


Technical Specifications


Weighting machine with non-automatic operation and scales to be used for dynamic weighting of vehicles

1. Weighing machine with non-automatic operation (Electronic scales for vehicles meant for static weighting of cargoes transported by road, with general weight up to 80 tones and length up to 18 m		
Set of equipment	Weighting platform made of reinforced concrete – 3 pieces Strain gauge sensors – 8 pieces Electronic measuring device – 1 piece Additional indicator device– 1 piece Instructions for scale's operation – 1 piece Certificate of conformity or model approval certificate valid on the territory of the Republic of Moldova– 1 piece Verification report – 1 piece PC (completely equipped) – 1 piece Software – 1 piece System for weighting process automation and monitoring - 1	
Quantity (piece)	1	
		
No.	Name/classification	Description
1.	Unit of measure	The International System of Units (SI) is applied - kg
2.	Technical standards	All the products proposed by the bidder for purchase/delivery should be designed and manufactured in compliance with the standards in force in the RM.
3.	Purpose	Includes: manufacturing, assembling, initial verification, launching into operation, metrological verification of equipment. Training for personnel on how to operate the equipment. Supervision of works for establishing the foundation and providing access towards the equipment.
4.	General requirements	All the products should be compliant with the requirements set in normative documents and contractual clauses. The beneficiary shall be entitled to verify the completeness of the equipment, to choose the products and the main pieces of the equipment.

		<p>The platform should be located appropriately for the working area of the reception surface to be at the same horizontal level as the road track.</p> <p>The platform's construction should ensure the possibility of servicing and repairing the equipment.</p>
5.	Special requirements	<ul style="list-style-type: none"> • The proposed equipment should be produced, installed and commissioned taking into account the weather conditions in the RM. • The producer (bidder) should ensure the quality of its products during the design, development, production and launch into operation, as well as submitting the technical endorsement for registration (and/or) confirmation of registration from the National Institute of Metrology for performing repairing works, assembling and launching into use the measuring means subject to legal metrological control, and the certificate for approving the model with respective model's description. Copies of all these documents should be submitted as annexes to the application. • The producer (bidder) should prove existence of competent personnel, necessary gages for adjusting the scale and the equipment for performing assembling works and launch into operation, contract with the lab assigned to perform the metrological verification of the scales (according to the Law No. 19 of 04.03.2016 art.21) • The producer (bidder) should submit full information regarding the provided equipment, annexing catalogues, brochures, technical specifications, etc. • The producer (bidder) should submit the copy of the warranty for proposed products or for the group of provided products, referring to the present bid documents, indicating the guarantee period, quality, performance, and other requirements regarding the offered products. • The minimum total guarantee for the products should be minimum 3 years. • The producer (bidder) should ensure the presence of working gages for transmitting the measurement units for adjustment, initial and periodical verifications. • The system of automation and monitoring the weighting process will include: 2 video cameras, 2 sets of sensors, 2 systems of traffic control with lights, 1 control system, 1 set of assembling equipment and cables.
6.	Maximum weighting limit (MWL)	80 tones
7.	Division value	20 kg
8.	Scale accuracy	average, according to the Government Decision No. 267 of 08.04.2014
9.	Number of sensors	8 pieces

10.	The number of segments in the platform	3 pieces of size 6x3m; the material the platforms should be made of – reinforced concrete.
11.	Power supply	- 220 V -15% + 10%, 50Hz
12.	Operation temperature: a) electronic device b) load receptor	from -5°C to +35°C from -40°C to +45°C
13.	Water and dust safety IEC 529 (ГОСТ 14254-80) a) electronic device b) load receptor	minim IP- 65 minim IP-67
14.	Software for PC:	<p>Operation system – Microsoft Windows 10 and corresponding Software for data collection.</p> <p>The functional requirements for the Weighing Software:</p> <ul style="list-style-type: none"> • to obtain and subsequently to store the information about the weighted vehicles; • to contain the database about vehicles' weighting; • to sort the data by the number of the vehicle, by the date; • to print reports and other documents; • to store the weighting data for a certain period of time; • to transfer reports in Microsoft Excel, Microsoft Word; <p>It is necessary to store and archive the PC recordings.</p> <ul style="list-style-type: none"> • The producer/supplier should ensure a software integrated with ASYCUDA system of the RM Customs Service
15.	Requirement for provided PC:	<p>PC should have the possibility to transfer data using USB (memory sticks).</p> <p>PC should meet the minimum requirements for the weighing software and should comply with the following minimum technical characteristics:</p> <ul style="list-style-type: none"> - The exported data should be in a format which would allow indicating and processing data in Microsoft Office (Word and Excel) <p>Description of specifications:</p> <ul style="list-style-type: none"> - Processor's speed (MHz): minimum 2500 - Monitor 17" with minimum resolution 1366x768 pq <p>Volume of video memory 512 Mb</p> <p>Memory volume for hard disk – minimum 200 Gb</p> <p>Operational memory 3U: 3 Gb (lim. 32 Bit Windows 7)</p> <p>Minimum 2 ports for USB 2.0</p> <p>1 x DC-in</p> <p>1x VGA</p> <p>Indicator with display from files 5 in 1 (SD, MMC, MS, MS Pro, xD)</p> <p>Without cable IEEE 802.11 b/g/n</p> <p>Connection capacity LAN: 10/100/1000 M6 Ethernet</p> <p>Standard keypad with 88 keys, including in Cyrillic and mouse.</p> <p>White/black printer – 1 piece</p> <p>Power supply from external source of 220 V</p>

