



Australian Government
**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/4C/296

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.

Sartorius Model SQP-C Model Quintix 6102 – 10AU Weighing Instrument

submitted by Sartorius Lab Instruments GmbH & Co. KG
Weender Landstrasse 94 – 108
37075 Goettingen
Germany

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 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated July 2004.

This approval becomes subject to review on 1/06/20, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 3 approved – certificate issued	26/05/15

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/4C/296' 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 Certificate No S1/0B.

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



Dr Amanda Rawlinson

TECHNICAL SCHEDULE No 6/4C/296

1. Description of Pattern

approved on 26/05/15

The Sartorius model Quintix 6102 – 10AU class **II** weighing instrument (Figure 1 and Table 1) of 6100 g maximum capacity. The instrument has a single range, with 0.1 g verification scale interval, and has an auxiliary indicating device (a differentiated scale division) with a scale interval (d) of 0.01 g.

The instruments use electromagnetic force compensation technology and have a liquid crystal display (LCD).

Instruments are approved for use over a temperature range of +10 °C to +30 °C, and are so marked. Instruments are not for trading direct with the public, and are so marked.

Some instruments may have a windshield provided over the load receptor.

The AC/DC mains adaptor supplied was a type Sartorius model 153779 power supply (output 15 V_{DC}, 530 mA); the submittor should be consulted regarding the acceptability of alternative power supply units.

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

1.1 Zero and Tare

Instruments have an initial zero-setting device with a nominal range of 200g.

Instruments have a zero-setting device with the nominal range of not more than 4% of the maximum capacity of the instrument.

Instruments have a subtractive tare balancing device (operated by the 'Tare' key). The subtractive taring device operates up to the maximum capacity of the instrument.

A zero-tracking device may also operate to automatically correct to within $\pm 0.25e$ (or $\pm 0.5d$ where $d < e$) whenever the instrument comes to rest with the display indicating zero (including net zero).

1.2 Alternative Units

Use of units other than grams (g) is not approved for trade use.

1.3 Additional Features

Instruments may be fitted with a number of additional functions which display values that are not weighing results such as counting, mixing, components totalisation, statistics calculation of samples, density calculations, and weighing at unstable conditions.

These functions and displays are not approved for trade use.

1.4 Display Check

A display check is initiated when the instruments are switched on.

1.5 Levelling

Instruments are provided with adjustable feet and a level indicator, adjacent to which is a level notice stating “Instrument must be level when in use”, or similar wording.

1.6 Interfaces

Instruments may be fitted with interfaces for the connection of auxiliary and/or peripheral devices. Any interfaces shall comply with clause 5.3.6 of document NMI R76 (the basic intent of which is that it shall not be possible to alter weighing results via the interfaces).

Any measurement data output from the instrument or its interfaces shall only be used for trade in compliance with General Supplementary Certificate No S1/0/B (in particular in regard to the data and its format).

1.7 Internal Self-Calibration System

Instruments are fitted with an internal ‘calibration’ system. This comprises an internal calibration mass that may be applied to the instrument in an automatic adjustment cycle that is initiated manually by pressing a key. The instrument has facilities for advising an operator when this ‘calibration’ cycle should be utilised (e.g. dependent on time or temperature). The feature is known by Sartorius as ‘isoCal’.

1.8 Software

The software version numbers can be accessed by: Access the instrument MENU, select the tools icon (spanner symbol), select ‘Device information’.

The software for the instruments, both Quintix and Secura (variant 3) is identified by version numbers:

BAC: 00-50-02.xx CN:1701 and

APC: 01-70-02.xx CN:6587

The ‘xx’ above represent numbers which may vary according to non-metrological changes.

1.9 Verification Provision

Provision is made for the application of a verification mark.

1.10 Sealing Provision

Sealing of the calibration adjustments of the instruments is achieved by sealing the calibration switch as shown in Figure 2.

