

The Kett logo consists of the word "Kett" in a white, bold, serif font, centered within a solid black square.

SCIENCE OF SENSING

A large, stylized letter 'K' is formed by three overlapping, semi-transparent lime green shapes. One is a vertical bar on the left, another is a diagonal bar from the top-left to the bottom-right, and the third is a diagonal bar from the top-right to the bottom-left. The overlapping areas create darker shades of green.

# MEASURING INSTRUMENTS

Rev.30

## **A MESSAGE FROM THE PRESIDENT**

*Kett Electric Laboratory Co.Ltd., one of Japan's leading manufacturers of measuring instruments, has during its more than 77 years of operations developed a large number of unique, technically advanced and high-performance products for agricultural and industrial use. These include moisture testers, our specialty, as well as coating thickness testers, iron detectors, and a variety of other instruments. Our moisture testers represent a giant stride of progress from former, time-consuming methods of measuring moisture content, wherein the item to be measured had to be painstakingly dried and its weight loss evaluated. Kett moisture testers automatically and quickly determine the moisture content of such varied substances as grain, wood, food, textiles, pulp, paper, chemicals, mortar, soil and hay. They have thus played a valuable role in improvement of product quality and enhancement of overall productivity, and have been officially adopted by the Food Agency and other national and prefectural governmental agencies, numerous industry associations, private companies, and individuals. Kett's coating thickness testers are also employed in quality control applications in such industries as metal plating, machinery, rolling stock and shipbuilding. In addition, our iron detectors and other measuring instruments are presently employed in industrial operations throughout Japan and the world. Singular emphasis upon research and development has gained Kett a worldwide reputation for excellence, and the reliability and ease of operation of our products have earned them widespread acceptance in agriculture and industry through out the world. On the following pages is presented a broad range of measuring equipment featuring advanced technology and high accuracy, which is capable of meeting the requirements of even the most demanding user.*

A handwritten signature in black ink, appearing to read 'S. Emori', with a long horizontal flourish underneath.

**S. Emori, President**

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### Infrared Moisture Analyzer FD-660



- Basic model
- Minimum moisture content display 0.01%, weight display 5 mg
- Drift reduction using auto taring

Specifications	
Mea. method	Detection of weight loss by heating & drying
Sample mass	1 - 80g (optional weight sampling)
Mea. range	0 - 100% (Wet base, Solids), 0 - 500% (Dry base)
Repeatability	Samples with a weight of 5g or higher : 0.1%(standard deviation)
Resolution	Moisture: 0.01%* / 0.1%; Weight: 0.005g (*not a guarantee of accuracy)
Mea. modes	Automatic stop mode, Timer stop mode (1 - 120 min.)
Temp. setting range	30 - 180°C (in steps of 1°C)
Display	Backlit LCD display (96 x 40mm)
External output	RS-232C interface
Ambient cond.	Temperature 5-40°C, Humidity : 85%RH or less (no condensation)
Sample dish	SUS (diameter 110 mm, depth 11 mm)
Power source	AC100-120V / 220-240V (50/60Hz), Max900W
Dim. & weight	222(W)x360(D)x196(H)mm, 3.2kg / Shipment 8kg
Accessories	Sample dish x2, sample dish handler, wind shield, sample dish tray, spoon, spare fuse, package of Aluminum foil sheets (10 per package), Power Cord (Power plug conversion adapter)
Options	Printer VZ-380(P.30) (incl. cable VZC69), Printer paper (10 rolls), package of Aluminum foil sheets (500 sheets), RS-232C cable VZC52, Data Logger software FDL-02(P.32), Sample crusher TQ-100, Radiation thermometer calibration kit GF-310, Deodorizing windshield case FW-100 (P.28)

### Infrared Moisture Analyzer FD-720



- Mid-class model
- Minimum moisture content display 0.01%, weight display 1mg
- Six types of measurement modes

Specifications	
Mea. method	Detection of weight loss by heating & drying
Sample mass	0.5 - 120g (optional weight sampling)
Mea. range	0 - 100% (Wet base, Solids), 0 - 500% (Dry base)
Repeatability	Sample with a weight of 5g or higher : 0.05% (standard deviation) Sample with a weight of 10g or higher : 0.02% (standard deviation)
Resolution	Moisture: 0.01% / 0.1%; Weight: 1mg
Mea. modes	Automatic operation mode : Timed operation mode (1-240min or continuous) : High-speed drying mode : Low-speed drying mode : Stepped drying mode (max of 5 steps) : Predictive measurement mode
Temp. setting range	30 - 180°C (in steps of 1°C)
Ambient cond.	Temperature 5-40°C, Humidity : 85%RH or less (no condensation) Pollution degree 2, Altitude up to 2000m
Sample dish	SUS (diameter 130 mm, depth 13 mm)
Power source	AC100-120V / 220-240V (50/60Hz), Max900W
Dim. & weight	220(W)x415(D)x190(H)mm, 4.5kg / Shipment 10kg
Accessories	Sample dish 2 pcs, Sample dish handler 2 pcs, Wind shield, Sample dish tray, Spoon and spatula set, Spare fuses(T8A 250V) 2 pcs, Power Cord, Aluminum sheets(20 pcs)x2, Operating Manual
Options	Printer VZ-380(incl. cable VZC14), Data logger software FDL-02(P.32), Radiation thermometer calibration kit GF-110, Windshield with deodorizer case FW-100 (P.28)

### Infrared Moisture Analyzer FD-800



- Flagship model
- Dual temperature control even monitors on-tray temperature
- Significantly shortened measurement time

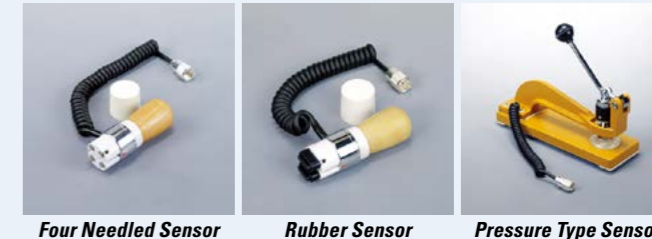
Specifications	
Mea. method	Detection of weight loss by heating & drying
Sample mass	0.5 - 120g (optional weight sampling)
Mea. range	0 - 100% (Wet base, Solids), 0 - 500% (Dry base)
Repeatability	Sample with a weight of 5g or higher : 0.05% (standard deviation) Sample with a weight of 10g or higher : 0.02% (standard deviation)
Resolution	Moisture: 0.01% / 0.1%; Weight: 1mg
Mea. modes	Automatic operation mode : Timed operation mode (1-240min or continuous) : High-speed drying mode : Low-speed drying mode : Stepped drying mode (max of 5 steps) : Predictive measurement mode
Temp. setting range	Thermistor (T1) : 30-180°C (1°C interval) Radiation thermometer (T2) : 30-250°C (1°C interval)
Ambient cond.	Temperature 5-40°C, Humidity : 85%RH or less (no condensation) Pollution degree 2, Altitude up to 2000m
Sample dish	SUS (diameter 130 mm, depth 13 mm)
Power source	AC100-120V / 220-240V (50/60Hz), Max900W
Dim. & weight	220(W)x415(D)x220(H)mm, 5.4kg / Shipment 10kg
Accessories	Sample dish 2 pcs, Sample dish handler 2 pcs, Wind shield, etc.
Options	Printer VZ-380(incl. cable VZC14), 10x Printer paper rolls, 500x Aluminum sheets, Radiation thermometer calibration kit GF-210 (digital thermometer, standard heating sample), Data logger software FDL-02(P.32), Windshield with deodorizer case FW-100 (P.28)

### Universal Moisture Tester HB-300



- Wide measurement range accepts many objects to measure
- Simple calibration curve creation
- A rich variety of optional sensors

Specifications	
Mea. method	Electric resistance
Mea. range	1 - 99% (Depends on calibration & samples)
Accuracy	Depends on calibration
Ambient cond.	0 - 40°C
Power source	Batteries 6 pcs. "AA" size Alkaline
Dimensions	110 (W) x 210 (D) x 50 (H) mm
Weight	Net 0.5kg / Shipment 4.0kg
Options	Sensors, Printer VZ-390(P.29)(incl. cable VZC70), Data logger software KDL-01(P.32)



### NIR Moisture Analyzer KB-230



- High flexibility of sample container and measurement over a plastic bag available
- Creates calibration curve by operating keys

Specifications	
Mea. method	Near-infrared reflection, light projected/received at the bottom plane
Spectroscopy	Filter
Mea. diameter	ø25mm
Measurement time	Normal measurement: 7 sec. (subject to the setting) Continuous measurement: 0.5 sec. interval
Analytical curves	50
Light source	Tungsten lamp (standard life: 20000 hours)
Display	Organic EL
Input/Output	USB (for PC I/O), RS-232C (for printer output)
Ambient cond.	5 - 35°C / 30 - 80%RH (no condensation)
Power supply	AC100-240 V (50/60Hz), 40W
Dim. & Weight	415 (W) x 370 (D) x 226 (H) mm / 13 kg
Accessories	Light shielding cover, Sample cell (Petri dish, ø90 mm), Zero-adjustment plate, Sample cell holder, Power cable, Fuse (spare), First Guide, Operating Manual
Options	Large Petri dish (150 mm dia), PC software, Masking holder (arbitrary Hole diameter) + small petri dish (30 mm dia), Deep type light shielding cover, Reflective plate, Printer VZ-800(P.31)

### NIR Moisture Analyzer KB-30



- Reasonably priced model
- Measures moisture on the production line in real time
- Uncoated finish prevents rust etc.

Specifications	
Mea. method	Near-infrared reflectance
Mea. distance	260mm±30mm
Mea. diameter	ø25mm (at 260mm)
Light source	Tungsten lamp (standard life: 20000 hours)
Display	Red color 7 segment LED
Input/Output	RS-232C, RS-485
Ambient cond.	5 - 40°C / 30 - 80%RH (no condensation)
Power supply	AC100-240V (50/60Hz), 50W
Protection	IP66
Dim. & Weight	268(W)x140(D)x306(H)mm / 7kg
Accessories	Power Cable, Zero adjustment plate, Mounting Bolt, PC Software, RS-232C Cable 3m etc.
Options	Controller KJT-CNT2(P.28), Interface Board



## NIR Moisture Meter KJT-130



- Portable handy NIR moisture analyzer
- Drives with rechargeable battery
- Data logging and calibration curve creation by operating keys

Specifications	
Mea. distance	150mm±25mm
Mea. diameter	ø25mm (at 150mm)
Response time	2 seconds
Refresh cycle	0.2 seconds
Analytical curves	50
Display	LCD with back light
Output	RS-232C, Equivalent to Hirose MX30-6P-C.
Power source	Nickel metal hydride battery "AA" size x 6pcs
Mounting screw for fixing	3/8-Inch standard mounting screw
Ambient cond.	10 - 30°C, 0 - 80%RH (no condensation)
Dimensions	210 (W) x 102 (D) x 172 (H) mm
Weight	Net 1.1kg / Shipment 3.0kg
Accessories	Battery, Carrying Case, Hood with zero adjustment plate, AC100V to 240V Charger, Strap
Options	RS-232C cable (KJT-130-CBL), AC adapter (KJT-130-ADC), Hood extension (KJT-130-FDP), Thermosensitive printer (KJT-130-PRT), Printer cable (KJT-130-RSP), Battery pack (KJT-130-BAT), PC software (KJT-130-PC)

