Camera Types

How many camera types are available?

There are two 'types' of camera technologies – analogue and digital. Analogue cameras are based on television technology using CCD sensors with digital cameras utilising CMOS sensors with software embedded in the camera. The software scans the image from the image sensor and produces the image stream.

What model variants are there?

Cameras for use in CCTV applications or IP surveillance are typically: -

- *Box cameras*
- *Bullet cameras*
- *Dome cameras*
- *PTZ cameras*
- *Day/Night cameras*
- *IR (Infrared) cameras*

Box Cameras

The standard design for a CCTV camera is the 'box' camera type – a rectangle unit with a lens at one end and power/video connectors at the rear.

Bullet Cameras

A 'bullet' camera is a later design – tubular in shape, silver or aluminium coloured casing with a lens at one end and power/video connectors at the rear.

Dome Cameras

Dome cameras were originally designed to provide a more aesthetically pleasing look to a CCTV camera when installed in hotels and retail outlets. Dome cameras can be flush fitted to ceilings or embedded in a false ceiling to conceal the majority of the camera's casing

PTZ Cameras

PTZ (Pan, Tilt and Zoom) cameras are the type generally seen in town centres affixed on top of a tall pole. They are motorised and allow an operator to remotely control the angle view from the camera. If the camera is equipped with a zoom lens the operator can 'zoom' in to an incident to capture vehicle number plates at a distance or obtain a 'facial recognition' of a suspect.

Day/Night Cameras

Day/Night cameras operate in two modes – colour for day time viewing when light levels are high and black & white for viewing in low lighting situations. A true day/night camera will have an 'IR cut filter' where a filter inside the camera switches out of sync behind the lens to enable the camera to make use of IR light to produce high quality black & white video.

Infrared Cameras

Infrared cameras are usually of 'bullet' or 'dome' design and have LED's embedded in the camera, surrounding the lens, which provide an Infrared beam to enable the camera to obtain images in low light conditions. This negates the need for additional lighting but only gives a narrow beam. Dedicated lighting such as Infrared or 'White Light' illuminators from Raytec offer varying degrees and distance capability (up to 370 metres for night time viewing with Infrared)

What is a CS mount lens?

There are two main lens mount standards called C-mount and CS-mount. They both have a one-inch thread and they look the same. What differs is the distance from the lenses to the sensor when fitted on the camera:

- *CS-mount. The distance between the sensor and the lens should be 12.5 mm*
- *C-mount. The distance between the sensor and the lens should be 17.5 mm. A 5 mm spacer (C/CS adapter ring) can be used to convert a C-mount lens to a CS-mount lens*

The initial standard was C-mount, while CS-mount is an update to this, allowing for reduced manufacturing cost and sensor size. Today, almost all cameras and lenses sold are equipped with a CS-mount. It is possible to mount an old C-mount lens to a camera with CS-mount by using a C/CS adapter ring.