

## Digimatic Calipers IP67 ABS Digimatic Coolant Proof Calipers ABS Digimatic Calipers

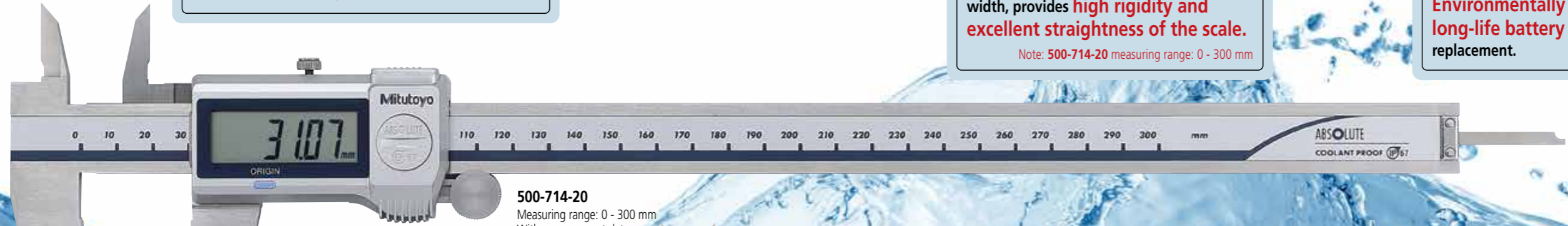
Small Tool Instruments  
and Data Management



300 mm range model with **11.0 mm** text height for enhanced visibility.

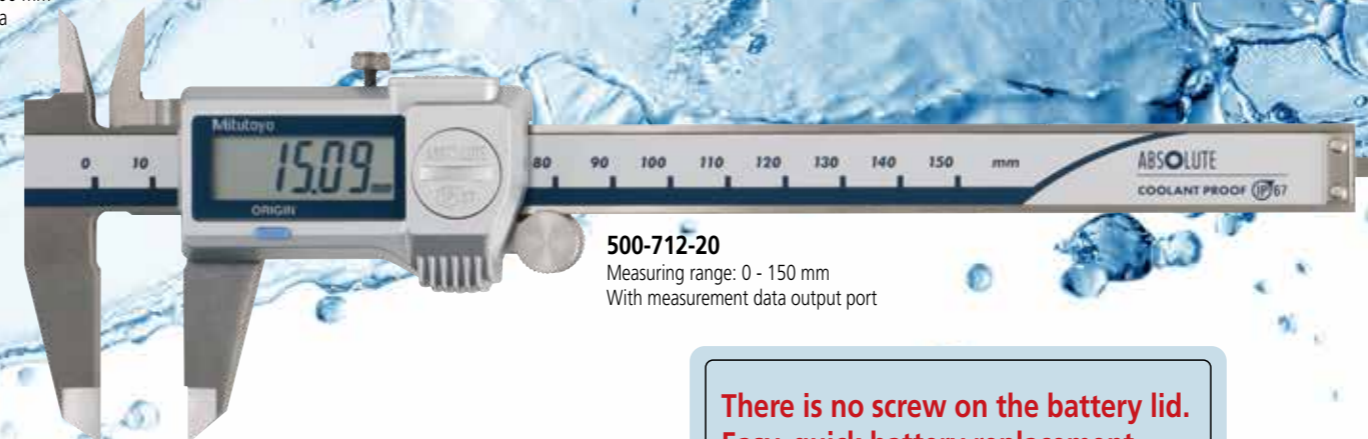
500-714-20, with **20 mm** main beam width, provides **high rigidity and excellent straightness of the scale.**  
 Note: 500-714-20 measuring range: 0 - 300 mm

**Environmentally friendly 5-year long-life battery** for less frequent battery replacement.



**500-714-20**  
 Measuring range: 0 - 300 mm  
 With measurement data output port

With built-in ABS scale, no need for origin-setting at every power-on.



**500-712-20**  
 Measuring range: 0 - 150 mm  
 With measurement data output port

There is no screw on the battery lid. Easy, quick battery replacement.

No more handwritten records thanks to the built-in measurement data output function. **Centralized data management with U-WAVE<sup>fit</sup> and DP-1VA LOGGER.**



# Highly resistant to water, oil, and staining

## with Dust/Water Protection Conforming to IP67 Level IP67 ABS Digimatic Coolant Proof Calipers



Products equipped with the measurement data output function can be connected to the measurement data network system MeasurLink®.