## Grain Moisture Tester PB-3100 series



- Electric resistance type, standard desktop rice and grain moisture tester
- Printer connectable

Specifications	
Mea. method	Electrical resistance
Applications	Model PB-3103; Paddy, Rice, Parboiled Rice, Parboiled Paddy, Tapioka-Pellet, Tapioka Flour Model PB-3104(for pasta processing); Wheat, Flour(Cake & Noodle), Flour(Bread & Pasta), Noodle, Pasta, Corn Flour
Mea. range	6-35% (Sample dependent)
Measurement Accuracy	Manufactured: ±0.1%, Standard error of 0.5% or less versus drying method. (all samples with moisture content of less than 20%)
Display format	Digital (LED, smallest displayed unit 0.1%)
Display content	Moisture (%), Number of times measured
Temp. correction	Automatic temperature correction according to thermostat
Output	Printer Terminal (based on Centronix)
Power source	AC100V /220V(50/60Hz) or 1.5 ("D" size batteries) x 4. When using battery power, continuous running time is 15 hours.
Dim. & weight	250(W)x240(D)x125(H)mm, 3.5kg / Shipment 5.0kg
Accessories	Metal plate, Sample dish, Checker, Measuring spoon, Crushing handle, Brush, Spiral Brush, Batteries (1.5 V Alkaline "D" size, 4 pcs), Power Cord
Options	Printer VZ-380(P.30) (incl. cable VZC69)

## Grain and Coffee Moisture Tester PM-450 series



- Moisture analyzer and electric grain tester comply with specified standard for agricultural product inspection
- Non-destructive measurement

Specifications (PM-450 Version 4501)	
Mea. method	Dielectric constant
Applications	Grain, seeds, small objects
Mea. range	1- 40% (Sample dependent)
Sample volume	240 mL
Ambient cond.	0 - 40 °C
Measurement Accuracy	Moisture: Standard error of 0.5% or less versus drying method. (all samples with moisture content of less than 20%)
Correction function	Mass : By integrated weighing scale, Temperature : By thermistor, Shift correction (Offset correction) -9.9 - +9.9%
Other functions	Average, auto Power off
Display	Digital (LCD)
Power source	4Pcs. 1.5V Batteries ("R6" or "AA" size), 240 mW
Dimensions	125 (W) x 205 (D) x 215 (H) mm
Weight	Net 1.3kg / Shipment 4.0kg
Accessories	Funnel, manual-hopper, Brush, product list, batteries (1.5V "R6" or "AA" size x4)

## Instant Multiple Moisture Tester PM-650 series



- Can measure grains and seeds
- No preliminary sample treatment required
- Non-destructive measurement by only placing a sample

Specifications	
Mea. method	Dielectric constant
Applications	Grain, Seeds
Mea. range	1-40% (Sample dependent)
Sample volume	240 mL
Ambient cond.	0- 40 °C
Measurement Accuracy	Moisture : Standard error of 0.5% or less versus drying method. (all samples with moisture content of less than 20%)
Function	Mass, Temperature, Shift correction (Offset correction)
Other functions	Average, auto Power off, volume weight unit of g/L (sample weight/sample volume)
Display	Digital (LCD)
Power source	4Pcs. 1.5V Batteries ("AA" size Alkaline)
Dimensions	125 (W) x 205 (D) x 215 (H) mm
Weight	Net 1.3kg / Shipment 4.0kg
Accessories	Hopper, sample cup, Brush, batteries (1.5V "R6" or "AA" size, x4), sample list
Option	Printer VZ-390(P.31) (incl. cable VZC69)

## Single Kernel Grain Moisture Tester PQ-520



- Grasp the moisture distribution of the whole section by measuring a single grain
- Displays the distribution in histograms

Specifications	
Mea. method	Electrical Resistance
Mea. range	Brown rice (11 - 20%), Milled rice (11 - 20%), Paddy rice (11-35%), Barley (10 - 40%), Wheat (10 - 40%), Naked barley (10 - 35%)
Measurement time	Less than 40 seconds / 100 kernels (during measurement of brown rice, average moisture value display time)
Accuracy	± 0.5% (Moisture less than or equal to 20%)
Statistical calculations	Average, Standard deviation (printout mode)
Display content	Selected grain type, average moisture value, kernel count, time, moisture distribution (histogram)
Temp. correction	Automatic instrument temperature correction using a thermostat
Kernel count	10-1000 (Selectable)
Ambient cond.	5-40°C, Less than 85%RH (no condensing)
External output	RS-232C interface (for printer), USB (for PC)
Power source	AC100-240V (50/60Hz), Max76W
Dim. and weight	320(W) x 254(D) x 382(H)mm 9.0kg
Accessories	Scoop, Tweezers, Electrical Power Cord
Options	Printer VZ-380(P.30) (incl. VZC69 cable) for RS-232C output only, Data logger software PDL-01(P.33) (incl. USB cable) for USB output only

## Wheat and Rice Flour Moisture Tester PRv-930



- Measures moisture of rice flour and raw polished rice
- Average moisture display
- Features automatic temp. correction

Specifications	
Mea. method	Electrical Resistance Method
Mea. range	Wheat flour : 11-18%, Wheat : 9-30%, Rice flour : 8-18%, Long milled rice : 10-20%, Short milled rice : 10-20%, Long paddy : 10-35%, Short paddy : 10-30%
Ambient cond.	5- 40 °C
Applications and Measurement Accuracy	Flour : 0.25% (SEC, 130°C 5g 2hrs method, Entire range) Grain : 0.5% (SEC, 130°C 5g crushed 2hrs method, Under 20% range) Environment without abnormal electromagnetic noise
Display format	Digital (LCD, minimum display digit 0.1%, backlit equipped)
Temp. correction	Automatic temperature correction using thermistor
Power supply	1.5 V (AA battery) x 4 pieces (auto Power off function after 5 minutes), -Max. 0.3 W
Dim. and weight	164 (W) x 94 (D) x 64.5 (H) mm, Approx. 0.44 kg
Accessories	Sampling tray 4 pieces (2pcs per each of rice flour and milled rice), Metal plate (3 pcs), Cleaning Brush (2types), Spoon with tweezers, Battery (AA size x4pcs), Battery holder, Carrying Case, Operating manual

## On-Line Grain Moisture Tester PT-2700 (2751/2752/2756)



### Specifications

Mea.method	Electrical Resistance Method
Applications	Paddy, Wheat, Brown Rice, Milled Rice, Barley, Parboiled Rice (Varies by version)
Mea. variables	Moisture, Temperature
Mea. range	Moisture: 10-35%, Temperature: 0-50°C/130°C 5g 2H crushed
Accuracy	With respect to drying method (105°C 5g 5H crushed), 1σ- 0.5% or less, at moisture of 20% or less
Mea. time	100 Grains/ 40s (Brown rice, Milled rice)
Measured volume	100 Grains per measurement
Display format	Digital (LED, smallest displayed unit: moisture 0.1%, temperature 1°C)
Ambient cond.	0-50°C, 0-80% (however, must be free of condensation risk)
External output	RS-232C interface
Power source	AC100-240V (50/60V), Max 120W
Dim. & weight	Controller 170(W) x 110(D) x 248(H) mm, 1.2kg
Accessories	Moisture sensor PU-356/359, Cable with thermistor

• Can be mounted into a paddy dryer or measuring scale at a rice unloading station, enabling continuous moisture measurement.

## On-Line Grain Moisture Sensor PT-6200



### Specifications

Mea. method	Electrical Resistance Method
Mea. range	Paddy (10-35%), Barley (10-40%), Wheat (10-40%), Brown Rice (10-20%) Soy (11-25%), Corn (10-35%), Milled Rice (11-20%)
Ambient cond.	0-40°C (no condensation)
Accuracy	With respect to drying method (105°C 5g 5H crushed) All samples with moisture content of less than 20%
Power source	DC24V±1V 1.5A
Dimensions	146(W) x 210(D) x 213(H)mm, 3.2kg

## Grain Moisture Tester Riceter fv200series



### Specifications

Mea. method	Electrical Resistance Method
Applications	Brown rice, Milled rice, Paddy, Barley, Naked Barley, Wheat,... (Model version dependant)
Mea. range	10 - 35% (Sample dependent)
Ambient cond.	0-40°C (no condensation)
Accuracy	Standard error of 0.5% or less versus drying method. (all samples with moisture content of less than 20%)
Power source	4Pcs. 1.5V Batteries ("AA" size)
Dimensions	164(W) x 94 (D) x 65 (H)mm
Weight	Net 0.44kg / Shipment 1.5kg
Accessories	Sample pans (2pcs.), Brush, Spoon with tweezers, "AA" size batteries (4pcs.), User's manual, Carrying Case

• Easy-to-see display and easy-to-use main body  
• Average moisture display  
• Features automatic temp. correction

## Grain Moisture Tester HB-610



### Specifications

Mea. method	Electrical Resistance Method
Applications	Raw cashew nut, Cashew kernel, Cashew kernel testa
Mea. range	3-25% (Sample dependant)
Display	Digital (LCD)
Power source	1.5V batteries (AA alkaline) x 6
Dim. & weight	110(W) x 210(D) x 50(H)mm, 0.5kg
Accessories	Bar sensor (UB-1000), Shoulder strap, 1.5V batteries (AA alkaline x 6), Carrying case Operating manual
Options	Printer VZ-390 with cable VZC70, Data Logger software HDL-03

## Wood Moisture Tester HM-540



### Specifications

Mea. method	High-frequency capacity type (20 MHz)
Applications	All wooden materials
Mea. range	2 - 150%
Accuracy	Standard error of 0.5% or less (our standard sample, cedar/cypress: 20% or less), Drying: JIS Z 2101:2009
Correction Function	Thickness: 10-40 mm Specific gravity: 0.1-1.25 (up to 3 setting values storable) Moisture: slope (0-2.50), offset (-9.9-9.9) Temperature: automatic (10-40°C), manual (-10-70°C)
Power source	Battery 1 pc. 9V (006P Alkaline)
Dim. & weight	72(W)×146(D)×118(H)mm, approx. 0.39 kg
Weight	Net 0.5kg / Shipment 1.5kg
Options	Data Logger Software HDL-02 (P.32)

• Moisture tester for wood and plywood  
• Non-destructive measurement available  
• Easy operation by only touching the object to measure

## Wood Chip Moisture Tester MT-200



### Specifications

Mea. method	Electrical Resistance Method
Applications	Cutting and crushing chips
Mea. range	15-55% (Wet base)
Accuracy	Cutting chips; Standard error: 5.0%, repeatability: 2.0% Crushing chips; Standard error: 3.0%, repeatability: 2.0% Standard method: Constant weight method at 103°C (ISO 18134)
Display	Digital (LCD, smallest displayed unit 0.1%)
Ambient cond.	0-40°C (no condensation)
Functions	Upper limit alarm setting (15 to 55% and OFF), Moisture value bias adjustment (-9.0 to 9.9%), Auto power off (automatically turned off in approx. 5 minutes), Average value display, Continuous measurement mode, Calibration curve memory function (13 types)
Power source	6Pcs. 1.5V Batteries ("AA" size Alkaline), Approx. 0.45 W
Dim. & weight	110 (W) x 210 (D) x 50 (H) mm, Net 0.5kg
Accessories	Bar sensor (PU-360), Shoulder strap, 1.5 V batteries (AA alkaline) x6, Operating manual

