Certificate of Registration

This is to certify that the quality management system of

ARCTIKO
ARCTIKO A/S

Main site: Lammefjordsvej 5, 6715 Esbjerg N, Denmark

has been assessed and registered by Intertek as conforming to the requirements of

ISO 9001:2008

The quality management system is applicable to

Research, Development, Sales and Services of ultra low temperature freezers and laboratory refrigerators and freezers

Certificate Number:	33037-01
Initial Certification Date:	December 20 2007
Certificate Issue Date:	December 9 2016
Certificate Expiry Date:	September 14 2018

Thomas Andersson, CEO
Intertek Certification AB
P.O. Box 1103, SE-164 22 Kista, Sweden

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1639
ISO/IEC 17021

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IQ / OQ

Installation and Operational Qualification

LFF 660 / -ST & LFFG 660 / -ST

ARCTIKO

IQ/OQ for LFF 660 /-ST & LFFG 660 /-ST Model.:

The objective of this Installation and Operational Qualification (IQ/OQ) Checklist is to qualify the installation and operation of the Arctiko Fridge/Freezer type LFF 660 /-ST & LFFG 660 /-ST for routine laboratory use.
This Installation and Operation Qualification Check will define the minimum test procedures and acceptance criteria to be used to establish that the Arctiko Fridge/Freezers are installed and operated as per our specifications.

This checklist is mentioned to be used as input for distributors of Arctiko Fridge/Freezers.
Please be aware that local circumstance can require additional control and verification during validation.

Index:

1 Basic information

1.1 Basic information about the unit

Serial number: _____

Arctiko Purchase order: _____

Date of quality control: _____

Quality control carried out by: _____

Date & Sign: _____

Comments

2 Component Verification

2.1 Cabinet check points:

Scope of supply		Check
Delivered versus P.O.	All Items are delivered as stated in P.O.	

Cabinet check points		Check
Body	All packing material has been removed	
	No scratches. No dents. No rust	
	No cracks on plastic frames	
Door	Can open and close	
	Can be locked via the key	
	No gab between gasket and frame	
Controller	No scratches on display	
	All cable mounted as per safety requirements	
Inside compartment	No scratches or cracks on the inside of the door	
	No scratches and cracks on the inside of the cabinet	
	Sensor mounted at the right place	
Documentation	Operating Instruction Manual available	

Comments

3 Environmental Conditions Verification

3.1 Verify that the following is correct

Cabinet check points		*Check*
Alarms	*High temp. alarm*	
	Low temp. alarm	
	Power failure	
Fan	*No unusual noise*	
Compressor	*No unusual noise*	

Environment		*Check*
Clima	*Max. ambient temp. 32°C Class N. No direct sun on the unit*	
Electrical supply	*As per stated in Operating Instruction Manual and in accordance to local regulations*	
Surface	*The unit kept on a solid flat surface to eliminate any vibrations & irritating noise*	
Airflow	*The unit is installed with at least 10 cm free space to the sides and 15 cm free space at the back*	

Comments

4 Equipment File Verification

4.1 Verify that the documentation is available

Documentation	*Check*
Purchase Order	
Operating Instruction Manual	
Spare Parts List	
Declaration of Conformity (only for EU)	

Comments

5 Operational Qualification Data Sheet

5.1 Make sure that the following parameters will be noted and filled

It is our recommendation that the parameters are checked app. Ones time every year.

Description	Arctiko default settings	Customer setting.
Custom Settings		
Password	0000	
Set point		
Refrigerator	+4,0	
Freezer	-20	
Alarm Settings:		
Alarm Delay		
Refrigerator	15 min.	
Freezer	15 min.	
Door open alarm		
Refrigerator	Enable	
Freezer	Enable	
High temp. alarm		
Refrigerator	+6	
Freezer	-15	
Low temp. alarm		
Refrigerator	+2	
Freezer	-30	
Probe/eprom failure		
Refrigerator	Enable	
Freezer	Enable	
Power failure		
Refrigerator	Enable	
Freezer	Enable	
Alarm log time interval		
Refrigerator	1	
Freezer	1	

