

# Installation and Operation Qualification

Alcolyzer Analyzing System

consisting of

Component	Serial Number	Software/ Firmware Version	Purchas Orde Number	Date of Purchase	Date of Installation	Installed by
<b>Master Instrument</b> <input checked="" type="checkbox"/> DMA 5000 M <input type="checkbox"/> Alcolyzer ..... M	82864972	2.94.13032. 59	451007164 2	08-05-2019	30-07-2019	Jose Olaya
<b>Alcohol Measuring Module</b> <input checked="" type="checkbox"/> Alcolyzer Spirits ME <input type="checkbox"/> Alcolyzer ..... ME with Option Color	82820091	2.94.13032. 59	451007164 2	08-05-2019	30-07-2019	Jose Olaya
<b>Modular Circular Polarimeter</b> <input type="checkbox"/> MCP 100	.....	.....	.....	.....	.....	.....
<b>Xsample™ Module</b> <input type="checkbox"/> Xsample™ 520 Separate IQ/OQ attached						
<b>Options</b> <input type="checkbox"/> pH ME Measuring Module <input type="checkbox"/> HazeQC ME Turbidity Measuring Module Separate IQ/OQs attached						



**contact**

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## 1 Installation Qualification (IQ)

The IQ checks the space requirements, the environmental and the electrical conditions.

For the IQ of Xsample™, see the separate Xsample™ IQ/OQ.

For the IQ of optional modules, see the respective IQ/OQ.

### 1.1 Supplied Documents

#### Instruction Manual

DMA™ M	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	<input type="checkbox"/> Not relevant	Comment: .....
Alcolyzer ME	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	<input type="checkbox"/> Not relevant	Comment: .....
Alcolyzer M	<input type="checkbox"/> OK	<input type="checkbox"/> NOK	<input checked="" type="checkbox"/> Not relevant	Comment: .....
MCP 100	<input type="checkbox"/> OK	<input type="checkbox"/> NOK	<input checked="" type="checkbox"/> Not relevant	Comment: .....
Alcolyzer Analyzing Systems	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	<input type="checkbox"/> Not relevant	Comment: .....

#### Certificate of Compliance

DMA™ M	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	<input type="checkbox"/> Not relevant	Comment: .....
Alcolyzer ME	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	<input type="checkbox"/> Not relevant	Comment: .....
Alcolyzer M	<input type="checkbox"/> OK	<input type="checkbox"/> NOK	<input checked="" type="checkbox"/> Not relevant	Comment: .....
MCP 100	<input type="checkbox"/> OK	<input type="checkbox"/> NOK	<input checked="" type="checkbox"/> Not relevant	Comment: .....

#### Calibration Certificate

DMA™ M	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	<input type="checkbox"/> Not relevant	Comment: .....
Alcolyzer ME	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> NOK	<input type="checkbox"/> Not relevant	Comment: .....
Alcolyzer M	<input type="checkbox"/> OK	<input type="checkbox"/> NOK	<input checked="" type="checkbox"/> Not relevant	Comment: .....

### 1.2 Shipped Goods

Do the shipped goods correspond to the packing lists?  YES  NO

If NOK which parts are missing:

.....  
.....  
.....

Are the shipped goods in a good condition?  OK  NOK

If NOK, please specify the faults:

.....

.....

### 1.3 Installation of the Measuring System

Are the packing boxes and transport protections removed and stored for further transports?  OK  NOK

If a measuring module or instrument is placed on top of another instrument, the drip plate (mat. no. 99384) has to be mounted on the instrument below.  OK  NOK  Not relevant

Is the drip plate mounted correctly on top of the lower positioned instrument?

Are the environmental conditions fulfilled?  OK  NOK

Indoor use/relative humidity non-condensing 20 °C < 90%, 25 °C < 60%, 30 °C < 45%  
ambient temperature 15–35 °C / 59–95 °F

Is the measuring system placed away from heaters and air conditioning units?  OK  NOK

Is the measuring system placed away from direct sunlight (advisable)?  OK  NOK

Are all hose connections done and checked according to the corresponding instruction manuals?  OK  NOK

Are all devices properly connected by CAN cables?  OK  NOK  Not relevant

Is the terminating resistor installed at the remaining CAN interface?  OK  NOK  Not relevant

Is the power cord properly attached to the master instrument?  OK  NOK

Is the input device properly connected via USB?  OK  NOK  Not relevant

Keyboard

Mouse

Bar code reader

Is the external touch screen properly connected via VGA and USB via USB hub?  OK  NOK  Not relevant

Is the power cord properly attached to the external touch screen?  OK  NOK  Not relevant

Is the printer properly connected? Connection is done via:  OK  NOK  Not relevant

Ethernet

USB

COM

Is the PC properly connected? Connection is done via:  OK  NOK  Not relevant

Ethernet

COM

## 2 Operation (OQ) & Performance Qualification (PQ):

The IQ has to be completed before starting the Operation Qualification. The OQ reviews, evaluates and tests the measuring system to verify that it is capable of operating satisfactorily within the defined operating limits and to ensure that the equipment meets the design criteria.

