

LADY BUG LIGHTING



WHEN THE SUN DON'T SHINE



LADYBUG LIGHTING ORACLE 680W USER MANUAL

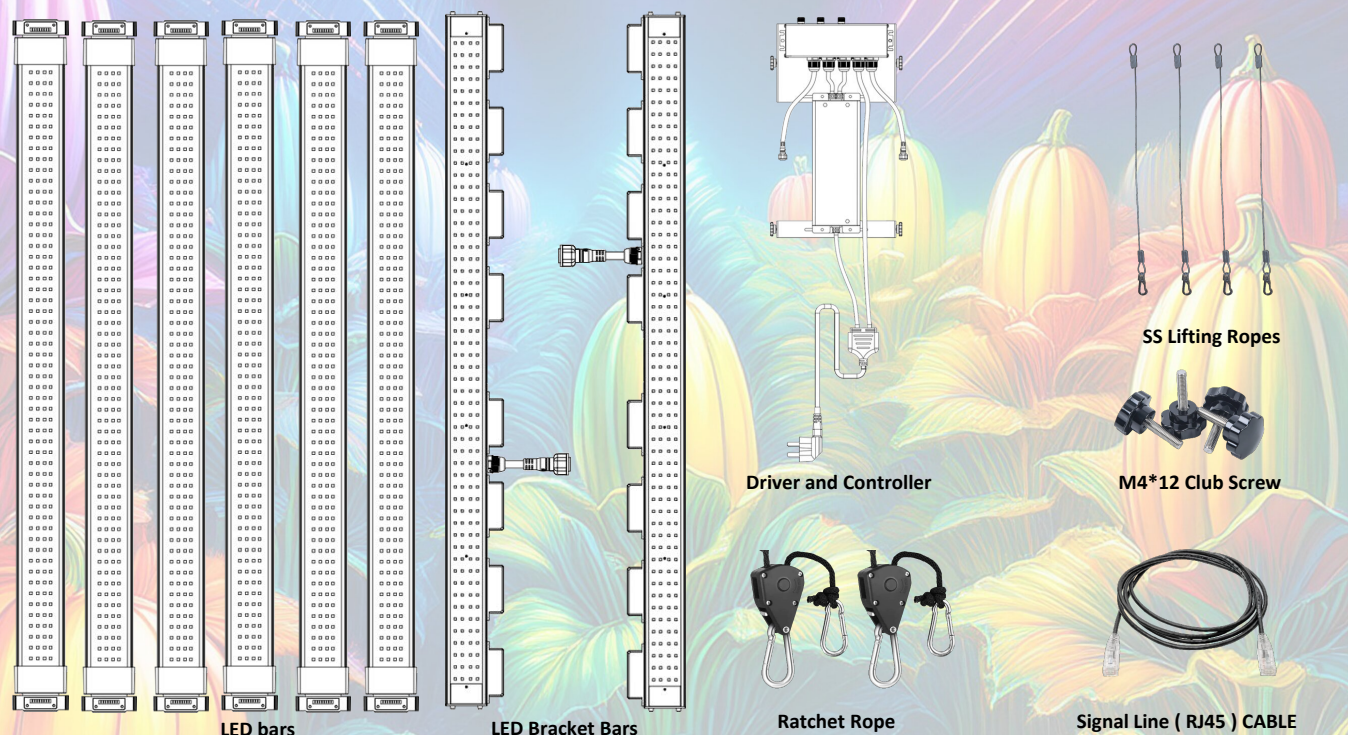
GROW TIPS!

The rate of photosynthesis and transpiration are directly affected by temperature, humidity and airflow. The ideal temperature and humidity for your plants are found between 24°C - 29°C with a humidity between 55% - 70%, along with plenty of airflow to replenish CO2 we recommend atleast 3 air exchanges per hour and a water / nutrient PH between 5.5- 6.5.

