Type evaluation report

Issued by	:	NMi Certin B.V., accredited by the national accreditation body (RvA), for the ISO/IEC 17025, with identification number L029. RvA is a signatory member of the Multi-Lateral Agreement of the European cooperation for Accreditation (EA) and the Mutual Recognition Arrangement of the International Laboratory Accreditation Cooperation (ILAC). The test results, including statements of confirmity, are reported under L029.
Applicant	:	Studio RS S.r.l. Via Traversagna ang. Via del Feo, 58/60 56019 Migliarino Pisano Italy
Measuring instrument	:	A **Point of Sale**, intended for sales to the public. Producer : Studio RS S.r.l. Type : TauPos
Test specifications	:	"Software Guide"
Test period	:	May 2025 up to and including July 2026
Result	:	The measuring instrument complies with the requirements of WELMEC 7.2, 2023 as reported in the following 2 annexes.
Issue date	:	6 August 2026
Remark	:	This revision replaces the previous version.

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General

Directive 2014/31/EU (NAWID) gives the essential requirements for certain measuring instruments used in the European Union. The software of the Point of Sale was validated to show conformance with the essential requirements of the above stated regulation.

The validation was based on the WELMEC 7.2, 2023 "Software Guide" and WELMEC 2.10, where the essential requirements are interpreted and explained for software.

Test Object

The TauPos, brand Studio RS S.r.l., is a Point of Sale intended for sales to the public.

The basic functions of the instrument are:

- Interface to receive weighing data;
- Handling of manual weight data;
- Price-computing for non-weighed articles;
- Totalization of transactions;
- Handling of non-weighed articles;
- Interface to send tare, preset tare and zero command;
- PLU function;
- Providing the indication of unit price and price to pay for the customer and the operator;
- Printing of the ticket for the customer;
- Indications other than primary indications;
- Additional functions that facilitate trade and management.

According to WELMEC 7.2 the measuring instrument is described as followed:

- Measuring instrument using universal computers.
- General-Purpose Operating Systems.
- Software separation.

The version of the validated software is as follows:

Identification	Version	Checksum	Date
WeighingApp.jar	1.0.x	6249B923	20-07-2026
OS	-	58B3D13B	20-07-2026

The validation has been supported by following documents from the manufacturer:
- TauPosArchitecture_2_3

Examination Procedure
The validation has been performed according to WELMEC 7.2, 2023 "Software Guide".

Following requirements have been validated:
- **Type U**: Basic requirements for software of measuring instruments using a universal computer.
- **Extension O**: General-Purpose Operating Systems, category 2 component.
- **Extension S**: Software separation.

Checklist for the selection of the configuration is found in annex 1 to this report.

Risk class C has been applied to this instrument.

Following validation methods have been applied:
- Identification of the software
- Completeness of the documentation
- Examination of the operating manual
- Software design review
- Review of software documentation

Result
Following requirements of WELMEC 7.2 have been validated without finding non-conformances:
- U1, U2, U3, U4, U5, U6, U7, U8.
- O1, O2, O3, O4, O5, O6, O7.
- S1, S2, S3.
- POS systems for weighing instruments.

The checklist for type U requirements is listed in Annex 2, paragraph 2.1 of this report.
The checklist for extension O requirements is listed in Annex 2, paragraph 2.2 of this report.
The checklist for extension S requirements is listed in Annex 2, paragraph 2.3 of this report.
The checklist for the POS systems for weighing instruments is listed in Annex 2, paragraph 2.4 of this report.

The software of the TauPos, brand Studio RS S.r.l., fulfils the applicable essential requirements of the relevant metrological regulation(s).

The result applies to the tested items only.

All evaluations have been performed at NMi Certin B.V., Thijsseweg 11, 2629 JA Delft, the Netherlands.

1. Checklists to support the selection of the appropriate requirement sets

Decision on Instrument Type				
		(P)	Y/N	Remarks
1	Is the entire application software constructed for the measuring purpose?	(Y)	Y	
2	Are the requirements for the inclusion of an operating system or subsystems of it fulfilled?	(Y)	Y	
3	Is the user prevented from accessing the operating system if it is possible to switch to an operating mode not subject to legal control?	(Y)	Y	
4	Are the implemented programs and the software environment invariable (apart from updates)?	(Y)	Y	
5	Are there any means for programming?	(N)	Y	

Only if all answers to the five questions can be given as in the (P) column, then the requirements of the part P apply. In all other cases the requirements of the part U apply. In this case part **U** applies.