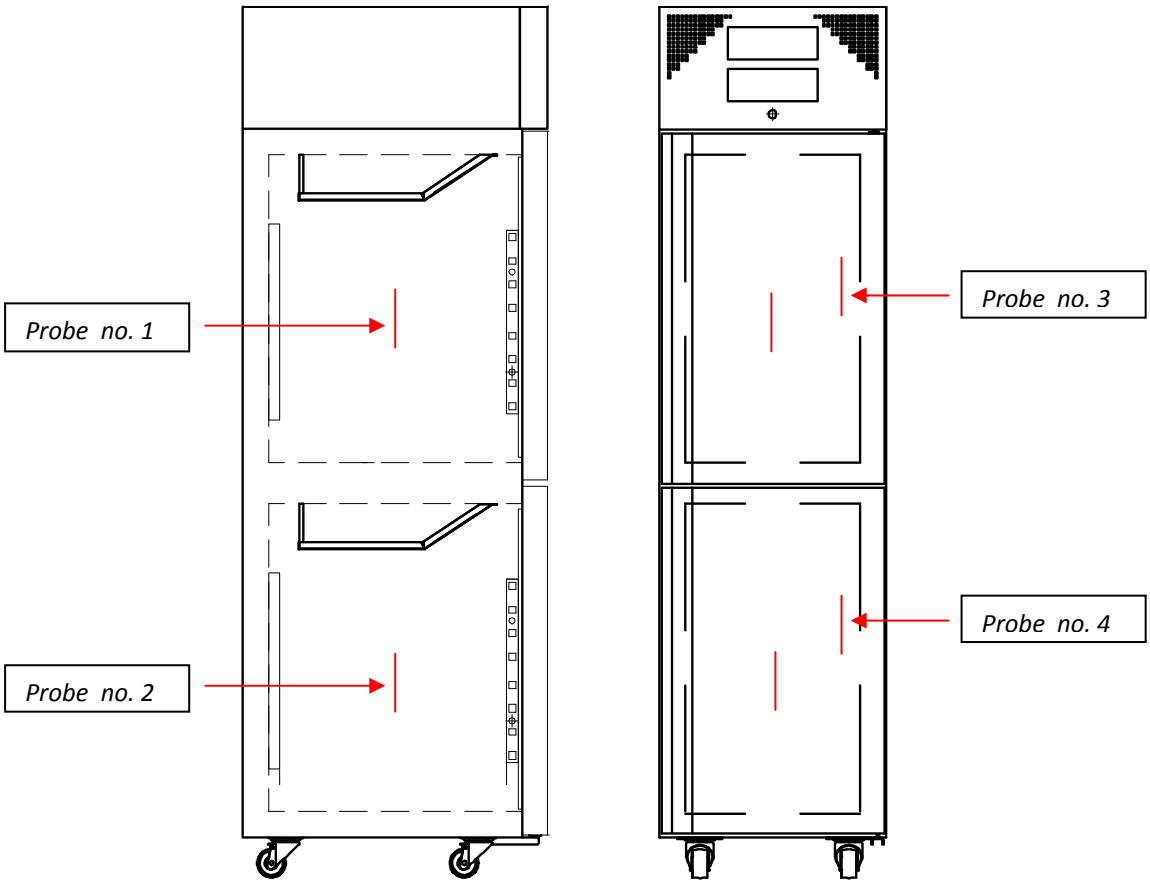
Comments

Description	Arctiko default settings	Customer setting.
Advanced Settings		
Password	0000	
Calibration		
Refrigerator	0,0	
Freezer	0,0	
Automatic defrost		
Refrigerator	06	
Freezer	06	
Manual defrost		
Refrigerator	OK	
Freezer	OK	
Hysteresis		
Refrigerator	1,0	
Freezer	1,0	
Temp. range limits		
Refrigerator	+10,0	
Refrigerator	+1,0	
Freezer	-30,0	
Freezer	-10,0	

Comments

6 Placement of test probes.

The probes must be placed in the unit like following marked with red.
Probe no. 1 is placed in the middle of the room no. 1.
Probe no. 2 is placed in the middle of the room no. 2
Probe no. 3 is placed beside the probe for the controller.
Probe no. 4 is placed beside the probe for the controller.



Comments

7 Requirement for accept.

7.1 Max. deviation and performance limits.

Max. Ambient temperature	32°C +/- 2K
Set point of controller	_____
Max. deviation between warmest and coldest spot in the unit:	5K

Probe no. on pull down

Actual value for probe no. 1:

Max. temperature	_____
Min. temperature	_____
Passed Yes / No	_____

Actual value for probe no. 2:

Max. temperature	_____
Min. temperature	_____
Passed Yes / No	_____

Actual value for probe no. 3:

Max. temperature	_____
Min. temperature	_____
Passed Yes / No	_____

Actual value for probe no. 4:

Max. temperature	_____
Min. temperature	_____
Passed Yes / No	_____

If there are deviation between probe placed beside the probe for controller and display then change the parameter “calibration” .
Start new test if the controller has been calibrate.

Pull down time	Max. 2 h
Passed Yes / No	_____

Comments

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ARCTIKO
true cooling specialists

+1/+10°C
-10/-30°C
SMART BIOMEDICAL COMBI
FRIDGE/FREEZER

LFF 660

SMART FRIDGE AND FREEZER IN ONE CABINET, MAKES IT A PERFECT SOLUTION FOR LABORATORIES WITH LIMITED SPACE DUE TO THE SMALL FOOTPRINT.
With air forced cooling and automatic defrost which will save time to focus on what's most important and store the samples most reliable.

AVAILABLE IN ATEX

AIR FORCED COOLING

FILTERLESS CONSTRUCTION

INDEPENDENT & LESS FOOTPRINT

The LFF comes with two controllers allowing you to set and operate them as two independent units. With separate locks and passwords, it provides the ability to restrict access to storage and settings, in case the unit have multiple users. The unit is in effect of two fully independent units each with its own compressor, cooling circuit and controller – allowing to turn off one of the compartments in case that they are not in use for some time.