WARRANTY

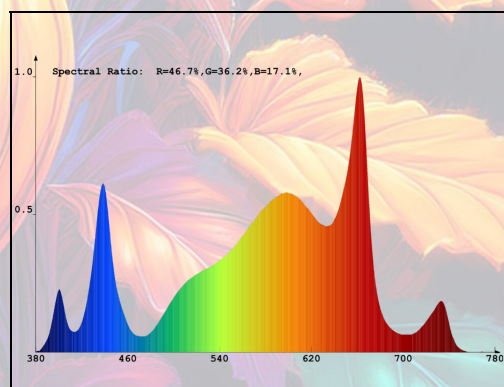
The LED grow light is guaranteed for a period of 3 years under normal use. The warranty includes all parts of the light board and a 5 year warranty for the power supply. During the warranty period, we will provide free replacement for damaged parts caused by non-artificial reasons. If the whole fixture needs to be repaired, the customer is responsible for costs relating to shipping of the faulty product in order to have it assessed by an approved repair centre or reseller.

PARTS LIST



	PARTS LIST			LBL ORACLE 680W		
1	LED Bars			8pcs		
2	LED Bracket Bars			2pcs		
3	Driver & Controller			1pc		
4	Ratchet Rope			4pcs		
5	SS Lifting Rope			2pcs		
6	Signal Line			1pc		
7	M4*12 Club Screw			4pcs		

FULL SPECTRUM WITH UV - 395nm & IR - 730nm ADDED



These LED lights feature the perfect blend of full-spectrum, white LED and red LED diodes, which results in the ideal spectrum for all phases of plant growth. The mix of white and red LEDs create a relatively high ratio of bluish light, Blue light keeps your crop tight and compact in the vegetative stage and adds to the optimal morphogenesis and light uptake by the plant.

Full-spectrum with UV395nm (purple light) & IR730nm (far-red light) added. IR730nm helps improve stem growth as well as helps to increase the number of flowers & fruits. UV395nm will help increase the trichomes and cannabidiol, whilst also making the plant(s) more resistant to pathogens and pests. It's recommended to use UV / IR only once the plants have reached flowering stage. It's suggested to only use the UV light for a maximum of 3 hours a day ideally split into two stages.

ORACLE 680W SAMSUNG LM301H EVO PPFD MAP

TEST AREA 1200 x 1200mm REFLECTIVE GROW TENT

1117.4	1383.6	1412.2	1312.9	1041.6
1455.6	1769.3	1782.9	1721.4	1429.4
1478.4	1848.5	1910.3	1883.5	1538.1
1304.8	1687.3	1783.4	1771.9	1486.1
1039.6	1339.4	1422.2	1355.2	1120.2

30cm

943.1	1087.5	1102.2	1075.2	918
1120.7	1299.1	1355.4	1289.56	1089.7
1154.8	1367.8	1437.1	1384.8	1154.4
1089.4	1283.8	1357.5	1318.5	1128.1
926.56	1066.2	1079.6	1069.6	938.65

40cm

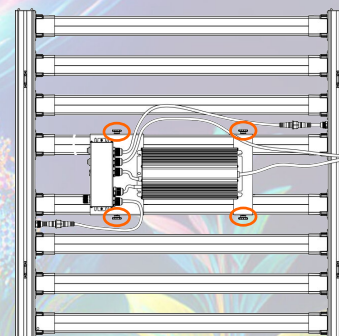
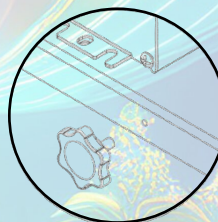
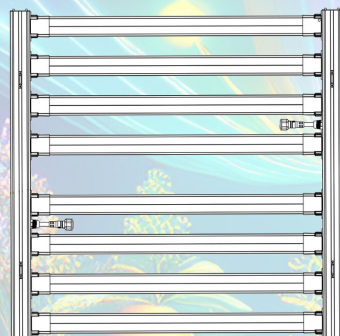
873.12	951.52	962.65	932.56	839.45
960.83	1063.2	1105.5	1059.6	931.11
977.52	1107.9	1162.1	1120.8	983.18
928.45	1056.5	1108.7	1075.9	966.25
846.41	943.66	977.63	950.99	855.71

60cm

ASSEMBLY & INSTALLATION

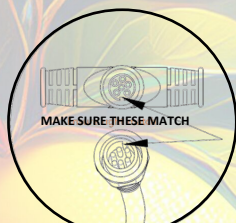
(1) Clip the LED Bars into the LED Bracket Bars, please make sure to match each side.

