

Mitutoyo

Mitutoyo Quality

Digimatic Calipers

IP67 ABS Digimatic Coolant Proof Calipers

ABS Digimatic Calipers

Small Tool Instruments
and Data Management



Catalog No. E12047(2)



Highly resistant to water, oil, and staining

with Dust/Water Protection Conforming to IP67 Level

IP67 ABS Digimatic Coolant Proof Calipers

MeasurLink[®] ENABLED
Data Management Software by Mitutoyo

ABSOLUTE[™]



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.

U-WAVE^{fit}



U-WAVE^{fit}

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.

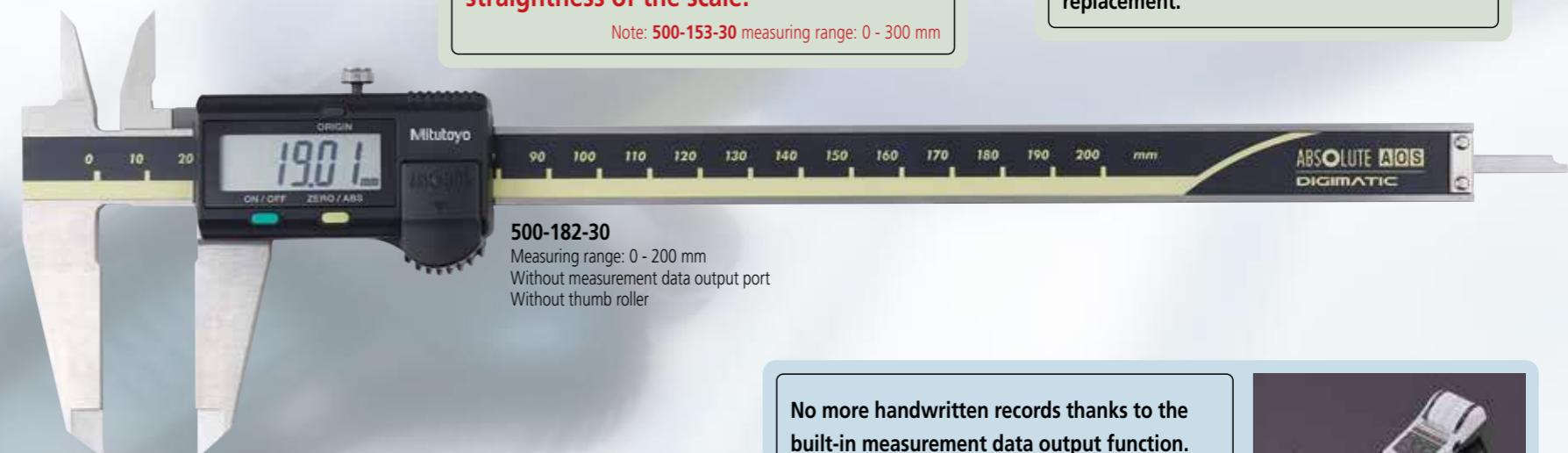
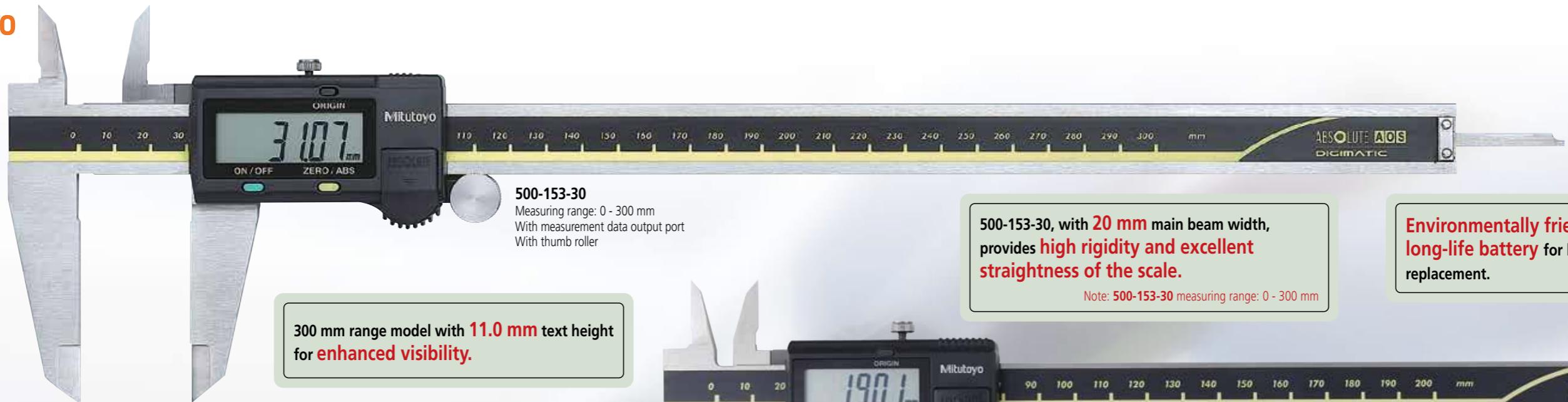
IP67 protection level

