MICROTRONIC MICROELECTRONIC VERTRIEBS GMBH

LBT210

Solderability Tester
Wetting Balance

Automated & PC Controlled Solderability Tester

Test Methodes & Options:

- Solder Bath Test with automatic scraper and dross bin
- Solder Ball Test with 1, 2, 3 & 4mm and bucket for used solder balls
- Solder Paste Test with substrate, solder paste and your component
- Automatic testing of multiple pins
- Automatic testing in oxygen atmosphere
- Tackiness testing (future option)
- Company wide central Database
- Preheating

Features:

- Dynamic range
- Automatic amplification
- Vibration dampening design
- Brushless DC Servo Motors
- Positioning: better than 5µm
- Bath surface position determined by non-contact laser sensor
- Video of measurment can be captured
- E-Stop, CE certified
- Software in German, English, French, (further languages possible)
- Data saved in a SQL Database with statistical analysis
- Export of data in CSV & text files
- Export of curves as image files

with N2 op

Standards:

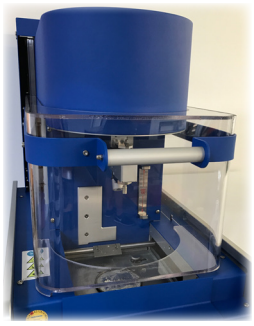
IEC 60068-2-54
IEC 60068-2-69
IPC/J-STD-003
IPC/J-STD-002
EIA/JETA-7401
MIL-883 - 2022

We support all commonly used standards.
Custom standards can be applyed.

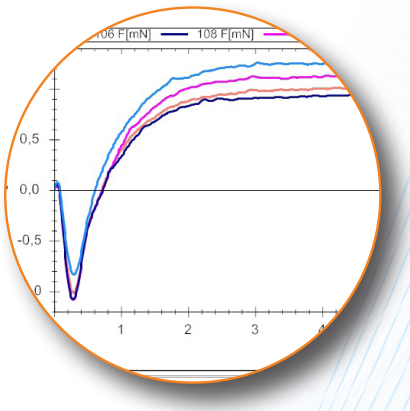
Test with Globule

Test with Solder Bath

Test with Solder Paste



with optional Safety Hood



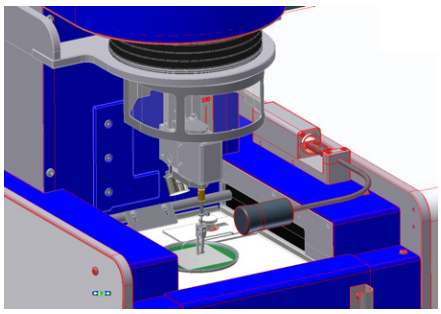
Easy to use software

tion mounted

Fan to cool the modules

- Testing components
- Testing substrates
- Testing wetting forces
- Testing flux characteristics
- Testing paste characteristics

Why Solderability Test?



One reliable method is to check components with a solderability tester. Several international standards exist for this method. These systems test components for solderability, preferably during incoming inspection. If the results are good, the components are passed on to the production area. When the results are unacceptable, the entire lot can be returned to the manufacturer or distributor for replacement. Alternatively, the company can order from another, more reliable source before a lack of components disturbs production.

If no action is taken to test the wettability of the components, the risk is that product will not pass functional test at the end of the production cycle because of bad solder joints. The defective units need expensive repairs or they cannot be reworked. Rejects and field failures easily can exceed the investment cost of a solderability tester.

The Solderability Tester

The solderability test is performed easily with modern PC-controlled measurement equipment. First, all component-relevant data and test parameters are placed into a screenmask. Next, the component is clamped to a holder and fluxed. The holder is placed into the tester and fixed. The test begins and the system's software takes all test data, showing the test curve together with the data of the standard norm chosen to determine solderability. The test should be performed with approximately 10 sample components from the same component lot to provide a mean value.
Microtronic's LBT-210 solderability tester has software that offers statistical information such as mean value, standard deviation, etc. A camera option offers video of the test cycle and storage in memory with the appropriate test measurements and data. Additionally, it has the feature to test under nitrogen. This function can be switched on in the software. An enclosure that is flooded with nitrogen lowers and rises with the device under test.

Measurements

The most common method is a test using a solder pot filled with the same alloy that is used in the production line. Solder pots are interchangeable when more than one solder alloy is in use. The device to be tested lowers with a defined speed into the molten solder. The exact position of the surface of the solder bath is determined by a non-contact laser sensor. A scraper removes all oxidation from the surface of the molten solder prior to each test.

