



Australian Government
Department of Industry,
Science and Resources

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

**Certificate of Approval
NMI 13/1/39**

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 TLD250 Dimensional Measuring Instrument

submitted by Mettler-Toledo Limited
Level 1 191 Salmon St
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 approved – certificate issued	22/08/24

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 13/1/39' 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 Certificate of Approval 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, postal or storage 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 13/1/39

1. Description of Pattern **approved on 22/08/24**

A Mettler Toledo Model TLD250 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.

Instruments are approved for use over a temperature range of 0 °C to +35 °C and must be so marked.

1.1 Details

The pattern is approved for use for the determination of the linear dimensions of rectangular box-shaped (parallelepiped (#), cuboidal) objects or cylindrical shaped objects placed on their base.

The pattern comprises a single-interval measurement range with object limitations described in Table 1 below.

TABLE 1

Principle of measurement	Reflected light		
Method of operation	Semi-automatic		
	Length	Width	Height
Maximum object dimension	≤ 1000 mm	≤ 800 mm	≤ 1000 mm
Minimum object dimension	≥ 60 mm	≥ 60 mm	≥ 60 mm
Scale interval of measurement (d)	≥ 5 mm	≥ 5 mm	≥ 5 mm
Limitations of use	<ul style="list-style-type: none"> • Not suitable for white objects • The colour of the measuring plane must be grey (original production colour) • Not suitable for objects with highly reflective surfaces • Not suitable for objects packed in thick, transparent wrapping material e.g. 'bubble wrap' • The object must be placed perpendicular towards the camera on the measuring plane 		
Minimum spacing between successive objects	Only one object must be within the field of view of the camera		
Power Supply voltage	100 – 240 V AC		
Temperature range	0 °C to +35 °C		

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).

- (#) 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 Dimensioning System

The pattern includes a Mettler-Toledo model TLD250 camera unit (Figure 2) mounted on a supporting pole above a measuring plane.

The TLD250 camera unit measure reflected light and determine the linear dimensions of single objects positioned in the measuring area.

An electronic module is mounted to the supporting pole to provide interfaces for the connection of power, the TLD250 camera unit, touchscreen display and other peripherals.

An extension post may be fitted to the supporting pole to accommodate installation preferences based on camera height with the following models (Figure 3):

- TLD250-136 with standard supporting pole
- TLD250-156 with 20 cm extension post
- TLD250-176 with 40 cm extension post

1.3 User Interface

The 7" colour touchscreen display mounted on the supporting pole (Figure 4) provides the user interface and indication of measurement results.

The indicator is also used to display any error messages that occur during measurement operation.

1.4 Indications

The pattern is fitted with a local indicator unit (Figure 4) however measurement data from the TLD250 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 pre-printed 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.

1.5 Software

The system operates the software version 2.00.xxx.yyy where

- xxx = 166...999 and represents non-legally relevant software for algorithm bug fixes.
- yyy = 123...999 and represents non-legally relevant software for application features or bug fixes.

The software identification is displayed after pressing the key sequence:

Hamburger menu “☰” > Information > Device.

1.6 Descriptive Markings

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

Manufacturer's mark, or name written in full	Mettler-Toledo
Model designation	TLD250
Serial number of the instrument
Year of manufacture
Pattern approval mark	NMI 13/1/39
Maximum dimensions for each axis	<i>Max</i> mm
Minimum dimensions for each axis	<i>Min</i> mm
Scale interval	<i>d</i> = mm
Maximum belt speed	<i>Max</i> m/sec or m/min
Minimum belt speed	<i>Max</i> m/sec or m/min.

- (b) Instruments of the pattern and variant 1 carry one or more notices stating 'TO BE USED FOR RECTANGULAR BOX SHAPED OBJECTS ONLY', or similar wording.

1.9 Verification Provision

Provision is made for the application of a verification mark.

1.10 Sealing Provision

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

Calibration adjustments are protected by an electronic lock which requires breaking a seal on the rear of the electronic module and pressing a calibration button with a stylus as shown in figure 5.

