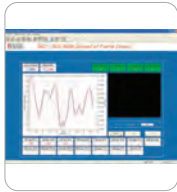


Spread of Flame Tester

화염전파 시험기, IMO-609, ISO 5658, ASTM E 1317, IMO FTP Code Resolution A. 653



Specification

Model	FT-IMO-609
Size	1,710×1,100× 1,985
Size (Control)	600×750×1600
Power	AC 220V, 50/60Hz, 30A
Weight	200kg
Exhaust	Min. 30 m ³ /min
Utilities	Methane Gas, Acetylene, Compressed Air, Camcorder, Hood, Duct, Dust Collector

Introduction

IMO is used to evaluate combustion characteristics of building materials and ship materials and measures spread rate of flame, flame for ignition by distances, CFE (Critical Flux at Extinguishment) and total heat release. This test method is originated from ISO 5658-2 (Reaction to fire tests-Spread of flame- Part 2 Lateral spread on building products in vertical configuration) and measures combustion characteristics of vertical specimen (155mmX800mm).

The specimen is exposed to the reasonable radiant heat field and is measured by thermocouple for exhaust gas calibrated through the progress of combustion as unit of mV. IMO records the spread rate of flame after this records ignition and extinguishment time of flame for each distance of specimens. And the other test results is Heat for ignition (MJ/m²), Heat for sustained burning (MJ/m²), Critical flux at extinguishment (kW/m²), Average heat for sustained burning (MJ/m²), Total heat release (kW) and so on.

Standard

- ISO 5658-2 : Reaction to fire tests
 - Spread of flame - Part 2 Lateral spread on building products in vertical configuration
- IMO FTP Code Resolution A. 653(16) : Recommendation on fire test procedures for flammability of bulkhead, ceiling and deck finish materials
- ASTM E 1317 : Standard test method for flammability of marine surface finishes

Feature

- All control systems are explosion-proof.
- Air Cylinder type of Pilot Flame Burner allowing the flame impingement test method based on IMO to be automatically performed.
- Double grid to see spread of flame length as well as enlarged Restrict View Mirror for easy observation.
- Radiant panel temperature controller : Equipment to prevent flame back toward the back side of Radiant panel, check the internal temperature of radiant panel and automatically block gas solenoid valve in case of flame back-flow.
- MFC (Mass Flow Controller) to easily measure the heat amount of methane gas in measuring critical heat flux.
- Explosion-proof options of all control systems for safety in combustion in radiant panel as well as Check-Valve and its Gas shut-off valve (Solenoid Valve) to prevent back-flow in gas line.
- Camcorder to observe and save test conditions in a program during tests.
- Rail for easily measuring heat flux of radiant panel at an interval of 50mm.
- DAQ Program for applying spread of flame length and combustion characteristics to image storage.
- 19" Analysis Rack for measuring spread rate of flame, critical flux, and heat release rate.
- IMO Program available of controlling Air Blower to facilitate change in amount of combustion-heat in Radiant Panel
- Calibration (for measuring heat release rate by each section of radiant panel.
- Program for blocking gas supply in failure of ignition in radiant panel, in which Flame Relay System detects
- IMO Program to facilitate all calibrations and tests as well as to printout of results by standards (IMO, ISO).

Test Result

- Heat for sustained burning (MJ/m²) : It is gained by multiplying time, which ranges from the initial exposure of test object to arrival of flame-tip in each point, by radiant heat flow penetrated against nonflammable calibration panel in the same point
- Average heat for sustained burning (MJ/m²) : It is an average of characteristic values measured in individual positions by continuous sustained heat. The characteristic value is measured in continuous position at an interval of 50 mm from the initial 1,500mm to the final position or 400 mm whichever is lower
- Heat for ignition (MJ/m²) : It is gained by multiplying time, which ranges from the initial exposure of test object to arrival of flame-tip in a point of 150 mm, by heat flow of this point. (However, heat flow is gained by pre-calibration of test equipment.)
- Critical flux at extinguishment (kW/m²) : It means heat flux in the location where flame spreads to the farthest distance from the center line of combusting test object. The heat flow is gained by performing calibration test of tester using calibration panels
- Total heat release (MJ) : It means total heat release during test period
- Peak heat release rate (kW) : It means peak heat release rate during test period