IP 6 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

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



The Standard for Digimatic Calipers

ABS Digimatic Calipers

MeasurLink[®] ENABLED
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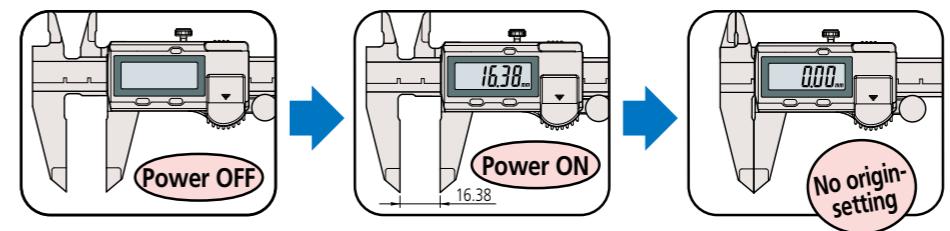
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U-WAVEfit

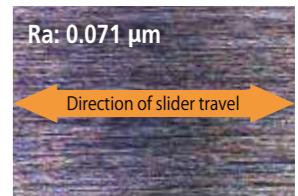
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ABS (Absolute) scale makes origin-setting at every power-on unnecessary, and the allowable slider speed is unlimited with this type of scale.



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
		E_{MPE}	S_{MPE}				
500-702-20	0 - 150	± 0.02	± 0.04	168	—	✓	—
500-703-20	0 - 200			198	—	✓	—
500-712-20	0 - 150	± 0.02	± 0.04	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	± 0.02	± 0.04	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_{MPE} and Shift Error, S_{MPE} 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
		E_{MPE}	S_{MPE}				
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	± 0.001 in/ ± 0.02 mm	± 0.002 in/ ± 0.04 mm	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	± 0.001 in/ ± 0.02 mm	± 0.002 in/ ± 0.04 mm	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_{MPE} and Shift Error, S_{MPE} are terms (notations) used in ISO 13385-1:2019.

DIMENSIONS

With thumb roller						
Unit: mm						
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		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						

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.

Zero/ABS button:

Switches between Absolute and Incremental measurement modes 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)* ²		Mass (g)	Measurement data output port	Thumb roller	Remarks
		E_{MPE}	S_{MPE}				
500-150-30	0 - 100	± 0.02	± 0.04	143	✓	✓	Rod depth bar ø1.9 mm
500-180-30 [†]				—	—	—	Rod depth bar ø1.9 mm
500-151-30	0 - 150	± 0.02	± 0.04	168	✓	✓	—
500-154-30				168	✓	✓	Carbide-tipped jaws for outside measurement
500-155-30	0 - 200	± 0.02	± 0.04	198	✓	✓	Carbide-tipped jaws for outside & inside measurement
500-158-30				198	✓	✓	Rod depth bar ø1.9 mm
500-181-30 [†]	0 - 200	± 0.02	± 0.04	198	✓	✓	—
500-152-30				198	✓	✓	Carbide-tipped jaws for outside measurement
500-156-30	0 - 300	± 0.03	± 0.05	350	✓	✓	Carbide-tipped jaws for outside & inside measurement
500-182-30 [†]				350	✓	✓	—
500-153-30	0 - 300	± 0.03	± 0.05	350	✓	✓	—