Prior to testing the measuring system, turn the power on using the power switch of the master instrument and allow approx. 30 minutes for the instrument's internal temperature to equilibrate.

For the OQ and PQ of Xsample™, see the separate Xsample™ IQ/OQ.

For the OQ and PQ of optional modules, see the respective IQ/OQ.

### 2.1 Power ON Functional Tests

Is the green light on the master instrument illuminated indicating that the power is on?  OK  NOK

Is the green POWER LED of Alcolyzer ME / DMA™ ME illuminated indicating that the power is on?  OK  NOK

Is the TFT display functioning?  OK  NOK

Can the buttons be operated by tapping on the touch screen?  OK  NOK

Only DMA™ M: Does the U-View quick access icon switch on the camera and is the picture OK (position, contrast, focus, brightness)?  OK  NOK

Does the air pump quick access icon switch the air pump on and off and is the air pump working properly?  OK  NOK

Is the communication with the input device working?

- |  |                             |                              |  |
|--|-----------------------------|------------------------------|--|
| <input type="checkbox"/> Keyboard              | <input type="checkbox"/> OK | <input type="checkbox"/> NOK | <input checked="" type="checkbox"/> Not relevant |
| <input type="checkbox"/> Mouse                 | <input type="checkbox"/> OK | <input type="checkbox"/> NOK | <input checked="" type="checkbox"/> Not relevant |
| <input type="checkbox"/> Bar code reader       | <input type="checkbox"/> OK | <input type="checkbox"/> NOK | <input checked="" type="checkbox"/> Not relevant |
| <input type="checkbox"/> External touch screen | <input type="checkbox"/> OK | <input type="checkbox"/> NOK | <input checked="" type="checkbox"/> Not relevant |
| <input type="checkbox"/> PC                    |                             |                              |  |

Is the communication with the output device working?

- |   |  |                              |  |
|---|--|------------------------------|--|
| <input type="checkbox"/> Printer          | <input type="checkbox"/> OK            | <input type="checkbox"/> NOK | <input checked="" type="checkbox"/> Not relevant |
| <input type="checkbox"/> PC               | <input type="checkbox"/> OK            | <input type="checkbox"/> NOK | <input checked="" type="checkbox"/> Not relevant |
| <input type="checkbox"/> USB drive device | <input checked="" type="checkbox"/> OK | <input type="checkbox"/> NOK | <input type="checkbox"/> Not relevant            |

## 2.2 Settings on the Master Instrument

- |   |  |                              |                                       |
|---|--|------------------------------|---------------------------------------|
| Is the master instrument equipped with the latest software version?       | <input checked="" type="checkbox"/> OK | <input type="checkbox"/> NOK |                                       |
| Is the correct method set on the master instrument?                       | <input checked="" type="checkbox"/> OK | <input type="checkbox"/> NOK |                                       |
| Are the measuring system settings properly set?                           | <input checked="" type="checkbox"/> OK | <input type="checkbox"/> NOK |                                       |
| Is the correct date and time set?   | <input checked="" type="checkbox"/> OK | <input type="checkbox"/> NOK | <input type="checkbox"/> Not relevant |
| Is the required display layout set, e.g. for the output quantity "Color"? | <input checked="" type="checkbox"/> OK | <input type="checkbox"/> NOK | <input type="checkbox"/> Not relevant |
| Is the required result output set, e.g. for the output quantity "Color"?  | <input checked="" type="checkbox"/> OK | <input type="checkbox"/> NOK | <input type="checkbox"/> Not relevant |

## 2.3 Customer-specific Settings on the Master Instrument

- |  |   |  |
|--|---|--|
| Are customer-specific methods defined?   | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO |
| If the answer is YES, use the IQ/OQ report function to export the custom specific settings     |   |  |
| Are customer-specific tables, linear functions, constants, polynomials or formulas programmed? | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO |
| If the answer is YES, use the IQ/OQ report function to export the custom specific settings     |   |  |
| Is a backup of the instrument settings saved externally?                                       | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            |
| Is the instrument password protected?  | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO |

### 2.4 Safety Instructions

Is the customer trained according to the chapter "Safety instructions" of the instruction manuals of all instruments and devices of the Alcolyzer Analyzing Systems?

YES       NO

Signature of customer

.....

### 2.5 Checking Procedure, Adjustment, and Cleaning Procedure

Is the customer trained to prepare and fill the sample properly?

