



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

Certificate of Approval NMI 13/2/8

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.

Quantronix Model CubiScan 150 LFT Non-automatic Weighing and Dimensional Measuring Instrument

submitted by Quantronix Inc
 380 South 200 West
 Farmington UTAH 84025-0929
 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 documents NMI R 129, *Multi-dimensional Measuring Instruments*, dated July 2004, and NMI R 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated July 2004.

This approval becomes subject to review on **1/03/22**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – interim certificate issued	24/02/09
1	Pattern approved – certificate issued	23/07/09
2	Pattern reviewed & updated – certificate issued	7/12/16

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 13/2/8' 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 Conditions of Approval:

Instruments are only approved for use for determination of the dimensions of a rectangular box and for the calculation of a 'dimensional weight' value of the item, for the purposes of determining freight or postal charges.

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



Mario Zamora

TECHNICAL SCHEDULE No 13/2/8

1. Description of Pattern

approved on 24/02/09

A Quantronix model CubiScan 150 LFT non-automatic weighing and dimensional measuring instrument (Figure 1) which is approved for use to weigh and to measure the linear dimensions of certain objects while stationary.

1.1 Details

The pattern is approved for use as a class III non-automatic weighing instrument with a maximum capacity of 70 kg and with a verification scale interval (e) of 0.02 kg. The pattern is also approved for use for the determination of the linear dimensions of objects having maximum dimensions (i.e. length \times width \times height) of 120 \times 100 \times 100 cm and minimum dimensions of 8 \times 6 \times 6 cm, with a scale interval (d) of 0.5 cm.

The pattern is approved for use in measuring the linear dimensions of non-sound absorbing rectangular box-shaped objects (cuboidal, rectangular parallelepiped – #) only; the dimensions determined may also be used for the calculation of a 'dimensional weight' value (*) of the item (refer to the Special Condition of Approval).

- (#) A rectangular box (rectangular 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.

The basework comprises a weighing platform made of forged and machined aluminium fitted with a rolling ball-type receptor, and supported on four load cells. The panel at the front of the weighing platform is used to locate the object to be measured.

Three ultrasonic transducers are mounted on the platform in the length and width directions; a fourth transducer is mounted in the overhead arm to measure the height of the object.

The dimensional and weight measurements are displayed on the integral control panel.

1.2 Weighing System

The load receptor has maximum nominal dimensions of 107 \times 163 cm and is supported on four HBM model Z6FC3 load cells of 100 kg capacity mounted as shown in Figure 2a.

1.3 Control Panel and Indicator

The control panel is used to initiate a measurement. The zero light indicates that the instrument is ready to be used.

The indicator displays the weight in kg, the length, width and height in cm, as well as the conversion factor and 'dimensional weight'.

1.4 Verification Provision

Provision is made for the application of a verification mark.

1.5 Sealing Provision

Provision is made for access to the calibration adjustments to be sealed by the application of one or more mechanical seals (Figure 2b).

1.6 Descriptive Markings and Notices

(a) Instruments carry the following markings, together in one location:

Manufacturer's mark, or name written in full	Quantronix Inc
Model designation	CubiScan 150 LFT
Serial number
Year of manufacture
Pattern approval number	NMI 13/2/8
Maximum capacity	<i>Max</i> kg
Minimum capacity	<i>Min</i> kg
Verification scale interval	<i>e</i> = kg
Maximum object length	<i>Max</i> cm
Maximum object width	<i>Max</i> cm
Maximum object height	<i>Max</i> cm
Minimum object length	<i>Min</i> cm
Minimum object width	<i>Min</i> cm
Minimum object height	<i>Min</i> cm
Scale interval	<i>d</i> = cm

(b) Instruments carry one or more notices stating TO BE USED FOR MEASURING RECTANGULAR BOXES ONLY, or similar wording.

TEST PROCEDURE

Maximum Permissible Errors at Verification/Certification

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

A. Weighing

The non-automatic weighing function should be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

B. Dimensional Measuring

- 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 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 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.
- 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.

FIGURE 13/2/8 – 1



Quantronix Model CubiScan 150 LFT Non-automatic Weighing and
Dimensional Measuring Instrument

FIGURE 13/2/8 – 2



(a) Showing Load Cell Mounting



(b) Showing Sealing

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