

Application of Infrared Thermometers in Response to COVID-19

National Institute of Metrology (NIM), China

Since the coronavirus outbreak in China, a massive number of infrared thermometers (IRTs) have been used for body temperature screening at entrances of various public facilities, which helped to early detect potential cases and cut off channels of transmission. However, lack of standard blackbodies, skilled metrology technicians, and necessary information about the calibration mode of IRT products was the major problems encountered on calibration of IRTs.

The National Institute of Metrology (NIM), China devoted effort in five aspects to address those problems. Firstly, NIM developed a batch of portable blackbodies for calibration of infrared thermometers (PBCIRTs) and calibration systems for infrared clinical thermometers (CSIRCTs), donated some to Hubei Province, the epicenter of China, and provided the others to other provinces. Secondly, NIM developed an accuracy checking method for IRFTs using a verified clinical thermometer as a reference. This method can only be used as a temporary emergency checking solution for IRFTs when blackbodies are unavailable. Thirdly, NIM provided various training in operation and calibration of IRTs for technicians in basic-level metrology institutes/laboratories. Fourthly, NIM popularized basic knowledge, proper operation, and matters needing attention about IRTs through national TV programs. Last but not least, experts from NIM and other institutes, made a number of recommendations, including setting up a traceability system for body temperature measurement for epidemic control etc., to the State Administration for Market Regulation (SAMR), the national metrology authority of China, in order to improve the relevant metrology and management system in the future.

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