IN LINE WITH THE FUTURE

EXCELLENT TABLET AND CAPSULE TESTING TECHNOLOGY FOR R&D, PRODUCTION AND QUALITY CONTROL

By Kraemer & Ischi

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Dear readers,

What makes a tablet testing system an excellent product?
Is it the systems quality? Its operating life? Professional advice? Or is it the impressive range of services?

It comes down to a combination of all these aspects, plus more than 30 years of experience in the industry that make our products so unique. Tablet testing technology by Kraemer & Ischi can be found wherever there is a need for the highest level of quality.

Kraemer & Ischi tablet testing systems can be found in research and production for ...

- pharmaceuticals
- neutraceuticals
- food
- veterinary products
- oral hygiene
- electrical technology
- washing and dishwashing products
- pellets
- industrial press products

We deliver a made-to-measure solution to meet your specific requirements. This catalogue provides you with an overview of devices, services and fittings in the IPC.line for industrial production and LAB.line, our new product line for research and laboratory use.

Why Kraemer & Ischi?

+ Solutions that combine quality and reliability to improve your efficiency and productivity.
+ We provide standard and custom designed solutions tailored to your needs.
+ Benefit from more than 30 years of experience in physical tablet testing equipment.
+ **We always put high quality and excellent service first.**

Contents

LAB.line

Compact, space-saving laboratory devices for identifying the physical properties of tablets and capsules efficiently

LABORATORY TESTING SYSTEMS

IPC.line

Wear-resistant and reliable automatic tablet and capsule testing systems for in-process control

INDUSTRIAL TESTING SYSTEMS

OPTIONS

Accessories

Accessories and software for the entire product line – LAB & IPC

Kraemer & Ischi

LAB.line

COMPACT, SPACE-SAVING LABORATORY DEVICES FOR IDENTIFYING THE PHYSICAL PROPERTIES OF TABLETS, CAPSULES, TABLET CORES, GRANULES ETC. EFFICIENTLY

LABORATORY TESTING SYSTEMS

MEASUREMENT PARAMETERS

- HARDNESS
- LENGTH / DIAMETER
- THICKNESS
- EXT. SCALE

ADVANTAGES

+ User-friendly 7-segment display with buttons
+ Fast, simple calibration
+ Small and robust

OPTIONS

- Measuring range extension (page 45)
- Manual thickness gauge
- External scale
- Soft gelatine capsule mode
- Cutting force mode

STANDARD DEVICE

HC6.2

The simple tablet hardness tester

Simple operation via buttons and easily readable displays means you can handle the equipment safely even wearing gloves and protective clothing.
Measure hardness and length with the standard device. Print out your test results directly on an external printer via a USB port. You can manage up to 99 products externally and import them using a USB stick. An integrated product memory is available as an option.

	MEASUREMENT PARAMETERS			
MODEL	HARDNESS	DIAMETER/ LENGTH	THICKNESS	WEIGHT (external scale)
HC 6.2	●	●	—	—
HC 6.2 EXT	●	●	●	—
HC 6.2 EXT+	●	●	●	●

MODEL	W x D x H (mm)	Weight (kg)
HC 6.2 STANDARD VERSION	224 x 195 x 115	7.5
HC 6.2 EXT (thickness gauge only)	252 x 195 x 205	10

HC6.2 for hardness and diameter testing

HC 6.2 with external thickness gauge and scale

NEW

STANDARD DEVICE

HC6.2 WIP

IP65

Washable hardness tester for use in an isolator

The HC6.2 WIP is designed for the use in an isolator. It is based on the HC6.2, but the following features set it apart:

- IP65 enclosure (fully encapsulated)
- External operation
  (no operating display on the device)
- Wash down capability

MODEL	W x D x H (mm)	Weight (kg)
HC6.2 WIP	190 x 310 x 141	7
CONTROL PANEL	250 x 240 x 50	2.5

Dimensions of closed system

MEASUREMENT PARAMETERS

- HARDNESS
- LENGTH / DIAMETER

ADVANTAGES

+ User-friendly 7-segment display with optimized buttons for operation in isolators wearing gloves
+ No discharge required for wet cleaning
+ Fast, simple calibration
+ Space-saving and robust

OPTIONS

- Load cells:
  50 N, 500 N (standard)

MEASUREMENT PARAMETERS

- HARDNESS
- LENGTH / DIAMETER
- WIDTH
- THICKNESS
- EXT. SCALE
- EXT. THICKNESS

ADVANTAGES

+ Clean design
+ Integrated LED status lamp
+ Intuitive touchscreen operation
+ Measuring range (length) up to 60 mm

OPTIONS

- Measuring range extension (page 45)
- Base with two larger collecting bins
- External thickness gauge
- External scale

STANDARD DEVICE

H-series

Manual tablet hardness testers

The manual laboratory testers of the H-series in the new LAB.line design combine state-of-the art technology with usability: rounded shapes, generous radii and smooth surfaces make cleaning child's play.

The operation of the embedded touch display is simple and intuitive: you can change a product or view informative test results with just a few clicks.

As an option, you can extend the measuring range to 800 N, and test and analyze even harder tablets and other compressed products. Connect an external scale (Sartorius/Mettler) to the H5 version and test all five parameters.

MODEL	W x D x H (mm)	Weight (kg)
H-SERIES	268 x 230 x 102	7

Compact, user-friendly, powerful

H-series measurement parameters

MEASUREMENT PARAMETERS

MODEL	HARDNESS	DIAMETER/ LENGTH	WIDTH	THICKNESS	WEIGHT (external scale)	THICKNESS (external)
H2	●	●	—	—	—	—
H3	●	●	●	—	—	—
H4	●	●	●	●	—	—
H5	●	●	●	●	●	—
H5+	●	●	●	●	●	●

The advantages of the H-series. Smart, intuitive and high quality.

Clean design

+ With its rounded corners and edges, the H-series is easy to clean

Intuitive touchscreen operation

+ Insert tablet and start testing
+ The new touchscreen user interface of the H-series is simple and self-explanatory

Measuring range up to 800 N as an option

+ Extend your hardness measuring range to 800 N
+ Ideal for veterinary, detergents and industrial applications such as dishwashing tabs, laundry tabs, catalysts or pellets.

H-series equipment details.
Compact, user-friendly, powerful.