(2) Lock the M4*12 screw, tighten the brackets of driver / power supply hand tight only.

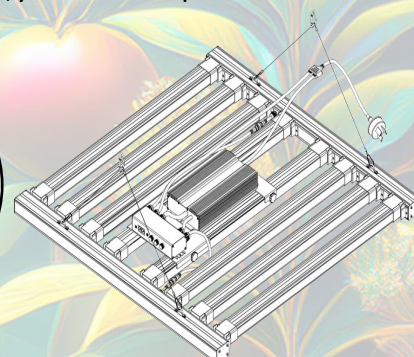
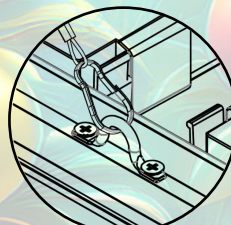
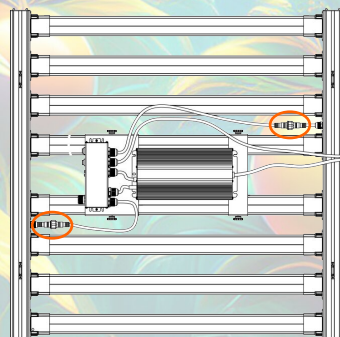


(3) Align bayonet, connect cable connector, and tighten the nut

(4) Install the lifting ropes, you have now completed the installation.



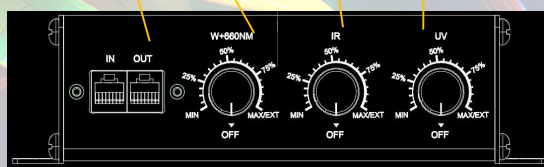
DO NOT FORCE THEM TOGETHER



INSTRUCTIONS FOR DIMMERS

Dimmer box function Introduction Diagram

white+660nm Dimmer IR Dimmer UV Dimmer
RJ45 Signal Cable Port



White+660nm Dimmer: Control dimming of white light+660nm diodes

IR Dimmer: Control dimming for IR diodes

UV Dimmer: Control dimming for UV diodes

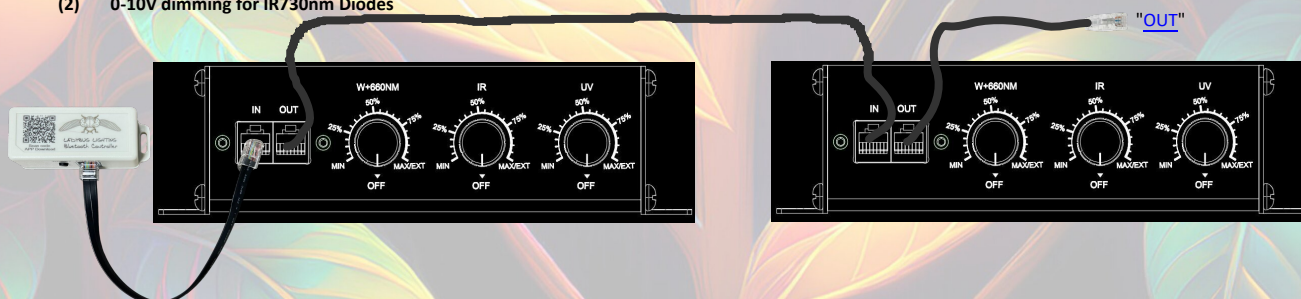
Signal Cable port: to connect the RJ45 cable, group dimming for lights

! Please do not turn on the UV light during the seedling or growth cycle, It will inhibit the growth of plants. The UV light is suggested to be turned on in the later stages of growth, like flowering or fruiting stages of plants, the UV light should not exceed 3 hours per day ideally split into 2 stages.