YES  
 NO

Is the customer trained to perform a check and adjustment of the alcohol module according to the chapter "Performing Measurements, Checks and Adjustments"

YES  
 NO

Page of instruction manual

Signature of customer

(see the instruction manual of the master instrument  or Alcolyzer Analyzing Systems )?

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.....

Is the customer trained to perform a check and adjustment of the density module according to the chapter "Checking, Adjusting and Calibrating"

YES  
 NO

Page of instruction manual

Signature of customer

(see the instruction manual of the master instrument  or Alcolyzer Analyzing Systems )?

15

.....

Is the customer trained to perform a proper cleaning procedure of the instruments and modules according to the chapter "Cleaning and Storing the Instrument/System"

YES  
 NO

Page of instruction manual

Signature of customer

(see the instruction manual of the master instrument  or Alcolyzer Analyzing Systems )?

.....15

.....

Is the customer trained to handle the sample cell of MCP 100 properly according to the instruction manual?

YES  
 NO

Page of instruction manual

Signature of customer

.....

.....

Is the customer trained to perform a quartz check / adjustment of MCP 100 according to of the instruction manual?

YES

NO

Page of instruction manual

.....

Signature of customer

.....

Is the customer trained how to clean the MCP 100 and its sample cell according to the instruction manual?

YES

NO

Page of instruction manual

.....

Signature of customer

.....

## 2.6 Check of the Alcolyzer Analyzing System

Prior to the check, make sure that the measuring system has been properly cleaned and adjusted according to the instruction manual of the master instrument or Alcolyzer analyzing systems (Adjustment of DMA™ M or ME with degassed, ultra pure (bi-distilled or deionized) water and air; adjustment of Alcolyzer M or ME with degassed, ultra-pure (bi-distilled or deionized) water and a water/ethanol solution of known concentration).

Then perform a water check of the measuring system.

If a traceable density check is required, use a certified water standard (e.g. from DKD, UKAS, etc.).

Degassed ultra-pure water  
(bi-distilled or deionized)

Certified water standard

Serial number .....

Calibration certificate number .....

Certified value .....g/cm<sup>3</sup>

### Measured values at 20 °C

Alcohol 40 % v/v

Density 0.9982g/cm<sup>3</sup>

Color  0.00 EBC

.....ASBC

not relevant

not relevant

### Alcohol:

Alcolyzer module 0.00 %vol ±0.03 %vol

### Density:

DMA™ 4100 M 0.99820 ±0.0001 g/cm<sup>3</sup>

DMA™ 4500 M 0.99820 ±0.00005 g/cm<sup>3</sup>

DMA™ 5000 M 0.99820 ±0.00001 g/cm<sup>3</sup>

### Color:

Option Color 0.00 EBC ±0.30 EBC

0.00 ASBC ±0.15 ASBC

### Is the measured value within the specifications?

Alcohol  YES  NO

Density  YES  NO

Color  YES  NO

Deviation 0.01% v/v

Deviation 0.0000g/cm<sup>3</sup>

Deviation 0.00EBC

### 2.7 Check of the MCP 100 modular circular Polarimeter

Check the instrument with one to three certified quartz control plates if applicable.

CCOR [°] = Calculated certified Optical Rotation  
 OR measured [°] = Optical Rotation readings of MCP 100  
 Δ OR [°] = Deviation of OR measured [°] from CCOR [°]

#### 2.4.1 Quartz control plate 1, certification data:

Ident. no.	Wavelength λ [nm]	Certified OR [°]	at Temperature [°C]
	589		<input type="checkbox"/> 20 °C

#### Results of 3 separate measurements:

Temperature [°C]	CCOR [°]	OR measured [°]	Δ OR [°]
<input type="checkbox"/> 20 °C			
<input type="checkbox"/> 20 °C			
<input type="checkbox"/> 20 °C			
<b>Maximum deviation:</b>			

Is the maximum deviation within the accuracy specification of the  YES  NO  N/A  
 MCP 100 (±0.01 °Optical Rotation)?

### 2.8 Concentration Check with Customer's Sample

Sample ..... at ..... °C

Measured value ..... determined by (name) .....

Reference value ..... Using method .....

on (date) .....

Measured value accepted?  YES

NO, because .....

### 3 Signatures of Test Approval:

At the time of the IQ/OQ record the instrument, its installation and its performance was found to be in conformance with all manufacturer's specifications.

Date: 30-07-2019

Signature of customer:

.....

Signature of Anton Paar GmbH authorized and trained person:

Jose Olaya

#### Attached Documents

.....# Optional page(s) for user accounts, customer-specific methods, tables, polynomials and formulas (with DMA M software version 2.30 and higher: Menu > Service > IQ/OQ Report)

- Xsample™ 320/520 IQ/OQ (D13AF004)
- pH ME Measuring Module IQ/OQ (C88IQ001)
- HazeQC ME Measuring Module IQ/OQ (C84IE01)