



Australian Government
**Department of Industry, Science,
Energy and Resources**

**National
Measurement
Institute**

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval
NMI 13/1/35

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.

Rice Lake Weighing Systems Model iDimension Plus Dimensional Measuring Instrument

submitted by Rice Lake Weighing Systems
230 W Coleman Street
Rice Lake WI 54868
USA

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 and Variant 1 approved – certificate issued	13/08/21

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 13/1/35' 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 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 13/1/35

1. Description of Pattern approved on 13/08/21

A Rice Lake Weighing Systems model iDimension Plus semi-automatic dimensional measuring instrument (Figure 1) which is approved for use for the determination of the linear dimensions of certain 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 +40°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 only having maximum dimensions (i.e. length × width × height) of 1200 × 800 × 800 mm and minimum dimensions 140 × 140 × 50 mm, with a scale interval of measurement (d) of 5 mm.

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

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 Measuring head

The pattern includes the iDimension Plus measuring head (Figure 2) mounted on a pole. The measuring head includes optical sensors and cameras which measure reflected light and determine the linear dimensions of objects positioned in the measuring area.

1.3 Processing unit

The measuring head includes a single board PC-based device that connects to the sensors to process the measurement data. The processing unit operates a Linux based operating system running iDimension Plus software version 4.13.x.x. The software identification is displayed after pressing device information key (*i*) in the display.

1.4 User interface

The Rice Lake touchscreen indicator (Figure 3) mounted to the pole and connecting to the Measuring head provides the user interface and indication of measurement results.

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

1.5 Indications

The pattern is fitted with a touchscreen indicator (Figure 3) however measurement data from the iDimension Plus 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.

1.6 Descriptive Markings

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

Manufacturer's mark, or name written in full	Rice Lake Weighing Systems
Model designation	iDimension Plus
Serial number of the instrument
Year of manufacture
Pattern approval mark	NMI 13/1/35
Maximum dimensions for each axis	<i>Max</i> mm
Minimum dimensions for each axis	<i>Min</i> mm
Scale interval	<i>d</i> = mm
Temperature range	0°C to +40°C

- (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.

1.7 Verification Provision

Provision is made for the application of a verification mark.

1.8 Sealing Provision

Provision is made for sealing the calibration adjustments in software using an audit trail which records adjustments. The Audit trail is accessed from the 'Certification change log' tab under the device information menu.

Provision is also made for sealing the Measuring Head model sealing labels applied to the Measuring Head housing (Figure 4).

2. Description of Variant 1

approved on 13/08/21

A custom setup of the iDimension Plus which does not use the standard pole. The measuring head and must be installed in a fixed position with respect to the height of the sensor to the reference surface.

Additional seals are required to prevent height adjustments of the measuring head with respect to the reference surface.

TEST PROCEDURE No 13/1/35

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

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.

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 \times width \times 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 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. Each measurement shall be within the maximum permissible error.
- (c) Check that instruments are marked in accordance with clause **1.6 Descriptive Markings**.

FIGURE 13/1/35 – 1



Rice Lake Weighing Systems model iDimension Plus Dimensional Measuring Instrument

FIGURE 13/1/35 – 2



Rice Lake Weighing Systems Model iDimension Plus measuring head

FIGURE 13/1/35 – 3



Rice Lake touchscreen indicator

FIGURE 13/1/35 – 4



Showing Sealing Provision on the Measuring Head

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