

User Manual

Giotto 2

Automated reader of Liofilchem[®] Systems for identification and susceptibility testing



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Via Scozia zona ind.le, 64026 Roseto degli Abruzzi (Te) Italy Tel. +39 0858930745 Fax +39 0858930330 www.liofilchem.net



liofilchem@liofilchem.net

Table of Contents

				<u>Page</u>				
1.	Intro	ductio	n to Giotto 2 and Liofilchem Systems	2				
	1.1.	Descr	iption of giotto 2	2				
	1.2. Liofilchem Systems for microbiological analyses							
2.	2. Giotto 2 Delivery and Installation							
	2.1.	Comp	onents and accessories	3				
	2.2.	Instruc	ctions for installation	4				
	2.3.	Electri	cal requirements	4				
	2.4.	Switch	ning on/off	5				
	2.5.	Intern	et connection	5				
3.	Giot	to 2 Op	perating Instructions	8				
	3.1.	How t	o run a test	8				
	3.2.	Types	of report	11				
	3.3.	3.3. Images management						
	3.4.	Data r	nanagement	14				
		3.4a.	Analysis archive	14				
		3.4b.	Image archive	14				
		3.4c.	Backup	15				
		3.4d.	Download color database	15				
	3.5.	Setup		15				
		3.5a.	Calibration	15				
		3.5b.	Technical assistance	18				
		3.5c.	Report customization	18				
		3.5d.	Control panel	19				
		3.5e.	Language setting	19				
	3.6.	Users	management	19				
	3.7.	Autom	natic updates	20				
4.	Trou	bleshoo	oting	21				
5.	Warı	nings ai	nd Precautions	22				
6.	Servi	ice and	Maintenance	22				
	6.1.	Touch	screen and drawer cleaning	22				

Appendix I

1. Introduction to Giotto 2 and Liofilchem[®] Systems

1.1. Description of giotto 2

Giotto 2 is an automated reader of Liofilchem's Systems designed for microbial identification and susceptibility testing. The instrument uses color digital imaging for reading and interpreting the colorimetric reactions resulting on Liofilchem's Systems after incubation. A personal computer integrated with the images capturing system allows a complete management of data along with electronic recording of results and HD photos. Customizable result reports are created in PDF format. The software is easy to update and equipped with remote assistance service via the internet.

1.2. Liofilchem's Systems for microbiological analysis

Liofilchem provides a wide range of Systems for screening, ID and AST intended for either clinical microbial laboratories or Industries.

The Appendix I of this manual lists the main Systems categorized for type of analysis and sample.



Giotto 2 can be used with all kind of Liofilchem's Systems. Contact the manufacturer or the local representative for reading a System which is not configured with the instrument yet.

2. Delivery and Installation of giotto 2

2.1. Components and accessories

Giotto 2 is shipped with its own styrofoam packaging inserted into the cardboard outer shell.

Measurement	Packaging Dimensions	Instrument Dimensions
Width	60 cm	30 cm
Height	40 cm	30 cm
Depth	33 cm	15 cm
Weight	2 kg	3 kg

The packaging contains the instrument along with the components listed below.

✓ Giotto 2



Equipped with

- monitor touch screen 10.1";
- rotating drawer with touch screen pen holder;
- 2 ports USB 2.0;
- supply power cable entry.

✓ Power cables



- ✓ Touch screen pen
- ✓ Mouse



✓ Caliper



✓ LAN USB adapter (with HUB 3 ports USB 2.0)



✓ User manual



NOTE: If any of the above items is missing or damaged, immediately contact your local Liofilchem representative or the Liofilchem headquarter.

2.2. Instructions for installation

- Place the instrument onto a laboratory bench. Make sure the working area is appropriately ventilated and vibration-proof.
- Connect the power cables, one end is connected to the power inlet on the back of giotto 2 and the other end is connected to a power outlet (see electrical requirements below)
- Connect the mouse to one of the USB ports on the back of giotto 2 (optional).

2.3. Electrical requirements

This section lists power specifications and describes electrical requirements for your facility.

Туре	Specification
Line voltage	100-240 Volts AC 50/60 Hz
Power consumption	60 Watts

Your facility must be wired with the following equipment:

- Fro 100-110 Volts AC: A 10-amp grounded, dedicated line with proper voltage is required.
- For 220-240 Volts AC: IA 6-amp grounded line with proper voltage is required.
- If the voltage fluctuates more than 10%, a power line regulator is required.



IMPORTANT: Giotto 2 cannot be used on ambulances, airplanes, helicopters etc. The instrument has to be placed on a stable flat surface in a permanent laboratory which meets the statutory electrical requirements.

2.4. Switching on/off

- Put the toggle switch in the ON (I) position. The LED (POWER) will light green for a few seconds and then red (push the POWER button if the light is not on). The analysis drawer will be illuminated at this point.
- Push the START button to turn on the monitor and start giotto 2. The LED POWER will light green.



Monitor Settings

- 1. Use the MENU button on the rear of the instrument to view the main setting screen;
- 2. Press the "-" and "+" buttons to scroll through the various options;
- 3. Press MENU to select;
- 4. Press EXIT to get out the MENU.

