

AFRICAN VIOLET/GESNERIAD - GROWER SETUP

INDUSTRIAL/COMMERCIAL WIRE SHELVES	
Installation	<ul style="list-style-type: none"> • Adjust shelves to preferred measurements • Easy to slide shelves over metal poles • Uses clips to seat shelves at preferred distances • Install wheels to allow for easier movement of shelves
Cost	<ul style="list-style-type: none"> • Approximately \$115-\$150 (Sam's Club is best option, approximately \$115) • Wheels (approximately \$20-\$30 for 1 set, 4 wheels) may not be included • Some units only have 5 shelves (Sam's Club unit is 6 shelves) • Wire component quality may vary depending upon supplier • Shelf dimensions may vary, depending upon manufacturer
Options/ Features	<ul style="list-style-type: none"> • Shelf units (racks) come in different dimensions • Usual dimension is 47.5" x 18" x 72" (best for 4" light options) • Some shelving comes with plastic shelf covers – great for covering spaces between wires; minimize light "bleed"
Benefits	<ul style="list-style-type: none"> • Available at most home improvement (Lowe's, Home Depot) or big box stores (WalMart, Sam's Club, Costco) • Adjustable shelves • Easy to install lighting options • Units with wheels are easier to move around • Easy to clean, maintain
Special Notations	<ul style="list-style-type: none"> • Purchase separate power strip with a minimum of 5 plugs (Harbor Freight, WalMart) for approximately \$30 – use for connecting lighting option power cords • Use zip ties to secure wiring to vertical metal poles • For single power source to turn all lights on rack • Verify shelf dimensions before purchase to insure compatibility as some manufacturers sell shelves that are < 1"-3" in width & may not be compatible with other shelves you might have or purchase in the future • Purchase from reputable supplier to insure best quality shelves • Shelf covers provide shade from lighting below shelves, offers more light consistency, intensity
Light Spacing	<ul style="list-style-type: none"> • Standards: 15" or > • Semis/Minis: 13" approximately • 5-shelf units: spacing is approximately 15" between shelves • 6-shelf units: spacing is approximately 13" between shelves



Sam's Club
Member's Mark 6-Tier NSF Steel
Wire Shelving
47.5" x 18" x 72"
Item # 773603
Model # 18496N
\$114.98

LED LIGHT STRIPS	
Installation	<ul style="list-style-type: none"> • 1 - Single chassis/LED light strip • 1 - Single End Cable • 2 - Double End Connectors • 2 - Metal Clips (used to hang under wire shelves) • 2 – Phillips-head Screws (use to install under solid shelf) • Requires 2 “S” hooks, optional chains (to hang lower) • Interchangeable/swappable plug (3-pin) - each end of light strip • Connects to electrical socket via regular plug • Connect to special power strip to protect lighting from power surges • Connect power strip to timer for automatic on/off cycles
Cost	<ul style="list-style-type: none"> • On Amazon, most are around \$7 - \$10 per strip • Can be purchased in “bundles” (e.g. packs of 10 strips perfect for lighting of single metal rack/stand) • Bundle costs vary – depends on total number of light strips sold • Free shipping for most if Amazon Prime subscribers
Options/Features	<ul style="list-style-type: none"> • Chassis: Aluminum housing for LED strip with plastic cover • Chassis available in T5 or T8 styles, depending upon vendor • Clear/Transparent or Milky White Light Cover/Canopy • Average 120° beam angle • LED strips now labeled using “Kelvin, or K” factors/ranges <ul style="list-style-type: none"> ✓ Warm (2700k - 3000k range) ✓ Cool/Neutral (3500k - 4500k range) ✓ Daylight (5000k - 6500k range) • Connect each shelf separately • Use single power switch for a single shelf • Connect to strips installed on shelves above/below to “daisy chain” to other lights • Use single power switch for multiple shelves • Daisy chain connections may require installation of large power strip with at least 5 power plugs • Some strips offer multiple color modes in a single strip (via toggle switch in power cord or on strip) • LED strips use uniform connections, so additional connectors or power cord/toggle switch connections can be purchased separately.
Benefits	<ul style="list-style-type: none"> • Instant start • Uses less energy, approximately 22W per strip • Generates less heat than fluorescent or other non-LED lighting options • Longer life span • Light is soft and uniform, safe to eyes • No flickering or humming • Green & eco-friendly without mercury • Low profile to bottom of shelf above plants • Easy to install, swap out, move around, space strips close or far apart, etc. • Easy access to hooks, wiring connectors • Sold in sets with all hardware, connections, wiring – ready to install, use • Connections, connectors, wiring are interchangeable between most vendor products • Easy to install different strips, color modes, etc. & control them for separate shelves in a single stand • For separate connections per shelf, can turn lighting OFF when shelf not in use, saves \$\$\$ • Very inexpensive option for LED lighting • LED diodes are either ON or OFF, no distortions in intensity if all diodes are working
Special Notations	<ul style="list-style-type: none"> • LED manufacturers shifting from “LUX” factor to “Kelvin or K” factor, making LED light choices much easier (great “handshake” with our old fluorescent terminology & technology) • Color mode options allow for “K” factor choices for LED light choices • Newer LED light strips now offer single toggle switch option for multiple color mode options (Warm White, Cool White, Daylight) in a single strip

