

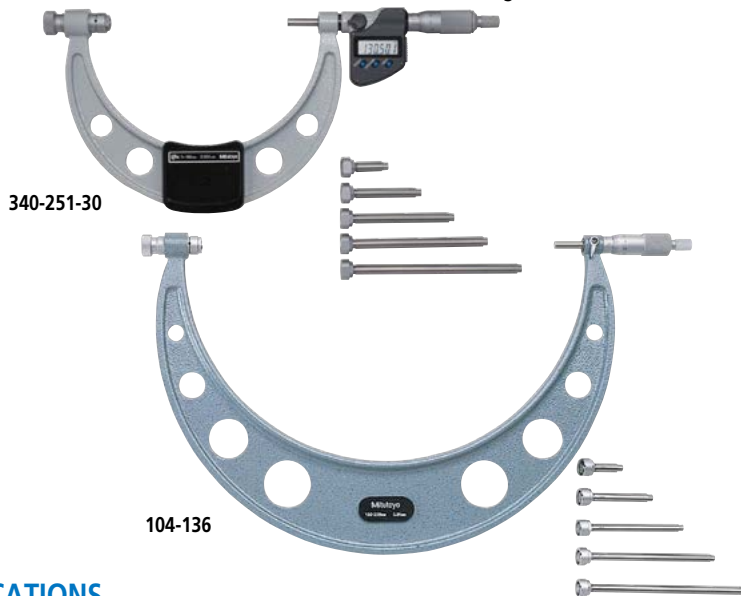
# Micrometer

The origin of Mitutoyo's trustworthy brand of small tool instruments

## Outside Micrometers

### SERIES 340, 104 — with Interchangeable Anvils

- Wide measuring range with interchangeable anvils.
- Measuring face of the spindle is carbide tipped (standard model).
- IP 65 water/dust protection (340-251-30, 340-252-30, 340-351-30, 340-352-30).
- Equipped with Ratchet Stop for constant measuring force.



## SPECIFICATIONS

| Metric          |            |                 |                        |                      |           |                             |
|-----------------|------------|-----------------|------------------------|----------------------|-----------|-----------------------------|
| Order No.       | Range (mm) | Resolution (mm) | Interchangeable anvils | Setting Standard Qty | Size (mm) | Micrometer head stroke (mm) |
| Digimatic (LCD) |            |                 |                        |                      |           |                             |
| 340-251-30      | 0 - 150    | 0.001           | 6 pcs.                 | 5                    | 25 - 125  | 25                          |
| 340-252-30      | 150 - 300  |                 |                        | 6                    | 150 - 275 |                             |
| 340-520         | 300 - 400  |                 | 4 pcs.                 | 4                    | 300 - 375 |                             |
| 340-521         | 400 - 500  |                 |                        |                      | 400 - 475 |                             |
| 340-522         | 500 - 600  |                 |                        |                      | 500 - 575 |                             |
| 340-523         | 600 - 700  |                 |                        |                      | 600 - 675 |                             |
| 340-524         | 700 - 800  |                 |                        |                      | 700 - 775 |                             |
| 340-525         | 800 - 900  |                 |                        |                      | 800 - 875 |                             |
| 340-526         | 900 - 1000 |                 |                        |                      | 900 - 975 |                             |

| Metric    |            |                 |                        |                      |           |                             |
|-----------|------------|-----------------|------------------------|----------------------|-----------|-----------------------------|
| Order No. | Range (mm) | Graduation (mm) | Interchangeable anvils | Setting Standard Qty | Size (mm) | Micrometer head stroke (mm) |
| Analog    |            |                 |                        |                      |           |                             |
| 104-171*  | 0 - 50     | 0.01            | 1 pc.                  | 1                    | 25        | 25                          |
| 104-139A  | 0 - 100    |                 | 4 pcs.                 | 3                    | 25 - 75   |                             |
| 104-135A  | 0 - 150    |                 | 6 pcs.                 | 5                    | 25 - 125  |                             |
| 104-161A  | 50 - 150   |                 | 4 pcs.                 | 4                    | 50 - 125  |                             |
| 104-140A  | 100 - 200  |                 |                        |                      | 100 - 175 |                             |
| 104-136A  | 150 - 300  |                 | 6 pcs.                 | 6                    | 150 - 275 |                             |
| 104-141A  | 200 - 300  |                 |                        |                      | 200 - 275 |                             |
| 104-142A  | 300 - 400  |                 |                        |                      | 300 - 375 |                             |
| 104-143A  | 400 - 500  |                 |                        |                      | 400 - 475 |                             |
| 104-144A  | 500 - 600  |                 |                        |                      | 500 - 575 |                             |
| 104-145A  | 600 - 700  |                 |                        |                      | 600 - 675 |                             |
| 104-146A  | 700 - 800  |                 |                        |                      | 700 - 775 |                             |
| 104-147A  | 800 - 900  |                 |                        |                      | 800 - 875 |                             |
| 104-148A  | 900 - 1000 |                 |                        |                      | 900 - 975 |                             |

\* The frame is fitted with a heat shield.

