



YASUDA
— TESTING THE LIMITS —

No.214 Details about Yasuda's FLAMMABILITY TESTER! For testing Plastic, Rubber, and Textile Materials

No.214 OXYGEN INDEX FLAMMABILITY TESTER

No.252-UL-94 PLASTIC FLAMMABILITY TESTER

No.252-UL-1581 ELECTRIC WIRE FLAMMABILITY TESTER

No.440 FLAMMABILITY TESTER FOR TEXTILE

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No.455 45° FLAMMABILITY TESTER FOR TXTILE

No.214 OXYGEN INDEX FLAMMABILITY TESTER



JIS-K6269, K7201, L1091, ASTM-D2863, ISO-4589-2, Japanese Fire Services Act

This tester is used to evaluate the oxygen index flammability of plastic and rubber. The operator is to check the lowest oxygen level (the oxygen level is acquired from a mixture gas of oxygen and nitrogen) that the test specimen is capable to flame inside the flaming column.

Specification

Model	No.214	No.214-ISO
Glass Column	Inner $\phi 75 + 3$ mm, H450 \pm 5 mm	Inner $\phi 95$ mm, H450 mm, Upper Seal $\phi 40$ mm
Flow Meter	Oxygen: Max. 8.6 L/min (Scale 0.1 L/min) Flow Meter: Max. 11 L/min (Scale 0.1 L/min)	Oxygen: Max. 20 L/min (Scale 0.1 L/min) Flow Meter: Max. 20 L/min (Scale 0.1 L/min)
Pressure Gauge	Oxygen: Max. 0.1 MPa (Scale 0.002 MPa) Nitrogen: Max. 0.1 MPa (Scale 0.002 MPa) Mixed Gas: Max. 0.1 MPa (Scale 0.002 MPa)	Oxygen: Max. 0.1 MPa (Scale 0.002 MPa) Nitrogen: Max. 0.1 MPa (Scale 0.002 MPa) Mixed Gas: Max. 0.1 MPa (Scale 0.002 MPa)
Burner	Flame L6 to 25 mm (Adjustable)	Flame L6 to 25 mm (Adjustable)
Specimen	Plastic, Rubber and Textile	Plastic, Rubber and Textile
Accessories	U-shape Specimen Holder, Glass Bead	U-shape Specimen Holder
Option	Thermometer, Jig for Hoist Specimen, HighTemperature Testing Spec (HT),Oxygen Density Analyzer	Thermometer, Jig for Hoist Specimen, HighTemperature Testing Spec (HT),Oxygen Density Analyzer

Power Source	—	AC 100 V, 1-Phase, 5 A, 50/60 Hz
Heat Source	Mehane Gas (Purity: 98 % Over) or Urban Gas	Mehane Gas (Purity: 98 % Over) or Urban Gas
Gas Supply	Oxygen and Nitrogen	Oxygen and Nitrogen
Dimensions/ Weight (Approx.)	W600 × D290 × H660 mm, 30 kg	W600 × D250 × H560 mm, 20 kg

No.252-UL-94 PLASTIC FLAMMABILITY TESTER



UL-94、JIS-K6911、ASTM-D635、D3801、D4804、D5025、D5207、ISO-1210

This tester is used to evaluate the burn-resistance of plastic according to the vertical flaming test (VB) and horizontal flaming test (HB). The tester has been improved so that the operator can conduct the test easily by using the jog dial type controller and the touch panel display also equipped with voice guidance. With these functions, the operator can concentrate in watching the condition of the test specimen while controlling the burner to adjust the distance between the flame and the test

specimen. Adding the option jigs, the tester will enable to carry out other test methods (5V, VTM, HBF, HF).

