

# UNIVERSITY OF LOUISIANA AT LAFAYETTE

STEP Committee

Technology Fee Application

**Modernization of Plant and Ecology Lab Courses with  
Contemporary Equipment**

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Title

**Dr. Erin Sigel, Dr. Mark Genung, Dr. Phyllis  
Griffard, Dr. Nicholas Kooyers, Dr. James Nelson,  
Dr. Sophie Plouviez, and Dr. Beth Stauffer**

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Name of Submitter  
*(Faculty or Staff Only)*

**Department of Biology**

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Organization

Title: Modernization of Plant and Ecology Lab Courses with Contemporary Equipment      Date: 01/15/2020  
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Department/College/Org: Biology / Sciences

**ABSTRACT:**

All 910 Biology majors are required to take three credits of field-based electives and three credits of systematics-focused electives. Most majors will fulfill these requirements by taking one or more courses taught in Billeaud Hall (BLD) 122, an antiquated teaching laboratory with outdated and defunct equipment. We are requesting funds to update the room with modern, professional-grade equipment that will **improve and expand the curricula of 9 ecology, aquatic, and plant sciences courses, directly impact 413 students each year, and provide additional resources for undergraduate research. Thousands of students will be positively impacted over the projected 20-year lifespan of this enhancement proposal.** Requested equipment includes a state-of-the-art growth chamber and light rigs for ecology, plankton, plant competition experiments, stereomicroscopes for dissection, an analytical balance, a plant-desiccation cabinet for producing museum-quality plant and insect teaching collections, a -20°C freezer, and a drying oven for ecology experiments. In keeping with the mission of the Student Technology Enhancement Program, this proposal will provide the resources necessary for high-quality in-class and independent undergraduate Biology research using contemporary equipment and technology in a professionally-appointed teaching laboratory.

## Purpose of grant and impact to student body as a whole

The Department of Biology has experienced exciting changes in the past several years that have positively affected the diversity and quality of undergraduate education and research opportunities. Since 2015, the Department has hired six assistant professors with research and teaching emphases in ecology, aquatic, and plant sciences, built an undergraduate molecular laboratory (funded by STEP), initiated plans for the construction of modern teaching and research greenhouses behind Billeaud Hall (BLD), and reopened the University's Herbarium (scientific plant collection). Building on the momentum of these changes, we are requesting funds to purchase contemporary equipment necessary to improve and develop new high-quality laboratory curricula for plant, aquatic, and ecology-focused courses, as well as enhance in-class and independent research experiences. Unfortunately, much of the equipment in the plant sciences, aquatic, and ecology teaching labs, specifically BLD 122, is antiquated, at the end of its usable lifespan, and/or no longer safe (Fig. 1). The lack of functional, modern teaching laboratory equipment and facilities was a top source of dissatisfaction by graduating Biology majors in the spring 2019 exit survey (Box 1), with **61% of surveyed students stating that they were unsatisfied to very unsatisfied with the condition of laboratory spaces. In keeping with the mission of the Student Technology Enhancement Program, UL Lafayette students deserve access to the resources necessary for a high-quality education using contemporary equipment and technology in professionally-appointed teaching laboratories.**

The benefits of modernizing the scientific equipment in BLD 122 to the student body are broad. This room serves as the primary lab space for most of the field electives and several of the systematics electives offered in the department. All Biology majors (approximately 910 students at any time) are required to take three credits of field-based electives and three credits of systematics-focused electives. Courses in these categories will heavily utilize the requested equipment for cutting-edge, hands-on lab-



**Fig. 1.** Examples of outdated, homemade, and unsafe equipment in Billeaud Hall 122. **A.** Freezer unable to maintain  $-20^{\circ}\text{C}$ . **B.** Non-functional homemade light rack. **C-D.** Homemade plant desiccation cabinet that heats with incandescent light bulbs. **E.** Rusted herbarium cabinet lacking proper seals for insect and humidity control. **F.** 1960's era dissecting stereomicroscopes. **G.** Undersized cabinets housing modern dissecting microscopes. **H.** Lack of proper storage for compound microscopes.

assignments and projects that yield meaningful in-class research experiences. These courses are particularly important to the 51 students with a concentration in Ecology, Evolution, and Marine Biology, who are required to take an additional 12 credits of these subjects. The additional elective courses are essential for them to gain professional training for careers in the ecology and natural resources fields or in preparation for graduate school. Additionally, all of the equipment requested will be utilized for invaluable undergraduate research opportunities for scholarship students, through BIOL 410 Individual Projects, or as research assistants in individual faculty labs. Below we summarize how the requested equipment will **benefit an estimated 413 students in 9 courses each year and thousands of students over the estimated 20 year lifespan of this enhancement proposal:**