STAINLESS STEEL & AUTOMATIC DEFROST

The unit is available with stainless steel AISI 304 Exterior, so that the interior and exterior is made entirely of stainless steel, providing a stronger more resistant unit.

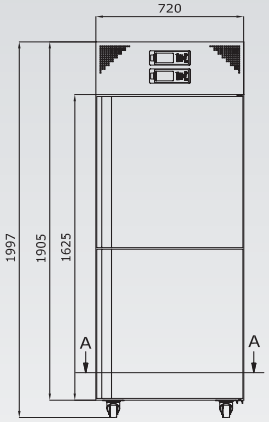
With Arctiko's automatic defrost system it's not required to remove samples prior to defrosting, saving you valuable time to focus on what matter the most and at the same time stores the samples safely.

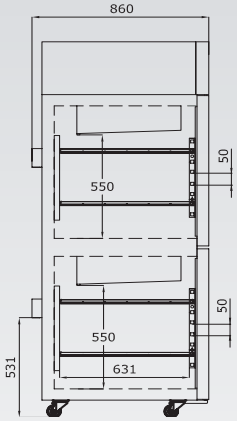
EXCEPTIONAL COOLING

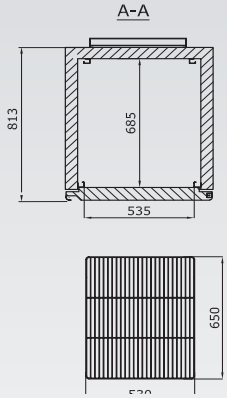
Arctiko has combined the high quality cooling performance created by air-forced cooling and automatic defrosting.

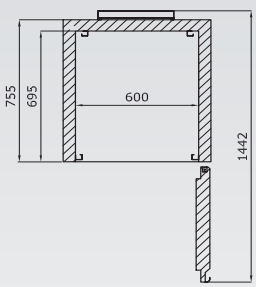
The results meet the more stringent requirements for lower power consumption, more precise cooling uniformity, need for temperature and alarm surveillance, documentation and validation, making the LFF 660 the perfect solution for biomedical storage.

MAIN DIMENSION FOR LFF 660









MAIN SPECIFICATIONS	
Item code	DAI 0265 / DAI 0266
Temperature range (˚C)	+1 / +10 -10 / -30
Max. ambient temperature (˚C)	32
Capacity (L)	288 / 288
Exterior dimensions WxDxH (mm)	720x860x1997
Interior dimensions WxDxH (mm)	2x(600x685x700)
Weight (KG)	163
Insulation (mm)	60
Cooling technology	air forced
Controller model / probe type	G214 / PT1000
POWER	
Power supply (V)	230*
Frequency (Hz)	50/60
Power consumption (kWh/24H)	11,3
AMP (A)	5,1
Power (Watt)	749
Horse power (HP)	1/3 + 1/2
ALARM FUNCTIONS	
Alarm display as text - not codes	yes
Visual / acoustic alarm	yes / yes
Power failure alarm	yes
Adjustable high / low temperature alarm	yes / yes
Open door alarm	yes
Probe failure alarm	yes
Low battery alarm	yes
Compressor failure alarm	no
Battery backup for alarms (approx. hrs.)	72
DATA LOGGING & EXTERNAL CONNECTION	
Voltage free contact for remote alarm (e.g. GSM alarm module)	yes
Electronic data logger	yes
RS 485 port	yes
USB port for software update & data download	yes
Temperature chart recorder	optional
DISPLAY FEATURES	
Display type	4,3'' with touch buttons
Number of optional reference probes	2
Password protection for turning unit on / off	yes
Temperature graph on display	yes
OTHER FEATURES	
Automatic defrost	yes
Antifreeze function	no
Vacuum release port	no
Access port for external probe etc. (int. diameter mm)	optional
Light	no
Lock with key	yes
Castors (total pcs) / castors with brake (pcs)	4 / 2
Fixed feet (pcs) / levelling feet (pcs)	no
Sub lids or inner doors (pcs)	no
Reversible door(s)	yes
Fixed shelves (pcs) / adjustable shelves (pcs)	0 / 4
Max. no. of shelves (pcs) / recommended max. no. of shelves (pcs)	16 / 8
Max. load per shelf (kg)	30
Adjustable drawers (pcs)	optional
Max. no. of adjustable drawers (pcs)	6
Max. load per adjustable drawer (kg)	30
REFRIGERATION & CABINET	
Number of compressors	2
Refrigerant	R290
Interior cabinet material	stainless steel
Exterior cabinet material	painted steel / stainless steel
Colour (exterior cabinet)	white / stainless steel
Foam type	polyurethane
VIP vacuum insulated panels	no
SHIPPING	
Shipping weight (KG)	218
Shipping dimensions WxDxH (cm)	102x84x220
Shipping volume (m^3)	1,88

*110V/60Hz available as option

OPTIONAL ACCESSORIES

GSM alarm module
Temperature chart recorder
Shelves (perforated, wire stainless steel, plastic coated)
Drawers (stainless steel)
Modbus adapter
Voltage stabilizer
Voltage converters
LED light

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