

Multi-Touch Table

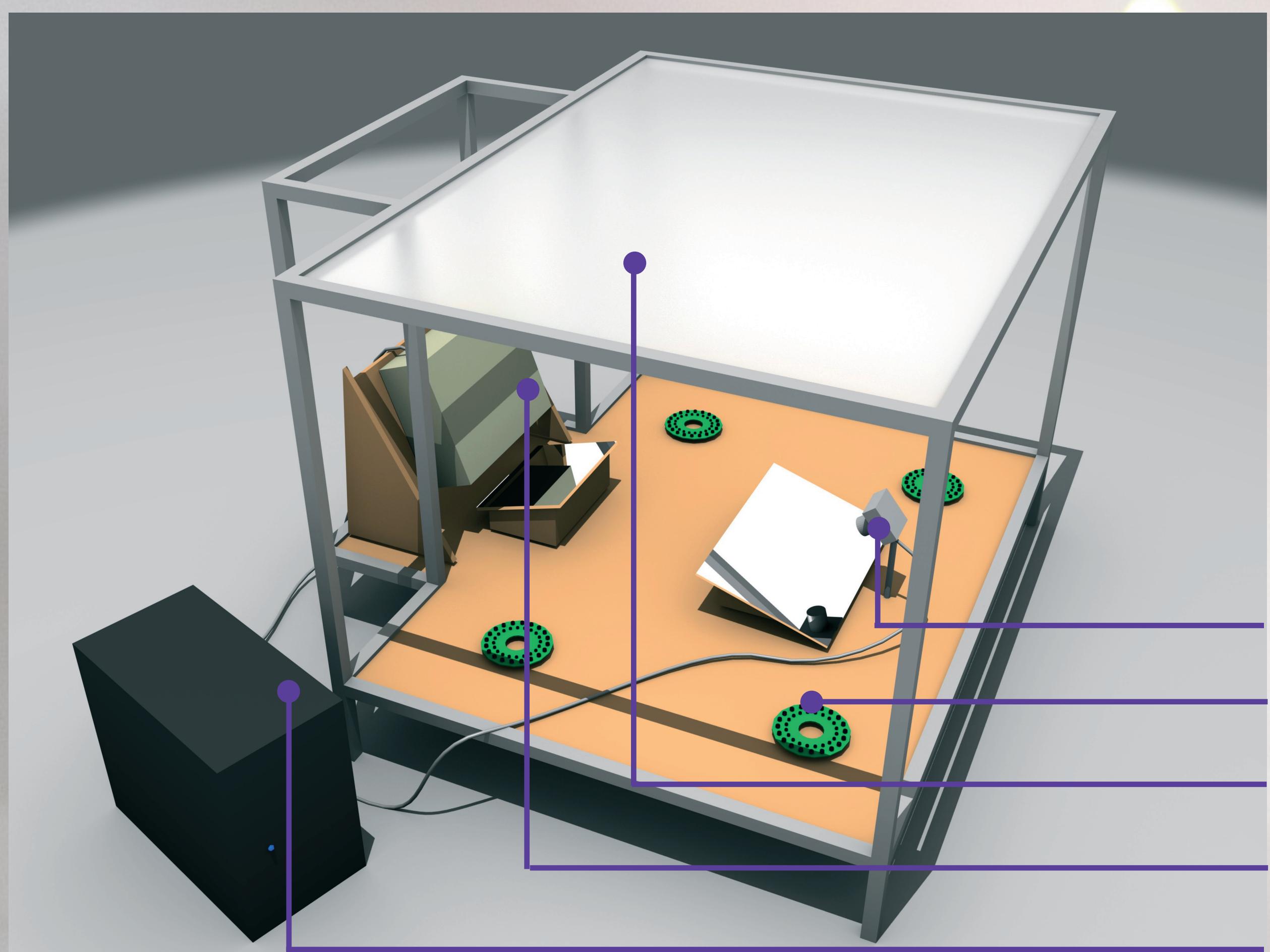
What is it?

Most computers have just one mouse and cannot be used by more than one person at the same time. The "UvA Multi-Touch Table" doesn't have this limitation. You operate it by the touch of your fingers and it is large enough to be used by several people at the same time.

What's in this table?

