

Emissivity and Thermography

The emissivity of materials is a problem facing any thermographic camera user seeking accurate, reliable results.

What is emissivity?

Material	Emissivity
Aluminium	0.03
Brick	0.95
Concrete	0.9
Chalk	0.34
Tin	0.06
Gold	0.02
Lead	0.28

A material's emissivity depends on its nature, its surface finish and its temperature. It corresponds to the ratio of the energy radiated by an emission source to the energy radiated by a black body at the same temperature. A black body absorbs and re-emits all the energy, giving an emissivity of 1.

All other bodies have emissivity values lower than 1. Charts have been produced listing the emissivity of all materials. For accurate measurement by infrared thermography, it is essential to know this value.



Temperature measurement with a thermographic camera

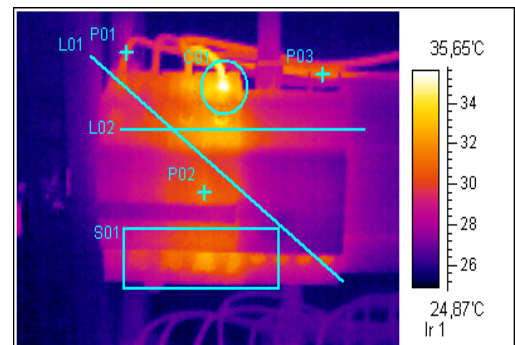
When measuring a temperature, the infrared camera targets an area of variable width.

This measurement area may contain several types of material. To obtain accurate results, the initial thermogram must be corrected with the specific emissivity of each material.

The **RayCAm Report software** offers this possibility, enabling several emissivity values to be linked to different points on the thermogram, thus allowing accurate analysis.

It is also possible to carry out area analysis (square or circle), ideal for parameterizing the thermogram according to the different emissivity values.

With RayCAm Report, modification of a parameter on the image triggers automatic recalculation of the other values.



Result: you obtain reports which accurately portray the real situation.

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