### **Description and justification for requested equipment**

**(a) Drying oven.** An efficient drying oven is necessary for drying plant, particulate, and animal material for ecology experiments in BIOL 360, 440G, and 446G. Since the BLD rooftop drying oven failed in 2018, there is no longer a shared oven for classroom use, and curricula for these courses had to be modified. For example, many samples from the plant competition lab in BIOL 360 require drying overnight. Rather than having students complete the drying in lab, the instructor or TA must drive (twice) to the UL Lafayette Ecology Center, approximately 20 miles from campus, to use their oven. In addition to being inconvenient, students are not being trained in this common but crucial piece of scientific equipment.

**(b) Growth Chamber.** An environmental growth chamber with temperature (2–44°C), humidity (40–85% RH), and light controls will greatly enhance lab exercises focused on growth limitations of aquatic primary producers in BIOL 440G and plant competition in BIOL 360. Experiments in these labs have previously been impossible because the Department's existing growth chambers are already operating at capacity for research and are impractical for simultaneous use by multiple student projects. Having a dedicated growth chamber for student use with fine-tuned temperature, light, and humidity controls will improve in-lab experiments on plant density and nutrient availability in conditions beyond those currently attained in the teaching greenhouse. Furthermore, the teaching greenhouse is likely to be inaccessible for the next two years due to construction. With a growth chamber, students will be able to hypothesize and conduct experiments with multiple independent variables. Additionally, the growth chamber will be available to BIOL 111/113 for student-designed in-lab experiments and for BIOL 433G and 427G for cultivation of plants that need specific environmental conditions.

**(c) -20°C Freezer.** Field collection of insect, plants, and aquatic microbes are crucial components of BIOL 321, 427G, 433G, 440G, and 461G for learning field techniques, identification, taxonomy, and curation. Students are taught to collect museum-quality specimens for professional training, to build teaching collections, and for accession into research collections housed at UL Lafayette. A professional grade -20° C freezer is needed to reliably kill collected insects, as a safe alternate to dangerous chemical pest-control methods (ethyl acetate, cyanide, and fumigants), for the long-term maintenance of insect and plant collections, and for short-term storage of specimens from field collections in estuarine ecology. At present, these courses do not have access to a -20° C freezer, and instead are using an old, insufficient household freezer (Fig. 1a).

**(d) Analytical Balance.** An analytical balance is an essential piece of professional equipment for nearly any field of ecological study, and is not currently available for the listed courses. It is necessary to obtain

"I think the lab spaces should have more equipment for students to use and better quality equipment."

"The labs NEED to be updated! Many of the equipment does not work or is very outdated. Sometimes the lecture rooms technology wouldn't work so we would have to go to a different room for the lecture which takes away valuable lecture time."

"Many of the lecture rooms are falling apart and both the lecture and lab rooms could use a technology update."

"The labs need some remodeling in my opinion."

"The rooms are decent but very old."

"The labs and classrooms need major work. They are outdated and falling apart."

"The people that are employed in Biology are great, but the facilities are old and out-dated."

"I think the laboratory spaces as whole need to revamped."

"Some of the rooms, especially labs, in Billeaud and Wharton have seen better days."

"I would improve the conditions of the laboratories."

"I would make renovations to the classrooms and labs because they are very outdated. Some renovations could make it a little less depressing going into some of the rooms."

**Box 1.** Select comments on the poor condition of teaching labs and equipment from the spring 2019 exit survey of graduating Biology majors.

precise mass of any sample, and will be used for BIOL 111/113, 360, and 427G to improve the accuracy of pre-existing laboratory exercises. This balance will also be used within the plant science courses (BIOL 433G and BIOL 461G) to develop new lessons on the comparative analysis of leaf succulence and relative water content of Louisiana native plants that occur in environments that differ in aridity.

**(e) Plant desiccation cabinet and two herbarium storage cabinets.** Several courses require students to produce scientific-quality voucher plant collections, either for the purpose of learning plant taxonomy and identification (BIOL 433G and 461G) or for service-learning projects and in-class research focused on native plant diversity (BIOL 111/113). Once collected many of these voucher specimens are incorporated into the teaching collections or the LAF Herbarium, UL Lafayette's research plant collection. To produce professional quality vouchers of use to future students and researchers, specimens must be properly dried in a temperature-calibrated plant desiccator. We are requesting funds for a large professional-grade plant desiccation cabinet to replace two unsafe homemade wooden plant desiccators that heat with incandescent light bulbs (Fig. 1c, d). Because of fire risk these wooden desiccators have gone largely unused in recent years, limiting the quality and utility of student voucher collections. Additionally, we are requesting funds for two professional-grade steel herbarium storage cabinets with pest and humidity-excluding seals and locks to house the teaching collections used for plant taxonomy (BIOL 433G and 461G) and ecology (BIOL 427G, 440) courses. This collection has decayed due to being stored in rusted and improperly sealed cabinets (Fig. 1e).