• Measures by inserting the bar sensor  
• Built-in calibration curves exclusive for cutting and crushing chips  
• Can create user calibration curves



## Wood Moisture Tester MT-730



### Specifications

Mea. method	Electrical Resistance Method
Applications	Single plank, all wooden materials
Calibration curves	For hardwood (broad-leaved trees) and softwood (needle-leaved trees) (Reference method: ISO 13061-1), 16 types for tree species
Mea. range	6-40% (Broad-leaved trees), 7-40% (needle-leaved trees), 4-40% (when tree types No. 1 - 16 selected, will depend on particular tree species)
Accuracy	Less than 20%: $\pm 0.5\%$ , 20% or more: $\pm 2.0\%$ (In either case, precision with respect to base resistance)
Display format	Digital (LCD, smallest displayed unit 0.1%)
Ambient cond.	0-40°C (no condensation)
Functions	Automatic temperature compensation, Average value display, Auto Off (turns Power OFF automatically after approx. 5 min) Max value alarm setting (10 - 39%, or OFF), moisture value compensation (-9.9 to 9.9%)
Power source	6Pcs. 1.5V Batteries ("AA" size Alkaline), Approx. 0.45 W
Dim. & weight	110 (W) x 210 (D) x 50 (H) mm, Net 0.5Kg / Shipment 4Kg
Accessories	4-Needle sensor, 10x Spare needles, 2x Conductive rubber pieces, Wrench, 6x 1.5V Batteries ("AA" size Alkaline), Carrying Case, Shoulder Strap, Tree species number chart (Japanese and English), Operating manual

- Measures 16 kinds of wood materials without conversion
- Features an average value display, automatic temperature correction and upper limit alarm

## Wood Moisture Tester MT-900



### Specifications

Mea. method	Electrical Resistance Method
Applications	Single plank, all wooden materials
Calibration curves	Broad-leaved trees, needle-leaved trees (Standard Method : ISO 3130), 16 types of tree species
Mea. range	6-80% (Broad-leaved trees), 7-80% (needle-leaved trees), 4-40% (when tree types No. 1 - 16 selected, will depend on particular tree species)
Accuracy	Moisture < 20% $\pm 0.5\%$ Moisture $\geq 20\% \pm 2.0\%$ (Accuracy compared to standard resistance)
Display format	Digital (LCD, smallest displayed unit 0.1%)
Ambient cond.	0-40°C (no condensation)
Functions	Automatic temperature compensation, Average value display, Auto Off (turns Power OFF automatically after approx. 5 min) Max value alarm setting (10 - 79%, or OFF), moisture value compensation (-9.9% - 9.9%)
Power source	6Pcs. 1.5V Batteries ("AA" size Alkaline), Approx. 0.45 W
Dim. & weight	110 (W) x 210 (D) x 50 (H) mm, Net 0.5Kg / Shipment 4Kg
Accessories	4-Needle sensor, 10x Spare needles, 2x Conductive rubber pieces, Wrench, 6x 1.5V Batteries ("AA" size Alkaline), Carrying Case, Shoulder Strap, Tree species number chart (Japanese and English), Operating manual
Options	Printer VZ-390(P.31) (incl. cable VZC70), Data logger KDL-01(P.32)

- High-end MT-730 model covers wide range
- Built-in calibration curves exclusive for broad and needle-leaved trees

## Fresh Concrete, Mortar & Sand Moisture Tester HI-300 / HI-330



### Specifications

Mea. method	High frequency volumetric method
Applications	Mortar (wet screened fresh concrete). HI-330 is for mortar or fine aggregate
Mea. range	Mortar: 20-40% (volumetric ratio). Fine aggregate: $\geq 15\%$ (surface moisture), Fresh concrete: 120-240 kg/m <sup>3</sup> (unit quantity of water)
Accuracy (Standard deviation)	Mortar: $\pm 0.3\%$ (moisture), Fine aggregate: 0.14% (surface water), Fresh concrete 1.0 kg/m <sup>3</sup> (unit quantity of water)
Display format	Digital (LCD, smallest displayed unit 0.1%)
External output	RS-232C Interface
Power source	AC100V (when using 6V AC adaptor), or 6x 1.5V Batteries ("C" size)
Functions	Unit water estimation, Water/cement ratio estimation, User scale logging, Composition Data logging, Average value, 126 data point memory, Auto Power OFF after 15 min. Varies between models
Dim. & weight	300(W) x 264(D) x 197(H) mm, 2.5kg
Accessories	Sample case, Exchange connectors, Dummy, AC adaptor, Carrying Case. Variations between models, Operating manual
Options	Printer VZ-390(P.31) (incl. cable VZC12), Wet screener TZ-610(P.30)

- Measures moisture and unit water content of fresh concrete
- Can record measurement data and register combination data

## Concrete and Mortar Moisture Tester HI-520-2



### Specifications

Mea. method	High frequency capacitance (20MHz)
Applications/Ranges	LWC (ALA : Artificial lightweight aggregate concrete) 0-23 % GYP (Gypsum board) 0-50 % Concrete 0-12 % ALC (Autoclaved lightweight concrete) 0-100 % Mortar 0-15 % CSB (Calcium silicate board) 0-15 % D mode 0-1999 S mode (only in S & D mode) 0-1100
Functions	Temperature correction, backlit, upper limit of moisture content alarm setting, hold, user calibrations (8 pcs.)
Display	Digital (LCD)
Power supply	9 V alkaline battery (006P) x1, 350 mW
Dim. & weight	72 (W) x 146 (D) x 118 (H) mm, approx. 0.39 kg
Accessories	9 V alkaline battery (006P), soft case (with Strap), Operating manual
Options	Data logger software HDL-01 / HDL-02(P.32)

- Usable in dark places thanks to the LCD with backlight
- Features user fs custom calibration creation

## Concrete/Mortar Moisture Tester HI-800



### Specifications

Mea. method	Electric resistance
Mea. range	Concrete : 0 - 10% / Mortar : 0 - 15%
Accuracy	0.5% - 1.5%
Mea. depth	50mm Max. available upto 150mm as optional.
Power source	Batteries 4pcs. "AA" size
Dimensions	75 (W) x 145 (D) x 31 (H) mm
Weight	Net 0.5kg / Shipment 1.0kg

- Measure moisture at the desired depth
- Features an upper and lower limit alarm setting and auto power off
- Portable small and handy type

## Paper Moisture Tester HK-300 Series (-1/-2/-3)



### Specifications

Mea. method	Electrical Resistance Method
Applications	Kraft paper, Liner board, Copy paper, Cardboard, etc
Standard method	JIS P8127 (copy paper, cardboard)
Mea. range	<ul style="list-style-type: none"> <li>• <b>HK-300-1(Grip sensor)</b>: Copy paper, 4-15% / Cardboard, 6-20%</li> <li>• <b>HK-300-2(Conductive rubber sensor)</b>: Copy paper, 4-25% / Liner board, 6-23% / Kraft paper, 5-24%</li> <li>• <b>HK-300-1(Constant pressure sensor)</b>: Copy paper, 2-10% / Liner board, 5-15% / Kraft paper, 2-10%</li> </ul>
Accuracy	Standard error 0.4% (at 15% moisture or less)
Display format	Digital (LCD, smallest displayed unit 0.1%)
Power source	6X 1.5V ("AA" size Alkaline), approx 0.45W
Dim. & weight	110(W) x 210(D) x 50(H)mm, 0.5kg
Accessories	Carrying Case, Shoulder Strap, 6x 1.5V batteries ("AA" size Alkaline)
Options	Printer VZ-390(P.31) (incl. cable VZC70), Data logger KDL-01(P.32)

- Select from 3 types of sensors
- Measure by simply using the sensor on an object to measure





## Paper Moisture Tester KH-70



### Specifications

Mea. method	Capacitance
Mea. range	0 - 33%
Accuracy	Depends on sample
Power source	Battery 9V (6LF22 Alkaline)
Dimensions	72 (W) x 150 (D) x 25 (H) mm
Weight	Net 0.15kg / Shipment 1.5kg

- Measures average moisture up to 50 mm deep with non-destructive measurement
- Built-in 11 pre-installed calibration curves

## Copra Moisture Tester HX-120



### Specifications

Mea. method	Electrical resistance
Applications	Copra
Standard method	ISO 665
Mea. range	3-20% (Dry base)
Accuracy	Standard error 0.4% (moisture values of 10% or lower)
Display	Digital (LCD)
Resolution	0.1%
Ambient cond.	0-40°C (no condensation)
Functions	Moisture value bias adjustment (-9.9 to +9.9%), Average value, Upper limit alarm, Automatic temperature compensation, Auto Power off (automatically turns off after approx. 5 minutes)
Power supply	6Pcs. 1.5 V batteries (AA alkaline), approx. 0.45 W
Dimensions	110 Mm (W) x 210 mm (D) x 50 mm (H)
Weight	0.5 Kg / Shipment 4kg
Accessories	Two needle probe, Wrench, Shoulder Strap, 6pcs 1.5 V battery (AA alkaline), Carrying Case, Operating Manual
Options	Printer VZ-390(P.31) (incl. cable VZC70)

- Moisture tester exclusive for copra
- Measures by inserting the sensor needles into the copra

## Tatami (straw mat) Moisture Tester HX-300



### Specifications

Mea. method	Electrical Resistance Method
Applications and Mea. range	Tatami surface matting : 8-20%, Rice straw stuffing 7-25%, Tatami board (wooden board flooring material) : 7-35%
Accuracy	Standard error : Tatami surface matting 0.8% or less, Rice straw stuffing 1.3% or less, Tatami board 1.3% or less
Display format	Digital (LCD, smallest displayed unit 0.1%)
Ambient cond.	0-40°C (no condensation)
Functions	Automatic temperature compensation, Average value display, Max value alarm setting (10 - 79%, or OFF), Auto Off (turns Power OFF automatically after approx. 5 min), Moisture value compensation (-9.9% - 9.9%)
Power source	6Pcs. 1.5V Batteries ("AA" size Alkaline)
Dim. & weight	110 (W) x 210(D) x 50(H) mm, 0.5 kg / Shipment 4kg
Accessories	2-Needle sensor, 4pcs Spare needles, Spacer for sensor needles, Wrench, Shoulder Strap, 6pcs 1.5V Batteries ("AA" size Alkaline), etc.