Collecting bin for tested tablets

Basic H5 version with external scale

Exchangeable fixed jaw for different tablet shapes

Large collecting bin is easy to install

Easy measurement of the five parameters hardness, length/ diameter, width, thickness and weight

The H5+ is a manual single tablet testing system that covers all five major tablet parameters in one device. The results of the different measuring stations are displayed in an overall report.

NEW

STANDARD DEVICE

P-series

Semi-automatic tablet hardness testers

These versatile laboratory testers from the P-series offer you the latest technology, a space-saving design and maximum flexibility. Adapt the basic devices (P2-P5) to your requirements at any time.

The new LAB.line design also boasts numerous practical advantages. Thanks to the generous radii, rounded corners and smooth surface, cleaning is made easy.

The intuitive touch display enables fast, easy operation. The results are shown immediately on the clearly laid out display, and can be printed out or shown as a PDF report.

MEASUREMENT PARAMETERS

- HARDNESS
- LENGTH / DIAMETER
- WIDTH
- THICKNESS
- WEIGHT

ADVANTAGES

+ Sensor-aided navigation
+ Integrated 360° LED status display
+ Automatic tablet positioning
+ Clean design

OPTIONS

- Measuring range extension (page 45)
- Covered model with integrated breakage chamber
- Vibralign system
- Roto system (manual, adjustable grooved plate) for simple positioning of test specimens in the P3 and P4 models

MEASUREMENT PARAMETERS

MODEL	WEIGHT	THICKNESS	DIAMETER/ LENGTH	HARDNESS	WIDTH
P2	●	●	—	—	—
P3	—	●	●	●	—
P4	●	●	●	●	—
P5	●	●	●	●	●

MODEL	W x D x H (mm)	Weight (kg)
P2 - P5	320 x 320 x 185	< 15

Tablet positioning that's one of a kind with the Vibralign and Roto systems

The P5-series sets new standards in the laboratory testing technology. The P5 version tests all five parameters automatically. The Vibralign and Roto systems make it easy to position tablets precisely.

Vibralign system

The tablets are precisely rotated 90° and positioned for width measurement using the Vibralign system incorporated in the hardness station.

Roto system
(manual, adjustable grooved plate)

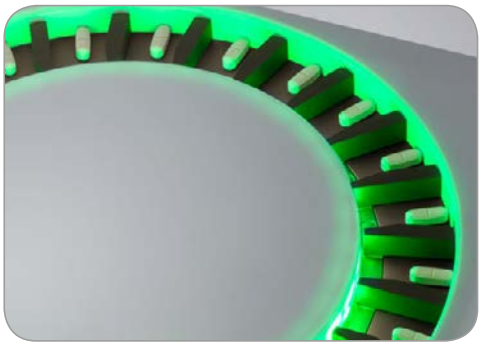
In the P4 model, the Roto system (manual, adjustable grooved plate) ensures easy tablet positioning for length measurement. You can choose from three different settings: a flat, light or deep groove.

The advantages of the P-series.
Precise, high quality and user-friendly.

The P-series always provides the best possible solution for your requirements.

Intuitive navigation

+ Insert tablets and start testing
+ The new touchscreen user interface of the P-series is simple and self-explanatory



Integrated 360° LED status display

+ The clear LED display provides information on the device's status at all times
+ The status of the device can easily be seen even from a distance

Automatic tablet positioning

+ Length, width, hardness, ...
+ The P-series accurately places tablets in their test position

Clean design

+ With its rounded corners and edges, the P-series is easy to clean

MEASUREMENT PARAMETERS

FRIABILITY

ABRASION

ADVANTAGES

+ Compact stainless steel housing
+ Quick drum assembly
+ Automatic emptying

OPTIONS

- Friability test drum
- Abrasion test drum

STANDARD DEVICE

AE 1+2

Friability and abrasion tester

The abrasion and friability testing device consists of one or two test stations. If required, test drums can be equipped to test for wear due to rolling and falling or to test the abrasion of tablets, tablet cores, granules etc.

The tester meets all the latest requirements of the European & US Pharmacopoeia, GMP and GLP.

- Quick drum assembly
- User-friendly membrane keypad
- GMP-compliant stainless steel housing

MODEL	L x W x H (mm)	Weight (kg)
AE 1	320 x 300 x 250	6.5
AE 2	320 x 430 x 250	7

Friability and abrasion testing device AE 2 with 2 test drums

STANDARD DEVICE

DISI-M

Semi-automatic disintegration tester with LCD display and individual timer

The DISI-M tablet disintegration tester offers user-friendliness in a tried-and-tested design. Opt for the manual DISI-M disintegration tester as a cost-effective alternative to the automatic DISI-A model. The DISI-M fulfils all EP/USP requirements.

The testing baskets can be attached and removed quickly thanks to the magnetic coupling. A few quick steps is all it takes to dismantle the testing baskets ready for cleaning.

As each station is powered separately, you can test up to four different products at the same time. The softstart function ensures that the testing basket is immersed in a controlled manner.

MODEL	Stations (pieces)	L x W x H (mm)	Weight (kg)
DISI-1M	1	340 x 250 x 750	20
DISI-2M	2	475 x 250 x 750	30
DISI-3M	3	610 x 250 x 750	40
DISI-4M	4	750 x 250 x 750	50

The DISI-M disintegration tester is available with a choice of 1 to 4 measurement stations

MEASUREMENT PARAMETERS

DISINTEGRATION TIME

ADVANTAGES

+ Can be upgraded to DISI-A
+ Magnetic coupling of the testing baskets
+ Available with up to four independent measuring stations
+ Stainless steel housing

OPTIONS

- Testing basket B for tablets from Ø 18 mm
- Testing basket for soft gelatine capsules

Simple & practical: the testing baskets are magnetically coupled

Special testing basket for large tablets

MEASUREMENT PARAMETERS

DISINTEGRATION TIME

ADVANTAGES

+ Automatic endpoint detection
+ Touchscreen operation
+ Magnet coupling of the testing baskets
+ Wireless signal transmission
+ Integrated temperature sensors in testing baskets

OPTIONS

· Testing basket B for tablets from Ø 18mm

STANDARD DEVICE

DISI-A Touch

Automatic disintegration tester

DISI-A Touch

The standalone variant DISI-A Touch is easy to operate using the integrated touchscreen. It is possible to upgrade to PC version at any time. The system fulfils all EP/USP requirements.

The device has 4GB of product memory. The standard printout of DISI-A Touch offers an overview of results in table form. You can export data via a USB stick.

