

Some Precautions

- Do not touch your fixture when it is plugged in.
 - Always unplug the ballast from the outlet and allow to cool when moving or replacing parts on your light.
 - Never pull the cord to unplug the system. Pull the plug only.
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- Do not try and move the ballast by pulling the cord — use the handle.
 - Do not run a bulb beyond recommended replacement schedule — see Bulb Replacement.
 - Do not look directly into the bulb during startup or operation.
 - Avoid scratching your bulb, subjecting it to undue pressure, or getting it wet when it is hot, as any of these could cause it to break.
 - We recommend a lens for all Hydrofarm light systems in areas where water is being used.
 - In the event of bulb breakage, shut off power immediately to prevent exposure to ultraviolet energy, which may be harmful to eyes and skin.
 - Protect the bulb from moisture. Do not mist the plants while your system is powered on.
 - Always make sure there is adequate air circulation (use a fan) in your growing area. Keep the room temperature below 95°F.
 - If your growing area is extremely warm or if you need to increase air circulation, fan options are available for your light. Check with your Hydrofarm dealer for more information.
 - Your plants should be far enough away from the bulb to prevent heat damage. If the leaves wilt or show other signs of burn damage, the light is too close. Usually about 2 to 3 feet is right for a 1000-watt light. Less distance is allowable for lower wattages, or if air cooling the reflector(s).
 - Use caution when moving your plants from lower light situations (windows or fluorescents) to a high intensity halide or sodium. They can get sunburned. Keep the light an extra foot away and wait for positive response until placing it closer to the canopy.
 - Always use a heavy duty three-prong grounded timer, rated for at least 15 amps. Many 7-day digital timers are not rated for 1000 watt lights.
 - Each ballast will operate only on a specific wattage and type of light— do not interchange it with any different wattage or other type of light. Interchange only between identical units with units unplugged.

TROUBLESHOOTING

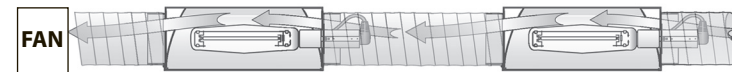
If your fixture does not work, try the following step-by-step procedures

- 1 Check your electrical source. Make sure the unit is plugged in properly and that the breaker is not tripped or the fuse blown. (The ballast should hum slightly if it's receiving electricity.)
- 2 Check your grounded timer — plug the unit directly into your outlet.
- 3 Unplug the unit and make sure the lamp is screwed in all the way.
- 4 If you have another working identical unit, unplug it and interchange bulbs to identify the faulty part.
- 5 Make sure you have given the unit plenty of time to cool down before restarting (15-30 minutes).

Fan Options

Recirculating or exhausting air is the best way to control temperatures in growing environments. In hot areas, fan options can exhaust air from the fixture via aluminum ducting (item number ACDC_25). In colder climates, warm air from the fixture can be recirculated for heating. Hydrofarm recommends a minimum of 400 CFM to effectively air-cool these in-line reflectors.

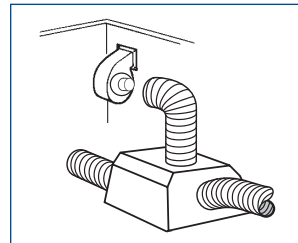
DAYSTAR AC™, RADIANT 6" & 8" AC™, GROWZILLA™, XTRASUN 6" & 8" AC™ — Cooling Suggestions



Fan not included

Reflector and Fan Flanges for Remote Fan Mounting

For really powerful air movement, you can attach one of our vent fans to the Daystar, Radiant, or Sunburst fixture to intake and exhaust through several ports. You can also block off unused ports with an available vent cover. Visit hydrofarm.com for available



THE HYDROFARM GUARANTEE

All our fixtures are guaranteed to the original owner for one year from the date of purchase. Ballast electrical components (transformer, capacitor, starter) come with an eight year repair or replacement warranty (GLX and GLS units, three year warranty), unless otherwise specified. Misuse, abuse, or failure to follow instructions are not covered. If you have a problem, check your system and timer to isolate the problem. If this doesn't remedy the situation, call the place of purchase to get a return authorization for the faulty part. Send only that part. Unauthorized returns will not be accepted. Save your receipt/invoice — a copy is required for all warranty work.