1.11 Descriptive Markings and Notices

The instrument model number is shown on the instrument nameplate. Instruments carry the following markings:

Manufacturer's mark, or name written in full	Sartorius Lab Instruments GmbH & Co. KG
Indication of accuracy class	Ⓜ
Pattern approval mark for the instrument	NMI 6/4C/296
Maximum capacity	<i>Max</i> g*
Minimum capacity	<i>Min</i> g*
Verification scale interval	<i>e</i> = g*
Scale interval	<i>d</i> = g*
Serial number of the instrument
Special temperature limits	+10°C / +30°C

- * These markings shall also be shown near the display of the result if they are not already located there. Values may alternatively be shown in units of mg.

In addition, instruments shall carry a notice stating NOT FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

2. Description of Variant 1

approved on 26/05/15

Certain other model Sartorius SQP-C Quintix class Ⓜ weighing instruments as listed in Table 1. Note: the model in **BOLD** letters is the pattern (i.e. Type SQP-C model Quintix 6102-10AU). These models have different maximum capacities, but otherwise have similar specifications to the pattern, including an initial zero-setting range of 200g for each model of this type.

TABLE 1 – Type SQP-C, Quintix.... Models

Model	Quintix -10AU					
	6102	5102	3102	2102	1102	612
Accuracy class	Ⓜ	Ⓜ	Ⓜ	Ⓜ	Ⓜ	Ⓜ
Type	SQP-C	SQP-C	SQP-C	SQP-C	SQP-C	SQP-C
Max. capacity (g)	6100	5100	3100	2100	1100	610
Verification scale interval <i>e</i> (mg)	100	100	100	100	100	100
Scale interval <i>d</i> (mg)	10	10	10	10	10	10
Min capacity (g)	0.5	0.5	0.5	0.5	0.5	0.5
Weighing pan size (diameter in mm)	180	180	180	180	180	180
Levelling device	Level bubble	Level bubble	Level bubble	Level bubble	Level bubble	Level bubble

3. Description of Variant 2

approved on 26/05/15







Sartorius model SQP-B Quintix class  weighing instruments, similar to the pattern, but with differing specifications as shown in Table 2. The initial zero-setting range for each model of this type is 20g.

TABLE 2 – Type SQP-B, Quintix.... Models

Model	Quintix-10AU			
	613	513	313	213
Accuracy class				
Type	SQP-B	SQP-B	SQP-B	SQP-B
Max. capacity (g)	610	510	510	210
Verification scale interval e (mg)	10	10	10	10
Scale interval d (mg)	1	1	1	1
Min capacity (g)	0.02	0.02	0.02	0.02
Weighing pan size (diameter in mm)	120	120	120	120
Levelling device	Level bubble	Level bubble	Level bubble	Level bubble

4. Description of Variant 3

approved on 26/05/15

Sartorius models SQP-B Secura and SQP-C Secura class  weighing instruments as shown in Figure 3.

These models are similar to, and have the same specifications as the SQP-B Quintix models (pattern and variant 1 – Table 1) and SQP-C Quintix models (variant 2 – Table 2), except that the visible level bubble is replaced by an electronic tilt sensor. These models incorporate an electronic levelling indicator (Figure 4a) and provide a warning signal (Figure 4b) if the permissible tilt of the instrument is exceeded.

In addition, for these models the 'isoCal' automatic adjustment cycle (see clause **1.5 Internal Self-Calibration System**) may be disabled by a switch within the menu system (i.e. this feature is not required to be enabled).

