

## Ultrasonic Vibration Meter (for a medical device to clear blocked arteries)

### THE PROBLEM

It has been estimated that Chronic Total Occlusions (CTOs) exist in 20% of all interventional cardiology procedures. Half of these cases consume considerable physician time manipulating standard coronary guidewires and may end up uncrossable despite all efforts.

### THE SOLUTION

A medical device company has developed a High Frequency Mechanical Recanalization (HFMR) device intended to cross totally occluded arteries\*. This device utilizes piezoelectric crystals to convert AC current into high frequency mechanical vibrations which are propagated from an ultrasonic transducer to the tip of a catheter. This vibrational energy provides mechanical impact and cavitation effects which aid in the recanalization of an occluded artery.



### PHILTEC's UV40-RC20

The proximal hub of the catheters are attached to the distal end of an ultrasonic transducer. It is crucial that the amplitude of vibration of the catheter probe be precisely controlled. This required a non-contacting instrument for calibration of the transducer horn, which could

- a) measure vibrations at 21 KHz
- b) measure amplitudes up to 200 microns
- c) have a target spot size under 1 mm

Philtec's Model UV40-RC20 Ultrasonic Vibration Meter, equipped with a model RC20 fiberoptic probe, meets the requirements of the application and was chosen as the calibration instrument for this new device.



\*The HFMR system is intended for investigational use only, limited by U.S. law to investigational use. Not for commercial distribution.