting the test (is requested by
	6311)
Changed tests	If activated, changed tests will be exported
Available pages	If activated, only available pages will be
	transferred.



# 3.9.2 Interfaces – Data Reports

General	Auto-Export	Enabled	
Parameters		Linabled	
Patient data	Results export	Both (6228 and 8421)	
Viewing	Table columns	%Pred %Base %Change	Setup
Printing		wired., wibase, worlange	Jeiup
Medications	Units	Export values in original units	
Measuring	Decimal separator	Doint	
Comments	Boominal Soparator	Point	
Interfaces	Comment export	Diagnosis (6220)	
Interface	Pdf export path		Prouver
Data reports	i di expert puti		DIOWSE
MediConnet	Filename of pdf report	.pdf	Insert
Stetho	Monguramenta		
Aerocrine	Measurements	Add Remove Setup	
Seca	_	Al	
External ECG	_	SVC E/V	
Ergonizer	_	SVC + FVC	
Winlactat		CO Diffusion	
HL7 General		CPET MVV	
Audit trail	-	CO Diffusion	
Dovicos	-		
Devices			

Settings	Function
Auto-Export	Configuration if the report should be created
	automatically. User can select between Disabled,
	Enabled and Report dependent.
Results export	Adjust how the test results will be transferred
Table columns	Configure which information will be transfered in
	the table columns.
Units	If activated parameter will be transfered in their
	original unit. Apart from that in the selected unit.
Decimal separator	Configure if dot or comma will be used as seperator
	between decimal places.
Comment export	Adjust how the comment will be exported.
PDF export path	Configure the folder for the PDF file
Filename of pdf report	Configure how the filename will be created
Measurements	Configuration of the device and process specific
	GDT identifier. With the shown buttons you can
	add, delete and configure GDT identifiers.



After selecting the drop down menu in the line Results export the following selections will be available:

Both (6228 and 8421)	~
No export	
Result field (8421)	
Formatted result text (6228)	
Both (6228 and 8421)	

Settings	Function
No export	Results will not be exported
Result field (8421)	Results will be exported with the 8421 identifier
Formatted result text (6228)	Results will be exported as formatted result text
Both (6228 and 8421)	Results will be exported as result field as well as formatted result text

After selecting the drop down menu in the line Comment export the following selections will be available:

Diagnosis (6220) No export Comment field (6227) Diagnosis (6220)

Settings	Function
No export	Comment will not be exported
Comment (6227)	Comment will be exported with the 6227 GDT identifier
Comment (6220)	Comment will be exported with the 6220 GDT identifier

V

Clicking the setup button at the top of the measurements section opens the following configuration menu.

# Geratherm

N	
Name	F/V
ID in GDT/BDT	LUFU02
Measurement type	F/V ·
Page to measure	F/V (ID 4)
Start measurement	FVC (Small lung function)
Start of test	Start test automatically
After test:	
Reviewing page	F/V (ID 4)
Create per	Measurement -
Pdf export	Setup
Parameters	
	Add Remove Setup Up Down
	FVECE: (FVCE: Effort, Current)           FEV1 (FVC): Effort, Current)           FEV1/FVC): (FVC): Effort, Current)           FEV1/FVC): (FVC): (FV
	MEF75 (MEF75, Effort, Current)

Einstellungen	Funktion
ID in GDT/BDT	Configuration of the device and process
	specific GDT identifier.
Measurement type	Adjust the measurement type
Page to measure	Adjust the measurement type which will be
	selected if the message <b>Measure</b> will be
	received
Start measurement	Select which measurement will be started
Start of test	If activated, the test starts automatically
After test	Adjust the behavior of Blue Cherry after a test
	(minimize of close)
Reviewing page	Adjust the measurement type which will be
	selected if the message <b>View</b> will be received.
Create per	Configure how report should be created. User
	can select between Measurement, Stage and
	Study day.
PDF export	Configuration of the PDF export
Parameters	Adjust the parameter list for GDT export. With
	the buttons you can add, delete and modify the
	parameter order.



# 3.9.3 Interfaces – MediConnect

Setup		
General Parameters Patient data Viewing Printing Medications Measuring Comments Interfaces Interfaces Interfaces Interfaces Retroots Mediconnect Seca Beternal ECC Ergonize Winlactat USers Addit trail Devices	Enabled Output folder Output filename Output extension	Interface enabled Browse Sequential number
Help	Basic	Cancel Accept

Settings	Function
Enabled	If activated, the MediConnect interface is turned
	on
Output folder	Folder for the MediConnect output file
Output name	File name for the MediConnect output file
Output extension	File extension for the MediConnect output file.
	You can choose between sequential number and
	*.MC.



# 3.9.4 Interfaces – Stetho

etup			
General	Enabled	☑ Interface enabled	
Parameters			
Patient data	Input folder	Browse	e
Viewing	Input filename	nationt	
Printing	mpar monamo	patient	
Medications	Output folder	Browse	e
Measuring	Output filename	rosultateSpiro	
Comments	e alput monumo	resultatsOpilo	
Interfaces	Close button	Close button only puts Blue Cherry to Standby	
Interface			
Data reports			
MediConnect			
Stetho			
Aerocrine			
Seca			
External ECG			
Ergonizer			
Winlactat			
HI 7 General			
Osers			
Audit trail			
Devices			
Help Ba	sic	Cancel Accept	

Settings	Function
Enabled	If activated, the Stetho interface is turned on
Input folder	Folder for ingoing Stetho files
Input filename	Filename for ingoing Stetho files
Output folder	Folder for outgoing Stetho files
Output filename	Filename for outgoing Stetho files
Close button	If activated, Blue Cherry will be switched into a
	Standby mode by clicking the close button



#### 3.9.5 Interfaces – Aerocrine

General Parameters Patient data Viewing Printing Medications	Enabled Interface path Programm	Interface enabled Brows Brow
Measuring Comments Interfaces Data reports MediConned Stetho		
Aerocrine Seca External ECG Ergonizer Winlactat		
Users Audit trail Devices		

Settings	Function
Enabled	If activated the Aerocrine interface will be enabled
Interface path	Folder for the Aerocrine interface file
Programm	Folder and program selection fort he Aerocrine
	software



# 3.9.6 Interfaces – Seca

General	Easterd	The second second second second
Parameters	Enabled	Interface enabled
Patient data	Input folder	C:\GDT\seca Browse
Viewing	Input filename	
Printing	mpar monanto	
Medications	Input extension	Fix extensiongdt
Measuring	Output folder	C:\GDT\seca
Comments		Diouse
Interfaces	Output filename	
Interface	Output extension	Fix extension adt
Data reports	output extension	Pix extension • .gut
MediConnect	File encoding	Windows Central Europe (1250)
Stetho		
Aerocrine		
Seca		
External ECG		
Ergonizer		
Winlactat		
HI 7 General		
Users		
Audit trail		
Devices		

Settings	Function	
Enabled	If activated the Seca interface will be enabled	
Input folder	Folder for Seca input file	
Input filename	Input filename	
Input extension	File extension for input filename	
Output folder	Folder for Seca output file	
Output filename	Output filename	
Output extension	File extension for output filename	
File encoding	Selection of file encoding	



#### 3.9.7 Interfaces – External ECG

Blue Cherry can connect to different ECG systems. The following description will show the interface configuration for Amedtec ECG.

emp		
General	External ECG	Ameritar
Parameters		Amodice
Patient data	ECG mode	Blue Cherry is Master
Viewing		
Printing	ECG program	C:\Program Files (x86)\AMEDTEC ECGpro\s05main Browse
Medications	Argumonto	
Measuring	Arguments	
Comments	ECG Caption	AMEDIEC
Interfaces		AMEDIES
Interface	Second screen	Blue Cherry
Data reports		
MediConnect	Events	BloodGases,BloodPressure,BorgScale,TidalBreathin Setup
Stetho		
Aerocrine	Special events	
Seca		Add Remove Up Down
External ECG		
Ergonizer		
Winlactat		
HI 7 General		
Audit trail		
Dovicos	ECG report	Setun
Devices		m +

Depending on the chosen External ECG in the corresponding line the underlying fields will change. In the following only the fields which are always available will be explained:

Settings	Function	
External ECG	Select the external ECG which is in use	
ECG mode	Select the mode for the external ECG. You can	
	choose between No ECG, Blue Cherry is Master	
	and Blue Cherry is Slave. For the standard	
	connection Blue Cherry is Master has to be	
	selected.	
ECG program	Choose the ECG application	
Arguments	Here it is possible to define arguments which	
	will be transferred at the start of the ECG	
	application	
ECG caption	Choose the caption for the ECG program	
	window. For the standard connection	
	AMEDTEC ECGpro has to be selected.	
Second Screen	Adjust whether Blue Cherry or the ECG	
	application should be displayed on the second	



	screen	
Events	Configure which events will be available in Blue	
	Cherry	
Special events	Configure which special events will be available	
	in Blue Cherry	
ECG report	Configuration of ECG report transfer	
Independent test end	If activated it's possible to close Blue Cherry	
	independent of ECG software	
File encoding	Configuration of file encoding	
Connection timeout	Configure after which time the measurement	
	will be stopped if the ECG software doesn't	
	respond anymore	
Start file	Configuration of folder and filename of ECG	
	start file	
Online file	Configuration of folder and filename of ECG	
	online file	
Results file	Configuration of folder and filename of ECG	
	results file	
Profile file	Configuration of folder and filename of ECG	
	load profile	
Reference values	If activated Blue Cherry will use reference value	
	for HR and Load from ECG software	
Stop reason	If activated Blue Cherry will use stop reason	
	from ECG software	
GUI	If activated the Blue Cherry software design will	
	be adapted to the ECG software	
Forward load to ergom.	If activated the load profile selected in the ECG	
	software will be forwarded to Blue Cherry and	
	Blue Cherry will drive the ergometer	



After selecting the Setup button in the line ECG report the following screen appear:

ECG report path	Browse
Report handling	Delete report
Move to	Browse

Settings	Function		
ECG report path	Configuration of folder for ECG report		
Report handling	Configuration of what will happen with report after Blue Cherry has overtaken the file. User can select between Delete report and Move to.		
Move to	Configuration of folder where the file should be moved		



# 3.9.8 Interfaces – Ergonizer

Setup		
General Parameters Patient data Viewing Printing Medications Measuring Comments Interfaces Interfaces Interfaces Extend Aerocine Saca Extend ECG Ergonizer Winlatt th 72cment Users Audit trail Devices	Ergonizer Programm Data-File HR Averaging	Active     C:\Program Files (x86)\Ergonizer\ergonizer exe     Erowse     C:\GDT\Ergonizer\ergonizer.hl7     Browse     30
Help	Basic	Cancel Accept

Settings	FunctionIf activated, the Ergonizer interface is active	
Ergonizer		
Program	Set the path to the Ergonizer application	
Data-File	Adjust the transfer file between Blue Cherry	
	and Ergonizer	
HR Averaging	Adjust the averaging in s for the transfer of HR	
	to the Ergonizer	



# 3.9.9 Interfaces – Winlactat

Setup		
Setup  General Parameters Patient data Viewing Printing Medications Measuring Comments Interfaces Interfaces Interfaces Interfaces Extensi ECG Exponter Windstat Will ZGeneral VUSers Audit trail	Enabled Input folder Output folder Programm	✓ Interface enabled          Browse         Browse         Browse
Help	Basic	Cancel Accept

Settings	Function	
Enabled	If activated, the Winlactat interface is active	
Input folder	Configuration of folder for input file	
Output folder	Configuration of folder for output file	
Program	Set the path to the Winlactat application	



# 3.9.10 Interfaces – HL7 General

General	Activate HI 7	Activate HL7	
Parameters	/ touvato TTE/	Activate HL7	
Patient data	Run HL7 as service	Run HL7 as service	
Viewing	ADT		Setup
Printing			Jeiup
Medications	ORM		Setup
Measuring	QRY	C.	Setup
Comments			
Interfaces	ORU		Setup
Ergonizer 📩			
Winlactat			
HL7 General			
HL7 Interfaces			
HL7 Versions			
HL7 Messages			
HL7 Segments			
HL7 Fields			
HL7 Components			
Users			
Audit trail			
Devices			

Settings	Function
Activate HL7	If activated, HL7 service is enabled
Run HL7 as service	If activated HL7 will run as a windows service
ADT	Configuration of ADT messages
ORM	Configuration of ORM messages
QRY	Configuration of QRY messages
ORU	Configuration of ORU messages



After selecting the Setup button in line ADT the following window will

#### appear:

Setup HL7 ADT	
Send ADT messages	Send ADT messages
L	Cancel Accept

Settings	Function
Send ADT messages	If activated ADT messages will be send

After selecting the Setup button in line ORM the following window will appear:



Settings	Function
Allow to cancel orders	If activated ORM orders can be canceled
Service identifiers	Configuration which measurements will be
	used to identify the scope of HL7 service



After selecting the Setup button in line ORY the following window will

#### appear:

Setup HL7 QRY	
Query message What subject filter	QRY_Q01 • DEM •
	Cancel Accept

Settings	Function
Query message	Configuration of Query message. User can select between QRY-Q01, QRY-Q02 and QRY-A19
What subject filter	Filter configuration for the query message. User can select between DEM and APA

After selecting the Setup button in line ORU the following window will appear:

Setup HL7 ORU	
Auto-Export	Disabled
Units	Export values in original units
Decimal separator	Point
Pdf export path	Browse
Filename of pdf report	Insert
Measurements	Add Remove Copy Setup Up Down
	Cancel Accept



Settings	Function
Auto-Export	Configuration if the report will be created
	automatically. User can select between
	Disabled, Enabled and Report dependent. If
	Report dependent will be selected the
	automatically created report will depend on
	the configuration of the report itself.
Units	If activated the parameter will be transmitted
	in the original unit. If not Blue Cherry will use
	the configured unit.
Decimal separator	Configuration if point or comma will be used as
	separator.
PDF Export path	Setting of path in which the PDF report will be
	created.
Filename of PDF report	Setting of information used to create the
	filename.
Measurements	Configuration of the measurement specific
	ORU messages.