	Stations (pieces)	L x W x H (mm)	Weight (kg)
DISI-1A / TOUCH	1	340 x 250 x 750	22
DISI-2A / TOUCH	2	475 x 250 x 750	32
DISI-3A / TOUCH	3	610 x 250 x 750	42
DISI-4A / TOUCH	4	750 x 250 x 750	52

Special testing basket for large tablets

The DISI-A Touch, seen here with four measurement stations, is operated via the touchscreen.

STANDARD DEVICE

DISI-A

Automatic disintegration tester

DISI-A
The disintegration process is continuously monitored by measuring the tablets thickness with every upward stroke. With DISI-A, you control all operation and data analysis safely and easily via computer and PH21 software.

The system fulfils the requirements of FDA 21 CFR Part 11. All operation procedures are password-protected and monitored continuously by the system. All relevant procedures, for example amendments to master data, calibration and much more, are automatically recorded in the audit trail.

	Stations (pieces)	L x W x H (mm)	Weight (kg)
DISI-1A	1	340 x 250 x 750	22
DISI-2A	2	475 x 250 x 750	32
DISI-3A	3	610 x 250 x 750	42
DISI-4A	4	750 x 250 x 750	52

MEASUREMENT PARAMETERS

DISINTEGRATION TIME

ADVANTAGES

+ Continuous disintegration process monitoring
+ Computer operation
+ Magnet coupling of the testing baskets
+ Wireless signal transmission
+ Integrated temperature sensors in testing baskets

OPTIONS

- Testing basket B for tablets from Ø 18mm
- Complete PC and printer configuration
- Qualification documents

The **DISI-A**, seen here with two measurement stations, is operated via the PH21 computer software

Simple & practical: the testing baskets are magnetically coupled

IPC.line

WEAR-RESISTANT AND RELIABLE AUTOMATIC TABLET AND CAPSULE TESTING SYSTEMS FOR IN-PROCESS CONTROL

INDUSTRIAL TESTING SYSTEMS

OPTIONS

MEASUREMENT PARAMETERS

- HARDNESS
- LENGTH / DIAMETER
- THICKNESS
- WEIGHT
- WIDTH (OPTIONAL)

ADVANTAGES

+ Solid industrial design
+ Reliable results
+ Stand alone use or online with tablet press

OPTIONS

- PH21 Software, 21 CFR Part 11 compliant
- Oblong Centering System (OZB)
- 12, 24 or 48-station feeder
- Single air conveyor system
- Double air conveyor system
- 3-way sorting diverter
- 12, 24 or 48-station sample collector
- Transportation casters

STANDARD DEVICE

UTS 4.1-Series

Automatic testing systems

The UTS 4.1 is a universal and fully automated tablet testing system developed for use in industry. The UTS 4.1 is the proven model from a series of tablet testing systems tested over many years – developed in close collaboration with the pharmaceutical industry. The UTS 4.1 enables you to test round, oblong, oval and rectangular tablets, as well as numerous unusual shapes. For tricky oblong tablets, the tried and tested Oblong Centering System (OZB) is available as an option.

Use the UTS 4.1 as a lab tester or online monitoring device connected to a tablet press. Sampling can be initiated either in the production machine or via our PH21 software.

MODEL	W x D x H (mm)	Weight (kg)
UTS 4.1	450 x 630 x 540	40

UTS 4.1 tablet testing system, the No. 1 among automatic tablet testing systems for IPC and online applications (photo shows optional touch display)

Optional Oblong Centering System (OZB), see page 34

Optional transportation casters, see page 38

BESTSELLER

UTS 4.1-12F

With 12-station feeder

UTS 4.1-12F tablet testing system with 12-station feeder (device also available with touch display)

NEW MODEL

UTS 4.1-S20

Dust-proof version

The dust-proof version of the UTS 4.1-S20 with single tablet feeder guarantees safety at work

OPTION

UTS 4.1 Touch display

With touchscreen operation

User-friendly, intuitive operation via touch display

CUSTOMIZED SOLUTIONS

UTS

If you wish, we can provide special solutions for your specific requirements. Here are a few examples:

UTS	
S7	With special feeder for tablets up to Ø 25 mm
S8	For tablets up to Ø 50 mm
S9	For mini-tablets
S16	With conveyor belt feeder and 5-way sorting diverter
S17	With 2-way sorting diverter
S20-FC	Dust-proof with single tablet feeder

MEASUREMENT PARAMETERS


HARDNESS


LENGTH / DIAMETER


THICKNESS


WEIGHT


ACTIVE INGREDIENT CONTENT

ADVANTAGES

+ Shorter release times
+ Programmable cycles during ongoing production
+ Qualitative and quantitative online analysis
+ For use in the lab and in production
+ Dust-proof

OPTIONS

· Windows software
· Single air conveyor system
· Double air conveyor system
· 24-station sample collector

STANDARD DEVICE

UTS NIR

IP54

Automatic testing system with active ingredient content measurement

The UTS NIR automatic tablet testing system combines the measurement of the physical parameters weight, thickness, diameter, length and hardness with near-infrared spectroscopy (FT-NIR analysis) to determine a tablet's active ingredient content.

The UTS NIR is therefore a fully automated online PAT tool, which can be used in production or as an offline tester in the laboratory.

In conjunction with a tablet press, the system allows you to monitor the production process continuously and transmit all test results directly to the tablet press. This way, you can take action straight away if there's a problem, keeping your production process safe.

In addition, the NIRFlex N-500 FT-NIR transmission spectrometer from Büchi Labortechnik AG enables applications to be reliably transferred from the lab tester to the UTS NIR.

The precise, patented two-jaw centering mechanism positions the test specimen with an accuracy of ± 0.1 mm, guaranteeing very precise measurement results that are standard in the laboratory sector.

Its compact, space-saving design and low height mean the UTS NIR fits under all tablet chutes from the most popular press manufacturers. Depending on customer requirements, various sample collectors are available, permitting further analysis in the laboratory.

Removal of all parts requiring cleaning is uncomplicated and very fast, with no need for tools.

The system conforms to the European and US Pharmacopoeia and is 21 CFR Part 11 compliant.

