

Why an IR Thermometer Should Not be Used to Measure Tip Temperature

IR thermometers should not be used to measure tip temperature as they can provide inaccurate readings. Although all IR thermometers are different, the capability depends on the D:S ratio or the Distance to Spot ratio. Many IR thermometers have a D:S ratio of 8:1 or 12:1 which means that the thermometer needs to be a distance of 8" or 12" in order to read a 1" spot size. If you consider the size of a Hakko tip, the standard chisel tip size is roughly 2.4mm which is about 0.1". This would require the thermometer to be 0.8" or 1.2" away from the tip but the thermometer also has a minimum distance it needs to be away from the object. Some IR thermometers may be capable of measuring a small spot size like a Hakko tip, but please check your IR thermometers manufacturer specifications to be certain. Most IR thermometers will not be capable of measuring such a small spot size.

Hakko recommends using the FG-101 or FG-100 thermometers to measure soldering iron tip temperature. These thermometers are very accurate and are commonly used to verify soldering iron temperatures according to J-STD-001.

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