



OIML Member State
Czech Republic

OIML Certificate No.
R76/2006-A-CZ1-2023.04
Revision 2

OIML CERTIFICATE ISSUED UNDER SCHEME A

OIML Issuing Authority

Name: **Czech Metrology Institute**
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Czech Republic

Person responsible: Jan Kalandra

Applicant

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Address: 5 Toruńska Street
26-600 Radom
Poland

Manufacturer

Name: RADWAG Wagi Elektroniczne Witold Lewandowski
Address: 5 Toruńska Street
26-600 Radom
Poland

Identification of the certified type *(the detailed characteristics will be defined in the additional pages)*

Non - automatic weighing instrument
type: C32.xxx.PM.yyy and 5Y.xxx.PM.yyy

Designation of the module *(if applicable)*

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This OIML Certificate attests the conformity of the above identified type (represented by the sample(s) identified in the OIML type evaluation report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

OIML R 76-1 Edition (year): 2006

For accuracy class **II and III**



This OIML Certificate relates only to metrological and technical characteristics of the type of measuring instrument covered by the relevant OIML Recommendation identified above.

This OIML Certificate does not bestow any form of legal international approval.

The conformity was established by the results of tests and examinations provided in the associated reports:

Test reports: 6052-PT-R0002-24 and 8551-PT-E0187-22

OIML type evaluation report No. 0511-ER-N079-22 (Rev.2) dated February 1, 2024 that includes 10 pages.

The technical documentation relating to the identified type is contained in documentation file:

0511-UL-N079-22

OIML Certificate History

Revision No.	Date	Description of the modification
-	23 June 2023	Issuing certificate
Revision 1	5 January 2024	Correction of the Test report number
Revision 2	1 February 2024	New Test report

The OIML Issuing Authority

RNDr. Pavel Klenovský
Head of Certification Body



Date: 1 February 2024

Important note: Apart from the mention of the Certificate's reference number and the name of the OIML Member State in which the Certificate is issued, partial quotation of the Certificate and of the associated OIML type evaluation report(s) is not permitted, although either may be reproduced in full.

Characteristics

Type: **C32.xxx.PM.yyy and 5Y.xxx.PM.yyy**

Main metrological characteristics

Type	C32.10.PM	C32.50.PM	C32.100.PM	C32.150.P M	C32.6/35.PM
Maximum - Max	10 kg	50 kg	100 kg	150 kg	6/35 kg
Minimum - Min	5 g	50 g	50 g	500 g	20/100 g
Resolution – d	0.01 g	0.1 g	0.1 g	1 g	1/5 g
Verification interval – e	0.1 g	1 g	1 g	10 g	1/5 g
Tare range – T	- 10 kg	- 50 kg	- 100 kg	- 150 kg	- 35 g
Working temperature	+10 °C / +40 °C				
Supply	100 V – 240 VAC, 50-60 Hz / 12 – 16 VDC				
Accuracy class	II	II	II	II	III

Type	5Y.10.PM	5Y.50.PM	5Y.100.PM	5Y.150.PM	5Y.6/35.PM
Maximum - Max	10 kg	50	100 kg	150 kg	6/35 kg
Minimum - Min	5 g	50 g	50 g	500 g	20/100 g
Resolution – d	0.01 g	0.1 g	0.1 g	1 g	1/5 g
Verification interval – e	0.1 g	1 g	1 g	10 g	1/5 g
Tare range – T	- 10 kg	- 50 kg	- 100 kg	- 150 kg	- 35 g
Working temperature	+10 °C / +40 °C				
Supply	100 V – 240 VAC, 50-60 Hz / 12 – 16 VDC				
Accuracy class	II	II	II	II	III

Devices:

- Zero indicator
- Stability indicator
- Internal adjustment
- Service menu via switch on the main board
- Initial zero-setting
- Zero-tracking
- Semi-automatic zero setting device
- Subtractive tare device
- Semi-automatic and automatic tare device
- Tare-weighing device
- Preset tare device
- Data Storage Device (Alibi memory)
- Weighing in carat units*)

*) For instruments that are able to display in both units if the Max, Min and e values are on a label then they must be marked on the instrument in both units. If the values are shown on a display, then they can be switched.