2. Weighting scales to weight the vehicles while moving

Electronic scales for vehicles with the possibility to determine the load while moving, on the axes and the total de-facto weight of the vehicles by summing up the mass of axes.		
Set of equipment		Weighting platform (b min metal board=10mm) – 1 piece Strain gauge sensors – 4 pieces Electronic measuring device – 1 piece Additional indicator device– 1 piece Model approval certificate valid on the territory of the Republic of Moldova– 1 piece Instructions for scale's operation – 1 piece Verification report – 1 piece PC (completely equipped) – 1 piece Software – 1 piece System for weighting process automation and monitoring - 1
Quantity (piece)		2
		
No.	Name/classification	Description
1.	Unit of measure	The International System of Units (SI) is applied - kg
2.	Technical standards	All the products proposed by the bidder for purchase/delivery should be designed and manufactured in compliance with the standards in force in the RM.
3.	Purpose	Includes: manufacturing, assembling, initial verification, launching into operation, metrological verification of equipment. Training for personnel on how to operate the equipment. Supervision of works for establishing the foundation and providing access towards the equipment.
4.	General requirements	All the products should comply with the requirements set in the normative documents, including the measuring procedure PML 02-01:2014 and contractual requirements. The beneficiary shall be entitled to verify the completeness of the equipment, to choose the products and the main pieces of the equipment. The platform's construction should ensure the possibility of servicing and repairing the equipment.
5.	Special requirements	<ul style="list-style-type: none"> The proposed equipment should be produced, installed and commissioned taking into account the weather conditions in the RM. The producer (bidder) should ensure the quality of its products during the design, development, production and launch into operation, submitting as well the technical endorsement for registration / (and/or) confirmation of

		<p>registration from the National Institute of Metrology for performing repairing works, assembling and launching into use the measuring means subject to legal metrological control, and the certificate for approving the model with respective model's description. Copies of all these documents should be submitted as annexes to the application.</p> <ul style="list-style-type: none"> • The producer (bidder) should prove existence of competent personnel, necessary gages for adjusting the scale and the equipment for performing assembling works and launch into operation, contract with the lab assigned to perform the metrological verification of the scales (according to the Law No. 19 of 04.03.2016 art.21) • The producer (bidder) should submit full information regarding the provided equipment, annexing catalogues, brochures, technical specifications, etc. • The producer (bidder) should submit the copy of the warranty for proposed products or for the group of provided products, referring to the present bid documents, indicating the guarantee period, quality, performance, and other requirements regarding the offered products. • The minimum guarantee - 3 years • The producer (bidder) should ensure the presence of working gages for transmitting the measurement units for adjustment, initial and periodical verifications. • The system of automation and monitoring the weighting process will include: 2 video cameras, 2 sets of sensors, 2 systems of traffic control with lights, 1 control system, 1 set of assembling equipment and cables.
6.	Configuration of the system	<ul style="list-style-type: none"> • Scales for weighting the vehicles while moving on each axle should comprise the weighting platform and the display indicating the weight. The system should comply with the standard SM STB 1845:2011.
7.	Maximum weighting limit (MWL)	20 tones
8.	Division value	20 kg
9.	Scale's accuracy	1B according to SM STB 1845:2011
10.	Number of sensors	4 pieces
11.	Number and characteristics of the platform	<p>a) The size of the reception surface should be at least 780 mm in the direction of the transportation mean's circulation and at least 3250 mm in the transversal direction (width of the scale's carriageway). The thickness of the board covering the platform should be at least 10 mm The overall dimension of the weighting platform of the scale in the transversal direction should not exceed 3850 mm. The platform should be located appropriately for the working area of the reception surface to be at the same horizontal level as the road track. The dimensions of the reception bridge should be 820x3900 mm, the depth – at least 700 mm. A gutter to discharge water</p>