Daisy Chain Connection

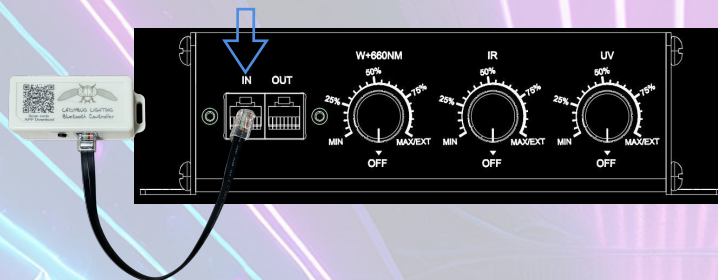
Centralised control of dimming function when multiple lights are connected via RJ45 signal cable The first port in the series is for the Bluetooth Controller or first driver / power supply which connects to the "IN" position, then the "OUT" position connects to the next driver / power supply at the "IN" Position the rest connect to the "OUT" to "OUT" positions see below.

- (1) 0-10V dimming for White+660nm Diodes
- (2) 0-10V dimming for IR730nm Diodes



BLUETOOTH OPERATION / SETUP

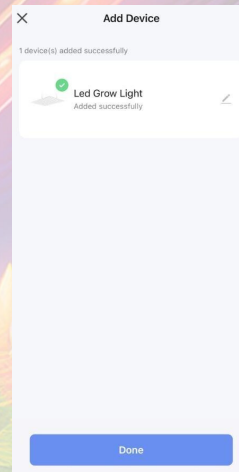
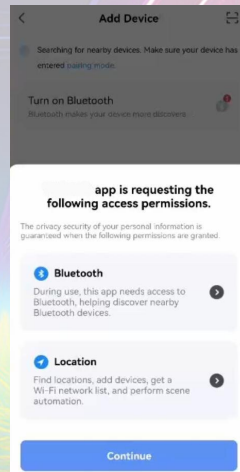
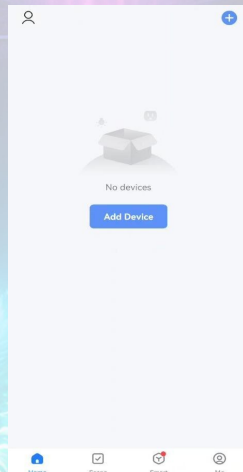
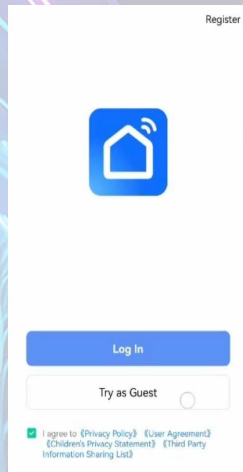
1. Insert the Bluetooth Controller cable into the "IN" port of the Main Black Controller



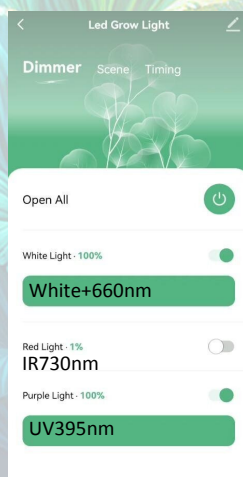
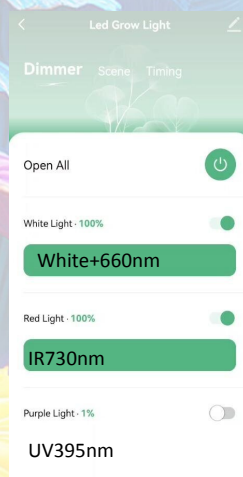
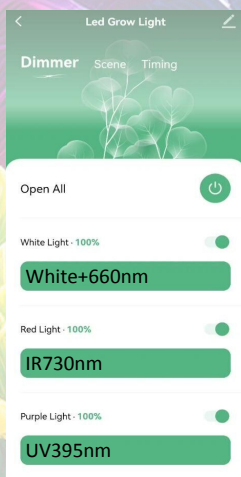
2. Press the black button of the bluetooth Controller 5 times, within 2 seconds to initialise the bluetooth signal, the light will start to flash if initialisation is successful. (Please do not hold down or long press the black button)