The instruments must be equipped with a level indicator with a sensitivity of at least 2 mm for a tilt of 2/1000.



Data Storage Device (Alibi memory)

Balances are equipped with alibi memory (Data Storage Device) working as a long term memory. Weighing results are saved automatically in the internal flash memory.

A program works embedded software without operating system, which prevents running other pieces of software.

The program of C32.PM balances allows saving the content of alibi memory on the external flash memory connected to the USB interface (e.g. pendrive) for archiving. The program does not allow sending data in the opposite direction (to the scale) which means that files from a pendrive cannot be uploaded to the scale or indicator. A single data record have the following fields:

- Measurement date
- Measurement time
- weighing results – (display unit)
- weighing results – (calibration unit)
- Tare value
- Operator code (if logged in)
- Product code (if chosen)

A standard memory chip can hold up to 500 000 weighing results. After the memory is filled the next record will overwrite the oldest record. It is assumed that the number of records is enough for any specific regulations in different countries. Single records and the whole database are protected by checksums. Any corruption of data causes that they are not displayed and/or printed. Weighings are saved in the flash memory in the form of integrated circuit connected to the main processor which runs the program supervising the alibi memory. The program is also responsible for supervising the main display, printing and supervising data transmission through all hardware interfaces.

5Y.PM balances are equipped with a memory module (Alibi memory) used as a database system acting as a long term memory. It saves automatically weighing results using an embedded flash memory. Data are protected against deletion for a given period (configurable). Balances software is running on Linux operating system. They are designed as closed shell systems protected against running applications other than the one loaded in the internal flash memory by the manufacturer. These systems ext3 (third extended file system) for files allocation. It means that the system settles standards of protecting files, generating I/O errors or exceptions when there is some file corruption detected. The record of weighing holds all relevant information required i.e. net and tare values together with units, date and time record as an identifier, platform number as the load receptor designation and some other that are not relevant but useful for other applications. Weighings in DSD are identified by date and time which is one of fields in the relevant part of the weighing record. It is saved in Linux date format standard that allows to present the date in a format with accuracy that meets Welmec 2.5 requirements and allows to present dates in format yyyy-mm-dd, hh:mm:ss. Weighings are saved automatically. Measurements are initiated by pressing the print/enter button or by automatic measurement triggering after fulfilling some conditions (e.g. results between MIN and MAX or over LO) depending on the device configuration.

Each stored weighing can be printed and/or shown on the main display. The printer is not the part of DSD.

Interfaces

Interfaces used must comply with the paragraph 5.3.6 of OIML R76-1 (2006). Following interface is used 5Y.PM balances: USB C, Ethernet RFID, HDMI , WiFi.

Following interface is used C32.PM balances: 2 x RS 232, USB-A 2.0, USB-B 2.0, Ethernet . Optionally the balances may be equipped in wireless interfaces WiFi.

Software - C32.xxx.PM.yyy

Instruments are equipped with embedded software that is used in a fixed hardware and software environment and cannot be modified or uploaded via any interface or by other means after securing and/or verification. Software identification by its version number is accessible after pressing ON/OFF key on the overlay when the software is operating.

C32.xxx.PM.yyy use embedded terminal software **L1.0.0** and weighing software in embedded version uploaded to a processor situated in the weighing platform body - **version 1.0.0 or 1.0.1**



Software – 5Y.xxx.PM.yyy

5Y balances are equipped with hybrid system with **embedded software version 1.0.0 or 1.0.1** with all the basic weighing functions and legally relevant parameters. On the level of terminal with display **closed shell software version is used** with no access of operators to the system and files. Linux operating system is used for terminal operation – **LL2.0** version is used. Both kinds of terminal software working on Linux operating system include DSD (alibi memory), printing and displaying functions.

Non-essential devices

When non-essential device is connected to an electronic instrument through an appropriate interface the metrological qualities of the instrument shall not be adversely influenced.

