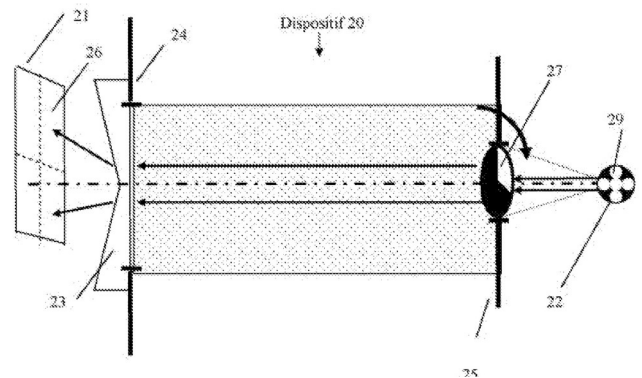


OPTICAL DEVICE FOR LIGHT RAY EMISSION AND DETECTION

Technological advantages

- Optical system simple and easy to setup
- Extended field of view
- Reduced costs
- No complex mechanism
- Compact system
- A single emission surface (light) or single detection surface (sensor)



Invention synthesis

The invention presents an optical sensor / illuminator device that can operate on an extended scene using optical deflectors.

Traditionally, to observe or illuminate an extended scene, the number of sensors or light sources is multiplied. Another solution is based on scanning mirrors but with sequential views. These are complex and costly.

The invention is based on optical deflectors (mirrors, prisms) located in a pupil to divert the optical paths. Placed in between the optical sensor / light source and the pupil, an optical module (mobile shutter in rotation / translation, prism, micro-mirrors matrix, liquid crystal system) allows to selectively change the optical deflectors in use.

Schematic of a device for light emission

- (22) Light source
- (27) Optical module
- (24) Pupil
- (23) Optical deflectors
- (21) Target scene
- (26) Sub-areas in the main target scene

Commercial benefits

- Simple system suited to extended scenes.
- Reduced costs compared to traditional systems.
- Can be used for both optical detection and surface illumination.

Potential applications

- All optical systems for shooting
- All illumination systems
- Applicable for the public and the industrial domains

Patented invention - under license.