MODEL	W x D x H (mm)	Weight (kg)
UTS NIR	750 x 590 x 615	107

Robust measuring system

Reliable tablet handover

Precise tablet positioning (patented stamp)

Discharge of NIR specimens

Customized version
of a UTS NIR

MEASUREMENT PARAMETERS

- HARDNESS
- LENGTH / DIAMETER
- THICKNESS
- WEIGHT

ADVANTAGES

+ Option of stand-alone use in the lab
+ No tools required to remove parts for cleaning
+ The test area can be cleaned very easily and thoroughly
+ Integrated specimen orientation

OPTIONS

- PH21 Software, 21 CFR Part 11 compliant
- 12-station feeder with single tablet mode
- Single air conveyor system
- Double air conveyor system

STANDARD DEVICE

UTS IP LR

IP54

Automatic testing systems with protection rating IP54

The UTS IP LR is designed to make sure the work/test area can be thoroughly cleaned. The device is very maintenance-friendly, as all parts can be removed for cleaning with no need for tools.

In the feeder chute, the tablets are automatically de-dusted, separated and conveyed to the test area. Here, a rake system positions the tablets and transports them to the measuring stations. The positioning method upstream of the hardness tester enables almost any shape of tablet to be ideally positioned for diameter and hardness measurements. The tablet stop, pusher and transport segment can be ideally adapted for each product. During product changes, these parts can be replaced in just a few easy steps.

MODEL	W x D x H (mm)	Weight (kg)
UTS IP LR	442 x 615 x 490	40

CUSTOMIZED SOLUTION

UTS IP LR-S2	Version with 12-station feeder Version with cyclone for air transport connection and bypass for single tablets

Patented radial transport rake

STANDARD DEVICE

UTS IP65

Automatic testing system with protection rating IP65

The UTS IP65 is designed for operation in isolators. The UTS IP65 is largely identical to the UTS IP-LR, but the following features set it apart:

- External operation (display and control device outside the isolator)
- Encapsulated weighing device
- Wash down capability

MODEL	W x D x H (mm)	Weight (kg)
UTS IP65	470 x 400 x 450	40
CONTROL DEVICE	350 x 185 x 135	2.5

MEASUREMENT PARAMETERS

- HARDNESS
- LENGTH / DIAMETER
- THICKNESS
- WEIGHT

ADVANTAGES

+ No tools required to remove parts for cleaning
+ The test area can be cleaned easily and thoroughly
+ Integrated tablet orientation

OPTIONS

- PH21 Software, 21 CFR Part 11 compliant
- Single air conveyor system
- Double air conveyor system

Version for an isolator.
Connections via Triclamp DIN DN50

Patented, integrated diverter plate

MEASUREMENT PARAMETERS

- HARDNESS
- LENGTH / DIAMETER
- THICKNESS
- WEIGHT

ADVANTAGES

+ Only testing system with integrated washer nozzles
+ WIP (Wash-In-Place) system
+ WOL (Wash-Off-Line) system
+ Integrated 360° LED status display
+ Hermetically sealed system, class OEB 5
+ No isolator required as the system is sealed

OPTIONS

- PH21 software, 21 CFR Part 11 compliant
- Version for single tablet feed
- Cover with glove ports

STANDARD DEVICE

UTS IP65i

OEB 5 | IP65

Automatic testing system – hermetically sealed & washable

The UTS IP65i system is an add-on to washable tablet presses for WIP or WOL applications, for the processing of medium and high-potency products.

The UTS IP65i is the first unique fully washable, universal testing system launched, and available globally. The work/test area has protection rating IP65 and the cleaning process is fully controlled.

The integrated fail-safe system rules out possible operator errors even in the preparation phase and during the washing process, and ensures error-free routines. There are user-defined parameters for the washing programs, for setting the washing time per washing cycle, the number of washing cycles and the duration of the individual washing phases.

The system can be used in the following ways:

- Online with control via tablet press
- Stand-alone with PH21 software
- Online with PH21 software

MODEL	W x D x H (mm)	Weight (kg)
UTS IP65i	621 x 623 x 687	80

Open construction for optimum washing results

Isolated work area, wash in progress

OEB 5

Compact and space saving design, LED indicating operation status

MEASUREMENT PARAMETERS

WEIGHT

THICKNESS

ADVANTAGES

+ Solid industrial design
+ Reliable, rapid weighing
+ Use as online or stand-alone weighing system

OPTIONS

- PH21 software, 21 CFR Part 11 compliant
- 12-station feeder
- Single air conveyor system
- Double air conveyor system
- 3-way sorting diverter
- 12-station sample collector
- Transportation casters

STANDARD DEVICE

CIW 6.2 / 6.3

Automatic weighing systems

With the automatic CIW weighing system, you can weigh tablets, capsules, dragées and similar products during or after the production process.

The standard device is based on Kraemer's UTS tablet testing systems and features a tablet separating system and a special transport starwheel for precisely positioning the specimen on the integrated scale.

All parts requiring cleaning can be removed quickly and easily with no need for tools.

The CIW 6.3 model is largely identical to the CIW 6.2, except that it additionally features a precise measuring device for determining thickness.

- Lab tester with PH21 software, 21 CFR Part 11 compliant.
- Online monitoring device connected to a tablet press or capsule filler. Sampling can be initiated either from the production machine or via our PH21 software.

MODEL	W x D x H (mm)	Weight (kg)
CIW 6.2 / 6.3	440 x 490 x 470	30

Fast, precise weighing of tablets or capsules with the automatic CIW weighing system

NEW

STANDARD DEVICE

CIW 6.4

Automatic weighing system designed for capsules

The CIW 6.4 automatic weighing system is a special version of the tried and tested CIW 6.2. In addition to the weight, the CIW 6.4 provides optimal and nearly forceless length measurements for capsules. The capsule will be positioned without any impact on the measuring of the capsule length.

