Technical Informations
PIR motion detectors are working in the 7 to 14µm (Microns) infrared band and cannot see through normal glass or plastic.
Special PIR transmissive materials are needed to make fresnel lenses and other PIR optics or windows.

Calculate Infrared Transmission
Transmission data of granulates in the table are per 1/10 mm, excluding surface reflections. The actual transmission of a molded window can be calculated as follows:

\[ T = 0.92 \times (1 - \text{Attenuation})^{(\text{thickness in 1/10mm})} \]
0.92 corrects for surface reflection

Refractive Index
The refractive index at 7 to 14µm wavelength is 1.525. Dispersion is negligible

Spectral Transmission

Typical example:
KUBE Granulate 22400a, 0.22mm thick (2018d film is very similar)

The low transmission at wavelengths below 3 µm helps to filter out unwanted daylight
Temperature Stability

The TMA analysis shows the excellent dimensional stability of KUBE granulates over a wide temperature range.

According to the DSC plot, there are no phase transitions and no glass phase formations within this range.

All KUBE PIR transmissive plastics can be used over a temperature range of -40 ... +85°C.