OPTIONS

Bent-type Sampler for Powder 12-04576





"C" Bent-type Sampler for Powders phi 18.5 1/10 Taper Glass 12-04454





Spoon Type Sampler for Viscous Sample

Sampler for Light Weight Powder 12-04452





Straight-type Sampler for Light Weight Powder 12-04574





Eggplant-shaped Sampler for Powders phi18.5 1/10 Taper 12-04453





12-04575



Sampler for High Viscous Sample 12-02400





Finger Shaped Sampler

12-04184









N-type Titration Vessel

with Port Plug

12-01585

Liquefied Gas Sampler 12-05143





C-type Titration Vessel with Port Plug 12-02828





Micro Sampling Unit (for Coulometric) 12-00696-10



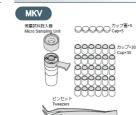
Titration Cell with Drain Cock 20-04042-00





Micro Sampling Unit (for Volumetric) 12-05067

MKV



12-03510 MKV



D-type Titration Vessel with Port Plug



Data Acquisition Software SOFT-CAP



SOFT-CAP receives measurement results from a titrator and exports it to Excel® or saves it in CSV

■ LIMS software connects RS-232C port as well as SOFT-CAP Data Capture Software

Microsoft®, Windows®, Excel® are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries

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Karl Fischer Moisture Titrator [Volumetric method]

MKV-710 SERIES ZELIEZ

Karl Fischer Moisture Titrator [Coulometric method]

MKE-718 SERIES



MKV-710M Option: Additional Burette KF (10mL)

> **KYOTO ELECTRONICS** MANUFACTURING CO.,LTD.

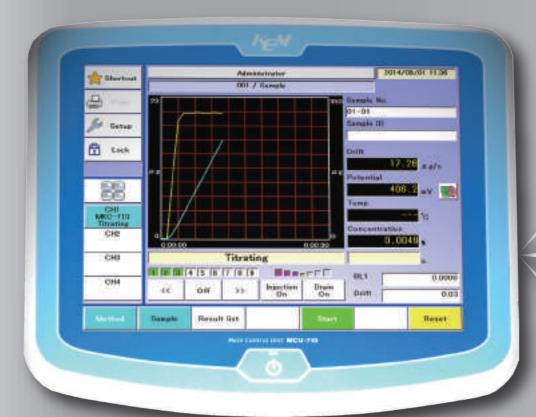
SUMMARY/CONNECTION EXAMPLE

MKV/MKC-710M

Unique flexibility – up to 4 simultaneous titrations of any type

Moisture measurement by Karl Fischer method has been adopted in the official analysis methods (ASTM and pharmacopeial standard) and is widely used to determine moisture content in various substances as the most reliable method.

The MKV/MKC-710M as a flagship model comes with a largest titration user interface available in the market: The main control unit of this model, MCU-710M, provides with its 8.4 inch LED touch panel an unique user experience and can be the common basis for up to four full-fledged titrators of any type, be it AT-710B potentiometric titrators or additional MKV-710B Volumetric or MKC-710B Coulometric Karl Fischer moisture titrators.



Main Control Unit MCU-710M

Wireless Bluetooth® communication - increased workplace safety when measuring toxic samples

* Bluetooth® adapters are to be prepared locally.

Wireless communication offers substantial benefits in terms of safety and space require-

Operation is easier and safer when toxic samples have to be measured as the main control unit can be located outside the hood.



MKV-710B

Karl Fischer Moisture Titrator [Volumetric method]

MKV-710M / MKV-710S



Karl Fischer Moisture Titrator [Coulometric method]

MKC-710M / MKC-710S







MKV-710M + MKC-710B + AT-710B

FEATURES

No cables required between main control unit and titrator

MKV-710M MKC-710M

For safe operation

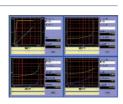
With Bluetooth® adapters, there is no need to connect the main control unit to the titrator with a cable. This offers substantial benefits in terms of safety as the main control unit can be located outside the hood when toxic samples have to be measured. The main control unit can be equipped with a battery and therefore be held in the hand. Additionally, it can be equipped with a monitor arm and therefore be located in the most suitable spot. (Arm mount: VESA standard 75mm x 75mm)



One screen for up to four titrators

MKV-710M MKC-710M

One main control unit can operate up to four titrators of any type (Potentiometric and Karl Fischer moisture titrators). It is thus possible to set up a system capable of running potentiometric and Karl Fischer moisture titrations simultaneously without wasting valuable bench space for several separate displays.





Result output as PDF files

MKV-710M MKV-710S MKV-710B MKC-710M MKC-710S MKC-710B

Paper saving and environmental-

MKV-710M MKV-710S MKC-710M MKC-710S

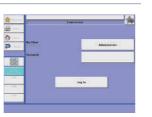
lv friendly – results no longer need to be printed. Measurement results are converted to PDF and can be stored in a USB flash drive.



Two different user levels let you easily define the operation permissions of each operator.

User groups and permissions

An administrator (protected with password) has access to all functions whereas a normal operator can only perform burette operation, calibration, measurement, method number (sample file) change and reading of method.



Large color TFT-LCD with touch panel

MKV-710M MKV-710S MKC-710M MKC-710S

The main control unit is equipped with a large color TFT-LCD. The touch panel enables easy key entry.

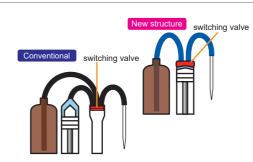


MKV-71 [[Volumetric method]

New burette unit

MKV-710M MKV-710S MKV-710B

The new burette unit has the switching valve mounted directly on top of the cylinder. Less dead space between the switching valve and the cylinder and it inside of the cylinder left less residual titrant when replacing it.







Titrant information stored in burette unit

MKV-710M MKV-710S

Relevant titrant information is stored in an IC chip in the burette unit. Mounting the burette unit from one titrator to another does not require re-entry of the titrant information. This prevents titration with incorrect titrant.



MKV-710M MKV-710S

By adding an optional additional burette filled with a Water-Methanol standard solution, factor determinations are a matter of one single click. Thanks to a built-in timer the Karl Fischer reagent can automatically be performed at regular intervals.



