

HIGHLAND TRACKLIGHT QUICK START GUIDE

**IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS**

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IMPORTANT SAFETY INSTRUCTIONS



1. Read all safety and operating instructions before using this product.
2. Not for use with dimmers of any kind.
3. **TURN OFF ELECTRICITY** at the main fuse box before installing, adding to or changing the configuration of the fixture.
4. For indoor use only.
5. Do not install this fixture in a damp or wet location.
6. Install the fixture in a manner consistent with its intended use and in compliance with the National Electrical Code and with other local electrical codes.
7. Track rails must maintain polarity.
8. Do not cut the track rails.
9. Use this product only as described in this manual. Any other use is not recommended by the manufacturer and may cause fire, electrical shock or injury, and may void the warranty.
10. Avoid eye contact directly with the LED light.
11. Always turn off or unplug the unit before cleaning to reduce risk of electrical shock. Do not stick anything inside of the rails.
12. Only use a dry or lightly damp cloth to clean the Highland, do not use a wet cloth or spray anything into or on the unit.
13. The use of attachments not recommended or sold by the manufacturer may cause injury.
14. Do not operate the product in the presence of explosive and/or flammable fumes.
15. (For corded systems) If the plug loosely fits in the outlet, discontinue use with that outlet. A loose-fitting plug may cause the plug or outlet to overheat. Have a qualified electrician replace the outlet.
16. If you have pets, make sure the wires are out of reach and you check that your plants are animal friendly.

SAFETY INSTRUCTIONS FOR PET OWNERS



When your animals are your family, keeping them safe is a top priority. All wiring should be kept out of reach of animals. We recommend a protective tubing or other means of blocking access.

It may not have crossed your mind, but many common houseplants can be toxic. We highly recommend consulting with professionals before buying new plants. Provided below is a short list of common plants that may be toxic to animals and range from rash, oxalates, minor toxicity and major toxicity. The plants highlighted in bold are considered extremely toxic and may cause coma, seizures or death.

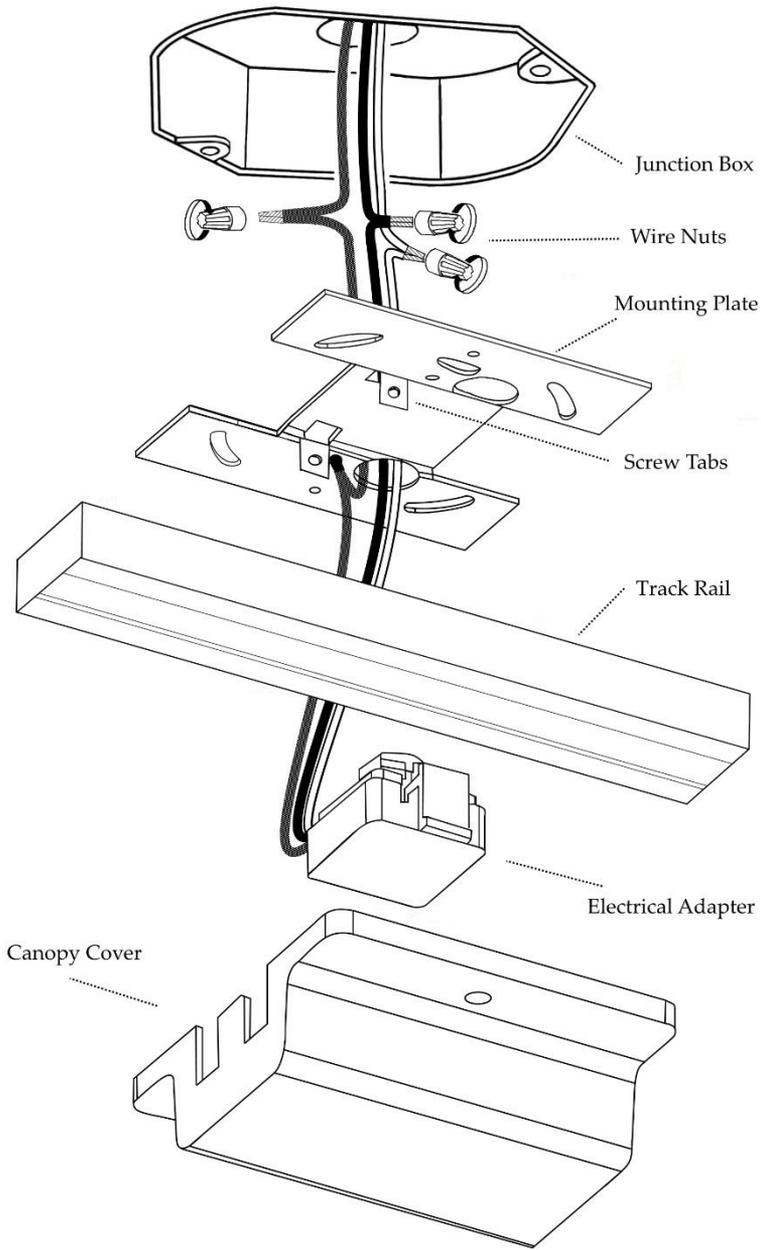
Aloe Vera	Dahlia	Morning Glory
Amaryllis	Daisy	Mother in Law
American Holly	Deadly Nightshade	Mum
Apple	English Ivy	Oleander
Apricot	Eucalyptus	Orange
Azalea	Fig	Oregano
Baby's Breath	Garlic	Palm Lily
Begonia	Geranium	Parsley
Bird of Paradise	Glacier Ivy	Peace Lily
Bitter root	Gladiola	Peach
Boxwood	Grapefruit	Plum
Branching Ivy	Hibiscus	Poinsettia
Calamondin Orange	Hops	Pothos
California Ivy	Hosta	Rhododendron
Carnations	Hydrangea	Sago Palm
Castor Bean	Jade	St. John's Wort
Cherry	Leek	Sweet Potato Vine
Chinese Jade	Lemon	Sweetheart Ivy
Chives	Lemon Grass	Tomato Plants
Chrysanthemum	Lilies	Tulip
Coffee Tree	Lime	Tradescantia pallida
Cyclamen	Marijuana	Yew
Daffodil	Milkweed	Yucca

