Australian Government
Department of Industry, Science and Resources

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 13/1/40

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 System Model iDimension LTL Dimensional Measuring Instrument

submitted by Rice Lake Weighing Systems
230 W. Coleman St.
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, Variants 1 and 2 approved – certificate issued	08/04/26

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 13/1/40' and only by persons authorised by the submittor.

It is the submittor'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.

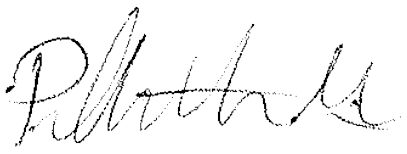
Special

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*.



Phillip Mitchell
A/g Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No 13/1/40

1. Description of Pattern approved on 08/04/26

An iDimension LTL 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 −10 °C to +40 °C.

1.1 Details

The pattern is approved to measure objects in two principles of operation: “Drop and clear” and “Stop and go”. The instrument automatically detects the principle of operation used. In “Drop and clear”, the object is placed on the floor in the field of measurement. “Stop and go” measures the object that has been lifted by a stationary forklift. Objects placed on a pallet must be lifted 50 mm to 300 mm from the floor during the “Stop and go” function. The dimensions of the pallet are included in the measurement.

The ”Drop and clear” principle of operation is approved for use for the determination of the linear dimensions of irregular shaped objects having maximum dimensions (i.e. length × width × height) not greater than 3600 × 2400 × 2400 mm and minimum dimensions not less than 200 × 200 × 200 mm, with a scale interval of measurement (*d*) of 20 mm.

The “Stop and go” principle of operation is approved for use for the determination of the linear dimensions of irregular shaped objects having maximum dimensions (i.e. length × width × height) not greater than 1800 × 1800 × 2100 mm and minimum dimensions not less than 300 × 300 × 300 mm, with a scale interval of measurement (*d*) of 20 mm.

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:

- Objects with a reflective surface for all principles of operation
- Objects transported without a pallet, or when the lowest part of the object is higher than the forks of the forklift during “Stop and go function.”

(*) 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 iDimension LTL measuring head with 5 or 8 remote sensors (Figure 2) mounted on a frame suspended from a steel roof structure or hanging cables mounted to the building structure. 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 an industrial PC-based device that connects to the O3D303 sensors through a terminal box to process the measurement data.

The software identification can be found by selecting (i) key under the main screen.

The processing unit runs a Linux-based operating system with the software identification 6.1.x.x.

1.4 Local Indicator Unit

The Rice Lake Indicator (Figure 3) may be mounted to the measuring head or to the pole and connected to the measuring head. It provides an indication of measurement results and also displays any error messages that occur during the measurement operation.

1.5 Workstation

There may be a computer running a compatible internet browser which can be used to view the user interface or to make configuration changes.

1.6 Indications

The pattern is fitted with a local indicator unit (Figure 3) however measurement data from the iDimension LTL 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 R 129, *Multi-dimensional 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.

1.7 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 LTL
Serial number of the instrument	.....
Year of manufacture	.....
Pattern approval mark	NMI 13/1/40
Maximum dimensions for each axis	*Max* ..... mm
Minimum dimensions for each axis	*Min* ..... mm
Scale interval	*d* = ... mm

(b) Instruments of the pattern, variant 1 and variant 2 carry one or more notices stating 'CERTAIN REFLECTIVE OR TRANSPARENT ITEMS CANNOT BE MEASURED', or similar wording.

(c) Instruments of the pattern, variant 1 and variant 2 carry one or more notices stating 'MINIMUM SPACING OF 35 cm TO DETECT SUCCESSIVE OBJECTS', 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. The audit trail is accessed and viewed by selecting (i) in the top right corner of Qube Vu Manager and then selecting Transaction Log tab. The change counter and change log information can be found in the Change Log tab next to the Transaction Log tab (Figure 5).

Provision is also made for sealing the O3D303 sensor model to avoid adjustment by the user, as the sensor positions are physically sealed in their position (Figure 4). Any removal of the sensors from the installed configuration is updated in the change counter.

2. Description of Variant 1 approved on 08/04/26

The iDimension LTL-XL which is similar to the pattern but has 8 remote sensors (Figure 6).

.

3. Description of Variant 2 approved on 08/04/26

The iDimension Flex which is similar to the pattern but can have 4, 5 or 8 remote sensors (Figure 7).

iDimension Flex can be installed on a floor mounted free-standing frame or suspended from the ceiling.

TEST PROCEDURE No 13/1/40

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

Note: Refer to clause **1.6 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*.