		<p>should be envisaged at the reception surface or any other measures which would avoid for the platform to be covered by rainwater.</p> <p>b) The working area for applying the load: the weighting platform should be designed appropriately so as to ensure for the sensitiveness of the weighting platform not to be affected by the effects deriving from the difference in size of the load working areas, when the load will be applied on the active weighting area, described above.</p>
12.	Dynamic measurement	<p>The scales should be able to weight the transportation means while moving, with errors that will not exceed the limits set for the accuracy class 1B, at a speed from 1 km/h up to 3.5 km/h. If the vehicle exceeded the maximum speed, a visual and/or sound warning should be provided.</p>
13.	Connection to the weight indicator:	<p>The weighting platform should be connected to the electronic device - through a cable. The systems meant to work with a cable should be designed appropriately, for the cable to have an exit from the exterior part of the weighting platform and to go through the protecting duct installed in the weighting platform from the left part. This will guarantee for no vehicle to cross the cable during the weighting process. Another option, if the cable is set in the prepared gap, it may be embedded in the concrete.</p>
14.	Reading the weight entries	<p>The device indicating the weight should have an embedded display and a printer connected to it, so as to have the possibility to print the information regarding the load on the axle, the total load, the number of the receipt, weighting date and time. The access to the parameters influencing the results of the measurement should be limited through the following methods:</p> <ul style="list-style-type: none"> - mechanical blocking of access to adjustment parameters; - entering the adjustment settings via a password; <p>The device indicating the weight should be equipped with a communication interface RS 232, so as to send the data accumulated on the external PC.</p>
15.	The weight device should be compliant with, at least, the following requirements:	<p>b) Automated follow-up from zero, the installation button at zero and the confirmation indicator for weighting: the system should include a system of automated follow-up at zero for avoiding the displacement of zero, conditioned by temperature and other conditions.</p> <p>c) Information printed on the receipt: the printer printing the receipt should print the following information:</p> <ul style="list-style-type: none"> - load per each axle; - summary mass of the transportation means; - time and date; - circulation speed; - individual number of the receipt, which is impossible to be reproduced.
16.	Data storage and communication means:	<p>a) Storage of data: the device indicating the weight should preserve the data about the measuring results for 2000 transportation means (in case of the record keeping by axle – for 2000 transportation means).</p>

		b) Delivery of data: the device indicating the weight should deliver the data stored on the external PC.
17.	Power supply	220 V- 15% + 10%, 50 Hz
17.	Working temperature for the electronic device indicating the weight:	from -5°C to +35°C
18.	Working temperature for the reception platform:	from – 30°C to +70°C
19.	Water and dust safety IEC 529 (ГОСТ 14254-80) a) electronic device - b) load receptor -	execution IP- 54 IP-67
20.	Storage of data:	(minimum) the last 2000 vehicles
21.	Load measurement on axle	at least 8 axles
22.	Software for PC:	<p>Operation system – Microsoft Windows 10 and corresponding Software for data collection.</p> <p>The functional requirements for the Weighing Software:</p> <ul style="list-style-type: none"> • to obtain and subsequently to store the information about the weighted vehicles; • to contain the database about vehicles' weighting; • to sort the data by the number of the vehicle, by the date; • to print reports and other documents; • to store the weighting data for a certain period of time; • to transfer reports in Microsoft Excel, Microsoft Word; <p>It is necessary to store and archive the PC recordings.</p> <ul style="list-style-type: none"> - The producer/supplier should ensure a software integrated with ASYCUDA system of the RM Customs Service
23.	Requirements for the provided PC:	<p>PC should have the possibility to transfer the data using USB (memory stick).</p> <p>PC should meet the minimum requirements for the weighing software and should comply with the following minimum technical characteristics:</p> <ul style="list-style-type: none"> - The exported data should be in a format which would allow indicating and processing the data in Microsoft Office (Word and Excel) <p>Description of specifications:</p> <ul style="list-style-type: none"> - Processor's speed (MHz): minimum 2500 - Monitor 17" with minimum resolution 1366x768 pq <p>Video</p> <p>Volume of video memory 512 Mb</p> <p>Hard disk – 1 piece</p> <p>Memory volume for hard disk - minimum 200 Gb</p> <p>Operational memory 3U: 3 Gb (lim. 32 Bit Windows 7)</p> <p>Minimum 2 ports for USB 2.0</p> <p>1 x DC-in</p>

		1x VGA Dynamics incorporated – Yes Indicator displaying from the files 5 in 1 (SD, MMC, MS, MS Pro, xD) Without cable IEEE 802.11 b/g/n LAN connection capacity: 10/100/1000 M6 Ethernet Standard keypad with 88 keys, including in Cyrillic and mouse. White/black printer – 1 piece Printer for the weighting receipt – 1 piece Supply from external source of 220 V
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