Australian Government
National Measurement Institute
Bradfield Road, West Lindfield NSW 2070

Notification of Change
Certificate of Approval No 13/2/5
Change No 1

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

The following changes are made to the approval documentation for the

Quantronix Model CubiScan CS100 LFT Non-automatic Weighing and Dimensional Measuring Instrument

submitted by Quantronix Inc
PO Box 929
Farmington UTAH 84025-0929
USA.

A. In Certificate of Approval No 13/2/5 dated 2 June 2004;

1. The Condition of Approval referring to the review of the approval should be amended to read:

   "This approval becomes subject to review on 1 August **2014**, and then every 5 years thereafter."

2. The FILING ADVICE should be amended by adding the following:

   "Notification of Change No 1 dated 13 January 2011"

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

13/2/5
2 June 2004

Australian Government

National Standards Commission

12 Lyonpark Road, North Ryde NSW 2113 Australia

Certificate of Approval

No 13/2/5

Issued 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

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

submitted by Quantronix Inc
PO Box 929
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.

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CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 August 2009, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked NSC No 13/2/5 and only by persons authorised by the submittor.

Instruments purporting to comply with this approval and currently marked NSC No P13/2/5 may be re-marked NSC No 13/2/5 but 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 NSC P 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.

Special Condition 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.

DESCRIPTIVE ADVICE

Pattern: provisionally approved 3 July 2003
approved 6 April 2004

- A Quantronix model CubiScan 100 LFT non-automatic weighing and dimensional measuring instrument which is approved for use to weigh and to measure the linear dimensions of certain objects while stationary.

Technical Schedule No 13/2/5 describes the pattern.

FILING ADVICE

The documentation for this approval comprises:

Certificate of Approval No 13/2/5 dated 2 June 2004
Technical Schedule No 13/2/5 dated 2 June 2004 (incl. Test Procedure)
Figures 1 to 4 dated 2 June 2004

Signed by a person authorised under Regulation 60 of the National Measurement Regulations 1999 to exercise the powers and functions of the Commission under this Regulation.

TECHNICAL SCHEDULE No 13/2/5

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

Submittor: Quantronix Inc
PO Box 929
Farmington UTAH 84025-0929
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 (III) non-automatic weighing instrument with a maximum capacity of 60 kg and with a verification scale interval (e) of 0.02 kg. The pattern is approved for use for the determination of the linear dimensions of objects 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 is approved for use in measuring the linear dimensions of opaque 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 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 rear 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 Weighing System

The load receptor has maximum nominal dimensions of 61 cm x 61 cm. It uses a Celtron Technologies model LOC-100kg-C3 load cell of 100 kg maximum capacity mounted as shown in Figure 2.

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1.3 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'.

1.4 Operation

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

(i) Ensure that the weighing platform is empty and the zero indication is lit. Press the zero button if the zero light is not lit.

(ii) Place the object on the platform and slide it against the back corner until it is in contact with both rear side panels.

(iii) 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.

1.5 Markings and Notices

(a) Instruments carry the following markings:

Manufacturer's mark, or name written in full	Quantronix Inc
Model designation	CubiScan 100 LFT
Serial number	.....
Year of manufacture	.....
Pattern approval mark	NSC No 13/2/5
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.

1.6 Verification/Certification Provision

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

1.7 Sealing Provision

Provision is made for the calibration dipswitch located within the controller box to be sealed (Figure 4).

TEST PROCEDURE

A. Weighing

The non-automatic weighing function should be tested in accordance with any relevant tests specified in the Uniform Test Proceudres.

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:

$\pm 0.5e$ for loads $0 \leq m \leq 500$; and

$\pm 1.0e$ 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 **1.4 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 $\pm 1/3$d using a verified length standard. N is a whole number.
- Use the procedure described in clause **1.4 Operation** and check that the dimensions indicated on the indicator are within the maximum permissible error, i.e. the display is either N*d* 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 0.02 kg.

