



Australian Government

Department of Industry,
Science and Resources

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 13/1/24

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

METTLER TOLEDO Model CSN810 Dimensional Measuring Instrument

submitted by Mettler-Toledo Limited
 220 Turner Street
 Port Melbourne VIC 3207

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 129, *Multi-dimensional Measuring Instruments*, dated July 2004.

This approval is subject to review at the decision of the Chief Metrologist in accordance with the conditions specified in the document NMI P 106.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 & 2 approved – certificate issued	13/06/12
1	Variant 3 approved – certificate issued	19/04/24

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 13/1/24' and only by persons authorised by the submitter.

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificates No S1/0/A or No S1/0B.

Special:

Instruments are only approved for use for determination of the dimensions and volume of the smallest rectangular box that could contain an object, for the purposes of determining freight or postal charges.

The dimensions determined may also be used for the calculation (by peripheral equipment) of a volume and/or 'dimensional weight' (*) value of the object, also for the purposes of determining freight or postal charges.

- (*) A 'dimensional weight' value is a calculated value deemed to be a weight value obtained by applying a conversion factor to the object's volume.

Signed by a person authorised by the Chief Metrologist
to exercise their powers under Regulation 60 of the
National Measurement Regulations 1999.



Darryl Hines
Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No 13/1/24

1. Description of Pattern

approved on 13/06/12

A METTLER TOLEDO model CSN810 dimensional measuring instrument (Figure 1) which is approved for use for the determination of the linear dimensions of stationary objects. Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

1.1 Details

The pattern is approved for use for the determination of the linear dimensions of objects having maximum dimensions (i.e. length \times width \times height) of 1000 \times 600 \times 840 mm and minimum dimensions 100 \times 50 \times 50 mm, with a scale interval of measurement (d) of 5 mm. The pattern is fitted with a 'standard' roller table.

The pattern converts the detected characteristics into the linear dimensions of the smallest rectangular box (parallelepiped – #) that would fully contain the object.

The pattern is approved for use in measuring the linear dimensions of opaque objects only; the dimensions determined may also be used for the calculation of volume and/or 'dimensional weight' value (*) of the item (refer to the Special Conditions of Approval).

Note: This instrument is NOT suitable for:

- transparent objects and objects packed in thick, transparent wrapping material, e.g. 'bubble wrap'; or
- objects with a mirror-like surface, e.g. chrome or other high gloss finish.

However, the instrument can measure objects covered in shiny sealing tape or glossy plastic wrapping, e.g. 'cling wrap'.

Objects are measured statically by being positioned manually in the defined measurement area.

(#) A rectangular box (parallelepiped) is a polyhedron having six faces that are parallel in pairs; each face is a parallelogram and adjacent edges are perpendicular.

(*) A '**dimensional weight**' value is a calculated value deemed to be a weight value obtained by applying a conversion factor to the object's volume as calculated from the measured dimensions.

1.2 Laser Scanner

The pattern includes a METTLER TOLEDO model CSN810 laser scanner (Figures 1 and 2a) mounted to a frame above a standard roller table (Figure 1) which forms the defined measurement area. The laser scanner is positioned to provide a view of all sides of the object to be measured.

When a measurement operation is initiated the laser scanner performs a scan of the object in the measurement area. The image data is processed and the measurement result is output to a METTLER TOLEDO model CS2200LX indicator or an optional workstation. The system operates using Cargoscan version 2.0.xx software.

1.3 Indicator Unit

A METTLER TOLEDO model CS2200LX indicator (Figure 3a) provides a 4 line alphanumeric LCD display for indication of measurement results. The indicator is also used to operate and configure the instrument and displays any error messages that occur during a measurement operation.

Indicator lamps may be fitted to signal when the system is operating, a measurement is in progress or an error has been detected.

1.4 Workstation

An optional workstation (Figure 3b) can also be used to initiate measurement operations and display results, as well as collecting additional information about the object being measured via barcode scanners or keyboard data entry.

1.5 Indications

The pattern is fitted with a model CS2200LX indicator however measurement data from the CSN810 is made available to other systems for indication and/or printing.

Printed and displayed information must be made available for verification and must comply with the requirements set out in document NMI R129, *Multidimensional Measuring Instruments*, in particular as per the extract below.

