

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.
- Auto power ON/OFF function.
- A nonslip surface is employed for the frame cover and surface panel to achieve stable handheld measurement.
- Certificate of inspection* is included.
(2" /50mm or less range models)**
*It is not the type used to obtain calibration certificates.
** except 293-349-30
- With a standard bar except for 0-1"/0-25mm model.
- Supplied in fitted case. Plastic case up to 6"/150mm, wooden box over 6"/150mm.



293-330-30



293-252-30



Oil-resistant materials are used in all plastic components.



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



Employed nonslip surface



Mitutoyo		Date of Issue / 発行日付: 2013.08.01																															
CERTIFICATE OF INSPECTION / 検査成績書																																	
1. Item / 品名	Digital Micrometer	Modeling name / 型番	293-330																														
2. Brand / 商標	Mitutoyo	Serial No. / 番付	0000000000																														
3. Date of Inspection / 検査日付	2013.08.01	Standard temperature / 標準温度	20 °C																														
4. Inspector / 検査者	0000000000	Inspection status / 検査状況	OK																														
<table border="1"> <tr> <th>Part of measuring face / 測定面部分</th> <th>Material / 材質</th> <th>Hardness / 硬度</th> <th>Flatness / 平面度</th> <th>Parallelism / 平行度</th> </tr> <tr> <td>Measuring face / 測定面</td> <td>SKD11</td> <td>HRC 62</td> <td>0.00012</td> <td>0.0004</td> </tr> <tr> <td>Frame / 本体</td> <td>Aluminum</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bar / 尺</td> <td>SKD11</td> <td>HRC 62</td> <td>0.00012</td> <td>0.0004</td> </tr> <tr> <td>Frame cover / 本体カバー</td> <td>Aluminum</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Surface panel / 表面パネル</td> <td>Aluminum</td> <td></td> <td></td> <td></td> </tr> </table>				Part of measuring face / 測定面部分	Material / 材質	Hardness / 硬度	Flatness / 平面度	Parallelism / 平行度	Measuring face / 測定面	SKD11	HRC 62	0.00012	0.0004	Frame / 本体	Aluminum				Bar / 尺	SKD11	HRC 62	0.00012	0.0004	Frame cover / 本体カバー	Aluminum				Surface panel / 表面パネル	Aluminum			
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Inspection method / 検査方法: 2-Point Method Inspection equipment / 検査装置: Mitutoyo Inspection environment / 検査環境: 20 °C, 50% RH Inspection result / 検査結果: OK Inspection date / 検査日付: 2013.08.01 Inspection place / 検査場所: Mitutoyo Corporation																																	
5. Signature / 署名 C. Q. Manager		Personal / 個人 Mitutoyo Corporation																															

Certificate of inspection

Technical Data

- Accuracy: Refer to the list of specifications.
 Resolution: .00005"/0.001mm or 0.001mm (up to 4" models)
 .0001" / 0.001mm (over 4" models)
 Flatness: .000012"/0.3μm
 Parallelism: .00004"/1μm for models up to 2"/50mm
 .00008"/2μm for models up to 4"/100mm
 .00012"/3μm for models up to 7"/175mm
 .00016"/4μm for models up to 11"/275mm
 .0002"/5μm for models over 12"/300mm
 Measuring faces: Carbide tipped
 Display: LCD
 Battery: SR44 (1 pc.), **938882**
 Battery life: Approx. 2.4 years under normal use
 Dust/Water protection level: IP65

Function

- Origin-set, Zero / ABS, Hold, Auto power on/off,
 Data output (output models),
 inch/mm conversion (on inch/metric models only)
 Alarm: Low voltage, Counting value composition error

Optional Accessories

- 05CZA662**: SPC cable with data switch (40"/1m)
05CZA663: SPC cable with data switch (80"/2m)



SPC cable with data switch

SPECIFICATIONS

Metric With ratchet stop

Range	Resolution	Order No.	Accuracy
0 - 25mm	0.001mm	293-230-30 / 293-240-30*	±1μm
25 - 50mm	0.001mm	293-231-30 / 293-241-30*	±1μm
50 - 75mm	0.001mm	293-232-30 / 293-242-30*	±1μm
75 - 100mm	0.001mm	293-233-30 / 293-243-30*	±2μm
100 - 125mm	0.001mm	293-250-30	±2μm
125 - 150mm	0.001mm	293-251-30	±2μm
150 - 175mm	0.001mm	293-252-30	±3μm
175 - 200mm	0.001mm	293-253-30	±3μm
200 - 225mm	0.001mm	293-254-30	±3μm
225 - 250mm	0.001mm	293-255-30	±4μm
250 - 275mm	0.001mm	293-256-30	±4μm
275 - 300mm	0.001mm	293-257-30	±4μm

*without SPC data output

Metric With ratchet thimble

Range	Resolution	Order No.	Accuracy
0 - 25mm	0.001mm	293-234-30 / 293-244-30*	±1μm
25 - 50mm	0.001mm	293-235-30 / 293-245-30*	±1μm
50 - 75mm	0.001mm	293-236-30 / 293-246-30*	±1μm
75 - 100mm	0.001mm	293-237-30 / 293-247-30*	±2μm

*without SPC data output

Metric Micrometer Set

Range	Order No.	Included in set
0-50mm (2pcs. Set)	293-966-30	293-230-30, 293-231-30, 25mm CERA block, plastic case
0-75mm (3pcs. Set)	293-962-30	293-230-30, 293-231-30, 293-232-30, 2 standard bars, plastic case
0-100mm (4pcs. Set)	293-963-30	293-230-30, 293-231-30, 293-232-30, 293-233-30, 3 standard bars, wooden box