The N.C. button (not connected) is inactive.

• At the end of the working section click the shutting down button on software.



• Put the toggle switch in the OFF (0) position.

2.5. Internet connection

Wi-Fi connection

From the Menu, select Panel control and click Network connection and sharing center. Select Change adapter settings. Long press with the touch screen pen (or right-click) on the Wi-Fi icon and select Connect. Look for the SSID (Service Set IDentifier) name, check off Connect automatically and click Connect. At this point all you have to do is typing the wifi password to activate the connection.



Ethernet connection

Insert the LAN USB adapter into one of the USB ports on the back of giotto 2 and connect the network cable to the Ethernet port. To get access to the network ask the network administrator for log-in information if needed.



NOTE: Giotto 2 can work without being connected to the internet. However, network and internet connections are required to use the following features:

- Receiving and installing software updates;
- Images transferring to Liofilchem for difficult-to-interpret test analysis;
- Benefit from the integrated remote assistance service.

Additional information are provided further in this document.

3. Giotto 2 operating instructions

3.1. How to run a test



Click SELECT SYSTEM and • choose from the list the System to be read.

NOTE: Contact Liofilchem or the local representative if the System being used is not in the list.

Sistema per la ricerca, la conta e l'antibiogramma dei germi Sistema per la ricerca e l'identificazione di germi patogeni intestinali Sistema per l'identificazione degli enterobatteri Gram negativi, Sistema per l'identificazione degli enterobatteri Gram negativi,	24 24 24
Sistema per la ricerca e l'identificazione di germi patogeni intestinali Sistema per l'identificazione degli enterobatteri Gram negativi, Sistema per l'identificazione degli enterobatteri Gram negativi,	24 24
Sistema per l'identificazione degli enterobatteri Gram negativi, Sistema per l'identificazione degli enterobatteri Gram negativi,	24
Sistema per l'identificazione degli enterobatteri Gram negativi,	
	24
Sistema per la ricerca e l'identificazione presuntiva di microrganismi	12
Sistema per la determinazione della carica microbica totale e per la	12
Sistema per l'identificazione e la valutazione della sensibilita' agli	24
Sistema per la ricerca, la determinazione semiquantitativa e	24
Sistema per l'identificazione e l'antibiogramma dei principali	32
Sistema per la ricerca e l'identificazione presuntiva di microrganismi	12
Sistema per l'antibiogramma dei batteri gram-negativi.	24
Sistema per l'antibiogramma dei batteri gram-positivi.	24
Pannello per la determinazione della suscettibilità agli antimicotici	32
Sistema per la determinazione della Minima Concentrazione	40
Sistema per la determinazione della Minima Concentrazione	40
Sistema per la determinazione semiquantitativa della carica	32
Sistema per la determinazione semiquantitativa della carica	24
	Sistema per l'identificazione e la valutazione della sensibilità agli Sistema per la ricerca, la determinazione semiquantitativa e Sistema per l'identificazione e l'antibiogramma dei principali Sistema per l'antibiogramma dei batteri gram-negativi. Sistema per l'antibiogramma dei batteri gram-positivi. Pannello per la determinazione della suscettibilità agli antimicotici Sistema per la determinazione della Minima Concentrazione Sistema per la determinazione della Minima Concentrazione Sistema per la determinazione semiquantitativa della carica Sistema per la determinazione semiquantitativa della carica

• Click NEW TEST to enter all information related to the laboratory (such data are maintained if not changed) and test.

ome struttura:	
Città:	
leparto:	
Direttore:	
nformazioni paziente	
d paziente:	
Cognome e Nome:	
nformazioni campione	
Aateriale:	
Data analisi: _/_/	Data campionamento: _/_/
lote	
Commenti:	

• Open the rotating drawer, insert system as shown on the picture and close completely.

IMPORTANT: When the drawer is closed, the System loaded into the instrument must be upside down to the lab technician.



• Click READ to run the test. Reading usually takes 10 to 20 sec. Observe results obtained for each well:

(+) positive reaction;

(-) negative reaction;

If the result is expressed with the symbol (?) the following options have to be considered:

- 1. Use the liquid inside the well for confirmation tests (see instructions sheet of the System being used).
- 2. The colorimetric reaction is not well defined giving undeterminable result (errors occurred during sample preparation of the inoculation of the System may have caused the development of an unexpected coloration).

NUOVA ANALISI

AVVIO ANALISI

ESITI POZZETTI

REPORT

MORTANT: Check the Reading areas to make sure they are correctly positioned (blue squares) over the System image, i.e. each area has to be within the relevant well (see Calibration in this document).

• Once reading is completed click WELL RESULTS. Next, review results, accept or change the interpretation generated automatically. In addition, here you can enter other results given by confirmatory tests if required (refer to the instructions sheet of the System being used).

• Click REPORT to view how data will be reported.