Note: MeasurLink® is a registered trademark of Mitutoyo Corporation in Japan and Mitutoyo America Corporation in the United States.

An inspection certificate is supplied as standard.

**COOLANT PROOF™ IP67**

COOLANT PROOF\* is the universal term for Mitutoyo Digimatic Small Tool Instruments that are not only resistant to dust and water ingress but also to deterioration of materials due to contact with the cutting oil or coolant fluids in normal use.  
 \* Some types of aggressive cutting oil or coolant may degrade the sealing materials over time.

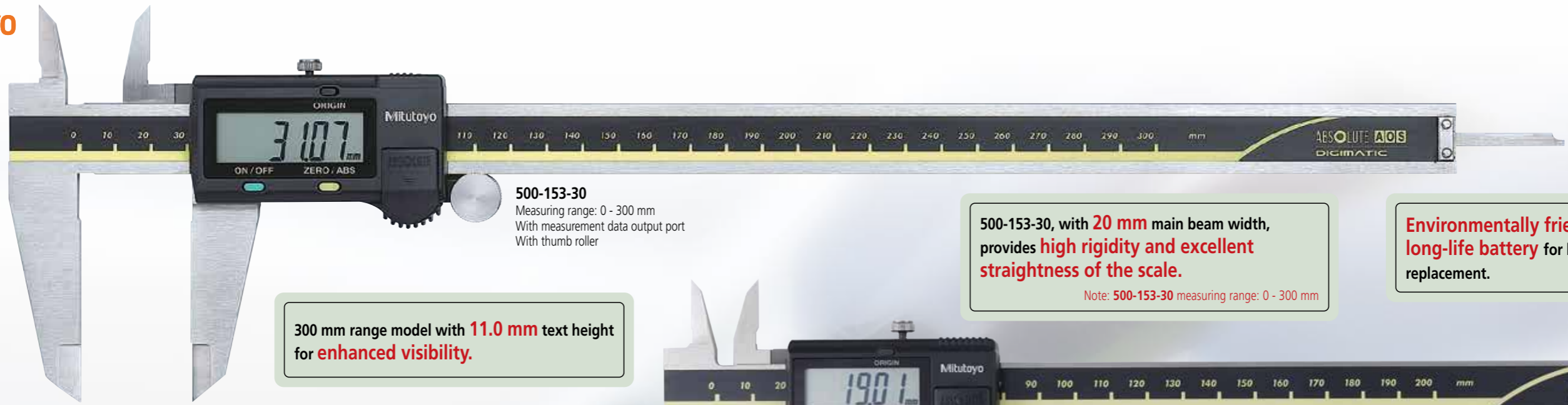
IP67 protection level

IP 6		IP 7			
First characteristic number	Protection from solid objects (people or things)	Second characteristic number	Protection from liquids (water, etc.)		
Brief description	Description	Brief description	Description		
6	Dust-proof	No ingress of dust allowed.	7	Protected against water penetration.	Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is temporarily immersed in water under standardized conditions of pressure and time.

Note: For details of the test conditions used in evaluating each degree of protection, please refer to the original standard.

### History of the Evolution of Mitutoyo's Proprietary Digimatic Calipers

Year	Product Description
1982	Developed Digimatic Calipers
1987	Digimatic caliper with measurement data output function
1988	Battery-less solar caliper
1993	Digimatic caliper with ABSOLUTE (ABS) electrostatic capacity linear encoder
2000	Coolant-proof caliper with IP65-level protection
2003	Coolant-proof caliper with IP67-level protection and ABSOLUTE (ABS) electromagnetic induction linear encoder
2005	Battery-less solar caliper with IP67-level protection
2013	Digimatic caliper with ABSOLUTE (ABS) electromagnetic induction linear encoder

