



# CERTIFICATE OF CALIBRATION

NUMBER 193393

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**FUNDACIÓN TEKNIKER  
LABORATORIO DE METROLOGÍA  
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20600 EIBAR (GIPUZKOA) SPAIN**



|                               |  |
|-------------------------------|--|
| <b>ITEM:</b>                  | DIAL GAUGE   |
| <b>MARK:</b>                  | TESA   |
| <b>MODEL:</b>                 | DIGICO 2   |
| <b>IDENTIFICATION:</b>        | 7Z 006 0001  |
| <b>APPLICANT:</b>             | METTLER TOLEDO - TAIPEI<br>2F NO 17, LANE 171, JIU ZONG RD, SEC. 2<br>114 TAIPEI |
| <b>DATE/S OF CALIBRATION:</b> | 06/10/2022   |

**Authorised Signatory/ies**  
Head of Laboratory

**Date of issue**

Eibar, October 6, 2022

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## IDENTIFICATION OF THE CALIBRATION ELEMENT

**ITEM:** DIAL GAUGE  
**MARK:** TESA  
**MODEL:** DIGICO 2  
**CODE:**  
**IDENTIFICATION:** 7Z 006 00  
**LENGTH OF TRAVEL:** 0÷60 mm  
**RESOLUTION:** 0,001 mm  
**OBSERVATIONS:**

## CONDITIONS AND METHODS OF CALIBRATION:

| MEASURING INSTRUMENT USED  | ENVIRONMENTAL CONDITIONS     | STANDARDS |
|--|------------------------------|-----------|
| - TESTING MACHINES FOR COMPARATORS, ref.109001503 - 7308-2<br>- THERMOMETER, ref. D13340305 - 7039-7 | (20 ± 1)°C                   |           |
|  | <b>CALIBRATION PROCEDURE</b> |           |
|  | PC-MM.302                    |           |

## OBSERVATIONS:

The results obtained in this report are referred to the moment and conditions in which the measuring are made.

The expanded uncertainty has been obtained multiplying the typical uncertainty of measurement by the cover factor  $k=2$  that, for a normal distribution, corresponds approximately to a probability of cover of 95%. The typical uncertainty of measure has been determined according to document EA-4/02 M:2021.

The uncertainty of the correction has been considered from the following contributions: used standard, the repeatability of the measures, the equipment resolution and the magnitudes of influence (temperature when he comes).

The uncertainty of use has been considered from the following contributions: used standard, the repeatability of the measures, the equipment resolution, the instrument corrections and the magnitudes of influence (temperature when he comes).

One notices the user of the necessity to consider the magnitudes of influence significant, and to increase the global uncertainty consequently, when he uses the elements in conditions that differ from those of calibration.

The laboratory does not take responsibility of the inadequate use of the calibrated instruments.



**RESULTS**

| CALIBRATION POINTS<br>(mm) | INCREASING CORRECTIONS<br>( $\mu\text{m}$ ) | $U_{CC}$<br>( $\mu\text{m}$ ) | DECREASING CORRECTIONS<br>( $\mu\text{m}$ ) | $U_{CD}$<br>( $\mu\text{m}$ ) |
|----------------------------|---|-------------------------------|---|-------------------------------|
| 0                          | 0   | 0,9                           | 1   | 0,9                           |
| 6                          | 0   | 0,9                           | 1   | 0,9                           |
| 12                         | 0   | 0,9                           | 1   | 0,9                           |
| 18                         | 0   | 0,9                           | 1   | 0,9                           |
| 24                         | 0   | 0,9                           | 1   | 0,9                           |
| 30                         | 0   | 0,9                           | 1   | 0,9                           |
| 36                         | 0   | 0,9                           | 0   | 0,9                           |
| 42                         | 0   | 0,9                           | 0   | 0,9                           |
| 48                         | 0   | 0,9                           | 0   | 0,9                           |
| 54                         | 1   | 0,9                           | 1   | 0,9                           |
| 60                         | 1   | 0,9                           | 0   | 0,9                           |

| CALIBRATION POINTS<br>(mm) | CORRECTIONS<br>( $\mu\text{m}$ ) |   |   |   |   |   |   |   |   |   |   | $S_c$<br>( $\mu\text{m}$ ) | $S_{cTOTAL}$<br>( $\mu\text{m}$ ) |   |
|----------------------------|----------------------------------|---|---|---|---|---|---|---|---|---|---|----------------------------|-----------------------------------|---|
|                            | $\uparrow$                       |   |   |   |   |   |   |   |   |   |   |                            |                                   |   |
| 30                         | $\uparrow$                       | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0                          | 0                                 | 0 |
|                            | $\downarrow$                     | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0                          | 0                                 |   |

**EQUIPMENT UNCERTAINTY:  $U = 2 \mu\text{m}$   
 COVERAGE FACTOR  $K=2$**

**NOTES:**

- $\bar{S}_c$  = Standard desviation
- $S_{cTOTAL}$  = Total standard deviation in the point of the reiterations. (Considering the 20 measures)
- $U_0$  = Uncertainty of the standard
- $U_{CC}$  = Uncertainty of the  $\uparrow$  correction
- $U_{CD}$  = Uncertainty of the  $\downarrow$  correction
- $U$  = Uncertainty of use of the equipment (including correction)