Initially, dipping the test specimen into the molten solder causes solder displacement because the test specimen is at room temperature and the solder is not wetting the part yet. The displacement force is already measured. After the test specimen has reached the solder temperature, the wetting begins. The solder flows up the test specimen and the strong surface tension of the molten solder pulls the specimen down. These forces are measured precisely and are shown in a force-time curve on the monitor. All previous time data is available in a listing. The Software calculates the measurements and provides the wetting force or meniscus angle.

This value can be compared to the values of other specimens. The advantage of the Software is that it compares the data of earlier (or future) tests of the same component from the database to show a quality trend. A further test with a molten solder ball, known as a "globule" test, also is commonly used. The test sequence is similar to the solder pot test. Oxide must be removed from the molten solder ball using flux. The test specimen is placed over the middle of the globule by motorized X- and Y-axes. The globule must be replaced after each test. Solder particles of different alloys from 1-4 mm are offered with the system.

Revolutionary New Test Method

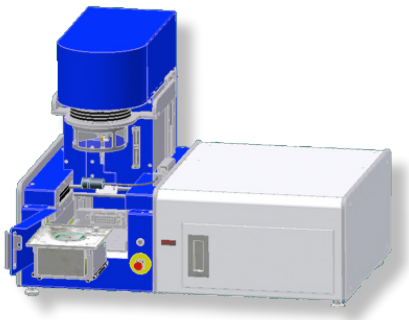
A revolutionary new method is available that tests using solder paste and a temperature profile. A component is placed on printed solder paste and heated through the same temperature profile that is used in production. All force parameters and values during the heating cycle are monitored and saved. This is the only known exis-

ting method of simulating and qualifying the solder profile of an in-line production solder furnace in conjunction with different solder pastes and components. The software is straightforward and allows the use of comprehensive component lists. The appropriate data sets can be generated, saved and edited for later use.

As an additional benefit, all results can be found at any time and shown in the required standard norm. Many international standards are supported by the system (Figure 2), and custom standards can be generated and used in the system easily.

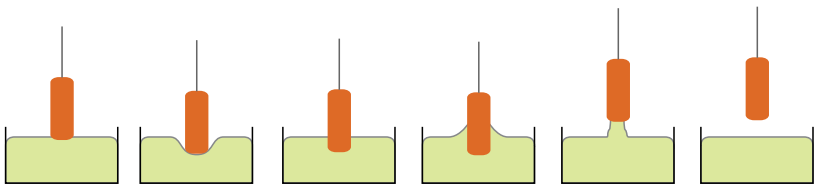
A further function allows the measurement curve and all the measurement data to be exported in other applications. This function makes it simple to prepare reports and presentations (as PDF files that can be sent via e-mail, etc.). The printout includes all measurement parameters, curves and value listings.

If the system's computer is connected to a network, all test data can be stored on a central server and retrieved by individuals. This is significant for companies that have multiple locations because all results can be compared amongst all users over extended time periods, further increasing quality assurance levels.



Inserting a Module

Storing Modules



A measurment Cycle

Available Models

The LBT210 is offered in these versions

	LBT-210-180	LBT-210-200	LBT-210-300	LBT-210-HD
Laser sensor	X	X	X	X
X/Y Table	-	X	X	X
Bath module	X	X	X	X
Globule module	-	O	X	O
Paste module	-	O	X	-
Cooling Fan	O	O	X	O
N2 Option	O	O	O	O
with Safety Hood	O	O	O	O
with Safety Hood & Cover	O	O	O	O

(- = not availible; X = included; O = optional)