- Moisture tester exclusive for the surface and inner parts of tatami mats
- Measures by sticking a needle at the tip of the sensor

## Jute Moisture Tester HX-410



### Specifications

Mea. method	Electrical resistance
Applications	Jute
Mea. range	6-100% (Dry base)
Accuracy	Standard error of 0.9% or less (Moisture values of 20% or lower)
Display format	Digital (LCD)
Ambient cond.	0-45°C (no condensation)
Power source	6PCS. 1.5V Batteries ("AA" size Alkaline)
Dim. & weight	110(W)x210(D)x50(H)mm, Net 0.5kg Shipment 440(W)x400(D)x160(H), 4.3kg
Accessories	Pressure sensor, Two needle sensor with three different length needles (4 / 8 / 12 inches, 2pcs/each), Shoulder strap, 1.5V alkaline battery 6pcs, Carrying case, Wrench, Operation manual

- Can measure domestic and imported jute from producing countries such as India and Bangladesh

## Cotton Moisture Tester HX-500



### Specifications

Mea. method	Electrical Resistance Method
Applications	Raw cotton, Cotton bale, Cotton thread
Mea. range	See 3. "Calibration Curve List"
Display	Digital (LCD)
Power source	1.5V batteries (AA alkaline) x 6
Dim. & weight	110(W) x 210(D) x 50(H)mm, 0.5kg
Accessories	Pressure sensor (for raw cotton), 2 needle probe (2 measurement needle 2 lengths) Shoulder strap, 1.5V batteries (AA alkaline x 6), Wrench, Acrylic plate, Carrying case Operating manual
Options	Printer VZ-390 with cable VZC70, Data Logger software HDL-03

## Biomass Fuel Moisture Tester HI-700



### Specifications

Mea. method	Capacitance (Dielectric) (50MHz)
Applications	Solid biomass fuel: PKS (Dura / Tenera), Wood pellet, Rice husk, Saw dust (Normal / Chain saw)
Mea. range	3-60% (Sample dependent)
Sample volume	240 mL
Ambient cond.	0-40 °C
Accuracy	Standard error of 1.0% or less versus standard method. (all samples with moisture content of less than 20%)
Functions	Weight scale, Automatic temperature correction by integrated thermistor, Auto-power off, Auto-display for battery level icon, Average
Other functions	Average, auto Power off
Display	Digital (LCD)
Power source	4Pcs. 1.5V Batteries ("R6" or "AA" size), 240 mW
Dimensions	125 (W) x 205 (D) x 215 (H) mm
Weight	Net 1.3kg / Shipment 4.0kg
Accessories	Funnel, Manual hopper(sample cup), Brush, Batteries(1.5V AA sizex4), Operating manual

- Measures moisture of PKS, wood pellet, saw dust, etc in a few seconds
- Non-destructive measurement by only placing a sample



## Hay Moisture Tester HX-700



### Specifications

Mea. method	Electrical resistance
Mea. range	8 - 30% (Depends on calibration & samples)
Accuracy	Standard error of 1% or less
Ambient cond.	0-40°C (no condensation)
Power source	6Pcs. 1.5V Batteries ("AA" size Alkaline)
Dimensions	110 (W) x 210 (D) x 50 (H) mm
Weight	Net 0.5kg / Shipment 4kg

- Moisture tester exclusive for pasture grass
- Measures by inserting the sensor into pasture grass

## NIR Rice Composition Analyzer AN-820

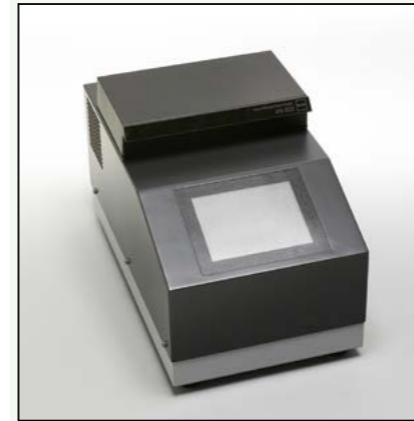


- Measures moisture, protein and amylose content of rice
- Displays quality evaluation value of unpolished and polished rice

### Specifications

Mea. method	Near-Infrared Transmittance
Light source	Tungsten lamp (life 20,000hr)
Applications	Brown Rice, Milled rice <b>option:</b> High-moisture unpolished rice, Wash-free rice, Unpolished rice for sake
Compositions	Moisture, Protein, Amylose (reference value)
Display range	Moisture 10-20%, Protein 4-10%, Amylose 15-25% (reference value)
Sample volume	Approx. 60 mL
Calibration curve	Memory Capacity : 4 Components x 8 Channels
Ambient cond.	10-35°C
Display	320 x 240 dot matrix backlit LCD
Input/Output	RS-232C, Printer output terminal
Display content	Calibration curve label, Protein value, Moisture value, Amylose value (reference value), Quality rating value
Power source	AC100V - 240V (50/60 Hz)
Dim. & weight	260(W) x 350(D) x 380(H)mm, 13kg
Accessories	Power cable, 2x Sample case, Sampling cup, Spare fuse, Each of standard sample (Brown rice, Milled rice), Storage container (standard sample)
Options	Printer VZ-810(P.31) (incl. cable VZC20), Data logger software NDL-04(P.33)

## NIR Rice Composition Analyzer AN-920



- The operation is easy to understand by installing the touch panel
- Displays moisture, protein, amylose content and quality evaluation value

### Specifications

Mea. method	Near-Infrared Transmittance
Light source	Tungsten lamp (life 20,000hr)
Applications	Brown Rice, Milled rice
Compositions	Moisture, Protein, Amylose (reference value)
Display range	Moisture 10-20%, Protein 4-10%, Amylose 15-25% (reference value)
Sample volume	Approx. 60 mL
Calibration curve	Memory Capacity : 4 Components x 8 Channels
Ambient cond.	10-35°C
Display	5.7-Inch touch panel color LCD
Input/Output	RS-232C, USB, TCP/IP
Display content	Protein value, Moisture value, Amylose value (reference value), Quality rating value
Power source	AC100V - 240V (50/60 Hz)
Dim. & weight	230(W) x 400(D) x 250(H)mm, 8.5kg
Accessories	Power cable, 2x Sample case, Sampling cup, Spare fuse, Each of standard sample with storage container (Brown rice, Milled rice), Operating Manual
Options	Printer VZ-800(P.31), Data logger software NDL-04(P.33)

## NIR Laver Composition Analyzer KBL-3000



### Specifications

Mea. method	Near-infrared reflection, light projected/ received at the bottom plane
Mea. diameter	Approx. φ25mm
Applications	Dried laver, Roast laver, Korean seasoned laver
Compositions	Moisture, Protein
Number of calibration curves	50
Mea. time	Normal measurement: 9 sec. (subject to the setting) Continuous measurement: 0.5 sec. interval
Display	Organic EL
Input/Output	USB (for PC I/O), RS-232C (for printer output)
Power source	AC100-240V (50/60Hz), 40W
Dim. & weight	415(W) x 370(D) x 226(H), 12kg
Accessories	Light shielding cover, Zero-adjustment plate, power cable, spare fuse, operating manual

## NIR Composition Analyzer KB-270



### Specifications

Mea. method	Near-infrared reflection, light projected/ received at the bottom plane
Mea. diameter	approx. $\varnothing$ 25mm
Number of calibration curves	50
Mea. time	Normal measurement: 9 sec. (subject to the setting) Continuous measurement: 0.5 sec. interval
Display	Organic EL
Input/Output	USB (for PC I/O), RS-232C (for printer output)
Power source	AC100-240V(50/60Hz)
Dim. & weight	415(W) x 370(D) x 226(H)mm, 13 kg
Accessories	Light shielding cover, petri dish with 90 mm dia for samples, sample holder, zero-adjustment plate, power cable, spare fuse, wireless LAN router, PC software, and operating manual
Options	Printer VZ-800(P.31)

- Desktop analyzer uses reflected light of near-infrared light
- Displays results in several seconds after applying light

## NIR Composition Analyzer KJT-70-5 / 70-7



### Specifications

Mea. method	Near infrared Reflectance
Mea. distance	170mm $\pm$ 10mm
Mea. diameter	$\varnothing$ 40mm ( at 170mm), Option $\varnothing$ 15mm
Light source	Tungsten lamp (20000 hours or more)
Display	Red color 7 segment LED
External comm.	RS-232C / RS-485, DC4-20mA
Analytical curves	50
Ambient cond.	0 - 40°C, 0 - 95RH (no condensation)
Power source	AC 100V-220V $\pm$ 10% (50/60Hz), 50VA
Protection	Against dust and drop-proof
Dim. & weight	322(W) x 176(D) x 319(H)mm, 8 kg (with cooling fan 9.3 kg)
Accessories	Power cable, Zero adjustment plate, Mounting bolt, etc.
Options	Controller KJT-CNT2(P.28), etc.

- Measures up to four ingredients simultaneously
- Data logging/calibration curve creation by connecting with a PC

## NIR Composition Analyzer KJT-700



### Specifications

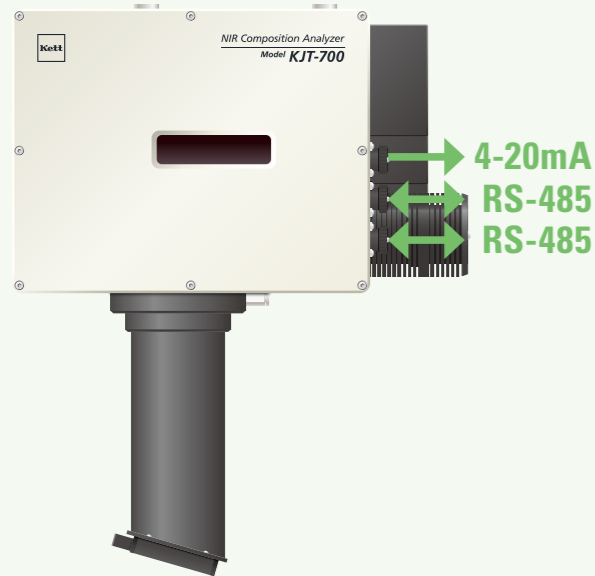
Mea. method	Near infrared Reflectance
Mea. distance	350mm $\pm$ 50mm
Mea. diameter	$\varnothing$ 50mm ( at 350mm)
Light source	Tungsten lamp (20000 hours or more)
Display	Red color 7 segment LED
External comm.	99
Analytical curves	0 - 40°C, 0 - 95%RH (no condensation)
Ambient cond.	RS-485 $\times$ 2, DC4-20mA
Power source	AC 100V-220V $\pm$ 10% (50/60Hz), 50VA
Protection	Against dust and drop-proof
Dim. & weight	361(W) $\times$ 177(D) $\times$ 451(H)mm, 11 kg
Accessories	Power cable, Zero adjustment plate, Mounting bolt, etc.
Options	Controller KJT-CNT2(P.28), etc.