Decision on Required Extensions			
Req. Extension		YES / NO	Remarks
O	Does the device have an operating system that is legally relevant, i.e. the operating system is used to fulfil the essential requirements of the MID or can be used to affect compliance with requirements.	Y	Category 2 component
L	Does the device have the ability to store the measurement data either on an integrated storage or on a remote or removable storage?	N	
T	Is measurement data transmitted via communication networks to a distant device where it is further processed and/or used for legally relevant purposes?	N	
S	Are there software parts with functions not subject to legal control AND are these software parts desired to be changed after type approval?	Y	
D	Is loading of software possible or desired after putting the measuring instrument into use?	N	

2. Specific checklists for the respective technical parts

2.1. Checklist of basic requirements for type U instrument

Requirement		Passed	Failed	Not applicable	Remarks
U1	**Documentation** In addition to the specific documentation required in each requirement below, the documentation shall basically include:	X			
U1a	A description of the legally relevant software, meaning of the data, etc.	X			WeighingApp.jar contains all legally relevant software.
U1b	A description of the user interface, menus and dialogues.	X			
U1c	The software identifier(s) of the legally relevant software	X			WeighingApp.jar. Any change to this module, regardless of its nature, results in a new version number and a new CRC32 checksum, requiring a new certification or re-evaluation.
U1d	An overview of the system hardware e.g. topology, block diagram, type of computers, type of network, etc..	X			ARCHITECTURE DIAGRAM_2_1.png
U1e	The documentation of the configuration of the operating system, see Extension O.	X			See extension O
U1f	The operating manual.	X			

Requirement		Passed	Failed	Not applicable	Remarks
U2	**Software identification** The legally relevant software shall be clearly identified. The identifier(s) shall be permanently presented by the instrument, presented on command or during operation.	**X**			
	Specifying notes:				
	1. Legally relevant software identifier(s) may be independent or part of well-structured identifiers.	**X**			CRC32 checksum. MAJOR.MINOR.PATCH versioning format (e.g., 1.0.0) is used exclusively for the LRS.
	2. In the case that a legally relevant software identifier is embedded in an overall identifier, it shall be clearly distinguishable.	**X**			
	3. The legally relevant identifier(s) shall be unique for each the legally relevant software an instrument is equipped with.	**X**			
	4. The legally relevant identifiers shall be easily presented without requiring an additional tool.	**X**			Log in following the instructions in TauPosUserManual with: User: 10000 Password: 42994 Then click Welmec info.
	5. For the identification of operating system parts, see O6. These specifying notes apply in conjunction with O6 to the identification of the operating system.			**X**	See O6
	6. The legally relevant software identifier(s) are type-specific parameters and shall be protected as such (see U5 and U6). If the identifiers are not inextricably linked to the software itself, other securing means are required.	**X**			CRC32
	7. The identifier(s) shall be displayed permanently, on command or on start-up.	**X**			

Requirement		Passed	Failed	Not applicable	Remarks
	Remarks:				
U3	**Influence via user interface(s)** Commands entered via the user interface shall not inadmissibly influence legally relevant software, device-specific parameters and measurement data.	X			
	Specifying notes:				
	1. There shall be an unambiguous assignment of each command to an initiated function or data change.	X			
	2. Commands that are not documented shall have no effect on legally relevant functions, device specific parameters and measurement data.	X			Generates a standard GS1 DataBar barcode that securely encapsulates the final transaction data (net weight, final price) for individual weighed items.
	3. The respective modules of the software that interpret commands are considered to be legally relevant software.	X			Done directly by the LRS.
	Remarks: The module that interprets all legally relevant commands from the user is an integral and inseparable part of the LRS, WeighingApp.jar The N-LRS (CDT-Pos.jar) does not interpret metrological commands. It only sends high-level, nonmetrological requests to the LRS (e.g., "start weighing process for product X"). The LRS then takes full control, interprets the request, and executes the entire secure weighing and calculation process internally.				