No need to adjust settings for different types of

MKV-710M MKV-710S MKV-710B solvent and samples

Our proprietary technology (endpoint detection by compensating liquid resistance, Japanese Patent No.1896338) makes it unnecessary to change the detection electrode sensitivity and the endpoint voltage depending on the nature of each solvent and sample. This feature reliably prevents over titration and ensures highly accurate measure-



Automatic factor calibration (timer controlled)

function, factor determinations of



MKC-71 [Goulometric method]

Fast measurements

MKC-710M MKC-710S MKC-710B

Our proprietary technology achieves electrolytic speeds up to 2.6mg H2O/min. This shortens the time required for

pre-titrations and sample measurements considerably

Replaceable diaphragm

MKC-710M MKC-710S MKC-710B

Easy maintenance when measuring samples which tend to contaminate the diaphragm as eg. oils: Thanks to a unique mechanism, the ceramic diaphragm of the optional titration cell unit (12-03635-01) can be replaced.



LINEUP/MEASUREMENT PRINCIPLE



Flagship model

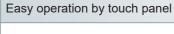
Unique flexibility - up to 4 simultaneous titrations of any type

Karl Fischer Moisture Titrator [Volumetric method]





Option: Additional Burette KF (10mL)



Karl Fischer Moisture Titrator [Volumetric method]



Entry model



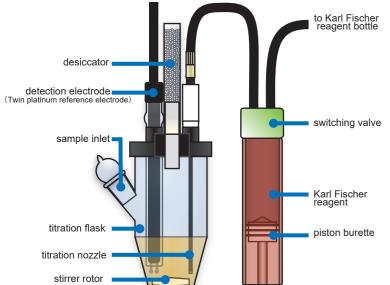




Karl Fischer Moisture Titrator [Volumetric method]



Standard: MS-710VP Magnetic Stirrer / Automatic Solvent Change Unit



-VOLUMETRIC TITRATION METHOD-

In moisture measurements by Karl Fischer titration method, water reacts with iodine and sulfur dioxide in the presence of a base and alcohol.

H₂O + I₂ + SO₂ + CH₃OH + 3RN → [RNH]SO₄CH₃ + 2[RNH] I

In moisture measurements by volumetric titration method, solvent is put in the titration cell and titrated with Karl Fischer reagent to achieve dehydrated state. Then the sample is added.

The water content is then determined by adding Karl Fischer reagent whose factor (mgH2O/mL) is pre-determined with a water standard as eg. a Water-Methanol standard solution.

During titration, the speed and amount of Karl Fischer reagent addition is controlled based on the measured electric polarization potential of the detection electrode.

SPECIFICATIONS

MKV-71 [Volumetric method]