- Standard model of in-line analyzer that handles distance fluctuation well
- Measures up to four ingredients simultaneously

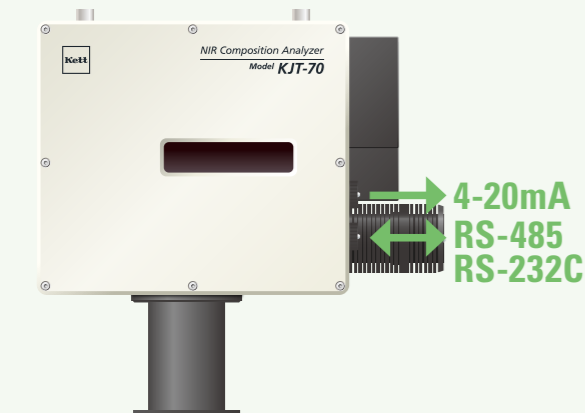


## Input and output specification

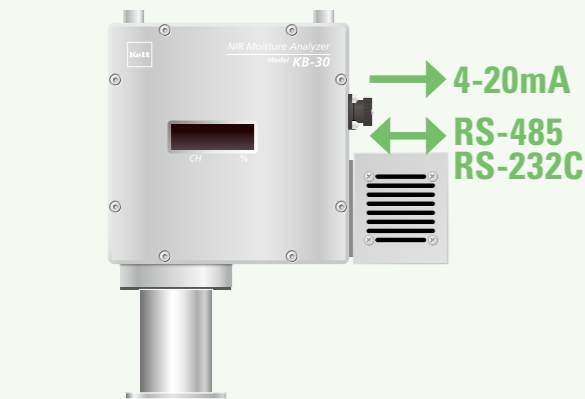
### KJT-700



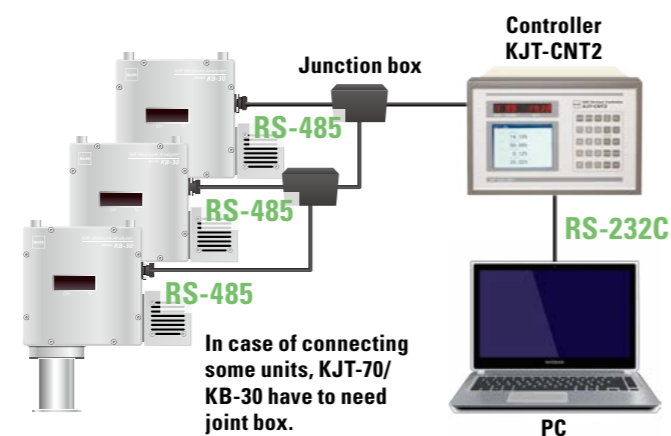
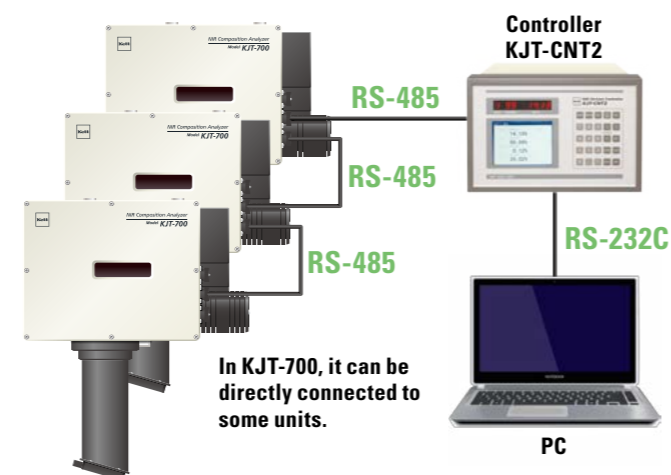
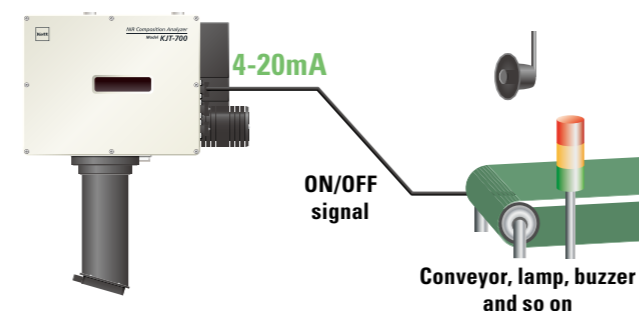
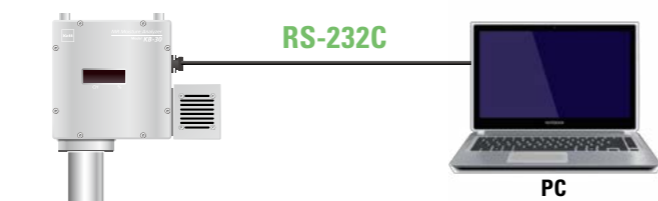
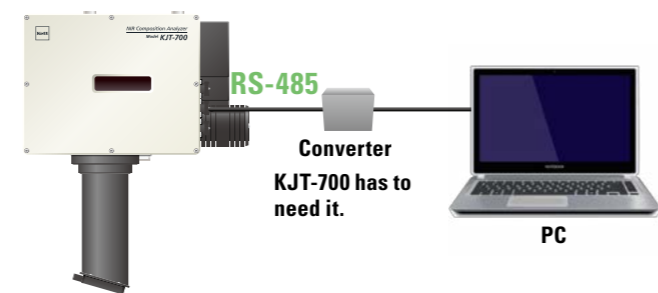
### KJT-70



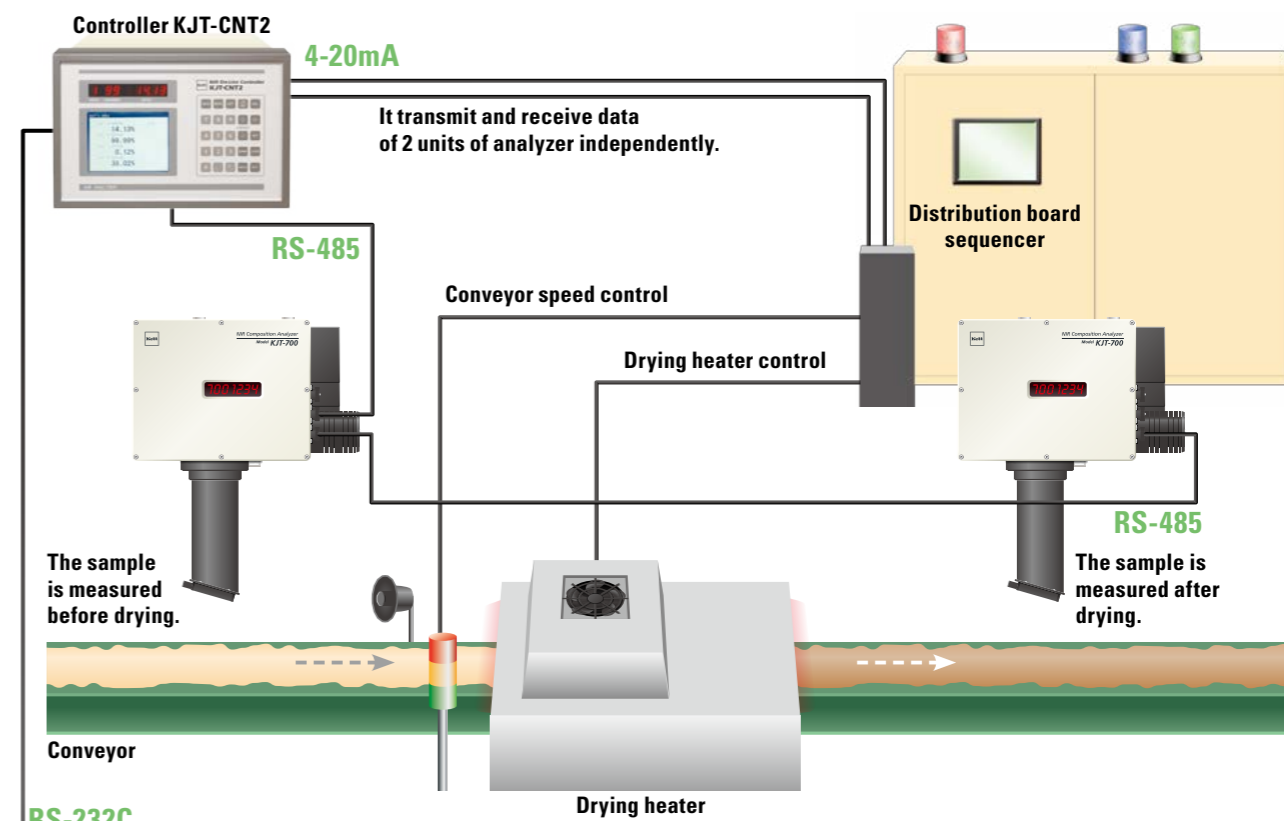
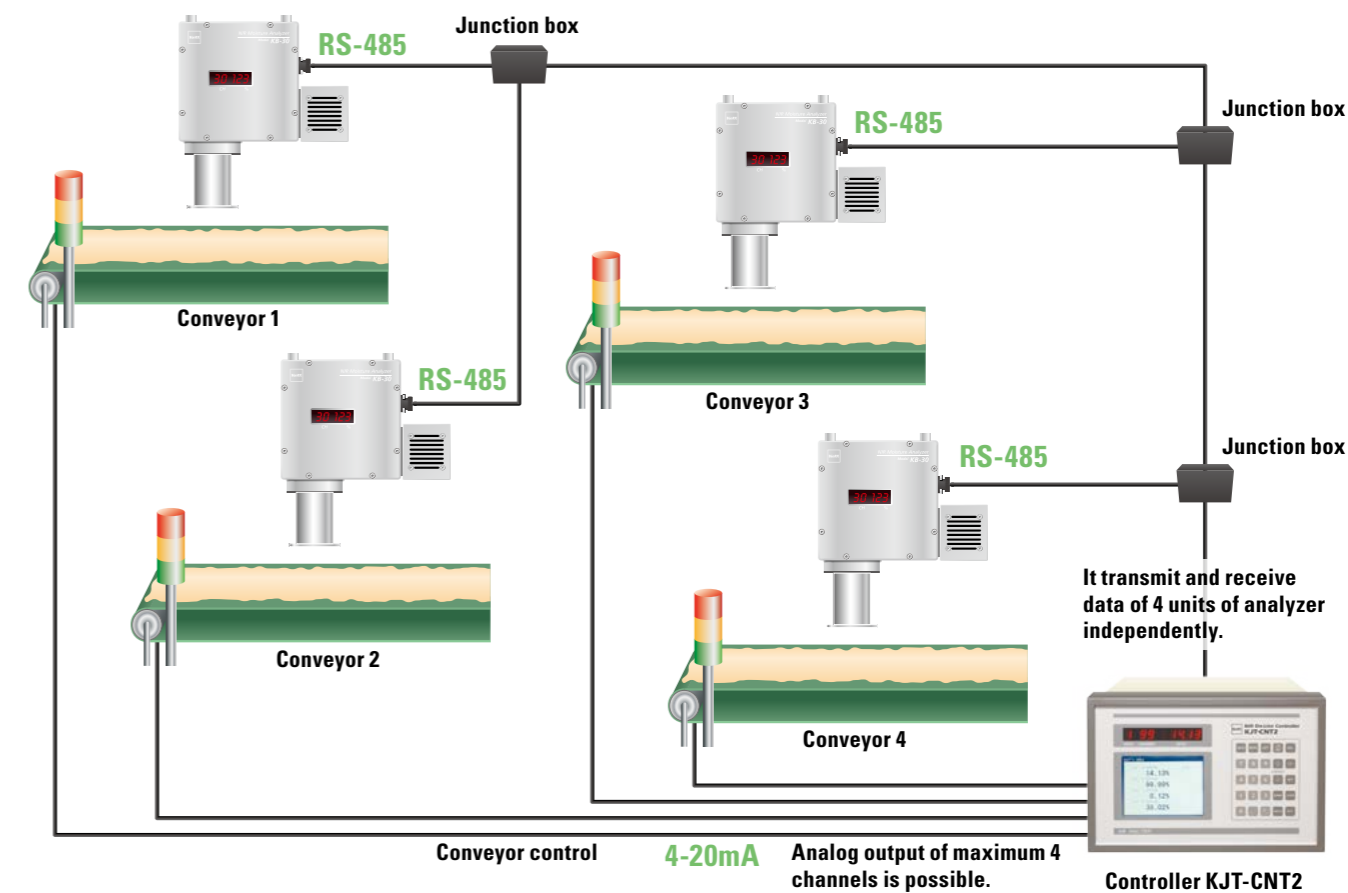
### KB-30



## Connection example

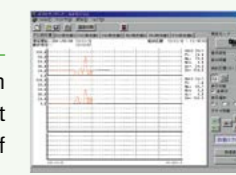


## Configuration example



### PC software (Accessory)

It is possible to display numerical data, write as CSV data, read to excel, confirm calculation result of calibration curve, display calibration curve graph and transmit calibration curve to main unit easily. In addition, it is possible that trend display of various statistical processing result of maximum 4 channels that read online is done.



