EC type-approval Certificate

Number **T8148** revision 1
Project number 12200474

Issued by	NMi Certin B.V., designated and notified by the Netherlands to perform tasks with respect to conformity modules mentioned in article 9 of Directive 2009/23/EC, after having established that the measuring instrument meets the applicable requirements of Directive 2009/23/EC, to:
Manufacturer	Tanita Corporation 14-2,1 chome, Maeno-cho Itabashi-ku Tokyo, 174-8630
Measuring instrument	A **Non-automatic weighing instrument** Type : MC-780
	Further properties are described in the annexes – Description T8148 revision 0 – Documentation folder T8148-1
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Description

1 General information about the non-automatic weighing instrument

All properties of the non-automatic weighing instrument, whether mentioned or not, shall not be in conflict with the legislation.

1.1 Essential parts

The instrument is built from a base unit and a terminal. The base unit contains the essential parts:
- The electronics;
- The mechanical assembly with load cell.

EMC protection measures:
- The analog board is shielded with a metal cover;
- One ferrite on the cable from the load cell to the analog board;
- One ferrite on each cable to the electrodes for the hands (inside the base unit).

1.2 Essential characteristics

Accuracy class	(III)
Maximum capacity	Max ≤ 270 kg
Verification scale interval	e ≥ 100 g
Maximum number of scale intervals	n ≤ 2700 divisions
Temperature range	+5 °C / +35 °C
Tare	T = -10 kg
Weighing range(s)	Single interval
Power supply voltage	100 – 240 V AC 50/60 Hz
Software identification base unit	Version number: Vb 260 9201
Software identification terminal	Version number: 9311 or higher

Software:
- The identification number will be displayed at after pressing the key sequence in PT input mode:
  - Press settings; the display shows "SET 00";
  - Press enter to see the software version of the terminal;
  - Press enter to see the software version of the base unit.
- The non-automatic weighing instrument has embedded software.

1.3 Essential shapes

The non-automatic weighing instrument is built according to the drawings:
- Position of the markings labels, drawing number 8148/0-01.

The descriptive markings plate is divided in several parts, see the drawings:
- Parts of the markings labels, drawing number 8148/0-02, items F and G;
- Position of the markings labels, drawing number 8148/0-01, items F and G.

The descriptive markings plates are secured against removal by sealing or will be destroyed when removed.

1.4 Conditional parts

The non-automatic weighing instrument may be equipped with peripheral equipment which is used for the applications listed in article 1(2)(a) of Directive 2009/23/EC, provided that the peripheral equipment is certified to be connected to an EC type-approved non-automatic weighing instrument by a Notified Body responsible for type examination under Directive 2009/23/EC, or that the equipment and the use of the equipment comply with the requirements of WELMEC 2.5 Issue 2 Section 2.2.

The non-automatic weighing instrument is fitted with a levelling device and a level indicator. A ring on the level indicator indicates when the maximum tilt is exceeded.

The terminal provides the display and the keyboard. It can be interchanged without changing the metrological properties of the non-automatic weighing instrument, provided that:
- The software version complies with the versions in chapter 1.2;
- The inscriptions near the display as mentioned in Annex IV article 1.4 of Directive 2009/23/EC are identical to the specifications mentioned on the descriptive markings plate of the base unit.

1.5 Non-essential parts

The non-automatic weighing instrument may be connected to non-essential devices, for example but not limited to bar code readers, foot switches, second display's and cash drawers, provided that:
- They do not present primary data used for purposes mentioned in article 1(2)(a) of Directive 2009/23/EC unless the "preliminary observations" in Annex 1 of this directive is satisfied;
- They do not lead to an instrument having other essential characteristics than those fixed by this type-approval document.

Other non-essential parts:
- External AC/DC-adapter.

2 Information about the main constituent parts of the non-automatic weighing instrument

2.1 The electronics

2.1.1 Essential parts

Electronic parts in the base unit:

Number	Pages	Description	Remarks
8148/0-03	2	Analog board	
8148/0-04	3	Impedance board	
8148/0-05	2	Power board	

2.1.2 Essential characteristics

List of legally relevant functions in the base unit:
- Determination stability of equilibrium;
- Indication of stable equilibrium;
- Semi-automatic zero-setting;
- Initial zero-setting;
- Zero-tracking;
- Preset tare;
- Gravity compensation;
- The calibration mode is secured with a switch on the terminal against unintentional access; the calibration mode uses an event counter that contains a number that will be incremented each time any parameter changes or calibration change is made and saved; the calibration data, the parameters and the event counter are stored in the base unit; the event counter value is fixed as a descriptive marking at the time of verification;

- Storage of weighing data in a protected file, this file complies with WELMEC 2.5 chapter 6 and OIML R76-1 edition 2006 article 5.5.3; The data is stored on an SD-card that can be removed from the instrument; verification of the data needs to be done on the non-automatic weighing instrument;
- Acting upon significant faults;
- Checking the display.

2.1.3 Conditional parts

The non-automatic weighing instrument may be equipped with one or more of the following protective interfaces that have not to be secured:
- RS232;
- USB device (2x).

2.2 The mechanical assembly with load cell

2.2.1 Essential parts

Number	Pages	Description	Remarks
8148/0-06	1	Exploded view	
8148/0-07	1	Load cell specification	

2.2.2 Essential characteristics

$e \geq E_{max} / 3000$
Excitation power supply 5 V DC.

2.2.3 Essential shapes

See the drawings from chapter 2.2.1.

3 Seals

To secure components that may not be dismantled or adjusted by the user, the non-automatic weighing instrument has to be secured in a suitable manner on the locations indicated in the drawing:

- Position of the markings labels, drawing number 8148/0-01, items C and D.

4 Conditions for conformity assessment

The marks, facilities for the marks and the inscriptions on the non-automatic weighing instrument fulfill the requirements of article 1 of Annex IV of Directive 2009/23/EC.