

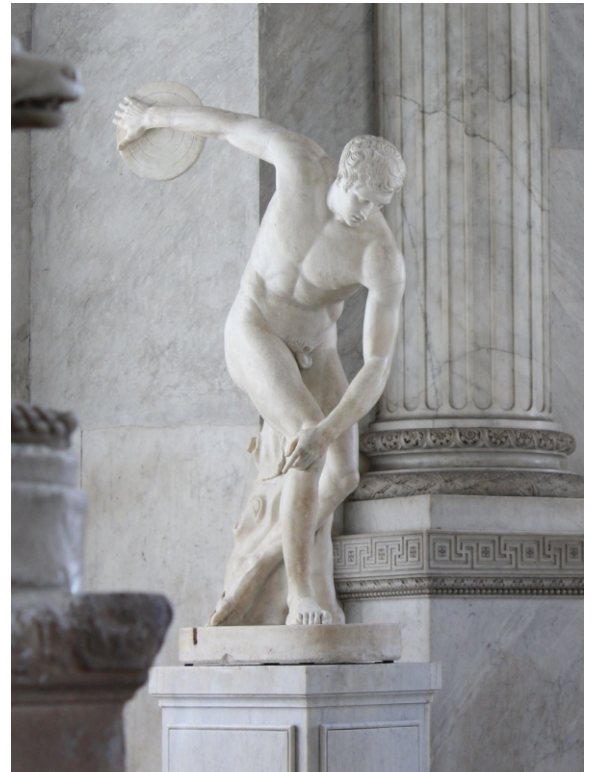
# Protection of Exhibits with Camera Technology



**We protect your values!**

In museums larger exhibits often have to be protected. In rare cases it is not possible to use common safety devices such as laser scanners, field change and high-frequency sensors. There are a number of reasons for this. Laser scanners are more expensive than other systems. They can only create straight protective surfaces, so called curtains. At least three or more laser scanners are required, if the object to be monitored is standing freely in the room. The associated costs are far too high for most projects. Field change sensors reach their limitations with larger, non-conductive objects and radar detectors are disturbed by reflections on the conductive objects.

The exhibit can be protected with a powerful video camera. The camera detects when someone enters the monitored area and reports the intrusion to an external alarm system.



## The Solution with Human Detector

The **Human Detector** alarm modules have an NC alarm input. External sensors can be connected to this input. Modern high-performance CCTV cameras have a corresponding alarm output.

Certain conditions must be adhered to in order to be able to monitor an object with one or more cameras. The cameras must be installed vertically on the ceiling and centrally above the object to be secured. They also look down vertically. The environment must be free of "optical interference", e. g. "hard" shadows of natural light (windows) or illumination (spotlights).

The geometry of the object must also allow its monitoring from above. A pyramid has the ideal shape because it has no receding surfaces.

A reliable protection is possible if all conditions are met. The camera must be correctly calibrated and adjusted. This task requires an engineer with a certain level of experience. This method is suitable for difficult tasks such as the protection of free-standing figurines, wax figures or large wooden boats. Several cameras can be connected to form a cluster if the protection is not possible with only one camera. The output signals can be processed via a **Human Detector** module. The module sends all camera signals to the Human **Detector alarm** centre.

# Protection of Exhibits with Camera Technology

## What Material is Needed?

The listed material is required for the protection of exhibits with video cameras in connection with **Human Detector**.

### Basic Equipment:



CCTV-Camera



Human Detector  
alarm module

### Optional Accessories:



Human Detector  
alarm centre



Power supply 12V DC

## Installation - This is How it is Done

First carefully read the operating instructions of the camera and the **Human Detector** system. The described installation requires a certain amount of experience with video cameras. The use of IP cameras with a resolution of 2 or 5 megapixels and a zoom lens is recommended. It is also necessary to turn off all automatic controls, such as the automatic aperture and focus control.

The camera is installed centrally above the object on the ceiling. The camera needs to look down vertically. The camera is first connected to the IP network. The camera is supplied with power via PoE (Power over Ethernet). The technician can only monitor the camera image on a PC. Select the picture in such a way, that approximately 2/3 of the exhibit area is filled in. The camera's alarm output is connected to the alarm input of the **Human Detector** alarm module. The alarm module must be set according to the operating instructions.

The detection range is defined by the camera image. This is done via lines or square fields defined by software. Then a person should enter the set area. The monitor image shows whether the test person is correctly recognised. Finally, the desired sensitivity needs to be adjusted. Depending on the colour of the exhibit surface, it may be necessary to adjust the amplification of the individual colour channels (RGB - red, green and blue). The detection of a person must be assigned to the camera's alarm output. In many cases an additional voice output is activated in addition to the audible alarm signal.