Please note that the information contained in our plants list is not meant to be all-inclusive, but rather a compilation of the most frequently encountered plants. If you think that your animal may have ingested a poisonous plant, contact your local veterinarian or the ASPCA 24-hour emergency poison hotline directly at 1-888-426-4435. Soltech Solutions LLC and authorized distributors are not responsible for illness or death of persons or animals.

INSTALLATION INSTRUCTIONS

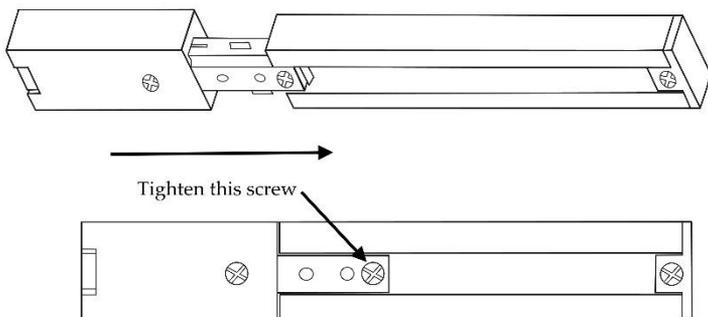
(OPTION 1) INSTALL AN ELECTRICAL FEED FROM A JUNCTION BOX WITH FLOATING CANOPY

1. Make sure the power is off.
2. Route the wires from the electrical adapter through the mounting plate.
3. Connect the wires to the existing wiring from the junction box.
4. Tuck excess wiring back into the junction box.
5. Install the mounting plate to the junction box.
6. Before installing the track rail, confirm that the polarity of the rail is in the right direction for the electrical adapter and all accessories. Accessories, such as connectors, elbows and plugs will only fit in one direction. The groove in the rail indicates the neutral side.
7. Raise track assembly to the ceiling. Mark hole locations.
8. Two types of fasteners are provided; a nylon self-drilling anchor for drywall ceilings and a butterfly anchor for plaster and lath ceilings or drop ceilings.
 - a. The nylon self-drilling anchors can be installed in the ceiling with either a screwdriver or drill. Press the anchor into the ceiling and screw the anchor in. Put the track rail in place and tighten the metal screw into the anchor until the rail is secured.
 - b. Butterfly anchors (toggle bolts) require a 5/8 inch drill bit. First, prepare the track rail by routing the bolt through the rail. Thread on the toggle so that the tips of the wings are facing down towards the screw head. Squeeze the toggle closed and insert into the hole in the ceiling. The wings of the toggle will open in the ceiling, allowing you to tighten the bolt. You may need to carefully pull down on the screw head or rail so that the wings catch on the ceiling. Tighten until the rail is secure.
9. Tighten the screws located on the screw tab to secure the track rail to the mounting plate.
10. Twist in the electrical adapter into the track rail. Take note of the polarity of the track rail and the polarity of the electrical adapter. The side of the electrical adapter that has two contacts should twice into the side of the rail with a groove. Do not force the adapter in the wrong way, it will break.
11. Install the canopy cover and secure with screws.
12. Install the Highland LED lights.