PDZITIO ISTO MACCINA ISTO INCOLOGO PDL ISTO MACCINA ISTO MA

Carica microbica:	UFC/ml>	10^6	
Identificazione:	Presenza	Proteus spp	
	Presenza	Pseudomonas spp	
	Presenza	a Enterococcus faecalis	
Antibiogramma:	SIGLA	ANTIMICROBICO	ESITO
	AK	Amikacina - 32 ug/mL	Resistente
	CN	Gentamicina - 8 ug/mL	Sensibile
	TOB	Tobramicina - 8 ug/mL	Sensibile
	TZP	Piperacillina/Tazobactam - 128/4 ug/mL	Sensibile
	FOS	Fosfomicina - 200 ug/mL	Sensibile
	IMI	Imipenem - 16 ug/mL	Sensibile
	CFM	Cefixime - 32 ug/mL	Sensibile
	CXM	Cefuroxime - 32 ug/mL	Resistente
	CTX	Cefotaxime - 64 ug/mL	Sensibile
	CAZ	Ceftazidime - 32 ug/mL	Sensibile
	F	Nitrofurantoina - 64 ug/mL	Resistente
	AMS	Ampicillina/Sulbactam - 32/16 ug/mL	Sensibile
	TE	Tetracycline - 16 ug/mL	Resistente
	CIP	Ciprofloxacina - 4 ug/mL	Sensibile
	LEV	Levofloxacina - 8 ug/mL	Sensibile
	OFL	Ofloxacina - 8 ug/mL	Sensibile

URIN SYSTEM Chron

27 28 29 CIP LEV OFI

<u>SensiQuattro</u>

When this family of Systems is being used, go to REPORT and select organism and interpretive criteria (CLSI, EUCAST or other) to complete the analysis.

	ORGANISA	Staphylococo	us spp			~			
Sigla	Antimicrobico	C	oncentraz	tione (ug	(ml)	MIC	Crit	eri etativi	Interpretazion
CN	Gentamicina	3	4	8	16	<= 3	CLSI	~	Intermedio
C.14	Gentamicana	-	-		-			100	
IEV	Levoflovacina	1	2	4	8	c=1	CISI		Intermedio
	Leronomeena	-	-	-	-				intermedio
A	Ampicillina / Sulbactam	8/4	16/8	32/16	64/32	<= 8/4	CLSI	eri tativi v v v v v v v v v v v v v v v v v v	Intermedio
	7 unpreamine 7 Seriorecum	-	-	-	-				
VA	Vancomicina	2	4	8	16		CISI	122	Intermedie
VA Va	vancomena	-	-	-	-	4-2	CLUI	×	intermedio
INT.	Linexalid	2	4	8	16	<= 2	CISI	100	Consibile
LINZ	Linezona	-	-	-	-	4.4.2	CLOT	<u> </u>	Jennone
cno	Coffeinness	8	16	32	64		CISI	100	Internetic
CRO	certraxone	-	-	-	-	<= 0	CLSI	×	intermedio
AUC	Americallina / Asida Churulanina	4/2	8/4	16/8	32/16	4.10	CISI	100	Considado
AUG	Amoxicinita / Acido Ciavulanico	-	-		-	4.4.2	CLUT	~	Sensible
CI.D.	Clashanialas	1	2	4	8		CISI		testame edia.
CLK	Ciantromicina	+	+	+	+	> 0	CLSI	~	intermedio
	Different later	0.5	1	2	4		2020		
кD	клатрісіла	-	-	-	-	<= 0.5	CLOI	×	Intermedio
	warman and a second	2/38	4/76	8/152	Growth	0.000	(CLC)		
SXI	Cotrimossazolo	+	+	+	+	> 8/152	CLSI	×	Sensibile

• Click SAVE to archive picture and all data associated with the test performed.

• Click PRINT/PDF to print (a printer already connected to giotto 2 and configured is required) or export the report in electronic format.



3.2. Types of report

• Systems for ID and AST directly from clinical specimens

Example of Report on Screen

Example of Report to be Printed (pdf/paper)

Paziente: Brambilla Daria

					Note: Prelievo a dis	to: 19/06/2016 tanza di 1 mese dal	trattamento a
Esame: Carica micro Metodi analisi: Bro Sistema Liofilchem?	obica, Ide odocoltura 0: Urin Sv	ntificarione, Antibiogramma. , Microdiluirione in brodo. sten Chrom.		•	Esame: Carica micr Metodo analisi: Bro Sistema Liofilchemo Data analisi: 20/06/	obica, Identificazion docoltura, Microdilui ®: Urin System Chro 2016	e, Antibiogran zione in brodo m
Carica microbica:	LIEC /ml >	=10.4			Carica microbica:	UFC/ml >106	
Jarica microbica: Identificazione:	Presenz Presenz Presenz	a Proteus spp a Proteus spp a Enterococcus faecalis			Identificazione:	Presenza Protei Presenza Pseud Presenza Entern	us spp Iomonas spp Dococcus faeca
Antibiogramma:	SIGLA	ANTIMICROBICO	ESITO		Antibiogramma:	SIGLA	ANTIMIC
		Buildening - 22 up/mt	Pagigkopha			AK	Amikacina
	CN	Gentamicina = 8 ug/ml	Sensibile			CN	Gentamic
	TOB	Tobramicina - 8 ug/mL	Sensibile			TOP	Tobramici
	TZP	Piperacillina/Tazobactam - 128/4 ug/mL	Sensibile			100	Tooramic
	FOS	Fosfomicina - 200 ug/mL	Sensibile			TZP	Piperacilli
	IMI	Imipenem - 16 ug/mL	Sensibile			FOS	Fosfomici
	CFM	Cefixime - 32 ug/mL	Sensibile			IMI	Imipenem
	C304	Cefuroxime - 32 ug/mL	Resistente			CFM	Cefixime -
	CTX	Cefotaxime - 64 ug/mL	Sensibile			CYM	Cefurovin
	CAZ	Ceftazidime - 32 ug/mL	Sensibile			OTV	Coluroxin
	2	Nitrorurantoina - 64 ug/mL	Resistente			UIX	Cefotaxim
	Auto ma	Reproduction - 16 up/nt	Sensibile			CAZ	Ceftazidin
	CT D	Cirreflevening - 4 up/mb	Consibile			F	Nitrofuran
	LWW	Levoflovacina - 8 ug/mL	Sansibila			AMS	Ampicillin
	OFL	Ofloxacina - 8 ug/mL	Sensibile			TE	Totrocuoli
						1.1.1	1 I REFERENCE

