





## WHAT IS ULTRAVIOLET LIGHT?

Ultraviolet radiation covers a band of wave lengths just beyond the eye's visual capabilities.

This broad band of the UV spectrum is divided into three separate ranges.

- Long Wave UV-A 320-400nm
- Mid Range UV-B 280-320nm
- Short Wave UV-C 180-280nm

Farther distinctions in wave lengths - are often made to define their application.

- Ozone production 184.9nm
- Germicidal 253.7nm
- Erythema 300.0nm
- Black Light 365.0nm
- UV Curing 180-420nm

It show that the curing band can encompass the complete UV spectrum depending upon the particular job that it job has to do.



## UV CURING

UV curing is a photochemical process by which specially formulated liquid monomers are polymerized, or "cured" by exposure to ultraviolet radiation.

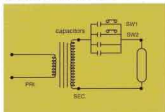
The UV- curable monomers contain sensitizers that absorb UV energy which then produce very rapid polymerization.

The relative speed of curing depends upon several factors, including the chemical formulation and thickness of the monomer, and the intensity and spectral distribution of the ultraviolet source.



## BALLAST REQUIREMENTS

The ballasts used in the UV curing system are designed to operate the UV lamps at full power. However, operation at 50% or 75% levels can be achieved through the use of capacitor switching circuits similar to the one pictured here: The ballasts are not available at input voltages of 220V and 380V at either 50 or 60 hertz.



## ADVANTAGES OF UV CURING

- **High productivity** - Rapid curing can be achieved at ambient temperatures there by shortening production times and minimizing stocking.
- **Energy-Saving** - UV curing consumes only 20% of the energy needed to cure solvent-based coatings.
- **No Air pollution** - UV curable materials do not contain solvents therefore they do not release residues or noxious gases into the environment.
- **Low Heat Output** - because ultraviolet, instead of infrared radiation is used, fragile materials such as paper plastics and thin films can be processed safely.
- **Space Saving** - UV system are usually smaller in size than their convention counterparts.

## UV CURING APPLICATION

New uses for UV curing are being developed everyday. Among the more wide spread applications are:

- Printing inks
- Screen Printing On Glass
- Printed Circuit Boards
- Graphic Arts
- Metallic Decorations
- Paint Drying Of plywood
- Setting Adhesives
- Surface Hardening
- Photolysis Of Toxic Wastes