3. Scan the QR code to download the "Smart Life" App, 1) login in to the app, 2) turn on the bluetooth of your phone, 3) add the light device nearby with



4. Dimmer setting, Turn on/off the light, set brightness for white light(white light+660nm), Red light(IR730nm), and Purple light(UV395nm)



5. Timming setting for below situation:

- (1) Turn off UV IR, set brightness for white light+660nm.
- (2) Turn off the light
- (3) Turn ON/OFF the UV light
- (4) Turn ON/OFF the IR light

Note:

Remote control is not supported, the light only can be controlled within the bluetooth signal range / area.

⚠ PRECAUTIONS / WARNINGS PLEASE READ BEFORE OPERATING LED GROW LIGHT

1. For best performance/experience use a high quality wall socket or lead, light will not work properly with bad connection.
2. Verify that the supply voltage is correct by referring to the information on the specification label.
3. Do not change any open holes in an enclosure of wiring or electrical components during the kit installation.
4. Turn off the power and unplug the fixture when you perform any maintenance.
5. Don't look at light source directly with naked eyes.
6. Don't touch the surface of the lamp with power on.
7. Avoid hitting, bending or causing mechanical stress to the fixture.
8. Don't cover or block any part of the fixture during operation.
9. To ensure optimal performance, clean heatsink periodically, clean with compressed air or damp lint free cloth.
10. Always provide a well ventilated environment where ambient temperature doesn't exceed 40°C-104°F regardless of whether fixtures are in operation or not
11. Excessive temperature can inhibit performance and may cause damage or shorten the lifespan of the fixtures that will also void the warranty.
12. When calculating the cooling needs for your greenhouse, take BTU load generated by LED fixtures into consideration.
13. Please insure you install the light in such a way that its anchor points can withstand 10 times the weight of the light fixture.
14. Install the light in a safe place which doesn't contain any excess heat source, hot steam or corrosive gas this may affect the lifespan of the light.
15. This LED fixture is intended for indoor or greenhouse use.
16. "IMPORTANT" a 30cm Distance from any combustible surface must be maintained.

DAILY LIGHT INTEGRAL

When it comes to plant lighting, the daily light integral (DLI) is the most important measure and the one metric you want to optimise. Providing too low of a DLI will result in slow plant growth and a low yield whereas providing too high of a DLI will result in wasted electricity and might even burn the plants.

GENERAL GUIDE LINES

Identifying the ideal PAR levels is quite complex and dependent on a lot of influencing factors, most notable the plant's genetics, current growth phase, and climate.

GROWTH PHASE

PAR Level (PPFD)	Seedling / Clone	Vegetative	Bloom / Flowering
	150 - 250	250 - 600	600 - 1050

Note, that PAR levels are measured as photosynthetic photon flux density (PPFD) generally in the unit of $\mu\text{mol}/\text{m}^2/\text{s}$.

INFLUENCING FACTORS

A plant's photosynthesis and metabolism is quite complex and depends on a lot of factors above and beneath the soil.

The following describes the most influential on the light levels.

CO2 Photosynthesis mainly requires photons (light), water, and CO2. Therefore, CO2 is an important and influential factor when considering optimal PAR levels. As for really maxing out the rate of photosynthesis, all plants do have a point where more light does not equal more growth, but more often than not, inadequate CO2 supplementation is the primary limiting factor.