**(f) Eight dissecting scopes and three mobile microscope cabinets.** BLD 122 lacks an adequate number of contemporary, stereomicroscopes necessary for student dissection and observation of organisms for BIOL 321, 433G, 440, and 461G. These classes have a capacity of 18 students per semester, but there are only 10 functional stereomicroscopes purchased within the past 10 years capable of both transmitted and reflected light microscopy. Additional 1960's era compound scopes that are housed in the lab have low magnification, are incapable of transmitted light microscopy, and have well-exceeded their usable lifespan (Fig. 1f). We are requesting funds for 8 additional stereomicroscopes, to ensure that each student in these classes has access to their own fully-functional, contemporary

microscope. We are also requesting funds for three 16-capacity lockable mobile microscope cabinets to house 18 stereomicroscopes and 20 recently acquired compound microscopes. The current microscope cabinet in BLD 122 is too small for the safe storage of larger modern microscopes, and many scopes are being stored in unprotected shelves in a multipurpose closet (Fig. 1g,h). New lockable mobile cabinets will help maintain the microscopes in high-quality operating condition, prevent theft, and allow for the microscopes to be safely moved to other teaching laboratories for use in BIOL 111/113 and BIOL 446G.

**(g) Two mobile 3-tiered light rack.** Funds are requested for two mobile 3-tiered light racks to replace a defunct, homemade unit (Fig. 1b). The racks are ideal for displaying large live specimens under controlled light conditions for plant and ecology-focused classes (433G, 440, and 461G), and will be used for sowing spores for a newly developed lab on fern and moss lifecycles for BIOL 433G. Because the racks are mobile, they will also be used by BIOL 111/113 for germinating seeds for in-class research on Louisiana native plants.

**Specific courses and number of students benefitting from this proposal each year.**

Course	No. of Students	Semester	Instructor
BIOL 111/113: Fundamental of Biology	250	Fall	Dr. Griffard
BIOL 321: Entomology	18	Spring	Dr. Genung
BIOL 427G: Experimental Design & Data Analysis	18	Fall	Dr. Genung
BIOL 360: Principles of Ecology	18	Fall	TBD
BIOL 410: Mentored Research*	20	Fall & Spring	Multiple
BIOL 433G: Plant Systematics & Biodiversity	18	Spring	Dr. Sigel
BIOL 440G: Estuarine Ecology & Coastal Marine Biology	18	Fall	Dr. Stauffer
BIOL 446G: Fish Ecology and Management	18	Spring	Dr. Nelson
BIOL 461G: Aquatic & Wetland Vascular Plants	15	Fall	TBD
Master's and PhD dissertation research*	20	Fall & Spring	Multiple
<b>Total</b>			<b>413</b>

\*research conducted in the laboratories of multiple faculty members

**Projected lifetime of enhancement**

Most of the requested items are durable, low-maintenance, and estimated to enhance course curricula and student research for more than 20 years. Herbarium and microscope cabinets can be used indefinitely. The plant desiccation cabinet, -20°C freezer, drying oven, and growth chamber with moderate to heavy use can have life spans of approximately 20 years. Mobile plant light racks, with replacement bulbs funded by lab fees, and stereomicroscopes are expected to last at least 15 years with routine maintenance. **Approximately 413 students per year and thousands of students will be positively impacted over the projected lifespan of this enhancement proposal.**

**Person(s) responsible for:**

**Implementation.** Drs. Sigel, Genung, and Stauffer will coordinate the purchase of equipment and arrange for shipping and delivery.

**Installation.** Drs. Sigel, Genung, and Stauffer will oversee proper installation of all equipment. A plaque will be affixed to each piece of equipment stating that it was purchased with generous support from the Student Technology Enhancement Program.

**Maintenance.** Most of the equipment requested in the proposal does not require precision maintenance or yearly calibration. Dr. Sigel will coordinate with Dr. Sophie Plouviez, the Department of Biology Instrument Coordinator, for managing the routine maintenance and coordinating use of the growth chamber, light rigs, -20°C freezer, the plant desiccation cabinet, and drying oven. As with all teaching equipment in the Department of Biology, Dr. Plouviez will be responsible for maintaining service contracts and coordinating the repair of the stereomicroscope and analytic balance.