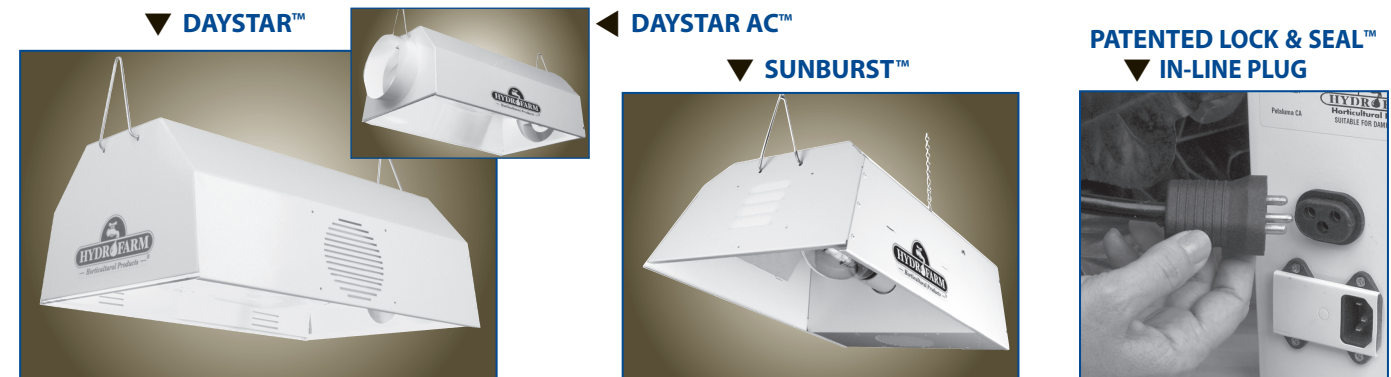
LIGHT SYSTEM

INFORMATION and OPERATING INSTRUCTIONS

Congratulations on your purchase of a Hydrofarm grow light!

With proper use and care according to these guidelines, you should get excellent results for years to come.

A lens is required for CSA listing and recommended for all systems. It will keep your bulb and reflector cleaner and more efficient. If you don't have a lens please consider getting one!



WARNING! FAILURE TO FOLLOW OUR GUIDELINES COULD RESULT IN ELECTRICAL SHOCK

Do not touch, move, spray or clean your light fixture when it is plugged in. Allow it to cool down before handling. Recommended mounting clearance for your fixture is 8"-12" on all sides. Do not mount directly to any surface.

Dual Voltage Ballast

The Powerhouse Ballast comes equipped with a dual voltage receptacle arrangement which allows the simple change between using 120 volt input or 240 volt input power. Each system comes standard with the 120 volt power cord and if you want to change to 240 volt input, you will need to purchase the 240 volt power cord (part #BACD6) from your local retailer.

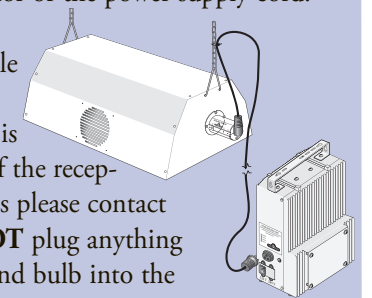
Ballasts also available as Convertibles!

With a convertible ballast you can use both halide and sodium bulbs. All with the same system!



Hydrofarm convertible ballasts feature engineered transformers made to the exacting American National Standards Institute specifications. They are designed to drive either halide or sodium bulbs properly with separate wire leads. They are marked according to UL standards for use with either bulb. We pair this engineered unit with our heavy duty multi-pole switch the ultimate in transitional ease, safety, and reliability.

You have received our exclusive "Lock & Seal" inline connector between the ballast and reflector. Follow all the reflector assembly instructions and install the bulb into the socket before plugging in the connector or the power supply cord. Simply plug the end from the lamp cord set into the receptacle on the ballast enclosure. Firmly push in on it so that it is seated all the way to the base of the receptacle. If you have any questions please contact the place of purchase. **DO NOT** plug anything except the designated fixture and bulb into the proper ballast enclosure.



