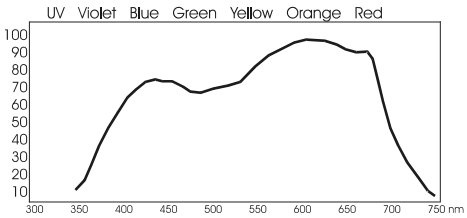
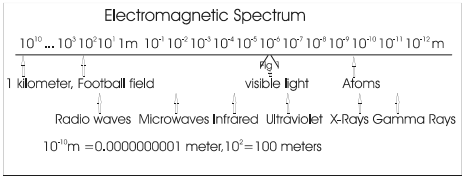
What is light

Plant light is part of the Electromagnetic Radiation. 380 - 780 namometer's is where plants get there PAR Photosynthetic Active Radiation. All plants use within 5% of the same quantity and quality of PAR Radiation.



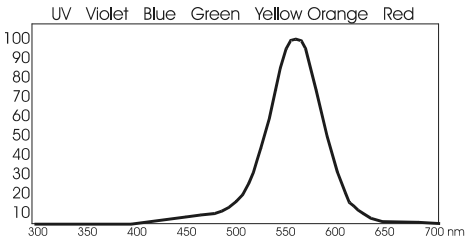
Electromagnetic Radiation is described as a stream of photons that moves at the speed of light 186,000 miles per second. Every photon has a certain amount of energy. Radio waves have the lowest energy, then Microwaves, infrared, visible spectrum for living organisms, ultraviolet, X-rays and then Gamma-rays. Each part of the electromagnetic radiation has it own particular size. You can never use a light to illuminate an atom, our scientists must use the same size of (Electromagnetic Radiation) as the object that they want to look at. For instances look at your Micro Wave Oven it has many holes that we can look through to see what's cooking. Our eyes never get burnt or sore because the electromagnetic radiation is considerably larger than the holes in the door. check out (fig1). It is very important to give plants a balance Electromagnetic Radiation Spectrum of light as to little blue will cause stem elongation and possibly yellow leaves. A shortage of red light prevents stem growth. Red light will heal a sick plant faster than blue light.



There are different light absorbing receptors within plants leaves that gather the light energy. These carotenoids and chlorophyll absorb the different spectrum reflecting back the unused portion of light, hence why plants are green. They have very little need for green light. These pigments that absorb the light will hold the radical energy and release the electromagnetic radiation within the plant. As the electromagnetic radiation is utilized the plant must gather more light so that the plant can continue to grow at an accelerated rate. By not providing enough electromagnetic radiation (light energy) plants will become stunted or die.

The same goes for plants mineral element, without providing sufficient nutrition plants cannot combine Electromagnetic Radiation 350 - 750nm, Carbon Dioxide and Water (H_20) with nutrient solution (N, P, K, Ca, Mg, S, Fe, B, Cu, Mn, Zn, Mo, Cl, Ni.) will all be combined to create sugar and oxygen. These elements will form indeterminate cells. Indeterminate cells will produce roots, stems, leaves. Determinate cells which will form flowers, pistil, ovary. The reason that flowers look so beautiful is that they no longer absorb as much light energy reflecting unused light, so they are now used to attract insects, birds to pollinate the seeds. The different cells created by plants are xylem, phloem, epidermis = roots, shoots, leaves, flowers.

The human eye uses far less light energy than a plant. See pic below.



Now we would like you to try some new techniques on shortday plants that have been working great for customers. As we mentioned before plants absorb light energy and utilizes it with nutrition. To initiate flowering faster on short day plants, keep your plants in total darkness for 36 hours allowing the plant to utilize some of stored light energy. What we want to accomplish, is that the plants will begin their move to determinate flowering cells faster. Because plants absorb light faster than all other needed elements. We must allow the pigments to release some of the absorbed light before plants can start flowering. As you know most shortday plants need approximately 2 weeks to start the onslaught of flowers. In other words it takes about 5-7 days to loose most of the Electromagnetic energy. And to produce flower cells that make up the actual flower. Shortday plant need 12 hours light, and 12 hours dark. As little as 1 min. of light during darkness can slow down or reverse the flowering. With long day plants the opposite happens where the plants need an extended period of light, more than14 hours to initiate flowering. Some plants need dry or wet, cold or warmth to initate flowering.