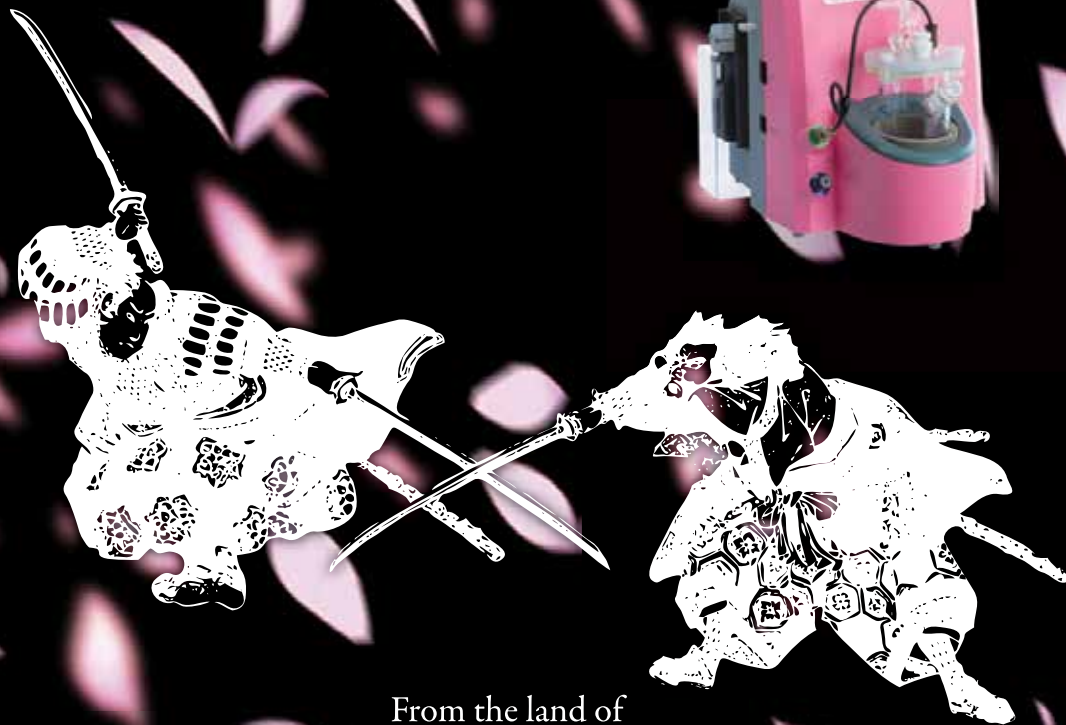


Karl Fischer
Moisture Meter

CA/KF-31

SAKURA PINK



From the land of
beautiful cherry blossoms and
superior technological craftsmanship
comes the new generation
Karl Fischer moisture meter
Model CA-31/KF-31



SAMURAI BLACK

Compact
Convertible
Cost Efficient



Mandel Scientific Inc.

www.mandelsci.com | tel: (844) 4MANDEL - (844) 462-6335

Nittoseiko Analytech Co., Ltd.



Compact, Convertible, Cost Efficient

Convertible

One and Only!



Volumetric Setup



Coulometric Setup

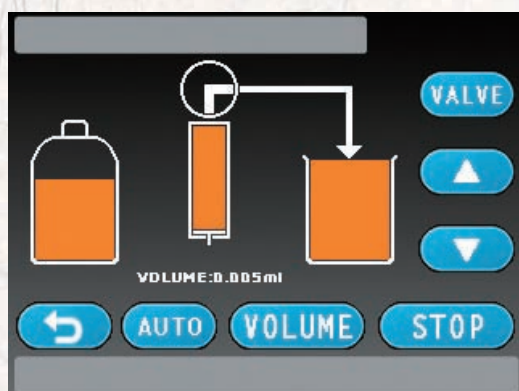
Model KF-31 initially comes with a titration flask for volumetric titration. By adding a coulometric cell, the same unit can be used as coulometric Karl Fischer instrument. No more need to buy 2 instruments to cover all of your Karl Fischer needs. The KF-31 will run both volumetric and coulometric measurements for you just with this one compact unit!