Specification

Model	No.252-UL-94 (MANUAL)	No.252-UL-94 (ELECTRIC SYSTEM)
Chamber	1,000 × 555 × 900 mm(Volume Approx. 0.5 m3)	1,000 × 555 × 900 mm(Volume Approx. 0.5 m3)
Specimen	L125 ± 5 mm, W13.0 ± 0.5 mm, T13 mm or less	L125 ± 5 mm, W13.0 ± 0.5 mm, T13 mm or less
Burner	L100 ± 10 mm, Inner Diameter φ 9.5 ± 0.3 mm	L100 ± 10 mm, Inner Diameter φ 9.5 ± 0.3 mm
Burner Base	Slide type (With Operation Handle), Inclination Angle 45 ± 2°, 20 ± 5° (5 V)	Slide type (With Jog Dial type Controller), Inclination Angle 45 ± 2°, 20 ± 5° (5 V)
Burner Calibration Device	Flow Meter: Max.150 ml/min (Scale 2 ml/min) (Standard 105 ml/min) Flow Meter: Max. 1,000 ml/min (Scale 10 ml/min) (Standard 965 ml/min) Manometer: Max. 200 (± 100) mmH2O (Scale 1 mmH2O) (Standard 10 mmH2O) Timer, Built-In Thermometer	Flow Meter: Max.150 ml/min (Scale 2 ml/min) (Standard 105 ml/min) Flow Meter: Max. 1,000 ml/min (Scale 10 ml/min) (Standard 965 ml/min) Manometer: Max. 200 (± 100) mmH2O (Scale 1 mmH2O) (Standard 10 mmH2O) Timer, Built-In Thermometer
Accessories	Flame Gauge (20 mm) (Option: 125 mm & 38 mm), Ring Stand,Wire Mesh, Dry Cotton Pad, Fireproof Gloves, Gas Lighter	Flame Gauge (20 mm) (Option: 125 mm & 38 mm), Ring Stand,Wire Mesh, Dry Cotton Pad, Fireproof Gloves, Gas Lighter

Option	Horizontal Burning Support Fixture (HB), Plaque Support Fixture (5 V), Spring Clamp (VTM), Foam Support Fixture	Horizontal Burning Support Fixture (HB), Plaque Support Fixture (5 V), Spring Clamp (VTM), Foam Support Fixture
Power Source	AC 100 V, 1-Phase, 15 A, 50/60 Hz	AC 100 V, 1-Phase, 10 A, 50/60 Hz
Heat Source	Methane Gas (Purity: 98 % Over)	Methane Gas (Purity: 98 % Over)
Dimensions/ Weight (Approx.)	W1,510 × D610 × H1,100 mm 200 kg	W1,500 × D615 × H1,100 mm 230 kg

No.252-UL-1581 ELECTRIC WIRE FLAMMABILITY TESTER



UL-1581、ASTM-D5025、D5207

This tester is to evaluate the flammability resistance of electric wires by conducting a vertical flammability test. The operator is to fix the test specimen to the upper and lower Chuck and tilt the burner 20° to burn the test specimen for 15 seconds.

Specification

Chamber	1.6 × 1.6 × 1.6 m (Volume Approx. 4 m ³)
Specimen	L450 ± 10 mm
Burner	L100 ± 10 mm, Inner Diameter φ9.5 ± 0.3 mm
Burner Base	Inclination Angle 20°
Burner Calibration Device	Flow Meter: Max. 1,000 ml/min (Scale 10 ml/min) (Standard 965 ml/min) Manometer: Max. 400 (± 200) mmH ₂ O (Scale 1 mmH ₂ O) (Standard 125 ± 15 mmH ₂ O) Timer, Thermometer, Slug
Accessories	Gas Lighter, Flame Gauge, Ring Stand, Gauge for Slug, Dry Cotton Pad
Power Source	Tester Body: AC 100 V, 1-Phase, 3 A, 50/60 Hz Calibration Device: AC 100 V, 1-Phase, 3 A, 50/60 Hz
Heat Source	Methane Gas (Purity: 98 % Over)
Dimensions/ Weight (Approx.)	W1,700 × D1,700 × H2,500 mm, 380 kg (Chamber)

No.440 FLAMMABILITY TESTER FOR TEXTILE



JIS-L1091

This tester is used to test the flammability (flaming speed) of thin cloth (scarfs and clothes). The C Method is to measure the speed that the test specimen burned. The operator is to measure the length and the width of the burn and acquire the average to calculate the flammability.

Specification

Specimen	50 × 150 mm
Burner	Propane Gas Burner, Flame Height 16 mm
Timer	Max. 999.9 sec (Preset type)
Flame Angle	45°
Flaming Time	1 sec
Flame Height Adjustment	Needle Valve type, U-Shaped Manometer
Specimen Holder Angle	30°、 45°、 60°
Power Source	AC 100 V, 1-Phase, 5 A, 50/60 Hz
Heating Source	Liquid Nitrogen Gas Type 2 No.4

機体寸法・Dimensions/ Weight (Approx.)