TEST PROCEDURE No 6/4C/296

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

Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

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

For instruments with an internal self-calibration facility

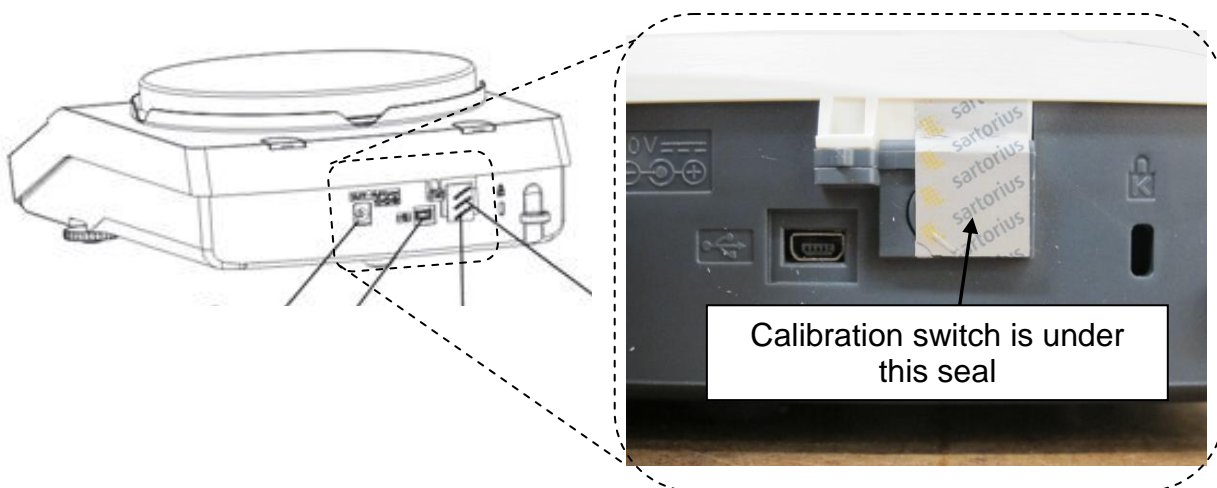
Prior to verification/certification ensure that the instrument has been adjusted by the internal self-calibration system by pressing the 'CAL' key in the 'Menu' screen, and then allow the calibration procedure to proceed to completion (with no load on the platter).

FIGURE 6/4C/296 – 1



Sartorius Model SQP-C Quintix6102-10AU Weighing Instrument (Pattern)

FIGURE 6/4C/296 – 2



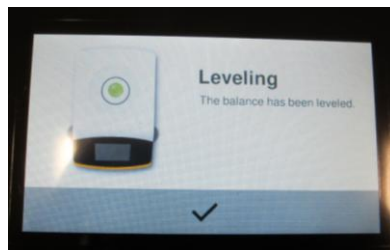
Sealing Method and Location

FIGURE 6/4C/296 – 3

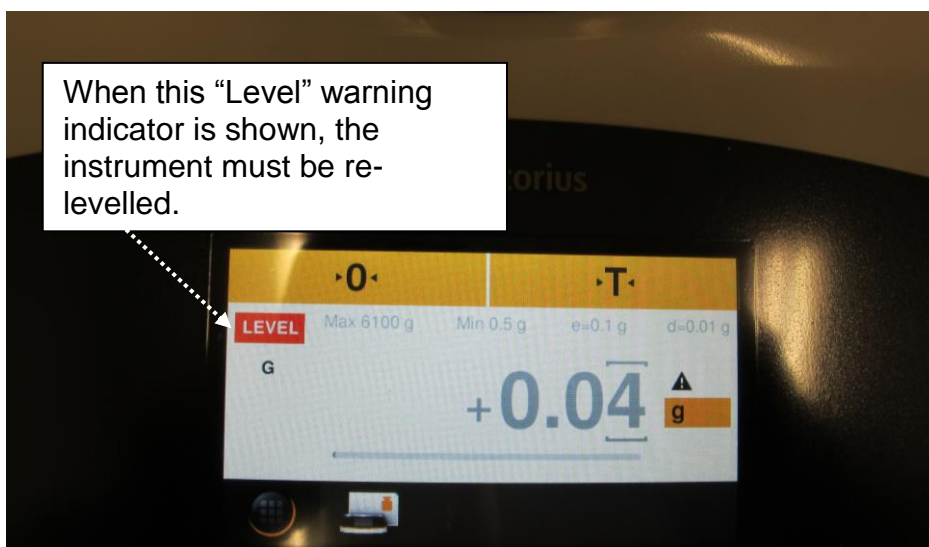


Sartorius Model Secura (Variant 3)

FIGURE 6/4C/296 – 4



(a) Electronic Levelling Indicator (Variant 3)



(b) Secura Model - level warning (Variant 3)