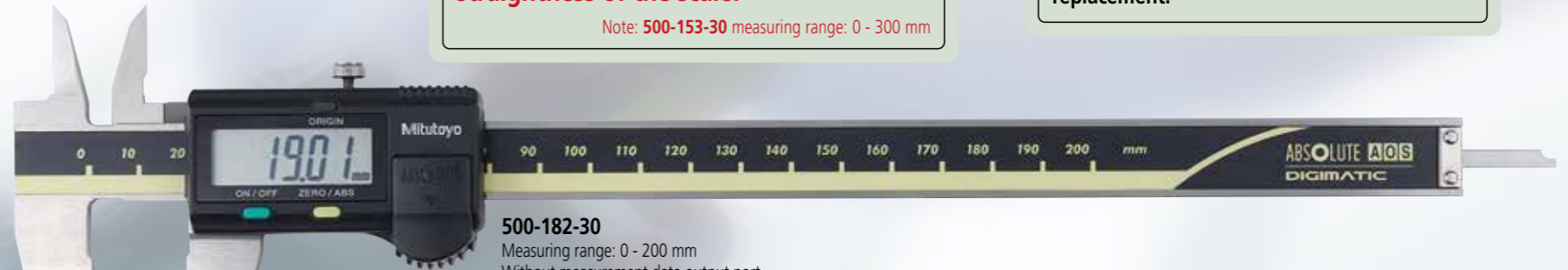


**500-153-30**  
Measuring range: 0 - 300 mm  
With measurement data output port  
With thumb roller

300 mm range model with **11.0 mm** text height for **enhanced visibility**.

**500-153-30, with 20 mm main beam width, provides high rigidity and excellent straightness of the scale.**  
Note: 500-153-30 measuring range: 0 - 300 mm

**Environmentally friendly 5-year long-life battery** for less frequent battery replacement.



**500-182-30**  
Measuring range: 0 - 200 mm  
Without measurement data output port  
Without thumb roller

No more handwritten records thanks to the built-in measurement data output function. **Centralized data management with U-WAVEfit and DP-1VA LOGGER.**



**500-151-30**  
Measuring range: 0 - 150 mm  
With measurement data output port  
With thumb roller

With built-in ABS scale, **no need for origin-setting at every power-on.**



**500-181-30**  
Measuring range: 0 - 150 mm  
Without measurement data output port  
Without thumb roller

**Displayed value clearing (zero-setting) at any position. Comparison measurement has never been easier.**

# The Standard for Digimatic Calipers

## ABS Digimatic Calipers



Products equipped with the measurement data output function can be connected to the measurement data network system MeasurLink®.

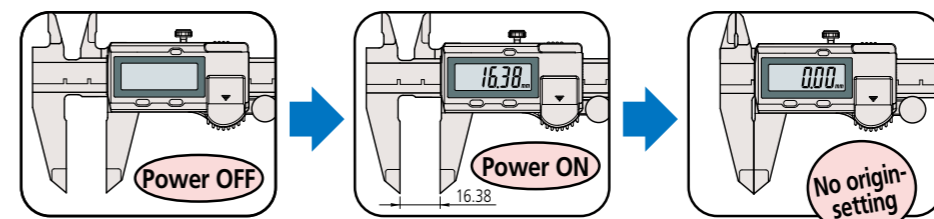
Note: MeasurLink® is a registered trademark of Mitutoyo Corporation in Japan and Mitutoyo America Corporation in the United States.



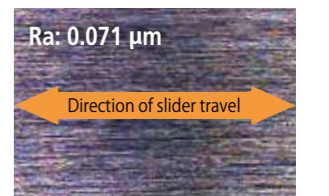
An inspection certificate is supplied as standard.



ABS (Absolute) scale makes origin-setting at every power-on unnecessary, and the allowable slider speed is unlimited with this type of scale.



High quality guide surface finish for smooth slider movement



ABS Digimatic Caliper ex. 500-151-30

## Common specifications

(IP67 ABS Digimatic Coolant Proof Calipers, ABS Digimatic Calipers)

- Resolution: 0.01 mm
- Power supply: Silver oxide button cell battery SR44 (938882), 1 pc. supplied for testing purposes only. Replace with a fresh cell as soon as the caliper is put into use.
- Battery life: Approx. 5 years under normal use
- Max. response speed: Unlimited