7.9.1 Any printed ticket or displayed indication shall include sufficient information to identify the transaction, for example:

- (a) dimensions: length (L), width (W) and height (H);
- (b) volume (vol);
- (c) weight (Wt) if the instrument includes a weighing instrument;
- (d) dimensional weight (Dim Wt ... kg or DW ... kg);
- (e) dimensional tare (DT ... kg);
- (f) conversion factor (F);
- (g) quantity for charging, for example dimensions, vol or DW ... kg;
- (h) price rate and price; and
- (i) date, transaction number or other identification of the object.

Note 1: Icons may be used to identify indications.

Note 2: When the customer is not present during the measurement process the above information need not be displayed or printed out at the time but shall be available on request.

Note 3: The price interval and the price rate shall comply with the national regulations applicable for trade.

7.9.2 A printed ticket shall also contain the following printed or preprinted information:

- (a) that the dimensions and/or volume shown are those of the smallest rectangular box that fully encloses the object; and
- (b) that the dimensional weight is a calculated value deemed to be a weight value obtained by applying a conversion factor to the object's volume or dimensions.

1.6 Verification Provision

Provision is made for the application of a verification mark.

1.7 Descriptive Markings and Notices

- (a) Instruments carry the following markings (in the vicinity of the indicating device):

Manufacturer's mark, or name written in full	METTLER TOLEDO A/S
Model designation
Serial number of the instrument
Year of manufacture
Pattern approval mark	13/1/24
Maximum dimensions for each axis	<i>Max</i> cm
Minimum dimensions for each axis	<i>Min</i> cm
Scale interval	<i>d</i> = cm

- (b) Instruments carry one or more notices stating CERTAIN REFLECTIVE OR TRANSPARENT ITEMS CANNOT BE MEASURED, and ITEMS MUST BE PLACED WITH LARGEST AND MOST STABLE SURFACE DOWN, or similar wording.

1.8 Sealing Provision

Provision is made for sealing the calibration adjustments in software using an audit trail which records adjustments.

Provision is also made for sealing the CSN810 enclosure by means of at least one sealing label applied over the edge of the enclosure (Figure 2b).

2. Description of Variant 1

approved on 13/06/12

With a model XL roller table having maximum object dimensions (i.e. length × width × height) of 1200 × 900 × 900 mm. The minimum object dimensions are 100 × 50 × 50 mm.

3. Description of Variant 2

approved on 13/06/12

The 'standard' roller table is replaced by a 'standard' flat table having maximum object dimensions (i.e. length × width × height) of 1150 × 750 × 700 mm. The minimum object dimensions are 50 × 50 × 50 mm.

4. Description of Variant 3

approved on 19/04/24

With the models similar to the pattern and variants known as Mettler Toledo model TLD850 (Figure 4). The system operates Cargoscan Dimensioning software with package identifier 8093.

The TLD850 is approved for use for the determination of the linear dimensions of objects having maximum dimensions (i.e. length × width × height) of 1200 × 900 × 900 mm and minimum dimensions 50 × 50 × 20 mm, with a scale interval of measurement (*d*) of 5 × 5 × 2 mm.

Objects to be measured include cuboidal (rectangular), cylindrical and pillow-bag shapes.

4.1 Laser Scanner

The pattern includes a METTLER TOLEDO model 800S laser scanner (Figure 5) mounted to a frame above a standard roller or flat table which forms the defined measurement area. The laser scanner is positioned to provide a view of all sides of the object to be measured.

4.2 Indication device

A graphics display (Figure 5) is connected to a USB port on the 800S. The indicator displays the measurement results and/or any error messages that occur during a measurement operation.

Indicator lamps may be fitted to signal when the system is operating, a measurement is in progress or an error has been detected.

4.3 OctoCSM display

The TLD850 may operate OctoCSM software (Figure 6) on the built in computer, or on an external workstation connected via Ethernet (Figure 7). Measurement results and status codes are displayed on a standard graphics display (HDMI or equivalent) connected to the computer.

4.4 Sealing Provision

Provision is made for sealing the calibration adjustments in software using an audit trail which records adjustments. A 4 digit Event counter is also incremented when an adjustment has been made and is displayed on the USB display (Figure 8a) or the System info page of the Octo CSM software (Figure 8b).

The Audit trail is accessed and viewed from within the workstation or by logging in to the system using a web browser.

4.4 Descriptive Markings and Notices

As described in **1.7 Descriptive Markings and Notices**.