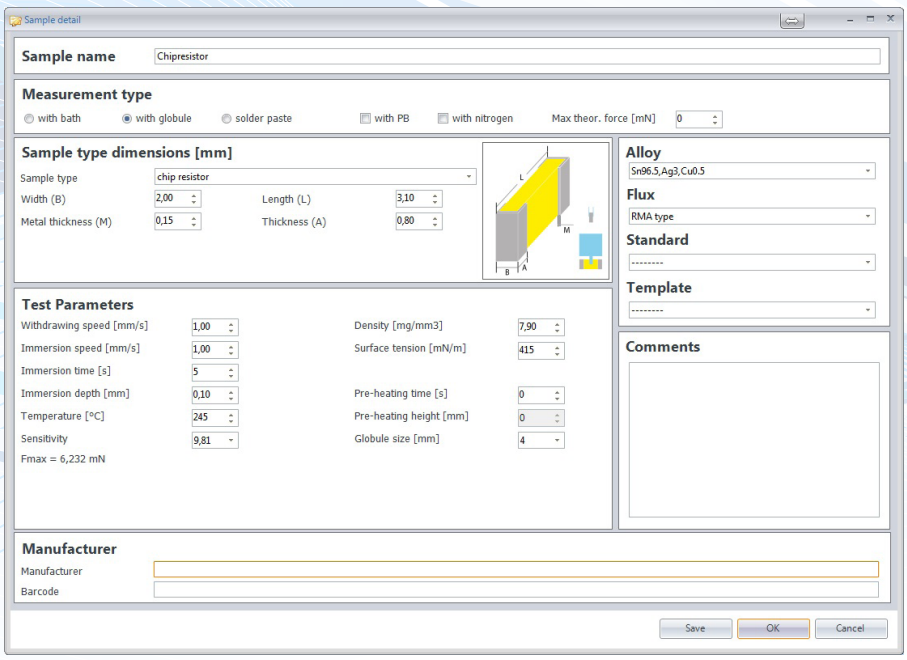
Software

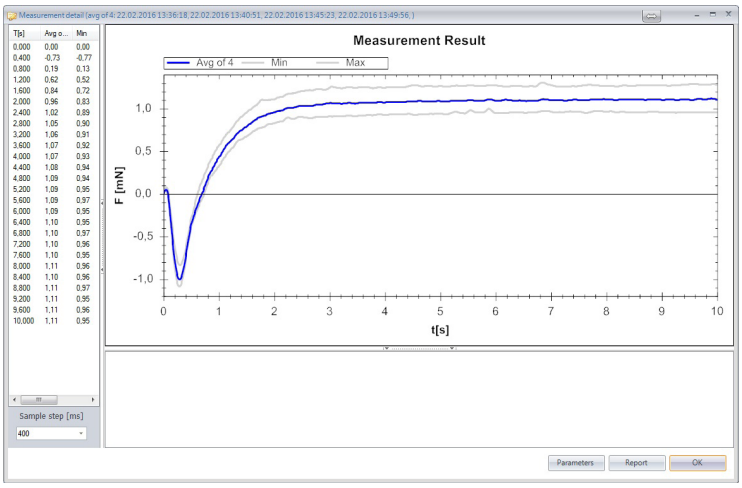
The LBT-210's newly created software has been designed for ease of use, allowing users to start immediately with minimal effort. After logging in with a user name and password, users can select desired components from the list and begin testing.

New test specimens can be integrated easily in the component list. The same is true for new testing standards, users, solder alloys and fluxes. For an easy overview we usually display a table with all information's for a section. A double click opens a window with detailed information for view or editing.

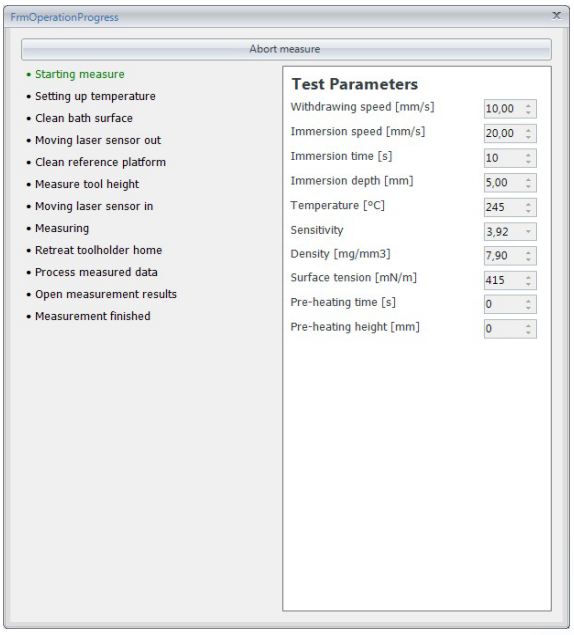
All information and test data are saved in a local SQL database. This ensures all data is available through progressive search filters. For example, the performance of component "A" over the last three years can be determined within seconds, and solderability can be compared in the case of having the same component from different suppliers. Results can be summarized in curves or the mean value can be calculated. All standards have been considered and the good/bad criteria can be displayed in the measurement curves. If required, videos can be taken during the measurements with the built-in Webcam. Frame rate, sound, CODEC and more can be adjusted quickly and easily. To make the software even easier to use, a language feature has been included. Users can adapt all text fields in the software in any language. Additionally, new languages that are not included can be added.

Exporting data made simple: CSV files with the data can be exported and the curves can be saved as pictures or users can use copy & paste. Results can be printed with a standard template from our software or transferred to a Word template (a WinWord license is needed for this function). As an additional benefit, company-specific logos, the address and so on can be included in the document, enabling professional reports and analyses to be printed in a company's preferred format. The file then can be saved, printed or forwarded digitally to customers.