TEST PROCEDURE No 13/1/39

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

Note: Refer to clause **1.4 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.

Maximum Permissible Errors

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

Instruments shall be tested as follows:

- (a) Test objects shall be used, in the shape of rectangular boxes with known linear dimensions 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 dimensions (approximately) specified on the instrument nameplate. Each test object shall be non-sound absorbing, rigid and with flat faces and well-defined edges. All adjacent faces and edges shall be perpendicular to each other. The dimensions of the test objects shall be equal to $N \times d$ 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 in accordance with clause **1.6 Descriptive Markings**.

FIGURE 13/1/39 – 1



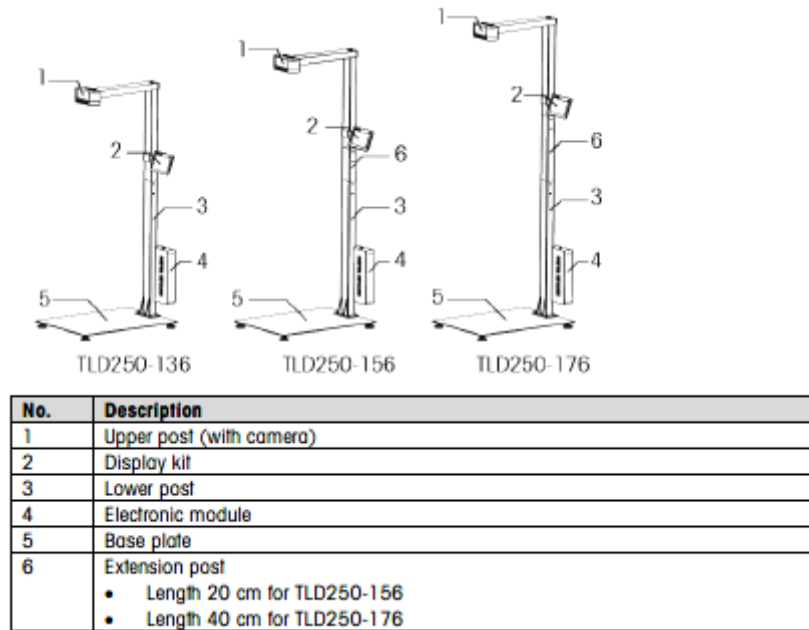
METTLER TOLEDO Model CSN250 Dimensional Measuring Instrument

