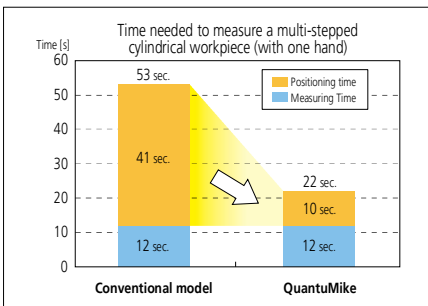


# Micrometer

## QuantuMike SERIES 293 — IP65 Micrometer with 2 mm/rev Spindle Feed

- Faster measurement is achieved by using a thread which feeds the spindle by 2 mm per revolution of the thimble. Our own technology for high precision thread-cutting enables such a fine and quick measurement.
- Positioning times are reduced by 60%\* and measuring times by 35%\* compared with a conventional micrometer.
- The ratchet thimble mechanism helps ensure repeatable results. The sound of the ratchet provides the user with a sense of confidence and the speeder enables the rapid spindle feed needed when measuring widely different dimensions.

\* According to Mitutoyo's comparison test data for measuring time on typical workpieces.



293-140-30

### SPECIFICATIONS

Metric							
	Order No.	Range (mm)	Resolution (mm)	Maximum permissible error $J_{MPE}$ ( $\mu\text{m}$ )	Flatness ( $\mu\text{m}$ )	Parallelism ( $\mu\text{m}$ )	Mass (g)
with SPC data output	293-140-30	0 - 25	0.001	$\pm 1$	0.3	1	265
	293-141-30	25 - 50					325
	293-142-30	50 - 75		$\pm 2$		2	465
	293-143-30	75 - 100					620
without SPC data output	293-145-30	0 - 25		$\pm 1$		1	265
	293-146-30	25 - 50					325
	293-147-30	50 - 75		$\pm 2$		2	465
	293-148-30	75 - 100					620

Inch/Metric							
	Order No.	Range (in)	Resolution	Maximum permissible error $J_{MPE}$ (in)	Flatness (in)	Parallelism (in)	Mass (g)
with SPC data output	293-180-30	0 - 1	0.00005 in/ 0.001 mm	$\pm 0.00005$	0.000012	0.00004	265
	293-181-30	1 - 2					325
	293-182-30	2 - 3		$\pm 0.0001$		0.00008	465
	293-183-30	3 - 4					620
without SPC data output	293-185-30	0 - 1		$\pm 0.00005$		0.00004	265
	293-186-30	1 - 2					325
	293-187-30	2 - 3		$\pm 0.0001$		0.00008	465
	293-188-30	3 - 4					620

- Dust/Water protection level: IP65 (IEC60529)\*1
- Measuring force: 7 to 12 N\*2
- Battery: SR44 (1 pc.), **938882**, for initial operational checks (standard accessory)
- Battery life: Approx. 2.4 years under normal use
- Length standard: Electromagnetic rotary sensor
- Standard accessories: Setting standard, 1 pc. (except for 0 to 25 mm (0 to 1 in) models), Spanner (**301336**), 1 pc.

\*1 Rustproofing shall be applied after use.

\*2 Measuring force when using the speeder ratchet (Apply a measuring force in the same condition as for measurement and then set the origin.)

MeasurLink<sup>®</sup> ENABLED  
Data Management Software by Mitutoyo

U-WAVE fit



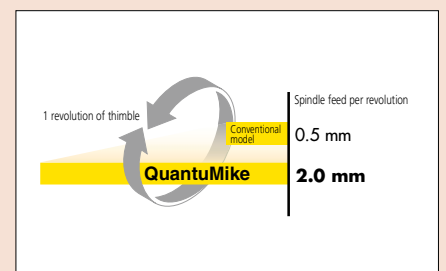
Dust and Water Protected  
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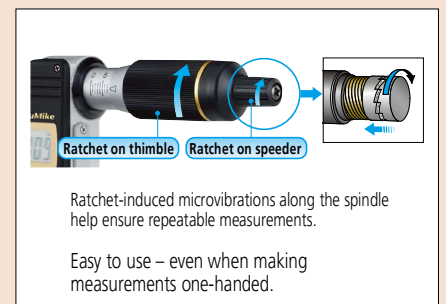
### Measurement example



### Quick measurement



### Ratchet thimble mechanism



**Functions**

**Origin point setting (ABS length measurement system):**  
Pressing the ORIGIN button resets the ABS origin at the current spindle position. Origin values can be set depending on each size.

**Zero setting (INC length measurement system):**  
A brief press on the ZERO/ABS button sets display to zero at the current spindle position and switches to the incremental (INC) measuring mode. A longer press resets to the ABS measuring mode.

**Hold:**  
Pressing the HOLD button freezes the current value in the display. This function is useful for preserving a measurement in situations of poor visibility when the instrument must be moved away from the workpiece before the reading can be recorded.

**Function lock:**  
This function allows the ORIGIN (origin point setting) function and the ZERO (zero setting) function to be locked to prevent these points being reset accidentally.

**Auto power ON/OFF:**  
The reading on the LCD disappears after this instrument is idle for approx. 20 minutes, but the origin point is retained. Turning the spindle causes the reading on the LCD to reappear.

**Data output\*:**  
Models equipped with this function have an output port for transferring measurement data to a Statistical Process Control (SPC) system.

**Error alarm:**  
In case of an overflow on the LCD or a computing error, an error message appears on the LCD, and the measuring function stops. This prevents an instrument from giving an erroneous reading. Also, when the battery voltage drops to a certain level, the low-battery-voltage alarm indicator appears well before the micrometer becomes unusable.  
\* Only for the models with SPC data output

**Optional Accessories**

Order No.	Type	Description
05CZA662	B	Connecting cable (1 m)
05CZA663	B	Connecting cable (2 m)
06AFM380B	B	USB Input Tool Direct (2 m)
02AZD790B	B	Connecting cables for U-WAVE-T (160 mm)
02AZE140B	B	Connecting cables for U-WAVE-T For foot switch
264-622	IP67	U-WAVE-TM
264-623	Buzzer	U-WAVE-TM
264-626	IP67	U-WAVE-TMB
264-627	Buzzer	U-WAVE-TMB
02AZF310	IP67 / buzzer	Connecting unit for U-WAVE-TM/TMB

**DIMENSIONS**

