

Monitors:

1. LCD: Liquid Crystal Display: These are modern monitors using less power (using more voltage compared to LED) liquid crystal display panels.

Their front layer is made up of liquid crystal diodes. These diodes combined together to form pixels. Grouped diodes are mostly in red, green and blue colours.

2. LBD: Light emitting diodes; Modern LCDs are back lit (light source at the bottom) using LBDs. Such LCDs are called LEDs.

LCD monitors on contrary used a fluorescent lamp that uses high voltage for back lighting. There used to be two such lamps in LCDs.

LEDs

- LEDs are power efficient (consumes less energy)
- LEDs reach maximum brightness quickly.
- LED colours are (more) vivid.
- LBD has high contrast.
- LED screen is thinner.
- LEDs are durable and long lasting

- LCD display is made up of diodes, group together to form pixels.
- Each pixel has three filters; red, blue, green.
- Shades are achieved using RGB mixes.
- LCD screen is backlit
- LCD light is stored through three layers of liquid crystals
- Liquid crystals can be transparent or solid to light through them.

3D Cutters: A machine cutter that uses laser light to cut through the material to cast it to required 3D image.

3D cutters work with Computer Aided Manufacturing (CAM) systems that takes its direct input from Computer Aided Design (CAD) software; which might use 3D scanner or specialised software for the model building.

Applications:

- Industrial manufacturing
- Home decor items.
- Car parts.

Advantages:

- Separate parts can be cut through iron or other materials when not available commercially.

- Small scale manufacturers can produce parts themselves if bulk buying is not possible.

Disadvantages:

- Expensive

- Can only be used using computers

- Only trained people can handle it.

- No domestic use.

Projectors: Also called light projectors/multimedia projectors.

There are two types:

1. DLP (Digital)

2. LCD (Analogue)

Projectors are used to project monitor screen over walls on a greater size.

DLP: They use millions of mirrors on a small DLP microchip. Number of mirrors reflect the resolution of the video/image, that is, a mirror duplicates a pixel. When a mirror is tilted (by the microchip) towards the light, it is said to be on; otherwise off.

These mirrors can be switched on/off thousands of times to create better video.

A light from a xenon bulb passes

through a colour filter on its way to

DLP microchip. The filter breaks the

light into Red, Green and Blue - RGB

combinations can produce as many

as 18 million (2^4) colours.

LCD Projector:

It works on same principles as LCD monitor but final output is

an image which is projected to

the wall through a reflection

on a mirror.

A powerful xenon bulb light

passes through three layers of

diodes to take its form as an

combination of diode formed pixels

and finally it is beamed on

a mirror to be reflected on

the wall.