(OPTION 2) INSTALL A LIVE END PLUG OR ELECTRICAL FEED

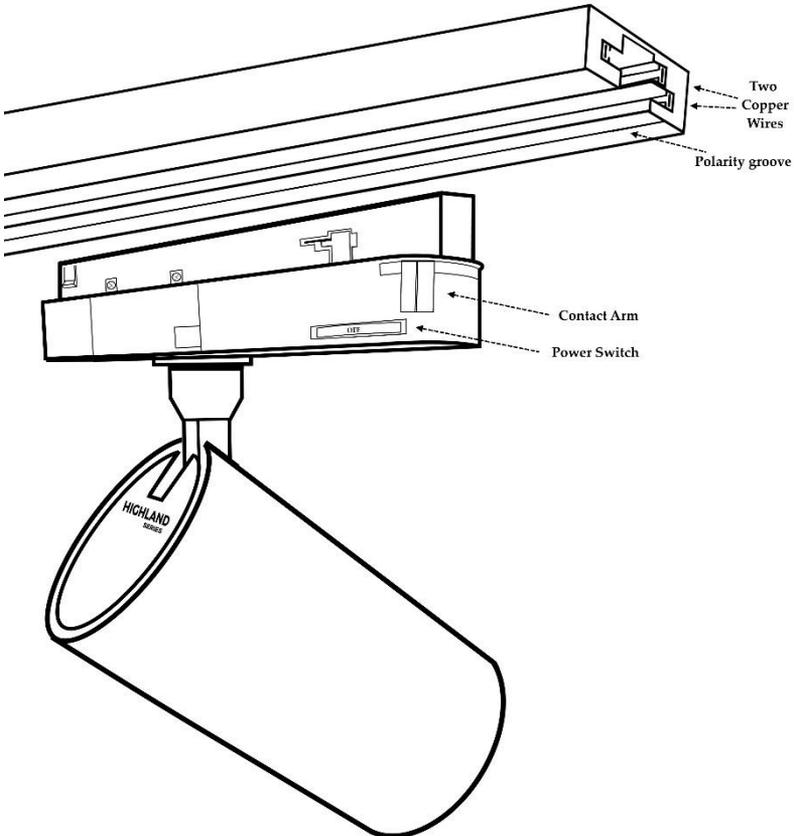
1. Make sure the power is off.
2. Before installing the track rail, identify the side that accepts the live end connector. Confirm that the polarity of the rail is in the correct direction for the electrical adapter and all accessories. The plug end and all accessories will only fit in one direction. The groove in the rail indicates the neutral side.
3. Brace the opposite end of the track against a solid surface.
4. Insert the live end and secure by tightening the screw.
5. Raise track assembly to the ceiling. Mark hole locations.
6. Two types of fasteners are provided; a nylon self-drilling anchor for drywall ceilings and a butterfly anchor for plaster and lath ceilings or drop ceilings.
 - a. The nylon self-drilling anchors can be installed in the ceiling with either a screwdriver or drill. Press the anchor into the ceiling and screw the anchor in. Put the track rail in place and tighten the metal screw into the anchor until the rail is secured.
 - b. Butterfly anchors (toggle bolts) require a 5/8 inch drill bit. First, prepare the track rail by routing the bolt through the rail. Thread on the toggle so that the tips of the wings are facing down towards the screw head. Squeeze the toggle closed and insert into the hole in the ceiling. The wings of the toggle will open in the ceiling, allowing you to tighten the bolt. You may need to carefully pull down on the screw head or rail so that the wings catch on the ceiling. Tighten until the rail is secure.
7. Use staples, fairleads, wire mold, hooks, command hooks or other products to secure the wire along the ceiling and wall.
8. Set an outlet timer to your desired light cycle, we recommend between 12-16 hours. Do not exceed 18 hours of light per day! Your plants need to sleep and too much light will kill them.
9. Install the Highland LED lights.



INSTALLING THE HIGHLAND

When installing the Highland grow light, take note of the polarity groove on the track rail. The side of the Highland with no writing on the box should face the polarity groove of the track light rail. The side of the Highland with writing and access door should be on the opposite side of the polarity groove.

1. Make sure the power is off.
2. Insert the Highland into the track light rail. The base of the Highland should be flush with the track light rail.
3. Switch the contact arm from left to right. The contact arm should be completely to the right; clicking into place.
4. Position the head of the Highland towards your plants.
5. Switch the power switch from OFF to ON.
6. Removal is the reverse procedure. With the power off, switch the contact arm from right to left and gently remove the highland from the track rail.

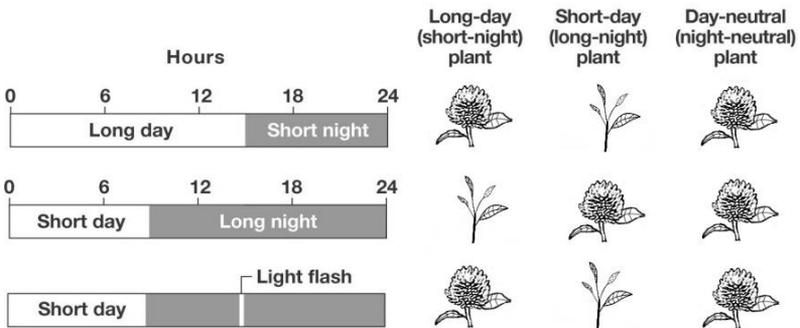


LIGHT CYCLES

Light cycles are used to simulate the conditions of day and night for indoor plants. We highly recommend the use of a 24-hour timer to create a repeatable light cycle.

Most plants grow in two stages, the vegetative stage and flowering stage. During the vegetative growth stage, the plant is focused on growing in preparation for flowering. Some plants can be left in the vegetative stage indefinitely with no adverse effects. The flower stage is initiated when the light cycle changes into the critical light period, explained below. This change will cause your plant to focus completely on making flowers and seeds for reproduction.

There are three types of plant responses; short-day, long-day, and day-neutral. The first two types have a critical light and dark period associated with them and can vary from plant to plant. This critical period will determine when the plant switches from the vegetative stage to the flowering stage. Day-neutral plants are generally unaffected by light cycles and flower when the plant is mature. If you find that it is difficult to flower a short-day plant due to a light flash at night, we recommend flowering in a closet or grow tent.



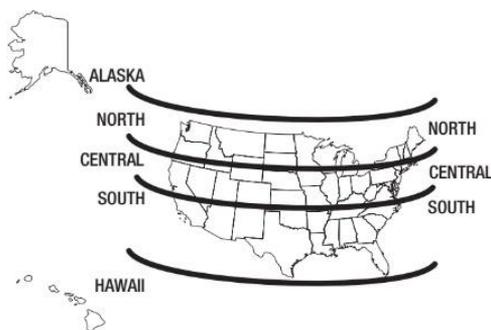
Long-day (Short-night)	Short-day (Long-night)	Day-neutral (Night-neutral)
Flowers when exposed to light longer than a certain number of hours.	Flowers when exposed to light for less than a certain number of hours.	Unaffected by day-length; flowers at a certain stage of maturity.
Maintain a lightcycle of under 12 ⁺ hours to promote vegetative growth.	Maintain a lightcycle of over 12 ⁺ hours to promote vegetative growth.	Generally unaffected by the lightcycle. More light may encourage more growth.
Flowering is stimulated if dark period is interrupted by a flash of light.	Flowering is prevented if dark period is interrupted by a flash of light.	Unaffected by flash of light; flowering not based on photoperiodism.
Normally flower in spring and summer when day length is over 12 hours.	Normally flower in early spring or fall when day length is under 12 hours.	Affected more by temperature change, plant maturity, and other factors.
Common examples: • Chrysanthemums • Cockslebur • Cosmos • Dahlias • Green Onion • Soya Beans • Morning Glory • Poinsettia • Soya Beans • Violets	Common examples: • Cabbage • Carrot • Henbane • Larkspur • Lettuce • Onion • Petunia • Poppy • Radish • Spinach • Wheat	Common examples: • Balsam • Beans • Chillies • Cotton • Cucumber • Dandelion • Corn • Potato • Tobacco • Tomato • Rhododendrons