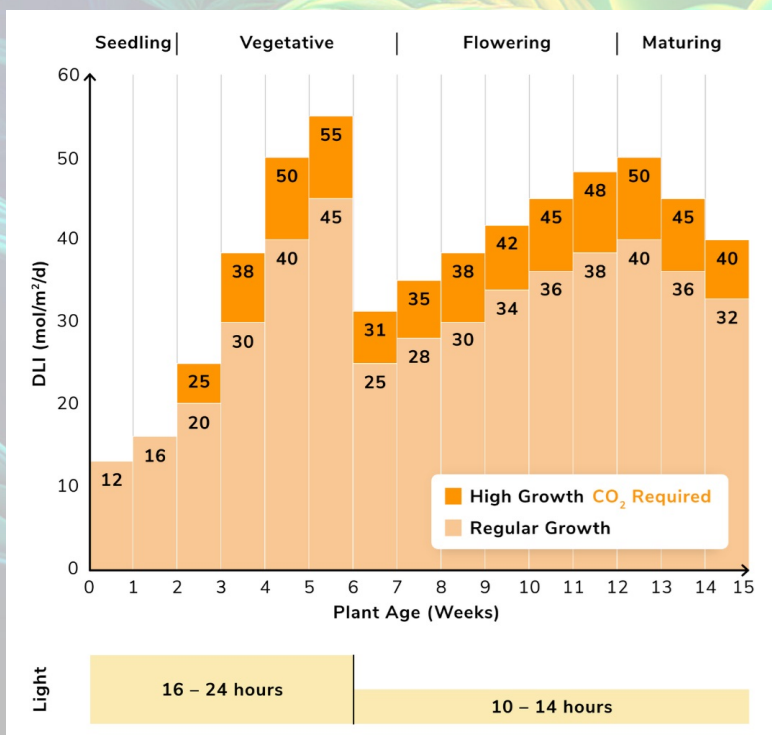
Influence of CO2 concentration on the rate of photosynthesis, CO2 is measured in parts per million (ppm). General indoor CO2 levels of about 400 to 600 ppm quickly restrict photosynthetic activity to less than half of what would be possible.

Supplementing higher CO2 to reach at least 800 ppm greatly boosts photosynthetic activity and allows for higher PAR levels and thus a higher PPFD. If you really want to max out your plant's growth, we recommend the following CO2 levels:

GROWTH PHASE

PAR Level PPFD	Seedling / Clone	Vegetative	Bloom / Flowering
	250 - 400	400 - 800	800 - 1400

PLANT PHOTOSYNTHESIS DLI / CO2 CHART



TEMPERATURE & HUMIDITY

In general, the growth of a plant increases with temperature until an optimal temperature is reached. Above the optimal temperature, plant growth decreases or even halts. The tricky thing is, that the optimal temperature again depends on the CO2 concentration in the growth environment. We recommend the following temperature levels:

GROWTH PHASE

Seedling / Clone Lights ON (Day Time) - 22°C - 27°C | Lights OFF (Night Time) - 21°C - 25°C

Vegetative Lights ON (Day Time) - 23°C - 29°C | Lights OFF (Night Time) - 20°C - 24°C

Bloom / Flower Lights ON (Day Time) - 20°C - 29°C | Lights OFF (Night Time) - 20°C - 26°C

Another factor is humidity whose optimal rate in turn is dependant on the temperature. The following table provides a detailed recommendation from a study on tomatoes that is also applicable to other plants:

The effect of temperature and humidity levels.

As for the factor of climate, as long as you keep your plants within those recommended temperature and humidity values, you can increase your PAR levels to the upper end of our recommended PPFD values.