	Presenza Pseudo	Presenza Pseudomonas spp						
	Presenza Enterod	coccus faecalis						
gramma:	SIGLA	ANTIMICROBICO	ESITO					
	AK	Amikacina - 32 ug/mL	Resistente					
	CN	Gentamicina - 8 ug/mL	Sensibile					
	TOB	Tobramicina - 8 ug/mL	Sensibile					
	TZP	Piperacillina/Tazobactam - 128/4 ug/mL	Sensibile					
	FOS	Fosfomicina - 200 ug/mL	Sensibile					
	IMI	Imipenem - 16 ug/mL	Sensibile					
	CFM	Cefixime - 32 ug/mL	Sensibile					
	CXM	Cefuroxime - 32 ug/mL	Resistente					
	CTX	Cefotaxime - 64 ug/mL	Sensibile					
	CAZ	Ceftazidime - 32 ug/mL	Sensibile					
	F	Nitrofurantoina - 64 ug/mL	Resistente					
	AMS	Ampicillina/Sulbactam - 32/16 ug/mL	Sensibile					
	TE	Tetracycline - 16 ug/mL	Resistente					
	CIP	Ciprofloxacina - 4 ug/mL	Sensibile					
	LEV	Levofloxacina - 8 ug/mL	Sensibile					
	OFL	Ofloxacina - 8 ug/mL	Sensibile					
	VA	Vancomicina - 4 ug/mL	Resistente					
	SXT	Cotrimossazolo - 8 ug/mL	Resistente					

Commenti: Torbidità elevata

Laboratorio1 Reparto: Microb

ID paziente: 54 Materiale: Urine Roseto degli Abruzz

Il Direttore Dott. Mario Rossi

vrio1

Roseto degli Abruzzi

Integral Systems for ID and AST from isolated colonies •

Example of Report on Screen

				Microbiologia		
				Paziente: Mirabella L	ucia	
				Materiale: Tampone Data campionamento Note: Isolamento su	vaginale 5: 19/06/2016 Sabouraud clora	mfenice
Esame: Identifica	azione, Antik	piogramma.		-		
Metodi analisi: 1	Brodocoltura,	, Microdiluizione in brodo.		Esame: Carica micro	bica, Identificazi	one, Ar
Sistema Liofilch	em®: Integral	l System Yeast Plus		Metodo analisi: Brod Sistema Liofilchem® Data analisi: 20/06/2	ocoltura, Microdii : Integral System 016	iuizione Yeast
Identificazione: Codice: 7242						
Microrganismo: Ca	andida albica	ans		Identificazione:		
Antibiogramma	SIGLA	ANTIMICROBICO	ESITO	Codice: 7242		
				Microrganismo: Can	dida albicans	
	NY	Nistatina 1.25 ug/ml	Sensibile	Antibiogramma:		
	FOY	Elucitorina 16 ug/ml	Consibile		SIGLA	
	ECN	Econazolo 2 ug/ml	Resistente		NY	- 13
	KCA	Ketoconazolo 0.5 ug/ml	Sensibile		AMB	- 12
	CLO	Clotrimazolo 1 ug/ml	Resistente		FGY	
	MIC	Miconazolo 2 ug/ml	Resistente		ECN	E
	ITR	Itraconazolo 1 ug/ml	Resistente		KCA	
	VOR	Voriconazolo 2 ug/ml	Sensibile		CLO	0
	FLU	Fluconazolo 64 ug/ml	Sensibile		MIC	1
	Growth	Controllo di Crescita	Reazione positiva		ITR	1
					VOR	N
					ELLI	

Example of Report to be Printed (pdf/paper)