Features

5.7-inch Color LCD Touch Panel



Easy to view, easy to operate. All of the essential information in one view. Simple buttons to set parameters and start measurement.



Connect Vaporizers



Vaporizers from the 200 series can be connected to CA-31/KF-31. This expands the scope of measurable samples to nearly everything. By using the step temperature function, the suitable temperature for an unknown sample can be easily determined.

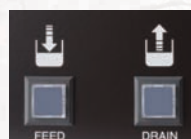
Connectable Models:
VA-300, VA-200, VA-210, VA-230, VG-200

*Additional power box is necessary for VA-200.
*Additional VA stand is recommended for VA-230.

Automatic Reagent Dispensing System



Dispose and dispense reagent with one push of button.





Simple, Fast, Accurate.

Simple



Just press START and inject sample to obtain moisture content in ppm or %.

Portable



The unit can be taken out to the field for on site measurement with optional carrying case.



Applications



Moisture analysis for various industrial products



Monitoring moisture level of insulating oil in power stations



Process control in petrochemical plants

Carrying Case



The optional carrying case with battery enables the CA-31 to be transported and used at any location.



Exhaust tube

No more replacement of dessicant.

The newly designed exhaust tube frees you from additional maintenance!



Model	KF-31		CA-31	
Method	Volumetric		Coulometric (2-reagent System)	Coulometric (Single Reagent System)
Standard Packages				
	● Black: KF31BF * PINK: KF31PF		● Black: CA31BF * PINK: CA31PF	● Black: CA31BSVF * PINK: CA31PSVF
Part Number				

Optional Units

for Karl Fischer Moisture Meter Model CA/KF-31

VA-300 (Boat Type)

CA-31 KF-31 +



Plastics, rubber, food, pharmaceutical, inorganic salts, other powders and solid samples

■ P/N: CK3VA
*POWER CODE (CAM085: 115V or CAM086: 240V) and CONNECTION CABLE (CK3CB3) are necessary.

Heating Temp.	50 to 300°C
Heater	Transparent Conductive Glass, 150W
Sample Size	Up to 10g
Measuring Range	≥5ppm
Carrier Gas	Nitrogen, 0.1 to 0.5L/min
Power Supply	AC100 to 120V, 160VA / AC220 to 240V, 740VA
Dimensions / Weight	Approx. 323(W) x 170(D) x 260(H) mm, 4kg

VA-230 (Vial Type)

CA-31 KF-31 +



Place samples in a vial and measure. Suitable for plastics, rubber, food, pharmaceuticals, inorganic salts, etc.

■ P/N: VAE3B(115V)
VAE3C(230V)

Heating Temp.	70 to 300°C
Heater	Aluminum Block Heater, 60W x 2
Sample Size	Up to 10g, Vial size 10mL
Measuring Range	≥30ppm
Carrier Gas	Nitrogen, 0.1 to 0.5L/min
Power Supply	AC100 to 120V, 140VA / AC220 to 240V, 280VA
Dimensions / Weight	Approx. 300(W) x 135(D) x 220(H) mm, 3.5kg

VA-210 (For Lubricants)

CA-31 KF-31 +



Lubricants, tar, etc.

■ P/N: VAE1B(115V)
VAE1C(230V)

Heating Temp.	70 to 199°C
Heater	Transparent Conductive Glass, 200W
Sample Size	≤50g
Measuring Range	≥5ppm
Carrier Gas	Nitrogen, 0.1 to 0.5L/min
Power Supply	AC100 to 120V, 160VA / AC220 to 240V, 740VA
Dimensions / Weight	Approx. 120(W) x 220(D) x 230(H) mm, 3kg

VG-200 (For Liquefied Gas)

CA-31 KF-31 +



Vaporizes and injects a preset amount of liquefied gas into the CA-31 cell.