Note 1: For functional details of 340-251-30, 340-252-30, 340-351-30, 340-352-30, refer to page B-8.

Please note that origin setting of these models is by presetting.

Optional connecting cable is available only for water-proof type (Digimatic model).

Note 2: For functional details of 340-520 to 340-723, refer to page B-9.

MeasurLink ENABLED  
Data Management Software by Mitutoyo

Products equipped with the measurement data output function can be connected to the measurement data network system MeasurLink (refer to page A-5 for details).



These marks indicate that a product has successfully passed IP65-level testing, which is carried out by the independent German certification organization TÜV Rheinland.



### IP Codes (340-251-30, 340-252-30, 340-351-30, 340-352-30)

Level 6: Dust -proof.

No ingress of dust allowed.

Level 5: Protected against water jets.

Water projected in jets against the enclosure from any direction shall have no harmful effects.

### Technical Data

- Spindle feed error: 3  $\mu$ m/0.00015 in
- Flatness
  - Measuring range 0 to 300: 0.6  $\mu$ m
  - Measuring range 300 to 1000: 1.0  $\mu$ m
- Parallelism
  - Measuring range 0 to 75: 2  $\mu$ m
  - Measuring range 75 to 150: 3  $\mu$ m
  - Measuring range 150 to 1000 (2+R/100)  $\mu$ m, R=max. range (mm) (fraction rounded up)

| Inch/Metric     |            |                         |                        |                  |           |                             |
|-----------------|------------|-------------------------|------------------------|------------------|-----------|-----------------------------|
| Order No.       | Range (in) | Resolution              | Interchangeable anvils | Setting Standard |           | Micrometer head stroke (in) |
|                 |            |                         |                        | Qty              | Size (in) |                             |
| Digimatic (LCD) |            |                         |                        |                  |           |                             |
| 340-351-30      | 0 - 6      | 0.00005 in/<br>0.001 mm | 6 pcs.                 | 5                | 1 - 5     | 1                           |
| 340-352-30      | 6 - 12     | 0.0001 in/<br>0.001 mm  |                        | 6                | 6 - 11    |                             |
| 340-720         | 12 - 18    |                         |                        |                  | 12 - 17   |                             |
| 340-721         | 18 - 24    |                         |                        |                  | 18 - 23   |                             |
| 340-722         | 24 - 30    |                         |                        |                  | 24 - 29   |                             |
| 340-723         | 30 - 36    |                         |                        |                  | 30 - 35   |                             |

| Inch      |               |                           |                    |                  |           |                                   |
|-----------|---------------|---------------------------|--------------------|------------------|-----------|-----------------------------------|
| Order No. | Range<br>(in) | Interchangeable<br>anvils | Graduation<br>(in) | Setting Standard |           | Micrometer<br>head stroke<br>(in) |
|           |               |                           |                    | Qty              | Size (in) |                                   |
| Analog    |               |                           |                    |                  |           |                                   |
| 104-165   | 0 - 2         | 1 pc.                     | 0.0001             | 1                | 1         | 1                                 |
| 104-149   | 0 - 4         | 4 pcs.                    | 0.001              | 3                | 1 - 3     |                                   |
| 104-137   | 0 - 6         | 6 pcs.                    |                    | 5                | 1 - 5     |                                   |
| 104-162   | 2 - 6         | 4 pcs.                    |                    | 4                | 2 - 5     |                                   |
| 104-150   | 4 - 8         |                           |                    |                  | 4 - 7     |                                   |
| 104-138   | 6 - 12        | 6 pcs.                    |                    | 6                | 6 - 11    |                                   |
| 104-151   | 8 - 12        | 4 pcs.                    |                    | 4                | 8 - 11    |                                   |
| 104-152   | 12 - 16       |                           |                    |                  | 12 - 15   |                                   |
| 104-201   | 12 - 18       | 6 pcs.                    |                    | 6                | 12 - 17   |                                   |
| 104-153   | 16 - 20       | 4 pcs.                    |                    | 4                | 16 - 19   |                                   |
| 104-202   | 18 - 24       | 6 pcs.                    |                    | 6                | 18 - 23   |                                   |
| 104-154   | 20 - 24       | 4 pcs.                    |                    | 4                | 20 - 23   |                                   |
| 104-155   | 24 - 28       |                           |                    |                  | 24 - 27   |                                   |
| 104-203   | 24 - 30       | 6 pcs.                    |                    | 6                | 24 - 29   |                                   |
| 104-156   | 28 - 32       | 4 pcs.                    |                    | 4                | 28 - 31   |                                   |
| 104-204   | 30 - 36       | 6 pcs.                    |                    | 6                | 30 - 35   |                                   |
| 104-157   | 32 - 36       | 4 pcs.                    |                    | 4                | 32 - 35   |                                   |
| 104-158   | 36 - 40       |                           |                    |                  | 36 - 39   |                                   |
| 104-205   | 36 - 42       | 6 pcs.                    |                    | 6                | 36 - 41   |                                   |