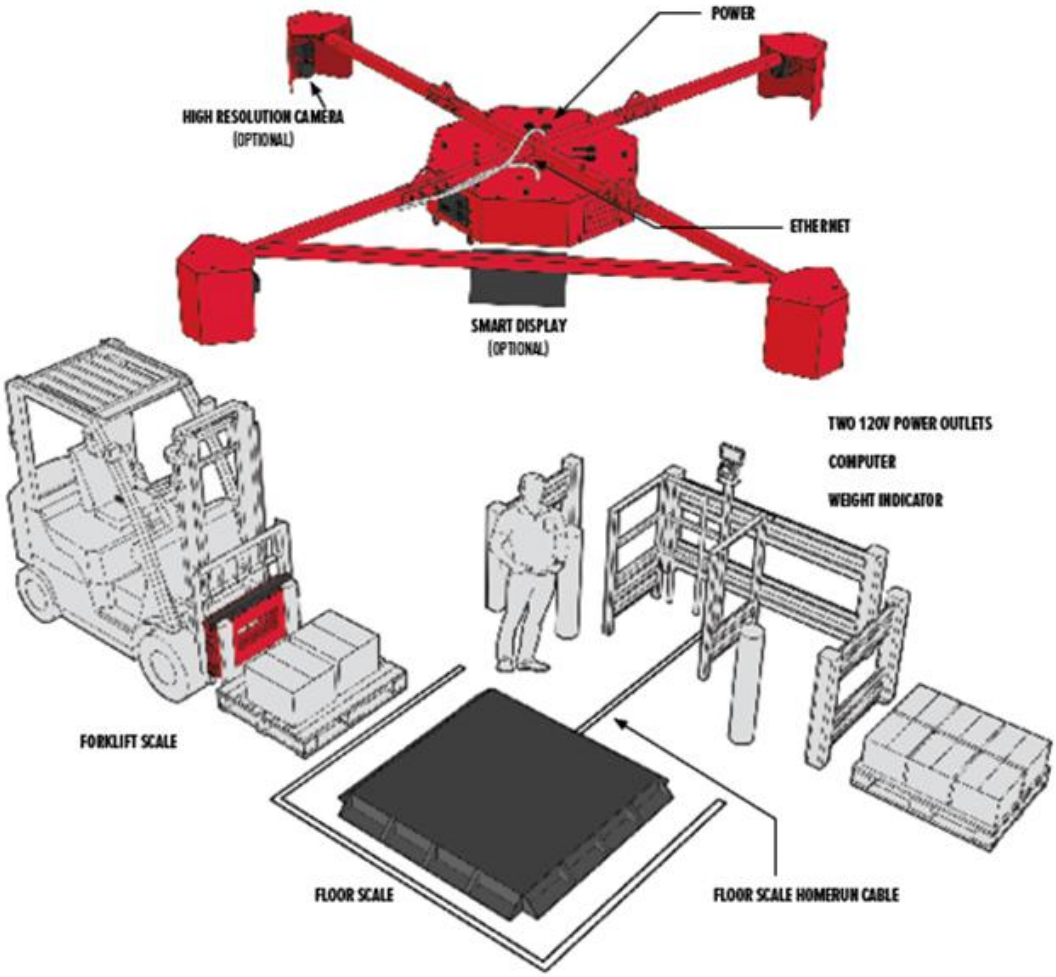
Instruments shall be tested as follows:

(a) Test objects shall be used, in the shape of rectangular boxes with known linear dimensions such that each axis (i.e. length × width × 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 × *d* and the lengths shall be known to an uncertainty equal to or better than ±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 **1.8 Descriptive Markings**.

