

What makes thermal radiation so interesting?

Our eyes can only see light (what else?) - that means waves with a wavelength in the range between 0.4 and 0.7 micrometers. Shorter wavelengths belong first to the ultraviolet range, then to the X-radiation range, and then to the gamma range. Longer wavelengths are first called infrared, then heat radiation and then radiowaves.

Heat rays belong to the wavelength range around 10 micrometers. If our eyes were able to see this range, it would look like shown in the following pictures. These pictures were taken with a (very expensive) special camera, sensitive in the range from 9..11µm. Such a camera measures temperatures, or more precisely heat radiation from surfaces. The scale to the right shows how the different colors relate to temperature values.

Why is this interesting? The reason: Our pIRx3 sensor measures temperatures in exactly the same way, only even more precisely; but only at three spots of the forehead. The pictures with the black background have a smaller temperature range, which results in a temperature scale with higher resolution.