Kelvin Temperature Chart

2700k	3000k	3500k	4500k	5000k	6500k
Warm White		Cool White/Neutral		Daylight	
<ul style="list-style-type: none"> Color range is more RED Plants requiring LESS light, cooler temps < 70° Streps, Optimara varieties, etc. May need to increase light hours on 		<ul style="list-style-type: none"> Color range more WHITE Plants requiring AVERAGE light, temps usually around 70° Good choice to start when introducing AVs to LED lighting Good lighting choice for show plants Good lighting choice for propagation Start with 8 hours, increase weekly by 1 hour Not recommended to exceed 12 light hours on 		<ul style="list-style-type: none"> Color range is more BLUE Light simulates sunlight intensity > 5000k AV foliage can get damaged Plants requiring MORE light, warmer temps > 70° Episcias, some sinningias Other plants that can be grown outside in sun <u>NOT</u> suggested or recommended for AVs 	

Select lighting that best fits your growing needs. For example, if growing out show plants, Cool White/Neutral lighting are good options

DISCLAIMER: *The LED lighting in this documentation is lighting that Glenda's House of Violets (GHV) has been testing over time, since 2018. Information in this document is not guaranteed to work in any conditions but is provided as documentation of results of years of testing in various conditions in our growing environment. Any information used is understood to be at your own risk. While we wish everyone to have positive results in your growing experience, there is always a risk when new techniques and technologies are used. We encourage everyone to thoroughly research any technique or technology to be sure you understand how it works and the best way to use it. We also recommend any implementation of new techniques or technologies be done on a limited basis, then implemented fully upon successful results.*

Links:

The following links to several products sold by Amazon are listed to provide you with information about several LED light strip vendors & products. It is possible some links may not work if products or vendor are no longer available via Amazon.

LED Light Strips:

Brand: AceLight. Milky Cover, 10-strip count; 3-color mode:

https://smile.amazon.com/gp/product/B081GKVH3V/ref=ppx_yo_dt_b_asin_title_o08_s00?ie=UTF8&th=1

Brand: AceLight. Clear Cover, 10-strip count; 3-color mode:

https://smile.amazon.com/gp/product/B081RFBXWW/ref=ppx_yo_dt_b_asin_title_o08_s00?ie=UTF8&th=1

Brand: Barrina. Clear Cover, 6-strip count; 4000k color mode:

https://smile.amazon.com/Barrina-Integrated-Fixture-Daylight-Electric/dp/B01MUKSZE3/ref=sr_1_11?crid=1TULI50Y5A47P&keywords=barrina+4+foot+led+shop+light&qid=1645910968&srefix=barrina+4+foot+led+shop+light%2Caps%2C162&sr=8-11

Note: Barrina sells multiple types of LED strips.

Other LED Light Options:

17" Under Counter LED Light, 3-color mode (3000k, 4000k, 6000k):

https://smile.amazon.com/gp/product/B07MGF279B/ref=ppx_yo_dt_b_asin_title_o01_s01?ie=UTF8&psc=1

Misc Options:

"S" Hooks:

<https://www.walmart.com/ip/Peerless-Chain-Black-Flower-Pot-S-Hook-4718938/55237707?athbdg=L1600>



Wire Shelf Installation

- Use "S" Hook & Metal Clips
- Connect pigtail or power cord
 - Adjust as needed
- Select Color Mode (if available option)

Connection Options

- Power Cord/Toggle Switch
- Metal Clips
- Pigtail Connector (connect strips)
- "S" Hooks





Unit/Rack Shelf Covers

- Dark Shade to minimize light “bleed”
- Prevents items from falling through shelf wire
- Sold with some units (Sam’s Club)

Power Strip

- 5 Plugs Per Unit/Rack
- 10 Plug Strip Connects 2 Units/Racks



Location/Profile

- Fits under shelf
- Low Profile
- Easy Access to hooks, wiring connectors

Light Covers/Canopy

- T5 or T8 Chassis made from aluminum
- LED strip
- Canopy usually clear/transparent or milky white
- Milky white better at diffusing light
- Clear/transparent has more direct, brighter light

Connections

- Power cord/toggle switch
- Pigtail to connect individual strips
- Uniform connectors