Type	Specification		Contents	
Model MC-7104M MC-7104M MC-7105M MC-7105M MC-7105M MC-7106M MC-710	•	Karl Fischer Moisture Titrator	Contents	
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measurement Check performance: Reminder of scheduled check date / Record of check results Management of conduction time: Display of operating time External I/O RS-232C port × 4 for Dot matrix printer, Electronic balance, Data Capture Software (SOFT-CAP), Evaporator USB x1 for USB flash drive, Thermal printer, A4 printer, Keyboard, Barcode reader, Foot switch, USB HUB SS-BUS × 1: for APB LAN × 1: for Personal computer (PC) Extensibility Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moistrure Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Automatic piston burette: Can control max 2 burette drives (Including two built-in burette drives) Evaporator ADP-611 Ambient condition 1) Temperature: 5 to 35°C 2) Humidity: 85%RH or below (no condensation) Power source AC100 - 240V ± 10%, 50/60 Hz Power consumption Main unit: Approx. 30W Printer: Approx. 7W Dimensions Touch panel controller: 225(W) × 190(D) × 42(H) mm Titration unit: 314(W) × 292(D) × 367(H) mm (not incl. tubing) Printer: 107(W) × 206(D) × 322(H) mm (not incl. Solvent Change unit) Solvent Change Unit: Approx. 15/kg Sirrer: 107(W) × 206(D) × 322(H) mm (not incl. tubing) Printer: Approx. 16/kg Sirrer: Approx. 20kg Solvent Change Unit: Approx. 20kg Solvent Change Unit: Approx. 0.6kg Sirrer: Approx. 20kg Solvent Change Unit: Approx. 0.0kg Sirrer: Approx. 0.0kg Solvent Change Unit: Approx. 0.0kg		measurement date / Alarm to indicate ren	naining reagent / Reminder of piston	check results / Record of factor
check results Management of conduction time : Display of operating time External I/O RS-232C port × 2 for Dot matrix printer, Electronic balance, Data Capture Software (SOFT-CAP), Evaporator USB ×1 for USB flash drive, Thermal printer, A4 printer, Keyboard, Barcode reader, Foot switch, USB HUB SS-BUS × 1 : for APB LAN × 1 : for Personal computer (PC) Extensibility Measuring instrument : Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Automatic piston buretts : Can control max 2 burette drives (Including two built-in burette drives) Evaporator ADP-611 Ambient condition 1) Temperature : 5 to 35°C 2) Humidity : 85%RH or below (no condensation) Power source AC100 - 240V ± 10%, 50/60 Hz Power consumption Main unit : Approx. 30W Printer : Approx. 7W Dimensions Touch panel controller : 225(W) × 190(D) × 42(H) mm Titration unit : 141(W) × 292(D) × 387(H) mm (not incl. tubing) Stirrer : 107(W) × 206(D) × 322(H) mm (not incl. tubing) Printer : Approx. 15kg Titration unit : Approx. 04kg Solvent Change Unit : Approx. 04kg Conformity standard CE marking EMC : EN61326-1 LVD: EN61010-1 RE Directive		replacement date / Reminder of reagent r	replacement date / History of factor	measurement / Management of
Management of conduction time: Display of operating time		measurement Check performance: Remind	der of scheduled check date / Record of	conduction time
RS-232C port × 4 for Dot matrix printer, Electronic balance, Data Capture Software (SOFT-CAP), Evaporator		check results		
for Dot matrix printer, Electronic balance, Data Capture Software (SOFT-CAP), Evaporator USB × 1 for USB flash drive, Thermal printer, A4 printer, Keyboard, Barcode reader, Foot switch, USB HUB SS-BUS × 1: for APB LAN × 1: for Personal computer (PC) Extensibility Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Automatic piston burette: Can control max 2 burette drives (Including two built-in burette drives) Evaporator ADP-611 Ambient condition 1) Temperature: 5 to 35°C 2) Humidity: \$58/RH or below (no condensation) Power source AC100 - 240V ± 10% 50/60 Hz Main unit: Approx. 30W Printer: Approx. 7W Dimensions Touch panel controller: \$225(W) × 190(D) × 42(H) mm Titration unit: \$141(W) × 292(D) × 367(H) mm (not incl. tubing) Stirre: \$107(W) × 206(D) × 322(H) mm (not incl. Solvent Change unit) Solvent Change Unit: \$240(W) × 140(D) × 40(H) mm Titration unit: \$141(W) × 292(D) × 367(H) mm (not incl. Solvent Change unit) Solvent Change Unit: \$240(W) × 140(D) × 40(H) mm Titration unit: \$140(W) × 180(D) × 88(H) mm Weight Touch panel controller: \$Approx. 1.5kg Titration unit: \$Approx. 4.0kg Scirrer: \$Approx. 2.0kg Solvent Change Unit: \$Approx. 2.0kg Solvent Change Unit: \$Approx. 0.6kg Printer: \$Approx. 0.6kg		Management of conduction time : Display	of operating time	
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Evaporator USB x1 for USB flash drive, Thermal printer, A4 printer, Keyboard, Barcode reader, Foot switch, USB HUB SS-BUS x 1: for APB LAN x1: for Personal computer (PC) Extensibility Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Automatic piston burette: Can control max 2 burette drives (Including two built—in burette drives) Evaporator ADP-611 Ambient condition 1) Temperature: 5 to 35°C 2) Humidity: 85%RH or below (no condensation) Power source AC100 - 240V ±10% 50/60 Hz Power consumption Main unit: Approx. 30W Printer: Approx. 7W Dimensions Touch panel controller: 225(W) x 190(D) x 42(H) mm Titration unit: 141(W) x 292(D) x 367(H) mm (not incl. tubing) Stirrer: 107(W) x 206(D) x 322(H) mm (not incl. tubing) Printer: 106(W) x 180(D) x 88(H) mm Weight Touch panel controller: Approx. 2.0kg Solvent Change Unit: Approx. 2.0kg Solvent Change Unit: Approx. 2.0kg Solvent Change Unit: Approx. 0.6kg Printer: Approx. 0.4kg Conformity standard CE marking EMC: EN61326-1 LVD: EN61010-1 RE Directive		for Dot matrix printer, Electronic balance,	Data Capture Software (SOFT-CAP),	for Dot matrix printer, Electronic balance,
USB ×1 for USB flash drive, Thermal printer, A4 printer, Keyboard, Barcode reader, Foot switch, USB HUB SS-BUS × 1 : for APB LAN × 1 : for Personal computer (PC) Extensibility Measuring instrument: Automatic Potentiometric Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Automatic piston burette: Can control max 2 burette drives (Including two built-in burette drives) Evaporator ADP-611 Ambient condition 1) Temperature: \$1 to 35°C 2) Humidity: \$85%RH or below (no condensation) Power source AC100 - 240V ±10% 50/60 Hz Power consumption Main unit: Approx. 20W Printer: Approx. 7W Dimensions Touch panel controller: \$225(W) × 190(D) × 42(H) mm Titration unit: \$141(W) × 292(D) × 367(H) mm (not incl. tubing) Stirrer: \$107(W) × 206(D) × 322(H) mm (not incl. solvent Change unit) Solvent Change Unit: Approx. 20kg				· ·
for USB flash drive, Thermal printer, Keyboard, Barcode reader, Foot switch, USB HUB SS-BUS x 1: for APB LAN x 1: for Personal computer (PC) Extensibility Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Automatic piston burette: Can control max 2 burette drives (Including two built-in burette drives) Evaporator ADP-611 Ambient condition 1) Temperature: 5 to 35°C 2) Humidity: 85%RH or below (no condensation) Power source AC100 - 240V ±10% 50/60 Hz Power consumption Main unit: Approx. 30W Printer: Approx. 7W Dimensions Tucuch panel controller: 225(W) x 190(D) x 42(H) mm Titration unit: 141(W) x 292(D) x 367(H) mm (not incl. tubing) Stirrer: 106(W) x 180(D) x 88(H) mm Weight Touch panel controller: Approx. 1.5kg Titration unit: Approx. 2.0kg Solvent Change Unit: Approx. 2.0kg Solvent Change Unit: Approx. 0.6kg Printer: Approx. 0.4kg Conformity standard CE marking EMC: EN61326-1 LVD: EN61010-1 RE Directive		· ·		' '
Foot switch, USB HUB SS-BUS × 1 : for APB LAN×1 : for Personal computer (PC) Extensibility Measuring instrument : Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Automatic piston burette : Can control max 2 burette drives (Including two built-in burette drives) Evaporator ADP-611 Ambient condition 1) Temperature : 5 to 35°C 2) Humidity : 85%RH or below (no condensation) Power source AC100 - 240V ±10% 50/60 Hz Power consumption Main unit : Approx. 30W Printer : Approx. 7W Dimensions Tuch panel controller : 225(W) × 190(D) × 42(H) mm Titration unit : 141(W) × 292(D) × 367(H) mm (not incl. tubing) Stirrer : 106(W) × 180(D) × 88(H) mm Weight Touch panel controller : Approx. 1.5kg Titration unit : Approx. 1.5kg Titration unit : Approx. 1.5kg Titration unit : Approx. 2.0kg Solvent Change Unit : Approx. 0.6kg Printer : Approx. 0.6kg Printer : Approx. 0.6kg Printer : Approx. 0.6kg Printer : Approx. 0.4kg Conformity standard CE marking EMC : EN61326-1 LVD: EN61010-1 RE Directive			rinter Keyboard Baroode reader	
USB HUB, Android device			miter, Reyboard, Daroode reader,	·
SS-BUS x 1 : for APB		Tool switch, OSB HOB		
LAN x 1 : for Personal computer (PC)		00 000 00 4 5 400		USB HUB, Android device
Measuring instrument : Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Automatic piston burette : Can control max 2 burette drives (Including two built—in burette drives) Evaporator ADP-611				
Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Automatic piston burette: Can control max 2 burette drives (Including two built—in burette drives) Evaporator ADP-611				
Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Automatic piston burette: Gan control max 2 burette drives (Including two built-in burette drives) Evaporator ADP-611 Ambient condition 1) Temperature : 5 to 35°C 2) Humidity : 85%RH or below (no condensation) Power source AC100 - 240V ±10% 50/60 Hz Power consumption Main unit : Approx. 30W Printer : Approx. 7W Dimensions Touch panel controller : 225(W) × 190(D) × 42(H) mm Titration unit : 141(W) × 292(D) × 367(H) mm (not incl. tubing) Stirrer : 107(W) × 206(D) × 322(H) mm (not incl. Solvent Change unit) Solvent Change Unit : 240(W) × 140(D) × 400(H) mm (not incl. tubing) Printer : 106(W) × 180(D) × 88(H) mm Weight Touch panel controller : Approx. 4.0kg Stirrer : Approx. 2.0kg Solvent Change Unit : Approx. 2.0kg Solvent Change Unit : Approx. 0.6kg Printer : Approx. 0.4kg Conformity standard CE marking EMC : EN61326-1 LVD: EN61010-1 RE Directive	Extensibility	Measuring instrument : Automatic		
MKV-710/MKC-710/MKH-710); Three of these instruments can be added.		Potentiometric Titrator (AT-710),		
Three of these instruments can be added.		Karl Fischer Moisture Titrator		
Automatic piston burette : Can control max 2 burette drives (Including two built-in burette drives) Evaporator ADP-611 Ambient condition 1) Temperature : 5 to 35°C 2) Humidity : 85%RH or below (no condensation) Power source AC100 - 240V ± 10% 50/60 Hz Power consumption Main unit : Approx. 30W Printer : Approx. 7W Printer : Approx. 7W Dimensions Touch panel controller : 225(W) × 190(D) × 42(H) mm Titration unit : 141(W) × 292(D) × 367(H) mm (not incl. tubing) Stirrer : 107(W) × 206(D) × 322(H) mm (not incl. Solvent Change unit) Solvent Change Unit : 240(W) × 140(D) × 400(H) mm (not incl. tubing) Printer : 106(W) × 180(D) × 88(H) mm Weight Touch panel controller : Approx. 1.5kg Titration unit : Approx. 4.0kg Stirrer : Approx. 2.0kg Solvent Change Unit : Approx. 0.6kg Printer : Approx. 0.6kg Printer : Approx. 0.4kg Conformity standard CE marking EMC : EN61326-1 LVD: EN61010-1 RE Directive		(MKV-710/MKC-710/MKH-710);		
Evaporator ADP-611		Three of these instruments can be added.		
Ambient condition 1) Temperature : 5 to 35°C 2) Humidity : 85%RH or below (no condensation) Power source AC100 - 240V ± 10% 50/60 Hz Power consumption Main unit : Approx. 30W		Automatic piston burette : Can control ma	ax 2 burette drives (Including two built-in b	purette drives)
2) Humidity		Evaporator ADP-611		
Power source				
Power consumption	Ambient condition	1) Temperature : 5 to 35°C		
Power consumption	Ambient condition		ondensation)	
Printer		2) Humidity : 85%RH or below (no co	ondensation)	
Touch panel controller : 225(W) × 190(D) × 42(H) mm	Power source	2) Humidity : 85%RH or below (no co AC100 - 240V ±10% 50/60 Hz	ondensation)	Main unit : Approx 20W
Titration unit		2) Humidity : 85%RH or below (no co AC100 - 240V ±10% 50/60 Hz Main unit : Approx. 30W	ondensation)	
Stirrer	Power source Power consumption	2) Humidity : 85%RH or below (no co AC100 - 240V ±10% 50/60 Hz Main unit : Approx. 30W Printer : Approx. 7W		
Solvent Change Unit	Power source	2) Humidity : 85%RH or below (no co AC100 - 240V ±10% 50/60 Hz Main unit : Approx. 30W Printer : Approx. 7W Touch panel controller : 225(W) × 1	190(D) × 42(H) mm	
Printer	Power source Power consumption	2) Humidity : 85%RH or below (no color and an article) : 85%RH or below (no color and article) : 400 - 240V ± 10% 50/60 Hz Main unit : Approx. 30W Printer : Approx. 7W Touch panel controller : 225(W) × 10 - 22	190(D) × 42(H) mm 292(D) × 367(H) mm (not incl. tubing)	Printer : Approx. 7W
Touch panel controller	Power source Power consumption	2) Humidity : 85%RH or below (no color of the color of th	190(D) × 42(H) mm 292(D) × 367(H) mm (not incl. tubing) 206(D) × 322(H) mm (not incl. Solvent Cha	Printer : Approx. 7W
Titration unit : Approx. 4.0kg Stirrer : Approx. 2.0kg Solvent Change Unit : Approx. 0.6kg Printer : Approx. 0.4kg Conformity standard CE marking EMC : EN61326-1 LVD: EN61010-1 RE Directive	Power source Power consumption	2) Humidity : 85%RH or below (no color of the color of th	190(D) × 42(H) mm 292(D) × 367(H) mm (not incl. tubing) 206(D) × 322(H) mm (not incl. Solvent Cha	Printer : Approx. 7W
Stirrer : Approx. 2.0kg Solvent Change Unit : Approx. 0.6kg Printer : Approx. 0.4kg Conformity standard CE marking EMC : EN61326-1 LVD: EN61010-1 RE Directive	Power source Power consumption	2) Humidity : 85%RH or below (no color of the color of th	190(D) × 42(H) mm 292(D) × 367(H) mm (not incl. tubing) 206(D) × 322(H) mm (not incl. Solvent Cha 140(D) × 400(H) mm (not incl. tubing)	Printer : Approx. 7W
Solvent Change Unit : Approx. 0.6kg Printer : Approx. 0.4kg Conformity standard CE marking EMC : EN61326-1 LVD: EN61010-1 RE Directive	Power source Power consumption	2) Humidity : 85%RH or below (no color AC100 - 240V ± 10% 50/60 Hz Main unit : Approx. 30W Printer : Approx. 7W Touch panel controller : 225(W) × 1 Titration unit : 141(W) × 2 Solvent Change Unit : 240(W) × 1 Printer : 106(W) × 1	190(D) × 42(H) mm 292(D) × 367(H) mm (not incl. tubing) 206(D) × 322(H) mm (not incl. Solvent Char 140(D) × 400(H) mm (not incl. tubing) 180(D) × 88(H) mm	Printer : Approx. 7W
Printer : Approx. 0.4kg Conformity standard	Power source Power consumption Dimensions	2) Humidity : 85%RH or below (no color AC100 - 240V ± 10% 50/60 Hz Main unit : Approx. 30W Printer : Approx. 7W Touch panel controller : 225(W) × 1 Titration unit : 141(W) × 2 Solvent Change Unit : 240(W) × 1 Printer : 106(W) × 1 Touch panel controller : Approx. 1.5	190(D) × 42(H) mm 292(D) × 367(H) mm (not incl. tubing) 206(D) × 322(H) mm (not incl. Solvent Chi 140(D) × 400(H) mm (not incl. tubing) 180(D) × 88(H) mm	Printer : Approx. 7W
Printer : Approx. 0.4kg Conformity standard	Power source Power consumption Dimensions	2) Humidity : 85%RH or below (no color AC100 - 240V ± 10% 50/60 Hz Main unit : Approx. 30W Printer : Approx. 7W Touch panel controller : 225(W) × 1 Titration unit : 141(W) × 2 Solvent Change Unit : 240(W) × 1 Printer : 106(W) × 1 Touch panel controller : Approx. 1.5i Titration unit : Approx. 4.0	190(D) × 42(H) mm 292(D) × 367(H) mm (not incl. tubing) 206(D) × 322(H) mm (not incl. Solvent Chal 140(D) × 400(H) mm (not incl. tubing) 180(D) × 88(H) mm kg	Printer : Approx. 7W
Conformity standard CE marking EMC : EN61326-1 LVD: EN61010-1 RE Directive	Power source Power consumption Dimensions	2) Humidity : 85%RH or below (no color AC100 - 240V ± 10% 50/60 Hz Main unit : Approx. 30W Printer : Approx. 7W Touch panel controller : 225(W) × 1 Titration unit : 141(W) × 2 Solvent Change Unit : 240(W) × 1 Printer : 106(W) × 1 Touch panel controller : Approx. 1.5i Titration unit : Approx. 2.0	190(D) × 42(H) mm 292(D) × 367(H) mm (not incl. tubing) 206(D) × 322(H) mm (not incl. Solvent Char 140(D) × 400(H) mm (not incl. tubing) 180(D) × 88(H) mm kg kg	Printer : Approx. 7W
	Power source Power consumption Dimensions	2) Humidity : 85%RH or below (no color AC100 - 240V ± 10% 50/60 Hz Main unit : Approx. 30W Printer : Approx. 7W Touch panel controller : 225(W) × 1 Titration unit : 141(W) × 2 Solvent Change Unit : 240(W) × 1 Touch panel controller : Approx. 1.5i Titration unit : Approx. 2.00 Solvent Change Unit : Approx. 2.00 Solvent Change Unit : Approx. 2.00 Solvent Change Unit : Approx. 0.66	190(D) × 42(H) mm 292(D) × 367(H) mm (not incl. tubing) 206(D) × 322(H) mm (not incl. Solvent Char 140(D) × 400(H) mm (not incl. tubing) 180(D) × 88(H) mm kg kg kg	Printer : Approx. 7W
Burette unit EBU FCC Part15 SubpartC FCC ID: 2ABSVEBU01	Power source Power consumption Dimensions Weight	2) Humidity : 85%RH or below (no color AC100 - 240V ± 10% 50/60 Hz Main unit : Approx. 30W Printer : Approx. 7W Touch panel controller : 225(W) × 1 Titration unit : 141(W) × 2 Solvent Change Unit : 240(W) × 1 Touch panel controller : Approx. 1.5i Titration unit : Approx. 2.0 Solvent Change Unit : Approx. 2.0 Solvent Change Unit : Approx. 0.6i Printer : Approx. 0.4i	190(D) × 42(H) mm 292(D) × 367(H) mm (not incl. tubing) 206(D) × 322(H) mm (not incl. Solvent Charles (140(D) × 400(H) mm (not incl. tubing) 180(D) × 88(H) mm kg kg kg kg	Printer : Approx. 7W
	Power source Power consumption	2) Humidity : 85%RH or below (no color and an article) : 85%RH or below (no color and article) : 400 - 240V ± 10% 50/60 Hz Main unit : Approx. 30W Printer : Approx. 7W Touch panel controller : 225(W) × 10 - 22	190(D) × 42(H) mm 292(D) × 367(H) mm (not incl. tubing)	Printer : Approx. 7W
	Power source Power consumption Dimensions Weight	2) Humidity : 85%RH or below (no color AC100 - 240V ± 10% 50/60 Hz Main unit : Approx. 30W Printer : Approx. 7W Touch panel controller : 225(W) × 1 Titration unit : 141(W) × 2 Solvent Change Unit : 240(W) × 1 Touch panel controller : Approx. 1.5i Titration unit : Approx. 2.0 Solvent Change Unit : Approx. 2.0 Solvent Change Unit : Approx. 0.6i Printer : Approx. 0.4i	190(D) × 42(H) mm 292(D) × 367(H) mm (not incl. tubing) 206(D) × 322(H) mm (not incl. Solvent Charles (140(D) × 400(H) mm (not incl. tubing) 180(D) × 88(H) mm kg kg kg kg	Printer : Approx. 7W