FIGURE 13/1/40 – 1



Rice Lake Weighing Systems iDimension LTL Dimensional Measuring Instrument

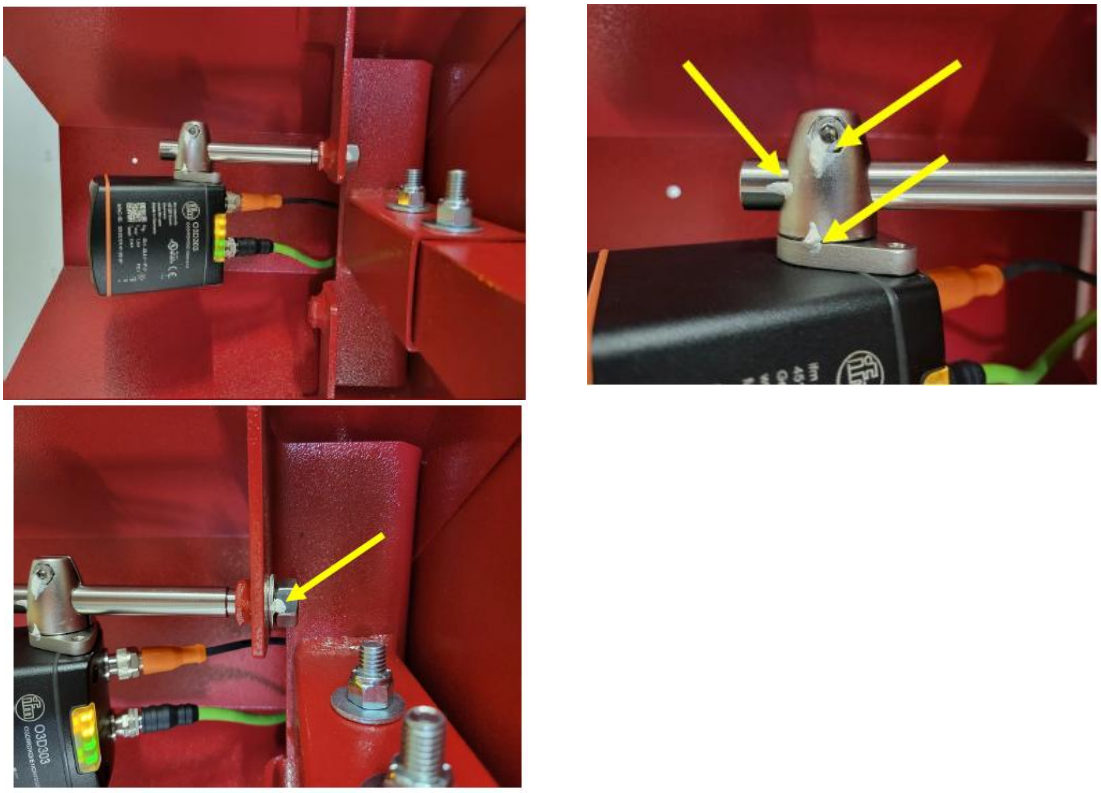
FIGURE 13/1/40 – 2

Rice Lake Weighing Systems iDimension LTL Measuring Head (5 sensor)

FIGURE 13/1/40 – 3

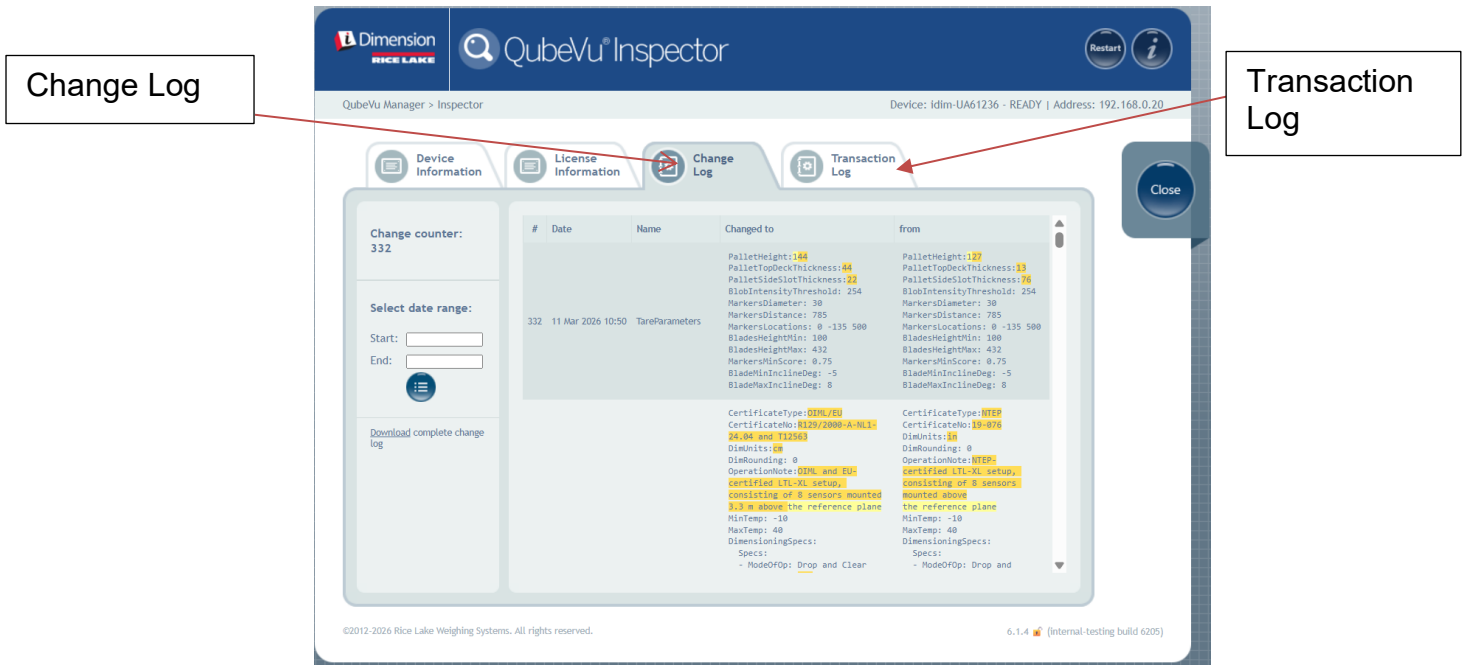
Rice Lake Weighing Local Indicator Unit

FIGURE 13/1/40 – 4



Typical positional seals on the Remote Sensor

FIGURE 13/1/40 – 5



Software sealing provision

FIGURE 13/1/40 – 6

Rice Lake Weighing Systems iDimension LTL-XL Dimensional Measuring Instrument (Variant 1)

FIGURE 13/1/40 – 7

Rice Lake Weighing Systems iDimension Flex Dimensional Measuring Instrument, Floor standing or Suspended installation (Variant 2)

~ End of Document ~