## Technical Data

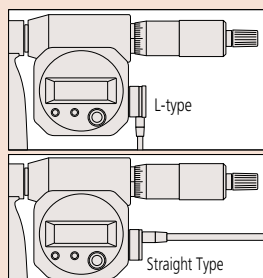
- Battery for **series 340**  
**340-251-30, 340-252-30,**  
**340-351-30, 340-352-30:** SR44 (1 pc.)  
**340-520 to 340-526**  
**340-720 to 340-723:** SR44 (2 pcs.)  
**938882**, for initial operational checks (standard accessory)
- Battery life: Approx. 2.4 years under normal use  
(for **series 340-2XX, 340-3XX**)  
Approx. 1.8 years under normal use  
(for **series 340-5XX, 340-7XX**)
- Length standard: Electromagnetic rotary sensor (for **series 340**)
- Standard accessories: Spanner (**301336**), 1 pc.  
(for maximum measuring range up to 300 mm (12 in))  
Spanner (**200154**), 1 pc.  
(for maximum measuring range 400 mm (16 in) or over)

## Optional Accessories

- Connecting cables for  
**340-251-30, 340-252-30, 340-351-30 and 340-352-30**
- USB Input Tool Direct  
**USB-ITN-B** (2 m): **06AFM380B**
- SPC cables for **U-WAVE-T** w/data switch (160 mm):  
**02AZD790B**  
For foot switch: **02AZE140B**

## Wireless Data Output\* U-WAVE™

- U-WAVE-TM 264-622** (IP67 type)  
**264-623** (Buzzer type)
- U-WAVE-TMB** Transmitter  
**Mitutoyo Bluetooth® U-WAVE**  
**264-626** (IP type)  
**264-627** (Buzzer type)  
Refer to page A-16 for details.
- Connecting unit for **U-WAVE-TM/TMB**  
**02AZF310** (IP67/buzzer type common specification)  
Refer to pages A-16 and A-18 for details  
\* Only **340-251-30, 340-252-30, 340-351-30** and  
**340-352-30** can be attached
- Connecting cables for  
**340-5XX, 340-7XX**  
Recommended cables:  
L-Type (does not interfere with operating the thimble.)  
1 m: **04AZB512**  
2 m: **04AZB513**  
Straight type (may interfere with operating the thimble.)  
1 m: **959149**  
2 m: **959150**



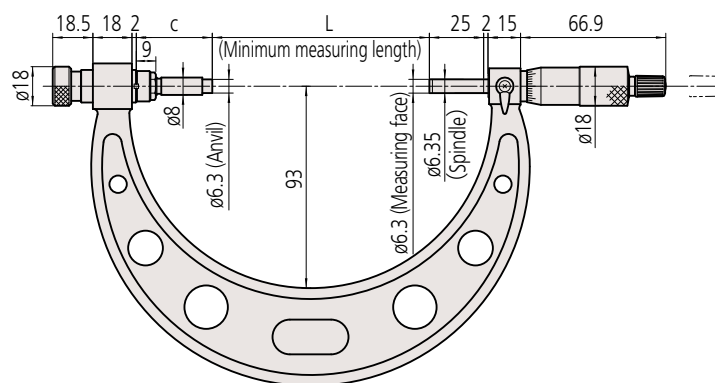
Refer to page A-27 for detailed information about recommended cables.