4ch trend display

## Rice Inspector RN-700



### Specifications

Mea. method	Optical format (CMOS image sensor)
Applications	Short Brown Rice, Short Milled Rice
Classifications	Even grain, Cracked grain, Immature grain, Discolored grain, Dead grain and Damaged grain
Quantity	800-2000 grains
Display format	Digital (OLED)
Processing capability	Approx. 1000 grains per 40 seconds (It differs depending on the condition)
Ambient cond.	5 - 35°C, 10-80%RH (no condensing)
Light source	LED, LCD
Power source	AC100-240V (50/60Hz)
Dim. & weight	340(W) x 360(D) x 355(H)mm, 7kg
Input/Output	Built-in printer, USB2.0, SD Card, IEEE 802.11g
Accessories	Blower brush, Measuring spoon, Silicon cloth, Brush, Tweezers, Power code, Standard tray, Measuring tray, Printer paper, Operating Manual etc.

## Grainscope TX-200



### Specifications

- Discriminates shape and color of rice easily
- Magnifies and observes unpolished and polished rice
- "Rice museum" booklet provided

Sample size	50 Rice grain or more
Power source	4Pcs. 1.5V Batteries ("AA" size Alkaline), AC 100V (50/60Hz)
Dimensions	162(W) x 134(D) x 80(H)mm
Weight	Net 0.5kg / Shipment 1.5kg

## Digital Grain Gauge TS-127



### Specifications

Resolution	Centesimal: 0.01mm/0.0005", millesimal: 0.001/0.0005"
Measuring range	0-12.7mm/5", 0-25.4mm/1"
Power source	One silver oxide battery (SR44) 1.5V
Operating temp.	0°C-40°C
Storage temp.	-20°C-70°C
Relative humidity	≤80%

## Powder Whiteness Tester C-130



### Specifications

Mea. method	Reflectivity measurement
Applications	Various types of powder (Starch, Wheat flour, Tapioca flour, Cement etc.)
Mea. item	Whiteness (different from JIS whiteness)
Range	5.0-120.0
Resolution	0.1
Display format	Fluorescent display tube
Functions	User calibration curve, sensitivity adjustment notification, average, printer output
Ambient cond.	5-40°C, 30-85%RH (no condensing)
Light source	Blue LED
Output	RS-232C
Power source	AC 100-120V, AC 200-240V (50/60Hz)
Dim. & weight	375(W) x 220(D) x 250(H)mm, Net 7.0 kg
Accessories	Whiteness standard plate, Whiteness standard plate case, Sample platter x 5, Sample platter holder, Spoon with spatula, Brush, Cleaning Brush, Blower Brush, Glass wiper, Replacement fuse, Power Cord, Power plug conversion adapter, Simple guide to sampling
Options	Printer VZ-380(P.30) (incl. cable VZC69)

- Blue LED light source improves the heat stability and prolongs life
- Measurement can be started in 20sec after the start-up and warm-up

## Rice Whiteness Tester C-600



### Specifications

Mea. method	Reflectivity measurement
Products	Polished, Brown and Pre-washed rice - Glutinous and non-glutinous
Mea. item	Whiteness (different from JIS whiteness)
Range	5.0-69.9
Resolution	0.1
Display	Fluorescent LED
Functions	Whiteness, Average
Ambient cond.	5-40°C, 30-85%RH (no condensing)
Light source	Blue LED
External output	RS-232C
Power	AC 100-120V, AC 200-240V (50/60Hz)
Consumption	35W(100V), 60W(240V)
Dim. & weight	290(W) x 295(D) x 185(H)mm, 5.0kg
Accessories	Whiteness standard plate, sample case, sample platter, fixed quantity shooter, sample cup, glass wipe, replacement sponge, replacement packing(x3), replacement fuse, Power Cord, Power plug adapter
Options	Printer VZ-380(P.30) (incl. cable VZC69)

- Blue LED light source improves the heat stability and prolongs life
- Measurement can be started in 20sec after the start-up and warm-up

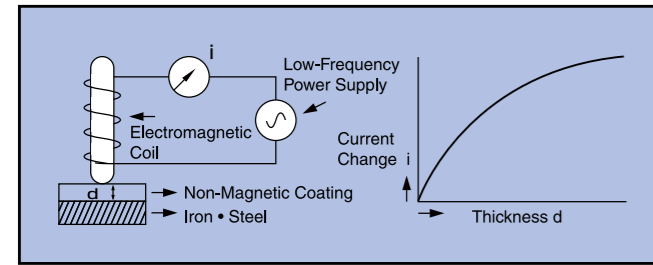


## Principle of measurement

### Electromagnetic induction method :

For measuring the thickness of non-magnetic coatings on magnetic metal substrates.

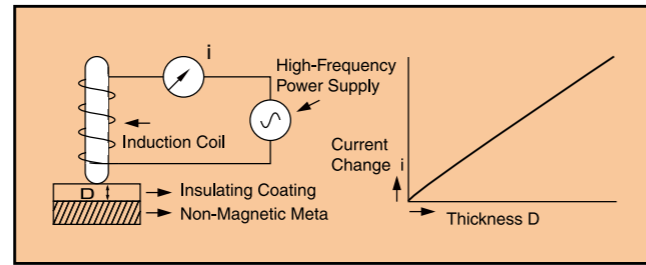
When an alternating current electromagnet is brought near iron (or other magnetic metal) the number of magnetic flux lines passing through the coil changes in proportion to the distance, thereby causing a change in the voltage at the ends of the coil. This change in voltage is determined from the current value and this is used to compute the thickness of the coating.



### Eddy Current method :

For measuring the thickness of insulating coatings on non-magnetic metal substrates.

An eddy current is produced in the surface of a metal when a coil through which a current of fixed frequency is brought near the metal. This eddy current and the voltage at the ends of the coil change in proportion to the distance between the coil and the metal surface. This change can be determined from the current value and this is used to calculate the thickness of the coating.



## Selection table for coating thickness measurement methods

Coating	Substrate																		
	Aluminium	Lead	Chromium	Anodizing, Chromate, Phosphate	Enamel, Paint, Rubber, Plastics	Gold	Cadmium	Copper	Solder	Brass	Nickel (magnetic)	Nickel (electroless)	Palladium	PVD CVD coatings	Rhodium	Silver	Zinc	Tin	
Iron and Steel	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■
Kovar	■	■	■		■		■	■	■	■			■	■	■	■	■	■	■
Steel (non-magnetic)					■*														
Aluminium and alloys				■	■														
Copper and alloys				■	■														
Silver					■														
Titanium and alloys					■														
Zinc and alloy					■														
Glass Ceramic Plastic																			

\* Coating thickness of some type of stainless steel may not be measurable. Contact us for detail.

■ Electromagnetic Induction Method ■ Eddy-Current Method

## Figure of probe external form (Reduced scale lack of unity)

Probe type	Normal type probe : LEP-J / LHP-J	L shape probe : LEP-21L / LHP-21L / EP-110 / HP-110
Product model	LE-373 / LH-373 / LZ-373	LE-373 / LH-373 / LZ-373 / L-500
Dimensions		
Probe type	Probe for pipe inside measurement : LEP-22/EP-120/HP-120	
Product model	LE-373 / LZ-373 / L-500	
Dimensions		

## The contents of an attached calibration foil.

Model	Qty	Thickness(μm)								Material
		10	50	100	500	1000	1500	3000	3000	
L-500	6	10	50	100	500	1000	1500			Polyester Film
LE-373 / LZ-373	6	10	50	100	500	1000	1500			Polyester Film
LH-373	5	10	50	100	500	1000				Polyester Film
LZ-990	3		50	100		1000				Polyester Film
Optional foils for all the models	-	10 25 37	50 75	100 125 250	300 350	500 700	800	1000	1500 3000	Polyester Film

Attention : The thickness of calibration foils attached to the product sets the thing which we really measured. Therefore, it is not numerical value same as a list shown below.

## Conformity Standard

Measurement method	Model	Standard	
Electromagnetic Induction	L-500 LE-373	JIS K5600-1-7, JIS H0401, JIS H8401, JIS H8501, JIS H8641 / ISO 1460, ISO 2064, ISO 2178, ISO 2808, ISO 19840 / BS 3900-C5 / ASTM B 499, ASTM D 7091-5, ASTM E 376	
Eddy-current	L-500 LH-373	JIS K5600-1-7, JIS H8501, JIS H8680-2 / ISO 2064, ISO 2360, ISO 2808, ISO 19840 / BS 3900-C5 / ASTM B 244, ASTM D 7091-5, ASTM E 376	
Electromagnetic Induction and Eddy-current	L-500 LZ-373 LZ-990	Electromagnetic Induction	JIS K5600-1-7, JIS H0401, JIS H8401, JIS H8501, JIS H8641 / ISO 1460, ISO 2064, ISO 2178, ISO 2808, ISO 19840 / BS 3900-C5 / ASTM B 499, ASTM D 7091-5, ASTM E 376
		Eddy-current	JIS K5600-1-7, JIS H8501, JIS H8680-2 / ISO 2064, ISO 2360, ISO 2808, ISO 19840 / BS 3900-C5 / ASTM B 244, ASTM D 7091-5, ASTM E 376

## Coating Thickness Tester

## L-500



- Flagship model with built-in printer
- Electromagnetic and eddy current probes are sold separately

## Specifications

Mea. method	Electromagnetic induction / Eddy-current (Depends on optional probe connected)
Applications	Non-magnetic coating on iron and steel (ferrous) substrates Insulating coatings on non-ferrous substrates
Resolution	0.1µm (less than 100µm), 1µm (100µm or greater)
Data memory	Approx. 24,000 points
Functions	Number of measurements, Average value, Standard deviation, Maximum value, Minimum value, Block numbers, Group numbers
Probe	EP-100 / HP-100 (not included)
Output	USB
Power source	AC100-240V (50/60Hz) or 1.5 ("AA" size Alkaline batteries) x 4 (main unit), Printer ("AA" size Alkaline batteries) x 4
Dim. & weight	126(W) x 256(D) x 93(H)mm, 0.75kg
Accessories	Calibration plate, Iron substrate, Aluminium substrate, Batteries (1.5V, "AA" size Alkaline), Probe adapter, AC adapter, Printer paper, Carrying Case, Operating manual
Options	Electromagnetic Probe "EP-100", Eddy-current Probe "HP-100", Calibration plates (thicknesses other than those available as standard accessories), Measuring stand LW-990(P.26)

## Electromagnetic Probe

## EP-100



- Compatible with coating thickness tester L-500
- Electromagnetic probe (for magnetic metal)
- Stores up to 50 applications

## Specifications

Mea. method	Electromagnetic induction
Applications	Non-magnetic coating on iron and steel (ferrous) substrates
Mea. range	0-2500µm or 99.0mils
Accuracy	Under 15µm: ±0.3µm, 15 to 1000µm: ±2%, 1000µm or greater: ±3%
App. memory	50 Types of calibrations curves
Dimensions	φ13 x 90(L) mm (sensor part excluding cable)