FIGURE 13/2/5 – 1

Quantronix Model CubiScan 100 LFT Measuring Instrument

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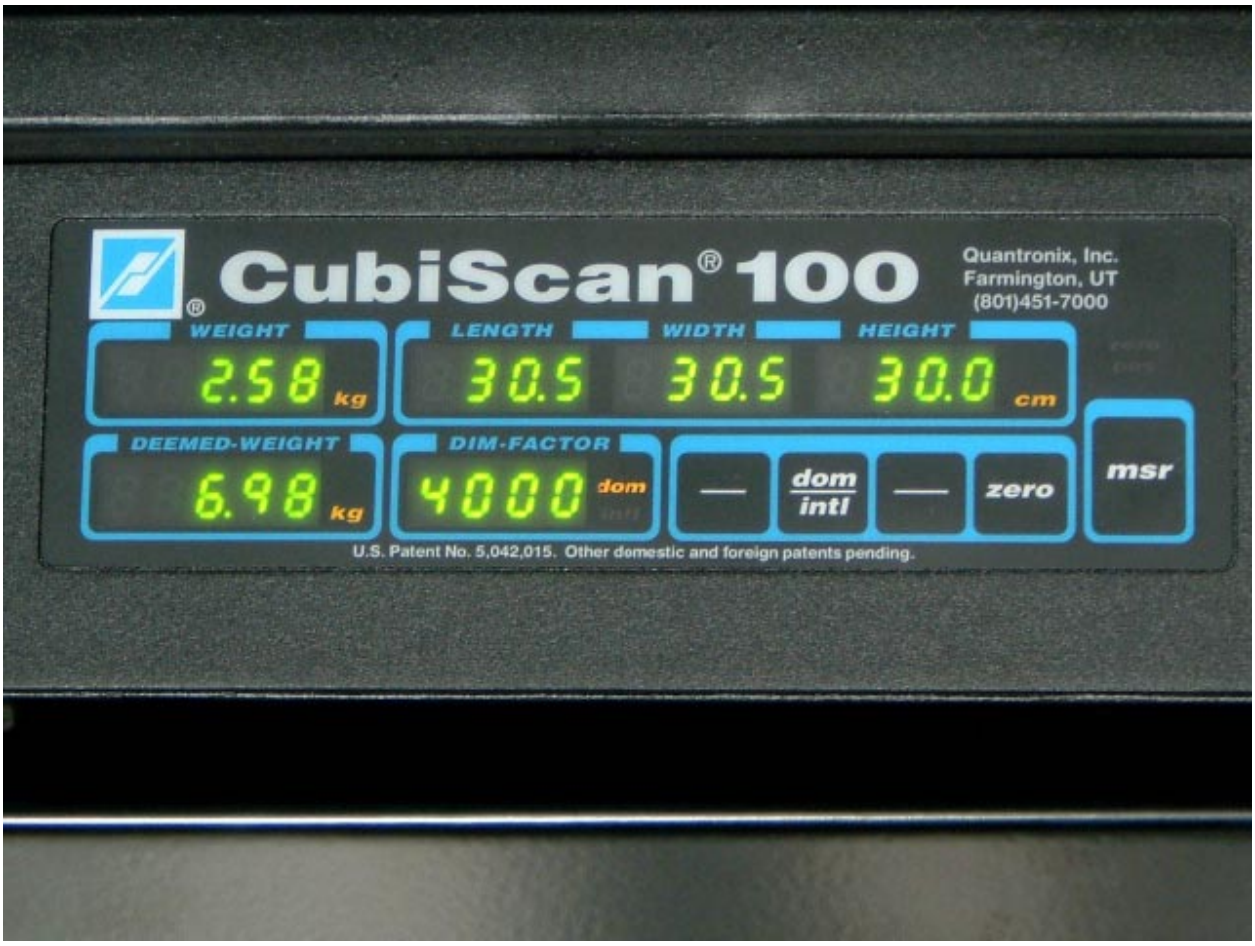
2 June 2004