# 3.9.11 Interfaces – HL7 Interfaces

Setup			
Selup  General Parameters Patient data Viewing Printing Medications Measuring Comments Interfaces Seca Exemal ECG Ergonize Winlacta HL7 General HL7 Versions HL7 Versions HL7 Versions HL7 Segments HL7	Ad Remove Default	Enabled Name HL7 Version File encoding Encoding characters Sender and receiver Communication HL7 Messages	Interface enabled Default 2.3 Windows Central Europe (1250) Setup Setup Setup Add Remove Add Remove Add ADT*A15 ADT*A15 ADT*A25 ADT*A5
Audit trail Devices Help	Basic		Cancel Accept

Settings	Function
Enabled	Enable or disable HL7 interface
Name	Name of HL7 interface
HL7 Version	Configuration of HL7 version for this interface
File encoding	Setting of file encoding
Encoding characters	Setting of encoding for single characters
Sender and receiver	Configuration of sender and receiver
Communication	Configuration of communication details
HL7 Messages	Configuration of HL7 messages used for this
	interface



After selecting the Setup button in line Sender and receiver the following window will appear:

Sending application	BLUEC
Sending department	
Receiving application	HIS
Receiving department	

Settings	Function
Sending application	Configuration of Sending application
Sending department	Configuration of Sending department
Receiving application	Configuration of Receiving application
Receiving department	Configuration of Receiving department

After selecting the Setup button in line Communication the following window will appear:

Setup server communication	h
Accepted ACK Application ACK Message transfer Send ACK Digits of filename Input folder Output folder	AL   NE  FileTransfer  Send ACK  Browse Browse Browse
	Cancel Accept



Settings	Function
Accepted ACK	Configuration of Accepted ACK. User can select
	between AL (Always), NE (Never), SU (Success),
	ER (Error).
Application ACK	Configuration of Application ACK. User can
	select between AL (Always), NE (Never), SU
	(Success), ER (Error).
Message transfer	Configuration of protocol. User can select
	between FileTransfer and TCP_IP.
Send ACK	If activated, ACK message will be send
Digit of filename	Configuration about how many digits will be
	used for filename
Input folder	Input folder configuration
Output folder	Output folder configuration



#### 3.9.12 Interfaces – HL7 Versions

Setup		
Setup           General         23 23 23           Parameters         24           Patient data         24           Viewing         24           Printing         Medications           Medications         Measuring           Comments         Interfaces           Interfaces         Sea           Betmail ECG         E	Version HL7 Messages	2.4 Add Remove ACK A10 p.4 ADT A01 ADT A01 ADT A04 ADT A04
Egonizer Winlactat H: J General H: J Herrings H: J Versions H: J Versions H: J Segnents H: J Segnent		

Settings	Function	
Version	Used HL7 version	
HL7 Messages	Select the messages which should be processed	



# 3.9.13 Interfaces – HL7 Messages

General 🔶		anceseM	4012418
Parameters Add	Remove	Message	ADT ATO
Patient data ACK	( R^A19	Туре	ADT^A18
Viewing ADF ADT	R^A19_24 *^A01	Handle message	Handle message
Printing ADT	^A03	Tidhalo mobolgo	I handle message
Medications ADT	**A08	Admit patient	Admit patient
Measuring ADT	^A34	Send over server socket	Send over server socket
Comments DFT	~A40 ~P03		
Interfaces MDP OR	И^Т02 И^О01	Segments	4 - 1 4
Seca ORI	M^001_24		Add Remove Up Down
External ECG ORF	R^002_24		MSH
Ergonizer ORU	J^R01_24		PID
Winlactat QRY	r^A19		MRG
HL7 General QR1	r*Q02		Contractor
HL7 Interfaces			
HL7 Versions			
HL7 Messages			
HL7 Segments			
HI 7 Fields			
Users			
Audit trail		Preview	Preview
Devices			

Settings	Function
Message	Name of the message
Туре	Select the type of the message
Handle message	If activated, the message will be processed
Admit patient	If activated, the patient will be added to the
	database if he doesn't already exist
Send over server socket	If activated message will be send via server
	socket
Segments	Segments can be added or removed from the
	message. It is even possible to change their
	position.
Preview	Clicking the button opens a preview window
	showing how the message will be sent



# 3.9.14 Interfaces – HL7 Segments

General     Add Remove     Segment     MSH       Parameters     FW     Segment-ID     MSH       Patient data     FW     Segment-ID     Optional       Printing     MSA     Optional     Optional       Medications     OBK_RD     Beenatable     Repeatable       Messuing     OBK_RD     Beenatable     MSH       Seca     DPC_A     PC_A     Add Remove       Seca     DPC_A     DPC_A     Add Remove       Minitate     TXA     MSH     MSH       HJ2 forerafee     H2     MSH     MSH       H12 forerafee     H2     MSH     MSH       H12 forerafee     MSH     MSH     MSH       MSH15     MSH15     MSH15     MSH15       MSH15     MSH15     MSH15     MSH15	etup			
Devices	etup General General Parameters Patient data Viewing Printing Medications Measuring Comments Interfaces Interfaces Exemal ECG Ergonize Winlast HL7 General HL7 General HL7 General HL7 Hessages HL7 Hessages HL7 Hessages HL7 Hessages HL7 Hassages HL7 Hass	Add Remove Ent NRG MSA	Segment ID Segment-ID Optional Repeatable Fields	MSH  Optional  Repeatable  Msit Msit Msit Msit Msit Msit Msit Msi

Settings	Function	
Segment	Name of the Segment	
Segment-ID	Select the ID of the selected segment	
Optional	If activated, the selected segment is optional	
Repeatable	If activated, the selected segment is repeatable	
Fields	Fields can be added to or removed from the	
	segment	



# 3.9.15 Interfaces – HL7 Fields

General			Field	MSH10
Parameters	Add Remove		1 Iolu	MSITTO
Patient data	EVN0 EVN1	<u> </u>	Index	10
Viewing	EVN2 FT1 0		Required	Poquirod
Printing	FT1_1		rioquirou	M Redailed
Medications	FT1_20	=	Components	4 • 1 4
Measuring	FT1_6			Add Remove Up Down
Comments	FT1_7 MRG0			MSH_MessageControlID
Interfaces	MRG1 MRG2			
Ergonizer	MRG4			
Winlactat	MSA0 MSA1			
HL7 General	MSA2 MSH0			
HL7 Interfaces	MSH1			
HL7 Versions	MSH11			
HL7 Messages	MSH12 MSH15			
HL7 Segments	MSH16 MSH2			
HL7 Fields	MSH3			
HL7 Components	MSH5 MSH6			
Users	MSH7 MSH9			
Audit trail	OBR0 OBR1			
Devices	OBR13	-		

Settings	Function	
Field	Name of the Field	
Index	Index of the selected field	
Required	If activated, the selected field is required	
Components	Components can be added to or removed from	
	the field as well as moved into another order	



After clicking the Add button in the line components the following window will appear which offers the possibility of adding new components to the selected field:

AlternativePatientenID Birthday	<u>^</u>
Empty component	
EVN EventTypeCode	
EVN_RecordedDateTime	
ExternalPatientID	E
Family name	
First name	
FI1_PerformedByCode_ID	
FIL Performed ByCode_Identifier TypeCode	
FT1_TransactionCode_ID	
FT1_TransactionDate	
FT1 TransactionQuantity	
FT1 Transaction Type	
HL7DataType	
InternalPatientID	
MRG_PatientID	
MSA_AcknowledgmentCode	
MSA_MessageControlID	
MSH_AcceptACKType	
MSH_ApplicationALK Type	
MSH_Date MSH_EncodingCharactem	
MSH_EieldSeparator	
MSH_MessageControlID	
MSH_MessageType	
MSH ProcessingID	
MSH Receiving Application	
MSH Receiving Application ID	
MSH_ReceivingApplication_Type	
MSH_ReceivingFacility	*

# Geratherm Respiratory

# 3.9.16 Interfaces – HL7 Components

General		Component	InternalPatientID
Parameters	Add Remove		
Patient data	Birthday	Туре	Patient information
Viewing	Empty component	Patient information	Patient ID
Printing	EVN_EventTypeCode EVN_RecordedDateTime		Fatient ID
Medications	ExternalPatientID E	Interpretation	Text
Measuring	First name	Max text length	20
Comments	FT1_PerformedByCode_ID FT1_PerformedByCode_Identifier		20
Interfaces	FT1_TransactionCode_ID FT1_TransactionCode_Text		
Ergonizer	FT1_TransactionDate		
Winlactat	FT1_TransactionType		
HL7 General	Internal PatientID		
HL7 Interfaces	MRG_PatientID MSA_AcknowledgmentCode		
HL7 Versions	MSA_MessageControlID		
HL7 Messages	MSH_AcceptACKType MSH_ApplicationACKType		
HL7 Segments	MSH_Date MSH_EncodingCharacters		
HL7 Fields	MSH_FieldSeparator		
HL7 Components	MSH_MessageType MSH_ProcessingID		
Users	MSH_ReceivingApplication MSH_ReceivingApplication_ID		
Audit trail	MSH_ReceivingApplication_Type		
Devices	MSH_ReceivingFacility_ID *		

Settings	Function
Component	Name of the component
Туре	Choose the type of the selected field
Patient information	Selection of patient information
Interpretation	Choose how to process the content of the
	component. User can select between
	DateOrTime, Enumeration, FloatValue,
	IntegerValue and Text
Max. text length	Depending on the settings of the previous line
	the format of the component can be defined



#### 3.10 Users

The following section will allow configuration of users as well as user groups.

#### 3.10.1 Users - General

General	Login required	Login required
Parameters	Auto logout	Auto logout
Patient data	Autologout	
Viewing	Auto logout time	120 s
Medieations	Physician	Show selection
Medications	, nyoloidin	
Comments	Ward	Show selection
Interfaces	Test start	Show login before start of first test
Users		
General		
User groups		
Users		
Physician		
Ward		
Audit trail		
Devices		

Settings	Function
Login required	If activated, users have to login at start up
Auto Logout	If activated, a user will be logged out
	automatically after a set period of inactivity.
Auto Logout Time	If auto logout is activated the time of inactivity
	can be configured in the corresponding text field.
Physician	If activated, a drop down menu of all physicians
	will be shown at login
Ward	If activated, a drop down menu of all wards will
	be shown at login
Test start	If activated, the user has to log in before the first
	test starts.



#### 3.10.2 Users – User groups

Setup				
General	Add Remove	Name	Administrator	1
Patient data	Administrator	Setup system	Setup system	
Viewing		Setup users	Sotup usors	
Printing		octup usors		
Medications		Patient handling	Add,Review,Change,De Setup	
Measuring		Tests	+ • ·	
Comments			Add Remove Setup	
Interfaces			All (Measure, Review, Change, Delete, Import, Export)	
Users				-
General				1
User groups				
Users	-			
Physician				
Waru	-	Comments	💠 💻 🥆	
			Add Remove Setup	
Audit trail Devices			va (vao, neview unange Userie , mport, Esport)	
Help	Basic		Cancel Accept	

In the selection area user groups can be added or removed. After selecting a group the following settings are available in the configuration area:

Settings	Function
Name	Name for the user group
Setup system	If activated the users in the displayed group are
	able to change the configurations within the Blue
	Cherry setup
Setup users	If activated, users in the displayed group are able
	to add new users to the Blue Cherry system
Patient Handling	Adjust which rights the users of this group have
	in relation with patient data, e.g. if they are able
	to add or remove patients
Tests	Adjust which tests the users of the selected user
	group should be able to start and which rights
	they have in relation to the particular type of
	measurement, e.g. if they may edit a
	measurement.
Comments	Adjust whether and at which measurement
	types the users of this group are able to insert



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comments and if they are able to change comments.

After clicking the Setup button in the patient handling line the following window will appear:

Setup rights	
Add	☑ Add
Review	Review
Change	Change
Delete	☑ Delete
Import	☑ Import
Export	✓ Export
	Cancel Accept

Settings	Function
Add	If activated, the users of this group are able to
	add new patients
Review	If activated, the users of this group are able to
	look at patient data
Change	If activated, the users of this group are able to
	change patient data
Delete	If activated, the users of this group are able to
	delete patient data
Import	If activated, the users of this group are able to
	import patient data
Export	If activated, the users of this group are able to
	export patient data



After clicking the **Setup** or **Add** button in the Tests line the following window will be displayed:

etup rights	
Measurement type	All
Add	✓ Add
Review	Review
Change	Change
Delete	☑ Delete
Export	✓ Export
	Cancel Accept

Settings	Function
Measurement type	Adjust for which measurement type rights should
	be set.
Add	If activated, the users of this group are able to
	add new patients
Review	If activated, the users of this group are able to
	look at patient data
Change	If activated, the users of this group are able to
	change patient data
Delete	If activated, the users of this group are able to
	delete patient data
Export	If activated, the users of this group are able to
	export patient data
After selecting the Setup or Add button in the comments line the following window will appear:

Setup rights	
Measurement type	All
Review	Review
Change	Change
	Cancel Accept

Settings	Function	
Measurement type	Adjust for which measurement type rights should	
	be set.	
Review	If activated, the users of this group are able to	
	look at patient data	
Change	If activated, the users of this group are able to	
	change patient data	



#### 3.10.3 Users - Users

Setup			
General Parameters Patient data Viewing Printing Medications Measuring Comments Interfaces Users General Users Physician Ward Audit trait Devrices	Add Remove Up Down	User User group Password Repeat password	Administrator -
Help	Basic		Cancel Accept

In the selection area users can be added, removed or moved up and down in order to change the order. After selecting a user the following settings are available in the configuration area:

Settings	Function	
User	Name of the individual user	
User group	Determine which group the selected user should	
	belong to	
Password	Enter a user specific password	
Repeat Password	Enter the user specific password for a second	
	time	



#### 3.10.4 Users – Physician

General	- + - 🕇 🦊	Name	
Parameters	Add Remove Up Down		
Patient data			
Viewing			
Printing			
Medications			
Measuring			
Comments			
Interfaces			
Users			
General			
User groups			
Users			
Physician			
Ward			
Audit trail			
Devices			

In the selection area physicians can be added, removed or moved up and down in order to change the order. After selecting a physician it is possible to define a name in the configuration on the right side.