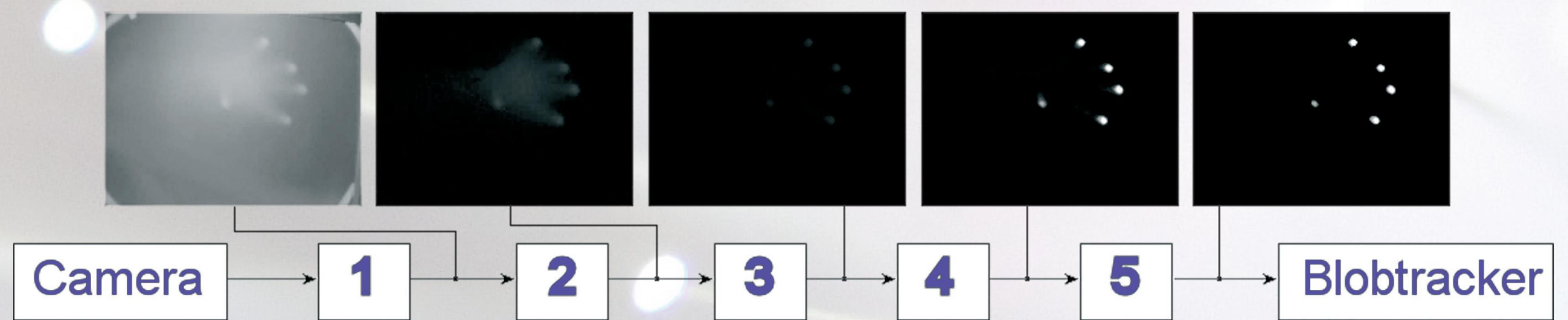
The main components are:

- camera with infrared filter
- infrared emitter (4 in total)
- glass plate with projection surface
- DLP projector
- computer



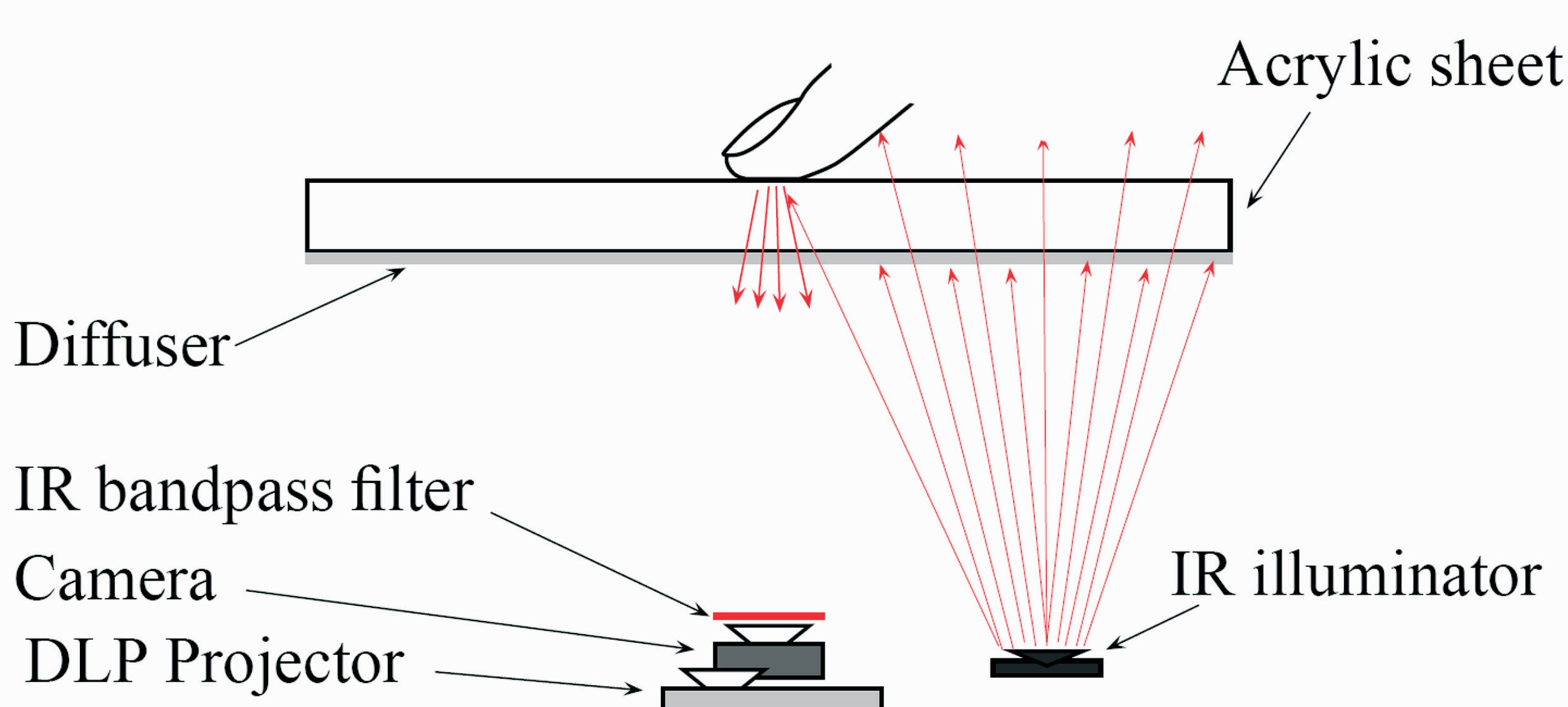
How does it work?

The detection system detects reflections from a diffuse rear illumination system. The box contains four infrared emitters that flood the inside of the box with light. Infrared light is invisible to the human eye but it can be detected using a digital camera. When a finger or object touches the surface, the area reflects light back into the camera. The images from the camera are analyzed by a computer.



