DMV 12 - DELTIMA Metyl Violet Tester

MODERNIZED STABILITY TESTER FOR METHYL VIOLET TEST

Methyl Violet Test (also known as Heat Test) is a traditional qualitative method for determination of chemical stability of nitrocellulose, single and double based smokeless powders, rocket fuels and nitro compounds.

Application

Chemical stability of energetic materials is an essential quality parameter for reliable risk and safety management. Methyl Violet Test was developed for the standard inspection of stability of energetic materials. This method is implemented by most of the stability testing guidelines and national authorities for standardization. Methyl Violet Test (also known as Heat Test) is a traditional and reliable qualitative method with sufficient reproducibility. It is fast, affordable and requires no extra laboratory skills.

Principle

Unstable behaviour of nitrocellulose and NC based energetic materials is associated with the liberation of heat and gaseous decomposition products which contain also nitrogen oxides (NO_x). Exposition of the sample to a higher temperature increases its decomposition rate. Methyl Violet Test was developed to evolve NO_x in defined conditions and to detect it by standard reagent paper.

Methyl Violet Test is often combined with Bergmann-Junk, Abel Heat Test, Vacuum Thermal Stability Test and HPLC. The result of Methyl Violet Test is a time required for colour change of the reagent paper. Further consideration of these values provides an overview of material stability and their lifetime.

Specifications

DMV 12	
LCD interaface	Yes
Sample positions	12
Temperature limit	200 °C
Temperature resolution	0.1 °C
Temperature stability	± 0.05 °C
Block heating rate	2 °C/min
External calibration	Yes
Independent temperature limiting	Yes
Composite insulation with aerogel	Yes
Additional stainless steel shield	Yes
Total count down timer	Yes (5 hours)
Cycle count down timer	Yes (5 minutes)
Remote firmware update	Yes
Remote operation (USB)	Optional
External Heating Lock	Optional
Lab temperature monitoring	Optional
Data recording (SD card)	Optional
Size (WxDxH) DMV 12	30x33x49 cm
Weight	45 Kg
Power (110 or 230 VAC/50-60 Hz)	950 W

Customized version is marked CA and its specifications are mofified according to reqirements.

Compliance

STANAG 4178, MIL-STD-286C, ČOS 137602, CE

Energetic Materials
Stability & Compatibility
Heating Blocks

www.deltima.eu
Simunkova 1610/23
182 00 Praha 8
Czech Republic (EU)

Precise solution for smart people

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Description

DMV 12 testing apparatus consists of a main controlling unit with LCD interface which is inbuilt into the main block. The main block with the main controlling unit presents a standalone independent apparatus.

The main block includes aluminium heating block with 12 holes for glass tubes. The test tube is defined by the standard. Heating elements are controlled by means of precise PID electronics and independent overheating protection. The block heating is efficiently insulated to keep the power consumption low.

Colour LCD touchscreen interface of the main unit includes instructions for all defined testing conditions and management of calibration constants. The salient feature of the interface is the total count down timer and cycle count down timer with status bar and sound alarm. The LCD interface is open for adjustiment of experiment conditions.

Advantageous features

Standalone device with colour LCD touch screen interface

General test and cycle timers on the LCD screen

Accurate temperature controlling

Independent overheating protection

User-defined testing procedures (self-programming)

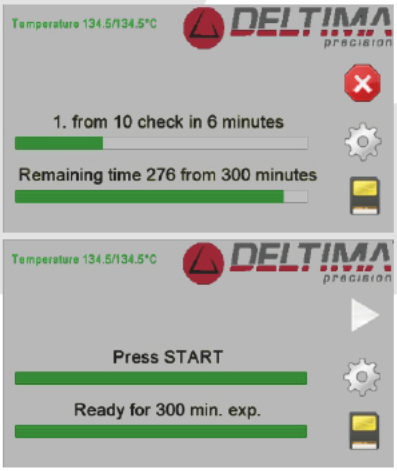
External calibration

Remote operation via USB/LAN

Firmware update via SD card

Rigid stands for sample preparation and cooling

Permanently marked glassware



Stand for Test Tubes

Each tube is prepared for measurement when placed into its stand. Stand is made of stainless steel and provide great stability. Stand has temperature resistant PEEK ports.

Stand for tubes	DMV
Capacity	12 tubes
Material	AISI304 / PEEK

Glass Test Tubes

DMV tubes are cost-effective and easy to replace in case of damage. Heat resistant marking assures sample identification. Tubes are filled with help of PEEK funnel and calibrated by external calibrator installed into oil or sand.

Glass tubes for DMV	
Tube diameter	18 mm
Tube length	290 mm
Glass material	B-silicate / Quartz
Temp. limit (recommended)	140 °C / 500 °C

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