【瞬態平面熱傳導係數分析儀】

TCi 瞬態平面熱傳導係數分析儀是由加拿大 C-Therm 公司採用改良式瞬態平面熱源法所生產的設備。量測原理為電流通過探頭時會產生小面積熱源，其表面溫度變化會使探頭元件的電壓改變，同時其線圈之熱源擴散會仰賴量測樣品本身之熱傳導性質，利用此原理，儀器可以即時記錄溫度、電壓變化及反應時間，並且計算出樣品材料的熱傳導相關係數。TCi 熱傳導儀具有分析快速與非破壞性樣品來準確測試樣品熱傳導性質，固體、液體、粉體皆可量測，並具有廣泛的應用領域，包括聚合物，塑膠製品，陶瓷製品，絕緣材料，建築材料，纖維紡織品，氣凝膠粉體，奈米材料等其他種類材料。量測範圍廣 自 0.025 W/mK 至 30 W/mK，操作溫度範圍自 -50oC 至 200 oC，不需進一步換算可直接量出熱傳導係數，也無須樣品前處理。樣品要求簡易，其樣品量測規格要求為面積不可小於 1.2 cm2，厚度不得小於 2 mm，並可完全接觸貼合感測器為主。量測標準乃是依據 ASTM D7984。

【QUV Accelerated Weathering Tester】

TCi Thermal conductivity analyzer produced by C-Therm Technologies Ltd. in Canada adopts the technique of Modified Transient Plane Source (MTPS). The principle of measurement is the heat was generated when the electric current passed thought the sensor, and the changing temperature will alter the voltage on the probe instrument. Simultaneously, the heat transfer from the coil to the sample, and the thermal diffusivity of the sample will depend on the characteristics of materials. Based on this method, the instrument can monitor the reaction time and variety of temperature and voltage immediately to calculate the accurate data of thermal conductivity .The advantages of the TCi thermal conductivity analyzer are rapid analysis and non-destructive sample measurement. The forms of material are suitable for solid, liquid, and powder to fit almost samples. The wide application including the polymer, plastic, ceramics, insulated materials, constructive materials, fabric, aerogel, and nano-materials. The measuring range is wider, from 0.025 W/mK to 30 W/mK, and the temperature is from -50oC to 200 oC. Simple for the sample preparation, the straight operation, and the automated test report generation. The requirement of the sample area is large than 1.2 cm2, the thickness is high than 2 mm, and the surface is smooth essentially to fit on the sensor. The measurement standard reference can be confirmed by ASTM D7984.