## IP67 ABS Digimatic Coolant Proof Calipers

### Specifications

#### Metric

Order No.	Measuring range (mm)	Maximum permissible error (mm)*		Mass (g)	Measurement data output port	Thumb roller	Remarks
		<i>E</i> <sub>MPE</sub>	<i>S</i> <sub>MPE</sub>				
500-702-20	0 - 150	±0.02	±0.04	168	—	✓	—
500-703-20	0 - 200			198	—	✓	—
500-712-20	0 - 150			168	✓	✓	—
500-713-20	0 - 200			198	✓	✓	—
500-714-20	0 - 300	±0.03	±0.05	350	✓	✓	—
500-721-20	0 - 150	±0.02	±0.04	168	✓	✓	Carbide-tipped jaws for outside measurement
500-722-20	0 - 200			198	✓	✓	Carbide-tipped jaws for outside measurement
500-723-20	0 - 150			168	✓	✓	Carbide-tipped jaws for outside & inside measurement
500-724-20	0 - 200			198	✓	✓	Carbide-tipped jaws for outside & inside measurement
500-719-20	0 - 150			168	✓	✓	Rod depth bar ø1.9 mm

\* Partial Surface Contact Error, *E*<sub>MPE</sub> and Shift Error, *S*<sub>MPE</sub> are terms (notations) used in ISO 13385-1:2019.

#### Inch/Metric

Order No.	Measuring range (in)	Maximum permissible error*		Mass (g)	Measurement data output port	Thumb roller	Remarks
		<i>E</i> <sub>MPE</sub>	<i>S</i> <sub>MPE</sub>				
500-752-20	0 - 6	±0.001 in/ ±0.02 mm	±0.002 in/ ±0.04 mm	168	—	✓	—
500-753-20	0 - 8			198	—	✓	—
500-762-20	0 - 6			168	✓	✓	—
500-763-20	0 - 8			198	✓	✓	—
500-764-20	0 - 12	±0.0015 in/ ±0.03 mm	±0.0025 in/ ±0.05 mm	350	✓	✓	—
500-735-20	0 - 6	±0.001 in/ ±0.02 mm	±0.002 in/ ±0.04 mm	168	✓	✓	Carbide-tipped jaws for outside measurement
500-736-20	0 - 8			198	✓	✓	Carbide-tipped jaws for outside measurement
500-737-20	0 - 6			168	✓	✓	Carbide-tipped jaws for outside & inside measurement
500-738-20	0 - 8			198	✓	✓	Carbide-tipped jaws for outside & inside measurement
500-769-20	0 - 6			168	✓	✓	Rod depth bar ø0.075 inch

\* Partial Surface Contact Error, *E*<sub>MPE</sub> and Shift Error, *S*<sub>MPE</sub> are terms (notations) used in ISO 13385-1:2019.

## Common functions

(IP67 ABS Digimatic Coolant Proof Calipers, ABS Digimatic Calipers)

#### Absolute measurement:

After power is turned ON, measurement can be started without zero-setting if origin-setting was previously performed. The Absolute origin position can be changed by the ORIGIN button.

#### ORIGIN button:

Sets the Absolute origin at the current slider position when pressed.

#### Low-voltage alert:

If the battery voltage becomes low, a "B" appears in the display to alert the user before measurement is no longer possible. A battery change advisory alert precedes this alert.

#### Data output:

By using the connecting cable (option), measurement data can be output.

## ABS Digimatic Calipers

### Specifications

#### Metric

Order No.	Measuring range (mm)	Maximum permissible error (mm)* <sup>2</sup>		Mass (g)	Measurement data output port	Thumb roller	Remarks
		<i>E</i> <sub>MPE</sub>	<i>S</i> <sub>MPE</sub>				
500-150-30	0 - 100	±0.02	±0.04	143	✓	✓	Rod depth bar ø1.9 mm
500-180-30* <sup>1</sup>							—
500-151-30	0 - 150	±0.02	±0.04	168	✓	✓	—
500-154-30							Carbide-tipped jaws for outside measurement
500-155-30							Carbide-tipped jaws for outside & inside measurement
500-158-30							Rod depth bar ø1.9 mm
500-181-30* <sup>1</sup>							—
500-152-30							—
500-156-30	0 - 200	±0.02	±0.04	198	✓	✓	Carbide-tipped jaws for outside measurement
500-157-30							Carbide-tipped jaws for outside & inside measurement
500-182-30* <sup>1</sup>							—
500-153-30							0 - 300

\*<sup>1</sup> Without SPC data output

\*<sup>2</sup> Partial Surface Contact Error, *E*<sub>MPE</sub> and Shift Error, *S*<sub>MPE</sub> are terms (notations) used in ISO 13385-1:2019.

