

## CERTIFIKAT O KALIBRACIJI / CALIBRATION CERTIFICATE

stran / page 1 od 2

Št. certifikata / Certificate no. 14062-LTM-26

|                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Naročnik</b><br><i>Applicant</i>                          | 5Labs d.o.o.<br>Legen 112<br>2380 SLOVENJ GRADEC                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Instrument</b><br><i>Instrument</i>                       | Naprava za umer. merilnih ur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Proizvajalec</b><br><i>Manufacturer</i>                   | MITUTOYO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Tip</b><br><i>Type</i>                                    | (0-25/0,001) mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Serijska številka</b><br><i>Serial no.</i>                | 000661404                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Kalibracijska metoda</b><br><i>Calibration method</i>     | Primerjava izmerjene vrednosti z dolžinskim etalonom - SOP 12                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Pogoji okolja</b><br><i>Environmental conditions</i>      | Temperatura (20 ± 0,1) °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Čas in mesto kalibracije</b><br><i>Calibration period</i> | Od 10. 04. 2026 do 10. 04. 2026 Na lokaciji naročnika                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Rezultati</b><br><i>Results</i>                           | Rezultati kalibracije so podani na strani 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Negotovost</b><br><i>Uncertainty</i>                      | <p>Razširjena negotovost meritve je podana kot standardna negotovost pomnožena s faktorjem <math>k = 2</math>, ki ustreza intervalu zaupanja 95 %. Določena je v skladu z aktualno verzijo EA-4/02.</p> <p><i>The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor <math>k = 2</math>, which corresponds to coverage probability approximately 95 %. It is determined in accordance with the current version of EA-4/02.</i></p> |
| <b>Sledljivost</b><br><i>Traceability</i>                    | <p>Pri meritvah so bili uporabljeni etaloni, ki so sledljivi na primarni etalon za dolžino.</p> <p><i>The measurements have been executed using standards, which are traceable to primary standard of length.</i></p>                                                                                                                                                                                                                                                                                               |

Izvedel / Performed by

Odobril / Approved by

Datum / Date

13. 04. 2026

# CERTIFIKAT O KALIBRACIJI / CALIBRATION CERTIFICATE

stran / page 2 od 2

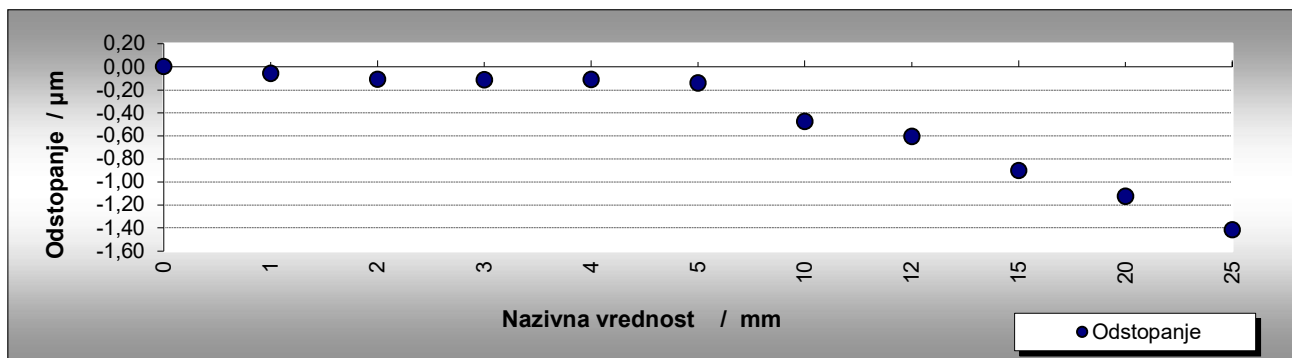
Št. certifikata / Certificate no.

14062-LTM-26

## Merilni rezultati

Measurement results

| Nazivna vrednost<br>$L_n$ / mm    | 0    | 1     | 2     | 3     | 4     | 5     | 10    | 12    | 15    | 20    | 25    |
|-----------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Odstopanje<br>$o$ / $\mu\text{m}$ | 0,01 | -0,06 | -0,11 | -0,11 | -0,11 | -0,14 | -0,48 | -0,60 | -0,90 | -1,13 | -1,42 |



## Stanje merila med kalibracijo

Artefact condition during the calibration

Brezhibno / Consistent

## Razlaga rezultata

Result explanation

$$o = R - L_e$$

$o$  = odstopanje / deviation

$R$  = razbirek na merilu / device indication

$L_e$  = vrednost etalona / reference value

## Merilna negotovost

Uncertainty of measurement

$$U = 0,25 \mu\text{m} + 2,5 \cdot 10^{-6} \cdot L_n$$

$L_n$  - nazivna vrednost

## Uporabljeni etaloni in merilna oprema

Applied standards and measurement equipment

| Etalon<br>Standard | Proizvajalec<br>Manufacturer | Tip<br>Type   | Oznaka<br>Identification | Št. kalibracije<br>Calibration No. |
|--------------------|------------------------------|---------------|--------------------------|------------------------------------|
| Induktivno tipalo  | HEIDENHAIN                   | MT 2581       | 78155354                 | 13927-LTM-25                       |
| Termohigrograf     | AHLBORN                      | Almemo 6290-7 | D9709191                 | T0225Z77/T0225Z75                  |

## Opomba

Remark

Pomik tipala navzgor je +, navzdol je -. / Probe movement up is +, down is -.

Laboratorij za tehnološke meritve  
Univerza v Mariboru  
Fakulteta za strojništvo  
Smetanova ul, 17, 2000 Maribor  
tel.: +386 2 220-7587  
fax: +386 2 220-7990

Rezultati se nanašajo izključno na kalibrirane primerke.

Dovoljeno je razmnoževanje celotnega certifikata.  
Razmnoževanje posameznih delov je dovoljeno samo s  
pisno odobritvijo laboratorija.

Results relate only to the calibrated items.

Reproduction of the complete certificate is allowed,  
Parts of the certificate may only be reproduced with  
written approval of the calibration laboratory.