

Coolant Proof Micrometer

SERIES 293 — with Dust/Water Protection Conforming to IP65 Level

FEATURES

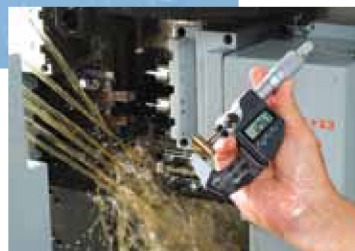
- IP65 protection level, enabling use in environments exposed to cutting oil, etc*.
*Anti-corrosion treatment is required after use.
- Measurement data output function is available with a water-resistant connection cable.
- Oil-resistant materials are used in all plastic components.
- $\pm 1\mu\text{m}$ instrumental error (75mm/3" or less range models)
- Auto power ON/OFF function.
- Certificate of Inspection* is included. (50mm/2" or less range models)
* This certificate is outdated and therefore cannot be used as a calibration certificate.



293-230



293-252-10



Oil-resistant materials are used in all plastic components.



(Refer to page IV for details.)



(Refer to page IV for details.)



Certificate of Inspection

Technical Data

- Accuracy: Refer to the list of specifications. (excluding quantizing error)
- Resolution: 0.001mm, .00005"/0.001mm (up to 4") or .0001"/0.001mm (over 4")
- Flatness: 0.3 μm /.000012"
- Parallelism: 1 μm /.00004" for models up to 50mm/2"
2 μm /.00008" for models up to 100mm/4"
3 μm /.00012" for models up to 175mm/7"
4 μm /.00016" for models up to 275mm/11"
5 μm /.0002" for models over 300mm/12"
- Measuring faces: Carbide
- Display: LCD
- Battery: SR44 (1 pc.), **938882**
- Battery life: Approx. 1.2 years under normal use
- Dust/Water protection level: IP65

Functions

- Origin-set, 2-point preset (over 100mm), Zero-setting, Function lock (over 100mm) Automatic power ON/OFF, Data hold, Data output, inch/mm conversion (inch/mm models)
- Alarm: Low voltage, Counting value composition error

Optional Accessories

- 05CZA662:** SPC cable with data switch (1m)
- 05CZA663:** SPC cable with data switch (2m)
- 06ADV380B:** USB Input Tool Direct with data switch (2m)
- 02AZD790B:** SPC cable for U-WAVE water-proof model (160mm)



SPC cable with data switch



Measurement data output function is available with a water-resistant connection cable.

SPECIFICATIONS

Metric With ratchet stop		
Range	Order No.	Accuracy
0 - 25mm	293-230 / 293-240*	±1μm
25 - 50mm	293-231 / 293-241*	±1μm
50 - 75mm	293-232 / 293-242*	±1μm
75 - 100mm	293-233 / 293-243*	±2μm
100 - 125mm	293-250-10	±2μm
125 - 150mm	293-251-10	±2μm
150 - 175mm	293-252-10	±3μm
175 - 200mm	293-253-10	±3μm
200 - 225mm	293-254-10	±3μm
225 - 250mm	293-255-10	±4μm
250 - 275mm	293-256-10	±4μm
275 - 300mm	293-257-10	±4μm

*without SPC data output

Metric With ratchet thimble		
Range	Order No.	Accuracy
0 - 25mm	293-234 / 293-244*	±1μm
25 - 50mm	293-235 / 293-245*	±1μm
50 - 75mm	293-236 / 293-246*	±1μm
75 - 100mm	293-237 / 293-247*	±2μm

*without SPC data output

Metric With friction thimble		
Range	Order No.	Accuracy
0 - 25mm	293-238 / 293-248*	±1μm

*without SPC data output

Inch/Metric With ratchet stop		
Range	Order No.	Accuracy
0 - 1"	293-330 / 293-340*	±.00005"
1" - 2"	293-331 / 293-341*	±.00005"
2" - 3"	293-332 / 293-342*	±.00005"
3" - 4"	293-333 / 293-343*	±.0001"
4" - 5"	293-350-10	±.0001"
5" - 6"	293-351-10	±.0001"
6" - 7"	293-352-10	±.00015"
7" - 8"	293-353-10	±.00015"
8" - 9"	293-354-10	±.00015"
9" - 10"	293-355-10	±.0002"
10" - 11"	293-356-10	±.0002"
11" - 12"	293-357-10	±.0002"

*without SPC data output

Inch/Metric With ratchet thimble		
Range	Order No.	Accuracy
0 - 1"	293-334 / 293-344*	±.00005"
1" - 2"	293-345*	±.00005"
2" - 3"	293-346*	±.00005"
3" - 4"	293-347*	±.0001"

*without SPC data output

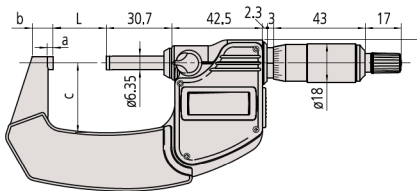
Inch/Metric With friction thimble		
Range	Order No.	Accuracy
0 - 1"	293-335 / 293-348*	±.00005"
1" - 2"	293-336	±.00005"

*without SPC data output

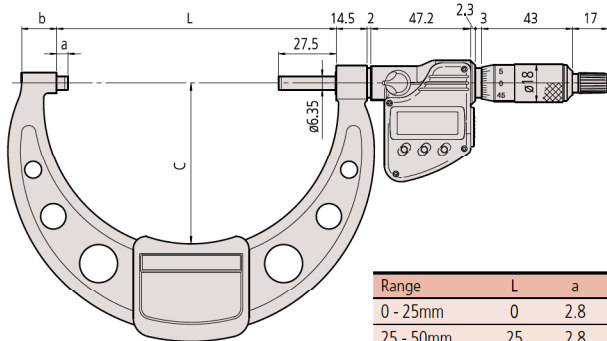
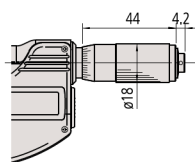
DIMENSIONS AND MASS

Unit: mm

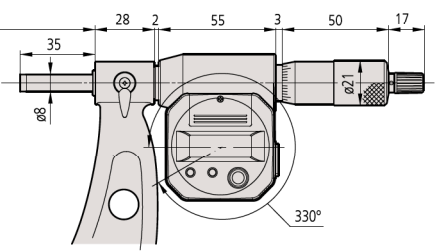
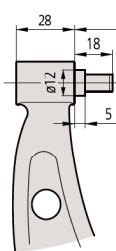
Ratchet stop type up to 100mm



Ratchet thimble type / Friction thimble type



Ratchet stop type over 100mm



Range	L	a	b	c	Mass
0 - 25mm	0	2.8	9	25	270g
25 - 50mm	25	2.8	9.8	32	330g
50 - 75mm	50	2.8	12.6	47	470g
75 - 100mm	75	2.8	14	60	625g
100 - 125mm	132.8	5.3	16.7	76	600g
125 - 150mm	158.2	5.7	18.8	90	740g
150 - 175mm	183.6	6.1	19.1	102	800g
175 - 200mm	208.8	6.3	18.2	115	970g
200 - 225mm	234.2	6.7	16.8	127	1100g
225 - 250mm	258	5.5	18	139	1270g
250 - 275mm	284	6.5	18	152	1340g
275 - 300mm	309	6.5	18	166	1540g

Range	L	a
300 - 325mm	353	187
325 - 350mm	378	199
350 - 375mm	403	212
375 - 400mm	428	224
400 - 425mm	453	236
425 - 450mm	478	248
450 - 475mm	503	261
475 - 500mm	528	273