object

LWIR radiation

LWIR camera

(Sect. 3.1)

NIR pattern

depth camera

point cloud

thermal image

(Sect. 3.2)

data fusion
and
point cloud registration

3D thermogram
(point cloud)

(Sect. 3.3)

surface
reconstruction

3D thermogram
(surface elements)

(Sect. 4)

calculation of
heat dissipation

thermal radiation

natural convection

$\dot{Q}_{\mathrm{rad}}$

$\dot{Q}_{\mathrm{conv}}$