#### 3.10.5 Users – Ward

General	4 • • • •	Name	
Parameters	Add Remove Up Down		
Patient data			
Viewing			
Printing			
Medications			
Measuring			
Comments			
Interfaces			
Users			
General			
User groups			
Users			
Physician			
Ward			
Audit trail	-		
Audit trail	-		
Devices			

In the selection area wards can be added, removed or moved up and down in order to change the order. After selecting a ward it is possible to define a name in the configuration on the right side.

## Geratherm Respiratory

## 3.11 Audit Trail

In this section changes to Audit Trail can be made.

### 3.11.1 Audit Trail – General

etup			
General	Measurements	da = <	
Parameters	riododromonio	Add Remove Setup	
Patient data		SVC	
Viewing		F/V	
Printing			
Medications			
Measuring			
Comments			
Interfaces			
Users			
Audit trail			
General			
Search masks			
Devices			
Help Ba	sic		Cancel Accept

In this section it is possible to define which measurements should be monitored by Audit Trail. It is possible to add or remove measurements as well as setup measurements. After clicking the **Add** or **Setup** button the following window will appear:

Setup measurement	
Measurement type	svc
Reviewing page	SVC (ID 3)
	Cancel Accept

Settings	Function
Measurement type	Select the measurement type
Reviewing page	Select how the measurement
	should be displayed



## 3.11.2 Audit Trail – Search masks

General Parameters Add Remov	e	Name	
Patient data		Types	Setup
Viewing		Users	Setup
Printing			Joiup
Medications		Physicians	Setup
Measuring		Period start	DD/MM/YYYY
Comments			
Interfaces		Period end	DD/MM/YYYY
Users			
Audit trail			
General			
Search masks			
Devices			

In the selection area it is possible to add or remove search masks. Once a search mask is added and selected the following settings are available in the configuration area:

Settings	Function
Name	Name for the search mask
Types	Adjust the type whose changes should be
	searched for
Users	Adjust the user whose changes should be
	searched for
Physicians	Adjust the physician whose changes should be
	searched for
Period start	Date changes should be search from
Period end	Date until changes should be searched



After clicking the **Setup** button in the types line the following window will appear:



Here it is possible to define the type of change which should be searched for. E.g. it is possible to search for changes in comments of patient data.

After clicking the **Setup** button in the users line the following window will appear:

Select users	
- Admin Reviewer	

Here it is possible to define the user whose changes should be searched for.

After clicking the **Setup** button in the physician line the following window will appear:



Here it is possible to define the physician whose changes should be searched for.



### 3.12 Devices

This section allow to configure settings for different devices.

## 3.12.1 Devices - General

Coporal		
Daramatara	Default devices	Reset
Patient data		
Patient data		
viewing		
Printing		
Medications		
Measuring		
Comments		
Interfaces		
Users		
Audit trail		
Devices		
General		
Ergometers		
File transfer		
IOStiks		
Blood pressure devices		
Output devices		
Blueto oth devices		

By clicking the **Reset** button it is possible to reset the standard settings for measurements which will be started when the device is connected and recognised by Blue Cherry.



#### 3.12.2 Devices - Ergometers

Add Remove		
Frankine		
h/p/cosmos	Name	Ergoline
Trackmaster (km/h)	Protocol	Fraoline
GE 12000 Woodway		[
Trackmaster 400 RAM	Interval between com	1000
Powerjog Fractit	Time-Out	Use communication time-out
Seca		
Lode (Ergometer) Lode (Treadmill)	Port	
Ergoline ER800 Tech med	Port settings	Setup
Runner FES rowing machine		
	Used signals	Load,Blood pressure Setup
	Measurements	CPET,Stress ECG Setup
	Costors and effects	
	Factors and onsets	Setup
	Response to comman	Response after each command
	Log communication	E Log communication
	Test	Test communication
	hjbioanno hjbioanno (kmh) GE T2000 Bodingo Ergoti Bodingo Ergoti	hybicanes transmission of training hybicanes (new) constrained (ne

In the selection area it is possible to add or remove ergometer configurations. After clicking one of these the settings will appear in the configuration area.

Settings	Function
Enabled	If activated the ergometer will be used for Blue
	Cherry
Name	Name of the ergometer
Protocol	Choose the protocol for communication with
	the ergometer.
Intervall between com	Configuration of time intervall between 2
	commands in ms.
Time-Out	If activated timeout will be checked during
	communication
Port	Choose the port which the ergometer is
	connected to.
Port settings	Configuration of the communication
Used signals	Configuration of the signals provided by this
	device
Measurements	Configure for which measurements the
	ergometer will be available



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Factors and offsets	Configuration of factor and offset used to
	control the load of ergometer
Response to comman	Configuration about how to respond to
	commands. User can select between <b>no</b>
	response, response after each command and
	response after value has changed
Log communication	If activated communication will be logged in a
	file
Test	Here it is possible to test the communication

After clicking the **Setup** button in the port settings line the following window will appear:

Baudrate	4800	
Databits	8	
Parity	None	
Stopbits	1	_
Read timeout (ms)	250	
Write timeout (ms)	250	

Settings	Function
Baudrate	Adjust the Baudrate, which means how many
	symbols are transfered per second
Databits	Adjust the number of Databits
Parity	Adjust if a paritybit should be attached and if it
	is straight or odd
Stopbits	Adjust the number of stopbits
Read timeout (ms)	Adjust the time of Read timeout in ms
Write timeout (ms)	Adjust the time of Write timeout in ms



After clicking the Test communication button in the test line the following window appears:

Load	0
RPM	0 1/min
SBP	0 mmHg
DBP	0 mmHg
BP measurement	Start

Settings	Function
Load	Adjust the load of the ergometer
RPM	Display the pedal speed
SBP	Display the systolic blood pressure
DBP	Display the diastolic blood pressure
BP measurement	Start a blood pressure measurement



#### 3.12.3 Devices - File transfer

General Parameters Patient data	Enabled	Device enabled
Viewing Printing Medications Measuring Comments Interfaces Users	Folder File Polling time Data separation Latest data	Browse
Audit Itali Devices General Ergonnets <b>File transfer</b> 1058/a Biod pras auto devices Biode sure devices Biuetooth devices	Delete file Data	Delete file after reading

In the selection area it is possible to add or remove file transfer configurations. After clicking one of these the settings will appear in the configuration area:

Settings	Function
Enabled	If activated the file transfer will be used
Name	Name of the file transfer device
Folder	Path to the file folder
File	File name
Polling time	Adjust the time interval after which the folder
	will be checked for new files
Data separation	Adjust how the several data should be
	separated from each other. There are
	Tabulator, Comma, Semicolon and Fixed
	positions
Latest data	Adjust on which data position actual data can
	be found
Delete file	If activated, the file will be deleted after it is
	imported
Data	Adjustment of the file architecture



After clicking the **Add** or **Setup** button in the Data line the following window appears:

Signal	DBP
Factor	1
Offset	0
Position	0
Length	5

Settings	Function
Signal	Adjust from which signal data
	should be imported
Factor	Adjust the data factor
Offset	Adjust the data offset
Position	Adjust the data position
Length	Adjust the data length



### 3.12.4 Devices - IOStiks

Setup			
General Parameters Patient data Viewing Printing Medications Measuring Comments Interfaces Users Audit trail Devices General Ergometers File transfer Tostiks Blood pressure devices	Add Remove	Enabled Name Device Channel I (0 - 2,5V) Channel II (0 - 5V) Channel III (0 - 12V)	Device enabled      New      Setup      Setup      Setup      Setup
Help	Basic		Cancel Accept

In the selection area it is possible to add or remove stik configurations. After clicking one of these the settings will appear in the configuration area:

Settings	Function	
Enabled	If activated the selected IOstik will be used	
Name	Name of the IOstik	
Device	Select for which connected IOstik this	
	configuration should be used	
Channel I	Adjust which informations should be read by	
	this channel	
Channel II	Adjust which informations should be read by	
	this channel	
Channel III	Adjust which informations should be read by	
	this channel	



After clicking the Setup button in the lines of Channel I-III the following window appears:

Setup channel I (0 - 2,5V)	
Parameter	SpO2 Setup
Gain	1
Offset	0
	Cancel Accept

Settings	Function	
Parameter	Adjust the parameter which should be	
	transfered over this channel	
Gain	Set the gain for this parameter	
Offset	Set the offset for this parameter	

Select parameter	
HR SpD2 SBP DBP Load RPM Speed Elev	

Choose the parameter which should be transferred.



#### 3.12.5 Devices – Blood pressure devices

General 🔶 🖷	Enabled 🔲 Device enabled
Parameters Add Remove	
Patient data	Name Tango
Viewing	Protocol
Printing	
Medications	Interval between com 1000
Measuring	Time-Out Vise communication time-out
Comments	Port
Interfaces	Foit
Users Audit trail	Port settings Setup
Devices	Lised signals Ricod proseuro
General	Biolog pressure
Ergometers	Measurements CPET,REE,Stress EC Setup
File transfer	Log communication 📃 Log communication
IOStiks	Test Contraction
Blood pressure devices	Test communication
Output devices	
Blueto oth devices	

In the selection area it is possible to add or remove blood pressure devices. After selecting a device the following settings will appear in the configuration area:

Settings	Function
Enabled	If activated the blood pressure device will be
	used for Blue Cherry
Name	Name of the device
Protocol	Choose the protocol for communication with
	the blood pressure device.
Intervall between com	Configuration of time intervall between 2
	commands in ms.
Time-Out	If activated timeout will be checked during
	communication
Port	Choose the port which the blood pressure
	device is connected to.
Port settings	Configuration of the communication
Used signals	Configuration of the signals provided by this
	device
Measurements	Configure for which measurements the blood



	pressure device will be available
Log communication	If activated communication will be logged in a
	file
Test	Here it is possible to test the communication



### 3.12.6 Devices – Output devices

General	4 <b>-</b>	Enabled	Device enabled	
Parameters /	Add Remove		E DONOU UNADIOU	
Patient data	Stercise device	Name	Exercise device	
Viewing		Protocol	Exercise device	
Printing			Extended demoe	
Medications		Interval between com	1000	
Measuring		Time-Out	Use communication	time-out
Comments		Det		
Interfaces		Port		
Users		Port settings	Setup	_
Audit trail		Llood signals		0.1
Devices		Used signals		Setup
Enometers		Measurements	CPET,Stress ECG	Setup
File transfer		Communication	Cotup	
IOStiks		Communication	Setup	_
Blood pressure devices		Log communication	Log communication	
Output devices		Test	Test communi	cation
Blueto oth devices			rest commun	oation

In the selection area it is possible to add or remove Output devices. After selecting a device the following settings will appear in the configuration area:

Settings	Function	
Enabled	If activated the Output device will be used for	
	Blue Cherry	
Name	Name of the device	
Protocol	Choose the protocol for communication with	
	the Output device.	
Intervall between com	Configuration of time intervall between 2	
	commands in ms.	
Time-Out	If activated timeout will be checked during	
	communication	
Port	Choose the port which the device is connected	
	to.	
Port settings	Configuration of the communication	
Used signals	Configuration of the signals provided by this	
	device	
Measurements	Configure for which measurements the Output	



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	pressure device will be available
Communication	Configuration of communication
Log communication	If activated communication will be logged in a file
Test	Here it is possible to test the communication

## 3.12.7 Devices – Bluetooth devices

General	Add Remove	Enabled	Device enabled
Parameters Patient data	Nonin	Name	Nonin
Viewing	-	Destand	
Printing	-	Protocor	Nonin
Medications		Interval between com	13,33333
Measuring		Time-Out	Use communication time-out
Comments			
Interfaces		Port	
Users	-	Port settings	Setup
Audit trail	-		UD C=02
General		Used signals	HR,Sp02 Setup
Ergometers		Measurements	CPET,Stress ECG Setup
File transfer		Activation key	
IOStiks		Device state	
Blood pressure devices		Device starts	If signal is detected
Output devices		Log communication	Log communication
Bluetooth devices	-1	Test	Tost communication
		Tost	rest continunication

In the selection area it is possible to add or remove Bluetooth devices. After selecting a device the following settings will appear in the configuration area:

Settings	Function	
Enabled	If activated the device will be used for Blue	
	Cherry	
Name	Name of the device	
Protocol	Choose the protocol for communication with	
	the device.	
Intervall between com	Configuration of time intervall between 2	
	commands in ms.	
Time-Out	If activated timeout will be checked during	
	communication	



Port	Choose the port which the device is connected
	to.
Port settings	Configuration of the communication
Used signals	Configuration of the signals provided by this
	device
Measurements	Configure for which measurements the device
	will be available
Activation key	Enter the activation key provided by your
	dealer
Device starts	Configure when the Bluetooth device should
	start communication. User can select between
	if signal is detected and if sensor is connected
Log communication	If activated communication will be logged in a
	file
Test	Here it is possible to test the communication

#### 4. Parameter Definitions

The following list will show all available parameters in Blue Cherry in in alphabetic order of measurement type.