Requirement		Passed	Failed	Not applicable	Remarks
U4	**Influence via communication interfaces** Commands input via communication interfaces of the device shall not inadmissibly influence the legally relevant software, device-specific parameters and measurement data	X			
	Specifying notes:				
	1. There shall be an unambiguous assignment of each command to an initiated function or data change.	X			
	2. Commands that are not documented shall not have any effect on legally relevant functions, device-specific parameters and measurement data.	X			
	3. The modules that interpret commands are considered to be legally relevant software.	X			All done by one module in the LRS
	4. Interfaces that allow commands with inadmissible effects on the legally relevant software, device-specific parameters and measurement data shall be sealed or protected in another appropriate way. This also applies for interfaces that cannot be completely assessed.			X	
	5. This special requirement does not apply to software download according to Extension D.			X	
	Note: If the operating system allows remote control or remote access, the requirements U3 apply to the communication interface and the connected remote terminal, respectively.			X	
	Remarks: **External Interfaces (Scale):** The LRS only sends specific, documented commands to the scale (e.g., TARE, Request Weight). The scale's responses are unambiguously interpreted by the LRS as a weight value or a status. **Internal Interface (LRS-N-LRS):** The N-LRS can only make a high-level call like "start weighing". This single call unambiguously initiates the entire autonomous weighing process within the LRS. There are no commands sent from the N-LRS that can individually modify a parameter or function within the LRS.				

Requirement		Passed	Failed	Not applicable	Remarks
U5	**Securing and protecting legally relevant software and device-specific parameters** Legally relevant software and device-specific parameters shall be secured against unintentional and protected against accidental changes.	X			
	Specifying notes:				
	1. The software shall be capable to detect changes caused by physical effects (electromagnetic interference, temperature, vibration, etc).	X			CRC32 checksum that is confirmed at startup and before any weighing action.
	2. Means shall be implemented to protect from unintentional misuse of the user interfaces.	X			The N-LRS application CDT-Pos.jar provides the commercial POS functionalities and the main user interface. It has no direct access to metrological hardware or logic and only interact with the LRS via a protected interface.
	3. The accidental modification of legally relevant software and device-specific parameters shall be periodically checked by calculating checksum(s) and automatically comparing them with deposited nominal value(s). If the comparison does not match, reactions are necessary that are adequate for the instrument (stop of measurement, indication of measurement data, see chapter 10 for eventual recommendations). Alternative methods are possible if the change status of software can be identified by them.	X			Combination of checksum and binary, fixed record structure.
	4. For additional protection measures to be implemented in the operating system, see O4.			X	See O4
	Remarks:				

Requirement		Passed	Failed	Not applicable	Remarks
U6	**Software and measurement data protection** Legally relevant software and measurement data shall be protected against intentional changes	X			
	Specifying notes:				
	1. Measurement data are considered to be sufficiently protected if it is ensured that only legally relevant software can process them. This is addressed by interface protection in the U requirements U3 and U4. In case of not legally relevant software, additional internal protection against influences from the not legally relevant software is ensured through Extension S.	X			Also, see extension S.
	2. Storage devices that contain software and measurement data shall be protected against exchange.			X	When the storage device that contains the POS software is removed, the pos no longer functions.
	3. A checksum or an alternative method with the same level of protection shall be provided in order to support the detection of software modifications. The calculated checksum or an alternative indication of software modification shall be made visible on command for control purposes.	X			Log in following the instructions in TauPosUserManual with: User: 10000 Password: 42994 Then click Welmec info.
	4. The checksum or the alternative indication is calculated over the legally relevant software. The module that organizes the generation of checksums or alternative indications is legally relevant.	X			WeighingApp.jar is the only LRS, a CRC32 checksum is calculated over this module by the module itself and periodically checked by the WeighingApp.jar.
	5. For additional protection measures to be implemented in the operating system, see O4 and O7.			X	See O4 and O7
	6. If a checksum is used, the algorithm shall have a key length of at least 4 bytes.	X			CRC32