TEST PROCEDURE 13/1/24

Note: Refer to clause **1.5 Indications** – Printed and displayed information must be made available for verification and must comply with the requirements set out in document NMI R 129, *Multi-dimensional Measuring Instruments*, dated July 2004.

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

Instruments shall be tested as follows:

- (a) Test objects shall be used of known lengths such that each axis (i.e. length x width x height) is tested for at least five dimensions between and including the minimum and maximum lengths specified on the instrument nameplate. Each test object shall be rigid and with well-defined edges to simulate the edges of a rectangular box. All adjacent faces and edges shall be perpendicular to each other. The dimensions shall be equal to Nd and the lengths shall be known to an uncertainty equal to or better than $\pm 1/5$ of the maximum permissible error, which is equal to the scale interval (d). N is a whole number.
- (b) Carry out at least three test runs for each length, varying position and orientation across the receptor. Each measurement shall be within the maximum permissible error.
- (c) Check that instruments are marked and carry one or more notices in accordance with clause **1.7 Descriptive Markings and Notices**.

FIGURE 13/1/24 – 1

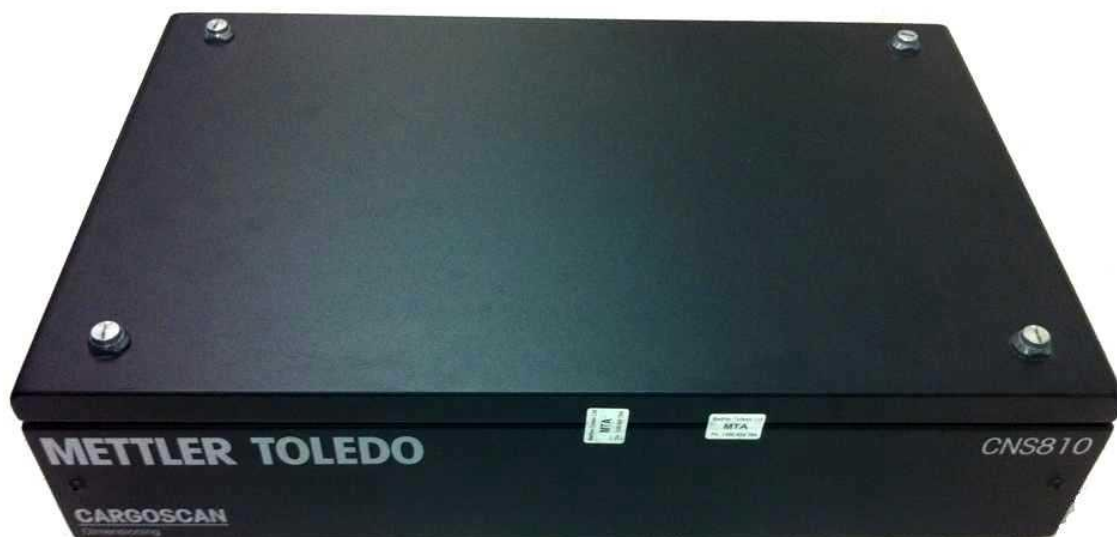


METTLER TOLEDO Model CSN810 Dimensional Measuring Instrument

FIGURE 13/1/24 – 2



(a) METTLER TOLEDO Model CSN810 Laser Scanner



(b) Typical Mechanical Sealing of METTLER TOLEDO Model CSN810 Laser Scanner Enclosure

FIGURE 13/1/24 – 3



(a) Typical Display of a METTLER TOLEDO Model CS2200LX Indicator



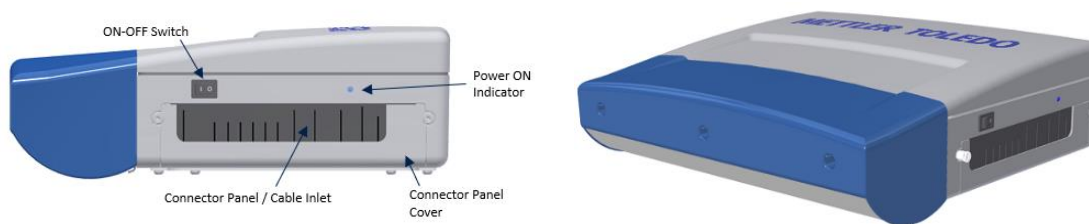
(b) Typical Optional Workstation

FIGURE 13/1/24 – 4



Mettler Toledo Model TLD850 Dimensional Measuring Instrument (Variant 3)