ID	Messurement Type	Name	Unit	Description
7301	Box calibration	Box volume	1	Volume of Bodystik cabine
7302	Box calibration	Box corr		Body box correction factor determined during
				box calibration
7303	Box calibration	Time constant	s	Time constant of body box determined during
				box calibration
7304	Box calibration	Pump volume	ml	Volume of Body box calibration syringe
7305	Box calibration	PBStart	Ра	Box pressure at start of time constant
				determination
7306	Box calibration	PBEnd	Ра	Box pressure at end of time constant
				determination
7397	Box calibration	Ambient temperature	°C	Ambient temperature
7398	Box calibration	Ambient pressure	hPa	Ambient pressure
7399	Box calibration	Ambient humidity	%	Ambient humidity
1300	Breathing pattern	Test time		Time the test has been performed
1301	Breathing pattern	Vt	1	Tidal volume
1302	Breathing pattern	Bf	1/min	Breathing frequency
1303	Breathing pattern	VE	l/min	Minute Ventilation
1304	Breathing pattern	tln	s	Inspiration time
1305	Breathing pattern	tEx	s	Expiration time
1306	Breathing pattern	tTot	s	Duration of 1 complete breathing cycle
1307	Breathing pattern	Vt/tln	I/s	Tidal volume devided by inspiration time
1308	Breathing pattern	tln/tTot	%	Inspiration time in percentage of total time
				for 1 breath
1395	Breathing pattern	Vol corr in		Inspiratory corection factor for volume
				calibration
1396	Breathing pattern	Vol corr ex		Expiratory corection factor for volume
				calibration
1397	Breathing pattern	Ambient temperature	°C	Ambient temperature
1398	Breathing pattern	Ambient pressure	hPa	Ambient pressure
1399	Breathing pattern	Ambient humidity	%	Ambient humidity
1200	CO Diffusion	Test time		Time the test has been performed
1201	CO Diffusion	Vd	1	Dead space volume of apparatus
1202	CO Diffusion	VA	1	Alvoelar volume
1203	CO Diffusion	TLco	mmol/kPa/min	Diffusion capacity
1204	CO Diffusion	Ксо	mmol/kPa/min/l	Transfer coefficient of the lung
				Kco = TLCO/VA
1205	CO Diffusion	TLco (Hb)	mmol/kPa/min	Diffusion capacity corrected for Hb
1206	CO Diffusion	Kco (Hb)	mmol/kPa/min/l	Transfer coefficient of the lung corrected for
1207	CO Diffusion	TIC	1	Total lung canacity
1207	CO Diffusion	FRC		Functional residual canacity
1200	CO Diffusion	RV	1	Residual volume
1210	CO Diffusion	VI	l.	
1210	CO Diffusion	FRV	l.	Expiratory reserve volume
1212	CO Diffusion	RV/TLC	%	Residual volume in percentage of total lung
	SC Diffusion	,		capacity

# Geratherm Respiratory

ID	Messurement Type	Name	Unit	Description
1213	CO Diffusion	FRC/TLC	%	Functional residual capacity in percentage of total lung capacity
1214	CO Diffusion	VI/VC	%	Inspiratory capacity in percent of vital
1215	CO Diffusion	FF CO	%	Expiratory carbon dioxide concentration
1215	CO Diffusion	FF_CH4	%	Expiratory methane concentration
1210	CO Diffusion		%	Inspiratory carbon dioxide concentration
1217	CO Diffusion	FL CH4	%	Inspiratory methane concentration
1210	CO Diffusion	Vdiscard	1	Discard volume
1215	CO Diffusion	Vsamnle	1	Sample volume
1220	CO Diffusion	PaO2	mmHg	Arterial oxygen partial pressure
1221	CO Diffusion	Hh	a/yl	Haemoglobin
1222	CO Diffusion	СОНЬ	%	Carboxybaemoglobin
1223	CO Diffusion	Tdiff	5 5	Diffusion time
1224	CO Diffusion	T85 in	5	Time until 85% of the VI has been inhaled
1225	CO Diffusion	T85_0V	5 5	Time until 85% of the VI has been exhaled
1220	CO Diffusion	T00_in	5	Time until 85% of the VI has been inhaled
1227	CO Diffusion	T90_III	5	Time until 90% of the VI has been initialed
1228	CO Diffusion	190_ex	s	Time until 90% Of the Virias been exhaled
1229	CO Diffusion	I_SV Dm in	5 hDo	Mouth prossure inspiratory
1230	CO Diffusion	Pm_m	nPa hDa	Mouth pressure expiratory
1231	CO Diffusion	PIII_ex	IIPd	
1232	CO Diffusion	HBConstant	1	Constant used for Hb correction
1233	CO Diffusion	ILCBody-ILCCH4	1	Difference between ILC measured with
4224	00 D'11	105	1	Bodypietnysmography and Diffusion
1234	CO Diffusion	VCEX	1	Expiratory vital capacity
1235	CO Diffusion		1	lidal volume
1236	CO Diffusion	Vdapp	1	Dead space volume of apparatus
1237	CO Diffusion	Drift CO	%	Drift of CO during breath hold time
1238	CO Diffusion	Drift CH4	%	Drift of CH4 during breath hold time
1239	CO Diffusion	VI (Ambient air)	I	Inspired volume before shutter is closed
1240	CO Diffusion	ATPD to BTPS		Conversion factor from ATPD to BTPS
1241	CO Diffusion	STPD to BTPS		Conversion factor from STPD to BTPS
1242	CO Diffusion	PIF	l/s	Peak inspiratory flow
1243	CO Diffusion	TLco/VC	mmol/kPa/min/l	Diffusion capacity devided by vital capacity
1244	CO Diffusion	TLco/TLC(p)	mmol/kPa/min/l	Diffusion capacity devided by total lung capacity
1245	CO Diffusion	%FRC/%TLco		Ratio of FRC as percent predicted to Tlco as
				percent predicted
1246	CO Diffusion	%VC/%TLco		Ratio of VC as percent predicted to Tlco as
				percent predicted
1247	CO Diffusion	VA/TLC(p)		Ratio of alveolar volume to total lung capacity
	aa a.(//			measured by body plethysmography
1248	CO Diffusion	VA/ILC		Alveolar volume devided by Total lung capacity
1249	CO Diffusion	TLco/RV	mmol/kPa/min/l	Diffusion capacity devided by residual volume
1250	CO Diffusion	%FVC/%TLco		Ratio of FVC as percent predicted to Tlco as
				percent predicted
1295	CO Diffusion	Vol corr in		Inspiratory corection factor for volume calibration
1296	CO Diffusion	Vol corr ex		Expiratory corection factor for volume calibration
1297	CO Diffusion	Ambient temperature	°C	Ambient temperature
1298	CO Diffusion	Ambient pressure	hPa	Ambient pressure
1299	CO Diffusion	Ambient humidity	%	Ambient humidity
501	CPET	Time	min:sec	Test time

ID	Messurement Type	Name	Unit	Description
502	CPET	Load	W	Load
503	CPET	Speed	km/h	Speed
504	CPET	Elev	%	Elevation
505	CPET	RPM	1/min	pedal speed
506	CPET	V02	l/min	Oxygen Uptake
				$VO2 = \int_0^T Fex(t) dt \ x \ \Delta FO2$
				$\Delta FO2 = \frac{FiO2 - FeO2 - FiO2 \times FeCO2}{(1 - FiO2)}$
				Fex = expired flow
				FiO2 = inspired O2 concentration
				FeO2 = expired O2 concentration
				FeCO2 = expired CO2 concentration
507	CPET	VO2/kg	ml/min/kg	Oxygen uptake per body weight
				VO2/kg = VO2 / body weight x 1000
508	CPET	VCO2	l/min	Carbon Dioxide production
				$VCO2 = \int_0^T Fex(t) dt x FECO2$
509	CPET	RER		Respiratory Exchange Ratio
				RER = VCO2/VO2
510	CPET	VEx	1	Expired volume
511	CPET	tEx	S	Time for expiration
512	CPET	VIn	1	Inspired volume
513	CPET	tln	S	Time for inspiration
514	CPET	Vt		Tidal volume
515	CPET	Bf	1/min	Breathing frequency
516	CPET	VE	l/min	Minute Ventilation $VE = \int_0^T Fex(t) dt$
517	CPET	BR	l/min	Breathing reserve
				BR = MVV - VEpeak
				MVV = Maximum Voluntary Volume
				(FEV1x35)
				VEpeak is Minute Ventilation at VO2max
518	CPET	BR	%	Breathing reserve
519	CPFT	VE/VO2		Ventilatory equivalent for Q2
515		,		Minute Ventilation devided by Oxygen uptake
520	CPET	VE/VCO2		Ventilatory equivalent for CO2
				Minute Ventilation devided by Carbon
				Dioxide production
521	CPET	Vd(g)	1	Dead space volume (noninvasive calculation)
				$Vd = Vt x \frac{PETCO2 - PECO2}{PETCO2} - Vdm$
	1			Vt = Tidal volume
	1			PaCO2 = arterial PCO2
				PECO2 = mixed expired PCO2
				Vdm= mask dead space



ID 

CPET

CPET

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wessurement type	Ivallie	Unit	Description
CPET	Vd(g)/Vt	%	Dead space - tidal volume ratio (noninvasive
			calculation)
			$\frac{Vd(g)}{Vd(g)} = \frac{PETCO2 - PECO2}{Vdm}$
			Vt PETCO2 Vt – Vdm
CPET	FO2Et		Endtidal fraction of O2 concentration
CPET	FCO2Et		Endtidal fraction of CO2 concentration
CPET	FiO2Et		Inspiratory fraction of O2 concentration
CPET	FiCO2Et		Inspiratory fraction of CO2 concentration
CPET	PETO2	mmHg	End tidal O2 pressure
CPET	PETCO2	mmHg	End tidal CO2 pressure
CPET	HR	1/min	Heart rate
CPET	HRR	1/min	Heart rate reserve
			HRR = predicted HR - HR at VO2max
CPET	O2Pulse	ml/beat	O2 Pulse
	( () )		O2Puls = VO2 x 1000 / HR
CPET	O2Pulse (/kg)	ml/kg/beat	O2 Pulse per body weight
 CDET	CDD	mmlla	O2Pulse(/kg) = O2Pulse / body weight
CPET		mml/g	Diastalia blood pressure
 CPET	DBP	mmHg/min	Diastolic blood pressure
CPET	DP	mm¤g/mm	Double product
			DP = SBP x HB
 CPFT	SnO2	%	Oxygen saturation
CPFT	PaO2	mmHg	Arterial oxygen partial pressure
CPFT	PaCO2	mmHg	Arterial carbon dioxide partial pressure
 CPFT	Lactate	mmol/l	Lactate concentration
CPET	P(A-a)O2	mmHg	Alveolar - Arterial PO2 difference
0.2.	. (, ) • =		
			P(A-a)O2 = PAO2 - PaO2
			$PA02 = Fi02 \times (PB - 47) - \frac{PaU02}{m}$
			RER
			PB = ambient barometric pressure in mmHg
CPET	P(a-ET)CO2	mmHg	Arterial End-tidal PCO2 difference
			P(a-ET)CO2 = PaCO2 - PETCO2
CPET	рН		pH blood gas value
CPET	HCO3	meq/l	Bicarbonat blood gas value
CPET	BE	meq/l	Base Excess blood gas value
CPET	Mets		Metabolic equivalent
			$METS = \frac{VO2/Kg}{VO2/Kg}$
			3,5
CPET	Borg		Borg Index
CPET	Lipides	mg/min	Lipids oxidation
CPET	Glucides	mg/min	Carbohydrate oxidation
CPET	Proteines	mg/min	Proteines oxidation
CPET	Lipides	kcal/min	Lipids oxidation
CPFT	Glucides	kcal/min	Carbohydrate oxidation

kcal/min

%

Proteines oxidation

Lipids oxidation

Proteines

Lipides

U ID	Messurement Type	Name	Unit	Description
554	CPET	Glucides	%	Carbohydrate oxidation
555	CPET	Proteines	%	Proteines oxidation
556	CPET	Energy	kcal/min	Energy consumption
557	CPET	Vd(b)	1	Dead space volume
				$Vd = Vt \ x \ \frac{PaCO2 \ - \ PECO2}{PaCO2} - Vdm$
				Vt = Tidal volume
				PaCO2 = arterial PCO2
				PECO2 = mixed expired PCO2
				Vdm= mask dead space
558	CPET	Vd(b)/Vt	%	Dead space - tidal volume ratio
				Vd(b) PaCO2 – PECO2 Vdm
				$\frac{1}{Vt} = \frac{1}{PaCO2} - \frac{1}{Vt} - Vdm$
559	CPET	%VO2	%	Oxygen uptake in percent of VO2max
560	CPET	PAO2	mmHg	Alveolar PO2 pressure
561	CPET	Load/Ref.	%	Load in percent of reference load
562	CPET	SpO2 Quality	%	Quality of SpO2 reading
563	CPET	Fat	mg/min	Lipids oxidation
564	CPET	СН	mg/min	Carbohydrate oxidation
565	CPET	Proteines	mg/min	Proteines oxidation
566	CPET	Fat	kcal/24h	Lipids oxidation
567	CPET	СН	kcal/24h	Carbohydrate oxidation
568	CPET	Proteines	kcal/24h	Proteines oxidation
569	CPET	Fat	%	Lipids oxidation
570	CPET	СН	%	Carbohydrate oxidation
571	CPET	Proteines	%	Proteines oxidation
572	CPET	REE	kcal/24h	Resting Energy Expenditure
				REE = (3.9 x VO2 + 1.1 x VCO2) x 1.44
573	CPET	O2Delay	ms	Delay in rise of O2 signal
574	CPET	CO2Delay	ms	Delay in rise of O2 signal
575	CPET	REE/BSA	kcal/24h/mÂ <sup>2</sup>	Resting Energy Expenditure per Body Surface
				Area
				$BSA = 0.007184 \text{ x} Height(cm)^{0.725} \times Weight(kg)^{0.425}$
				BSA calculation according to formula DuBois
576	CPET	RQnp		RQ corrected for proteine consumption
577	CPET	Load (i)	W	Load interpolated over each load stage
578	CPET	HR (i)	1/min	HR interpolated over each load stage
579	CPET	VO2ref	l/min	Predicted Oxygen consumption
580	CPET	VEref	l/min	Predicted minute ventilation
581	CPET	Vt/VC	%	Tidal volume in percent of vital capacity
582	CPET	REE (Weir)	kcal/24h	Resting Energy Expenditure
				REE = (3.9 x VO2 + 1.1 x VCO2) x 1.44
583	CPET	Load (/norm)	w	Predicted load calculated by using the norm weight of patient
584	CPET	VO2 (/norm)	l/min	Predicted oxygen consumption calculated by using the norm weight of patient
585	CPFT	VO2/breath	ml	Oxygen consumption per breath
586	CPET	VCO2/breath	ml	Carbon dioxide production per breath