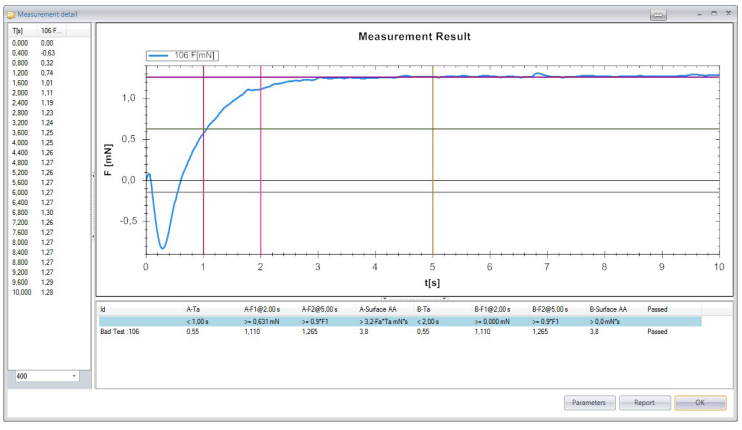




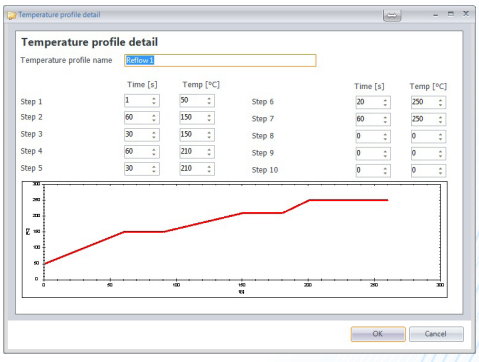
Average with Min & Max



Measurement in Progress

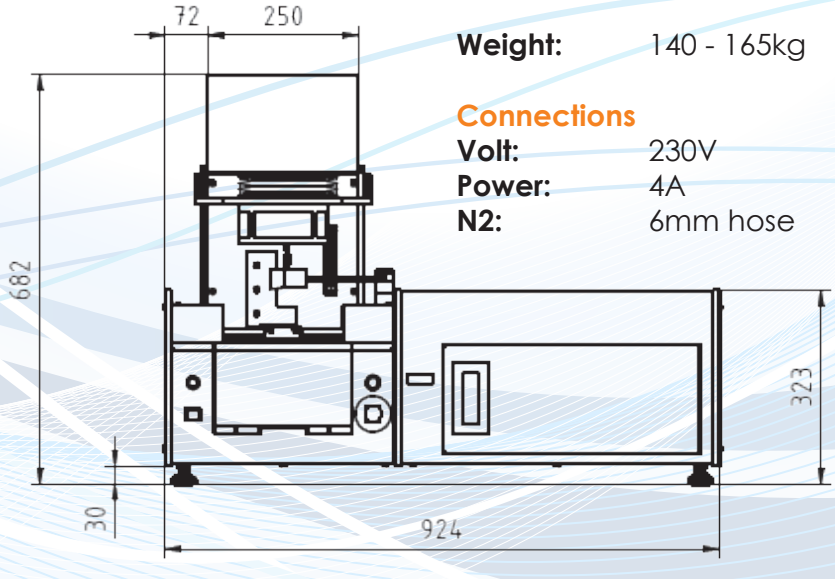


A Measurment Curve



Temperature Profile for Paste Test

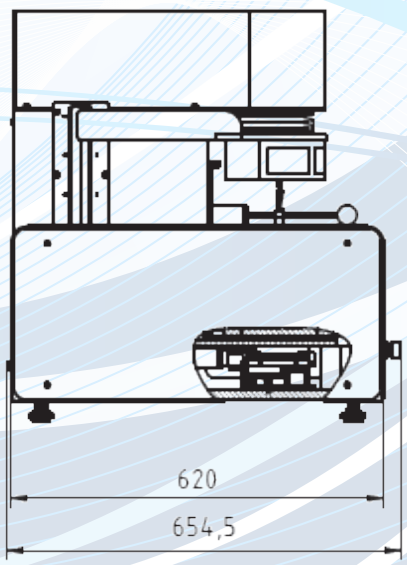
Technical Data



Weight: 140 - 165kg

Connections

Volt: 230V
Power: 4A
N2: 6mm hose



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The Future in Solderability Test

Microtronics' mindset is creating value for our customers in the industries we are serving. Our deep experience and leadership in core quality control technologies leads us in the development and distribution of cutting-edge equipment.

Through permanent improvement, worldwide support, training and tight cooperation with our customers, we guarantee high quality products and service.
Local representatives are permanently trained to give you the best possible support - worldwide.

Your Local Contact:

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