Temperature		Relative Humidity													
°C	°F	100%	95%	90%	85%	80%	75%	70%	65%	60%	55%	50%	45%	40%	
15	59.0	0.00	0.09	0.17	0.26	0.34	0.42	0.51	0.59	0.68	0.76	0.85	0.94	1.02	
16	60.8	0.00	0.09	0.18	0.27	0.36	0.46	0.55	0.64	0.73	0.82	0.91	1.00	1.09	
17	62.6	0.00	0.10	0.19	0.29	0.39	0.49	0.58	0.68	0.78	0.88	0.97	1.06	1.16	
18	64.4	0.00	0.10	0.21	0.31	0.41	0.51	0.62	0.72	0.82	0.93	1.03	1.13	1.24	
19	66.2	0.00	0.11	0.22	0.33	0.44	0.55	0.66	0.77	0.88	0.99	1.10	1.21	1.32	
20	68.0	0.00	0.12	0.23	0.35	0.47	0.59	0.70	0.82	0.94	1.06	1.17	1.28	1.40	
21	69.8	0.00	0.12	0.25	0.37	0.50	0.62	0.74	0.86	0.99	1.11	1.24	1.37	1.49	
22	71.6	0.00	0.13	0.26	0.40	0.53	0.66	0.79	0.92	1.05	1.19	1.32	1.45	1.58	
23	73.4	0.00	0.14	0.28	0.42	0.56	0.70	0.85	0.99	0.13	1.27	1.41	1.54	1.68	
24	75.2	0.00	0.15	0.30	0.45	0.60	0.74	0.89	1.04	1.19	1.34	1.49	1.64	1.79	
25	77.0	0.00	0.16	0.32	0.48	0.63	0.80	0.95	1.11	1.27	1.43	1.59	1.74	1.90	
26	78.8	0.00	0.17	0.34	0.50	0.67	0.84	1.10	1.18	1.34	1.51	1.68	1.84	2.01	
27	80.6	0.00	0.18	0.36	0.54	0.71	0.89	1.07	1.24	1.42	1.60	1.78	1.96	2.13	
28	82.4	0.00	0.19	0.38	0.57	0.76	0.95	1.14	1.33	1.51	1.70	1.89	2.07	2.26	
29	84.2	0.00	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00	2.21	2.41	
30	86.0	0.00	0.21	0.42	0.64	0.85	1.06	1.27	1.48	1.70	1.91	2.12	2.33	2.54	
31	87.8	0.00	0.22	0.45	0.67	0.90	1.12	1.34	1.57	1.79	2.02	2.24	2.46	2.69	
32	89.6	0.00	0.24	0.48	0.71	0.95	1.19	1.42	1.66	1.90	2.13	2.37	2.61	2.84	
33	91.4	0.00	0.25	0.50	0.76	1.01	1.25	1.50	1.76	2.01	2.26	2.51	2.76	3.01	
34	93.2	0.00	0.27	0.53	0.80	1.06	1.33	1.59	1.86	2.12	2.39	2.65	2.92	3.18	
35	95.0	0.00	0.28	0.56	0.84	1.13	1.40	1.68	1.96	2.24	2.52	2.80	3.08	3.36	

Optimal

Moderate

Sub-Optimal

GENETICS

Some plants naturally grow in pretty diverse climates stemming from tropical regions to highly mountainous areas, each with different light levels. As a highly cultivated and breed plant, there is a lot of genetic variety, most seed manufacturers provide some information about the specific strain's light need that should allow you to get a sense of putting your strain rather on the low - or the high end of our recommendation.

SIGNS OF TOO MUCH LIGHT

Light burn is the most common sign of too high PAR levels on a plant. It is also commonly referred to as leaf burn and causes yellow leaves with green veins and stems.

Light burn might easily be mistaken with a Nitrogen deficiency, which also turns the leaves yellow. A simple indicator is how strong the yellow leaves are attached to the stem: While Nitrogen-deficient leaves fall off on their own, light-burned leaves are hard to pluck off. Furthermore, light burn is mainly affecting the leaves on the top of the plant while a Nitrogen deficiency starts at the bottom of the plant.

LOOSE & FLUFFY FEELING FRUITS

An excess of light also causes the plant's metabolism to work harder which often causes nutrient deficiencies and generally weak, loose, and airy fruits that might even feel crisp to the touch.

LIGHT BLEACHED " WHITE " FRUITS

Fruit bleaching can happen when the fruit itself gets too much light and causes them to lose their color pigments and turn white. This must not be mistaken by a very resinous, trichome covered fruit. Bleached fruits are often less potent.

SIGNS OF NOT ENOUGH LIGHT

Slow Growth, The most obvious factor is slower than expected growth. As light is one of the key ingredients for plants to photosynthesize, with too little light, they just can't grow as desired. To identify slow growth, it might be helpful to compare the height of your plants to the regular height of the same strain at the same age.

STRETCHING

When a plant lacks light, most plants respond to this by spurring stem growth to move themselves closer to the light. This can be detected visually by higher internode spacing and an overall taller look of the plant.

MEASURING LIGHT

You want to optimize the PAR levels for your fruit plants for the best results in both plant growth and electricity consumption.

CONTACT US

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