Check for shipping damage

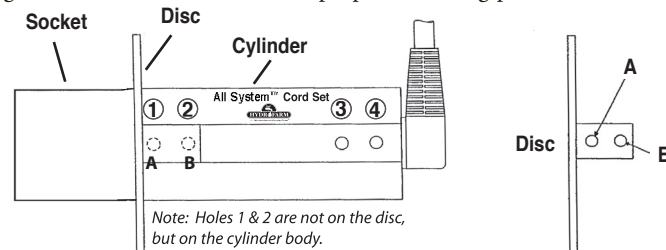
Upon delivery of your equipment, note any dented, deformed, or opened boxes to the delivery company. If any part of your order is broken or damaged, immediately notify your retailer.

NOTE: *Small pieces of glass or metal inside your bulb are not a sign of trouble. This is common with high intensity bulbs. Don't be concerned unless the bulb does not work.*

Setting your All System™ Cord Set *

* All System Cord Set not included with Sunburst light systems or attached cord systems.

The All System Cord Set is designed to position the bulb in the center of your reflector for optimum performance. Please follow the guidelines below to achieve the proper mounting position.



- 1 Identify your reflector and bulb type using the charts below.
- 2 Slide disc to the proper cylinder location for your reflector bulb combination, making sure that you have lined up the proper disc hole (A or B) with the correct cylinder hole (1, 2, 3 or 4).
- 3 Insert provided screws into the proper disc hole (A or B) and thread screw into correct cylinder hole (1, 2, 3, or 4). Tighten with screwdriver until snug.
- 4 Insert socket assembly into reflector or bracket hole (Pro) and fasten with the 10/24 screws that are provided in the hanger hardware kit.

DAYSTAR REFLECTOR / GLX REFLECTOR

Bulb Type	Cylinder Hole	Disc Hole
Halide 400W / 1000W — BT37	2	B
Sodium 1000W	1	B
Halide 1000W	1	B
Sodium 600W	2	A
Sodium 430W	2	A
Sodium 400W	2	B
Son Agro 430W	2	A

RADIANT REFLECTOR / GROWZILLA

Bulb Type	Cylinder Hole	Disc Hole
Halide 400W / 1000W — BT37	3	B
Sodium 1000W	1	A
Halide 1000W	1	A
Sodium 600W	3	B
Sodium 430W	3	B
Sodium 400W	3	A
Son Agro 430W	4	B

PRO REFLECTOR / BRACKET

Bulb Type	Cylinder Hole	Disc Hole
Halide 400W / 1000W — BT37	4	B
Sodium 1000W	2	A
Halide 1000W	2	A
Sodium 600W	3	B
Sodium 430W	3	A
Sodium 400W	3	A
Son Agro 430W	4	B

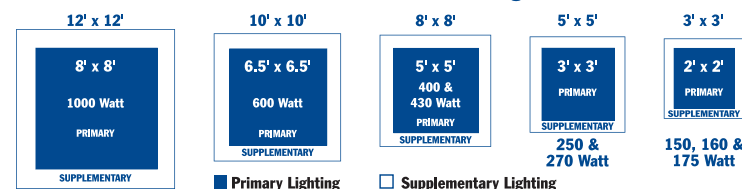
XTRASUN AIR COOLABLE REFLECTOR

Bulb Type	Cylinder Hole	Disc Hole
Halide 400W / 1000W — BT37	2	B
Sodium 1000W	1	B
Halide 1000W	1	B
Sodium 600W	2	A
Sodium 430W	2	A
Sodium 400W	2	B
Son Agro 430W	2	A

