



Australian Government

**National Measurement
Institute**

12 Lyonpark Road, North Ryde NSW 2113

**Cancellation
Certificate of
Approval No 13/2/3**

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

This is to certify that the approval for use for trade granted in respect of the
Quantronix Model CubiScan 100 LFT Non-automatic Weighing and Dimensional
Measuring Instrument

submitted by Quantronix Inc.
 PO Box 929
 Farmington UTAH 84025
 USA

has been cancelled in respect of new instruments as from 1 January 2005.

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

A handwritten signature in black ink, appearing to be 'J. H. T.', written in a cursive style.



National Standards Commission

Certificate of Approval

No 13/2/3

Issued under Regulation 9
of the
National Measurement (Patterns of Measuring Instruments) Regulations

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

Quantronix Model CubiScan 100 LFT Non-automatic Weighing and Dimensional Measuring Instrument

submitted by Quantronix Inc.
 PO Box 929
 Farmington UTAH 84025
 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.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 September 2003, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked NSC No 13/2/3 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 Commission 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 the Commission's Document 106.

The Commission reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

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

DESCRIPTIVE ADVICE

Pattern: approved 18 August 1998

- A Quantronix model CubiScan 100 LFT non-automatic weighing and dimensional measuring instrument.

Technical Schedule No 13/2/3 describes the pattern.

FILING ADVICE

The documentation for this approval comprises:

Certificate of Approval No 13/2/3 dated 7 June 1999

Technical Schedule No 13/2/3 dated 7 June 1999 (incl. Test Procedure)

Figures 1 to 3 dated 7 June 1999

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

A handwritten signature in black ink, appearing to read 'J. Taylor', written in a cursive style.

TECHNICAL SCHEDULE No 13/2/3

Pattern: Quantronix Model CubiScan 100 LFT Non-automatic Weighing and Dimensional Measuring Instrument.

Submittor: Quantronix Inc.
PO Box 929
Farmington UTAH 84025
USA.

1. Description of Pattern

A Quantronix model CubiScan 100 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 3 non-automatic weighing instrument with a maximum capacity of 93.5 kg and with a verification scale interval (e) of 0.05 kg. The pattern is approved to measure the linear dimensions of rectangular-box (parallelepiped – #) shaped objects only, having maximum dimensions (i.e. length x width x height) of 60 x 60 x 90 cm and minimum dimensions of 5 x 5 x 5 cm, with a scale interval (d) of 0.5 cm.

The pattern comprises a weighing platform made of forged and machined aluminum and which is fitted with a single-point beam-type load cell. Three ultrasonic transducers are mounted on the platform in the length, width and height directions.

The panels which bound the two back sides of the weighing platform are used to locate the object to be measured. The dimensional and weight measurements are displayed on the integral indicator.

1.2 Operation

The following procedure is used to determine the weight and ('deemed weight') of an object.

- (a) Ensure that the weighing platform is empty and the zero indication is lit. Press the zero button if the zero light is not lit.
- (b) Place the object on the platform and slide it against the back corner until it is in contact with both side panels. The zero indicator light will go out and the 'pos' indicator lights up when the object is in the correct position.
- (#) 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.

- (c) Press the <msr> button to take the measurement. The weight, length, width, height, conversion factor and 'deemed weight' (DW ... kg) are displayed on the integral indicator. 'Deemed weight' is determined by means of a conversion factor applied to the volume calculated from the three dimensions.

1.3 Weighing System

The load receptor has maximum nominal dimensions of 61 cm x 61 cm. It uses a Minebea model TWN-300K load cell of 300 kg maximum capacity mounted as shown in Figure 2.

1.4 Control Panel and Indicator (Figure 3)

The zero light indicates that the instrument is ready to be used.

The control panel is used to initiate a measurement. The indicator displays the weight in kg, the length, width and height in cm, the conversion factor and 'deemed weight'.

1.5 Verification/Certification Provision

Provision is made for the application of a verification/certification mark.

1.6 Markings and Notices

- (a) Instruments carry the following markings, in the form shown at right:

| | |
|--|------------------|
| Manufacturer's mark, or name written in full | Quantronix, Inc. |
| Model designation | CubiScan 100 LFT |
| Serial number | |
| Year of manufacture | |
| Indication of accuracy class | Ⓜ |
| Pattern approval mark | NSC No 13/2/3 |
| Maximum capacity | Max kg |
| Minimum capacity | Min kg |
| Verification scale interval | e = kg |
| Maximum object length | Max cm |
| Maximum object width | Max cm |
| Maximum object height | Max cm |
| Minimum object length | Min cm |
| Minimum object width | Min cm |
| Minimum object height | Min cm |
| Scale interval | d = cm |

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

1.7 Sealing Provision

Provision is made for the calibration dipswitch located within the controller box (Figure 2) to be sealed.