**Operation.** Training sessions will be held for all equipment (see below). Individual faculty will be responsible for operation of the equipment for their courses.

**Training (with qualifications).** Drs. Sigel, Genung, and Stauffer will hold two 2-hour training sessions for Biology faculty and staff on the use of the requested equipment—during the fall 2019 and spring 2020 semesters. Specifically, Dr. Sigel will provide training and operational help for the use of the plant desiccation cabinet, light rigs, stereomicroscopes, and analytical balance. Dr. Stauffer will provide training on the use of the drying oven and growth chamber. Dr. Genung will provide instruction on the use of the -20°C freezer. A plastic folder will be affixed on or near each piece of equipment containing an instruction manual, a quick reference "cheat sheet" on basic usage, Dr. Sophie Plouviez's (the Department of Biology Instrument Coordinator) contact information, and pertinent emergency protocols. Individual faculty will be responsible for training teaching assistants and students on the proper use of the equipment. Drs. Sigel, Genung, and Stauffer will be available for additional training and troubleshooting as necessary.

**Previously-funded STEP projects**

Dr. Genung, Dr. Nelson, and Dr. Kooyers have not previously submitted STEP proposals. Dr. Griffard has previously submitted several STEP proposals. Dr. Sigel is listed as a contributor on a January 2020 STEP submission by Dr. Sherry Kravesky-Self to acquire AV equipment for multiple Biology classrooms and laboratories. Dr. Stauffer was awarded a 2017-2018 STEP grant entitled "Building a modern technology lab for aquatic ecology courses." Dr. Plouviez, was awarded a 2017-2018 STEP grant entitled "Upgrading a Molecular Biology Teaching Lab."

## **Budget Proposal**

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\*See the above justification for each piece of equipment. All costs are based on quotes or current list prices from equipment vendors and includes shipping. Quotes and documentation are attached.

<b>1. Equipment</b>		
<b>a.</b>	Drying Oven	<b>\$3,193.00</b>
<b>b.</b>	Growth Chamber and lights	<b>\$10,705.00</b>
<b>c.</b>	-20°C Freezer	<b>\$1,514.13</b>
<b>d.</b>	Analytical Balance	<b>\$2,540.35</b>
<b>e.</b>	Plant Desiccation Cabinet and 2 Herbarium storage Cabinets (combined quote)	<b>\$10,885.00</b>
<b>f. i.</b>	8 Stereomicroscopes	<b>\$4,527.92</b>
<b>f. ii.</b>	3 Mobile Microscope Cabinets	<b>\$3,097.00</b>
<b>g.</b>	2 mobile 3-tiered light racks	<b>\$1,393.74</b>
<b>2. Software</b>		<b>\$0.00</b>
<b>3. Supplies</b>		<b>\$0.00</b>
<b>4. Maintenance</b>		<b>\$0.00</b>
<b>5. Personnel</b>		<b>\$0.00</b>
<b>6. Other</b>		<b>\$0.00</b>
<b>TOTAL:</b>		<b>\$37,856.14</b>



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- Automatic over temperature alarm
- On/Off timer for automated operation
- Easy calibration routine ensures temperature compliance over time
- Corrosion resistant stainless steel interior (1.4016 / AISI 430) with smooth corners for easy cleaning
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- Outstanding footprint/volume ratio reduces required bench space
- Stackable same-size-units, with optional heat shield, without the need for tools
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Applications:

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## Certifications

cCSAus certified

## Warranty and Services

Two year warranty on parts and labor

## Specifications

Amperage	13.8 A	Capacity (English)	6.3 cu.ft.
Dimensions (L x W x H)	29.1 x 25.2 x 36.2 in. (738 x 640 x 920 mm)	Frequency	60 Hz
Temperature Stability	±0.3°C	Temperature Uniformity	±3.5°C
Voltage	120 V	Wattage	1660 w
Temperature (Metric)	50°C to 250°C	Certifications/Compliance	cCSAus
Capacity (Metric)	179 L	Dimensions (D x W x H) Interior	21.4 x 18.3 x 27.9 in. (543 x 464 x 708 mm)
Electrical Requirements	120 V 60 Hz 1660 w 13.8 A Nema 5-15 US	Model	Forced-air convection
Plug Type	Nema 5-15 US	No. of Shelves	2 supplied/19 max.