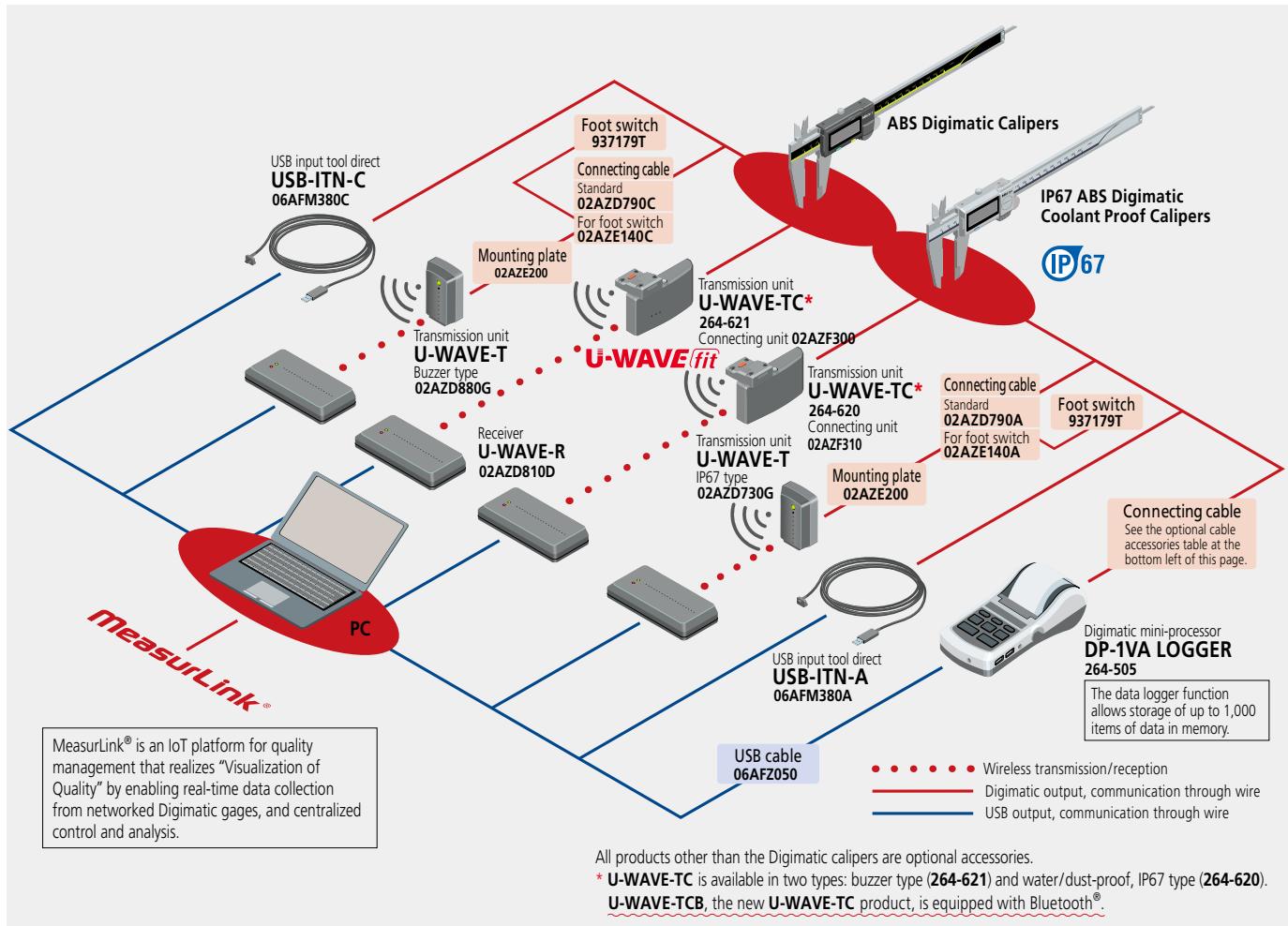
*1 Without SPC data output

*2 Partial Surface Contact Error, E_{MPE} and Shift Error, S_{MPE} 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
		E_{MPE}	S_{MPE}				
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							

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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