Geratherm Respiratory

ID	Messurement Type	Name	Unit	Description
587	CPET	Time	s	Time
588	CPET	VCO2/kg	ml/min/kg	Carbon dioxide production per body weight
				VCO2/kg = VCO2 / body weight x 1000
589	CPET	FiO2 Offset		Offset for inspiratory fraction of O2
				concentration
590	CPET	Load/kg	W/kg	Load per body weight
591	CPET	PECO2	mmHg	Mixed expired PCO2 pressure
592	CPET	PECO2/PETCO2		Mixed expired PCO2 pressure devided by
				PETCO2
593	CPET	Fan	l/min	Fan speed
596	CPET	Load / Speed + Elev		Parameter which will show
				Load if a cycle ergometer protocole is used
				and Second (Eleventions if a two admillions to calle in
				Speed/Elevation if a treadmill protocole is
507	CDET	Ambient temperature	°C	Ambiant tamparatura
597	CPET	Ambient temperature	L hDo	Ambient temperature
598	CPET	Ambient pressure	nra v	Ambient pressure
399 701	CPET	Amplent numberly	70 ml	Mask dead space
701	CPET		l/min	Maximum Voluntary Volume (EEV(1x2E)
702	CPET		ml/min/M/	
703	CPET			
704	CPET	HP ( Post )	hoats (min	Hoart rate at rest
705	CPET	VO2(Rest)	I/min	Ovugen consumption at rest
700	CPET	HP (AT)	heats /min	Heart rate at anaerobic threshold
707	CPET			Ovygen consumption at anaerobic threshold
708	CPET	%VO2(AT)	1/111112 %	Oxygen consumption at anaerobic threshold
709	CFLI	70VO2 (AT)	76	in percent of VO2max
710	CPFT	VE/VO2 ( AT )	l/min	Ventilatory equivalent for VO2 at anerobic
/10		12,102(7.17)	·,····	threshold
711	CPET	HR	beats/min	Heart rate
712	CPET	VO2	l/min	Oxygen consumption
713	CPET	Load ( Lipox )	W	Load at LIPOXmax point
714	CPET	Load/Ref ( Lipox )	%	Load in percentage of predicted load at
		, , , ,		LIPOXmax
715	CPET	HR ( Lipox )	beats/min	Heart rate at LIPOXmax point
716	CPET	Lipids ( Lipox )	mg/min	Lipides at LIPOXmax point
717	CPET	Load (Crossing point)	W	Load at crossing point
718	CPET	Load/Ref (Crossing	%	Load in percentage of predicted load at
		point )		crossing point
719	CPET	HR (Crossing point)	beats/min	Heart rate at crossing point
720	CPET	Glucids / WR	mg/min/kg/W	Glucides devided by work rate
721	CPET	Training unit duration	min	Duration of training unit
722	CPET	Energy consumed	kcal	Energy consumption during training unit
		during training		
723	CPET	O2Pulse	ml/beat	Oxygen pulse
				$O2Pulse = \frac{VO2 \times 1000}{VO2}$
				HR
724	CPET	Vd(g)/Vt	%	Vd(g)/Vt at VO2max
725	CPET	PaO2 ( peakVO2 )	mmHg	Arterial oxygen partial pressure at VO2max

Geratherm Respiratory

ID	Messurement Type	Name	Unit	Description
726	CPET	PaCO2 ( peakVO2 )	mmHg	Arterial carbon dioxide partial pressure at VO2max
727	CPET	P(A-a)O2 ( peakVO2 )	mmHg	Alveolar - Arterial PO2 difference at VO2max
728	CPET	P(a-ET)CO2 (peakVO2)	mmHg	Arterial End-tidal PCO2 difference at VO2max
729	CPET	BR	l/min	BR absolute at VO2max
730	CPET	BR	%	BR relative at VO2max
731	CPET	Bf	1/min	Bf at VO2max
732	CPET	VE/VCO2 ( AT )	_,	Ventilatory equivalent for CO2 at anaerobic
		,,		threshold
733	CPET	HRR	1/min	Heart rate reserve at VO2max
734	CPET	PaO2 ( Rest )	mmHg	Arterial oxygen partial pressure at rest
735	CPET	P(A-a)O2 ( Rest )	mmHg	Alveolar - Arterial PO2 difference at rest
736	CPET	P(A-a)O2 ( AT )	mmHg	Alveolar - Arterial PO2 difference at anaerobic threshold
737	CPET	SpO2 ( Rest )	%	Oxygen saturation at rest
738	CPET	SpO2	%	Oxygen saturation at VO2max
739	CPET	P(a-ET)CO2 ( AT )	mmHg	Arterial End-tidal PCO2 difference at anaeropic threshold
740	CPET	VO2( AT / peakVO2 )	%	Oxygen consumption at anaerobic threshold
-	-	- ( ) ( - )	-	in percent of VO2max
741	CPET	VO2( RCP / peakVO2 )	%	Oxygen consumption at respiratory
				compensation point in percent of VO2max
742	CPET	RER		Respiratory exchange ratio at VO2max
743	CPET	VE	l/min	Minute ventilation at VO2max
744	CPET	Load	W	Load at VO2max
745	CPET	Load (i)	W	Interpolated load at VO2max
746	CPET	Time	min:sec	Duration of load phase
747	CPET	VCO2	l/min	VCO2 at VO2max
748	CPET	VO2/kg ( AT )	ml/min/kg	Oxygen uptake per body weight at anaerobic threshold
749	CPET	VO2/kg ( RCP )	ml/min/kg	Oxygen uptake per body weight at respiratory
750	CPFT	VO2/kg	ml/min/kg	Oxygen untake per body weight at VO2max
751	CPET	SBP ( Rest )	mmHg	Systolic blood pressure at rest
752	CPET	SBP	mmHg	Systolic blood pressure at VO2max
753	CPFT	DBP ( Rest )	mmHg	Diastolic blood pressure at rest
754	CPET	DBP (Hest)	mmHg	Diastolic blood pressure at VO2max
755	CPFT	Vt	1	Tidal volume at VO2max
756	CPFT	PFTO2 ( Rest )	mmHg	End tidal O2 pressure at rest
757	CPFT	PETCO2 (Rest)	mmHg	End tidal CO2 pressure at rest
758	CPFT	RFR ( Rest )		Bespiratory exchange ratio at rest
759	CPFT	FFV1	1	Forced expired volume after 1s
760	CPET	VO2/Ref. ( AT )	%	Oxygen consumption in percentage of
				predicted at anaerobic threshold
761	CPET	PETCO2 ( AT )	mmHg	End tidal CO2 pressure at anaerobic threshold
762	CPET	PaCO2 (Rest)	mmHg	Arterial carbon dioxide partial pressure at rest
763	CPET	VO2/Ref. ( RCP )	%	Oxygen consumption in percentage of
764	CPET	OUES		Oxygen uptake efficiency slope
				OUES is derived from the slope of VO2 versus Log VE
765	CPET	HR/VO2-Slope	beats/ml/kg	Slope of HR over VO2
766	CPET	VO2/WR(m)	ml/min/W	Slope of VO2 over work rate

ID	Messurement Type	Name	Unit	Description
793	CPET	Vol corr in		Inspiratory corection factor for volume calibration
794	CPET	Vol corr ex		Expiratory corection factor for volume calibration
795	CPET	O2 corr		O2 correction factor determined during gas
796	CPET	CO2 corr		CO2 correction factor determined during gas
797	CPFT	Ambient temperature	°۲	Ambient temperature
798	CPFT	Ambient pressure	hPa	Ambient pressure
799	CPFT	Ambient humidity	%	Ambient humidity
813	CPFT	СН	mg/min	Carbohydrate oxidation
2101	CPET	%HR	%	Heart rate as percent predicted
2102	CPET	%Load	%	Load as percent predicted
2102	CPET	FeO2	70	Evaluation of O2 concentration
2103	CPET	FeCO2		Expiratory fraction of CO2 concentration
2104	CPET	FeO2Et		Expiratory fraction of end tidal O2
2105	CFLI	TEOZEL		concentration
2106	CPET	FeO2		Mean expiratory fraction of O2 concentration
2100	CPET	FiO2		Inspiratory fraction of O2 concentration
2107	CPET		log(l/min)	Logarithm of minute ventilation
2100	CPET	Log(VL)	10g(i/1111)	Measured load
2105	CDET	Load (III)	km /b	Measured speed
2110	CPET	Speed (III)	R111/11	Measured elevation
2111	CPET	cf	70 1 /min	Reasoned elevation
2112	CPET	ST tin (the st	1/min	Rowing frequency (Rowing machine)
2113	CPET	tin/ttot		breath
2114	CPET	Vt/IC	%	Tidal volume in percentage of inspiratory capacity
2115	CPET	VA (b)	l/min	Alveolar volume calculated from blood gases
2116	CPET	CO	l/min	Cardiac output estimated
2217	CPET	СН	mg/min	Carbohydrate oxidation
1800	Dynamic compliance	Test time		Time the test has been performed
1801	Dynamic compliance	CDyn	l/kPa	Dynamic compliance
1802	Dynamic compliance	CDynSpec	1/kPa	Specific dynamic compliance
1902	Dunamia compliance	- Dum	kDo /I	CDyNSpec = CdyN/FRC
1803	Dynamic compliance	EDyn V#	KPd/I	Tidel volume
1804	Dynamic compliance	Vt	-	Tidal volume
1805	Dynamic compliance	tin	S	
1806	Dynamic compliance	tEX Dr	S	Time for expiration
1807	Dynamic compliance	Bt	1/min	Breatning frequency
1808	Dynamic compliance	Wtot	1	Total work of breathing
1809	Dynamic compliance	Wel	J	Elastic work of breathing
1810	Dynamic compliance	Wvis	J	Viscous work of breathing
1811	Dynamic compliance	Ptp	kPa	Transpulmonary pressure
1893	Dynamic compliance	Mouth press. corr. in		Inspiratory corection factor for mouth pressure calibration
1894	Dynamic compliance	Mouth press. corr. ex		Expiratory corection factor for mouth pressure calibration
1895	Dynamic compliance	Vol corr in		Inspiratory corection factor for volume calibration
1896	Dynamic compliance	Vol corr ex		Expiratory corection factor for volume calibration
1897	Dynamic compliance	Ambient temperature	°C	Ambient temperature

ID	Mossurament Type	Namo	Unit	Description
1808	Dynamic compliance	Ambient prossure	hPa	Ambient pressure
1898	Dynamic compliance	Ambient pressure	0/	Ambient pressure
200		Tost time	70	Time the test has been performed
200	F/V		1	Forced expiratory vital capacity
201		FVCEX		Forced expiratory vital capacity
202	F/V		1	Forced inspiratory vital capacity
203	F/V	FEVU.5	1	Forced expiratory volume after 0.55
204	F/V	FEV0.55	1	Forced expiratory volume after 0.55s
205	F/V	FEVU.6	1	Forced expiratory volume after 0.65
206	F/V	FEV0.05	1	Forced expiratory volume after 0.65s
207	F/V	FEV0.7	1	Forced expiratory volume after 0.7s
208	F/V	FEV0.75	1	Forced expiratory volume after 0.75s
209	F/V	FEV0.8	1	Forced expiratory volume after 0.8s
210	F/V	FEV0.85	1	Forced expiratory volume after 0.85s
211	F/V	FEV0.9	1	Forced expiratory volume after 0.9s
212	F/V	FEV0.95	1	Forced expiratory volume after 0.95s
213	F/V	FEV1	1	Forced expiratory volume after 1s
214	F/V	FEV3	I	Forced expiratory volume after 3s
215	F/V	FEV6	1	Forced expiratory volume after 6s
216	F/V	FIV1	1	Forced inspiratory volume after 1s
217	F/V	FEV1/FVC	%	Tiffeneau Index, FEV1 in percentage of FVC
218	F/V	FEV1/VC	%	FEV1 in percentage of VC
219	F/V	PEF	l/s	Peak expiratotry flow
220	F/V	PIF	l/s	Peak inspiratory flow
221	F/V	EV	1	Extrapolated volume
222	F/V	EVrel	%	Extrapolated volume in percentage of FVC
223	F/V	tex	S	Duration time of expiration
				Maximal instantaneous forced expiratory flow
224	F/V	MEF25	l/s	when 25% of FVC remains to be expired
				Maximal instantaneous forced expiratory flow
225	F/V	MEF50	l/s	when 50% of FVC remains to be expired
				Maximal instantaneous forced expiratory flow
226	F/V	MEF75	l/s	when 75% of FVC remains to be expired
				Maximal instantaneous forced expiratory flow
227	F/V	MEF85	l/s	when 85% of FVC remains to be expired
				Mean forced expiratory flow between 25%
228	F/V	MEF25-50	l/s	and 50% of FVC
				Mean forced expiratory flow between 25%
229	F/V	MEF25-75	l/s	and 75% of FVC
				Mean forced expiratory flow between 50%
230	F/V	MEF50-75	l/s	and 75% of FVC
				Mean forced expiratory flow between 75%
231	F/V	MEF75-85	l/s	and 85% of FVC
				Maximal instantaneous forced inspiratory
232	F/V	MIF25	l/s	flow when 25% of FVC remains to be inhaled
				Maximal instantaneous forced inspiratory
233	F/V	MIF50	l/s	flow when 50% of FVC remains to be inhaled
				Maximal instantaneous forced inspiratory
234	F/V	MIF75	l/s	flow when 75% of FVC remains to be inhaled
	- 4 -			Area delineated by maximum expiratory flow
235	F/V	AEx	I*I/s	volume curve
		l		Area delineated by maximum inspiratory flow
236	F/V	Aln	I*I/s	volume curve
	- 6.			Expiratory volume change at the end of FV
237	F/V	dV@EOT	1	test
238	F/V	MEF25/FVC	1/s	MEF25 devided by FVC

