



Member State of OIML
United Kingdom of Great Britain
and Northern Ireland

OIML Certificate No
R51/2006-GB1-17.01
Revision 1

OIML CERTIFICATE OF CONFORMITY

Issuing authority: **NMO**
Person responsible: **Mannie Panesar – Head of Technical Services**
Applicant: **Sparc Systems Ltd
Sparc House, Merebrook Business Park
Hanley Road,
Malvern
Worcestershire
WR13 6NP
United Kingdom**
Manufacturer: **The applicant**
Identification of the certified pattern: **420 Series**

This certificate attests the conformity of the above-mentioned pattern (represented by the samples identified in the associated test report) with the requirements of the following Recommendation of the International Organisation of Legal Metrology (OIML):

OIML R 51 - Edition 2006(E) for accuracy class: XIII(1)

This certificate relates only to the metrological and technical characteristics of the pattern of the instrument concerned, as covered by the relevant OIML International Recommendation.

This certificate does not bestow any form of legal international approval.

Important note: Apart from the mention of the certificates reference number and the name of the OIML Member State in which the certificate was issued, partial quotation of the certificate or of the associated test report is not permitted, though they may be reproduced in full.

Issue Date: **13 July 2017**

G Stones
Technical Manager
For and on behalf of the Head of Technical Services



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The conformity was established by testing and examinations described in the associated Evaluation Report P01438 which includes 13 pages.

Characteristics of the instrument:

This family of mains-powered, single-interval, automatic weighing instruments is designated the TS420 Series. The instruments operate as checkweighers (Category X).

The instruments comprise a cabinet, touch screen user interface (HMI), in-feed and out-feed conveyors, weighing unit with weigh conveyor, mechanical handling facilities and sorting devices. The checkweigher may be equipped with a metal detector. The instruments are designed to weigh packs dynamically.

The models are designated 420 Series, with prefixes to describe the associated functions (for example: Sentinel 420 for stand alone, Cerberus 420 for metal detection, and Theia 420 for X-ray, etc.).

Construction:

The instruments are constructed in stainless steel. The framework is a fabricated floor standing stainless steel frame on adjustable feet. On the frame the conveyors (in-feed, weigh and out-feed) are mounted. The conveyors' type and size are not restricted.

The control cabinet is located behind of the conveyors and houses the electrical hardware including the A/D board and the flash card memory to protect the legally-relevant parameters.

Photocells mounted on the frame are used for pack detection.

Weighing unit

The weighing device comprises a strain gauge load cell located below the centre of the weigh conveyor.

The load cell is a PW16AC3, $E_{\max} = 30$ kg, manufactured by HBM.

Alternatively, any compatible load cell may be used providing the following conditions are met:

- There is a respective OIML Certificate of Conformity (R60) issued for the load cell.
- The certificate contains the load cell types and the necessary load cell data required for the manufacturer's declaration of compatibility of modules and any particular installation requirements.
- It is not a load cell with digital output
- The characteristics of the replacement load cell such as n_{lc} , Y, Z are the same or better than the load cell tested dynamically (HBM PW16AC3, $E_{\max} = 30$ kg)
- The design of the load cells and the material are the same
- No oil damper is used
- The sensitivity is greater than $0.33 \mu\text{V}/\text{div}$.

Packs are weighed as they pass over the weigh conveyor which runs continuously. The speeds for in-feed, weigh and out-feed conveyors can be adjusted independently to form a harmonised system speed.

Devices:

- Semi-automatic zero setting ($\leq 4\%$ Max)
- Zero tracking ($\leq 4\%$ Max)
- Initial zero setting ($\leq 20\%$ Max)
- Pre-set tare (\leq Max)
- Data storage device

The instrument must be set to zero at least every 30 min.

Technical data:

The TS420 instrument has the following technical characteristics

Max capacity (Max)	3,000 g	6,000 g	15,000 g
Min capacity (Min)	50 g	100 g	250 g
Scale interval (e)	1 g	2 g	5 g
Number of verification scale intervals (n)	3,000		
Preset Tare (PT)	50-500g, no tare; 500-3000g, \leq -130g	100-1000g, no tare; 1000-6000g, \leq -260g	250-2500g, no tare; 2500-15000g, \leq -650g
Load cell model	HBM PW16AC3		
Load cell capacity (E_{max})	30 kg		
Accuracy class	XIII(1)		
Climatic environment	Closed, non-condensing		
Temperature range	+5 °C to +40 °C		
Max belt speed	50 – 500 g: 100 m/min 500-3000 g: 80 m/min		
Electromagnetic environment	E1 and E2		
Power supply	230 V AC, 50/60 Hz		

Interfaces:

- Ethernet
- USB

Sealing:

The CF card, HMI board and load cell connection to the electronics are sealed via a tamper-evident solution.

Software:

The legally relevant software consists of two parts, HMI and Controller. Both parts of the legally relevant software are held in read-only directories separated from the main software repositories.

The software identification shall be as follows:

HMI Software version number: 0746xxx/1, where /1 represent legally relevant part.

HMI Checksum (CRC-32): 42A36389.

Controller Software version number: 0745xxx/1, where /1 represent legally relevant part.

Controller Checksum (CRC-32): ED436F81

The legally relevant parameters (including the possibility of downloading the legally relevant software) are secured by a password and non-editable counter designated Parameter Modification Counter, held on the Controller. Whenever a change is detected, the counter is incremented. The value of the counter can be viewed by pressing the date field on the HMI.

The calibration is secured by a password and non-editable counter designated Calibration Count, held on the Controller. Whenever a change is detected, the counter is incremented. The value of the counter can be viewed by pressing the date field on the HMI.

CERTIFICATE HISTORY

ISSUE NO.	DATE	DESCRIPTION
R51/2006-GB1-17.01	01 February 2017	Certificate first issued.
R51/2006-GB1-17.01 Revision 1	13 July 2017	<u>Software</u> Editorial error correction: HMI Checksum (CRC-32): A7197742 changed to 42A36389.