Grow Lights Depot

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LED Grow Light Buyer's Guide Checklist

Do you need help choosing an LED grow light for your indoor grow? Use this checklist to help narrow down your LED grow light options. More importantly, this list will reveal the LED grow light specifications that really matter when determining performance, fixture quality, and yields. Enjoy!

Light Intensity

❒ **What is the PPF of the fixture?** Is this a sufficient amount of light considering the wattage draw and efficacy?

~1500+ umol/s per 5'x5' area
~1100-1500 umol/s per 4'x4' area
~600-850 umol/s per 3'x3' area
~275-375 umol/s per 2'x2' area

❒ **Is there a PAR map available of the fixture?** Are the PPFD readings sufficient for your stage of growing? How uniform are the readings across the footprint (spotlight vs even footprint)?

❒ **Can you calculate the average PPFD using the PAR chart?** Average PPFD = *Sum of PPFD readings / number of PPFD readings.*

❒ **Is the average PPFD sufficient for your plant's stages of growth?** *Veg: 300-600 umol/m2/s, Flower: 600-1000 umol/m2/s or more.*

Spectrum

❒ **Is the spectrum constructed of single-wavelength 'mono' diodes, full-spectrum white didoes, COBs, or combinations of these?** Do you prefer one over the other?

- Spectrums constructed of targeted single-wavelength diodes are becoming less common since they are not as energetically efficient, have lower PPFD, lack canopy penetration, and plants can appear purple underneath them. *Common with budget lights.*
- White light full-spectrums (white diodes or COBs) commonly range from 3000K to 4000K. 3000K is best for flower, 4000K is best for veg. Either can be used for a full-cycle grow, but 3000K is most common. *Increasingly common.*
- Enhanced white light spectrums (base of white light enhanced with UV, blue, red, and/or far-red diodes) are a good option since they provide all of the useful wavelengths that plants absorb and utilize. *Not common, but ideal.*

❒ **Is the spectrum sufficient for your plant's growth stage?**

- Increased blue = ideal for veg (4000K white light spectrum or a 1:1 ratio of blue to red)
- Increased red = ideal for flower (3000K white light spectrum or about a 1:2 ratio of blue to red)
- Does the fixture offer spectrum tuning between the growth and flower stage? This can help save energy while delivering an ideal spectrum during veg and flower. *Not necessary, but can be helpful.*

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Wattage Draw & Electricity

❒ **How many watts does the fixture draw from the wall?** View the specifications of the fixture to determine this. If there is a *number* in the title of the light, it likely does not indicate the **actual** wattage. It may be a model number, total LED wattage, or HPS wattage equivalent.

❒ **Consider about 35 watts per square foot of grow space for planning purposes.** 30 watts to 44 watts is a common range. More efficient fixtures may use fewer watts per square foot. Higher intensities per square foot are possible with more efficient fixtures and a higher overall wattage draw. *Wattage does not equate to light output so do not use the wattage draw to determine how 'powerful' a fixture might be.*

❒ **What is the receptacle voltage for your light?** Most home circuits in the USA are 120V. Some growers use 240V. Commercial growers typically use 240V or higher. Many other areas in the world (inc. Europe, UK, AU) use 240V. *Ensure the light you select is rated for your voltage application.* Most LED grow lights have a flexible driver rated from 110V-277V. *Is the plug type correct or will you need an adapter?*

PAR Efficacy

❒ **What is the efficacy of the fixture in umol/j?** This is the amount of light the fixture exudes per watt. If it is not reported, you can estimate using this equation: *PPF/wattage draw.* Does efficacy matter to you? If so, look for fixtures above ~2.4 umol/j. If not, at least know how much light (PPF or average PPFD) you are getting for the wattage being drawn from the wall by the fixture.

❒ **Less expensive, budget lights are typically very inefficient since they use inferior parts.** Knowing the cost per photon ($/PPF) can help you decide which on the best light for your budget. Everyone wants the most light for their dollar, but it is not always attainable.

Coverage Area & Footprint

❒ **What size area do you need to cover with light?** Calculate your total grow area in square feet. Aisles and spaces where plants are not growing do not need to be considered. Choose a fixture or sets of fixtures that fully cover your area. Use the manufacturer's recommended footprint as a starting point for finding a fixture.

❒ **Use the PAR map to determine the uniformity and intensity across the recommended footprint.** Are the PAR values sufficient for your grow area?

❒ **Do you want/need lenses?** Lenses can affect how the light is distributed across the footprint and how well that intensity holds at particular heights. Lenses create a more concentrated footprint. Fixtures with no lenses have a more diffused footprint. Again, refer to the fixture's PAR map. Notice how quickly or slowly the values drop off when the PPFD is measured at different heights.

Dimensions & Weight

❒ **What are the dimensions of the fixture?** Will this fixture fit in your grow space?

❒ **What is the weight of the fixture?** Will the fixture be too heavy for the fixture's support system?

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Build/Construction

❒ **What brand of diodes does the fixture use?** Higher quality diodes last longer and are more efficient (more light/watt). CREE, Samsung, Osram, Lumiled, and Bridgelux are commonly used high-quality chips. Epistar and Epiled are mid to low-quality chips, in comparison.

❒ **What brand of driver(s) power the LEDs?** Mean Well and Inventronics make high-quality drivers. There are other good ones too. Low quality drivers in most budget lights fail quickly.

Special Features

❒ **Does the fixture contain dimmability, spectrum control, scheduling, or other advanced features?** Do you need/want these features? They allow you to add controllability into your lighting and allow experimentation, but the more parts and controls on the fixture, the more expensive it is and the more likely something can break/fail. It's no secret: good quality fixtures have better features with less downtime.

Brand

❒ **Do you prefer a particular brand over another? T**he brand of an LED grow light makes a difference to many buyers because a brand is synonymous with a particular quality of build and set of expectations. Have you heard good or bad things about an LED grow light brand? Consider some brand research of your top LED grow light choices to see what other growers are saying. Don't fall for marketing.

Certifications

❒ **Do you require any particular certifications or markings (UL/ETL/CSA/CE, etc).** Most home growers do not need to consider these special certifications. However, commercial growers in the USA **must** use lights that are UL listed or ETL certified if they are to be in compliance with their state's electrical regulations. If you are in the European Union or Canada, you might require a fixture with a CE mark and CSA mark, respectively.

Warranty

❒ **How long is the warranty?** LED grow light warranties can range from 1 year a 'lifetime'. Most companies offer a 3-year warranty. However, 5-year warranties are also very common. Fixtures with longer warranties are generally more expensive. Know the manufacturer's warranty policy beforehand in case something happens to your fixture.

Price

❒ **How does the price of the fixture influence your decision to purchase it?** Search for lights within your budget (if you have one), or stretch your budget to get a better quality fixture. If money is not an issue, choose a light based off of high performance, light output, efficiency, and quality parts.

❒ **The most expensive fixtures may not be the best ones.** High-quality fixtures are not necessarily more expensive. Use the rest of the checklist above to determine the best quality light for your grow space and budget.

Need advice? Call or email us: +1 (800) 611-9305 / info@ledgrowlightsdepot.com
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