PROGRAMMING THE DIGITAL WALL TIMER

Before installing the timer, read the Use and Care Guide included with the wall timer. The guide will give you detailed instructions on how to install and program your timer. You can skip this section if you rather follow instructions or if you are using a different wall timer. We provided the instructions below to help simplify the setup and as a reference for the future. Below is the method we used to set up the timer for the first time (adapted from the Use and Care Guide) and two methods of programming the timer. Method 1 matches the sunrise and sunset of your location and automatically changes throughout the year. Method two is used to set an exact on/off time that does not change.

Setting up the timer for the first time.

1. Follow the instructions for installing the timer.
2. Press the reset button to clear any information.
3. Press the set button.
4. Use the up/down buttons to set the time. Press the set button.
5. Use the up/down buttons to set the year. Press the set button.
6. Use the up/down buttons to set the month. Press the set button.
7. Use the up/down buttons to set the day. Press the set button.
8. Use the up/down buttons to turn on/off DST (Daylight Savings Time). If you leave DST on, the timer will automatically adjust the clock for you. Press the set button.
9. Use the up/down buttons to set the zone. Press the set button.



10. Use the up/down buttons to set the dusk time. Press the set button.
11. Use the up/down buttons to set the dawn time. Press the set button.
12. Press the set button to complete the setup and return to clock mode.

Method 1: Matching the sunrise and sunset of your location.

1. Press program (prg) to set the ON time. (PRG 1 ON)
2. Press the set button. This makes the days of the week flash along the top. No changes are needed, we recommend the default of everyday.
3. Press the set button. This allows you to pick the ON time. Use the down button and set the timer to DAWN.
4. Press the set button.
5. Press program (prg) to set the OFF time. (PRG 1 OFF)
6. Press the set button. This makes the days of the week flash along the top. No changes are needed, we recommend the default of everyday.
7. Press the set button. This allows you to pick the OFF time. Use the up/down buttons to select DUSK.
8. Press the set button.
9. Press and hold the program (prg) button for 3 seconds or press nothing for 20 seconds to return to the main screen.

Method 2: Programming an ON/OFF time.

1. Press program (prg) to set the ON time. (PRG 1 ON)
2. Press the set button. This makes the days of the week flash along the top. No changes are needed, we recommend the default of everyday.
3. Press the set button. This allows you to pick the ON time. TIME should be displayed, if not, use the up/down buttons to find the clock setting.
4. Press the set button. This allows you to change the time. Use the up/down buttons to set the ON time. Press the set button.
5. Press program (prg) to set the OFF time. (PRG 1 OFF)
6. Press the set button. This makes the days of the week flash along the top. No changes are needed, we recommend the default of everyday.
7. Press the set button. This allows you to pick the OFF time. TIME should be displayed, if not, use the up/down buttons to find the clock setting.
8. Press the set button. This allows you to change the time. Use the up/down buttons to set the OFF time. Press the set button.
9. Press and hold the program (prg) button for 3 seconds or press nothing for 20 seconds to return to the main screen.

SETTING THE ANALOG OUTLET TIMER

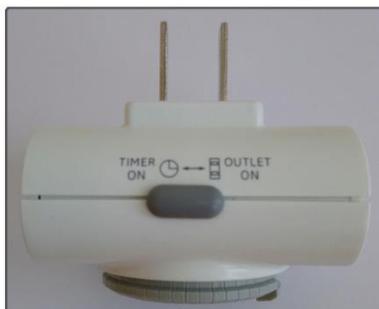
The use of an outlet timer is essential for maintaining proper growth of your plants. Never leave your light on for 24 hours, your plants need to sleep!

Setting the timer:

1. Locate the pins around the outer edge of the timer's dial. These pins represent 30 minutes.
2. Determine the light cycle that best fits your plant. This can be done by asking your nursery, finding the information online, or by finding out where the plant is native and mimicking the light cycle of that location. If you cannot determine the light cycle, we recommend either mimicking the current sunrise/sunset of your location or keeping a 16 hour on/8 hour off cycle. Adjust as needed.
3. Pull up on the pins to turn the light off, push down to turn the light on. We recommended having the light on during the times you are awake. This will help prevent night interruption.
4. Rotate the timer's dial clockwise until the pointer on the face of the dial points to the current time.
5. Set the master switch on the timer to the "timer on" position.
6. Plug the Highland into the outlet on the side of the timer. Plug the timer into the wall outlet. To override the timer and turn on the Highland, set the master switch to "outlet on" position.



This timer is set to turn on at 7 am and turn off at 10 pm. The current time is set for 8 am.



This switch controls the timer. When switched to outlet on, it will bypass the timer function.