XTRASUN ALUMINUM WING REFLECTOR

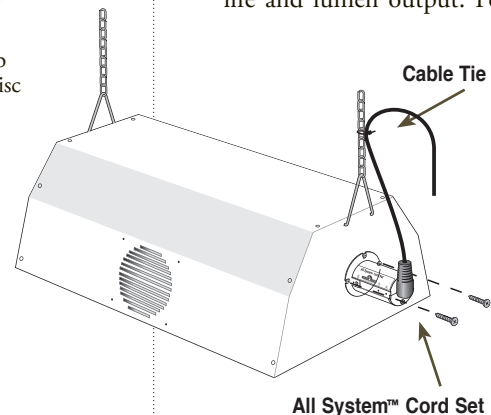
Bulb Type	Cylinder Hole	Disc Hole
Halide 400W / 1000W — BT37	2	A
Sodium 1000W	1	B
Halide 1000W	1	B
Sodium 600W	2	A
Sodium 430W	3	B
Sodium 400W	3	B
Son Agro 430W	3	B

HORIZONTAL FIXTURES Recommended Area Coverages

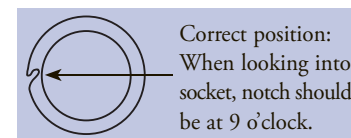


Hanging your Fixture

- 1 Make sure your unit is unplugged.
- 2 Spread hangers and insert into the two holes on top of the fixture. The open ends of the hooks face into the fixture.
- 3 The fixture cord should point upwards. (See illustration below.)
- 4 If you have received a bulb that is designed to be operated in a horizontal position only (high output halide bulbs only — small tab on side of screw base), your socket must be a special yellow, position-oriented one that holds the arc tube correctly for horizontal operation. Operation in any other orientation will cause substantial reduction in bulb life and lumen output. Position-oriented bulbs are the high

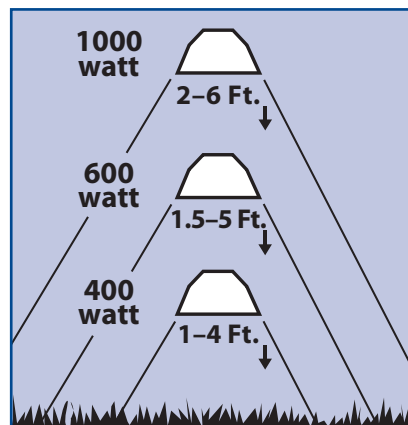


output halide bulbs. Sodium and standard halide bulbs operate in any socket or position.



- 5 Hang the fixture from a strong cord or chain from both ends. Make sure you have hooks screwed solidly into the studs in the ceiling. If you cannot locate the studs, insert expansion anchors into the ceiling. The hooks should be rated to hold at least 50 lbs. each.
- 6 Use the cable tie provided to secure the electrical cord to the hanging chain so that it doesn't tilt the fixture.
- 7 Route the electrical cord up and away from the light to another hook (not provided) and down the wall to the ballast.
- 8 Making sure the unit is still unplugged, screw the bulb in carefully so it is firm but not too tight. Clean bulb off with window cleaner (with system off) to remove any finger marks. Make sure the ballast is sitting on a firm, dry surface. Never clean a hot or warm bulb. Allow 15-20 minutes for unit to cool after unplugging before attempting to clean the unit.

RECOMMENDED REFLECTOR MOUNTING HEIGHT ABOVE PLANTS

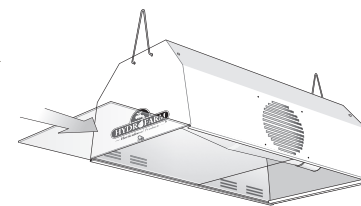


Optional Lens Instruction

If you have purchased an optional UL tempered glass lens, make sure it is properly in place at all times during fixture operation.

Attaching the Retention Tab

Use the Philips head screw provided to secure the lens tab to the outside of your reflector. Screw it in fully but allow the tab to swivel freely downward to retain the lens.



Rotate the tab upwards and carefully slide lens in from the end of the reflector. Rotate the tab down to retain the lens.

Operation

Bulb position: Operation in any other than recommended position may cause reduction of bulb life and lumen output.

Warm-up & Restart time: Once your unit is on, the bulb will require a few minutes to reach full brightness. Also, in the event of a momentary power interruption, the bulb will not restart immediately.