Requirement		Passed	Failed	Not applicable	Remarks
	7. In general, a universal computer is only usable if additional hardware can be used to support securing.			X	Risk Class D and up.
	8. Concerning algorithms and minimum key lengths, the requirements or recommendations of the national and international institutions responsible for data security shall be taken into consideration.			X	Risk Class D and up.
	Remarks: The WeighingApp.jar (LRS) executable file is protected by an embedded CRC32 checksum, which is calculated during the secure build process. This checksum is verified automatically by the application at each startup.				
U7	**Parameter protection** Device-specific parameters shall be protected against intentional modification.			X	
	Specifying notes:				
	1. Certain device-specific parameters may be set by the user, provided that they are protected by a facility to automatically and non-erasable record any adjustment of the legally relevant device specific parameter, e.g., an audit trail.			X	
	2. If necessary for the purpose of verification of a measuring instrument, display or printing of the current relevant parameter settings shall be possible.			X	
	3. The records that provide evidence of an intervention shall be made available via display or printout upon command.			X	
	There are no device-specific parameters that can be adjusted by the software, thus no reason to protect them and therefore U7 is non-applicable.				

Requirement		Passed	Failed	Not applicable	Remarks
U8	**Presented measurement data** The authenticity of the presented measurement data shall be guaranteed, and the presentation shall be clear and accompanied by all information necessary to inform the user of the significance of the result.	X			
	Specifying notes:				
	1. It shall not be possible to fraudulently simulate (spoof) legally relevant software for presenting measurement data.	X			
	2. For each presented legally relevant measurement data the meaning shall be clear. All presented legally relevant measurement data shall be distinguishable from each other.	X			
	3. Presented legally relevant measurement data shall be clearly distinguishable from not legally relevant data.	X			
	4. Presented measurement data shall be accompanied by all information, which is necessary to interpret them (e.g., quantity, unit, sensor number, scale factor). Regarding necessary information to accompany the data, see L1, T1. The sensor number is a legally relevant parameter that needs to be secured and protected, see P5/U5 and P7/U7.	X			
	Remarks: The LRS WeighingApp.Jar handles all primary displays and displays them in a separate UI named APM_DISPLAY which is part of the LRS.				

2.2. Checklist for specific requirements extension O

Requirement		Passed	Failed	Not Applicable	Remarks
O1	**Hardware** The hardware part on which the legally relevant operating system runs, shall be protected against inadmissible access.	X			For category 2 components: only applicable to the configuration/settings of the OS.
	Specifying notes:				
	1. For category 1 components and complete instruments, the legally relevant operating system shall be protected against removal or exchange.			X	
	2. Hardware interfaces that might influence the operating system shall either be disconnected from power supply, disabled by the OS, protected by a hardware seal or bound to a protective software interface (see O5).	X			Disabled under non-privileged user 'tau'.
	3. Interfaces with direct memory access shall be protected by a hardware seal.			X	
	4. The operating system shall use memory protection to prevent retrieval of sensitive cryptographic material.			X	
	Remarks: PC running Ubuntu 18.04 LTS				

Requirement		Passed	Failed	Not Applicable	Remarks
O2	**Boot process** For category 1 components and complete instruments the configuration of the boot process shall provide the same configured environment for the execution of legally relevant software.			X	Not applicable for category 2 components.
	Specifying notes:				
	1. The boot process of the operating system shall be unambiguous and reproducible.			X	
	2. The legally relevant software application shall be included in the start-up procedure of the universal computer.			X	
	3. The boot configuration shall be protected against modifications.			X	
	4. At the end of the boot process, a chain of trust shall be established over the individual components of the boot process.			X	
	5. The processing of the chain of trust may be interrupted if the integrity of the chain of trust is preserved.			X	
	6. Booting via open interfaces shall be prohibited.			X	
	7. The boot process shall be secured by adequate means, depending on the level of protection.			X	Risk class D and up.
	Remarks:				
O3	**System resources** The configuration of the operating system shall ensure that there are enough resources for the operation of the legally relevant application.	X			
	Specifying notes:				
	1. The operating system should be configured as restrictively as possible.	X			
	2. The resources of the legally relevant software application are not reduced below the necessary minimum by other software (legally relevant and legally non-relevant).	X			
	Remarks: The system is configured to ensure sufficient CPU and memory resources for the application.				