#### Inch/Metric

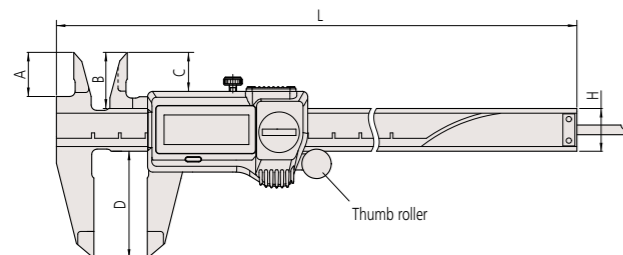
Order No.	Measuring range (in)	Maximum permissible error* <sup>2</sup>		Mass (g)	Measurement data output port	Thumb roller	Remarks
		<i>E</i> <sub>MPE</sub>	<i>S</i> <sub>MPE</sub>				
500-170-30	0 - 4	±0.001 in/ ±0.02 mm	±0.002 in/ ±0.04 mm	143	✓	✓	Rod depth bar ø0.075 inch
500-171-30							—
500-174-30	0 - 6	±0.001 in/ ±0.02 mm	±0.002 in/ ±0.04 mm	168	✓	✓	Carbide-tipped jaws for outside measurement
500-175-30							Carbide-tipped jaws for outside & inside measurement
500-178-30							Rod depth bar ø0.075 inch
500-191-30							—
500-172-30	0 - 8	±0.0015 in/ ±0.03 mm	±0.0025 in/ ±0.05 mm	198	✓	✓	Carbide-tipped jaws for outside measurement
500-176-30							Carbide-tipped jaws for outside & inside measurement
500-177-30							—
500-173-30	0 - 12	±0.0015 in/ ±0.03 mm	±0.0025 in/ ±0.05 mm	350	✓	✓	—
500-195-30* <sup>1</sup>	0 - 4	±0.001 in/ ±0.02 mm	±0.002 in/ ±0.04 mm	143	—	✓	Rod depth bar ø0.075 inch
500-196-30* <sup>1</sup>	0 - 6			168	—	✓	—
500-197-30* <sup>1</sup>	0 - 8			198	—	✓	—

\*<sup>1</sup> Without SPC data output

\*<sup>2</sup> Partial Surface Contact Error, *E*<sub>MPE</sub> and Shift Error, *S*<sub>MPE</sub> are terms (notations) used in ISO 13385-1:2019.

## DIMENSIONS

With thumb roller



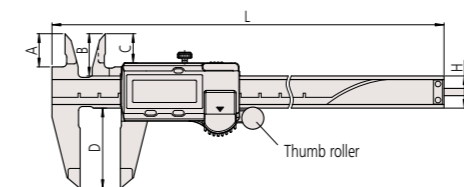
Measuring range	A	B	C	D	H	L
0 - 150	16.5	21	14.6	40	16	233
0 - 200	20	24.5	18.1	50	16	290
0 - 300	22	27.5	19.8	64	20	404

Outside jaw thickness = 3.5 mm for 0 to 150 mm / 0 to 200 mm models  
3.8 mm for 0 to 300 mm model