■ P/N: VGE5F

Applicable Gases	Propane, butane, other liquefied gases
Injection Rate	100 to 600mL/min
Injection Volume	1 to 99L
Pressure Resistance	1MPa
Heating Temp.	40 to 90°C
Power Supply	AC100 to 120V, 44VA / AC220 to 240V, 48VA
Dimensions / Weight	Approx. 150(W) x 350(D) x 270(H) mm, 6kg

PC Software TV-31 (Titration Viewer)

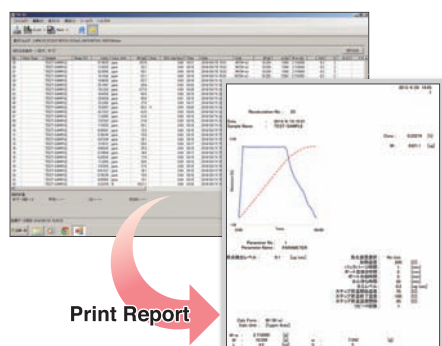
CA-31 KF-31 +

TV-31 collects measurement data from CA-31/KF-31 to PC. The collected data can be utilized to prepare reports in Microsoft® Excel® or Word®. ■ P/N: CA31TV

Report in Excel®

3 different templates can be chosen.

Data such as statistical calculation results or list of multiple measurements can be selected and prepared into a report.

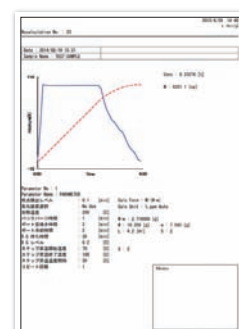


Print Report

Report in Word®

6 different templates can be chosen.

Data such as measurement data, titration chart, parameters, and calculation formula can be chosen via template and printed on a 1 page report.



Optional Units

for Karl Fischer Moisture Meter Model CA/KF-31

Battery (to use with Carrying Case) CA-31 KF-31 +



Battery Charger
P/N: CA31BCF
Battery Unit
P/N: CK31BU2

Voltage	Battery Unit: Approx. 24V Battery Charger: AC100V
Usage Time	Continuous Measurement: 2h Display Only: 4h
Charge Time	Approx. 6h
Dimensions/ Weight	Battery Unit: 158(W) x 338(D) x 52(H) mm, 2.5kg Battery Charger: 130(W) x 230(D) x 50(H) mm, 2.3kg

Carrying Case CA-31 KF-31 +



The light carrying case will hold the CA-31 main unit and battery.

■P/N: CA31CC

Dimensions/Weight	Approx. 340(W) x 485(D) x 500(H) mm, 5.2kg
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Reagent Dispensing System CA-31 KF-31 +



For disposing old reagent and dispensing new reagent into titration cell

■P/N: CA31SD

Dimensions/Weight	Approx. 86(W) x 84(D) x 56(H) mm, 0.5kg
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VA Power Unit +



Necessary when connecting VA-200 to CA/KF-31.

■P/N: CA31PWF

Dimensions/Weight	Approx. 310(W) x 125(D) x 100(H) mm, 1.5kg
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Coulometric Cell Set for KF-31 KF-31 +



By ordering one of the cell sets, KF-31 can be used as coulometric instrument.

■P/N:
CA31CL1
(2-reagent system)
CA31CL2
(1-reagent system)

Dot Impact Printer CA-31 KF-31 +



■P/N: CAEPDB(115V)
CAEPDC(230V)

Paper	58mm width
Digits/ line	24
Power Supply	AC100 to 240V, 7VA
Dimensions/Weight	Approx. 106(W) x 180(D) x 88(H) mm, 0.47kg