## Accessories

Catalog Number	Mfr. No.	Description	Price	Quantity & Availability
<b>15-014-5848</b>	N/A	WIRE SHELF 180L FA OVEN/INC	Each for \$147.00	<input type="text"/>
<b>Fisherbrand™ Shelves for Fisherbrand™ Isotemp™ Microbiological Incubators and Ovens</b>				

## Related Services

Catalog Number	Mfr. No.	Description	Price	Quantity & Availability
 <b>13-762-720</b>	THERMO SCI ASHEVILLE EWINC10	EXT WARRANTY OVEN FURN MIC INC	Each for \$685.00	<input type="text"/>
<b>Unity Lab Services™ CO2 Incubator Extended Warranty, 5K-10K</b>				



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<b>To:</b> UNIVERSITY OF LOUISIANA/LAFAYETTE	<b>ATTENTION:</b> DR. BETH STAUFFER
<b>FROM:</b> GARY POWELL	<b>RE:</b> QUOTATION FOR I-36NL BIOLOGICAL INCUBATOR
<b>PHONE:</b> 213-324-8147	<b>EMAIL:</b> BAS1301@LOUISIANA.EDU

Item:

<b>I-36NL</b>		<b>\$6,230.00</b>
<b>H3</b>	Pan-type Humidifier & Dehumidifier with Electronic RH Sensor	<b>\$3,065.00</b>
<b>Q42</b>	Convenience Receptacle (existing) on programmable event	<b>\$210.00</b>
	<b>**Estimated Freight</b>	<b>\$1,200.00</b>
<b>Total:</b>		<b>\$10,705.00</b>

*\*\*Freight estimate includes shipping to ground floor, tractor trailer accessible location (lift gate included). It also includes inside delivery, unpacking, and debris removal. Actual shipping charges (not estimates) will be charged to purchaser. Additional charges will apply for auxiliary service, small trucks, special equipment, waiting time, weight increases, extra labor, or any other circumstances that Percival has not been made aware of at the time of this estimate.*

**Standard Chamber Specifications**

*(Specifications are subject to change based on added options)*

**IntellusUltra Control system 3 programming styles:** Diurnal, 24 hour, and non-24hr (elapsed time)

**Exterior Dimensions:** W 33.5" x D 33.6" x H 77.2"

**Interior Space:** 29.7 ft<sup>3</sup>

**Total Shelving Area:** 32.3 ft<sup>2</sup> over six tiers

**Growth Height:** 8" per tier

**Temperature Range:**

- Lights Off 2° - 44°C (±0.5°C)

**Lighting:**

- No lighting included in this chamber see I-36VL, I-36LL, or I-36LLVL for similar models with lights

**Electrical Service requirements:**

- 115/1/60 - one grounded cord with NEMA 5-15P plug provided for standard chamber
- Electrical service requirements are subject to change based on added options; contact factory for details

**Please see chamber specification sheet for additional details**

**Additional Comments:**

**H3 40 - 85% RH ± 10% for temp range 15-30 °C lights off**

**Purchasing Details:**

- ✓ Validity: April 30, 2020
- ✓ Taxes: If applicable, not included
- ✓ Shipment: Approximately 90-125 days after receipt of order
- ✓ Terms: Net 30 days
- ✓ Payment Options: ACH/Direct Deposit, EFT, Wire Transfer, Check and all major Credit Cards
- ✓ Send PO or purchasing questions to : [sales@percival-scientific.com](mailto:sales@percival-scientific.com)
- ✓ Warranty: **Two years** on parts and labor
  - **Extended Parts & Labor warranties are available; Please contact your sales representative for additional information**

**A cancellation and/or restocking fee will be applied to all orders canceled 14 days after the order has been placed**

## Additional Chamber Options

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### Control Systems:

<b>C9</b>	<b>IntellusUltraConnect</b> ✓ Standard IntellusUltra Control System (includes PercivalConnect® software) ✓ Chamber <b>Monitoring and Programming Capabilities</b> <ul style="list-style-type: none"> <li>○ From Local or Remote Locations</li> <li>○ Via Web Browser</li> </ul> ✓ On-board Data Logging <b>Exportable to USB Drive</b>	<b>\$865.00</b>
<b>C9T</b>	<b>IntellusUltraConnect and Android-based Touch Screen</b> ✓ Includes all C9 Features and Controller <ul style="list-style-type: none"> <li>○ Plus a high definition IPS (1920 × 1200) <b>Touch Screen</b></li> <li>○ Ability to <b>Display Data in Graph or Table</b> on Touch Screen</li> <li>○ Highly Visible Alarm Display</li> </ul>	<b>\$990.00</b>

### Humidity Systems:

<b>H1</b>	Pan-type Humidifier with Electronic RH Sensor <b>Additive only - Up to 85% RH ± 10% for temp range 15-30 °C lights off</b>	<b>\$1,305.00</b>
<b>H3</b>	Pan-type Humidifier & Dehumidifier with Electronic RH Sensor <b>40 - 85% RH ± 10% for temp range 15-30 °C lights off</b>	<b>\$3,065.00</b>
<b>H15</b>	Ultrasonic Humidifier & Dehumidifier with Electronic RH Sensor <b>40 - 85% RH ± 10% for temp range 15-30 °C lights off</b>	<b>\$4,395.00</b>

