

AUTOMATED CLEVELAND OPEN CUP FLASH POINT TESTER

aco-8/aco-8as



Model aco-8 and aco-8 asphalt version are the automated Cleveland Open Cup flash point tester from Tanaka. Based on 45 years experience of manufacturing the automated flash point testers, innovative 8th generation series has been released. The theme of 8th generation is “Ergonomic, Versatile and Premium”.

- ERGONOMIC COLOR-COORDINATED DISPLAY FOR HIGH VISIBILITY FOR EVERYBODY (UNIVERSAL DESIGN) AND INTUITIVE SWITCH OPERATION.
- ENHANCED VERSATILITY INCLUDING USB PORT FOR OPTIONAL FLASH MEMORY OR KEYBOARD, PASSWORD PROTECTION AND DATA STORAGE.
- ALL-IN-ONE CHASSIS DESIGN: COMPACT, LIGHT-WEIGHT AND PREMIUM EXTERIOR DESIGN.
- CONFORMS TO STANDARD TEST METHOD
(ISO 2592, ASTM D92, IP36)

APPARATUS

CODE	PART NAME	REMARKS
ACO-00-023	aco-8	Cleveland open Cup Flash Point Tester
ACO-00-024	aco-8as	Cleveland open Cup Flash Point Tester, asphalt version

STANDARD ACCESSORIES

CODE	PART NAME	Qty	REMARKS
ACO-02-001	Test Cup Assembly	1	
320-00-035	Thermofuse	1	Pack of 5, with Insulating Tube.
----	Gas Hose φ9 x φ16, 1.5m with Hose bands	1	
ACO-04-401	Heating Plate, Upper	1	
ACO-02-441	Skimmer Paddle	3	asphalt version only
MPC-02-032	AC Power Cord	1	3.0m, For 100 to 120V
MPC-02-033			2.5m, For 220 to 240V
—	aco-8 Manuals	1	Manuals for aco-8 and aco-8as.

OPTIONAL ACCESSORIES

CODE	PART NAME	REMARKS
070-00-068	Printer, BS2-80TS	Prints out test data and instrument settings.
070-00-281	Mini USB Keyboard	Sample ID entering
ACO-05-016	Mercury Thermometer Holder	For Calibration

SUGGESTED SPARES for 2 YEARS

CODE	PART NAME	Qty	CODE	PART NAME	Qty
ACO-02-001	Test Cup Assembly	1	ACO-02-402	Inner Detector Ring	1
320-00-035	Thermofuse	1	ACO-02-403	Outer Detector Ring	1
ACO-05-021	Igniter Top for aco-8	2	190-00-216	Insulating Collar for aco-8	2
ACO-05-011	Temperature Sensor for aco-8	1	ACO-02-441	Skimmer Paddle (for aco-8as only)	5
100-00-001	Heater Coil, 100/120V 800W (for 100/120V model)	1	100-00-011	Heater Coil, 220/240V 800W (for 220/240V model)	1

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Printed in Japan 1209(E)

DISTRIBUTED BY



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SINGLE ACTION SETTING

The flash detector rings and the temperature sensor are permanently mounted on a swing-arm assembly, which allows an easy setting of the specimen

EASY OPERATION

Select a test mode and enter the expected flash point; while the instrument executes the test, you are free to do other lab work. The instrument follows the exact procedures prescribed in the test method, and the completion of the test cycle is signaled by beeps. The test result is brightly shown on the color LCD module.

AUTO FIRE POINT DETECTION

In addition to the flash point, fire point can be determined automatically. The fire point is detected when the double Ionization rings detects 5 sec of continuous burning.

AUTO FIRE CONTAINMENT

The fire containment lid activates automatically to help putting out fire when aco-8 detects a fire point or specimen is burning up heavily.

DATA HANDLING

The unit is equipped to store up to 200 test results and export to an optional printer or to a LIMS through an RS-232 port or USB memory.

USB PORT

A USB port allows connecting USB keyboard for easy entering sample name and connecting USB flash memory for data copy to a PC or test conditions/parameters copy to the tester.

PASSWORD PROTECTION

With setting up password by the administrator, the device is protected against inadvertent change of parameters by the operator.

ALL-IN ONE DESIGN IN LIGHTWEIGHT

The all-in-one design is much lighter than old model, ACO-7 by approximately 30%, which is world's smallest class in volume.

SKIMMER FOR SURFACE SKIN (Asphalt Version Only)

For aco-8 asphalt version, a unique skimmer was added to automatically remove the surface skin that forms on the sample when bitumen or some other samples are tested. Surface skin removal has been known to improve the precision and the safety of the COC flash point testing of such samples.



SPECIFICATIONS

TYPE	All –in one, microprocessor controlled
TEST STANDARDS	ISO 2592, ASTM D92, IP36
MEASURING RANGE	Ambient to 400°C
MEASUREMENT MODES	ISO CRM, ISO Normal, ISO SPE, ISO Flash & Fire, ISO Skim*, ASTM Normal, ASTM SPE, ASTM Flash & Fire, ASTM Skim*, and User custom *: asphalt version only
HEATER	Nichrome Coil heater: 800W@100V or 800W @220V
COOLING DEVICE	Forced air cooling by sirocco fan
DISPLAY	5.7 inch (117 x 88mm) color LCD with LED back light
SKIMMING MECHANISM (asphalt version only)	PTFE Paddle rotates to skim the surface film off specimen. Skimming start temperature and interval are programmable. When not in use, the paddle can be removed.
TEMPERATURE SENSOR	PT-100 in stainless steel sheath
FLASH DETECTOR	Double Ionization Rings
IGNITION SOURCE	Gas ignition with automatic lighting
BAROMETRIC CORRECTION	Automatic correction by built-in barometric pressure sensor
I/O PORT	RS-232C = 1 channel (for PC or Optional Printer) USB=1 channel (for USB keyboard or USB Flash Memory)
SAFETY SHUTDOWN	Automatically shuts off and the problem is reported by buzzer and display, in case: (a) EFP+30 °C or 400 °C is reached, (b) temperature sensor is found defective, (c) flash detector is found defective, (d) thermofuse is blown (also fire containment lid activates), (e) built-in battery is found drained out, (f) arm is not set in place, (g) control computer runs away (no display)
GAS SUPPLY	LP gas or natural gas (Max. pressure:10kPa)
POWER SUPPLY	100/120VAC or 220/240 VAC, 50/60Hz
POWER CONSUMPTION	1000W MAX.
ELECTRICITY CONSUMPTION	160Wh for 1 test (about 20 min), 60.48gCO ₂ (@ 0.378kgCO ₂ /1kWh)
AMBIENT TEMP. RANGE	10°C to 35°C
DIMENSIONS & WEIGHT	230mm (W) × 470mm (D) × 390mm (H) 16kg