Specifications

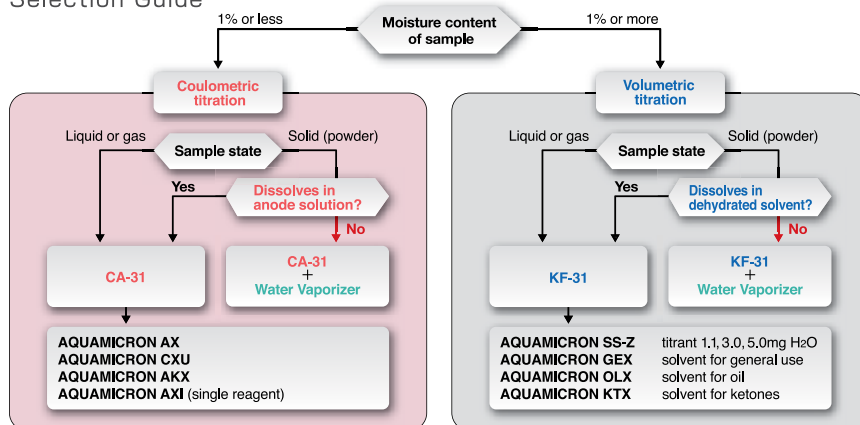
Method	Volumetric Karl Fischer Titration
End Point Detection	Constant Current Polarization Potential Difference
Measurement Range	0.1mg to 999.999mg H ₂ O
Titration Flask	150mL
Buret	Syringe type: 5mL Accuracy ±0.01mL (when dispensing 4mL)
Data Files	1 x Factor File 3 x Sample Parameter Files
Stirring Method	Magnetic Stirrer
Display	5.7inch Color LCD Touch Panel
Languages	English, Japanese, Spanish, and more Contact local distributor for other languages.
Calculation	Concentration based on editable formula, Statistical calculation, Recalculation
Printer	Dot Impact Printer (Optional)
Connectable Vaporizers	VA-300, VA-200, VA-210, VA-230, VG-200 (Step Temperature Control available on all Models)
External I/O	USB x 2: PC, Keyboard, Memory, Reagent Dispensing System RS-232C x 2: Printer, Balance, Vaporizers
Working Environment	Temperature: 15 to 40°C Humidity: <85%, No Condensation
Power Supply	AC100/120/220/240V (50/60Hz), 60VA
Dimensions	Approx. 230 (W) x 350 (D) x 360 (H) mm
Weight	Approx. 3.8kg



Specifications

Method	Coulometric Karl Fischer Titration
Electrolysis Control	Constant Current Pulse Time Control
End Point Detection	Constant Current Polarization Potential Difference
Electrolysis Current	430mA
Titration Rate	Average 2.2mg H ₂ O/min (36µg H ₂ O/sec)
Background	Automatic Correction, Constant Display Background level at start of measurement is displayed.
Measurement Range	10µg to 999.9999mg H ₂ O
Sensitivity	0.1µg H ₂ O
Repeatability	<0.3%RSD at 1mg or more H ₂ O
Stirring Method	Magnetic Stirrer
Display	5.7 inch Color LCD Touch Panel
Languages	English, Japanese, Spanish, and more Contact local distributor for other languages.
Calculation	Concentration based on editable formula, Statistical calculation, Recalculation
Printer	Dot Impact Printer (Optional)
Connectable Vaporizers	VA-300, VA-200, VA-210, VA-230, VG-200 (Step Temperature Control available on all Models)
External I/O	USB x 2: PC, Keyboard, Memory, Reagent Dispensing System RS-232C x 2: Printer, Balance, Vaporizers
Working Environment	Temperature: 15 to 40°C Humidity: <85%, No Condensation
Power Supply	AC 100/120/220/240V (50/60Hz) 60VA
Dimensions	Approx. 220 (W) x 350 (D) x 360 (H) mm
Weight	Approx. 3.8kg

Selection Guide



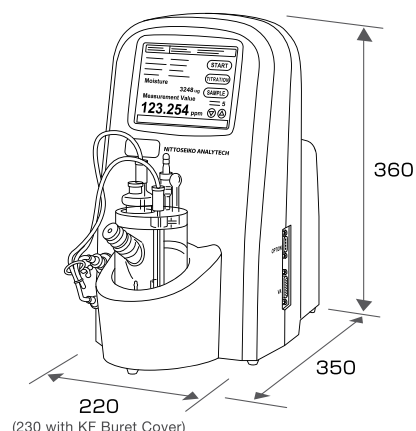
Some substances may not be applicable to the process flow shown above.



Mitsubishi's AQUAMICRON® Brand
KF Reagents

AQUAMICRON

Dimensions (mm)



Note: Follow instructions in manuals to correctly install, connect and operate the instruments. Contents of catalogues are subject to change without prior notice when improvements are made in performance. The actual color of the goods may appear different from color printed. All screen images are simulated.

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