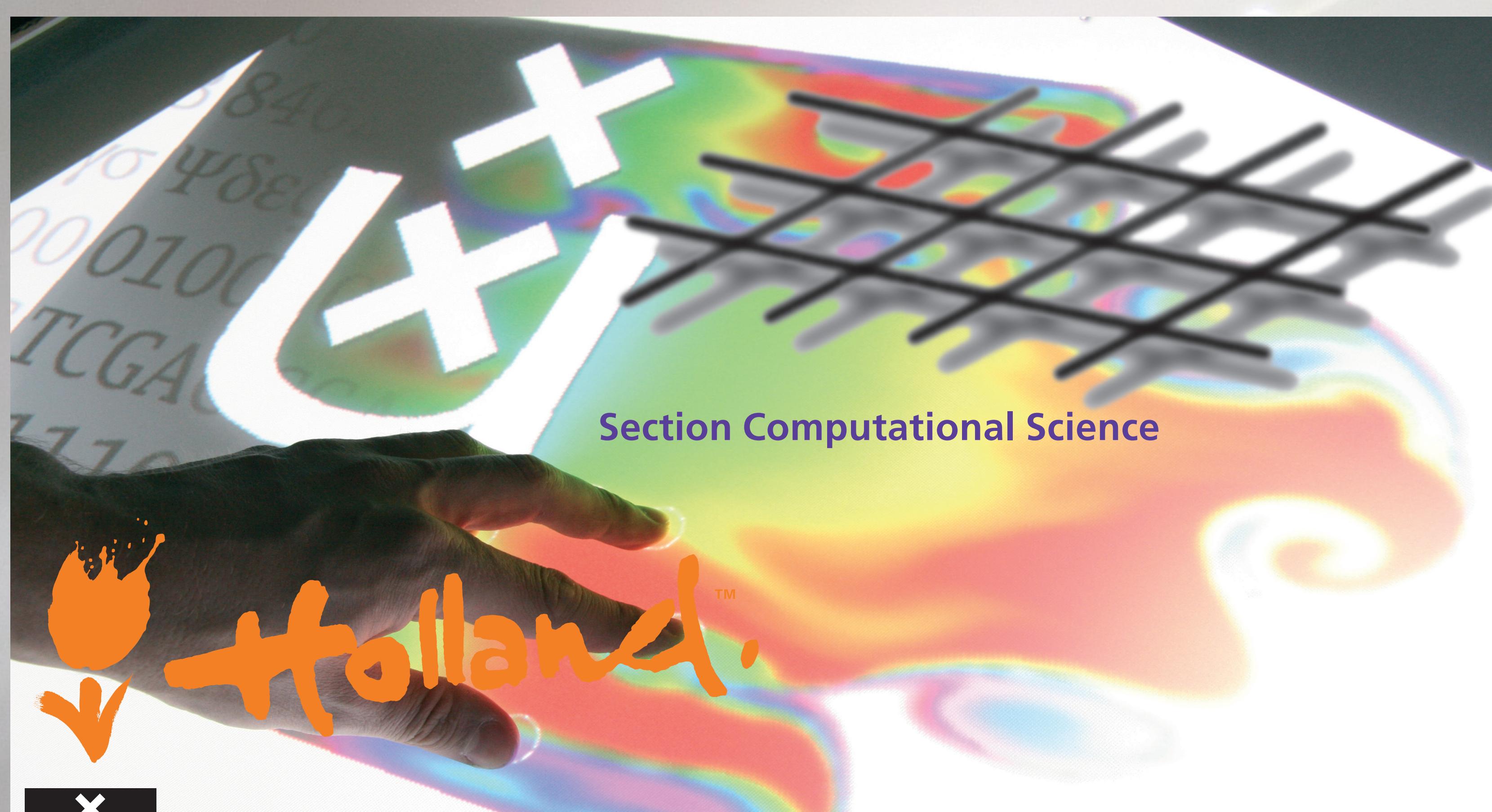
How do you detect touch?

1. The "raw" image from the camera contains background images
2. The background image is removed
3. A filter lets the lightest points in the image pass
4. The image is amplified; the fingertips are now clearly visible
5. in the last step noise is removed from the image



What can you do with it?

This device allows new methods of interaction with a computer. A number of these are shown at this venue. What makes this device interesting to us as a research group is the question whether classes of applications exist that can be solved quicker or better on the Multi-Touch Table compared to conventional interaction methods.



The "University of Amsterdam Multi-Touch Table" (UvA-MTT) was developed by Robert Belleman, Laurence Muller and Paul Melis of the "Scientific Visualization and Virtual Reality" group with help from Edwin Steffens. This work was made possible through contributions from the Section Computational Science (UvA/SCS, the Netherlands), the Systems- and Networking Engineering research group (UvA/SNE, the Netherlands), SARA Computing and Networking Services, NEMO Science Center, the National institute for subatomic physics (NIKHEF, the Netherlands), the Dutch BSIK "Virtual Laboratory for e-Science" (VL-e) project and the EU project "Advancing Clinico Genomic Trials on Cancer" (ACGT).

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