ADJUSTING THE LIGHT OUTPUT

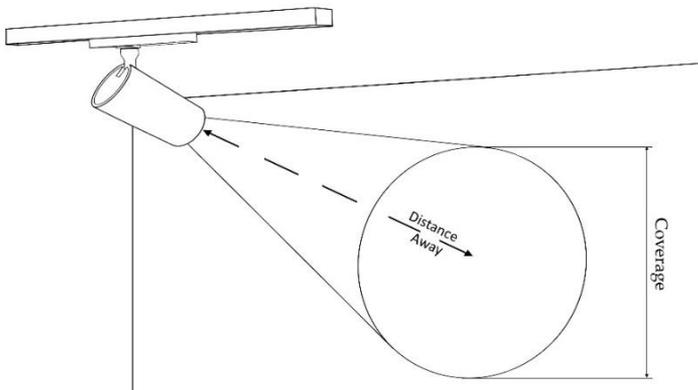
FOR PROFESSIONAL USE ONLY

The Highland power supply was designed to be adjustable from 30 watts down to 24 watts. By default, the Highland is set on the most powerful setting. While we highly recommend keeping the setting at the maximum, there are many situations where lowering the amount of power is necessary. Below are the steps on how to adjust the power output on the Highland.

1. Remove the Highland from the track rail.
2. Locate and remove the two screws on the power supply cover.
3. Remove the power supply cover by pressing in on the flap.
4. Locate the DIP switches. By default, both will be up or ON.
5. Turn off the switches to lower the power. A DIP switch table is provided on the fixture.
6. Replace the cover and screws; reinstall the Highland.

DETERMINING THE DISTANCE AND COVERAGE

Highlands are made with either a wide reflector for plants near the light, or a narrow reflector for plants further away. The following pages provided the recommended distance, coverage, and plant light requirements for a single Highland. To increase the amount of light, for example low light to moderate light, point two Highland fixtures at the same location.



Narrow Reflector				
Distance Away		Plant Light Requirements	Light Coverage	
Inches	Meters		Inches	Centimeters
12	0.30	Not Recommended	-	-
18	0.46	Not Recommended	-	-
24	0.61	Full Sun	13	33
30	0.76	Full Sun	16	41
36	0.91	High Light	19	48
42	1.07	High Light	22	56
48	1.22	Moderate Light	26	66
54	1.37	Moderate Light	29	74
60	1.52	Low Light	32	81
66	1.68	Low Light	35	89
72	1.83	Low Light	38	97
78	1.98	Low Light	42	107
84	2.13	Low Light	45	114
90	2.29	Low Light	48	122
96	2.44	Low Light	51	130
102	2.59	Very Low Light	55	140
108	2.74	Very Low Light	58	147
114	2.90	Very Low Light	61	155
120	3.05	Very Low Light	64	163

Wide Reflector				
Distance Away		Plant Light Requirements	Light Coverage	
Inches	Meters		Inches	Centimeters
12	0.30	Full Sun	10	25
18	0.46	Full Sun	15	38
24	0.61	High Light	20	51
30	0.76	High Light	26	66
36	0.91	Moderate Light	31	79
42	1.07	Moderate Light	36	91
48	1.22	Moderate Light	41	104
54	1.37	Low Light	46	117
60	1.52	Low Light	52	132
66	1.68	Low Light	57	145
72	1.83	Low Light	62	157
78	1.98	Very Low Light	67	170
84	2.13	Very Low Light	72	183
90	2.29	Very Low Light	78	198

Common Name	Lighting Requirements	Narrow	Wide
African Violets	Moderate to Low Light	48" - 96"	36" - 72"
Aglaonemas	Moderate to Low Light	48" - 96"	36" - 72"
Aloe	High Light	36" - 42"	24" - 30"
Aluminum Plant	Moderate to Low Light	48" - 96"	36" - 72"
Amaryllis	High Light	36" - 42"	24" - 30"
Anthurium	Moderate Light	48" - 66"	36" - 48"
Aralia, Balfour	High Light	36" - 42"	24" - 30"
Aralia, False	High to Moderate Light	36" - 66"	24" - 48"
Aralia, Ming	High to Moderate Light	36" - 66"	24" - 48"
Arrowhead Vine	Moderate Light	48" - 66"	36" - 48"
Azalea	High Light	36" - 42"	24" - 30"
Begonia, Angel Wing	Moderate Light	48" - 66"	36" - 48"
Begonia, Iron Cross	Moderate Light	48" - 66"	36" - 48"
Begonia, Strawberry	Moderate Light	48" - 66"	36" - 48"
Bird-of-Paradise	High to Moderate Light	36" - 66"	24" - 48"
Bomeliad, Earth Star	Moderate Light	48" - 66"	36" - 48"
Bougainvilla	High Light	36" - 42"	24" - 30"
Brake, Victoria	High Light	36" - 42"	24" - 30"
Bromeliad, Air Plant	High Light	36" - 42"	24" - 30"
Bromeliad, Bird Nest	Moderate to Low Light	48" - 96"	36" - 72"
Bromeliad, Blushing	Moderate Light	48" - 66"	36" - 48"
Bromeliad, Dyckia	High Light	36" - 42"	24" - 30"
Bromeliad, Flaming Sword	Moderate to Low Light	48" - 96"	36" - 72"
Bromeliad, Friendship	Moderate Light	48" - 66"	36" - 48"
Bromeliad, Pineapple	High Light	36" - 42"	24" - 30"
Bromeliad, Star	Moderate to Low Light	48" - 96"	36" - 72"
Bromeliad, Living Vase	Moderate Light	48" - 66"	36" - 48"
Burro's (Donkey's) Tail	High Light	36" - 42"	24" - 30"
Cactus, Christmas	Moderate Light	48" - 66"	36" - 48"
Cactus, Easter	Moderate Light	48" - 66"	36" - 48"
Cactus, Old Man	High Light	36" - 42"	24" - 30"

