



Australian Government
National Measurement
Institute

Bradfield Road, West Lindfield NSW 2070

Cancellation
Certificate of Approval No 13/1/1A

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 Approval
13/1/1A issued in respect of the

CubiCal Model PM-1/15 Dimensional Measuring Instrument

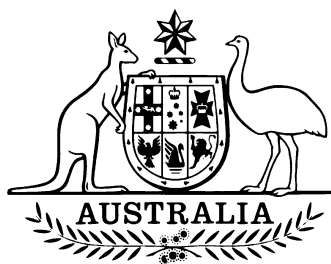
submitted by CubiCal Holdings Pty Limited
Level 22, Picadilly Centre
Castlereagh Street
Sydney NSW 2000

has been cancelled in respect of new instruments as from 1 April 2007.

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.', is written over a faint, circular official stamp.

13/1/1A
12 April 2001



National Standards Commission

12 Lyonpark Road, North Ryde NSW

Certificate of Approval

No 13/1/1A

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

CubiCal Model PM-1/15 Dimensional Measuring Instrument

submitted by CubiCal Holdings Pty Limited
 Level 22, Picadilly Centre
 Castlereagh Street
 Sydney NSW 2000.

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 Certificate is issued upon completion of a review of NSC approval No 13/1/1.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 March 2006, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked NSC No 13/1/1A 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 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:

Instruments are only approved for use for determination of volume and/or '**dimensional weight**' for charging for postage or freight of a rectangular box as described in the Technical Schedule listed in the Filing Advice below.

DESCRIPTIVE ADVICE

Pattern: approved 23 February 2001

- A CubiCal model PM-1/15 dimensional measuring instrument.

Technical Schedule No 13/1/1A describes the pattern.

FILING ADVICE

The documentation for this approval comprises:

Certificate of Approval No 13/1/1A dated 12 April 2001

Technical Schedule No 13/1/1A dated 12 April 2001 (incl. Test Procedure)

Figures 1 to 3 dated 12 April 2001

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 13/1/1A

Pattern: CubiCal Model PM-1/15 Dimensional Measuring Instrument.

Submittor: CubiCal Holdings Pty Limited
Level 22, Picadilly Centre
Castlereagh Street
Sydney NSW 2000.

1. Description of Pattern

A CubiCal model PM-1/15 dimensional measuring instrument (Figure 1) which is approved for use in measuring the linear dimensions of a rectangular box (parallelepiped - #) from which the volume is calculated; from this volume, a '**dimensional weight**' value (*) is determined by means of a conversion factor.

(#) 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.

The pattern is approved for use to measure lengths from 10 cm to 250 cm with a scale interval of 1 cm.

Instruments are approved for use over a temperature range of 0°C to +40°C and must be so marked.

NOTE: Instruments shall only be used as specified in the Special Condition of Approval.

1.1 Design

The pattern (Figure 1) is a hand-held device which is connected to either:

- (a) a portable printer unit which also provides a battery power supply for the hand-held device (Figure 2); or
- (b) a personal computer which provides power for the hand-held device via its PS2 port (Figure 3).

A 240/110 V 150 mA mains power supply may also be used to power the system and to recharge the batteries of the unit.

A display check is initiated whenever the device is switched on via the ON button of the printer unit; the software version number (v1.20) is also displayed.

As the hand-held device is drawn (with the trigger depressed) over each of three sides of the box in turn, the length of that side is determined; the value determined (in cm) is displayed after the trigger is released.

After the three dimensions have been measured the instrument applies the pre-programmed conversion factor to the calculated volume and displays the calculated 'dimensional weight' value (DW ...).

If the hand-held device is connected to the printer, an adhesive ticket showing the three dimensions together with the calculated volume, the conversion factor and the 'dimensional weight' value, is then printed by pressing the T button on the hand-held device. When connected to a personal computer the information is displayed on the computer screen for printing as required.

The three dimensions, the conversion factor and the calculated DW value may also be displayed on the hand-held device by pressing the R button; pressing the C button will display the calculated volume.

Note that the calculated volume and the 'dimensional weight' values are cumulative, such that if these values are printed or displayed they will show the cumulative total since the previous reset operation. Where these totals are printed, the printout indicates 'consignment totals' and the number of items (pieces), and does not print the dimensions.

1.2 Verification/Certification and Sealing Provisions

Provision is made for a verification/certification mark to be applied.

Provision is made for the calibration adjustments to be sealed by placing a destructible label over one end of the measuring wheel axle.

1.3 Markings

Instruments carry the following markings:

Manufacturer's mark, or name written in full	CubiCal Holdings Pty Limited
Model designation	PM-1/15
Serial number of the instrument
Year of manufacture
Pattern approval mark for the instrument	NSC No 13/1/1A
Maximum object length	<i>Max</i> 250 cm
Minimum object length	<i>Min</i> 10 cm
Scale interval	<i>d</i> = 1 cm
Special temperature limits	0°C to +40°C

- * In addition, instruments carry a notice stating "For the calculation of 'dimensional weight' (DW ... kg) or volume (m³) of rectangular boxes only", or similar wording.

TEST PROCEDURE

Maximum Permissible Error at Verification/Certification

The maximum permissible error at verification/certification is:

± 1.0 cm for lengths from the minimum length to any value up to and including the maximum length capacity of the instrument.

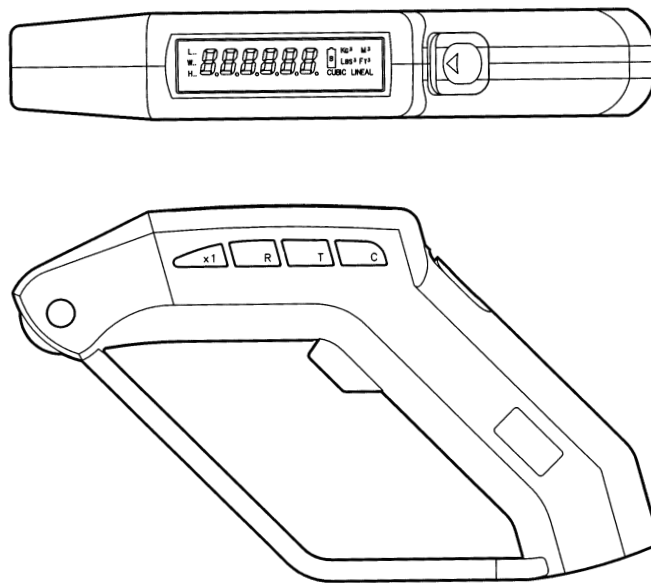
Ensure that instruments are only being used within the special temperature limits stated elsewhere in this Technical Schedule.

Instruments shall be tested as follows:

- Test objects shall be used of known lengths 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 lengths specified on the instrument nameplate. Each test object shall be rigid and with well-defined edges to simulate the edges of a rectangular box. The lengths shall be known to an uncertainty equal to or better than ± 3 mm.
- Using the instrument in the manner described in the user's manual supplied with the instrument, carry out at least three test runs for each length. Each measurement shall be within the maximum permissible error.
- Note the conversion factor displayed on the instrument and using three consecutive length measurements, display the calculated volume and the 'dimensional weight' value. These shall agree with values calculated from the displayed lengths and the conversion factor, rounded to the nearest significant digit.

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FIGURE 13/1/1A - 1



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FIGURE 13/1/1A - 2



With Portable Printer Unit, etc.

FIGURE 13/1/1A - 3



With Personal Computer Connections