FIGURE 13/2/5 – 2

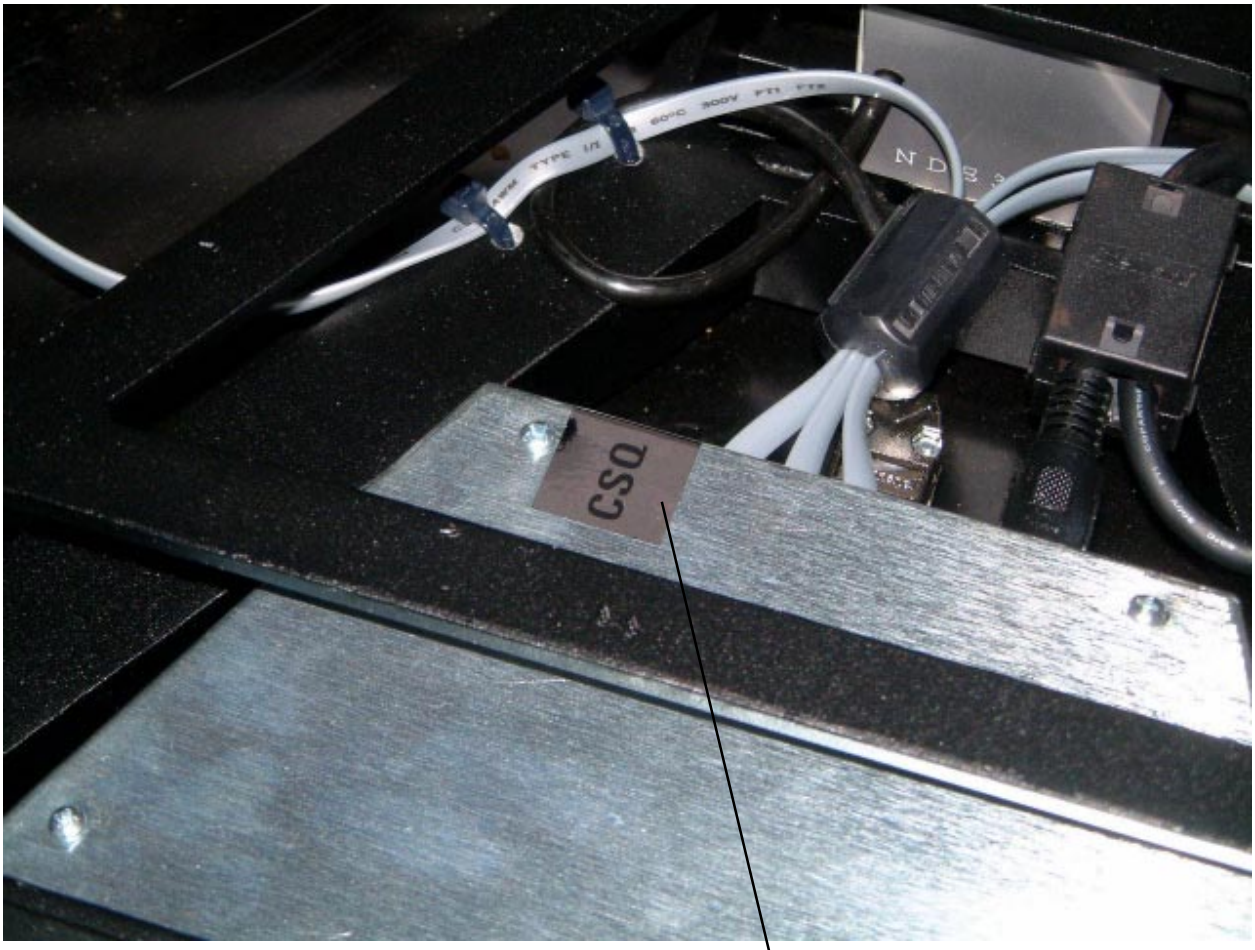
CubiScan 100 LFT – Showing Load Cell and Mounting

FIGURE 13/2/5 – 3



CubiScan 100 LFT – Control Panel and Indicator

FIGURE 13/2/5 – 4



CubiScan 100 LFT – Typical Sealing of Controller Box