

# APPLICATION SHEET

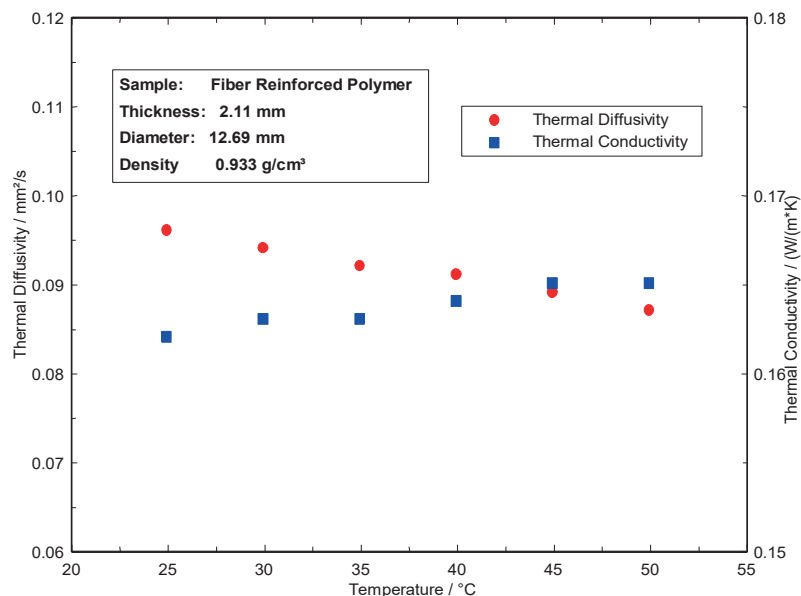
Polymers · Automotive  
LFA 467 HyperFlash®

## Fiber-Reinforced Polymer (PP)

### Introduction

Analysis of the thermophysical properties of polymer materials is becoming more and more important for optimization of the production process and tailoring of a part to

its application. However, many existing thermal conductivity methods require large sample sizes which are not easy to create using the existing production tools. The production of thin plates is generally no problem. Such plates can easily be measured with the LFA 467.



### Test Conditions

Temperature range: RT ... 50°C  
Sample holder: 12.7 mm diameter  
Sample thickness: 2.11 mm  
Sample surface preparation: Graphite coating  
 $c_p$  from DSC, standard: Sapphire

### Test Results

The measurement result for a fiber-reinforced PP material shows that the thermal diffusivity decreases with temperature, while the thermal conductivity slightly increases. This is in perfect agreement with the theory for polymer materials. The temperature dependence of the thermal conductivity is dominated by the changes in specific heat. The thermal conductivity is within the typical range for polymer materials. Values between 0.16 and 0.17 W/(m·K) were determined for this polypropylene composite material.