GrowLight LED

How to Use HB GrowLight™

1. Assemble the cart - see Cart Instructions.
2. Using the "S" hooks and the chains provided, hang GrowLight on the eyelits attached on the underside of the top shelf. Try to keep the fixture approximately two inches above the plants, and adjust accordingly as they grow.
4. Plug the GrowLight into cart power strip.
5. Color Tuning Function
   The color tuner controls red, blue and white LED strips inside the fixture:
   - Red is modulated with the red knob, blue with the blue knob and white with the green knob.
   - Each color is adjustable from 0-100 %.
   - For maximum growth rate set each color to 100% output.
6. Place your plants on the shelf and take care of them as specified by the plant supplier or seed package.

HB GrowLight™ Specifications

Input Voltage:	100–240 Volts
Power:	90 Watts
Controller:	RGB – R=Red, G=White, B=Blue
LED Light Sources:	Single Phillips R/B Board for Red, Blue, Dual Samsung Boards for White 4000K, 40W each
Dimensions:	24"L x 7.25"W x 3"H
Weight:	8 lbs.
Line Cord:	12'
Carton Dim.:	26"L x 12"W x 8"H
Shipping Weight:	9 lbs.
Chains and hooks:	Four 12" chainlinks and Six "S" Hooks for mounting

Hamilton Buhl®
Never-Ending Learning Innovation

GrowLight LED

Introduction

The heart of the HamiltonBuhl LED GrowLight™ is the wavelength tuner. The tuner allows selection of the optimum light desired for your plants during their specific growth cycles.

The Science of Growth

In addition to lighting, there are many variables that control the growth of plants including soil type, watering, nutrients, CO2, etc. The graphs show how the GrowLight™ will give you total control over your plant's growth.

Plants grow by absorbing certain regions of the light spectrum and performing a process called photosynthesis. This process relies on 3 primary molecules (pigments), Chloro a and b, and carotenoids – which use the light to produce the end product of the plant, from flowers to buds to fruit.

To do this most efficiently, plants absorb the light spectrum in two major regions: red and blue. This varies depending on the type of plant you are growing.

The tuner on the GrowLight™ is designed to allow you to vary the light spectrum during the plant's phases of growth from germination, vegetative, to flowering.

The effect of blue light on plants is directly related to chlorophyll production. Plants that receive plenty of blue light will have strong, healthy stems and leaves. Red light is responsible for making plants flower and produce fruit. It's also essential to a plant's early life for seed germination, root growth, and bulb development.

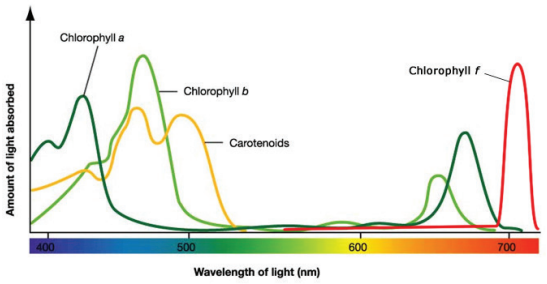
Variations in features of the plant can be affected depending on the light spectrum used. For example, the early stages when growing tomatoes showed dramatic results in stem diameter and root system by increasing the blue to red ratio, whereas leaf growth was augmented using a higher red-to-blue ratio at 4+ weeks.

HB GrowLight™ allows you to experiment at a level not capable with standard "one spectrum" systems. Use the HB GrowLight™ and experiment for your particular plant's needs. You will discover how varying light controls growth results.

GrowLight Tuner

LED Fluorescent Root/Stem Growth

Wavelengths and Absorption



Leaf Growth

Hamilton Buhl®
Never-Ending Learning Innovation