Gibitre Instruments S.r.l.
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CER_TCC_MIN	Rev: 02	IN

Calibration Report n° KEYXXXXXX_65945

Issued 21/04/2026

Customer

Name	CUSTOMER
Address	ADDRESS
	ADDRESS
Country	COUNTRY

Order

Number

Instrument

Type	KEYBOARD TESTER
Model	TACKINESS CHECK -DRIVE
Producer	GIBITRE INSTRUMENTS S.R.L.
Serial Number	KEYXXXXXX

Calibration

Date of the measures	**14/04/2026**	
Technician	**Cristiana Beretta**	Habilitation for Calibration
Activity	**Prima Taratura**	

Reference Standard

The calibration is made in accordance to the requirements of the following standards:

ISO 5893: Rubber and plastics test equipment — Tensile, flexural and compression types - Specification

ISO 7500-1: Tension/Compression testing machines - Verification and Calibration of the force-measuring system

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

Calibration made by:

Cristiana Beretta

Calibration Report approved by:

Ivan Locatelli

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The measurement results reported in this Calibration Report were obtained following the procedures given in the following pages, where the reference standards or instruments are indicated which garantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Reference Instruments	Producer	Serial N.	Gibitre Code	Certificate N.	Calibration Laboratory	Issue Date	Due Date	Uncertainty	Unit
Set of weights 1g - 5 Kg	Sartorius AG	PES01	PES01 [1-500 g]	LAT 117_23_M_1437	CIBE	20/04/23	20/04/2026	0,00018	g
Set of weights 1g - 5 Kg	Sartorius AG	PES01	PES01 [1000-5000 g]	LAT 117_23_M_1437	CIBE	20/04/23	20/04/2026	0,00300	g
Digital Thickness Meter 13,5 mm.	Mitutoyo	16005914	COM02 [0.41-13.5 mm]	LAT 051 C12126B680	TRESCAL	29/08/21	29/08/2026	0,00080	mm
Calibrator + 58 N Load Cell	Interface + Gibitre Instruments	C10-HS-1	C10-GB3-CAL-1 + C10-HS-1	CAL110_33238	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,01236	N
Thickness Block	Mitutoyo	165204	C10-L-2.0	CAL110_33238	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,00104	mm
Thickness Block	Mitutoyo	162428	C10-L-1.8	CAL110_33238	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,00080	mm
Thickness Block	Mitutoyo	162638	C10-L-1.6	CAL110_33238	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,00080	mm
Thickness Block	Mitutoyo	175017	C10-L-1.33	CAL110_33238	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,00104	mm
Thickness Block	Mitutoyo	160488	C10-L-0.88	CAL110_33238	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,00104	mm
Thickness Block	Mitutoyo	150470	C10-L-0.47	CAL110_33238	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,00104	mm

ENVIRONMENTAL CONDITIONS

Room Temperature	(23 ± 2) °C
Relative Humidity	(50 ± 10) %

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Calibration of: **Force Sensor**

Sensor Type:	**Load Cell**	
Model	**FL 6Kg**	
Serial n°	**25.09959**	
Capacity	**60**	**N**
Resolution	**0,001**	**N**
Force Application	**Compression**	

Procedure: The certified force sencor is mounted in serie with the one of the instrument. After an adequate conditioning time, the force applied to the foce sensors is increased by steps. The reading of the Reference Sensor and of the Sensor of the instrument are recorded. The cycle is repeated 3 times

Standard Reference: **ISO 7500-1**

Reference Instruments:
C10-GB3-CAL-1 + C10-HS-1 Uncertanty: 0,0124 N Deviation 0,00 %