## Eddy-current Probe

## HP-100



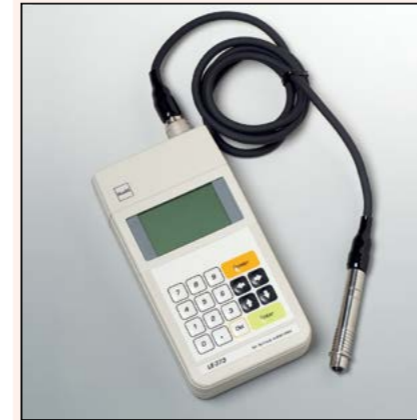
- Compatible with coating thickness tester L-500
- Eddy current probe (for non-magnetic metals)
- Stores up to 50 applications

## Specifications

Mea. method	Eddy-current
Applications	Insulating coatings on non-ferrous substrates
Mea. range	0-1200µm or 47.0mils
Accuracy	Under 50µm : ±1µm, 50µm or greater : ±2%
App. memory	50 Types of calibrations curves
Dimensions	φ13 x 90(L) mm (sensor part excluding cable)

## Electromagnetic Coating Thickness Tester

## LE-373



- Mid-class model
- Measurement Range of 0 - 2500 µm
- Records 39000 data sets, statistical calculation function

## Specifications

Mea. method	Electromagnetic Induction Method
Applications	Non-magnetic coating on ferrous metal
Mea. range	0-2500µm or 99.0mils
Accuracy	<50 µm ± 1 µm, ≥50 µm to <1000 µm ± 2%, ≥1000 µm ± 3%
Resolution	<100µm, 0.1 µm; ≥100 µm, 1 µm
Data memory	Approx. 39,000 points
App. memory	100 Types of calibrations curves
Probe	Single-point constant-pressure type probe (LEP-J)
Display method	Digital (LCD with backlight, smallest displayed unit 0.1 µm)
External output	PC(USB or RS-232C),printer(RS-232C)
Power supply	1.5V alkaline batteries ("AA" size x 4), 80 mW (with backlight off)
Battery life	100 Hours (continuous use with backlight off)
Functions	16 Types of internal functions
Dim. & weight	75(W) x 145(D) x 31(H) mm, 0.34 kg
Accessories	Calibration plate set, Ferrous metal substrate, Carrying Case, 1.5V alkaline batteries ("AA" size x 4), Probe adaptor, Operating manual
Options	Calibration plates (thicknesses other than those available as standard accessories), Measuring stand LW-990(P.28), Printer VZ-380, USB converter, Data logger software LDL-03(P.33), Data management software "McWave Series" and "MultiProp"

## Eddy-current Coating Thickness Tester

## LH-373



- Mid-class model
- Measurement Range of 0 - 1200 µm
- Records 39000 data sets, statistical calculation function

## Specifications

Mea. method	Eddy-current Method
Applications	Insulating coating on non-ferrous metal substrate
Mea. range	0-1200µm or 47.0mils
Accuracy	<50 µm ± 1 µm, ≥50 µm to <1000 µm ± 2%, ≥1000 µm ± 3%
Resolution	<100 µm, 0.1 µm; ≥100 µm, 1 µm
Data memory	Approx. 39,000 points
App. memory	100 Types of calibrations curves
Probe	Single-point constant-pressure type probe (LHP-J)
Display method	Digital (LCD with backlight, smallest displayed unit 0.1 µm)
External output	PC(USB or RS-232C),printer(RS-232C)
Power supply	1.5V alkaline batteries ("AA" size x 4), 80 mW (with backlight off)
Battery life	100 Hours (continuous use with backlight off)
Functions	16 Types of internal functions
Dim. & weight	75(W) x 145(D) x 31(H) mm, 0.34 kg
Accessories	Calibration plate set, Aluminium substrate, Carrying Case, 1.5V alkaline batteries ("AA" size x 4), Probe adaptor, Operating manual
Options	Calibration plates (thicknesses other than those available as standard accessories), Measuring stand LW-990(P.28), Printer VZ-380, USB converter, Data logger software LDL-03(P.33), Data management software "McWave Series" and "MultiProp"

## Dual-Type Coating Thickness Tester

## LZ-373



- Mid-class model
- Electromagnetic and eddy current probes provided

## Specifications

Mea. method	Uses both Electromagnetic Induction and Eddy-current Methods
Applications	Non-magnetic coating on ferrous metal substrate and insulating coating on non-ferrous metal substrate
Mea. range	Electromagnetic Induction : 0-2500µm or 99.0mils Eddy-current : 0-1200µm or 47.0mils
Accuracy	<50 µm ± 1 µm, ≥50 µm to <1000 µm ± 2%, ≥1000 µm ± 3%
Resolution	<100 µm, 0.1 µm; ≥100 µm, 1 µm
Data memory	Approx. 39,000 points
App. memory	50 Types of electromagnetic calibrations curves, 50 types of eddy current calibration curves.
Probe	Single-point constant-pressure type probe (LEP-J, LHP-J)
External output	PC(USB or RS-232C),printer(RS-232C)
Power supply	1.5V alkaline batteries ("AA" size x 4), 80 mW (with backlight off)
Functions	16 Types of internal functions
Dim. & weight	75(W) x 145(D) x 31(H) mm, 0.34 kg
Accessories	Calibration plate set, Ferrous metal substrate, Aluminium substrate, Carrying Case, 1.5V alkaline batteries ("AA" size x 4), Probe adaptor etc.
Options	Calibration plates (thicknesses other than those available as standard accessories), Measuring stand LW-990(P.28), Printer VZ-380, USB converter, Data logger software "LDL-03(P.33)", Data management software "McWave Series" and "MultiProp"



## Dual-Type Coating Thickness Tester

## LZ-990 "ESCAL"



- Reasonably priced and small sensor integrated
- Features automatic basis material judgement
- Measurement range of 0 - 2000 µm

## Specifications

Mea. method	Uses both electromagnetic induction and eddy-current methods (with automatic selection function)
Applications	Non-magnetic coating on ferrous metal substrate and insulating coating on non-ferrous metal substrate
Mea. range	0-2000µm or 0-80mils
Accuracy	<50 µm ± 1 µm, ≥50 µm to <1000 µm ± 2%, ≥1000 µm to <2000 µm ± 3%
Resolution	<100 µm, 0.1 µm; ≥100 µm, 1 µm
Display format	Digital (backlit LCD, smallest displayed unit 0.1 µm)
Data memory	Approx. 1000 points
App. memory	8 Types of electromagnetic or eddy current methods, total 16 Cal. curves
Power source	2X 1.5V Batteries ("AAA" size Alkaline), 40 mW (backlit OFF)
Functions	Lot classification, Auto Power ON/OFF, Clock, Upper and lower limits, Statistical calculations, etc, total 15 functions
External output	Can be output to PC (USB) or printer (RS-232C)
Dim. & weight	82(W) x 99.5(D) x 32(H) mm, approx. 0.16kg
Accessories	Zero plate holder (Ferrous metal / Aluminum ), Cal. plates (50, 100, 1000 µm), Carrying pouch, 2x 1.5V Batteries ("AAA" size Alkaline), WristStrap
Options	Cal. plates (thicknesses other than those available as standard accessories), Measuring stand LW-990(P.28), Printer VZ-380(P.30) (incl. cable VZC71), USB PC cable, Transparent protective cover, Data Logger Software LDL-01

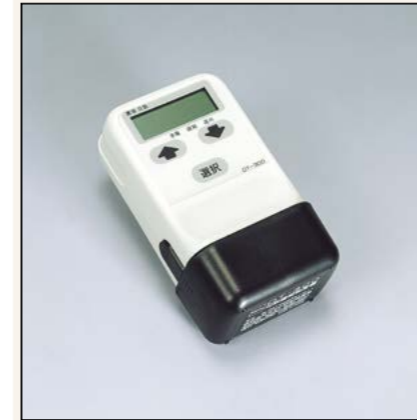
Metal Detector  
EB-610

- Detects metals and sounds alarm buzzer
- Detection diameter 22 mm coins at a distance of 70 mm

## Specifications

Detection Method	Pulse induction
Warning Method	Buzzer
Power Source	9V battery (006P)
Dim. & weight	115(W) x 170(H)mm, 0.28kg

*The detection power of this unit depends on the size and position of the piece of metal. For inquiries regarding details, please contact us.*

Harvest Monitor  
OT-300

- Notifies the optimal harvest timing of paddy rice with accumulated temp.
- Manages up to four fields within a two km radius per unit

## Specifications

Mea. method	Thermostat temperature detection
Applications	Accumulated field temperature
Mea. range	A fixed area of a radius of 2km (depending on conditions)
Display format	Digital(LCD)
Power source	9V (Alkaline battery)
Dim. & weight	Main unit: 60(W) x 45(D) x 105(H)mm, 0.15kg Support post: 30 x 30 x 1300(L)mm x 2 Sunshade hood: 200(W) x 200(D) x 250(H)mm

Friction Tester  
3D Muse TYPE: 37i

- Can be used in many situations thanks to superior portability
- Supports measurement of inclines, walls and ceilings

## Specifications

Mea. range	Coefficient of static friction : 0.000-1.250 (Refer to Section 9-4)
Resolution	0.001
Detector	VCM photosensor
Indicator	LED 7 segments
Power source	Batteries 4pcs. "AA" size Alkaline
Dimensions	140(W) x 56(D) x 140(H) mm
Weight	Net 0.8kg / Shipment 2.0kg

Friction Tester  
Muse TYPE : 94i-II

- Measures coefficient of static friction between objects easily
- Good visibility with four-digit LED digital display

## Specifications

Mea. range	Static friction coefficient 0.000-1.600
Resolution	0.001
Detector	VCM photosensor
Indicator	7 Segment Red Color LED 4 Digits
Power source	Batteries 4pcs. "AA" size Alkaline
Dimensions	188 (W) x 62 (D) x 64 (H) mm
Weight	Net 0.6kg / Shipment 2.0kg

### Windshield with Deodorizer FW-100



**Specifications**

Dimensions	333(W) x 465(D) x 509(H) mm (when assembled)
Weight	5.3 kg
Applicable devices	Infrared moisture analyzer FD-800, FD-720, FD-660, FD-620, FD-610, FD-600, FD-240
Set contains	Upper lid (includes shutter, 2x deodorizing filters), 2x Side panels, Rear panel, Front face metal fixtures
Replacement parts	Deodorizing filter

- Protects the infrared moisture analyzer from disturbances such as wind
- Adsorbs odor issued when heat drying with filter

### Controller KJT-CNT2



**Specifications**

Number of Analytical curves	Max 99
Time constant	0 - 99.9(0.1sec./step)
Display refresh cycle	0.5 seconds
Analog current output	DC4 - 20mA
External comm.	RS-485, RS-232C / USB / LAN(Optional)
Fialure output	Contact point output
Alarm output	Complies with upper/lower limit setting values
Ambient cond.	0-40°C, 0-95%RH (no condensation)
Displays	Red color 7 segment LED, LCD display
Power source	AC 100V-220V±10% (50/60Hz), 20VA
Dimensions	270(W) x 258(D) x 196-246(H)mm
Weight	7Kg
Option	Interface board

- To be used by connecting with an in-line NIR moisture tester and analyzer
- Monitors numerical values in locations remote from the main unit

### Measuring Bench LW-990



**Specifications**

Dim. & Weight	150(W) x 210(D) x 280(H) mm, 2.5 kg
Compatible Sensors	Probe type: LEP and LHP-20/20C/30/30C/J, EP-100, HP-100 Hand-held type: LZ-990
Accessories	Two screws, attachment for LZ-990, cable grip, probe holder (black / white), probe attachment, bolts, shaft stand, two hexagonal Wrenches, accessory case, manual