MODEL	W x D xH (mm)	Weight (kg)
CIW 6.4	440 x 490 x 470	30

Close-up of length measurement

MEASUREMENT PARAMETERS

- WEIGHT
- LENGTH

ADVANTAGES

+ Solid industrial design
+ Reliable, rapid weighing
+ Use as online or stand-alone weighing system

OPTIONS

- PH21 software, 21 CFR Part 11 compliant
- 12-station feeder
- Single air conveyor system
- Double air conveyor system
- 12-station sample collector
- Transportation casters

BESTSELLER

CIW 6.x-12FS

With 12-station feeder and sample collector

Automatic testing of several products

BESTSELLER

CIW 6.x-S10

Dust-proof version

Dust-proof test chamber

CUSTOMIZED SOLUTIONS

CIW

If you wish, we can provide special solutions for your specific requirements. Here are a few examples:

S9	For mini-tablets only
S9-12F	For mini-tablets with 12-station feeder
S13	Direct feed
S14	3-way sorting diverter in chute
S15	5-way sorting diverter in chute
S16	With conveyor belt feeder

OPTION

Touch Display

User-friendly operation without PC

The touch display is an ideal extension to our proven tablet testing systems. The transition to this way of working is extremely easy, as the screen has the usual appearance. The intuitive navigation offers numerous benefits:

- Store products with nominal values, batches, tolerances, test categories and test parameters
- Choice of various languages
- Print out test results or archived printouts directly on a connected printer
- Create different calibration specifications with interval monitoring
- Print calibration and adjustment reports
- Change setup parameters easily and conveniently
- Track measured values in clearly organized live diagrams
- Read system messages in plain text

ADVANTAGES

+ Easy and convenient operation
+ Can be retrofitted to existing UTS 4.1 testers
+ Network printing function
+ Extensive product memory
+ Switch easily between languages
+ Clear function for changing the device parameters
+ User guidance for adjustments / calibrations
+ Live diagrams during the tests
+ Product management for stand-alone-tests

MODEL	Screen
TOUCH DISPLAY	7-inch

Intuitive operation via touch display

MEASUREMENT PARAMETERS

WIDTH

CENTERING

ADVANTAGES

+ Reliable positioning
+ Width measurement

OPTIONS

· Customized centering jaws

OPTION

Oblong Centering Unit (OZB)

Centering and measuring unit for oblong tablets

The Oblong Centering Device (OZB) is available as an optional module and can be retrofitted to all testing systems Version 4 and higher (UTS). The centering unit is installed above the hardness measuring station. Elongated products such as oblong tablets, for example, are precisely positioned and guided without contact during the hardness test. Customized centering jaws can be provided for unusual shaped tablets.

1. Centering function

Precise positioning and guidance provides you with maximum peace of mind during hardness measurements of oblong tablets. 'Multiple' centering is already integrated and just needs to be activated.

2. Width measurement

The jaws of the OZB unit enable automatic measurement of tablet width. In conjunction with the PH21 software or touch display, width can be set as the fifth measurement parameter. Alternatively, the OZB can also be used in place of the thickness gauge to measure tablet thickness. This special feature solves the problem of oblong tablets lying on their side because of the unfavorable height/side ratio.

MODEL	W x D x H (mm)
OZB	100 x 90 x 150

Centering and width measurement

Oblong Centering Device (OZB)

OPTION

Feeder, sample collector & sorting diverter

Automated feeding and sorting of different batch samples

ADVANTAGES

+ Time savings
+ Tested tablets are sorted before discharge
+ Available for almost all UTS and CIW devices

Feeder & sample collector

Do you have different products and not much time? Simply automate and accelerate the testing process. With the sample feeder, you can let the testers get on with the job without having to start each test cycle individually. Thanks to the additional sample collector, tablets that are not irreparably damaged can be kept for further testing. The sample feeder and collector are available in three sizes – with 12, 24 and 48 stations.

Sorting diverter

Instantly detect and separate good, poor or damaged tablets. With the 3- way sorting diverter, tablets are discharged separately straight after testing. This is extremely helpful, as specimens that are not irreparably damaged can be further analyzed in the laboratory.

Feeder for UTS and CIW 6.x devices

Sorting diverter with the CIW 6.x as an example

Sample collector with transport device with the CIW 6.x as an example

ADVANTAGES

+ Time savings
+ Fast transport

OPTIONS

- Single air conveyor system for connection to single tablet presses
- Double air conveyor system for connection to double carousel tablet presses

OPTION

ATS air conveyor system

Fast transportation of tablets from the tablet press to the tablet testing system

In the ATS air conveyor system, tablets are sampled directly on the press and conveyed through a hose to the respective tester, even over large distances and to other rooms.

The tablet air conveyor system is designed to ensure that tablets are transported gently, with little vibration or friction. Tablets are conveyed by an air flow based on the Venturi principle, through a special transport hose to the collecting cyclone. Here, the tablets are gently slowed down and, as the air is switched off, fall into the tester separation process.

The air conveyor system consists of a conveying valve and collecting cyclone, connected by a hose (Range: 10 meters on the level, up to 5 meters with a height difference of 2 meters).

MODEL	W x D x H (mm)
ATS AIR CONVEYOR SYSTEM	140 x 240 x 170/230

Single air conveyor system ATS-1

Double air conveyor system ATS-2
connected to CIW 6.2

OPTION

Sampling diverter

To sample tablets from the tablet press and feeding them into the tablet testing system

Use the sampling diverter for autonomous production monitoring on older or not fully automated tablet presses. Tablet sampling is controlled by the PH211 software and is not linked to the press. However, it is possible to send a stop signal to the press, or use an audible alarm lamp trigger to alert operators for attention.

ADVANTAGES

+ Can be retro-fitted
+ For autonomous monitoring
+ Height adjustable

Min. 700 mm
Max. 1100 mm

The sampling diverter is height adjustable and is installed at the outlet chute of the production machine

ADVANTAGES

+ Move testers quickly and effortlessly in the press room
+ User-friendly handling: no need to lift the equipment
+ Available for almost all UTS and CIW devices

OPTION

Transportation equipment

For mobility in production

Practical stainless steel transport devices.

The testing systems are fixed in place and can therefore be transported with the greatest of ease. The weight of these solid, industrial constructions should not be underestimated. If the testing devices are on casters, they no longer have to be lifted in order to be moved around the press room or from one press room to another. The transportation device ensures greater occupational safety and speeds up processes in the workplace.

Transportation equipment for UTS 4.1

Transportation equipment for CIW 6.2

Options at a glance

There are numerous extensions available to allow you to adjust your testing system at any time. Find the right option for your application.

MODELS	UTS 4.1	UTS NIR	UTS IP LR	UTS IP65	UTS IP65i	CIW 6.2	CIW 6.3
Touchscreen	○						
OZB	○						
Sample feeder	○		○			○	○
Sample collector	○	○	○			○	○
Sorting diverter	○					○	○
ATS air conveying system	○					○	○
Sampling diverter	○					○	○
Load cell 40 N	○						
Load cell 400 N	●	●	●	●	●		
Load cell 800 N	○						
Transportation equipment	○	●	○		●	○	○

○ Optional

● Included in the standard version

Accessories

ACCESSORIES AND SOFTWARE
FOR THE ENTIRE PRODUCT RANGE – LAB.line & IPC.line

MEASUREMENT PARAMETERS

HARDNESS

ADVANTAGES

+ Comprehensive calibration
+ No calibration weights required
+ Perfect linearity through out the whole measurement range
+ Printed calibration report
+ Safety

ACCESSORIES

Dynamic calibration

Dynamic adjustment and calibration

Each of our tablet testers includes the standard accessories for calibration with weights and gauge blocks. The load cells in our testers have demonstrable, outstanding consistency and linearity.