**\*Humidity System options require a deionized, demineralized, or reverse osmosis source to be provided by customer\***

### Other:

<b>S1</b>	Security Package: Door Lock, Power Switch, and Dry Alarm Contacts	<b>\$425.00</b>
<b>Q2</b>	Door with 12"x12" Observation Window with Cover	<b>\$435.00</b>
<b>Q5</b>	Additional Steel Wire Shelf (each)	<b>\$80.00</b>
<b>Q9</b>	Phenolic Coated Coils (required for Drosophila research)	<b>\$610.00</b>
<b>Q19</b>	External Drip Pan	<b>\$65.00</b>
<b>Q24</b>	LED working light (energized when door opens)	<b>\$225.00</b>
<b>Q30</b>	Additive CO <sub>2</sub> control with 0-2000ppm Sensor <i>(Other sensor ranges available upon request)</i>	<b>\$2,350.00</b>
<b>Q33</b>	CO <sub>2</sub> Removal System ("Scrubber")	<b>\$1,885.00</b>

***Additional options are also available. Please contact the factory or your local sales rep for more information.***

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### Technical Specs

Item	Freezer	Defrost	Automatic
Application - Laboratory Refrigerator/Freezer	High Performance	Freezer Temperature Range (F)	-13 Degrees to 5 Degrees
Laboratory Refrigerator/Freezer Style	Undercounter	Amps	1.8
Freezer Capacity (Cu.- Ft.)	4.2	Hz	60
Freezer Temperature Range (C)	-15 Degrees to -25 Degrees	Voltage	115
Overall Depth	24-1/2"	Color	White
Overall Height	33-1/8"	Door Hinge	Right
Overall Width	23-3/4"	Door Type	Swing Solid
		Door Material	Solid
		Number of Doors	1

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## Compliance and Restrictions

This item is restricted for international sale.

## Documentation

[AMERICAN BIOTECH SUPPLY Laboratory Refrigerators and Freezers Brochure](#)

[AMERICAN BIOTECH SUPPLY Freezer Owners Manual](#)

[AMERICAN BIOTECH SUPPLY Freezer Spec Sheet](#)

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MORE

Home > Equipment & Apparatus > Balances > Analytical Balances > OHAUS Adventurer > AX124 Analytical Balance 120g



# AX124 Analytical Balance 120g

Cat #: 41-337

0.0001g Readability  
1 Analytical Balance/Unit  
Supplier: OHAUS

### Variations

#### Model

AX124, Internal Calibration

#### Readability

0.1mg

#### Weight Capacity

120g

List Price

~~\$3,163.05~~

Your

Price

**\$2,540.35**

1

ADD TO CART

ADD TO FAVORITES

- Adventurer 120g x 0.1mg
- The wide viewing angle color touchscreen offers quick access to all of Adventurer's applications
- Dual USB ports and the ability to store GLP/GMP information assist in the monitoring and reporting of data
- The two piece, top-mounted draftshield doors open wide on both sides, providing ample room for sample placement
- A real-time clock function keeps accurate time even during power loss
- GLP data capability has the ability to record Sample name, Project names and Balance ID's
- The cloning feature allows you to save user and application settings to a USB flash drive
- When using the minimum weight feature, the display clearly indicates that your current sample weight is below your defined minimum limit

## DESCRIPTION

Striking the ideal balance between inventive features and functional, uncomplicated weighing capabilities, the OHAUS Adventurer incorporates all of the applications necessary for routine weighing and measurement activities. With a color touchscreen, GLP/GMP compliance capabilities, two USB ports, ingenious draftshield, and much more, Adventurer is the most complete balance in its class.