TEST PROCEDURE

A. Weighing

The non-automatic weighing function should be tested in accordance with any relevant tests specified in the Inspector's Handbook.

Maximum Permissible Errors at Verification/Certification

The maximum permissible errors for increasing and decreasing loads on initial verification/certification for loads, m , expressed in verification scale intervals, e , are:

- $\pm 0.5 e$ for loads $0 \leq m \leq 500$; and
- $\pm 1.0 e$ for loads $500 < m \leq 2\,000$.

Note: The mass of an object can be determined by placing the object on the load receptor and reading the result on the indicator; there is no need to use the procedure described in clause **1.2 Operation**.

B. Dimensional Measuring

The maximum permissible error at verification/certification, expressed in terms of scale interval (d) is:

- $\pm 1.0d$ for linear dimensions from the minimum linear dimension to any value up to and including the maximum linear dimension of the instrument.
- 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 opaque, 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 known to an uncertainty equal to or better than $\pm 1/3d$ using a verified length standard. N is a whole number.
- Use the procedure described in clause **1.2 Operation** and check that the dimensions indicated on the indicator are within the maximum permissible error, i.e. the display is either Nd or $(N \pm 1)d$.
- Check that the 'deemed weight' indicated is equal to the 'deemed weight' calculated using the volume (determined from the displayed length x width x height) and the conversion factor (F) rounded to the nearest DW 0.1 kg.

FIGURE 13/2/3 - 1



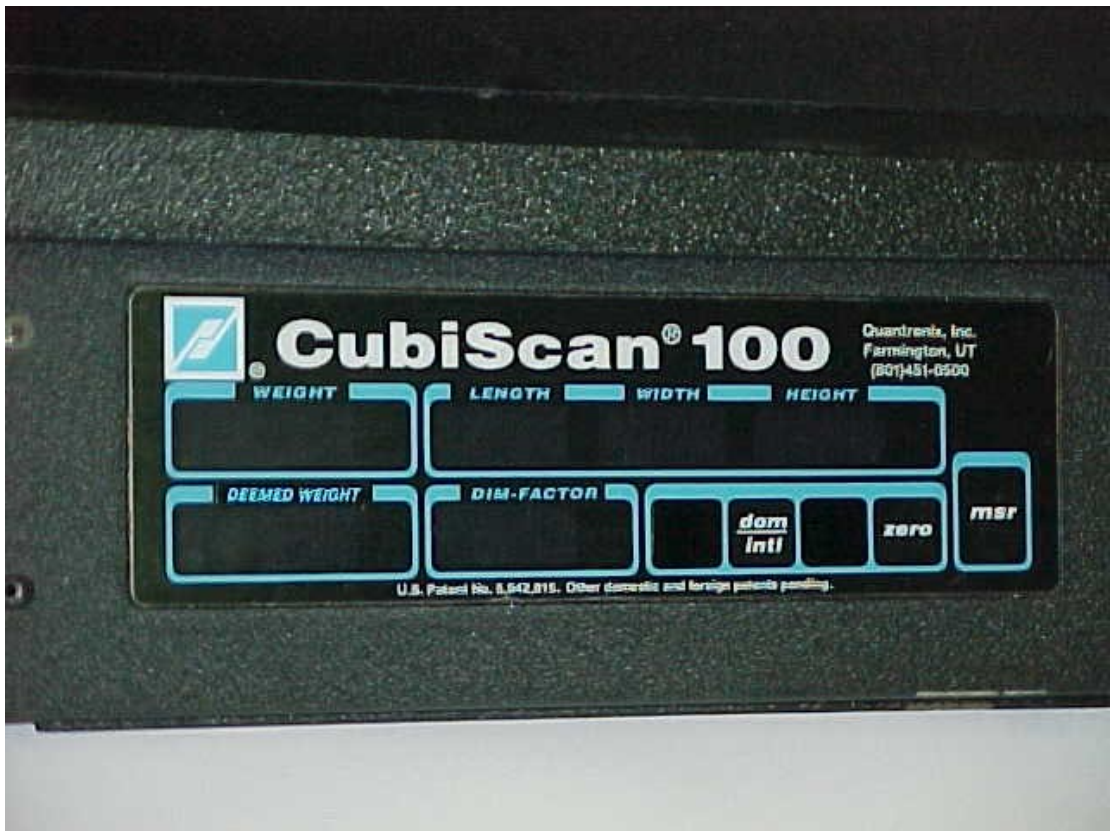
Quantronix Model CubiScan 100 LFT Weighing and
Dimensional Measuring Instrument

FIGURE 13/2/3 - 2



Showing Load cell Mounting and Controller Box Sealing

FIGURE 13/2/3 - 3



Control Panel and Indicator