Paziente: Mirabella L	Lucia		ID paziente: 62	
Materiale: Tampone Data campionament Note: Isolamento su	vaginale o: 19/06/2016 Sabouraud clorar	nfenicolo		
Esame: Carica micro Metodo analisi: Brod Sistema Liofilchem® Data analisi: 20/06/2	obica, Identificazio locoltura, Microdili 2: Integral System 1016	ine, Antibiogramma uizione in brodo Yeast Plus		
Identificazione: Codice: 7242 Microrganismo: <i>Can</i>	dida albicans			
Antibiogramma:	SIGLA	ANTIMICROBICO		ESITO
	NY	Nistatina 1.25 ug/ml		Sensibile
	AMB	Amfotericina 2 ug/ml		Resistente
	FCY	Flucitosina 16 ug/ml		Sensibile
	ECN	Econazolo 2 ug/ml		Resistente
	KCA	Ketoconazolo 0.5 ug/ml		Sensibile
	CLO	Clotrimazolo 1 ug/ml		Resistente
	MIC	Miconazolo 2 ug/ml		Resistente
	ITR	Itraconazolo 1 ug/ml		Resistente
	VOR	Voriconazolo 2 ug/ml		Sensibile
	FLU	Fluconazolo 64 ug/ml		Sensibile
	Growth	Controllo di Crescita		Reazione positiva
Commenti: Osservaz	zione microscopic	a a supporto		

Il Direttore Dott. Mario Rossi

• Systems SensiQuattro for AST from isolated colonies

Example of Report on Screen

Example of Report to be Printed (pdf/paper)

Laboratorio 1 Microbiologioa	Roseto degli Abruzzi
Paziente: Bianchi Emanuele	

ID paziente: 55 Organismo isolato: Staphylococcus aureus

Materiale: Tampone nasale Data campionamento: 14/07/2016 Note: coinfezione da streptococco izione in brodo nsiQuattro Gram

iofilchem®: Ser si: 15/07/2016

cus spp

onato: Staphylo

		Sens	iQuattro	Gram pos	itive				
	ORGANIS	O Staphylococo	us spp			×			
Sigla	Antimicrobico	C	Concentrazione (ug/ml) MIC			Criteri Interpretativi		Interpretazione	
CN	Contamicina	3	4	8	16	- 2	CISI	100	Intermedie
CIN	Gentamicina	-	-	-	-	- S	CLOI	×	internetito
LEV/	Loughourseins	1	2	4	8		21.01	¥	Intermedio
LEV	Levonoxacina	-	-	-	-	x= 1	CLOI		
AMAS	Ampicillina / Sulbactam	8/4	16/8	32/16	64/32	<= 8/4	CLSL		Intermedio
74445	/unpicaria/ Subuctaria	-	-	-	-			M	
VA	Vancomicina	2	4	8	16	<= 2	CLSI 💌	Intermedio	
		-	-	-	-				
IN7	Linezolid	2	4	8	16	<= 2	CLSI 💌	Sensibile	
L. 12.	LITELONG	-	-	-	-	~~ *		100	Serioloric
CRO	Ceftriaxone	8	16	32	64	<= 8	CLSL		Intermedio
cno	Certraxone	-	-	-	-		CCOT -	1.0	
ALIC	Amovicilina / Acido Clavallanico	4/2	8/4	16/8	32/16	<= 40	CLSL		Senribile
	Autometrical Autometrical	-	-	-	-		oros -	Jennine	
CLR	Claritromicina	1	2	4	8	~ 8	CLSL	100	Intermedio
C.L.N	Claritromicina	+	+	+	+		CC01	internetito	
PD	Pifampicina	0.5	1	2	4	<= 0.5	CLSL		Intermedio
ND I	Kuampicina	-	-	-	-		CLUI M	interneuto	
SYT	Cotrimorrazolo	2/38	4/76	8/152	Growth	>	CLSI 👻	Canadala	
	COUNTOREDID	+	+	+	+			Scalsibile	

orgia	Per la monocio de la composición de la composi Composición de la composición de la comp	Concentratione (ognin)		11.0	interpretazione		
CN	Gentamicina	3	4	8	16	(71)	Intermedio 2
		-	-	-	-		
LEV	Levofloxacina	1	2	4	8	(T1	Intermedio ²
		-	-	-	-		memedio
4140	AmeinTine / Culhastern	8/4	16/8	32/16	64/32	<= 8/4	Intermedia ²
Amo	Ampionina / Subactam	-	-	-	-		Internetio
1/4	Magazziela	2	4	8	16	c= 2	Informatio ²
VA Val	Vancomonia	-	-	-	-		memedio
LNZ	Linezolid	2	4	8	16	<= 2	Sensibile 2
		-	-	-	-		
CRO	Ceftriaxone	8	16	32	64	<= 8	Intermedio ²
CNO		-	-	-	-		
AUG	Amovicillina / Acido Clavulanico	4/2	8/4	16/8	32/16	ca 4/2	Sensibile ²
200		-	-	-	-		Centralizine
CLR	Claritromicina	1	2	4	8	> 8	Intermedio 2
our		+	+	+	+		
-	Rifampicina	0.5	1	2	4	<= 0.5	Intermedio 2
ND		-	-	-	-		
SXT	Cotrimossazolo	2/38	4/76	8/152	Growth	> 8/152	Sensibile 2
SXI		+	+	+	+		
College int	International International Client						

enti Criteri Interpretativ

CLSI. Performance Standards for Antimicrobial Susceptibility Testing; Twenty-Fourth Informational Supplement. CLSI document M100-S24. Wayne, PA: Clinical and Laboratory Standards Institute; 2014.

ti: prelievo a distanza di 1 mese dal trattam

Il Direttore Dott. Mario rossi

3.3. Images management

CAPTURING, SAVING and TRANSFERRING images are functions not directly related to the test analysis and that can be used for:

- creating a photographic archive of Systems;
- sending images to Liofilchem, for instance to require assistance if a test gives doubtful results.