## USEFUL LINKS

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[Instruction Manual](#)

<https://geneseesci.com/wp-content/uploads/2016/02/Adventurer-Data-Sheet.pdf>

[https://youtu.be/pNbWD2\\_L\\_NE](https://youtu.be/pNbWD2_L_NE)

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**International Phone**  
+1.858.536.8044  
  
**Toll-Free Fax**  
+1.888.789.0444

### CONNECT WITH US





Toll-Free Phone: 800.789.5550

www.geneseesci.com

## Order Form

Your local Genesee sales representative:

Shane Larson

858-357-2055

slarson@geneseesci.com

Erin Sigel

Phone:

Email: erinsigel@louisiana.edu

Print Date: 07/09/2019

Customer #: 10 - 0055755

LINE #	PRODUCT	LIST PRICE	YOUR PRICE	QTY	TOTAL PRICE
1	Cat #: 41-337 AX124 Analytical Balance 120g 0.0001g Readability 1 Analytical Balance/Unit	\$3,163.05	\$2,540.35	1	\$2,540.35
Total					\$2,540.35

**From:** Kristen Crock kcrock@southwestsolutions.com   
**Subject:** RE: quote needed for herbarium cabinets  
**Date:** July 3, 2019 at 9:03 AM  
**To:** Erin Sigel erinmackeysigel@gmail.com, Chris Morris cmorris@southwestsolutions.com



Erin,

Thank you for your patience as I pulled together this quote. Please hold to a budget of **\$10,885.00** for (1) herbarium drying cabinet and (2) full height single door herbarium cabinets.

Product information on the drying cabinet is below:

Equipped with Two-120 V/600 W Axial Fin Heater with independent fan, the vented Herbarium Drying Cabinet reaches a maximum internal temperature of 120°F to ensure thorough and rapid drying of specimens.

A door-mounted thermostat controls. Five vented shelves are adjustable on every 3/4". The cabinet has leveling feet on four corners and a hinged door available in right and left swing.

Product Details

External Dimensions: 30" W x 32" D x 84" H Internal Clearance: 27-1/2" W x 27-1/2" D x 77" H  
Weight: 400 lbs Colors: 31 Powder Coat Colors, no VOCs

- Vented Drying Cabinet desiccates botanical material
- Two-120 V/600 W Axial Fin Heaters with 1 Year Warranty - Adjustable independent fans and heater function - 3-Prong 6 Ft power cord plugs into port on unit back
- Digital Thermostat on door for quick temperature monitoring - Set point from 80°F to 120°F - Integrated alarm to sound if internal temperature reaches 125°F
- Five adjustable vented shelves provide air and heat circulation
- Door mounted cabinet power controller automatically activates fan.

(The drying cabinet requires a 10 amp service.)

This quote includes all material and freight shipped directly to your loading dock for you to receive, deliver inside, and perform all assembly and installation of all items. Upon a formal proposal or issuance of a PO, you are agreeing to all terms and conditions listed above.

Currently, your lead time is about 8-10 weeks upon confirmation of receipt and if applicable, drawing sign off.

This quote is valid for 30 calendar days.

Please let me know of any questions at all OR if you would like a formal proposal to sign off on to get this ordered for you.

Internal Ref- **SSG-070319-0858-KMC**

Thank you so much for the opportunity to serve you,

**Kristen Crock**  
Southwest Solutions Group  
2535-B E. SH121, Suite 110  
Lewisville, TX 75056  
Office: 1-800-803-1083

Mobile: 972.302.2772  
Email: [kcrock@southwestsolutions.com](mailto:kcrock@southwestsolutions.com)

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Learn More About Us: <http://www.southwestsolutions.com/>

---

**From:** Kristen Crock  
**Sent:** Tuesday, July 2, 2019 10:20 AM  
**To:** Erin Sigel <[erinmackeysigel@gmail.com](mailto:erinmackeysigel@gmail.com)>; Chris Morris <[cmorris@southwestsolutions.com](mailto:cmorris@southwestsolutions.com)>  
**Subject:** RE: quote needed for herbarium cabinets

Hi Erin,

Thank you for the inquiry! Let me work on this proposal for you and I will circle back with a budget for you.

Thank you,

**Kristen Crock**  
Southwest Solutions Group  
2535-B E. SH121, Suite 110  
Lewisville, TX 75056  
Office: 1-800-803-1083  
Mobile: 972.302.2772  
Email: [kcrock@southwestsolutions.com](mailto:kcrock@southwestsolutions.com)

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Learn More About Us: <http://www.southwestsolutions.com/>



---

**From:** Erin Sigel <[erinmackeysigel@gmail.com](mailto:erinmackeysigel@gmail.com)>  
**Sent:** Tuesday, July 2, 2019 10:15 AM  
**To:** Kristen Crock <[kcrock@southwestsolutions.com](mailto:kcrock@southwestsolutions.com)>; Chris Morris <[cmorris@southwestsolutions.com](mailto:cmorris@southwestsolutions.com)>

**Subject:** quote needed for herbarium cabinets

Hello Kristin,

Please provide me with a quote for 1 herbarium drying cabinet and 2 full-size, single door herbarium storage cabinets.

This quote is for a grant application for the University of Louisiana at Lafayette, and is needed by 7/8/19. We have a loading dock deliveries.

Thank you very much for your help.

