

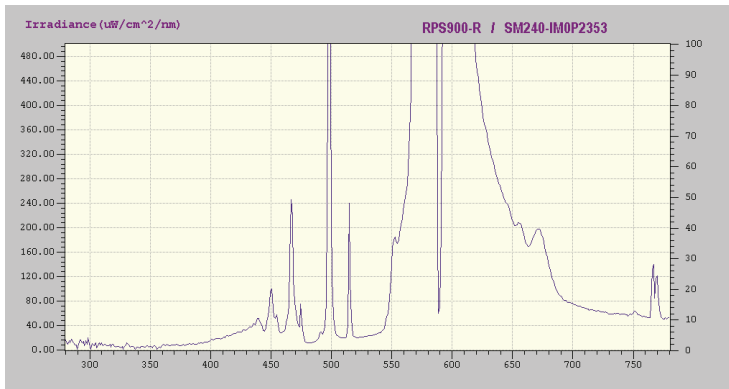


Sunpulse lamps VS HPS lamps

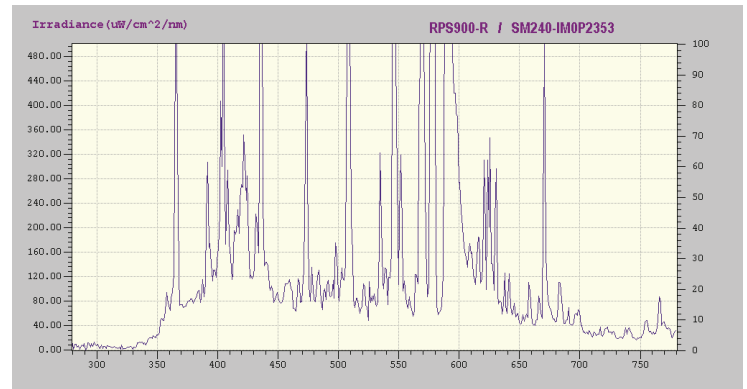
SunPulse Lamps are specially formulated for plants and living things and are designed for use on certified electronic and digital electronic HID ballasts. High frequency HID electronic ballasts (22 kHz+), are very different than the traditional 60 Hz magnetic ballasts that have been in horticulture for over 30 years. High frequency ballasts need high frequency lamps. Using a 60 Hz lamp on a 22 kHz or higher electronic ballast will result in the premature failure of that lamp. High frequency acoustic and magnetic resonances cause 60 Hz part failures in the lamps, and a major 60 Hz lamp manufacturer has stated for the record that their lamps & others cannot be used on electronic ballasts and perform properly.

HPS Light (pictured below left) is missing spectral information in the left portion of the graph, which the Sun would normally provide. You can also see the wide, bandwidth narrowed peaks of the HPS graph which represent the reds and oranges we see in the sodium lamps. These peaks don't exist in nature and extreme light saturation clips the photo-receptors of the leaf, shutting it down in a process called photo-inhibition. HPS is proven inefficient for living things.

SunPulse Lamps, (pictured below right), show a spectral graph that has "wave form linearity", or a shape that is more like the Sun's graph as it hits the Earth. The Sun provides all the colors, all the time, that's evolution. The Sun is high frequency, full spectrum light, and that's what Sun Pulse provides digitally, light more like the Sun.

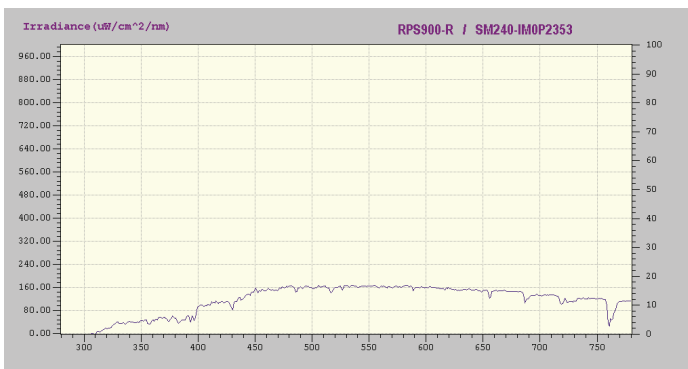


HPS Lamps



SunPulse Lamps

The spectral graphs above show three HPS lamps (left) and three Sun Pulse lamps (right) in a 30"x30"x26.75" Hood w/ glass at a 30" Distance Horiz. axis expresses wavelength and vertical axis is measured in watts per centimeter squared. Independent testing by Elite Engineering Inc., IL



(Pictured above: The Sun – 30° Lat. – 12:00PM – June 20, 2008)

Plants just want the Sun, (Pictured left). This is what evolution has provided them for millions of years, and we can't re-invent what the plant requires. The graph shows a maximum irradiance of 160 watts per centimeter squared. Plants have never evolved to receive more than that amount of Sunlight. Looking at the HPS chart you'll see that a majority of that light is being delivered over the 160 watts per centimeter squared mark. All that excess light is being converted to heat by the plants, and isn't used at all.

The Original Digital Lamp