It May Require 10-30 Minutes Cooling Time Before Restarting

Note: Some variations in the color of the light emitted by your bulb are not unusual, especially during the first 100 hours of operation.

Unplug Fixture and Allow to Cool Before Touching or Moving

Electrical Usage: To figure how much amperage your unit is using, simply use the following formula: $Wattage \div Voltage = Amperage$. The average household circuit breaker is rated at 15 amps. If the total amperage drawn from that circuit approaches 15 amps, the circuit breaker will trip off. You probably have one or two circuits per room. If you have a 1000 watt unit running off a 120 volt circuit, it will draw approximately 9 amps. For the cost of electricity to run your grow light, we recommend that you check with your local power company, since the cost will vary depending on the geographical area. A 1000 watt light will probably cost 10¢ per hour to operate. Make sure your household circuits or fuses are in good condition and are rated at least 33% over what the load will be (e.g. no more than 15 amp load on a 20 amp circuit). Drawing too much current can overheat the wiring due to low voltage or insufficient amperage in that household circuit. Extension cords should not be used to extend the ballast to the wall; however lamp cord extensions are available to extend the length from the ballast to the bulb (item # CSXCORd)

Bulb Replacement

Always unplug your system and allow bulb to cool before handling the light bulb. Halide and sodium bulbs should be replaced after approximately 1 to 1½ years of continuous use (12 to 18 hrs/day). At this point light output and electrical efficiency have decreased to the point where replacement is necessary for optimum performance. Running a bulb beyond its expected life-time is not recommended due to potential bulb failure. In order to accurately measure bulb life we recommend using a Hydrofarm light meter (LG17000 or LG17010).

Hours of Light

There is a mechanism in plants which tracks time. This response is called photoperiodism. Plants respond to the length of light and darkness that they receive. Different plants may respond in different ways, such as rosette growth of lettuce versus bolting, bulb formation of onions versus leaf and stem formation, flowering of chrysanthemum, and so forth. The right mix of light and dark causes flower, fruit and seed production.

The following is a list of plants and their response to light. These are general guidelines and may not be exact.

Recommended Minimum Footcandles

PLANT	(Approximate)	PHOTOPERIOD
Azalea	1,000	Short Day
Chrysanthemums	2,000	Short Day
Cineraria	1,000	Long Day
Coffee	1,000	Day Neutral
Coleus	1,000	Long Day
Cucumbers	4,000	Day Neutral
Geranium	1,500	Short Day
Gloxinia	1,000	Long Day
Pepper (Sweet) Everbearing	2,000	Day Neutral
Saintpaulia	1,000	Long Day
Strawberries	2,000	Day Neutral
Sweet Pea	2,000	Day Neutral
Tomatoes	2,000	Day Neutral

Plants are classified in regard to photoperiodism as long day plants, short day, and day neutral plants. It is actually the length of darkness that initiates the response by the plant. Many texts will relate photoperiod as short night and long night plants. To avoid confusion we will use length of day as the criteria.

Long day plants are those that require a minimal dark period in order to flower. Plants that normally flower in late spring or summer are generally considered to be long day plants. Long day plants generally require at least 16 hours of light to trigger flowering. Plants in this category remain vegetative when days are short. The general recommendation for lighting of long day plants is to increase lights from approximately 12-14 up to 16-18 hours per day over the normal life cycle of the plant.

Short day plants usually require at least 12 hours of darkness to flower. Plants that normally flower in the short days of autumn or winter are generally known as short day plants. Plants on this schedule usually require 16-18 hours of light for the vegetative cycle and approximately 12 hours of light to initiate bloom cycle.

Day neutral plants do not respond to the length of light or dark periods. Most vegetables are day neutral. These plants may respond to other factors such as temperature or days to maturity. Generally plants in this category can be grown with 12-16 hours of light.

Plants with precise photoperiod requirements have what is referred to as a photocritical point. Disrupting the dark cycle with light, by turning on a lamp or allowing street light through a window, can cause plants to remain in the vegetative stage. Exact photoperiod has not been established for all plants. Consult your local nursery or garden book if you are unsure