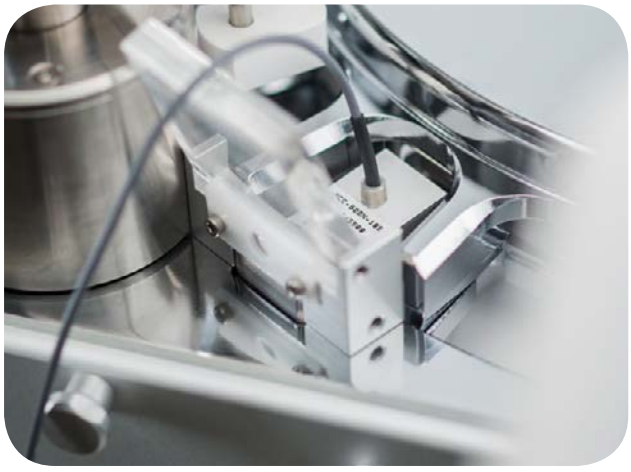
Weights of up to 40 kg would have to be used to ensure comprehensive calibration. This would be impractical and risky. We recommend dynamic calibration for a comprehensive calibration process.

The 'Dynamic calibration package' comprises:

- A certified external load cell
- A software package for the testing device and a display device for dynamic calibration

During the dynamic calibration process, the hardness measuring station approaches the predefined number of measuring points dynamically. The software records the measurement results of the testing device and compares them with the reference load cell. At the end, a calibration report can be printed out.

ACCESSORIES	W x D x H (mm)
DYNAMIC CALIBRATION PACKAGE	90 x 152 x 34



For dynamic calibration, the load cell is inserted into the hardness test station to enable dynamic calibration.

ACCESSORIES

Calibration equipment

Case with weights, Gauge blocks and tools

In this handy case you will find everything you need to calibrate your equipment. Current DKD (German Calibration Agency) certificates are also included.

- Calibration plate to ensure weights are deposited safely
- Weight 5 kg
- Weight 50 g
- Gauge block 20 mm
- Gauge block 10 mm
- Allen wrench 4
- Allen wrench 2.5

ACCESSORIES	W x D x H (mm)
CALIBRATION CASE	300 x 110 x 270

ADVANTAGES

+ Complete set of calibration tools, compactly stored in one case
+ Space-saving and handy
+ DKD-Certificates for weights

OPTIONS

- Gauge block 5 mm for standard OZB (Oblong Centering Unit)
- Gauge block 3 mm for OZB with narrow jaws
- Weight 2 kg for 50 N load cell
- Weight 10 kg for 1000 N load cell (not included in case)

HANDY HINT

Ask our team for slotted weights! These specially designed weights ensure a safe adjustment and calibration process, keeping the weights where they supposed to be.

MEASUREMENT PARAMETERS

HARDNESS

ADVANTAGES

+ Quick control
+ Simple operation
+ Stainless steel design
+ Suitable with UTS4.1, H-Series, HC6.2

ACCESSORIES

Mechanical tablets

Testing devices for daily function control

The mechanical tablet is a small testing device that allows you to conduct quick and easy function control on the hardness measuring station at any time. Each device is tested and certified by the manufacturer. The certificate is included.

The testing device is actuated approx. 20 times in the hardness measuring station and the average value of the last 10 measurements is determined by the operator. This is a verification check that the hardness tester is within specification.

Please note: The function test with the mechanical tablet does not replace calibration!

ACCESSORIES	W x D x H (mm)	Available designs (N)			
MECHANICAL TABLET	24 x 24 x 70	50	100	150	200

Function test with the mechanical tablet

ACCESSORIES

Measuring range extension

Exchangeable load cells for particularly hard or soft tablets

The measuring range extension for the hardness test station is used for particularly hard or soft tablets. For IPC.line testing devices, the load cells can be replaced at a later stage and adjusted to the new products. The matrix on page 35 shows which testing devices can be fitted with special load cells.

MEASUREMENT PARAMETERS

HARDNESS

ADVANTAGES

+ Higher measuring accuracy
+ Subsequent addition possible

LOAD CELLS	Measuring range (N)
500N (STANDARD)	4 – 400
50N (OPTION)	4 – 40
1000N (OPTION)	8 – 800

Standard and mini load cells

ADVANTAGES

+ Advanced functionality
+ Modularly expandable
+ Compliant with 21 CFR Part 11

OPTIONS

- LIMS integration
- Suitable with UTS, CIW, DISI, HC6.2, AE
- OPC interface
- Windows authentification via active directory
- WERUM integration

SOFTWARE

PH21 software

For all testing devices and quality assurance

It's time to be 21CFR Part11 compliant. Enjoy high fuctionality and full data integrity with our software.

