



No. 2046

## No. 2046

### Clark stiffness tester (automatic type)

This machine measures the stiffness of paper, fiber and film by the self-weight flexing method. Typical specimens are papers of small basis weight such as newspaper and thin paper. The specimen is pinched between a set of rolls, and the rolls are turned slowly in both directions. The length of specimen projection from the rolls is measured, when the deflection angle of the specimen from one side to the other becomes 90 degrees. Based on this length, the Clark stiffness is determined. Conventionally, this test has required skilled technique and much time of operation, which would often cause inter-operator error. Aimed at solving such problems and labor saving, we have developed this tester that performs a series of operation steps automatically.

**Type:** fully automatic with digital display

**Measurement method:** per JIS (Clark stiffness), both methods A and B are available

Automatically performs repetitive bending to determine the critical length.

**Specimen length:** 100 to 500 mm, to be input from the ten-key Maxim critical length on display 46 cm while measuring

**Specimen feed switch:** Even with a long specimen, measurement is done in a short time, by adjusting the projection length.

**Specimen width:** 15 to 50 mm (typically 30 mm)  
Selectable among 15, 20, 25, 30, 40, 50 (mm) by the selection switch.

**Specimen direction:** MD, CD, non-directional

**Selection of test method:** Selectable between methods A and B by the selection switch.

**Determination of bending angle:**

Method A: 90-degree bending,

Method B: bending at an acute angle and at an obtuse angle (the critical length is obtained by calculation from the extending length)

**Flexing speed:** 1 rpm (rotation speed of specimen)

**Data display:** Critical length and stiffness are shown digitally

**Optional:** Acrylic case

**Referential standards:** JIS P-8143-1996, TAPPI T451 cm-84

**Power source:** single-phase 100/110 VAC 50/60 Hz 1A

**Outer dimensions:** 320×385×480 mm

**Instrument weight:** 18 kg



No. 2047

## No. 2047

### Clark stiffness tester (motorized type)

Paper stiffness is one of essential characteristics. Newspaper and printing paper must have a stiffness enabling proper handling. This machine measures the stiffness of papers, fibers and films. Typical specimens are papers of small basis weight such as newspaper and thin paper. Stiffness is determined from the flexing load of the specimen. The length of specimen portion extending from the rolls is measured, when the deflection angle of the specimen from one side to the other becomes 90 degrees. Based on this length (critical length), Clark stiffness is obtained.

**Specimen width:** 15 to 50 mm (typically 30 mm)

**Specimen rotating speed:** 1 rpm

**Scale:** 30 to 300 mm

**Referential standards:** JIS P-8143-1996, TAPPI T451 cm-84

**Power source:** single-phase 100/110 VAC 50/60 Hz 0.5A

**Outer dimensions:** 225×320×260 mm

**Instrument weight:** 8 kg

## No. 2048-M

### Taber stiffness tester (motorized type)

This tester readily measures the stiffness of paper and paperboard. Features a high precision: a pendulum gives flexural loads to the specimen. Use of an auxiliary weight or a correcting element widens the measurement range, increasing sensitivity and reproducibility. One end of the specimen is held on the pendulum rotating axis, while the other end is positioned between a pair of rollers that turn with the loading disc to exert flexural loads on the specimen. The loading point (rotation angle) is read on the outer scale disc when the specified deflection angle, 15 or 7.5 degrees, is reached.

**Specimen:** 30 to 40 mm wide (typically 38.0 mm), 70 mm long, Up to 3.2 mm thick

**Deflection angle:** 15° or 7.5°

**Maximum flexural moment:** 490 mN·m

**Accessories:** weights range 500, 1000, 2000 g

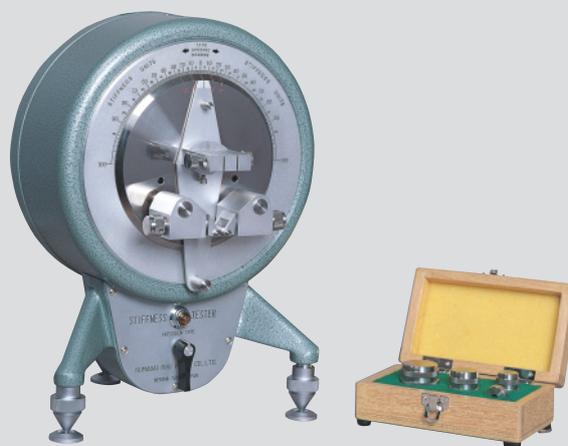
Correction element (0 to 10): 1 pc

**Referential standards:** JIS P-8125-2000, TAPPI T489os-99, ISO 2493

**Power source:** single-phase 100/110 VAC 50/60 Hz 0.5A

**Outer dimensions:** 350×250×260 mm

**Instrument weight:** 13 kg



No. 2048-M

## No. 2048-D

### Taber stiffness tester (automatic type)

Stiffness is one of important parameters for assessing the appropriateness of material for processing and printing. There are nearly proportional relationships between stiffness and beating degree, basis weight, thickness and water content. The correlation is remarkable especially with thickness. As with the No.2048-M, one end of the specimen (paper, paperboard, plastic sheet, metal foil, etc.) is held, and around the held point, the specimen is turned slowly, thereby being given flexural loads. The loading point (rotation angle) is read by a sensor when the deflection angle is 15 degrees, to calculate and output stiffness.

<Feature>

1. Fully automated zero adjustment, significantly reducing the measurement time.
2. Pinch the specimen, and push the AUTO switch. Measurement is done separately for right and left. Right and left data are shown on the digital display. The average of right and left results is also displayed. Very easy operation.
3. After measurement, the rotating disc quickly returns (four times faster) to the zero point.

**Measurement ranges:**

0 to 10 (g·cm) 15° deflection, 0 to 100 (g·cm) 15° deflection,  
0 to 500 (g·cm) 15° deflection, 0 to 1,000 (g·cm) 15° deflection  
0 to 2,000 (g·cm) 15° deflection

**Optional:** 0 to 5,000 (g·cm) 7.5° deflection,  
0 to 10,000 (g·cm) 7.5° deflection

**Bending speed:** 180° ±40° /min.

**Stiffness data:** left, right, average

**Specimen size:** 15 to 40 mm wide, 70 mm long, 27 mm long (for 0 to 10 range) Up to 3.2 mm thick

**Referential standards:** JIS P-8125-2000, TAPPI T489os-99, ISO 2493

**Power source:** single-phase 100/110 VAC 50/60 Hz 1A

**Outer dimensions:** 300×320×440 mm

**Instrument weight:** 13 kg



No. 2048-D