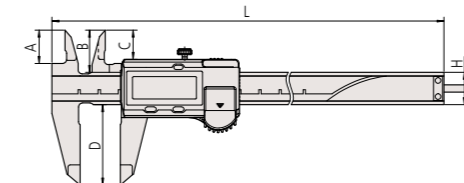
Unit: mm

## DIMENSIONS

With thumb roller



Without thumb roller

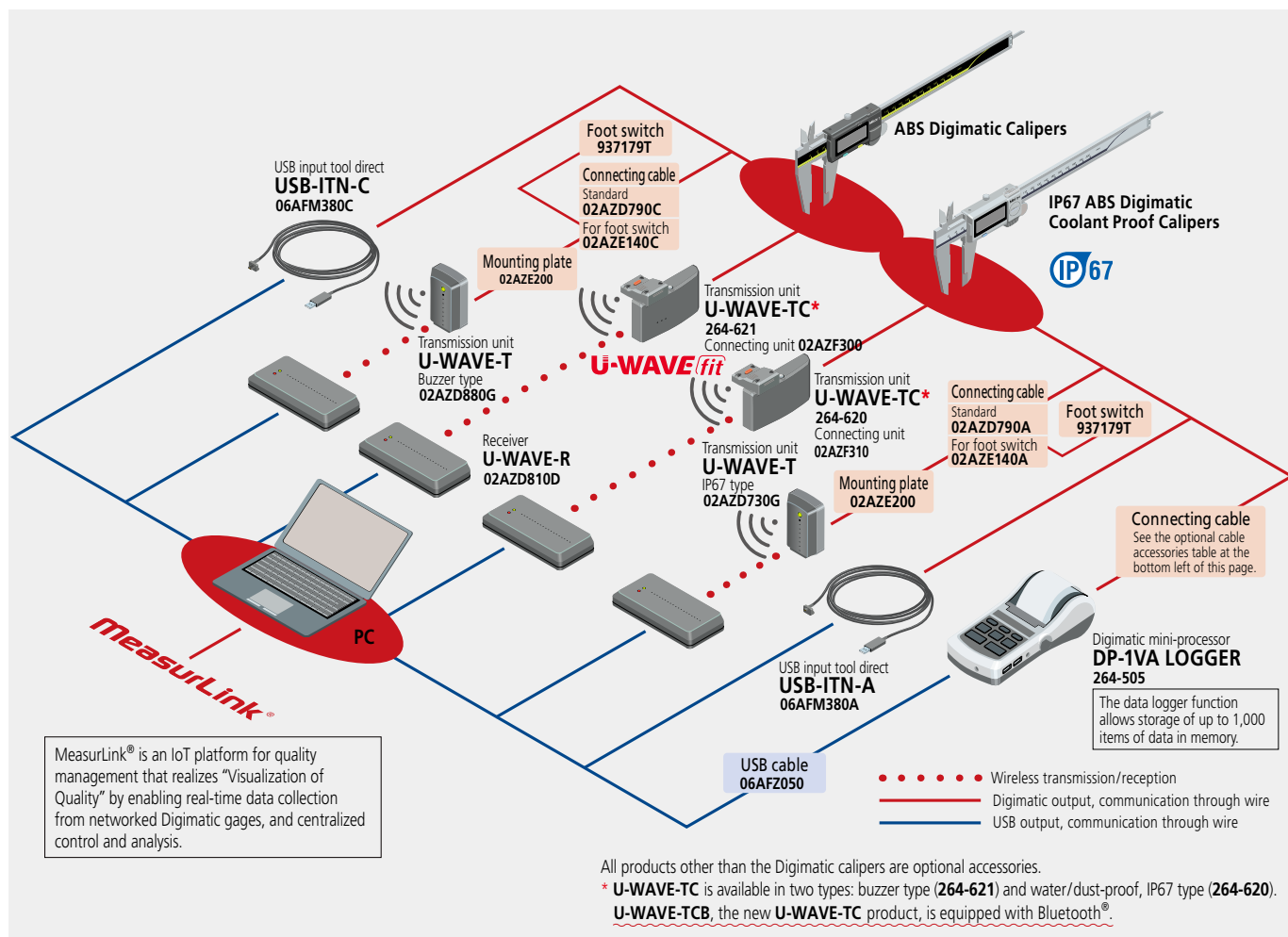


Measuring range	A	B	C	D	H	L
0 - 100	16.5	21	14.5	40	16	182
0 - 150						233
0 - 200	20	24.5	18	50	16	290
0 - 300	22	27.5	19.8	64	20	404

Outside jaw thickness: 3.5 mm for 0 to 100 mm / 0 to 150 mm / 0 to 200 mm models and 3.8 mm for 0 to 300 mm model

Unit: mm

# Centralized data management



## Optional cable accessories

	Product	Order No.
ABS Digimatic Calipers	Connecting cable	959149 (1 m)
		959150 (2 m)
	Hold unit	959143
IP67 ABS Digimatic Coolant Proof Calipers	Connecting cable	05CZA624 (1 m)
		05CZA625 (2 m)

Combining optional accessories enables not only wireless measurement data recording but also advanced statistical processing management.



Find additional product literature and our product catalogue

<https://www.mitutoyo.co.jp/global.html>

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