## DIMENSIONS

104-135A

Unit: mm

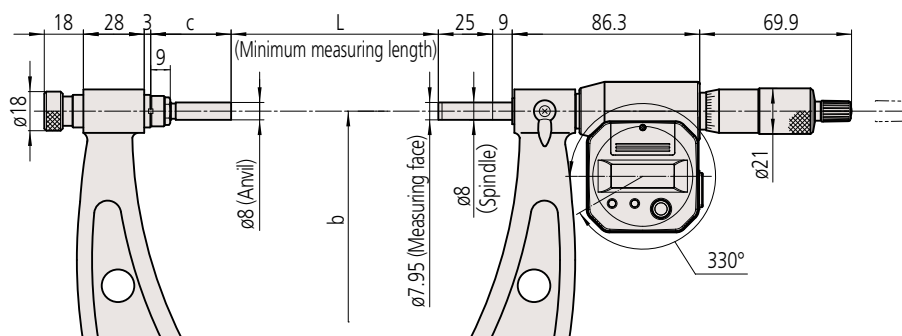


### Interchangeable Anvil

|                        |                     | L: Range (mm) |               |               |               |               |               |
|------------------------|---------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Range                  | 0 - 150 mm models   | 0 - 25        | 25 - 50       | 50 - 75       | 75 - 100      | 100 - 125     | 125 - 150     |
| Range                  | 150 - 300 mm models | 150 - 175     | 175 - 200     | 200 - 225     | 225 - 250     | 250 - 275     | 275 - 300     |
| Order No.              |                     | <b>303950</b> | <b>303951</b> | <b>303952</b> | <b>303953</b> | <b>303954</b> | <b>303955</b> |
| c: Overall length (mm) |                     | 135           | 110           | 85            | 60            | 35            | 10            |
| Interchangeable anvil  |                     | M1            | M2            | M3            | M4            | M5            | M6            |

|                        |                      | L: Range (mm) |               |               |               |
|------------------------|----------------------|---------------|---------------|---------------|---------------|
| Range                  | 300 - 400 mm models  | 300 - 325     | 325 - 350     | 350 - 375     | 375 - 400     |
| Range                  | 400 - 500 mm models  | 400 - 425     | 425 - 450     | 450 - 475     | 475 - 500     |
| Range                  | 500 - 600 mm models  | 500 - 525     | 525 - 550     | 550 - 575     | 575 - 600     |
| Range                  | 600 - 700 mm models  | 600 - 625     | 625 - 650     | 650 - 675     | 675 - 700     |
| Range                  | 700 - 800 mm models  | 700 - 725     | 725 - 750     | 750 - 775     | 775 - 800     |
| Range                  | 800 - 900 mm models  | 800 - 825     | 825 - 850     | 850 - 875     | 875 - 900     |
| Range                  | 900 - 1000 mm models | 900 - 925     | 925 - 950     | 950 - 975     | 975 - 1000    |
| Order No.              |                      | <b>304001</b> | <b>304002</b> | <b>304003</b> | <b>304004</b> |
| c: Overall length (mm) |                      | 87            | 62            | 37            | 12            |
| Interchangeable anvil  |                      | M3            | M4            | M5            | M6            |

### Over 400 mm up to 1000 mm



|                       |                      | L: Range (mm) |               |               |               |  | b   |
|-----------------------|----------------------|---------------|---------------|---------------|---------------|--|-----|
| Range                 | 300 - 400 mm models  | 300 - 325     | 325 - 350     | 350 - 375     | 375 - 400     |  | 224 |
| Range                 | 400 - 500 mm models  | 400 - 425     | 425 - 450     | 450 - 475     | 475 - 500     |  | 273 |
| Range                 | 500 - 600 mm models  | 500 - 525     | 525 - 550     | 550 - 575     | 575 - 600     |  | 332 |
| Range                 | 600 - 700 mm models  | 600 - 625     | 625 - 650     | 650 - 675     | 675 - 700     |  | 382 |
| Range                 | 700 - 800 mm models  | 700 - 725     | 725 - 750     | 750 - 775     | 775 - 800     |  | 430 |
| Range                 | 800 - 900 mm models  | 800 - 825     | 825 - 850     | 850 - 875     | 875 - 900     |  | 480 |
| Range                 | 900 - 1000 mm models | 900 - 925     | 925 - 950     | 950 - 975     | 975 - 1000    |  | 530 |
| Order No.             |                      | <b>304001</b> | <b>304002</b> | <b>304003</b> | <b>304004</b> |  |     |
| c: Overall (mm)       |                      | 87            | 62            | 37            | 12            |  |     |
| Interchangeable anvil |                      | M3            | M4            | M5            | M6            |  |     |