

Why grow-light watts often do not mean anything

We can buy a 300-watt incandescent lamp for 6.00 USD—from many suppliers. It actually will have full spectrum and a CRI of 95. But because it is so inefficient (12-15 lumens per watt) and such short life (750-1,000 hours) , it is almost useless as a light source.

Also, We can buy a very large 105-watt CFL for only 10.00 USD ,from company such as Adorama (three lamps--315 watts--- for only 30 USD) but it has only 50 lumens per watt, lasts about 7000 hours and intensity can be increased only slightly with very large (at least 12 inch diameter reflector) but most of emitted light is wasted. So watts and lumens per watt do not mean much here.

300-watt HPS has poor light spectrum and half its watts are wasted even with reflector, because much of its lights is going everywhere except where mostly wanted.

Almost all low-cost LED grow-light have multicolor, multiband LEDs with poor specifications. Most have high light intensity in the center of grow area and weaker and weaker light away from the center and very weak light on the sides.

No matter how the hanging distance is changed, it is impossible to create even light everywhere on the grow area, but at same time prevent much light by going way off to the sides of the area

Conclusion--- If we have many different kinds of lights—all rated for same 300 watts, we must ask-----

1—Is it a useful spectrum---- similar to sunlight spectrum? Without gaps and spikes?

2--- How much actual plant-useful light is being emitted--- measured in lumens or PPF? Many people say grow-light should not be measured in lumens per watts but there is very close relationship of lumens/watt to PPF/watt. If LPW is high/good, the PPF /W will also be high and good.

3. How much of the light is actually reaching the grow area?

4. Of all the light reaching the grow area, how evenly is it being distributed across the grow area (not too much light in one place and not enough light in another place?)

Most grow-lights cannot answer these questions in a truthful or useful way and we learn that their wattage rating does not tell us what kind of result we can expect.

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