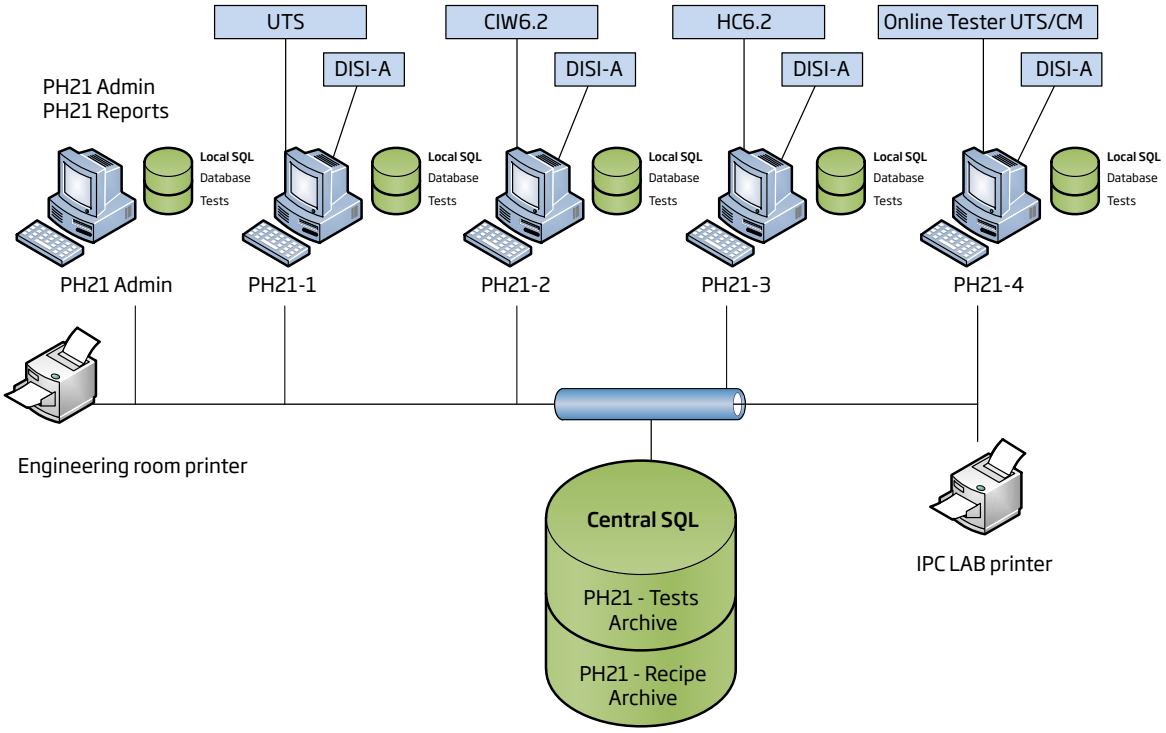
The PH21 pharmaceutical quality assurance system enables you to control and evaluate your tablet testers, disintegration testers and weighing machines centrally. Once it is stored in the central product database, you can use product-specific data for all tests on the connected devices.

The PH21 system supports the connection of up to 32 external pharmaceutical testing devices. Such devices include Kraemer Elektronik's well-known UTS tablet testing systems, tablet hardness testers and disintegration testers, as well as weighing systems for in-process control.

For larger applications, the PH21 system can be installed and operated as a client-server application. The entire software is 100% compliant with FDA 21 CFR Part 11 and allows you to use a wide scope of evaluation options for completed tests. Automatic backups in the background guarantee failsafe in-process control.

Numerous interfaces are available for communication and data exchange with external software applications.

Networking example:



SOFTWARE ACCESSORIES

QM package

Quality documentation package

Enhance your PH21 software. Use the QM package for computer system validation on site or to document product quality. The QM package is available as an option.

ADVANTAGES

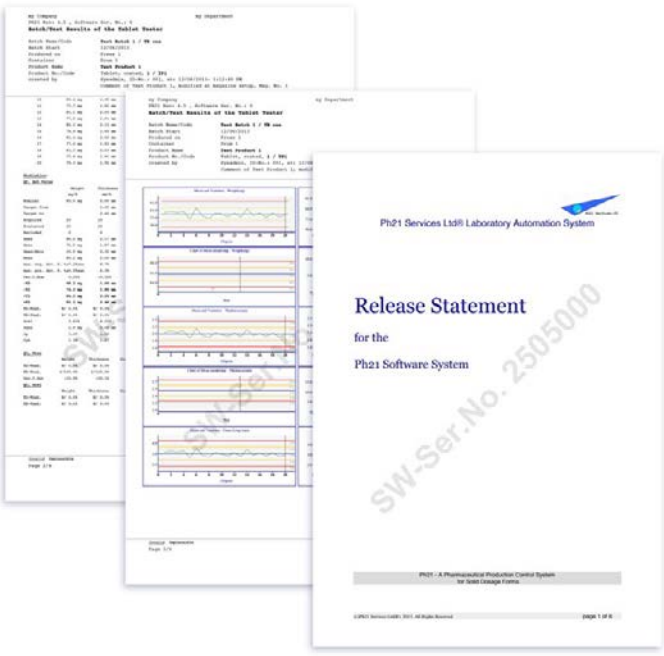
+ Complete documentation
+ Documented quality
+ Efficient system validation

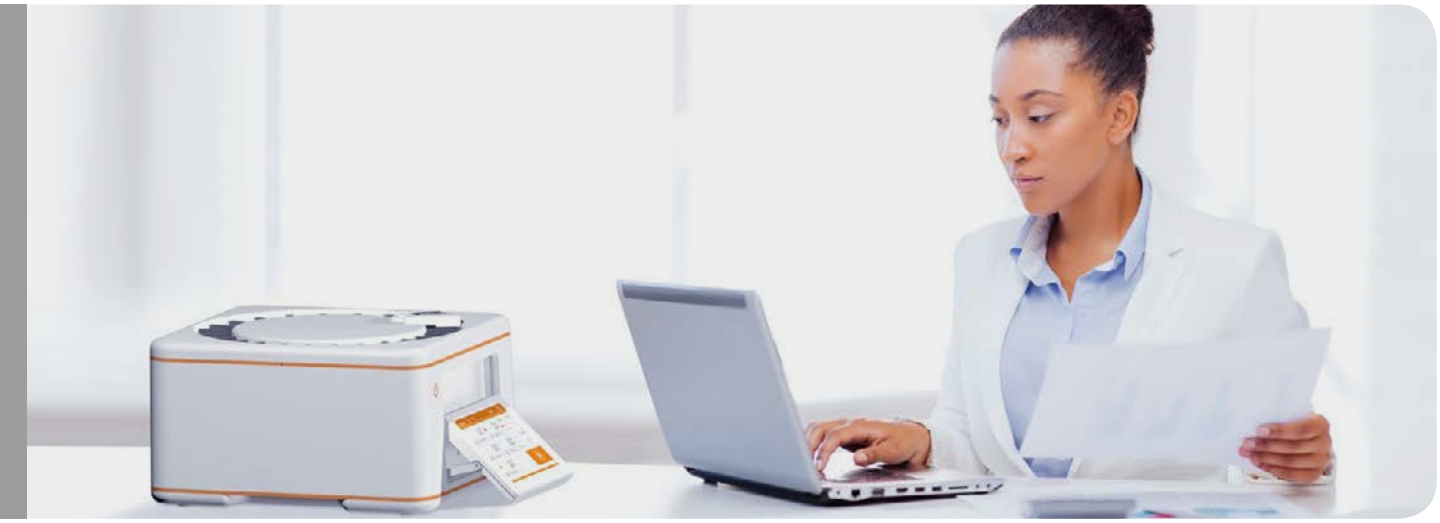
The QM package contains tests for all components in the PH21 software:

- The PH21 main menu
- Automatic testing system applications
- Automatic disintegration time/ testing device applications
- Other external testing device applications such as: hardness testers, laboratory scales, calipers, manually entered values,...
- Other applications, such as: online data transfer, barcode operation, LIMS and WERUM integration ...