FIGURE 13/1/39 – 2



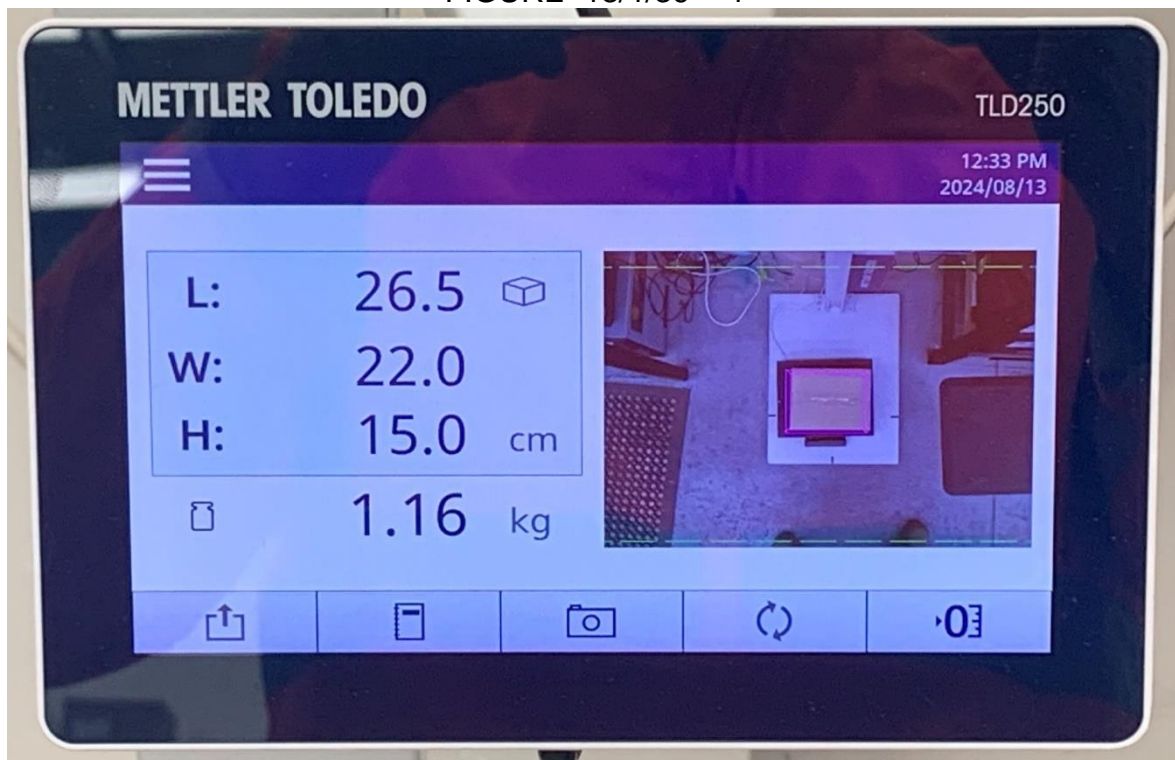
METTLER TOLEDO Model CSN250 camera unit

FIGURE 13/1/39 – 3



METTLER TOLEDO Model TLD250 series

FIGURE 13/1/39 – 4

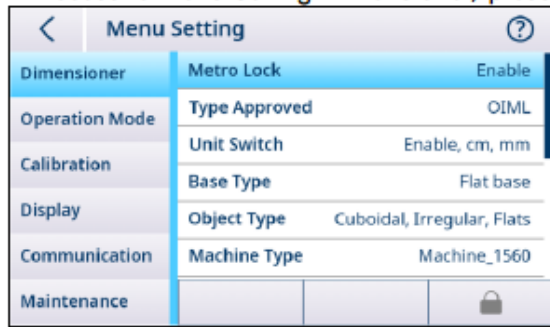


METTLER TOLEDO Model TLD250 touchscreen indicator

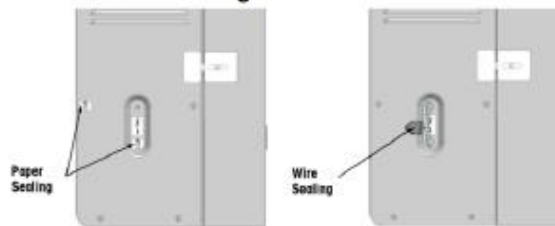
FIGURE 13/1/39 – 5



To disable the Metrology Lock, please follow the steps below:

1. Access to Menu Setting-Dimensioner, press Metro Lock.





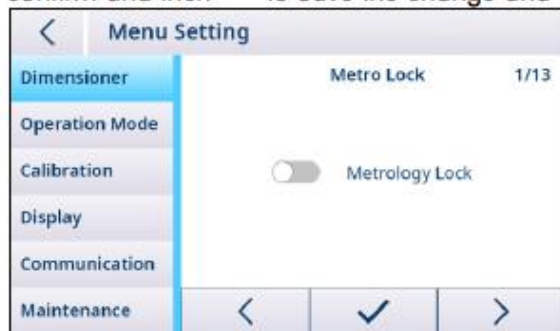
2. Break the sealing on the rear of the electronic module.



3. Short press the calibration button with a thin pin or plastic stylus, then the lock icon  will change to a pencil icon .



4. Access to the Metro Lock setting, and then disable the lock. press  to confirm and then  to save the change and reboot.



Mettler Toledo model TLD250 sealing provision

~ End of Document ~