To capture an image:

- 1. Click SELECT SYSTEM and choose form the list the System or Other;
- 2. Open the rotating drawer, load the System and close the drawer completely;

MENÛ

SELEZION

- 3. Click CAPTURE;
- 4. Enter a file name for the image;
- 5. Press SAVE to save the file.

For sanding images to Liofilchem:

- 6. Click TRANSFER;
- 7. Select an image or more than one (holding down the Ctrl key);
- 8. Enter a brief description;
- 9. Click SEND TO SERVER (internet connection required).

ZOOM in or zoom out pressing the buttons "+" or "-", respectively.

WARNING: Giotto 2 must be only used in laboratory for microbiological analysis. Each user shall be a qualified person in biological field expert for the handling of the materials used.

IMPORTANT: Every time a working section is started the calibration of giotto 2 should be verified. From Menu, select Calibration. For more information see the calibration section in

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User Manual



H SALVA

SALVA

INVIA AL SERVER

TRASFERISC

Immagine





DISCLAIMER: Both captured images and reports provided by giotto 2 are a valid aid to the

this document.

laboratory personnel for preparing the definitive report. The report, which the instrument creates, does not replace the definitive analysis report issued by the laboratory. The Head of the laboratory is solely responsible for the final report. The report created by giotto 2 might be used as definitive report issued by the laboratory only if the Head of the lab, once reviewed and approved all results, takes full responsibility of it appending his/her own signature.

3.4. Database management



3.4a. Analysis archive

From Menu, select Analysis archive.

Select the system to see the entire list of all relevant archived examinations . Click a row to view picture, results and report of the analysis you are interested in (read-only). Click the red "x" to delate recorded data.



3.4b. Images archive

From Menu, select Images archive.

Open a file among those contained in the pictures folder or select another folder.



3.4c. Backup

From Menu, select Backup to create a folder containing a copy of previously saved data.

Menù	
BACKUP	
Salva in 🖃 c: 🔹	
a giotto2	
ackup	
Nome File Backup	

3.4d. Download color database

From Menu, select Download color database.

Click DOWNLOAD to get latest updates on criteria used by the software to recognize and interpret the colorimetric reaction inside each well (see also Automated updates in this document).

Under the DOWNLOAD button you can see date and time of the last update.



3.5. Setup 3.5a. Calibration

drawer completely.

Open the rotating drawer, insert the Caliper as shown on picture and close



From Menu, select Calibration. Click Calibration to verify that the images capturing and interpreting System works correctly.	Margine superiore 3200 Margine sinistro 2750 Dimensione 100% SALVA
Calibrazione (15/06/2016 16:26:10) # RGB calibro E RGB letto 1 070,065,090 084,068,095 V 2 248,250,215 247,252,245 V 3 235,240,215 235,246,214 V	× Giotto 2 X Verifica acquisizione colori completata con successo!
4 239,240,206 239,245,207	ОК
11 247,115,100 253,120,101 ✓ 12 195,230,102 199,244,099 ✓ 13 103,198,142 101,207,143 ✓ 14 104,115,196 103,116,195 ✓ 15 100,140,225 101,142,222 ✓ 16 255,255,255 ✓ 17 242,168,115 242,168,105 ✓ 18 225,146,101 228,150,101 ✓	Giotto 2 ×
19 158,115,110 154,115,108 ✓ 20 165,135,125 167,139,125 ✓ 21 235,212,205 235,215,204 ✓ 22 249,155,166 249,154,158 ✓ 23 140,110,140 138,114,140 ✓ 24 250,125,188 250,128,185 ✓	ОК

K

IMPORTANT: Whatever the outcome of the Calibration, make sure that the reading areas (blue squares) are correctly positioned over the caliper image, i.e. each area must fall within the relevant colored circle.





Select Areas Adjustments and press the arrows to move simultaneously all reading areas up, down, right or left.

IMPORTANT: Calibration is recommended to be checked at every time a working section with giotto 2 is started.

An alternative way to adjust reading areas (from System)

The reading areas can be repositioned when a System image is captured.

Change the numerical values under Margins of reading areas and Centre picture to simultaneously move the reading area for all wells and centre the System image, respectively. Click SAVE to effect changes made.

Numerical values in the picture on the right are purely for guidance.

Impostazioni- Giotto 2 giiitto	×
Calibrazione Regolazione pozzetti	
Margini area analisi Margine superiore 750 Margine sinistro 1250 Valore 1 cm 112	
Centratura foto Margine superiore 3200 Margine sinistro 2750 Dimensione 100 %	
SALVA	

Select Well adjustments to move the reading area specific for each single well: to select the well, click the small arrow in the middle (1 corresponds to the well on the top left, 8 to the top right well and so on); next, press the bigger arrows to move the reading area in the four directions.