Each test contains:

- inspection instructions
- printed PDF reference reports
- audit records





SERVICE

Service & support

Customer services:

- Customer test trials
- Individual demonstration
- Installation
- Calibration
- Training
- Validation support
- Maintenance contracts
- On-site and in-house repair service
- Spare parts

We remain at your disposal for any questions concerning our products and services.

support@ischi.ch

SERVICE

System validation IQ / OQ / PQ

Are you prepared for TQM and audits?

Device qualification as part of quality management or validation is an unavoidable requirement at many companies when it comes to selecting suppliers.

In addition to the final test protocol and the adjustment and calibration protocol, which is delivered together with all testing devices as standard, Kraemer & Ischi issues IQ/OQ documents on request. We offer IQ/OQ documentation to support the customer's IQ/OQ.

support@ischi.ch

IQ – Installation qualification

Installation qualification (IQ) is documented proof that testing devices have been supplied and installed in line with the requirements prescribed in the design qualification and legal safety regulations. The documentation for installation qualification consists of an IQ test plan and IQ report.

The scope of the installation qualification:

- Inventory of the components delivered and check of the order documents
- Conformity check of the manufacturer's documentation (nameplate, delivery note)
- Assembly test and review of correct installation on the basis of the layout plan (if required)

OQ – Operational qualification

Operational qualification (OQ) is a test process that evaluates whether the testing device functions correctly. During the operational qualification, all points specified in the test plan are checked and documented in writing. In some circumstances (otherwise only common for performance qualification (PQ)), checks according to OQ can only be conducted with customer products.

Operational qualification must be passed for a testing device to be approved. Operational qualification can only be carried out once installation qualification has been passed. The documentation for operational qualification consists of an OQ test plan and OQ report.

Operational qualification involves identifying and monitoring the following quality-related alarm, control and switch functions:

- Initialisation of the testing device
- Weight – adjustment and calibration
- Thickness – adjustment and calibration
- Hardness/breaking strength – adjustment and calibration
- Diameter– adjustment and calibration
- Length and width – adjustment and calibration
- OZB – adjustment and calibration
- Adjustment and calibration protocol
- Product setup
- Verification of test results
- Documented proof that operating personnel have been trained

PQ – Performance qualification

Performance qualification (PQ) is a key part of validation of the entire production process over a certain period of time and for a specific product. It proves and documents that testing devices work within the specified limit values. The testing devices are not examined separately, but always as part of the entire process. Although PQ generally includes the OQ tests under process conditions, it is essential that a detailed test plan is drawn up on the basis of a thorough process description before the beginning of the validation process.

Performance qualification comprises:

- Documentation under process conditions, outlining that the testing device or the entire process with the product results in the expected, defined results
- The scope of the PQ can result from the operator's specifications or normative and legal requirements
- Documentation of the process and results in the qualification report
- Validation through multiple repetition, reproduction of processes (often three times in pharmaceutical/medical technology)

Two companies
providing excellent testing technology together

Kraemer Elektronik GmbH

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64291 Darmstadt
Germany

KRAEMER ELEKTRONIK – FROM AERONAUTICAL TO MEASUREMENT TECHNOLOGY

Our love of technology is what drives us. Since being founded by Norbert Kraemer in 1978, Kraemer Elektronik has been developing sophisticated and high-precision measurement systems for industrial production and the development of new products. Kraemer measurement systems first catered to the food and aerospace industries before expanding into the chemical and pharmaceutical industry, always ensuring the highest quality in production. We have been developing tablet testing devices since 1978, followed by tablet hardness testing devices from 1983.

Following the early death of Norbert Kraemer, Thilo Kraemer took over the reins of the company and has continued its success as the sole registered owner since 2006. Influenced by his father's

Charles Ischi AG

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IN THE CENTRE OF SWITZERLAND. IN THE HEART OF EUROPE. WITH CONNECTIONS AROUND THE WORLD.

"Charles Ischi Pharma-Prüftechnik" began in 1992 as a single company whose aim was to acquire customers from the local pharmaceutical industry in Switzerland. The company was soon able to develop its own sales network throughout Europe and in the Middle East. Charles Ischi, the owner and Managing Director, converted it into a joint stock corporation in 2000.

Today, Charles Ischi AG operates successfully in the international market as the general representative of Kraemer Elektronik GmbH. The excellent teamwork between the two companies ensures that the joint development and implementation of numerous customer-specific projects works so well.

inventive talent and pioneering spirit, Thilo Kraemer's leadership has seen many product innovations, while proven technologies are constantly further developed. Today, the Kraemer product portfolio ranges from manual testers to fully-automatic testing systems. In the LAB.line range, you will find both tried-and-tested and state-of-the-art measurement and testing technology especially for the laboratory. The IPC.line represents robust measurement systems specifically for use in harsh industrial environments.

Thanks to long-standing partnerships with OEM partners, national sales organisations and Charles Ischi AG, the international sales and service network, Kraemer systems are in constant operation in many industries and laboratories around the world, creating ever-better products.

Thilo Kraemer, Managing Director

The sales and service network is being expanded all the time. Around 45 representative offices are currently active all over the world. Connections around the globe emanate from the company's headquarters in Zuchwil, in the central Swiss canton of Solothurn – in the heart of Europe. It is from here that Charles Ischi AG coordinates the global sales network and maintains contact with both long-standing and new customers – even at a personal level.

"Our strong client relationships play a huge part in our success," explains company founder and Managing Director Charles Ischi.

Thanks to the very good access to the European transport network and close proximity to Basel and Zurich airports, our employees from the Sales & Service divisions can be on site quickly, anywhere in the world.

Charles Ischi, Managing Director

IN LINE WITH THE FUTURE

For more information, please visit our website:

www.ischi.ch

Manufacturer

kraemer ELEKTRONIK Pharmaprüfsysteme

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6133 - 18-EN

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