LINEUP/MEASUREMENT PRINCIPLE





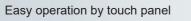


Karl Fischer Moisture Titrator [Coulometric method]



Midrange model





Karl Fischer Moisture Titrator [Coulometric method]

MKE-718 S

Entry model





Karl Fischer Moisture Titrator [Coulometric method]

MKE-710 E

Standard: MS-710C Magnetic Stirrer/
Manual Solvent Change Unit

-COULOMETRIC TITRATION METHOD-

In moisture measurements by Karl Fischer titration method, water reacts with iodine and sulfur dioxide in the presence of a base and alcohol.

 $H_2O + I_2 + SO_2 + CH_3OH + 3RN \rightarrow [RNH]SO_4CH_3 + 2[RNH]I$ (1)

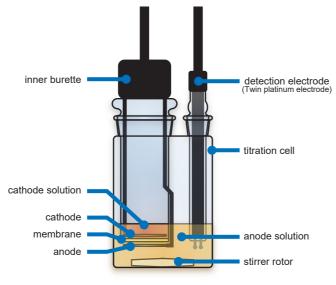
In moisture measurements by coulometric titration method, iodine is generated through electrolysis of an anode solution containing iodide ions.

 $2I\text{-} \rightarrow I_2 + 2e^- \ (2)$

The generated iodine (according to formula 2) is consumed by the water according to formula (1). The detection electrode serves to detect the amount of free iodine and to control the speed of electrolysis.

