

RESIN COATINGS ON METAL SUBSTRATE WITH THE INFRACAL FILTOMETER



INTRODUCTION



Resin coatings are often applied to metal as a protective coating. Galvanized aluminum for architectural structures and aluminum cans for beverages are examples of where resin coatings, often only a few microns thick, are used. The traditional method involves cutting a piece of metal to a specific size, weighing the sample, stripping the coating from the sample and then weighing the sample again. The coating thickness is calculated from the difference before and after stripping the sheet sample. This method is time consuming and requires a strong solvent to strip the resin from the metal substrate.

PRINCIPLE OF OPERATION

The InfraCal Filtometer is a compact, fixed-filter mid-infrared analyzer with no moving parts and an insignificant optical air path. It weighs less than 5 pounds and can be operated from a battery pack or a cigarette lighter adapter cable. This makes it portable, sturdy and operable in a range of ambient conditions typically found in field environments. An internal calibration table and easy-to-use operator interface allows for analysis by non-technical personnel. The resin coating has an infrared absorption band at $3.4 \mu\text{m}$ (2930 cm^{-1}). As coating thickness increases, the infrared absorbance increases. An internal calibration table converts the absorbance to the desired unit of measure. In less than one minute a result is displayed.

PRODUCT SPECIFICATIONS

Dimensions: 6.5 x 6.5 x 5" (165 x 165 x 127 mm)

Weight: 4.5 lbs. (2.0 kg)

Display: 4 digit, 7-segment red LED, 5/8 in. character height

Power Requirements:

Voltage - 12 V dc, +2% max.

Power - 7.5 watts max., 5 watts typical

Input - Switchcraft 760 plug or equivalent, center positive

Suggested Power Sources:

Wall supply; AC/DC converter type (supplied as standard)

12 volt auto battery adapter connector

Portable 12 volt battery pack

Measurement Range:

2 to 5000+ ppm (Dependant on InfraCal Model)

Operating Temperature Range:

40°F (4°C) to 110°F (45°C)

User Selected Calibration:

Zero balance adjustment

Up to 20 point curve fitting calibration

Communications Port:

RS232 port, 9-pin D-Sub female, PC compatible, for upload to PC, datalogger or printer

InfraCal Thickness Gauge, Model SR (Top Loader)

Part Number: 405-0006



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