Requirement		Passed	Failed	Not Applicable	Remarks
O4	**Protection during use** The operating system shall be configured in such a way that the legally relevant software application cannot be inadmissibly influenced by functions of the operating system or by other software.	**X**			
	Specifying notes:				
	1. The administration tasks of the legally relevant software (application and operating system) shall be protected.	**X**			There is one user account with no privileges to access root-owned LRS files.
	2. The access control shall be configured in such way that the intended use cannot be inadmissibly influenced.	**X**			
	3. The access permissions shall be routinely checked by the legally relevant operating system.	**X**			
	4. The operating system shall be configured to prevent removal of the legally relevant software.	**X**			
	5. The connection of auxiliary devices shall not have an inadmissible influence on the OS, or the configuration settings.	**X**			
	Remarks: The constant enforcement performed by the Linux kernel. Permissions are not checked periodically; they are verified by the kernel in real-time at the exact moment of every file access attempt. Any unauthorized attempt (e.g., the tau user trying to rm a root-owned file) is immediately blocked by the OS with a "Permission denied" error.				

Requirement		Passed	Failed	Not Applicable	Remarks
O5	**Protective interfaces** Operating system functions accessible via open interfaces shall not inadmissibly influence the legally relevant software, legally relevant parameters or measurement data.	**X**			
	Specifying notes:				
	1. Communication with the legally relevant operating system shall be made via protective interfaces.	**X**			1)
	2. In case of software separation on an operating system, Extension S and Extension T for open networks apply for transmission of legally relevant data via software interfaces of the operating system.			**X**	
	3. If the operating system configuration ensures that the communication partner connected to an open interface can only be a certified component and the connection is protected, no further checking of the interface is needed.			**X**	
	Remarks: 1) The LRS-to-OS communication is protected by a self-verification mechanism within the LRS, which acts as the "protective interface". The LRS does not expose a command interface to the OS. Instead, the LRS initiates all communication and does not blindly trust the OS environment. At startup, the LRS reads a MD5 checksum, which is calculated as an aggregate has of the three configuration files: /etc/passwd /etc/group /etc/sudoers /etc/sudoers.d/99-welmec-rule This integrity check is the protective interface: it ensures the LRS only runs in a verified, unmodified OS environment. If the check fails, the LRS will not start, thus protecting itself from a potentially compromised OS.				

Requirement		Passed	Failed	Not Applicable	Remarks
O6	**Identification of the operating system and its configuration** The operating system and configuration of the operating system shall be identifiable. The identification of the operating system and identification of the configuration of the operating system shall be presented on command or during operation.	X			For category 2 components: only applicable to the configuration/settings of the OS.
	Specifying notes:				
	1. If the legally relevant functions and the account of the measuring task are protected by a specific configuration of the operating system, the relevant configuration files shall have an own identifier.	X			The files are protected by a SHA-256 checksum who are brought together in an MD5 checksum.
	2. Identification shall include drivers and modules of the operating system that have been modified or specifically programmed for a legally relevant task.			X	
	Remarks:				

Requirement		Passed	Failed	Not Applicable	Remarks
O7	**Protection of the operating system** The operating system shall be protected against intentional modifications.	X			For category 2 components: only applicable to the configuration/settings of the OS.
	Specifying notes:				
	1. Modules of the operating system (kernel modules, drivers, libraries) that are specifically programmed for a legally relevant task shall have their own protection.	X			
	2. The protective measures for the operating system shall cover all legally relevant modules completely. An exception may be made to include the boot loader configuration in the protective measure instead of the boot loader itself, if it is not part of the file system of the operating system.	X			See 'OperatingSystemProtection.PDF for the full list and information.
	3. If a checksum or an equivalent protective measure are used, they should be calculated by means of the operating system. The calculated checksum or equivalent protective measure shall be indicated by the operating system or by a legally relevant application.	X			1)
	4. The integrity of the legally relevant operating system shall be periodically checked. If the integrity check fails, reactions are necessary that are adequate for the instrument.	X			
	5. Updates to the legally relevant modules of the operating system are not addressed by this requirement. Such updates would fall under Extension D.			X	
	6. The checksum shall be obtained with cryptographically strong methods.			X	Risk class D and up

Requirement		Passed	Failed	Not Applicable	Remarks
	Remarks: 1) In addition to static checks on configuration files, the LRS implements an **active runtime control** that operationally verifies that the tau user cannot actually acquire root privileges, regardless of the file configuration. The LRS contains an aggregate MD5 checksum that is calculated over the configuration files listed in the remarks of O5. This ensures that the underlying OS security configuration has not been tampered with to gain unauthorized privileges.				