ID	Messurement Type	Name	Unit	Description
239	F/V	MEF50/FVC	1/s	MEF50 devided by FVC
240	F/V	MEF75/FVC	1/s	MEF75 devided by FVC
241	F/V	PEF/FVC	1/s	PEF devided by FVC
	1			Lung age is calculated for patients 20-84 years
				old. Lung age is equal to the predicted FEV1
242	F/V	Lung age	years	that matches patients actual FEV1.
				Time begin with start of expiration until PEF
243	F/V	tPEF	ms	has been reached
244	F/V	FEV1/FEV6	%	FEV1 in percentage of FEV6
245	F/V	Soft air trapping	ml	Difference between SVC and FVC
				Ratio of area between expiratory loop and
246	F/V	A/T		triangular modell
				Ratio of area between expiratory loop
247	F/V	A/T(r)		(starting at PEF) and triangular modell
				Ratio of area between expiratory loop
				(starting at PEF and ending at 96% of FVC)
248	F/V	A/T(96%)		and triangular modell
				Maximal instantaneous forced expiratory flow
249	F/V	MEF(FRC)	l/s	at FRC level
				Inspiratory capacity in percent of forced vital
250	F/V	IC/FVC	%	capacity
				Mean forced expiratory flow between 25%
251	F/V	MEF25-75/FVC	%/s	and 75% of FVC devided by FVC
				Volume in percentage of vital capacity
252	F/V	%VCRef	%	reference value
				Maximum of Forced expiratory vital capacity
253	F/V	FVCmax	1	and forced inspiratory vital capacity
254	F/V	VC	I	Vital capacity
255	F/V	IC	1	inspiratory capacity
256	F/V	TV	1	Tidal volume
257	F/V	IRV	1	Inspiratory reserve volume
258	F/V	ERV	1	Expiratory reserve volume
	, ,			Body Temperature Pressure Saturated (BTPS)
294	F/V	BTPS corr.		factor
-	1			Inspiratory corection factor for volume
295	F/V	Vol corr in		calibration
				Expiratory corection factor for volume
296	F/V	Vol corr ex		calibration
297	F/V	Ambient temperature	°C	Ambient temperature
298	F/V	Ambient pressure	hPa	Ambint pressure
299	F/V	Ambient humidity	%	Ambient humidity
7101	Flow linearity check	Deviation low in	%	Inspiratory deviation from expected value for
/ 101	now incurry check		,,,	low flow
7102	Elow linearity check	Deviation low ex	%	Expiratory deviation from expected value for
/ 102	now incurry check	Deviation low ex	,,,	low flow
7103	Elow linearity check	Low flow in	1/s	Inspiratory flow during low flow linearity
/ 105	now incurry check		175	check
7104	Elow linearity check	low flow ex	1/s	Expiratory flow during low flow linearity
104	incurry check		., 5	check
7105	Flow linearity check	Deviation medium in	%	Inspiratory deviation from expected value for
. 105	incurry check		/ °	medium flow
7106	Flow linearity check	Deviation medium ev	%	Expiratory deviation from expected value for
100	incurry check		13	medium flow
7107	Flow linearity check	Medium flow in	1/s	Inspiratory flow during medium flow linearity
	incarry creck		., 5	check

				<b>/</b>
ID	Messurement Type	Name	Unit	Description
7108	Flow linearity check	Medium flow ex	l/s	Expiratory flow during medium flow linearity
				check
7109	Flow linearity check	Deviation high in	%	Inspiratory deviation from expected value for
				high flow
7110	Flow linearity check	Deviation high ex	%	Expiratory deviation from expected value for
			.,	high flow
7111	Flow linearity check	High flow in	l/s	Inspiratory flow during high flow linearity
	-		.,	check
/112	Flow linearity check	High flow ex	l/s	Expiratory flow during high flow linearity
7440		c :	1	check
/113	Flow linearity check	Syringe volume	1	Volume of calibration syringe
/19/	Flow linearity check	Ambient temperature	°C	Ambient temperature
/198	Flow linearity check	Ambient pressure	hPa	Ambient pressure
/199	Flow linearity check	Ambient numidity	%	Amplent numidity
6001	HR	HR	beats/min	Herat rate
6003	Manual entry	SBP	mmHg	Systolic blood pressure
6004	Manual entry	DBP	mmHg	Diastolic blood pressure
6006	Manual entry	UN	mg/min	Urea Nitrogen production
6007	Manual entry	Hct	%	Hematocrit
1500	MEP	Test time		Time the test has been performed
1501	MEP	PEmax	kPa	Maximum expiratory pressure
1593	MEP	Mouth press. corr. in		Inspiratory corection factor for mouth
				pressure calibration
1594	MEP	Mouth press. corr. ex		Expiratory corection factor for mouth
				pressure calibration
1595	MEP	Vol corr in		Inspiratory corection factor for volume
				calibration
1596	MEP	Vol corr ex		Expiratory corection factor for volume
				calibration
1597	MEP	Ambient temperature	°C	Ambient temperature
1598	MEP	Ambient pressure	hPa	Ambient pressure
1599	MEP	Ambient humidity	%	Ambient humidity
1400	MIP	Test time		Time the test has been performed
1401	MIP	Plmax	kPa	Maximum inspiratory pressure
1402	MIP	P0.1max	kPa	Pressure after 100ms during maximum
				inspiratory maneuvre
1493	MIP	Mouth press. corr. in		Inspiratory corection factor for mouth
-				pressure calibration
1494	MIP	Mouth press. corr. ex		Expiratory corection factor for mouth
			+	pressure calibration
1495	MIP	Vol corr in		Inspiratory corection factor for volume
			+	calibration
1496	MIP	Vol corr ex		Expiratory corection factor for volume
				calibration
1497		Ampient temperature		Ampient temperature
1498	MIP	Ampient pressure	пра	Ampient pressure
1499	MIP	Ambient humidity	%	Ampient humidity
/401	Nouthpressure	corr ex		Inspiratory mouth pressure correction factor
7400	calibration		+	measured during mouth pressure calibration
/402	Nouthpressure	Corr in		Expiratory mouth pressure correction factor
7400	calibration		+.	measured during mouth pressure calibration
/403	Nouthpressure	Applied pressure ex	mbar	Pressure used for expiratory mouth pressure
7404	calibration			
7404	calibration	Applied pressure in	inpar	calibration

# Geratherm Respiratory

ID	Management Trues	News	11	
ID	Messurement Type	Name	Unit	Description
7497	Mouthpressure	Ambient temperature	°C	Ambient temperature
	calibration			
7498	Mouthpressure	Ambient pressure	hPa	Ambient pressure
	calibration			
7499	Mouthpressure	Ambient humidity	%	Ambient humidity
	calibration			
300	MVV	Test time		Time the test has been performed
301	MVV	MVV	I/min	Maximum voluntary volume
302	MVV	VT	1	Tidal volume
303	MVV	BF	1/min	Breathing frequency
304	MVV	Start	S	Start time of the test
305	MVV	End	S	Time when the test has been finished
306	MVV	Duration	s	Duration of MVV maneuvre
307	MVV	MVV/(40*FEV1)	%	MVV in percentage of FEV1x40
				Body Temperature Pressure Saturated (BTPS)
394	MVV	BTPS corr.		factor
				Inspiratory corection factor for volume
395	MVV	Vol corr in		calibration
				Expiratory corection factor for volume
396	MVV	Vol corr ex		calibration
397	MVV	Ambient temperature	°C	Ambient temperature
398	MVV	Ambient pressure	hPa	Ambint pressure
399	MVV	Ambient humidity	%	Ambient humidity
6005	NO	NO	ppb	Exhaled nitric oxide concentration
7201	O2/CO2 Calibration	O2 corr		O2 correction factor determined during gas
				calibration
7202	O2/CO2 Calibration	CO2 corr		CO2 correction factor determined during gas
				calibration
7203	O2/CO2 Calibration	O2 Offset		O2 offset determined during gas calibration
7204	O2/CO2 Calibration	CO2 Offset		CO2 offset determined during gas calibration
7205	O2/CO2 Calibration	T90 O2	ms	T90 of O2 signal determined during gas
				calibration
7206	O2/CO2 Calibration	T90 CO2	ms	T90 of CO2 signal determined during gas
				calibration
7207	O2/CO2 Calibration	Delay O2	ms	Delay of O2 signal determined during gas
				calibration
7208	O2/CO2 Calibration	Delay CO2	ms	Delay of CO2 signal determined during gas
	,	,		calibration
7209	O2/CO2 Calibration	Ambient O2	%	Ambient Oxygen concentration
7210	O2/CO2 Calibration	Ambient CO2	%	Ambient Carbon dioxide concentration
7211	O2/CO2 Calibration	O2 cal gas	%	O2 concentration of calibration gas cylinder
7212	02/CO2 Calibration	CO2 cal gas	%	CO2 concentration of calibration gas cylinder
7297	02/CO2 Calibration	Ambient temperature	۰ <u>۲</u>	Ambient temperature
7298	02/C02 Calibration	Ambient pressure	hPa	Ambient pressure
7299	02/C02 Calibration	Ambient humidity	%	Ambient humidity
1600		Test time	/0	Time the test has been performed
1601	PO 1	DO 1	kPa	Pressure after 100ms during slow and relayed
1001	F U.1	F U. 1	NF d	tidal breathing maneuvre
1602	DO 1	D0 1 /\/E	kDa/l/min	PO 1 dovided by minute ventilation
1602	F U.1	PO.1/VE	kPa/1/11111	POLI devided by the relation of tidal values
1003	FU.1	FU.1/VI/UII	Krd/1/5	and inspiratory time
1604	DO 1	D0 1/D0 1m	9/	
1604	PU.1	P0.1/P0.1Max	70	PO.1 devided by PU.1MaX
1602	PU.1	PU.1/PImax	%	POLI devided by maximum inspiratory
1	1	1	1	pressure

# Geratherm Respiratory

ID	Messurement Type	Name	Unit	Description
1606	P0.1	TTmus		Tension time index for inspiratory muscles
				TTmus = ((5 * P0.1 * tln) / Pimax) * (ti/ttot *
				0,01)
1693	P0.1	Mouth press. corr. in		Inspiratory corection factor for mouth
				pressure calibration
1694	P0.1	Mouth press. corr. ex		Expiratory corection factor for mouth
				pressure calibration
1695	P0.1	Vol corr in		Inspiratory corection factor for volume
				calibration
1696	P0.1	Vol corr ex		Expiratory corection factor for volume
				calibration
1697	P0.1	Ambient temperature	°C	Ambient temperature
1698	P0.1	Ambient pressure	hPa	Ambient pressure
1699	P0.1	Ambient humidity	%	Ambient humidity
8101	PFT	VC		Vital capacity
8102	PFT	VCIn		Inspiratory vital capacity
8103	PFT	VCEx		Expiratory vital capacity
8104	PFT	IC	1	Inspiratory capacity
8105	PFT	TV	1	Tidal volume
8106	PFT	ERV	1	Expiratory reserve volume
8107	PFT	IRV		Inspiratory reserve volume
8108	PFT	TLC	1	Total lung capacity (TLC fix)
8109	PFT	RV	1	Residual volume (TLC fix)
8110	PFT	TLC	1	Total lung capacity (RV fix)
8111	PFT	RV	1	Residual volume (RV fix)
801	REE	REE	kcal/24h	Resting Energy Expenditure
				REE = (3.9 x VO2 + 1.1 x VCO2) x 1.44
802	REE	Vdm	ml	Dead space mask
803	REE	V02	l/min	Oxygen consumption
804	REE	VO2/kg	ml/min/kg	Oxygen consumption per body weight
805	REE	VCO2	l/min	Carbon Dioxide production
806	REE	RER		Respiratory exchange ratio
807	REE	RQnp		RQ corrected for proteine consumption
808	REE	Vt		lidal volume
809	REE	Bt	1/min	Breathing frequency
810	REE	VE -	l/min	Minute Ventilation
811	REE	Fan -	l/min	Fan speed
812	REE	Fat	mg/min	Fat oxidation
814	REE	Proteines	mg/min	Proteines oxidation
815	REE	Fat	kcal/24h	Fat oxidation
816	REE	СН	kcal/24h	Carbohydrate oxidation
817	REE	Proteines	kcal/24h	Proteines oxidation
818	KEE	Fat	%	Fat oxidation
819	REE	СН	%	Carbohydrate oxidation
820	REE	Proteines	%	Proteines oxidation
821	REE	REE (Weir)	kcal/24h	Resting Energy Expenditure
				REE = (3.9 x VO2 + 1.1 x VCO2) x 1.44