Common Name	Lighting Requirements	Narrow	Wide
Cactus, Prickly Pear	High Light	36" - 42"	24" - 30"
Cactus, Thanksgiving	Moderate Light	48" - 66"	36" - 48"
Calathea	Moderate Light	48" - 66"	36" - 48"
Cast Iron Plant	Moderate to Low Light	48" - 96"	36" - 72"
Century Plant	High Light	36" - 42"	24" - 30"
Chenille Plant	High Light	36" - 42"	24" - 30"
Chinese Evergreens	Moderate to Low Light	48" - 96"	36" - 72"
Citrus	High Light	36" - 42"	24" - 30"
Coffee Plant	High to Moderate Light	36" - 66"	24" - 48"
Coralberry	Moderate Light	48" - 66"	36" - 48"
Croton	High Light	36" - 42"	24" - 30"
Crown of Thorns	High to Moderate Light	36" - 66"	24" - 48"
Cyclamen	High to Moderate Light	36" - 66"	24" - 48"
Dracaena, Corn Plant	Moderate to Low Light	48" - 96"	36" - 72"
Dracaena, Dragon Tree	High to Moderate Light	36" - 66"	24" - 48"
Dracaena, Gold Dust	High to Moderate Light	36" - 66"	24" - 48"
Dracaena, 'Janet Craig'	Moderate to Low Light	42" - 72"	36" - 54"
Dracaena, Red Margined	Moderate Light	48" - 66"	36" - 48"
Dracaena, Song of India	Moderate Light	48" - 66"	36" - 48"
Dracaena, 'Tri-color'	Moderate Light	48" - 66"	36" - 48"
Dumbcane	Moderate Light	48" - 66"	36" - 48"
Elephant's Ear	Moderate Light	48" - 66"	36" - 48"
Fern, Asparagus	Moderate Light	48" - 66"	36" - 48"
Fern, Bird's Nest	Moderate to Low Light	48" - 96"	36" - 72"
Fern, Button	High to Moderate Light	36" - 66"	24" - 48"
Fern, Rabbit's Foot	High to Moderate Light	36" - 66"	24" - 48"
Fern, Staghorn	Moderate Light	48" - 66"	36" - 48"
Ferns (Sword, Dallas, Boston)	High to Moderate Light	36" - 66"	24" - 48"
Ferns, Maidenhair	Moderate Light	48" - 66"	36" - 48"
Fig, Creeping	Moderate Light	48" - 66"	36" - 48"
Fig, Fiddleleaf	Moderate Light	48" - 66"	36" - 48"

Common Name	Lighting Requirements	Narrow	Wide
Fig, Weeping	Moderate Light	48" - 66"	36" - 48"
Fuchsia	Moderate Light	48" - 66"	36" - 48"
Gardenia	High to Moderate Light	36" - 66"	24" - 48"
Gloxinia	High Light	36" - 42"	24" - 30"
Goldfish Plant	High Light	36" - 42"	24" - 30"
Hawaiian Ti Plant	Moderate Light	48" - 66"	36" - 48"
Haworthia	Moderate Light	48" - 66"	36" - 48"
Hibiscus	High to Moderate Light	36" - 66"	24" - 48"
Hoya / Wax Plant	High Light	36" - 42"	24" - 30"
Indian Rubber Plant	High Light	36" - 42"	24" - 30"
Ivy, Algerian	High to Moderate Light	36" - 66"	24" - 48"
Ivy, Aralia (Fatshedra)	High to Moderate Light	36" - 66"	24" - 48"
Ivy, English	High to Moderate Light	36" - 66"	24" - 48"
Ivy, Grape	Moderate Light	48" - 66"	36" - 48"
Ivy, Parlor	Moderate Light	48" - 66"	36" - 48"
Ivy, Swedish	Moderate Light	48" - 66"	36" - 48"
Ivy, Variegated Mintleaf	Moderate Light	48" - 66"	36" - 48"
Ivy, Wax	Moderate Light	48" - 66"	36" - 48"
Jade Plant	High to Moderate Light	36" - 66"	24" - 48"
Kalanchoe	High Light	36" - 42"	24" - 30"
Lantana	High Light	36" - 42"	24" - 30"
Lipstick Plant	High Light	36" - 42"	24" - 30"
Natal Plum	High Light	36" - 42"	24" - 30"
Nerve Plant	Moderate to Low Light	48" - 96"	36" - 72"
Norfolk Island Pine	Moderate Light	48" - 66"	36" - 48"
Orchid, Buttonhole	High Light	36" - 42"	24" - 30"
Orchid, Cattleya	High Light	36" - 42"	24" - 30"
Orchid, Dendrobium	High to Moderate Light	36" - 66"	24" - 48"
Orchid, Lady's Slipper	Moderate Light	48" - 66"	36" - 48"
Orchid, Moon/Vanda	Moderate Light	48" - 66"	36" - 48"
Orchid, Oncidium	Moderate Light	48" - 66"	36" - 48"
Orchid, Phalanopsis	High to Moderate Light	36" - 66"	24" - 48"