2.3. Checklist for specific requirements extension S.

Requirement		Passed	Failed	Not Applicable	Remarks
S1	**Realisation of software separation** There shall be a part of the software that contains all legally relevant software and parameters that is clearly separated from other parts of software.	X			
	Specifying notes:				
	1. The protective software interface itself (see S3) is legally relevant.	X			All LRS is contained in WeighingApp.jar including the protective interface.
	2. With regard to the determination whether or not software, parameters or data is legally relevant, see chapter 15.	X			
	Remarks:				

Requirement		Passed	Failed	Not Applicable	Remarks
S2	**Mixed indication** Information generated by the legally non-relevant software shall be shown on a display or printout in a way that confusions with the information generated by the legally relevant software are avoided.	**X**			
	Specifying notes: -				
	1. The legally relevant indication shall be protected against influence from the not legally relevant software, see S1.	**X**			Handles entirely by the LRS in a separate UI.
	2. The legally relevant software shall generate the legally relevant indication and shall only give the not legally relevant software access to the measurement data after the measurement result has been indicated.	**X**			First indication is both on operator and customer display all performed by weighinapp.jar and indication towards customer displayed in APM_DISPLAY which is part of the LRS.
	3. The legally relevant indication shall be indicated in such a way that it is clear that this is the legally relevant indication.	**X**			
	4. The legally relevant indication shall be visible as soon as the measurement starts and until the measurement result is shown. Thus, the user can check if the indication contains the necessary measurement data, e.g., unit price. See O8 for additional guidance in case of an operating system.	**X**			No 'live' weight only the final stable weight is shown. All other LR indications are on the screen the entire time
	Remarks:				

Requirement		Passed	Failed	Not Applicable	Remarks
S3	**Protective interface** The interaction and data exchange between the legally relevant and not legally relevant software shall be exclusively carried out via a protective interface that is under full control of the legally relevant software.	**X**			
	Specifying notes:				
	1. This requirement applies to all kinds of interactions and data exchanges between the legally relevant and not legally relevant software.	**X**			The only information that is shared is in the form of a protected, simulated barcode.
	2. All communication shall exclusively be carried out via the defined protective interface.	**X**			
	3. There shall be only those interactions and data flows allowed that do not inadmissibly influence the measuring process, in particular the legally relevant software, device-specific parameters and measurement data.	**X**			
	4. Scheduling and runtime of the measuring process shall not be influenced by not legally relevant software.	**X**			The only allowed interaction is for the N-LRS to make a high-level request to the LRS to start the weighing process.
	5. In case of software separation on a legally relevant operating system, see also O4	**X**			
	6. The protective interface between legally relevant and not legally relevant software shall be as small as possible, not containing any unnecessary functionality. It shall be under full control of the legally relevant software.	**X**			
	Remarks:				

2.4. Checklist for Point of Sales (POS), Price Totalizers and Price Computing Devices for weighing instruments

Requirement EN45501:2015			Passed	Failed	Not applicable	Remarks
3.6.3	**Multiple indicating devices**					
	No difference between digital indications and printout		X			
4.1.2.1	**Fraudulent use**					
	The same weighing data should not be used twice		X			
4.1.2.3	**Controls**					
	Keys shall be marked unambiguously		X			
4.2.1	**Quality of reading**					
	Reading is reliable, easy and unambiguous	Operator display	X			
		Customer display	X			
		Printer	X			
	Size shape and clarity	Operator display	X			
		Customer display	X			
		Printer	X			
	Units of					
	Mass	Operator display	X			
		Customer display	X			
		Printer	X			
	Currency	Operator display	X			
		Customer display	X			
		Printer	X			
4.2.2	**Form of indications**					
	for one indication, one unit of mass		X			All in kg
	scale interval in the form (1, 2 or 5) x 10k		X			2k
	same scale interval for all indicating devices, and printing devices		X			