ID	Messurement Type	Name	Unit	Description
822	REE	REE/BSA	kcal/24h/mÂ <sup>2</sup>	Resting Energy Expenditure per Body Surface
				Area
				$PSA = 0.007194 \times Haight(cm)^{0.725} \times Waight(kg)^{0.425}$
				BSA = 0.007184 x Height (cm) <sup>2000</sup> x weight (kg) <sup>2000</sup>
				BSA calculation according to formula DuBois
823	REE	HR	1/min	Heart rate
824	REE	SBP	mmHg	Systolic blood pressure
825	REE	DBP	mmHg	Diastolig blood pressure
826	REE	DP	mmHg/min	Double product
				DP = SBP x HR
827	REE	SpO2	%	Oxygen saturation
828	REE	PETO2	mmHg	End tidal O2 pressure
829	REE	PETCO2	mmHg	End tidal CO2 pressure
830	REE	PaO2	mmHg	Arterial oxygen partial pressure
831	REE	PaCO2	mmHg	Arterial carbon dioxide partial pressure
832	REE	P(A-a)O2	mmHg	Alveolar - Arterial PO2 difference
833	REE	P(a-ET)CO2	mmHg	Arterial End-tidal PCO2 difference
834	REE	рН		pH blood gas value
835	REE	HCO3	meq/l	Bicarbonat blood gas value
836	REE	BE	meq/l	Base Excess blood gas value
893	REE	Vol corr in		Inspiratory corection factor for volume
				calibration
894	REE	Vol corr ex		Expiratory corection factor for volume
				calibration
895	REE	O2 corr		O2 correction factor determined during gas
				calibration
896	REE	CO2 corr		CO2 correction factor determined during gas
				calibration
897	REE	Ambient temperature	°C	Ambient temperature
898	REE	Ambient pressure	hPa	Ambient pressure
899	REE	Ambient humidity	%	Ambient humidity
901	REE	max ΔVO2	%	Difference between maximal and minimal
				VO2 in section used for calculation of REE
902	REE	max ΔVCO2	%	Difference between maximal and minimal
				VCO2 in section used for calculation of REE
903	REE	max ΔRER	%	Difference between maximal and minimal
	2.55			RER in section used for calculation of REE
2201	REE	Time	min:sec	Time in minutes and seconds
2202	REE	Time	S	Time in seconds
2203	REE	V02	I/min	Oxygen consumption
2204	REE	VO2/kg	ml/min/kg	Oxygen consumption per body weight
2205	REE	VCO2	l/min	Carbon dioxide production
2206	REE	RER		Respiratory exchange ratio
2207	REE	RQnp		Respiratory quotient corrected for proteine
2208	RÉE	VEx	<u>  </u>	Expiratory volume
2209	RÉE	tEx	s	Time for expiration
2210	REE	VIn	1	Inspiratory volume
2211	REE	tln	s	Time for inspiration
2212	REE	Vt		Tidal volume
2213	REE	Bf	1/min	Breathing frequency
2214	REE	VE	l/min	Minute ventilation
2215	REE	Fan	l/min	Fan speed

ID	Messurement Type	Name	Unit	Description
2216	REE	Fat	mg/min	Lipids oxidation
2218	REE	Proteines	mg/min	Proteines oxidation
2219	REE	Fat	kcal/24h	Lipids oxidation
2220	REE	СН	kcal/24h	Carbohydrate oxidation
2221	REE	Proteines	kcal/24h	Proteines oxidation
2222	REE	Fat	%	Lipids oxidation
2223	REE	СН	%	Carbohydrate oxidation
2224	REE	Proteines	%	Proteines oxidation
2225	REE	REE	kcal/24h	Resting Energy Expenditure
2226	REE	REE (Weir)	kcal/24h	Resting Energy Expenditure calculated according to the equation of Weir
2227	REE	REE/BSA	kcal/24h/m²	Resting Energy Expenditure per Body Surface Area
2228	REE	HR	1/min	Heart rate
2229	REE	SBP	mmHg	Systolic blood pressure
2230	REE	DBP	mmHg	Diastolic blood pressure
2231	REE	DP	mmHg/min	Double product
2232	REE	SpO2	%	Oxygen saturation
2233	REE	SpO2 Quality	%	Quality of SpO2 reading
2234	REE	FO2Et		Endtidal fraction of O2 concentration
2235	REE	FCO2Et		Endtidal fraction of CO2 concentration
2236	REE	FiO2Et		Inspiratory fraction of endtidal O2
				concentration
2237	REE	FiCO2Et		Inspiratory fraction of endtidal CO2
				concentration
2238	REE	PETO2	mmHg	End tidal O2 pressure
2239	REE	PETCO2	mmHg	End tidal CO2 pressure
2240	REE	PaO2	mmHg	Arterial oxygen partial pressure
2241	REE	PaCO2	mmHg	Arterial carbon dioxide partial pressure
2242	REE	P(A-a)O2	mmHg	Alveolar - Arterial PO2 difference
2243	REE	P(a-ET)CO2	mmHg	Arterial End-tidal PCO2 difference
2244	REE	pH		pH blood gas value
2245	REE	HCO3	meq/l	Bicarbonat blood gas value
2246	REE	BE	meq/l	Base Excess blood gas value
2247	REE	FiO2 Offset		Offset between measured FiO2 and FiO2
2248	REE	O2Delay	ms	Delay between O2-Signal and Flow
2249	REE	CO2Delay	ms	Delay between CO2-Signal and Flow
2250	REE	CO2 Offset	%	Offset between measured FiCO2 and FiCO2
2297	REE	Ambient temperature	°C	Ambient temperature
2298	REE	Ambient pressure	hPa	Ambient pressure
2299	REE	Ambient humidity	%	Ambient humidity
1100	Resistance	Test time		Time the test has been performed
1101	Resistance	Rawtot	kPa/(I/s)	Total airway resistance
1102	Resistance	Rawin	kPa/(I/s)	Inspiratory airway resistance
1103	Resistance	Rawex	kPa/(I/s)	Expiratory airway resistance
1104	Resistance	sRawtot	kPa*s	Specific total airway resistance
1105	Resistance	sRawin	kPa*s	Specific inspiratory airway resistance
1106	Resistance	sRawex	kPa*s	skawin = Rawin x TGV Specific expiratory airway resistance
				sRawex = Rawex x TGV
1107	Resistance	Refftot	kPa/(I/s)	Total effective airway resistance

ID	Messurement Type	Name	Unit	Description
1108	Resistance	Reffin	kPa/(I/s)	Inspiratory effective airway resistance
1109	Resistance	Reffex	kPa/(I/s)	Expiratory effective airway resistance
1110	Resistance	sRefftot	kPa*s	Specific total effective airway resistance
				sRefftot = Refftot x TGV
1111	Resistance	sReffin	kPa*s	Specific inspiratory effective airway resistance
				sReffin = Reffin x TGV
1112	Resistance	sReffex	kPa*s	Specific expiratory effective airway resistance
1112	Desistence	Countrat	1 /l.D. //l./-)	SRETTEX = RETTEX X IGV
1113	Resistance	Gawlol	1/KPd/(I/S)	Inspiratory airway conductance
1114	Resistance	Gawin	1/KPd/(I/S)	Expiratory all way conductance
1115	Resistance	Gawex	1/KPd/(I/S)	Expiratory all way conductance
1110	Resistance	SGawlol	1/(KPd-S)	
				sGawtot = Gawtot x TGV
1117	Resistance	sGawin	1/(kPa*s)	Specific inspiratory airway conductance
				sGawin = Gawin x TGV
1118	Resistance	sGawex	1/(kPa*s)	Specific expiratory airway conductance
				sGawex = Gawex x TGV
1119	Resistance	sGefftot	1/kPa/(l/s)	Specific total efective conductance
				sGefftot = Gefftot x TGV
1120	Resistance	sGeffin	1/kPa/(l/s)	Specific inspiratory effective conductance
				sGeffin = Geffin x TGV
1121	Resistance	sGeffex	1/kPa/(l/s)	Specific expiratory effective conductance
		o. (f) .		sGeffex = Geffex x TGV
1122	Resistance	Gefftot	1/(kPa*s)	Total effective airway conductance
1123	Resistance	Gettin	1/(kPa*s)	Inspiratory effective airway conductance
1124	Resistance	Gettex	1/(KPa*s)	Expiratory effective airway conductance
1125	Resistance	tin	S	Time for inspiration
1126	Resistance	tEX Df	S 1 /m in	Time for expiration
1127	Resistance	BT	1/min	Breatning frequency
1128	Resistance	Max. Flow In	1/5	
1129	Resistance	Max. Flow Ex	I/S	Maximum expiratory flow
1130	Resistance	Box volume		Box volume
1131	Resistance	TotalsRawTot	кРа≛ѕ	application resistance)
1132	Resistance	TotalSRawEx	kPa*s	Expiratory specific airway resistance (including application resistance)
1133	Resistance	TotalSRawIn	kPa*s	Inspiratory specific airway resistance (including application resistance)
1134	Resistance	TotalSReffTot	kPa*s	Total specific effective airway resistance (including application resistance)
1135	Resistance	TotalSReffEx	kPa*s	Expiratory specific effective airway resistance
1136	Resistance	TotalSReffIn	kPa*s	Inspiratory specific effective airway resistance
<u> </u>				(including application resistance)
1137	Resistance	AppRawTot	kPa/(I/s)	I otal application resistance
1138	Resistance	AppRawEx	lkPa/(l/s)	Expiratory application resistance
				<u> </u>
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ID	Messurement Type	Name	Unit	Description
1139	Resistance	AppRawIn	kPa/(I/s)	Inspiratory application resistance
1193	Resistance	Box time const.	S	Time constant of body box measured during box calibration
1194	Resistance	Box press. corr.		Box pressure correction factor measured
1195	Resistance	Vol corr in		Inspiratory corection factor for volume
1155	hesistanee			calibration
1196	Resistance	Vol corr ex		Expiratory corection factor for volume calibration
1197	Resistance	Ambient temperature	°C	Ambient temperature
1198	Resistance	Ambient pressure	hPa	Ambient pressure
1199	Resistance	Ambient humidity	%	Ambient humidity
2300	Rint	Test time		Time the test has been performed
2301	Rint	Rint	kPa/(l/s)	Airway resistance by using interrupter
2202	Pint	Pint i	kPa/(1/s)	Inspiratory airway resistance by using
2302	Kiitt	NIILI	KP d/ (1/3)	interrupter technique
2303	Rint	Flow	l/s	Flow
2393	Rint	Mouth press. corr. in		Inspiratory corection factor for mouth pressure calibration
2394	Rint	Mouth press. corr. ex		Expiratory corection factor for mouth
				pressure calibration
2395	Rint	Vol corr in		Inspiratory corection factor for volume calibration
2396	Rint	Vol corr ex		Expiratory corection factor for volume calibration
2397	Rint	Ambient temperature	°C	Ambient temperature
2398	Rint	Ambient pressure	hPa	Ambient pressure
2399	Rint	Ambient humidity	%	Ambient humidity
401	SpO2	SpO2	%	Oxygen saturation
402	SpO2	HR	1/min	Heart rate
403	SpO2	SpO2 (min)	%	Minimum SpO2
404	SpO2	HR (min)	1/min	Minimum HR
405	SpO2	SpO2 (max)	%	Maximum SpO2
406	SpO2	HR (max)	1/min	Maximum HR
6002	SpO2	SpO2	%	Oxygen saturation
1700	Static compliance	Test time		Time the test has been performed
1701	Static compliance	CStat	l/kPa	Static compliance
1702	Static compliance	CStatSpec	1/kPa	Specific static compliance
				CStatSpec = Cstat / FRC
1703	Static compliance	EStat	kPa/l	Static elasticity
1704	Static compliance	IVC	1	Inspiratory vital capacity
1705	Static compliance	tin	s	Time for inspiration
1706	Static compliance	tEx	s	Time for expiration
1707	Static compliance	Bf	1/min	Breathing frequency
1793	Static compliance	Mouth press. corr. in		Inspiratory corection factor for mouth pressure calibration
1794	Static compliance	Mouth press. corr. ex	1	Expiratory corection factor for mouth
1795	Static compliance	Vol corr in		Inspiratory corection factor for volume
				calibration
1796	Static compliance	Vol corr ex		Expiratory corection factor for volume calibration
1797	Static compliance	Ambient temperature	°C	Ambient temperature

ID	Massure mant Turne	Nama	l lucit	Description
1709	Static compliance	Ambient prossure	bDo	Ambient prossure
1790	Static compliance	Ambient pressure	%	Ambient pressure
1001	Stross ECG	Time	70 min:sec	Time in minutes and seconds
1901	Stross ECG	Time	c .	Time in seconds
1902	Stross ECG	Load	3	
1903	Stross ECG	Load (i)	W/	Load internolated
1904	Stross ECG	Load (norm )	W/	Load using reference for patient with normal
1905	Stress ECG		vv	weight
1906	Stress ECG	Load/Ref.	%	Load in percentage of reference value
1907	Stress ECG	Load/kg	W/kg	Load per patient weight
1908	Stress ECG	Speed	km/h	Speed
1909	Stress ECG	Elevation	%	Elevation
1910	Stress ECG	RPM	1/min	Pedal cycling speed
1911	Stress ECG	HR	1/min	Heart rate
1912	Stress ECG	HR (i)	1/min	Heart rate interpolated over load stage
1913	Stress ECG	HRR	1/min	Heart rate reserve
				HRR = predicted HR - HRmax
1914	Stress ECG	SBP	mmHg	Systolic blood pressure
1915	Stress ECG	DBP	mmHg	Diastolic blood pressure
1916	Stress ECG	DP	mmHg/min	Double product
				DP = SBP x HR
1917	Stress ECG	SpO2	%	Oxygen saturation
1918	Stress ECG	SpO2 Qual.	%	Quality of SpO2 reading
1919	Stress ECG	PaO2	mmHg	Arterial oxygen partial pressure
1920	Stress ECG	PaCO2	mmHg	Arterial carbon dioxide partial pressure
1921	Stress ECG	Lactate	mmol/l	Lactate concentration
1922	Stress ECG	рH		pH blood gas value
1923	Stress ECG	НСОЗ	meg/l	Bicarbonat blood gas value
1924	Stress ECG	BE	meg/l	Base Excess blood gas value
1925	Stress ECG	Mets	P	Metabolic equivalent
				$METS = \frac{VO2/Kg}{3.5}$
1926	Stress ECG	Borg		Borg Index
1927	Stress ECG	%HR	%	Heart rate in percentage of predicted
1928	Stress ECG	Load (m)	W	Load
1929	Stress ECG	Speed (m)	km/h	Speed
1930	Stress ECG	Elev. (m)	%	Elevation
1931	Stress ECG	Sf	1/min	Rowing frequency (Rowing machine)
1996	Stress ECG	Load		Load or speed depending on ergometer type
1997	Stress ECG	Ambient temperature	°C	Ambient temperature
1998	Stress ECG	Ambient pressure	hPa	Ambient pressure
1999	Stress ECG	Ambient humidity	%	Ambient humidity
2001	Stress ECG	HR (Rest)	beats/min	Heart rate at rest
2002	Stress ECG	HR (max.Load)	beats/min	Heart rate at maximum load
2003	Stress ECG	max. Load	W	Maximum load
2004	Stress ECG	HRR (max. Load)	1/min	Heart rate reserve at maximum load
2005	Stress ECG	PaO2 (Rest)	mmHg	Arterial oxygen partial pressure at rest
2006	Stress ECG	SpO2 (Rest)	%	Arterial carbon dioxide partial pressure at rest
2007	Stress ECG	SpO2 (max, Load)	%	Oxygen saturation at maximum load
2008	Stress ECG	Load duration	min:sec	Duration of load phase
2009	Stress ECG	SBP (Rest)	mmHg	Systolic blood pressure at rest
2010	Stress ECG	SBP (max. Load)	mmHg	Systolic blood pressure at max load