Common Name	Lighting Requirements	Narrow	Wide
Palm, Fan	High to Moderate Light	36" - 66"	24" - 48"
Palm, Parlor	Moderate to Low Light	48" - 96"	36" - 72"
Palm, Sago	Moderate Light	48" - 66"	36" - 48"
Panda Plant	High Light	36" - 42"	24" - 30"
Peace Lily	Moderate to Low Light	48" - 96"	36" - 72"
Peperomia	Moderate Light	48" - 66"	36" - 48"
Philodendron	Moderate to Low Light	48" - 96"	36" - 72"
Philodendron, Split Leaf (Monstera)	Moderate to Low Light	48" - 96"	36" - 72"
Piggyback Plant	High Light	36" - 42"	24" - 30"
Pitcher Plant	High Light	36" - 42"	24" - 30"
Poinsettia	High Light	36" - 42"	24" - 30"
Polka Dot Plant	High to Moderate Light	36" - 66"	24" - 48"
Ponytail Plant	High to Moderate Light	36" - 66"	24" - 48"
Pothos	High to Moderate Light	36" - 66"	24" - 48"
Prayer Plant	Moderate Light	48" - 66"	36" - 48"
Primrose	Moderate Light	48" - 66"	36" - 48"
Primrose, Cape	High Light	36" - 42"	24" - 30"
Purple Passion (Velvet)	High Light	36" - 42"	24" - 30"
Purple Waffle Plant	Moderate to Low Light	48" - 96"	36" - 72"
Rosary Vine	High Light	36" - 42"	24" - 30"
Schefflera (Umbrella)	High to Moderate Light	36" - 66"	24" - 48"
Shamrock Plant	High to Moderate Light	36" - 66"	24" - 48"
Shrimp Plant	High Light	36" - 42"	24" - 30"
Snake Plant	Moderate to Low Light	48" - 96"	36" - 72"
Spiderplant	Moderate Light	48" - 66"	36" - 48"
String-of-Pearls	High Light	36" - 42"	24" - 30"
Tahitian Bridal Veil	High to Moderate Light	36" - 66"	24" - 48"
Tradescantia zebrina	High to Moderate Light	36" - 66"	24" - 48"
Venus Fly Trap	High Light	36" - 42"	24" - 30"
Yucca	High to Moderate Light	36" - 66"	24" - 48"
Zebra Plant	Moderate Light	48" - 66"	36" - 48"

INDOOR GROWING GUIDE

Plants should not be an overlooked element in creating a warm and inviting room; a perfectly placed plant can bring the entire room to life! For beginner gardeners, or even those with a year or two under their belts, the world of garden tools, materials, and supplies can be overwhelming. We provided this guide to help you decide what essentials you need to get started.

Lighting:

Lighting is the most important first step for your plants! This manual will help you determine the appropriate distance, light cycles and more. You can tell if your plant is not receiving enough light if it stops growing, the spaces between the leaves on new growth are much longer than before, the new leaves are smaller, the leaf color is lighter, or older leaves are dead.

It is important that light covers the entire plant, including the sides of the plant. Larger plants may require two or more Highlands to provide adequate light intensity. If you have questions, you can contact Soltech Solutions and we would be glad to assist you.

Temperature:

Temperature is a major factor influencing plant growth indoors. Before picking out your plants, consider the optimal temperature the plant needs. While many plants grow at temperatures around 60°F – 85°F (15°C – 29°C), some tropical plants grow best at temperatures exceeding 85°F. Be careful not to place plants near AC vents or heaters, the change in temperature may kill them.

Humidity:

Some indoor plants need high humidity and excellent air circulation for optimal growth. Humidity below 20% is considered low, up to 50% is medium, and above 50% is high. Many plants come from tropical regions and require high humidity. Since most homes have low humidity levels, you can do a few things to increase humidity.

- Place plants close together. Plants naturally humidify the air around them.
- Set your plants on a tray of pebbles filled with water.
- Use a humidifier.

Take caution when misting plants, especially if your plant has hairy leaves. Your plant may be more susceptible to disease and mildew. You may want to consider adding a fan to increase air circulation.

Pots & Containers:

To start your garden, you need the right type of container for your plant. The container should have drainage holes; water should be able to drain out. Plants cannot sit in waterlogged soil or they will die.

Watering:

Often overlooked, watering your plants properly is important. When dealing with how much water to apply, consider the plant type, plant size, container size, soil moisture and light intensity. For most plants, when deciding when you should water, feel the soil by pushing your finger about 1-2 inches below the dirt's surface. If the soil is still moist, do not water the plant. Overwatering can lead to root rot, mildew, and disease. Water meters are available at most greenhouses to simplify watering.

Soil:

Do not use topsoil or soil from your garden! We recommend that you find a high quality, pre-mixed soil at your local garden stores that was designed for container gardening. Topsoil and garden soil have very poor drainage abilities and you may introduce unwanted pests in your home. If you find your soil does not drain well, you can add perlite, coarse sand, or peat moss to increase drainage. Different plants grow better in different soil, make sure you know which soil you plant needs before planting.

Buying New Plants:

Buying new plants is always fun, but make sure to look for healthy looking plants with medium to dark green foliage. Avoid plants with unnatural yellow or brown leaves. Look for pest, especially small white mites on the undersides of the leaves. Remove the plant from the pot and examine the root system. Healthy roots generally are visible along the outside of the soil and have an earthy smell. Brown or black roots, especially if they have a foul smell, are signs of a problem.

Acclimatization:

Acclimatization is the adaptation of a plant to a new environment. Changing the environment the plant is accustomed to will stress the plant and may cause damage, prevent growth, or even kill the plant. The greater the difference between the previous environment and the new environment, the greater the stress the plant endures.

Pruning:

Pruning your plant is a great way to encourage dense growth while maintaining an optimal size and shape. Plants concentrate growing on the top and outer parts; pruning these growth areas regularly will encourage growth closer to the inner parts of the plant. Although not all houseplants need pruning, most will benefit from some attention, even if it's simply removing dead leaves or diseased or damaged stems.

Pest Management:

Like all plants, indoor plants will occasionally come under attack from pests. If you notice a plant dropping leaves or otherwise looking ill, take a close look. Chances are, it is infected with unwanted pests. If not quickly treated, infestations can be very severe, spread quickly and kill your plants.

