

Stereo Video Camera (StereoVideoCam)

Description

This invention is called “Stereo Video Camera” (“StereoVideoCam” in short”).

StereoVideoCam is like a normal video camera, except that it has two lens-and-image systems (lenses typically set about 63 mm apart) to capture the left image and right image of the same still picture or same moving picture. The left and right lens-and-image systems are moved by motorised levers to focus at the same point. Each lens-and-image system is to be moved automatically by X° ,

where $\tan(X) = [d/2 - R(1-\cos X)]/D$

where d = distance between centres of lenses (typically about 63 mm),

R = radius of lens-and-image cylinder and

D = distance between video camera and object as determined by the video camera’s auto-focus system.

The left and right images are captured on mini-tape or mini-disk or Secure Digital card or memory stick simultaneously, i.e. on the same time line.

When played back, depending on mode selection, the StereoVideoCam's screen is able to show the left and right images on each half of the screen or show only the left images or show only the right images.

When played back, the StereoVideoCam is able to output the left image picture and right image picture simultaneously, to 2 separate (TV or computer or other) screens.

Alternatively, the StereoVideoCam is able to output the left image picture and right image picture simultaneously to each half of the same (TV or computer or other) screen.

StereoVideoCam is applicable to capturing left and right images of moving pictures (e.g. videos) as well as left and right images of still pictures (e.g. photographs).

Because the left image video and right image video are output simultaneously on the same time line, the left image video and right image video are merged into a single 3-dimensional video in full natural colour when viewed through my related invention “StereoSpecs”. Similarly, the left image still picture and right image still picture are merged into a single 3-dimensional still picture in full natural colour when viewed through my related invention “StereoSpecs”.

The other parts of StereoVideoCam are as those available in normal video cameras.

See Figs 1A, 1B, 2, 3A & 3B of Drawings section for diagrams on the principles and typical dimensions of StereoVideoCam.

Typical dimensions of StereoVideoCam are as follows:

Overall Length: 100 mm

Overall Breadth: 103 mm

Overall Height: 90 mm

Distance between the centres of lenses: 63 mm

Claims

1. This invention “Stereo Video Camera” (“StereoVideoCam” in short)” captures the left image and right image of the same picture. When played back, the StereoVideoCam is able to output the left image picture and right image picture simultaneously to 2 separate (TV or computer or other) screens or alternatively output to 2 halves of the same (TV or computer or other) screen, which when viewed through my related invention “StereoSpecs” would result in truly 3-dimensional picture in full natural colours, as long as the left-eye picture and right-eye picture were taken in full natural colours.
2. Types of StereoVideoCam covered by this invention:
 - (a) Stereo Video Cameras which can capture left and right images of moving pictures (e.g. videos).
 - (b) Stereo Video Cameras which can capture left and right images of moving pictures (e.g. videos) as well as capture left and right images of still pictures (e.g. photographs).
3. Thus invention, together with my related invention “StereoSpecs”, make it easy to produce truly 3-dimensional videos (and still pictures) in their natural colours, for home use or for public use such as cinemas or even for TV broadcasting.