The generated iodine is proportional to the electric quantity according to the Faraday's law. The formula (1) shows that I2 reacts with H2O in the proportion of one to one.

The electric quantity required for the generation of the iodine based on the principle as described above is measured and converted to water content.



SPECIFICATIONS

MKC-71 [Coulometric method]

Specification		Contents	
Туре	Karl Fischer Moisture Titrator		
Model	MKC-710M	MKC-710S	MKC-710B
Product configuration	MCU-710M+MKC-710+IDP-100+Manual	MCU-710S+MKC-710+IDP-100+Manual	MKC-710+IDP-100+Manual Solvent
	Solvent Change Unit	Solvent Change Unit	Change Unit
Measuring method	Karl Fischer Coulometric titration		
Measuring range	Water content: 1 µg to 300mg (depends of	on reagent) / Bromine index : 8 µg to 300mg	5
Measurement cell	2-Component or 1-Component		
Precision	Relative standard deviation : less than 0.3% (n=10)		
	*Per KEM standard measurement condition	ons and standard liquids	
Display resolution	0.1ug	·	
Control method	Constant current pulse time control		
Endpoint detection	Alternate current polarization method with	h a twin platinum electrode	
EP sense method	Selective drift stability or limit measurement		
Required solvent	Anolyte 100mL (max 150mL)		
Nequired solvenic	Catholyte 5mL		
Markad	-		20
Method	120		
Key operation	Touch panel		Sheet key
Displays	1) 8.4-inch color LCD 800 × 600 dots		1) Black and white LED-backlit LCD
	2) English / Japanese / Mandarin Chine	se / Korean / Russian / Spanish /	2) English / Japanese / Mandarin Chine
	German / French		/ Korean / Russian / Spanish
	3) Simultaneous 4-channel display	3) 1-channel display	3) 1-channel display
	(Can also display Automatic		
	Potentiometric Titrator		
	simultaneously)		
Calculation	Concentration of water content, statistics	s data processing (mean, SD and RSD) and	automatic averaging of blank value
Data storage	500 samples		100 samples
GLP conformance	Registration of operator / User group ad	dministration Check performance with	Registration of operator / Check
	standard substance: Reminder of schedule	ed check date / Record of check results	performance with standard substance /
	Reagent life control: Reminder of expiration		Reagent life control / Management of
	date Management of conduction time : Dis		conduction time
External I/O	RS-232C port × 4	opiny or operating time	RS-232C port × 2
External I/ O	for Dot matrix printer, Electronic balance,	Data Conturo Software (SOET-CAD)	for Dot matrix printer, Electronic balance
		Data Sapture Software (SSF 1 SAF),	
	Evaporator, Multiple sample changer		Data Capture Software (SOFT-CAP)
	USB × 1		USB × 1
	for USB flash drive, Thermal printer, A4 p	rinter, Reyboard, Barcode reader, Foot	for USB flash drive, Thermal printer,
	switch, USB HUB		Keyboard, Barcode reader, Foot switch,
			USB HUB, Android device
	LAN × 1 : for Personal computer (PC)		
Extensibility	LAN × 1 : for Personal computer (PC) Measuring instrument : Automatic		
Extensibility	·		
Extensibility	Measuring instrument : Automatic		
Extensibility	Measuring instrument : Automatic Potentiometric Titrator (AT-710),		
Extensibility	Measuring instrument : Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator		
Extensibility	Measuring instrument : Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710);		
Extensibility	Measuring instrument : Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added.		
·	Measuring instrument : Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator : ADP-611		
·	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature : 5 to 35°C	ondensation)	
Ambient condition	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature : 5 to 35°C 2) Humidity : 85%RH or below (no c	ondensation)	
Ambient condition	Measuring instrument : Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator : ADP-611 Multiple sample changer : CHK-501 1) Temperature : 5 to 35°C 2) Humidity : 85%RH or below (no c	ondensation)	Main unit - Approx 20W
Ambient condition	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature : 5 to 35°C 2) Humidity : 85%RH or below (no c AC100 - 240V ±10% 50/60 Hz Main unit : Approx. 30W	ondensation)	Main unit : Approx. 20W
Ambient condition Power source Power consumption	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature : 5 to 35°C 2) Humidity : 85%RH or below (no c AC100 - 240V ±10% 50/60 Hz Main unit : Approx. 30W Printer : Approx. 7W		Main unit : Approx. 20W Printer: : Approx. 7W
Ambient condition Power source Power consumption	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature: 5 to 35°C 2) Humidity: 85%RH or below (no c AC100 - 240V ±10% 50/60 Hz Main unit: Approx. 30W Printer: Approx. 7W Touch panel controller: 225(W) ×	190(D) × 42(H) mm	· · ·
Ambient condition Power source Power consumption	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature: 5 to 35°C 2) Humidity: 85%RH or below (no c AC100 - 240V ±10% 50/60 Hz Main unit: Approx. 30W Printer: Approx. 7W Touch panel controller: 2225(W) × Titration unit: 141(W) × 50/60 Hz	190(D) × 42(H) mm 292(D) × 244(H) mm	Printer: : Approx. 7W
Ambient condition Power source Power consumption	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature: 5 to 35°C 2) Humidity: 85%RH or below (no c AC100 - 240V ±10% 50/60 Hz Main unit: Approx. 30W Printer: Approx. 7W Touch panel controller: 2225(W) × Titration unit: 141(W) × 50/100 Kirrer: 107(W) Kirrer: 107(W) Kirrer: 107(W) Kirrer: 107(W) Kirrer: 107(W) Kirrer: 107(W) Kir	190(D) × 42(H) mm 292(D) × 244(H) mm 206(D) × 340(H) mm (not incl. Solvent Cha	Printer: : Approx. 7W
Ambient condition Power source Power consumption Dimensions	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature: 5 to 35°C 2) Humidity: 85%RH or below (no c AC100 - 240V ±10% 50/60 Hz Main unit: Approx. 30W Printer: Approx. 7W Touch panel controller: 2225(W) × Titration unit: 141(W) × 50/100 Kirrer: 107(W) Kirrer: 107(W) Kirrer: 107(W) Kirrer: 107(W) Kirrer: 107(W) Kirrer: 107(W) Kir	190(D) × 42(H) mm 292(D) × 244(H) mm	Printer: : Approx. 7W
Ambient condition Power source Power consumption	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature: 5 to 35°C 2) Humidity: 85%RH or below (no c AC100 - 240V ±10% 50/60 Hz Main unit: Approx. 30W Printer: Approx. 7W Touch panel controller: 225(W) × Titration unit: 141(W) × Stirrer: 107(W) × Solvent Change Unit: 240(W) ×	190(D) × 42(H) mm 292(D) × 244(H) mm 206(D) × 340(H) mm (not incl. Solvent Cha	Printer: : Approx. 7W
Ambient condition Power source Power consumption Dimensions	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature: 5 to 35°C 2) Humidity: 85%RH or below (no c AC100 - 240V ±10% 50/60 Hz Main unit: Approx. 30W Printer: Approx. 7W Touch panel controller: 225(W) × Titration unit: 141(W) × Stirrer: 107(W) × Solvent Change Unit: 240(W) ×	190(D) × 42(H) mm 292(D) × 244(H) mm 206(D) × 340(H) mm (not incl. Solvent Cha 140(D) × 405(H) mm (not incl. tubing) 180(D) × 88(H) mm	Printer: : Approx. 7W
Ambient condition Power source Power consumption Dimensions	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature: 5 to 35°C 2) Humidity: 85%RH or below (no c AC100 - 240V ±10% 50/60 Hz Main unit: Approx. 30W Printer: Approx. 7W Touch panel controller: 225(W) × Titration unit: 141(W) × Stirrer: 107(W) × Solvent Change Unit: 240(W) × Printer: 106(W) ×	190(D) × 42(H) mm 292(D) × 244(H) mm 206(D) × 340(H) mm (not incl. Solvent Cha 140(D) × 405(H) mm (not incl. tubing) 180(D) × 88(H) mm	Printer: : Approx. 7W
Ambient condition Power source Power consumption Dimensions	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature: 5 to 35°C 2) Humidity: 85%RH or below (no c AC100 - 240V ±10% 50/60 Hz Main unit: Approx. 30W Printer: Approx. 7W Touch panel controller: 225(W) × Titration unit: 141(W) × 50/ent (141) ×	190(D) × 42(H) mm 292(D) × 244(H) mm 206(D) × 340(H) mm (not incl. Solvent Cha 140(D) × 405(H) mm (not incl. tubing) 180(D) × 88(H) mm ikkg	Printer: : Approx. 7W
Ambient condition Power source Power consumption	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature: 5 to 35°C 2) Humidity: 85%RH or below (no c AC100 - 240V ±10% 50/60 Hz Main unit: Approx. 30W Printer: Approx. 7W Touch panel controller: 225(W) × Titration unit: 141(W) × Stirrer: 107(W) × Solvent Change Unit: 240(W) × Printer: 106(W) × Touch panel controller: Approx. 1.5 Titration unit: Approx. 3.0	190(D) × 42(H) mm 292(D) × 244(H) mm 206(D) × 340(H) mm (not incl. Solvent Cha 140(D) × 405(H) mm (not incl. tubing) 180(D) × 88(H) mm ikg	Printer: : Approx. 7W
Ambient condition Power source Power consumption Dimensions	Measuring instrument: Automatic Potentiometric Titrator (AT-710), Karl Fischer Moisture Titrator (MKV-710/MKC-710/MKH-710); Three of these instruments can be added. Evaporator: ADP-611 Multiple sample changer: CHK-501 1) Temperature: 5 to 35°C 2) Humidity: 85%RH or below (no c AC100 - 240V ±10% 50/60 Hz Main unit: Approx. 30W Printer: Approx. 7W Touch panel controller: 225(W) × Titration unit: 141(W) × Solvent Change Unit: 240(W) × Printer: 106(W) × Touch panel controller: Approx. 1.5 Titration unit: Approx. 3.0 Stirrer: Approx. 3.0 Stirrer: Approx. 2.0	190(D) × 42(H) mm 292(D) × 244(H) mm 206(D) × 340(H) mm (not incl. Solvent Cha 140(D) × 405(H) mm (not incl. tubing) 180(D) × 88(H) mm ikkg ikkg ikkg	Printer: : Approx. 7W