FIGURE 13/1/24 – 5



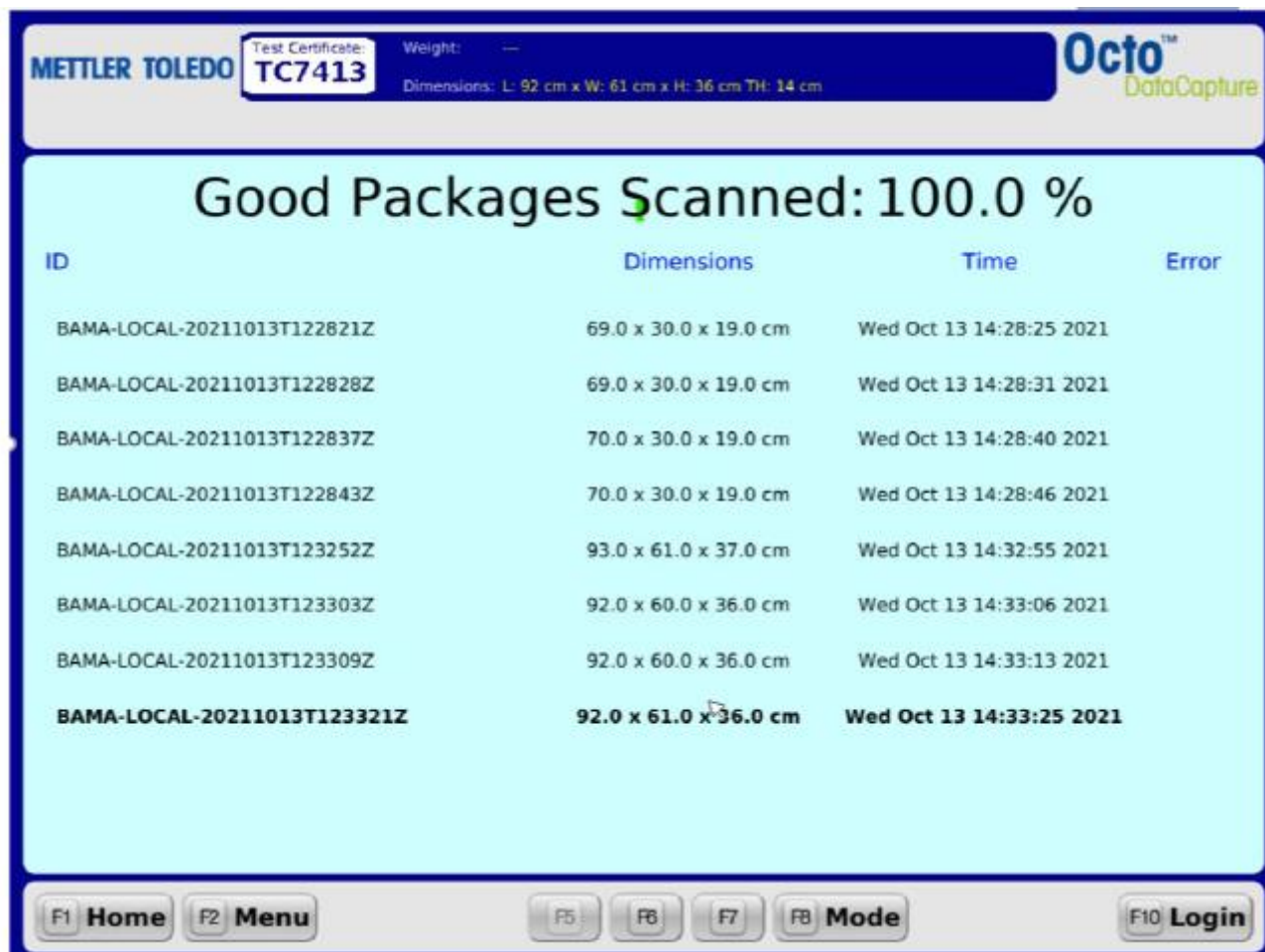
Mettler Toledo Model 800S laser scanner (Variant 3)

FIGURE 13/1/24 – 6



Mettler Toledo Model USB graphical display (Variant 3)

FIGURE 13/1/36 – 7



Typical Display of a Mettler Toledo OctoCSM software indication

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