Some of the most commonly encountered arthropod pests found on plants are those that feed on plant juices. These pests include aphids, scales, mites, leafhoppers and plant bugs. Some of these pests can even act as vectors of plant diseases.

To remove the infestation, we recommend diluted organic Neem Oil or Mighty Wash. Both can be bought in stores or online. You should first test these in a small area before using them on the plant. Some plants are sensitive to the sprays and you could kill them. You can also treat the plants by wiping leaves and stems with insecticidal soap. Heavy infestations may be too difficult to treat, consider discarding these plants.

Fungus Gnats:

These gnats are a common pest of plants grown indoors, especially where humidity and moisture are high. You normally notice one or two gnats flying around your plants or near windows and you think nothing about it. Before you know it, they lay eggs in the wet soil and multiply.

To rid your plant and home of fungus gnats, you need to let your plant soil dry out between watering. Fungus gnats do well in damp soil, allowing your soil to dry out an inch or two down will kill larvae and inhibit egg development. We found that yellow sticky paper is the best method of killing flying adults. For plants that can tolerate neem oil, we recommend adding a small amount of Neem oil when you water your plants. Neem Oil will help kill eggs and larvae deep down in the soil. It may take over a month to fully rid our home of Fungus Gnats.

HIGHLAND TROUBLESHOOTING

Problem: Plants are turning colors or dying

- Possible cause #1: Check the plant for bugs.
- Possible cause #2: Check the soil quality. Never use garden soil.
- Possible cause #3: Check if the container has a drain hole. If the container does not have a drain hole, check if the roots are rotten before repotting.
- Possible cause #4: Check if the soil is still wet. Make sure the soil is dry between watering. Check the roots.
- Possible cause #5: Check for air drafts or temperature changes.
- Possible cause #6: Check humidity levels, tropical plants may require high humidity.
- Possible cause #7: Did you fertilize lately? Fertilize!
- Possible cause #8: If possible, adjust the distance of the Highland or adjust the power setting. If more light is needed, a 2nd Highland may be required.

Problem: The Highland is flickering, flashing or not producing light

- Possible cause #1: Check to make sure the Highland is installed correctly. You should not see any gaps between the rail and the base of the Highland.
- Possible cause #2: Check to make sure the contact arm was fully engaged. You should be able to completely swing the arm from left to right and you will hear a click when the arm engages. If you notice the rail budge or you meet resistance, you may have installed the Highland in the wrong direction or with an incompatible rail.
- Possible cause #3: Incorrect voltage or no voltage at rail. Do not use dimmers and check to make sure the switch or wall timer has power and is working.

Problem: The Highland is humming

- Possible cause #1: Incorrect voltage. Do not use a dimmer switch.
- Possible cause #2: Check to make sure the Highland is correctly installed.

SPECIFICATIONS

Power Consumption.....	30 Watts	Luminous Flux.....	2000 Lumens
Voltage.....	120-240 V	CRI.....	97
Power Factor.....	0.992	PPF (400-700nm).....	32 $\mu\text{mol}/\text{sec}$
Current THD.....	7-10%	PPF Efficacy.....	1.1 $\mu\text{mol}/\text{J}$
Warranty.....	5 Years	Red:Blue Flux Ratio.....	6:1
Lifespan.....	50,000hrs	Color Temperature.....	3000 Kelvin

PRODUCT WARRANTY AND RETURN POLICY

What Is Covered

The Highland is warranted against defects in materials and/or workmanship for a period of three (3) years from the original date of purchase. During the warranty period, Soltech Solutions LLC will either repair or replace any covered, defective product. Within the first 90 days, Soltech Solutions LLC will incur all costs associated with the repair, or replacement, and return of the defective product. After 90 days, the customer will assume responsibility of shipping the defective product back to Soltech Solutions LLC for the remainder of the warranty period. Soltech Solutions will, in turn, assume responsibility for the shipping fees associated with returning the repaired or replaced product back to the purchaser.

What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Soltech Solutions LLC to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product.

How to Obtain Warranty Service

In order to enforce the rights under this warranty, you need to provide **proof of purchase** for your product. This allows us to verify the product is authentic. If you do not have this information, please contact us. In many cases, we may have this information available and can assist with the warranty claim. We may not be able to provide you with warranty coverage if neither party can find the proof of purchase information.

To start a claim, notify Soltech Solutions LLC by contacting a representative at hello@soltechsolutions.com. A Soltech Solutions LLC representative will either attempt to assist in troubleshooting, request photos showing the defect, or provide detailed return instructions. Upon receipt and review of the defective product, Soltech Solutions LLC will repair or replace, and return within twenty (20) business days.

CONTACT US

If you have any issues, comments or questions, feel free to contact us using any method below:

Live Chat: [Soltechsolutions.com](https://www.soltechsolutions.com)

By Email: hello@soltechsolutions.com

By Phone: 484-821-1001

By Mail: Soltech Solutions LLC

520 Evans Street, Suite 3

Bethlehem, PA 18015

LEGAL DISCLAIMER

Soltech Solutions developed the Highland for both interior design and with the intention of creating an ideal growing environment for plants, vegetables, fruits and herbs. These products are to be used for lawful purposes only. It is the responsibility of you as the purchaser to know and abide by all laws pertaining to the use of your new Highland grow light.

Soltech Solutions will not be held liable for any unlawful state or federal activity arising out of the use of our products. By purchasing the Highland, you are agreeing to the terms & conditions, confirming that you as the purchaser are attesting to the lawful use of our product and are thereby solely responsible for acting in conformance with all applicable regulations.