Requirement EN45501:2015		Passed	Failed	Not applicable	Remarks
4.2.2.2	**Form of digital indication**				
	at least one figure at the right			X	
	Decimal sign				
	separate at least one figure to the left and all to the right			X	
	Zero				
	indication of zero figures			X	
	only one non-significant zero to the right			X	
	for values with a decimal sign, non-significant zero only in third position			X	
4.4.4	**Multiple use of indicating devices**				Existent
	quantities identified by units or symbols or signs thereof	X			
	weight values (not weighed) shall be clearly identified	X			Preset Tara fully written on operator display. Customer display depends on attached display.
	complete wording or	X			
	display only temporarily on manual command and shall not be printed			X	
4.4.5	**Printing devices**				existent
	clear and permanent	X			
	figures ≥ 2 mm high	X			
	name or symbol of units of measurements above column of values or	X			Only for euro
	to the right of values	X			kg and kg/EUR

Requirement EN45501:2015			Passed	Failed	Not applicable	Remarks
4.6.11	**Printing of weighing results**					
	without designation (gross weight / net weight)		X			Only Net weight is printed.
	designation:	by G or B (gross)			X	
		by N (only net printed)			X	
	designation of net and tare by N and T (if net printed with gross and/or tare)				X	
	instead of G, B, N and T, complete words				X	
	printing separately net and tare with identification (different tare devices)				X	
	without designation (gross weight / net weight)		X			
	Manually entered weights must be clearly distinguished				X	
4.13.1	**Primary indications**					
	Two display sets, one vendor- and one customer display					existent
	One display set for vendor and customer					Non-existent
	Weight		X			
	Information about correct zero position		X			
	Tare operation				X	
	Preset tare operation		X			In Tare field on customer display.
4.13.6	Height of numerical figures displayed to the customer ≥ 9,5 mm		X			

Requirement EN45501:2015		Passed	Failed	Not applicable	Remarks
4.13.4	**Preset tare devices**				
	The price totalizer or price computing device may send the preset tare value to the NAWI through the interface. In this case the following applies:				Applicable
	• The preset tare operation shall be carried out by the NAWI, i.e. the NAWI calculates the Net value.	**X**			
	• The NAWI shall display the net weight value and the preset tare value.	**X**			Shows in T field on the customer display, this is wrong but not in the scope of this project.
	• It is not necessary that the price totalizer or price computing device prints the preset tare value.	**X**			
	The price totalizer or price computing device may calculate the net value based on the gross value and the preset tare value. In this case the following applies:				Not Applicable
	• The scale interval of the preset tare value shall be equal or automatically rounded to the scale interval of the NAWI.			**X**	
	• The preset tare value may only be transferred from one weighing range to another one with a larger verification scale interval but shall then be rounded to the latter (multiple range)			**X**	
	• The preset tare value shall be rounded to the smallest verification scale interval, e_1, of the NAWI, and the maximum preset tare value shall not be greater than Max_1 (multi-interval).			**X**	
	• The displayed or printed calculated net value shall be rounded to the scale interval of the instrument for the same net weight value.			**X**	

Requirement EN45501:2015			Passed	Failed	Not applicable	Remarks
	• In case the verification scale interval and Max_1 of the NAWI, are parameters, they shall be secured against modification in accordance with 4.1.2.4 (multi-interval).				X	
	• The price totalizer and price computing device shall display the net weight value and the preset tare value.				X	
	• The indicated net value shall be marked with "NET", "Net" or "net".				X	
	• The price totalizer and price computing device shall not be fitted with a device which can recall the gross value while a preset tare device is in operation.				X	
	• It is not necessary that the price totalizer or price computing device prints the preset tare value.				X	
4.13.9	**Significant faults**					
	visible or audible alarm provided for customer		X			Error message
	data transmission prevented		X			No data saved
	until user takes action or cause disappears		X			Press Clear to continue.
4.13.11	**Self-service instruments**					
	primary indications shall include the product designation if a ticket is printed		X			
4.14.1	**Primary indications**					
	Weight	Operator display	X			
		Customer display			X	On Bizerba display
		Printer	X			
	Unit price	Operator display	X			
		Customer display			X	Bizerba display
		Printer	X			
	Price to pay	Operator display	X			
		Customer display			X	Bizerba display