OPTIONS

Evaporator ADP-611



Model	Evaporator ADP-611	
Heating method	Electrically conductive clear	ar heater glass
Heating temperature range	50°C to 300°C	
Temperature control	Setting range: 50°C to 300°C (Minimum setting: 1°C)	
	Temperature sensor: K-the	ermocouple
	(Precision: ±2°C/ Setting to	emperature: At higher than 100°C)
Temperature/ Flow display	LED digital 3 digits	
Heated tube	Pyrex glass tube: φ30 (O,	D)mm x 335 (L)mm
Sample boat	Pyrex glass: 68 (L) x 25 (V	V) x 15 (H)mm Capacity 16mL
Carrier gas	Nitrogen gas: Not included	d as a standard accessory
	Air: Air Pump Unit (option)	1
Gas dryer	Zeolite container (100g) x	2pcs
Gas flow	100 to 300mL/min	
External control input/ output	Communication with Karl I	Fischer Moisture Titrator
	: RS232C Mini DIN 8pin	
Dimensions	370 (W) x 195 (D) x 217 (I	H)mm
Power source	AC 100-120V 50/60Hz	AC 220-240C 50/60Hz
		(Pre-adjusted before shipment
		from the factory)
Power consumption	Approx. 300W	-
Weight	Approx. 5kg	Approx. 7kg
Option	Stand	

 $\ensuremath{\mathbb{X}}$ When nitrogen gas is in use, regulator (adjustable to 50kPa) is required.



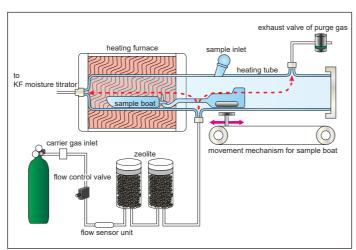
Together with Karl Fischer moisture titrator, this evaporator allows to measure the moisture content in powders or solid samples that cause side reactions and therefore cannot be titrated directly.

The samples are heated and the vaporized moisture is carried into the titration cell by a carrier gas.

The sample boat moves in a closed tube driven by a magnet. This makes it possible to perform reliable measurements of trace moisture eliminating the risk of contamination from atmospheric moisture.

A patented scan mode automatically determines the optimal evaporation temperature based on the relation between released water and heating temperature.