Inch/Metric With ratchet stop

Range	Resolution	Order No.	Accuracy
0 - 1" / 0 - 25.4mm	.00005" / 0.001mm	293-330-30 / 293-340-30*	±.00005"
1" - 2" / 25.4 - 50.8mm	.00005" / 0.001mm	293-331-30 / 293-341-30*	±.00005"
2" - 3" / 50.8 - 76.2mm	.00005" / 0.001mm	293-332-30 / 293-342-30*	±.00005"
3" - 4" / 76.2 - 101.6mm	.00005" / 0.001mm	293-333-30 / 293-343-30*	±.0001"
4" - 5" / 101.6 - 127.0mm	.0001" / 0.001mm	293-350-30	±.0001"
5" - 6" / 127.0 - 152.4mm	.0001" / 0.001mm	293-351-30	±.0001"
6" - 7" / 152.4 - 177.8mm	.0001" / 0.001mm	293-352-30	±.00015"
7" - 8" / 177.8 - 203.2mm	.0001" / 0.001mm	293-353-30	±.00015"
8" - 9" / 203.2 - 228.6mm	.0001" / 0.001mm	293-354-30	±.00015"
9" - 10" / 228.6 - 254.0mm	.0001" / 0.001mm	293-355-30	±.0002"
10" - 11" / 254.0 - 279.4mm	.0001" / 0.001mm	293-356-30	±.0002"
11" - 12" / 279.4 - 304.8mm	.0001" / 0.001mm	293-357-30	±.0002"

*without SPC data output

Inch/Metric With ratchet thimble

Range	Resolution	Order No.	Accuracy
0 - 1" / 0 - 25.4mm	.00005" / 0.001mm	293-334-30 / 293-344-30*	±.00005"
0 - 1" / 0 - 25.4mm	.0001" / 0.001mm	293-349-30*	±.0001"
1" - 2" / 25.4 - 50.8mm	.00005" / 0.001mm	293-345-30*	±.00005"
2" - 3" / 50.8 - 76.2mm	.00005" / 0.001mm	293-346-30*	±.00005"
3" - 4" / 76.2 - 101.6mm	.00005" / 0.001mm	293-347-30*	±.0001"

*without SPC data output

Inch/Metric With friction thimble

Range	Resolution	Order No.	Accuracy
0 - 1" / 0 - 25.4mm	.00005" / 0.001mm	293-335-30 / 293-348-30*	±.00005"
1" - 2" / 25.4 - 50.8mm	.00005" / 0.001mm	293-336-30	±.00005"

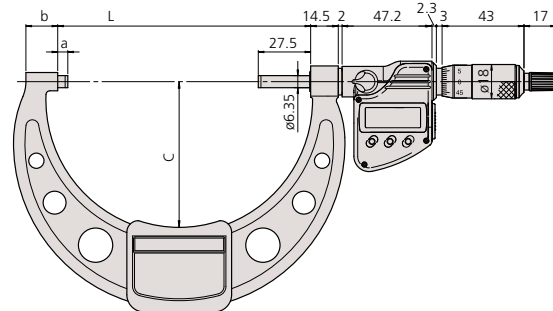
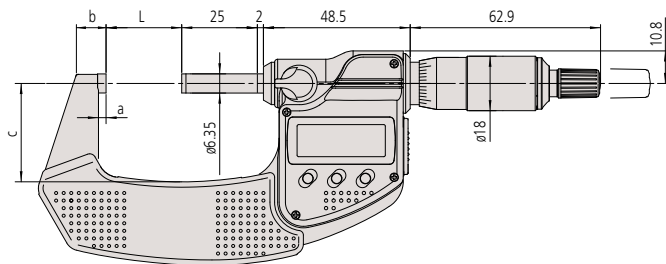
*without SPC data output

Inch/Metric Micrometer Set .00005" / 0.001mm graduation model

Range	Order No.	Included in set
0 - 3" / 0 - 76.2mm (3 pcs. set)	293-960-30	293-330-30, 293-331-30, 293-332-30, 2 standard bars, plastic case
0 - 4" / 0 - 101.6mm (4 pcs. set)	293-961-30	293-330-30, 293-331-30, 293-332-30, 293-333-30, 3 standard bars, wooden box

DIMENSIONS AND MASS

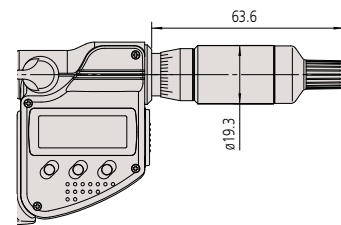
Ratchet-stop type (up to 100mm/4")



Ratchet stop type (over 100mm/4" to 300mm/12")

Ratchet-thimble type and friction-thimble type

Unit: mm



Range (Metric / Inch)	L	a	b	c	Mass (g)
0 - 25mm / 0-1"	0	2.5	9	(25)	270
25 - 50mm / 1-2"	25	2.5	9.8	(32.5)	330
50 - 75mm / 2-3"	50	2.5	12.6	(47)	470
75 - 100mm / 3-4"	75	2.5	14	(60)	625
100 - 125mm / 4-5"	132.8	5.3	16.7	(76.5)	600
125 - 150mm / 5-6"	158.2	5.7	18.8	(91)	740
150 - 175mm / 6-7"	183.6	6.1	19.1	(103.1)	800
175 - 200mm / 7-8"	208.8	6.3	18.2	(115.3)	970
200 - 225mm / 8-9"	234.2	6.7	16.8	(126.8)	1100
225 - 250mm / 9-10"	258	5.5	18	(139.8)	1270
250 - 275mm / 10-11"	284	18	28	(152.3)	1340
275 - 300mm / 11-12"	309	18	28	(166)	1540