CAUTION: move the reading areas only if necessary. If they are not correctly positioned the automated interpretation is unreliable.



3.5b. Technical assistance

From Menu, select Technical Assistance.

Contact Liofilchem to communicate ID and Password in order to benefit from remote assistance service.



3.5c. Report customization

From Menu, select Report customization.

Choose the logo of your lab or the image you want to be shown on the report. Enter numerical values to adjust position and size of this logo on the document.

🗃 Stampa	×
DOCUMENTO	
Margine superiore 0	Margine sinistro 300
LOGO	
Margine superiore 100	Margine sinistro 100
Ridimensionamento immagine	(base/altezza) 1470 1604
Dimensioni reali immagi	ne (base/altezza) 1470/1605
DWCX08LLCL	
Cambia	immagine
🐓 ок	

3.5d. Control panel

From Menu, select Control panel to change settings of the PC integrated with giotto 2 (not recommended).

Tutti gli elementi del Pannello di contro	llo			- 🗆 X
← → ~ ↑ 🔛 > Pannello di cont	rollo > Tutti gli elementi del Pannello di contri	ollo >	5 v	Cerca nel Pannello di controllo 🔎
Modifica le impostazioni del cor	nputer		Visuali	zza per: lcone piccole 🔻
& Account utente	🔗 Area geografica	🛋 Audio	autoPla	y
🍪 Backup e ripristino (Windows 7)	Barra delle applicazioni ed esplorazio	A Caratteri	Cartelle	di lavoro
🕒 Centro accessibilità	💱 Centro connessioni di rete e condivis	Centro PC portatile Windows	S Centro s	incronizzazione
🐻 Connessione RemoteApp e desktop	🏘 Crittografia unità BitLocker	🙆 Cronologia file	🔐 Data e o	ra
Dispositivi e stampanti	Flash Player (32 bit)	😰 Gestione Audio Realtek HD	📮 Gestione	e colori
Gestione credenziali	Gestione dispositivi	🔣 Grafica HD Intel®	•4 Gruppo	Home
105 IDS Camera Manager	💱 Lingua	J Mouse	🔒 Opzioni	di indicizzazione
🔄 Opzioni Esplora file	🔁 Opzioni Internet	😵 Opzioni risparmio energia	🖬 Personal	lizzazione
Programmi e funzionalità	🔊 Programmi predefiniti	Riconoscimento vocale	🐼 Ripristin	0
Risoluzione dei problemi	Schermo	🏲 Sicurezza e manutenzione	Sistema	
Spazi di archiviazione	🖀 Strumenti di amministrazione	Castiera Tastiera	Tecnolo	gia Intel® Rapid Storage
Telefono e modem	Mil Windows Defender	P Windows Firewall		

3.5e. Language setting

From Menu, select Set the language of giotto 2 choosing among those available.



3.6. Users management

From Menu, select New, Delate or Change to manage users profile

Before running a test, click Login to get access using your Username and Password. This operation is required if you want your name to appear in the report.



3.7. Automated updates

The giotto 2 application has two types of update:

- Color database update;
- Software version update.

An alert notifies when there is immediate availability of updates and their nature. Clik Info and follow instructions.

MPORTANT: To receive and install automated updates internet connection is required.

(i) Aggiornamento DataBase colori Giotto2 Info			
Attenzione	×		
Aggiornamenti disponibili - Dal menù selezionare download database colori. - Cliccare DOWNLOAD per rendere effettivo l'aggiornam	ento		
(i) Installa aggiornamenti Giotto2			
Arrenzione			
Cliccare sul link per eseguire l'installazione. L'operazione richiederà alcuni minuti e il Giotto2 si chiuderà automaticam	nente.		

OK

4. Troubleshooting

The monitor of giotto 2 does not turn on.	Check cables connection. The power supply LED should light green. The toggle switch should be in the ON (I) position. The analysis drawer is supposed to be illuminated from inside. Verify the LED (POWER) is lighting, if not press the relevant button. Press the START button if the LED lights red.
Giotto 2 does not connect to the internet.	Check there are no network issues. <u>Ethernet connection problems</u> Try using the other USB port on the back of giotto 2.
Misinterpreting the results	 Verify that: The System you selected on screen corresponds to the System effectively loaded into the drawer for testing. The System was placed correctly into the rotating drawer. The drawer was completely closed before running the test. All reading areas were correctly centered over the relevant well (check off "Reading areas" to make them visible over the System picture).
Calibration fails	 Verify that: The Caliper was placed correctly into the rotating drawer. The drawer was completely closed before clicking on Calibration. All reading areas (blue squares) fell within the relevant colored circle: otherwise, adjust the position of reading areas (refer to the Calibration section in this document).

5. Warnings and precautions

For transportation of giotto 2 and accessories use its own shipping pack (styrofoam packaging plus cardboard outer shell).