15		••		<b>_</b>
ID	Messurement Type	Name	Unit	Description
2011	Stress ECG	DBP (Rest)	mmHg	Double product at rest
2012	Stress ECG	DBP (max. Load)	mmHg	Double product at maximum load
2097	Stress ECG	Ambient temperature	°C	Ambient temperature
2098	Stress ECG	Ambient pressure	hPa	Ambient pressure
2099	Stress ECG	Ambient humidity	%	Ambient humidity
8001	Stress test	Time	min:sec	Test time in minutes and seconds
8002	Stress test	Time	S	Test time in seconds
8003	Stress test	Load	W	Load
8004	Stress test	Load (i)	W	Load interpolated over each load stage
8005	Stress test	Load (norm.)	W	Load using reference for patient with normal weight
8006	Stress test	Load/Ref.	%	Load in percentage of predicted load
8007	Stress test	Load/kg	W/kg	Load per body weight
8008	Stress test	Sneed	km/h	Sneed
8009	Stress test	Elevation	%	Elevation
8010	Stress test	RPM	1/min	Cycle speed of cycle ergometer
8011	Stress test	HR	1/min	Heart rate
8012	Stross test		1/min	Heart rate interpolated over load stage
8012	Stress test	HRR	1/min	Heart rate reserve
				HRR = predicted HR - HRmax
8014	Stress test	SBP	mmHø	Systolic blood pressure
8015	Stress test	DBP	mmHg	Diastolic blood pressure
8016	Stress test	DP	mmHg/min	Double product
8017	Stress test	SnO2	%	
2012	Stross test	Sp02	<i>∞</i> ∠	Quality of SpQ2 reading
8010	Stress test		<sup>70</sup> mmHg	Arterial ovygen partial pressure
8020	Stress test		mmHg	Arterial carbon dioxido partial prossure
8020	Stress test	PdCU2	mmol /l	
8021	Stress test		mmoi/i	
8022	Stress test	μrop	mog /l	Piezerbanat bland gas value
8023	Stress test		meq/l	Bical bollat blood gas value
8024		BE	meq/i	Base Excess blood gas value
8025	Stress test	Mets		$METS = \frac{VO2/Kg}{VO2/Kg}$
				3,5
8026	Stress test	Borg		Borg Index
8027	Stress test	%HR	%	Heart rate in percentage of predicted
8028	Stress test	Load (m)	w	Measured load
8029	Stress test	Speed (m)	km/h	Measured speed
8030	Stress test	Elev. (m)	%	Measured elevation
8031	Stress test	Sf	1/min	Rowing frequency (Rowing machine)
8096	Stress test	Load/Speed+Elevation	-,	Parameter which will show
0050		Loudy opeca · Lievation		Load if a cycle ergometer protocole is used
				and
				Speed/Elevation if a treadmill protocole is
				used
8097	Stress test	Ambient temperature	°C	Ambient temperature
8098	Stress test	Ambient pressure	hPa	Ambient pressure
8099	Stress test	Ambient humidity	%	Ambient humidity
100	SVC	Test time		Time the test has been performed
101	SVC	VC	1	Slow Vital capacity
102	SVC	IVC	1	Inspiratory vital capacity
103	SVC	VCEx	1	Expiratory vital capacity
104	SVC	TV	1	Tidal volume

ID	Messurement Type	Name	Unit	Description
105	SVC	IC	I	Inspiratory capacity
106	SVC	IRV	1	Inspiratory reserve volume
107	SVC	ERV	1	Expiratory reserve volume
108	SVC	TLC	1	Total lung capacity
109	SVC	RR	1/min	Respiratory rate, breathing frequency
110	SVC	MV	l/min	Minute Ventilation
111	SVC	60%VC	1	60% of vital capacity
			-	Inspiratory capacity measured during FRCnl
193	SVC	IC (From TGV)	1	measurement
			-	Body Temperature Pressure Saturated (BTPS)
194	SVC	BTPS corr.		factor
				Inspiratory corection factor for volume
195	SVC	Vol corr in		calibration
				Expiratory corection factor for volume
196	SVC	Vol corr ex		calibration
197	SVC	Ambient temperature	°C	Ambient temperature
198	SVC	Ambient pressure	hPa	Ambient pressure
199	SVC	Ambient humidity	%	Ambient humidity
1000	TGV	Test time		Time the test has been performed
1001	TGV	TLC	1	Total lung capacity
	-	-		
				TLC = TGV + IC
1002	TGV	TGV	I	Functional residual capacity measured with
				Bodyplethysmography
1003	TGV	RV	I	Residual volume
				RV = TLC - VC
1004	TGV	TGV/TLC	%	Functional residual capacity in percentage of
				total lung capacity
1005	TGV	RV/TLC	%	Residual volume in percentage of total lung
				capacity
1006	TGV	IC	I	Inspiratory capacity
1007	TGV	ERV	I	Expiratory reserve volume
1008	TGV	TV	I	Tidal volume
1009	TGV	IC	I	Inspiratory capacity measured during FRCpl
				measurement
1010	TGV	ERV	I	Expiratory capacity measured during FRCpl
				measurement
1011	TGV	TLCBody-TLCCH4	I	Difference between TLC measured with
				Bodyplethysmography and Diffusion
1012	TGV	Pm,max	kPa	Maximum mouth pressure
1013	TGV	Pm,min	kPa	Minimum mouth pressure
1014	TGV	PB,max	kPa	Maximum box pressure
1015	TGV	PB,min	kPa	Minimum box pressure
1016	TGV	TLC Offset	1	TLC offset
1017	TGV	Box volume	1	Box volume
1091	TGV	Box time const.	S	Time constant of body box measured during
				box calibration
1092	TGV	Box press. corr.		Box pressure correction factor measured
				during box calibration
1093	TGV	Mouth press. corr. in		Inspiratory mouth pressure correction factor
				measured during mouth pressure calibration
1094	TGV	Mouth press. corr. ex		Expiratory mouth pressure correction factor
1	1	1	1	measured during mouth pressure calibration

10	Messurement Type	Name	Unit	Description
1095	IGV	Vol corr in		Inspiratory corection factor for volume
1000	701	N/ 1		
1096	IGV	voi corr ex		Expiratory corection factor for volume
1007	TOV	A	*	
1097	TGV	Ambient temperature	-C	Ambient temperature
1098	TGV	Ambient pressure	nPa	Ambient pressure
1099	IGV	Ambient numidity	%	Ambient humidity
601	Tidal loops	IV	1	lidal volume
602	Tidal loops		1	Inspiratory capacity
603	lidal loops	IV/IC	%	lidal volume in percent of inspiratory
60.4		et 11 11 11	o/	
604	Tidal loops	Flow limitation	%	Flow limitation
605	Tidal loops	EELV	1	End expiratory lung volume
606	Tidal loops	EILV	1	End inspiratory lung volume
607	Tidal loops	FEV1	1	Forced expired volume after 1s
608	Tidal loops	TV/VC	%	Tidal volume in percent of vital capacity
1	Undefined	Time	S	Time
2	Undefined	Flow	I/s	Flow
3	Undefined	Volume	1	Volume
4	Undefined	HR	1/min	Heart rate
5	Undefined	SpO2	%	Oxygen saturation
6	Undefined	SpO2 intensity	%	SpO2 intensity
7	Undefined	Ambient temperature	°C	Ambient temperature
8	Undefined	Ambient pressure	hPa	Ambient pressure
9	Undefined	Ambient humidity	%	Ambient humidity
10	Undefined	Length	cm	Length
11	Undefined	02	%	Oxygen concentration
12	Undefined	CO2	%	Carbon dioxide concentration
13	Undefined	O2-Cell pressure	hPa	Oxygen cell pressure
14	Undefined	CO2-Cell pressure	hPa	Carbon dioxide cell pressure
15	Undefined	CO2-Cell Temp.	°C	Temperature inside CO2 cell
27	Undefined	PB	Ра	Body box pressure
28	Undefined	PM	kPa	Mouth pressure
29	Undefined	со	%	Carbon monoxide concentration
30	Undefined	CH4	%	Methane concentration
31	Undefined	Channel I	V	Raw signal of IOStik channel I
32	Undefined	Channel II	V	Raw signal of IOStik channel II
33	Undefined	Channel III	V	Raw signal of IOStik channel III
34	Undefined	Ptp	kPa	Transpulmonary pressure
35	Undefined	Shift volume	ml	Shift volume in Bodyplethysmography
36	Undefined	Relative dosis	%	Relative dosis
37	Undefined	Load (m)	W	Cycle ergometer load
38	Undefined	Speed (m)	km/h	Treadmill speed
39	Undefined	Elev. (m)	%	Treadmill elevation
40	Undefined	Sf	1/min	Rowing frequency (Rowing machine)
41	Undefined	Sync.		Synchronisation signal (Rowing machine)
42	Undefined	Ambient CO2	%	Ambient carbon dioxide concentration
5001	Undefined	Age	years	Patient age
5002	Undefined	Height	cm	Patient height
5003	Undefined	Weight	kg	Patient weight
-				



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ID	Messurement Type	Name	Unit	Description
5004	Undefined	BMI	kg/m²	Body Mass Index
				Weight
				$BMI = \frac{W cognet}{W cognet}$
				Height-
				Height in m
		200	â 2	Weight in Kg
5005	Undefined	BSA	mA²	Body surface area
5006	Undefined	PD20		Provocation dosis when FEV1 decreases 20%
5007	Undefined	PC20		Provocation concentration when EEV1
5007	ondenned	1 620		decreases 20% from base test
5008	Undefined	Cigarettes/day	Cig.	Amount of cigarettes per day
5009	Undefined	Smoking years	vears	Amount of smoking years
5010	Undefined	Threshold (EVC)	,	Threshold (total change) used as limit for
5010	ondenned			detection of bronchial responsiveness by
				provocation based on FVC
5011	Undefined	Threshold parameter		ID of parameter used as limit for detection of
		(FVC)		bronchial responsiveness by provocation
		. ,		based on FVC
5012	Undefined	Threshold Stage diff.		Threshold (change between stages) used as
		(FVC)		limit for detection of bronchial
				responsiveness by provocation based on FVC
5013	Undefined	Threshold (Resistance)		Threshold (absolute change) used as limit for
				detection of bronchial responsiveness by
				provocation based on Resistance
5014	Undefined	Threshold limit		ID of parameter used as limit for detection of
		(Resistance)		bronchial responsiveness by provocation
				based on Resistance
5015	Undefined	Threshold Stage diff.		Threshold (change between stages) used as
		(Resistance)		limit for detection of bronchial
				responsiveness by provocation based on
-016	Undefined	PD100		Resistance
5010	Undermed	PD100		increase 1000% from base test
5017	Undefined	PC100		Provocation concentration when Airway
	onacinea	. 0100		resistance increase 100% from base test
5018	Undefined	Pack years		Pack years is calculated by multiplying the
				smoking years and the number of packs per
				day
5019	Undefined	IBW	kg	Ideal body weight calculated by Height in cm
				minus 100
7001	Volume calibration	Vol corr in		Inspiratory corection factor for volume
				calibration
7002	Volume calibration	Vol corr ex		Expiratory corection factor for volume
7002	Maluma a libratian	Currie en currieren	1	calibration
7003	Volume calibration	Syringe volume	1	Calibration syringe volume
/004	volume calibration	Corr In Low		Inspiratory corection factor for volume
7005	Volumo colibration	Corr Ex Low		Expiratory coroction factor for volume
1005	volume calibration	COIT EX LOW		calibration for low flow
7006	Volume calibration	Low flow in	1/s	Inspiratory flow during low flow calibration
7007	Volume calibration	Low flow ex	1/s	Expiratory flow during low flow calibration
7008	Volume calibration	Corr In Medium	., .	Inspiratory corection factor for volume
				calibration for medium flow
7009	Volume calibration	Corr Ex Medium		Expiratory corection factor for volume

calibration for medium flow

### Geratherm Respiratory

ID	Messurement Type	Name	Unit	Description
7010	Volume calibration	Medium flow in	l/s	Inspiratory flow during medium flow
				calibration
7011	Volume calibration	Medium flow ex	l/s	Expiratory flow during medium flow
				calibration
7012	Volume calibration	Corr In High		Inspiratory corection factor for volume
				calibration for high flow
7013	Volume calibration	Corr Ex High		Expiratory corection factor for volume
				calibration for high flow
7014	Volume calibration	High flow in	l/s	Inspiratory flow during high flow calibration
7015	Volume calibration	High flow ex	l/s	Expiratory flow during high flow calibration
7096	Volume calibration	BTPS corr.		BTPS correction factor
7097	Volume calibration	Ambient temperature	°C	Ambient temperature
7098	Volume calibration	Ambient pressure	hPa	Ambient pressure
7099	Volume calibration	Ambient humidity	%	Ambient humidity