W400 × D320 × H530 mm, 30 kg

No.440-S MVSS FLAMMABILITY TESTER



FMVSS-302、JIS-D1201、(JASO)、ISO-3795、ASTM-D5132

This tester is used to evaluate the flammability of inner material for cars, tractors, and machines. Attaching the test specimen to a U-shaped specimen holder and flaming the free end for 15 seconds, the operator is to measure the flaming speed of the test

Specification

No.440-S1

Model	No.440-S1 (FMVSS, ASTM)	No.440-S1 (FMVSS, ASTM)
Standard	FMVSS	ASTM

Specimen(Standard)	W 102 mm, L 356 mm, T 13 mm or Less	W 100 mm, L 300 mm, T 13 mm or Less
Bunsen Burner	Inner φ10 mm	Inner φ9.5±0.3 mm
Heat Source	Natural Gas	Methane Gas or Natural Gas (Calorific Value 37 ± 1 MJ/m ³)
Specimen Holder	U-shape with Groove (Pitch 25 mm),Marked Line	U-shape with Groove (Pitch 25 mm),Marked Line
Heat-Resisting Wire	φ0.25 mm	φ0.25 mm
Accessories	Specimen Attachment Set, Gas Lighter, Termometer, LPG Gas Hose,Hose Band, Flame Gauge, Heat-Resisting Wire,Specimen Holder (Only No.440-S1), Bobbin (Only No.440-S1), Saucer (Only No.440-S2)	Specimen Attachment Set, Gas Lighter, Termometer, LPG Gas Hose,Hose Band, Flame Gauge, Heat-Resisting Wire,Specimen Holder (Only No.440-S1), Bobbin (Only No.440-S1), Saucer (Only No.440-S2)
Option	Timer (Flaming Time Control), Spirit Level, Heat-Resisting Wire(Spare)	Timer (Flaming Time Control), Spirit Level, Heat-Resisting Wire(Spare)
Power Source	AC 100 V, 1-Phase, 5 A, 50/60 Hz (with Timer)	AC 100 V, 1-Phase, 5 A, 50/60 Hz (with Timer)
Dimensions/ Weight (Approx.)	W480 × D250 × H580 mm/ 18 kg	W480 × D250 × H580 mm/ 22 kg

No.440-S2

Model	No.440-S2 (JIS、ISO、JASO)	No.440-S2 (JIS、ISO、JASO)
Standard	JIS、 ISO	JASO

Specimen(Standard)	When W3 to 60mm L 356 mm, T 13 mm or Less When W60 to 100mm L 138 mm, T 13 mm or Less	W 100 mm, T 356 mm
Bunsen Burner	Inner $\phi 9.5 \pm 0.5$ mm	Inner $\phi 10$ mm
Heat Source	Natural Gas (Calorific Value 38 MJ/m ³)	Natural Gas (Calorific Value 38 MJ/m ³)
Specimen Holder	U-shape with Groove (Pitch 25 mm), Pin Tray	U-shape with Groove (Pitch 25 mm), Pin Tray
Heat-Resisting Wire	$\phi 0.25$ mm	$\phi 0.25$ mm
Accessories	Specimen Attachment Set, Gas Lighter, Thermometer, LPG Gas Hose, Hose Band, Flame Gauge, Heat-Resisting Wire, Specimen Holder (Only No.440-S1), Bobbin (Only No.440-S1), Saucer (Only No.440-S2)	Specimen Attachment Set, Gas Lighter, Thermometer, LPG Gas Hose, Hose Band, Flame Gauge, Heat-Resisting Wire, Specimen Holder (Only No.440-S1), Bobbin (Only No.440-S1), Saucer (Only No.440-S2)
Option	Timer (Flaming Time Control), Spirit Level, Heat-Resisting Wire(Spare)	Timer (Flaming Time Control), Spirit Level, Heat-Resisting Wire(Spare)
Power Source	AC 100 V, 1-Phase, 5 A, 50/60 Hz (with Timer)	AC 100 V, 1-Phase, 5 A, 50/60 Hz (with Timer)
Dimensions/ Weight (Approx.)	W480 × D250 × H580 mm/ 22 kg	W480 × D250 × H580 mm/ 22 kg

No.No.440-B VERTICAL FLAMMABILITY TESTER FOR TEXTILE



JIS-L1091, L1091(appendix 8)

This tester is used to test the flammability of textile products (bedclothes). The A-4 method (vertical method) is to measure the burning length and the alternative method (vertical burner method) is to measure the degree of spread of the burn and the after-flame.

