

Thermal imaging terminology explained



Palette—Color representation of the temperatures (temperature scale) in a displayed image. Certain color palettes meet personal preferences or optimize the image for different applications and/or problems. An example of the different palettes appear to the right.

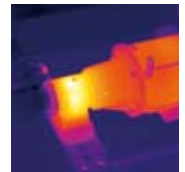
Sensor Size—Similar to digital cameras the sensor size describes the amount of displayed points per image of a thermal imager. A sensor size of 160 x 120 captures and displays more than 19,000 measurement points with each measurement. If the imager is fully radiometric then it also truly measures and stores all captured points with the image.

Field of view (FOV)—Indicates what the thermal imager sees or measures at a given moment. The combination of the Field Of View specification and the distance to the measured object determines which surface or part of an object will be measured as a total. A FOV calculator on www.fluke.eu/ti helps you calculate the measurement surface at various distances to the object.

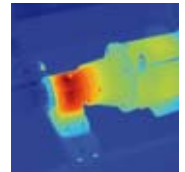
Thermal sensitivity—Indicates what the smallest temperature difference is which can be measured/displayed in an image. It basically is the maximum resolution of the image and is referred to as NETD (noise equivalent temperature difference).

Emissivity adjustment—All surfaces emit infrared energy or heat. The level of emission varies much per surface and is described with the term emissivity. Painted coatings and materials usually have a high emissivity while polished aluminum has a low emissivity. Visit www.fluke.eu/ti for a table with emissivities for different materials. To measure the temperature of a material accurately it will be necessary to adjust for the material's emissivity.

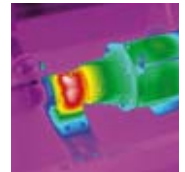
Span—The set of temperature values that can be measured within a preset range. Adjusting the span allows you to see more subtle temperature gradients (or contrast) in a captured image. When the span is optimized the imager shows 256 different shades of color in an image.



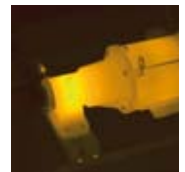
Ironbow



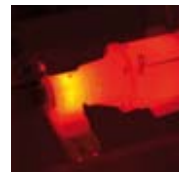
Blue-red



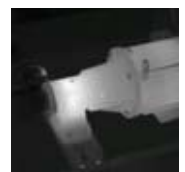
High contrast



Amber



Hot metal



Grey