Measures

Force Applied g	Force Applied N	Instrument Reading 1 N	Instrument Reading 2 N	Instrument Reading 3 N
0	0,000	0,002	0,002	0,000
25	0,245	0,246	0,245	0,246
50	0,491	0,492	0,490	0,490
100	0,981	0,981	0,981	0,981
200	1,962	1,963	1,963	1,963
500	4,905	4,912	4,914	4,912
1000	9,810	9,824	9,824	9,824
2000	19,620	19,632	19,637	19,641
3000	29,430	29,450	29,459	29,466
4000	39,240	39,276	39,255	39,270
5000	49,050	49,068	49,061	49,057
6000	58,860	58,879	58,855	58,848

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Results of the Verification

Force Applied N	Mean of the measures N	Accuracy %	Repeatability %	Relative Resolution %	Uncertanty U_ext_95% N	Uncertanty U_ext_95% %	**Risultanting Classification**
0,000	0,001	0,002					
0,245	0,246	0,170	0,408	0,408	0,001	0,360	Class 1
0,491	0,491	0,034	0,408	0,204	0,001	0,296	Class 0,5
0,981	0,981	0,000	0,000	0,102	0,001	0,059	Class 0,5
1,962	1,963	0,051	0,000	0,051	0,001	0,029	Class 0,5
4,905	4,913	0,156	0,041	0,020	0,001	0,030	Class 0,5
9,810	9,824	0,143	0,000	0,010	0,001	0,006	Class 0,5
19,620	19,637	0,085	0,046	0,005	0,005	0,027	Class 0,5
29,430	29,458	0,096	0,054	0,003	0,009	0,032	Class 0,5
39,240	39,267	0,069	0,054	0,003	0,013	0,032	Class 0,5
49,050	49,062	0,024	0,022	0,002	0,006	0,013	Class 0,5
58,860	58,861	0,001	0,053	0,002	0,019	0,032	Class 0,5

The classification is made accoring to the table below (extracted from ISO 7500-1 standard)

Class of the Load Cell	Accuracy %	Repeatability %	Relative Resolution %	Error of Zero %
Classe 0,5	± 0,5	0,5	0,25	± 0,05
Classe 1	± 1,0	1	0,5	± 0,1
Classe 2	± 2,0	2	1	± 0,2
Classe 3	± 3,0	3	1,5	± 0,3

The formulas for the calculation of each parameter are described in the ISO 7500-1 standard
Note: Reversibility error is not measured

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Calibration of: **Displacement of Sample holder**

Sensor Type: Thckness meter
Resolution: 0,001 mm

Procedure: The reading of the displacement is compared with the reading of the reference thickness meter

Reference Standard: **ISO 23529**

Reference Instruments:

C10-L-2.0	Uncertanty:	0,0010	mm	Deviation	0,00	mm
C10-L-1.8	Uncertanty:	0,0008	mm	Deviation	0,00	mm
C10-L-1.6	Uncertanty:	0,0008	mm	Deviation	0,00	mm
C10-L-1.33	Uncertanty:	0,0010	mm	Deviation	0,00	mm
C10-L-0.88	Uncertanty:	0,0010	mm	Deviation	0,00	mm
C10-L-0.47	Uncertanty:	0,0010	mm	Deviation	0,00	mm

Set Displacem.	Minimum Allowed	Maximum Allowed	Instrument Reading 1	Instrument Reading 2	Instrument Reading 3	Mean	Accuracy	Uncertanty U_ext_95%	Outcome
mm	mm	mm	mm	mm	mm	mm	mm	mm	
0,47	0,46	0,48	0,48	0,47	0,47	0,47	0,00	0,006	ok
0,88	0,87	0,89	0,89	0,88	0,87	0,88	0,00	0,007	ok
1,33	1,32	1,34	1,34	1,33	1,33	1,33	0,00	0,005	ok
1,60	1,59	1,61	1,60	1,60	1,60	1,60	0,00	0,004	ok
1,80	1,79	1,81	1,80	1,81	1,80	1,80	0,00	0,004	ok
2,00	1,99	2,01	2,00	2,01	2,00	2,00	0,00	0,003	ok