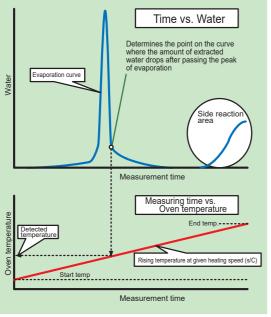
The heating tube is easy to be cleaned thanks to its simple structure.

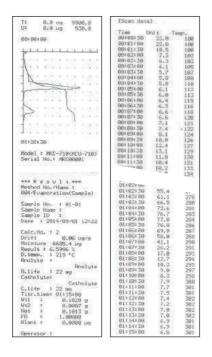


Scan mode

Japanese Patent no. 4247093

The scan mode automatically determines the optimum evaporator temperature. It is used when the vaporizing temperature of a sample is unknown or if the sample tends to thermal decomposition. In the scan mode, the temperature in the heating furnace is increased at a constant rate and the evaporated moisture curve is analyzed. The optimum evaporator temperature is determined based on the decay observed in the evaporated moisture curve.





Multiple Sample Changer CHK-501



Multiple sample evaporator for Coulometric Karl Fischer Moisture Titrators, suitable for the continuous measurement of up to 24 samples. The heating temperature can be set for each sample individually, different kinds of sample can

thus be measured automatically one after the other. An auto power off function after measurement ensures safe operation.
(NON-CE)

Model	Multiple Sample Changer CHK-501
Number of vials	24 vials
Vial	20mL vial
Heating temperature	Setting range : Room temp. to 300℃
	Minimum setting : 1°C
	Control precision:±3℃ Measurement with Thermocouple
	(At setting temperature higher than 100°C)
Heating tube	Higher than 100°C with self-control
Heating method	Electric oven heating over outside surface and bottom
	Special heater made of integrated mica with 50W capacity
Vial detection	Optical beam sensor
Auto power off	Power is shut off automatically after measurement is over.
Pre-treatment	Programmable automatic purge of system lines
Sample transfer system	Revolve turntable with vials and transfer a vial from turntable
	to heater oven.
Carrier gas	Flow range : 100 to 300mL/min
	Other : Dehydration with silica gel and zeolite
Display	20 digits x 2 lines LCD with back light
Alarm	Transfer mechanism malfunctions, temperature control
	failure, carrier gas suspension, operation error etc.
Ambient condition	Temperature : 15 to 35℃
	Humidity : 0 to 85%RH
Power source	AC 100-120V/ 220-240V±10% 50/60Hz
Power consumption	Approx. 100W
Dimensions	452(W) x 400 (D) x 362 (H)mm
Weight	Approx. 20kg

* When nitrogen gas is in use, regulator (adjustable to 50kPa) is required.

Evaporator for Oil Samples ADP-513



This unit evaporates moisture of samples dissolved in a heated base oil. This unit is primarily used for moisture measurements in lubricant oil, grease, tar products, paints and other viscous liquids.

(NON-CE)

Model	Evaporator for Oil Samples ADP-513
Heating oven	Room temp. to 200°C
	Temperature indicator controller PID control
	Plate heater
	Cartridge type structure
Gas flow	100 to 300mL/ min
Carrier gas	Nitrogen gas/ Supply pressure below 50kPa
Power source	AC 100-120V/ 200-240V±10% 50/60Hz
Power consumption	Approx. 400W
Dimensions	320 (W) x 210 (D) x 330 (H)mm
Weight	Approx. 6kg

- * When nitrogen gas is in use, regulator (adjustable to 50kPa) is required.
- Complies to "JIS K 2275 Crude oil and petroleum products—Determination of water content"
 Equipped with specially designed drain-out system for easy drainage of base oil.
- •Equipped with fuse to prevent excessive temperature rise

Heat Extractor for Sugar Samples ADP-344



The ideal solution sugary samples: This mantel heater for volumetric Karl Fischer titration cells ensures the complete extraction of the moisture content of samples like chocolates, caramels and other samples containing sugars. (NON-CE)

Model	Heat Extractor for Sugar Samples ADP-344
Heating method	Mantel heater
Heating temperature range	Room temp. to 60°C
Thermo sensor	Thermistor
Temperature control	±3°C (At setting temperature higher than 40°C) ON/ OFF control
Dimensions	100(W) x 150 (D) x 133 (H)mm
Weight	Approx. 1.8kg

Evaporator for Ores ADP-512

Evaporator for High Temperature ADP-512S

This unit is suitable for the determination of adhesive moisture or combined moisture of iron ores, manganese ores, clay or inorganic compounds according to the ISO standard.

The sample is heated in the electric furnace and the evaporated moisture is carried into the titration cell by nitrogen gas.

Powerful furnace — short warm-up time: This evaporator attains a temperature of 1000°C in 30 minutes and reaches stable measuring conditions in another 30 minutes. An overheat protection mechanism for this evaporator is available.

(NON-CE)



Model	Evaporator for Ores ADP-512
Electric furnace	High temperature furnace 50 to 1000℃
	Temperature indicator controller PID control
	Temperature setting precision: Set value ±10℃
	(At room temperature 25°C/ At setting temperature higher
	than 300°C)
	Low temperature furnace 50 to 130°C
	Temperature indicator controller PID control
Gas flow	100 to 300mL/min
Carrier gas	Nitrogen gas/ Supply pressure below 50kPa
Power source	AC 100-120V/ 200-240V±10% 50/60Hz
Power consumption	Approx. 600W
Dimensions	1150 (W) x 340 (D) x 334 (H)mm
Weight	Approx. 30kg

 $\ensuremath{\mathbb{X}}$ When nitrogen gas is in use, regulator (adjustable to 50kPa) is required.



Model	Evaporator for High Temperature ADP-512S
Electric furnace	50 to 1000℃
	Temperature indicator controller PID control
	Temperature setting precision: Set value ±10°C
	(At room temperature 25°C/ At setting temperature higher
	than 300°C)
Gas flow	100 to 300mL/min
Carrier gas	Nitrogen gas/ Supply pressure below 50kPa
Power source	AC 100-120V/200-240V±10% 50/60Hz
Power consumption	Approx. 600W
Dimensions	835 (W) x 340 (D) x 334 (H)mm
Weight	Approx. 30kg

 $\ensuremath{\mathbb{X}}$ When nitrogen gas is in use, regulator (adjustable to 50kPa) is required.