BEVS 1812 AI Minimum Film Forming Temperature Master

Can be used in accordance with:
ASTM D2354, ISO 2115, GB/T 9267



BEVS 1812 AI Minimum Film Formation Temperature (MFFT) Master is equipped with an intelligent temperature control system that automatically detects the minimum temperature at which the coating on the substrate forms a uniform transparent film. It displays the film formation temperature in real time. The device is mainly used to evaluate the film-forming performance of polymer emulsions and is widely applied in industries such as coatings, adhesives, synthetic fabrics, leather, and paper.

The working principle of the Minimum Film Formation Temperature (MFFT) Master is that there are a cooling source and a heating source on both sides of a metal plate. By adjusting the temperatures of the cooling and heating sources, a suitable temperature gradient is formed across the metal plate. The plate is equipped with 16 high-precision temperature sensors to measure the temperature gradient when the plate reaches thermal equilibrium. An emulsion or polymer dispersion is evenly coated on the metal plate to a specified thickness, and then the surface of the sample is blown with low-speed drying air. A high-definition camera captures the transition point where the emulsion or polymer dispersion changes from unpolymerized (white and opaque) to polymerized (continuous transparent film). The distance from this transition point to the nearest two temperature sensors is calculated, and the temperature at the transition point is determined, which represents the minimum film formation temperature of the sample.

Features

- 7-inch ultra-large touchscreen for simple and easy operation
- Equipped with an intelligent temperature regulation system for precise adjustment of the gradient plate temperature
- Built-in 16 high-precision temperature sensors to ensure accuracy in recorded data
- Capable of simultaneously testing 6 sets of samples, improving testing efficiency
- Integrated high-definition camera for precise film formation location identification
- Mobile infrared laser locator to assist in reading the temperature at the minimum film formation temperature location
- Real-time display of gradient plate temperature
- Rapid heating/cooling with stable temperature maintenance
- Automatic detection of film formation location and measurement of minimum film formation temperature
- Automatic measurement of temperature at any location on the gradient plate
- Automatic saving of test results, including photos and data
- Provide test report output

Technical Specifications

Parameter	Specification
Temperature range	-10°C to 65°C, ±0.1°C
Sample quantity	6 sets
Film width	16 mm
Laser line movement range	0-300 mm
Precision	Reproducibility ±2°C, Repeatability ±4°C
Imaging system resolution	5472 x 3768 pixels
Dimensions	640 x 420 x 750 mm (L x W x H)
Power supply	AC 110 V/220 V, 50/60 Hz
Power	1500 W
Total weight	60 kg

Packing List

AI Minimum Film Formation Temperature Master x1
Auxiliary Coating Stand x1

Order Information

Code	Description
BEVS 1812	AI Minimum Film Forming Temperature Master
BEVS 1805/1	25mm Cube Applicator, Film Width 16mm, Gaps 37/75μm
BEVS 1805/3	25mm Cube Applicator, Film Width 16mm, Gaps 50/100μm