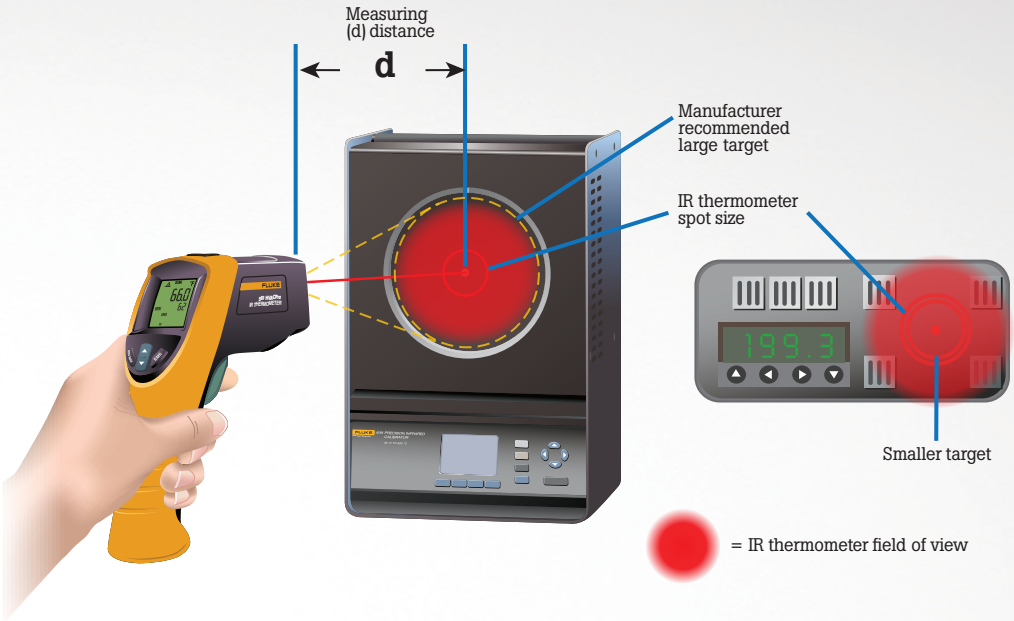

To perform the test:

STEP 1 Allow at least 15 minutes for the IR thermometer to reach the temperature of the shop or laboratory.

STEP 2 Set the radiation source to the desired calibration temperature. Depending on the temperature range a low, high, and midpoint temperature may be chosen.

STEP 3 If the infrared thermometer has an emissivity setting, it should be set to match the calibrated emissivity of the source.

STEP 4 Position the infrared thermometer at the manufacturer's recommended calibration distance.

STEP 5 Center the infrared thermometer on the calibrator surface. Do this by adjusting the aim slightly side to side and up and down to maximize the signal.

STEP 6 The measurement time should be ten times longer than the infrared thermometer's response time. This is typically five seconds for Fluke infrared thermometers.

STEP 7 Record the calibrator indicated reading and the indicated reading of the thermometer under test to determine the error and tolerance status of the thermometer at each set point.

STEP 8 Repeat for the other set point temperatures.

TECH TIPS

- Emissivity makes a big difference in infrared temperature measurement.
- The temperature and emissivity of the 4180 and 4181 are calibrated radiometrically for the most reliable and traceable results.
- The Fluke 4180 and 4181 can be set to match the emissivity setting of fixed emissivity thermometers.
- The large area of the 4180 and 4181 target allows infrared thermometers to be calibrated at the recommended distance without including unwanted surfaces in the field of view.
- Use a mounting device such as a tripod to maintain the calibration distance.
- Measure the calibration distance from the flat plate surface to the surface of the front housing of the infrared thermometer.

Additional resources

For more in depth information about this application check out these videos and application notes from Fluke.

Emissivity makes a difference
How to Calibrate an IR Thermometer webinar

Infrared Temperature Calibration 101 application note
Infrared Thermometer Calibration – A Complete Guide