Requirement EN45501:2015			Passed	Failed	Not applicable	Remarks
		Printer	X			
	if applicable: number for non-weighed articles	Operator display	X			Always one at the time.
		Customer display	X			
		Printer	X			
	if applicable: unit price for non-weighed articles	Operator display	X			
		Customer display	X			
		Printer	X			
	if applicable: number price to pay for non-weighed articles	Operator display	X			
		Customer display	X			
		Printer	X			
	if applicable: price totals	Operator display	X			Shown on weight screen first which is LR.
		Customer display	X			On the EPSON display
		Printer	X			
4.14.3	**Price-computing device or price totalizer**					
	multiplication of weight and unit price as indicated		X			
	rounding to the nearest interval of price to pay		X			
	unit price: price/kg or price/100g		X			Price/kg
	Indications of weights, unit price and price to pay visible:					
	while load on load receptor and for at least 1 s after stable weight indication after any introduction of unit price		X			Close to 3 seconds.
	freezing for ≤ 3 s after removing load and not possible to introduce or change unit price (if indication has been stable before and would otherwise be zero)		X			Entire screen is covered during the weight display.
	printing weight, unit price and price to pay		X			
	stored in memory before printing and				X	
	same data not to be printed twice for customer		X			

Requirement EN45501:2015		Passed	Failed	Not applicable	Remarks
4.14.4	**Special applications of price computing instruments**				
	if all transactions are printed for customer	X			Price totalization
	they shall not lead to confusion	X			
4.14.4.1	**Prices for more than one equal articles**				
	number of articles shown on weight or supplementary display and	X			
	without being taken for a weight and	X			
	article price shown on unit price or supplementary display	X			
	number of articles shown on weight display without being taken for a weight	X			
	price for one article shown on unit price display	X			
	supplementary display for number of articles and/or article prices	X			Epson display
4.14.4.2	**Totalization of transactions on one or several tickets**				
	price total indicated on price-to-pay display and	X			
	printed accompanied by a special word or symbol and	X			
	reference to commodities whose prices are totalized if a separate ticket is issued for total			X	
	all prices-to-pay shall be printed and price total shall be the algebraic	X			
4.14.4.3	**Multi-vendor operation**				
	connection between transactions and vendor or customer identified			X	
4.14.4.4	**Cancelling**				
	price-to-pay shall be printed with comment (transaction already printed)	X			Corr: art name
	transactions clearly differentiated from normal transactions (transaction displayed to customer)	X			^

Requirement EN45501:2015		Passed	Failed	Not applicable	Remarks
4.14.4.5	**Additional information**				
	clearly correlated to transaction and			X	
	does not interfere with assignment of weight value to unit symbol			X	
4.16	**Price labelling instruments**				
	Requirements 4.13.8, 4.14.3 (paragraph 1 and 5), 4.14.4.1 (paragraph 1) and 4.14.4.5 are met			X	
	a display for weight			X	
	possibility to verify values of unit price and pre-set tare during the use of the instrument			X	
	prevention of printing below Min			X	
	labels with fixed values of weight, unit price and price-to-pay allowed provided weighing mode is inoperative			X	
4.20	**Modes of operation**				
	clearly identification of mode which is actually in operation			X	
	manual switching back to weighing mode in any mode and at any time possible			X	
	automatic selection of mode only within a weighing sequence			X	
	automatic switching back to the weighing mode at the end of the weighing sequence			X	
	actual weight may be displayed when returning from a non-weighing mode			X	
	After returning from a switch-off condition:				
	zero shall be displayed, or			X	
	the actual weight is displayed after the correct zero position has been automatically checked			X	
5.1.1	**Significant fault**				
	indication of significant faults in the display does not lead to confusion with other messages	X			

Requirement EN45501:2015		Passed	Failed	Not applicable	Remarks
5.2	**Acting upon significant faults**				
	instrument made automatically inoperative			X	
	visual or audible indication until the user takes action or fault disappears	X			
5.3.1	**Requirements on switch-on (display check)**				
	signs of indication are active and non-active long enough to be checked by operator			X	
7.1	**Descriptive markings**				
	PC or EC number of the PTD/PCD	X			
	Producers mark of name	X			
	Type designation	X			
	Identification of the software	X			
	Markings are secured by hardware or software means	X			Software
Remarks:					