When giotto 2 is manually moved inside the lab where it was installed, keep the instrument in upright position.

After moving the instrument, it is recommended performing calibration (refer to the Calibration section in this document).

Personal Protective Equipment (PPE) should be used when operating with giotto 2, according to the laboratory policy for handling of potentially contaminated and/or infected material.

6. Service and maintenance

To get assistance for analysis of difficult-to-interpret test, refer to the Image management section in this document. Once the image transferring procedure is finished contact the Liofilchem headquarter.

Use the TeamViewer function which is integrated in giotto 2 allowing to get in contact with the Liofilchem assistance for problem-solving (see the Technical assistance section in this document).

Liofilchem does not provide any installation service or technical assistance for giotto 2 networking connection.

No maintenance of Giotto 2 is required. It contains no motors or moving parts. Lights in ths system do not require maintenance and are not-replaceable by the user.

6.1. Touch screen and drawer cleaning

Any standard glass cleaner or hospital disinfectants can be used to clean the touch screen monitor and drawer surface. Disinfectants/detergents should be applied to a cloth or towel and not sprayed directly on the screen or drawer surface.

Appendix I

An eye to the main Liofilchem[®] Systems for screening, ID and AST

Systems for ID and AST directly <u>from clinical specimen</u>:

Name	Ref.	Description
AF Genital System	74156 (20 test) 79156 (4 test)	System for detection, count and susceptibility testing of pathogens from the urogenital tract (24 wells)
Mycoplasma System Plus	72592 (20 test) 79592 (4 test)	System for detection, semi-quantitative determination and susceptibility testing of urogenital mycoplasma (24 wells)
Urin System Chrom	74161 (20 test) 79161 (4 test)	System for microbial count, identification and susceptibility testing, directly from urine specimens (32 wells)
Urin System Plus	74160 (20 test) 79160 (4 test)	System for microbial count, identification and and susceptibility testing directly from urine specimens (24 wells)
Pathogenic System AST	71681 (20 test) 79681 (4 test)	System for identification and and susceptibility testing of main pathogenic organisms from clinical specimens (32 wells)
Copro System Plus	71675 (20 test) 79675 (4 test)	System for detection and identification of enteric pathogenic organisms (18 wells)

Integral Systems for ID and AST from isolate colony:

Name	Ref.	Description
Integral System Enterobacteria	71714 (20 test) 79714 (4 test)	System for identification and and susceptibility testing of enterobacteria (24 wells)
Integral System Yeasts Plus	71822 (20 test) 79822 (4 test)	System for identification and and susceptibility testing of main pathogenic yeasts (24 wells)
Integral System Staphylococci	71718 (20 test) 79718 (4 test)	System for identification and and susceptibility testing of staphylococci (24 wells)
Integral System Streptococci	71720 (20 test) 79720 (4 test)	System for identification and and susceptibility testing of streptococci (24 wells)

System for ID from isolate colony:

Name	Ref.	Description
Enterosystem 24R	71619 (20 test) 79619 (4 test)	System for identification of Gram-negative, oxidase-negative enterobacteria (24 wells)
Enterosystem 18R	71618 (20 test) 79618 (4 test)	System for identification of Gram-negative, oxidase-negative enterobacteria (18 wells)
Listeria System 18R	71640 (20 test) 79640 (4 test)	System for identification of <i>Listeria</i> spp (18 wells)
Staph System 18R	71630 (20 test) 79630 (4 test)	System for identification of staphylococci (18 wells)
Strepto System 12R	72560 (20 test) 79560 (4 test)	System for identification of streptococci (24 wells, 2 specimens)

Systems for AST <u>from isolate colony</u>:

Name	Ref.	Description
SensiTest Gram-positive	76020 (20 test) 79020 (4 test)	System for susceptibility testing of Gram- positive bacteria (24 wells)
SensiTest Gram-negative	76010 (20 test) 79010 (4 test)	System for susceptibility testing of Gram- negative bacteria (24 wells)
SensiQuattro Gram-positive	76032 (20 test) 79032 (4 test)	System for determination of Minimum Inhibitory Concentration (MIC) of Gram- positive bacteria with the broth microdilution method (40 wells)
SensiQuattro Gram- negative	76031 (20 test) 79031 (4 test)	System for determination of Minimum Inhibitory Concentration (MIC) of Gram- negative bacteria with the broth microdilution method (40 wells)
SensiQuattro Candida EU	76033 (20 test) 79033 (4 test)	System for determination of Minimum Inhibitory Concentration (MIC) of <i>Candida</i> spp with the broth microdilution method (40 wells)

Name	Ref.	Description
Food System	71680 (20 test) 79680 (4 test)	System for detection and identification of pathogenic organisms from food validated according to ISO 16140 (24 wells, 2 samples)
HACCP System Plus	71655 (20 test) 79655 (4 test)	System for determination of microbial load, detection and identification of pathogens isolated from working surfaces (24 wells, 2 samples)

Systems for screening of main pathogens from <u>food and surfaces:</u>



Giotto 2 can be used with all kind of Liofilchem's Systems. Contact the manufacturer or the local representative for reading a System which is not configured with the instrument yet.