- With an assist stand stabilizing measurement with constant force
- Applicable probes/ instruments: LEP / LHP series, EP-100, HP-100, LZ-990



Fitted up with LZ-990



Fitted up with LZ-373

### Grain Polisher PEARLEST



**Specifications**

Sample weight	Brown rice: approximately 10 g Barley: approximately 10 g
Time for polishing	Brown rice: 30 to 40 seconds Barley: 180 to 240 seconds The time is only a guideline. It is sample/moisture dependent
Dependent.	Brown rice : 30 sec, Barley : 1 min.
Power source	100 V AC to 240 V AC (50/60 Hz)
Dim. and weight	95(W) x 130(D) x 160(H) mm, Net 2.0kg / Shipment 4.0kg
Accessories	Pallet, Brush, Paint brush, Spoon, AC adapter, Accessory case
Opsions	Pearlest Timer TZ-910, Parts for polishing barley and rice for sake

- Optimal for inspecting colored grain due to vermin, heat, mold and bacteria
- Optimal for adequacy checking for barley
- Automatically stops with optional timer

### Grain Crusher TQ-100



**Specifications**

Sample weight	5g
Grain size	20 - 30 meshes (rice)
Dimensions	80(W) x 70(D) x 180(H) mm
Weight	Net 1.2kg / Shipment 3.0kg

- Produces uniform crushed samples for infrared moisture analyzer
- In addition to grains, food and medicine can be crushed

### Manual Rice Husker TR-130



**Specifications**

Rubber roller	27mm in diameter, hardness 85
Sample weight	8g
Dimensions	112/145(W) x 45(D) x 70 /80(H) mm
Weight	Net 0.28kg / Shipment 1.0kg
Option	Motorization adapter

- Separates husk and brown rice to different trays
- Worn rollers can easily be replaced
- Accessory of the Riceter f commercialized



## Automatic Rice Husker TR-260



### Specifications

Capacity	1000 Pcs whole grain (approx.20g) / mm
Safety system	Automatically cutoff when overloaded
Moisture range	12 - 18%
Power source	AC 100-240 V (50/60Hz)
Dimensions	205(W) x 130(D) x 130(H) mm
Weight	1.8kg

- Makes unpolished rice sample of 20g from rough rice in approx. 60 seconds
- Separates rough and unpolished rice and stores them in separate cases

## Fresh Concrete Shaker TZ-610



### Specifications

Shaking method	Vibrator style
Applications	Fresh concrete
Time required	Approx. 5 min (with three cases of test samples for the fresh concrete and sand moisture tester)
Ambient temp.	0-40 °C
Power source	Custom-ordered 18.0V 4.0Ah lithium-ion battery
Dim. & Weight	360(W) x 454(D) x 620(H) mm, Approx.16.0kg.
Accessories	Mixer (#4.75 mm), Spatula, Sample reception bat, Rechargeable batteries x2, Recharger

- Sifter for HI-300, HI-330
- Quick wet screening
- For generating uniform samples without individual user differences

## Printer VZ-380



### Specifications

Printing method	Thermal dot
Paper width	112mm
Ambient cond.	0 - 50°C, 30 - 80% RH (no condensing)
Power source	AC100-240V, 50/60Hz
Dim. & Weight	145(W) x 135(D) x 58(H)mm, Approx.0.5kg
Compatible devices	FD-660, MT-900, HK-300 series, PB-3100 series, PQ-520, HB-300, C-130 / C-600, LZ-990 etc.

- Thermal printer connectable with many products
- Optional battery pack is available

## Printer VZ-390



### Specifications

Printing method	Thermal dot
Paper width	58mm
Ambient cond.	0 - 35°C
Power source	AC100V-240V, 50/60Hz OR 7.4V Li-ion battery
Dim. & Weight	83(W) x 130(D) x 45(H)mm, Approx.0.3kg (including battery)
Compatible devices	HI-300/330, PM-650, MT-900, HK-300, HB-300, HB-610, HX-410, HX-500

- Thermal printer connectable with many products
- Portable with built-in battery

## Printer VZ-800



### Specifications

Printing method	Thermal dot
Paper width	58mm
Ambient cond.	0 - 50°C, 35 - 85% RH (no condensing)
Power source	AC100V / 120V / 230V
Dim. & Weight	89.5(W) x 175(D) x 113(H)mm, Approx.0.5kg (printer only)
Compatible devices	KB-230, KB-270, AN-920

- Compact thermal printer
- High-speed printing with thermosensitive line dots

## Printer VZ-810

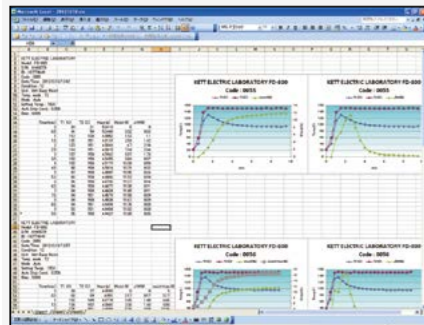


### Specifications

Printing method	Thermal dot
Paper width	58mm
Ambient cond.	5 - 45°C, 10 - 85% RH (no condensing)
Power source	AC100-240V, 50/60Hz
Dim. & Weight	106(W) x 170(D) x 116.5(H)mm, Approx.0.4kg (printer only)
Compatible devices	NIR Rice Composition Analyzer AN-820

- Compact thermal printer
- High-speed printing with thermosensitive line dots

## Data Logger Software FDL-02

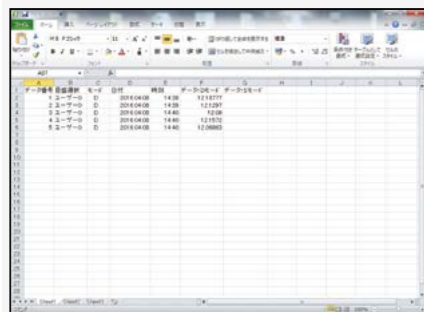


- Data transfer software for FD series
- Automatically pastes measurement data into Excel
- Can manage measurement data

### Specifications

Compatible devices	Infrared Moisture Analyzers FD-800 / FD-720 / FD-660
OS	Windows 7(32/64bit) / 8(32/64bit) / 8.1(32/64bit) / 10(32/64bit) / 11 (64bit)
App. software	Microsoft Excel 2003 / 2010 / 2013

## Data Logger Software HDL-01 / HDL-02 / HDL-03

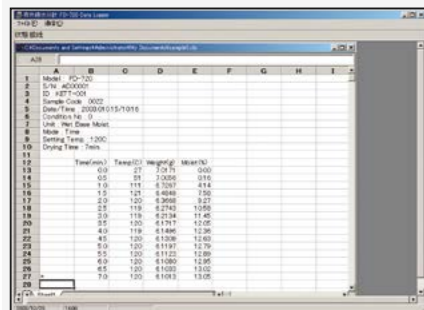


- Automatically pastes measurement data into Excel
- Can manage measurement data

### Specifications

Compatible devices	HDL-01: Concrete and Mortar Moisture Tester HI-520-2 HDL-02: Wood Moisture Tester HM-540 HDL-03: HB-300, HK-300, MT-900, HX-120, HX-410, HX-500, HB-610
OS	Windows 7(32/64bit) / 8.1 (32/64bit) / 10(32/64bit)
App. software	Microsoft Excel 2007 / 2010 / 2013 / 2016

## Data Logger Software KDL-01

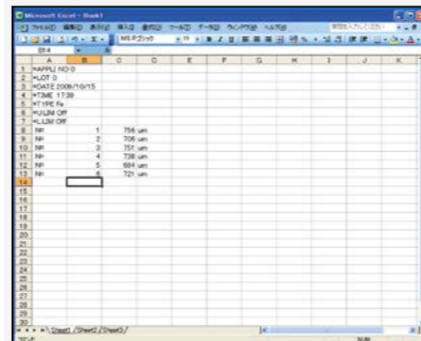


- Data transfer software
- Automatically pastes measurement data into Excel
- Can manage measurement data

### Specifications

Compatible devices	Coating thickness testers LE-200J / LH-200J / LZ-200J Infrared Moisture Analyzer FD-610 Wood Moisture Tester MT-900 Paper Moisture Tester HK-300 series Universal Moisture Tester HB-300
OS	Windows 7(32/64bit) / 8(32/64bit) / 8.1(32/64bit) / 10(32/64bit)
App. software	Microsoft Excel 2003 / 2010 / 2013 / 2016

## Data Logger Software LDL-01 / LDL-02 / LDL-03

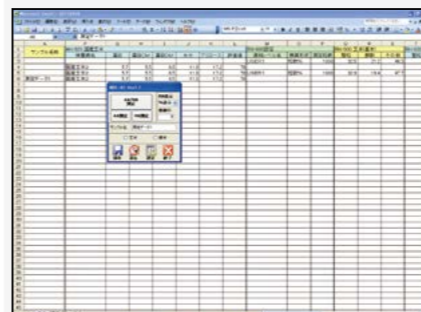


- Data transfer software for coating thickness tester LZ-990, L-373 and 370 series
- Can manage measurement data

### Specifications

Compatible devices	LDL-01: Coating Thickness Tester LZ-990 LDL-02: Coating Thickness Testers LE-370 / LH-370 / LZ-370 LDL-03: Coating Thickness Testers LE-373 / LH-373 / LZ-373
OS	Windows 7(32/64bit) / 8(32/64bit) / 8.1(32/64bit) / 10(32/64bit)
App. software	Microsoft Excel 2003 / 2010 / 2013 / 2016(only LDL-01)

## Data Logger Software NDL-04

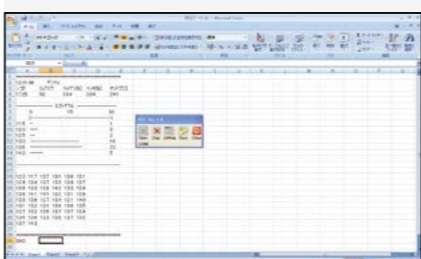


- Data transfer software for rice analyzer
- Automatically pastes measurement data into Excel
- Can manage measurement data

### Specifications

Compatible devices	NIR Rice Composition Analyzer AN-820, NIR Rice Composition Analyzer AN-920, Single-grain Rice Inspector RN-600, RN-700, PM-650 series
OS	Windows 7(32/64bit) / 8(32/64bit) / 8.1(32/64bit) / 10(32/64bit)
App. software	Microsoft Excel 2003 / 2007 / 2010 / 2013 / 2016(64bit)

## Data Logger Software PDL-01



- Data transfer software for PQ-520
- Automatically pastes measurement data into Excel
- Can manage measurement data

### Specifications

Compatible devices	Single Kernel Grain Moisture Tester PQ-520
OS	Windows 7(32/64bit) / 8(32/64bit) / 8.1(32/64bit) / 10(31/64bit) / 10(31/64bit)
App. software	Microsoft Excel 2003 / 2010 / 2013





**KETT ELECTRIC LABORATORY Co. Ltd.**

1-8-1 Minami-Magome, Ota-ku, Tokyo 143-8507, JAPAN

☎ +81-3-3776-1121 📠 +81-3-3772-3001

🌐 <https://www.kett.co.jp/english/contacts/>

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