Specification

Test Method	A-4 Method (Vertical Method)	Alternative Method (Vertical Burner Method)
Burning Box	Inner Diameter:W329 × D329 × H762 mm	Inner Diameter:W304.8 × D304.8 × H762 mm
Specimen	89 × 254 mm	70 × 300 mm

Burner Angle	Busen Burner, Inner Diameter ϕ 11 mm, Flame Height 38 mm, Attaching 25° to Vertical Direction	Busen Burner, Inner Diameter ϕ 9.5 mm, Flame Height 38 mm, Attaching Vertical
Burner Movement	Automatic Sliding	Automatic Sliding
Timer	Ignition Timer: Max. 999.9 sec (Preset method) Flaming Timer: Max. 99,999.9 sec (Preset method) After-flame Timer: Max. 99,999.9 sec (Running method) After-glow Timer: Max. 99,999.9 sec (Running method)	Ignition Timer: Max. 999.9 sec (Preset method) Flaming Timer: Max. 99,999.9 sec (Preset method) After-flame Timer: Max. 99,999.9 sec (Running method) After-glow Timer: Max. 99,999.9 sec (Running method)
Igniter	Automatic Ignition (Plug Method)	Automatic Ignition (Plug Method)
Load	0.54 N, 1.12 N, 2.23 N, 3.34 N (1 pc Each)	1.11 N, 2.23 N, 3.33 N, 4.45 N (1 pc Each)
Accessories	Specimen Holder, Flame Height Measuring Stand, Scale	Specimen Holder, Flame Height Measuring Stand, Scale
Power Source	AC 100 V, 1-Phase, 5 A, 50/60 Hz	AC 100 V, 1-Phase, 5 A, 50/60 Hz
Heat Source	Methane Gas (Purity: 97 % Over)	Liquid Petroleum Gas or City Gas
Dimensions/ Weight (Approx.)	W590 × D330 × H930 mm, 55 kg	W590 × D330 × H930 mm, 55 kg

No.455 45° FLAMMABILITY TESTER FOR TXTILE



JIS-A1322, L1091, L4404, Z2150

This tester is used to test the flammability of textile products (curtains). The A-1 (45° micro burner method) and A-2 (45° Meckel burner method) methods are used to measure the degree of spread of the burn and the after-flame. The D method is used to measure the time it takes for the test specimen to completely burn out. The tester can also be organized so that it can conduct the B method, which is used to measure the after-flame time and flaming distance.

Specification

Test Method	Standard Spec	B Method Spec (Surface Flaming Test)
Specimen	A-1 and A-2 Method: 350 × 250 mm D Method: W100 mm, Mass 1 g Attaching Angle: 45°	220 × 400 mm
Burner	A-1 and D Method: Micro Burner, Flame Height 45 mm A-2 Method:	Air Mix Burner: Flame Height 24 mm *Pressure of 3.92 kPa/hr

	Meckel Burner, Flame Height 65 mm	
Timer	—	Heating Timer: Max. 999.9 sec Flaming: Max. 999.9 sec After-flame Timer: Max. 99999.9 sec After-glow Timer: Max. 99999.9 sec
Igniter	Automatic Ignition (Plug Method)	Automatic Ignition (Plug Method)
Accessories	Specimen Holder (A-1 and A-2 Method), Specimen Holding Coil (D Method), Flame Height Measuring Stand, Remote Control Button	Pearlite Plate, Specimen Holder
Power Source	AC 100 V, 1-Phase, 3 A, 50/60 Hz	AC 100 V, 1-Phase, 3 A, 50/60 Hz
Heat Source	Liquid Nitrogen Gas Type 2 No.4	Liquid Nitrogen Gas Type 2 No.4
Dimensions/ Weight (Approx.)	Tester Body: W420 × D330 × H940 mm, 22 kg Control Box: W370 × D300 × H220 mm, 9 kg	Tester Body: W560 × D330 × H940 mm, 25 kg Control Box: W370 × D300 × H220 mm, 9 kg