Best, Erin

cell: 802 578 7146

Erin M. Sigel, PhD

Assistant Professor

Ramon E. Billeaud/BORSF Endowed Professor in Plant Science

Acting Director of the University of Louisiana at Lafayette Herbarium (LAF)

Department of Biology

University of Louisiana at Lafayette

243 Billeaud Hall

Lafayette, LA 70503

(337) 482-5245



Pebble Tan cabinets ship in 4 days. All other colors ship in 35-40 days. Some photos are for reference and may not represent minor details of the exact product.

VIEW LARGER PHOTO

(https://cdn3.volusion.com/hktad.kparj/v/vspfiles/photos/SMS-66-M40LDRY-2T.jpg?1507637002)

Alternative Views:



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### Plant Specimen Drying Cabinets

Plant specimen drying cabinets are designed to safely extract moisture from pr plant specimens. The drying cabinet will reach 120 degrees internally to insure thorough and rapid drying of plant specimens. Ships set-up with five adjustable vented shelves. Made in the U.S.A. Door hinges on the left.

[Click here to see more Museum Cabinets. \(/museum-storage-cabinets-drawe-collection-artifact-specimen-s/445.htm\)](#)

List Price: \$7,318.01

**Our Price: \$5,885.16**

**You save \$1,432.85!**

**Dimensions:** 30" W x 32" D x 84" H

**Type:** Hinges on the Left; Door Handle is on the Right

**Other:** Pebble Tan Cabinets are in Stock

**Weight:** 400 lbs.

**Availability:** Pebble Tan ships in 4 days, other colors ship in 35-40 business da; allow 5 days for transit

Product Code: SMS-66-M40LDRY

CHOOSE YOUR OPTIONS:

#### Colors/Finishes

Click thumbnail to view choice



Cranberry Red - #10

#### Shipping To

- Select Destination State\*:
- IL,IN,KY,MI,OH,WI,WV
  - AR,CT,DC,DE,IA,MA,MD,ME,MN,MO,NC,NH,NJ,NY,PA,RI,SC,TN,VA,VT
  - AL,CO,FL,GA,KS,LA,MS,ND,NE,NM,OK,SD,TX,WY
  - AZ,CA,ID,MT,NV,OR,UT,WA

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I agree to the shipping terms covering "free shipping" and "inspecting your freight" for damage listed in the [Shipping Document \(http://www.storemorestore.com/kb\\_results.asp?ID=5\)](#). If "Inside Delivery" or other freight services are needed 1-855-786-7667 for a quote.

Qty:

**ADD TO CART** >

## Description

## Plant Specimen Drying Cabinet

30" wide x 32" deep x 84" high (door hinges on left)

The cabinet extracts moisture from pressed plant samples preserving their structural integrity for study or other processing. Equipped with a 120 W ceramic heater with independent fan and heater function. The vented drying cabinet reaches a maximum internal temperature of 120°F to ensure thorough and rapid drying of specimens. A door-mounted digital thermostat monitors the cabinet temperature and features an easy to read digital display. Located directly below the thermostat is a separate fan control with 'off' position or variable speeds for even drying. Five vented shelves are adjustable on every 1/2".

### Herbarium Drying Cabinet Product Details

- **External Dimensions:** 30"W x 32"D x 84" H
- **Weight :** 400 lbs
- **Colors:** Wide selection of powder-coat colors, no VOCs
- **Security:** Locking handle
- **Alarm:** Integrated alarm to sound if internal temperature reaches 125°F
- **Power:** 3-Prong 6 foot power cord plugs into port on unit back (**Maximum Amp Usage is 10 Amps**)
- **Heater:** 120V/1000 W ceramic heater. Adjustable independent fan and heater function
- **Thermostat:** Digital thermostat on the door for quick temperature monitoring. Setpoint from 80°F to 120°F. Door mounted cabinet controller automatically activates fan
- **Shelves:** Five adjustable vented shelves provide air and heat circulation. Shelves are adjustable on 1/2" centers.
- **Other:** Vented Drying Cabinet desiccates botanical material. Ships vertical
- **Warranty:** 1 Year Manufacturers Warranty on Heater & 5 Year Warranty on Cabinet Body.

### Recent Items

Full Height Herbarium Storage Cabinet with left hand swing door, includes 26 compartments, 31" w x 22" d x 84" h, #SMS-66-H40-LH (/ProductDetails.asp?ProductCode=SMS%2D66%2DH40) \$2,267.31 (Call to Order)

[TURN HISTORY OFF \(/ProductDetails.asp?ProductCode=SMS%2D66%2DH40\)](/ProductDetails.asp?ProductCode=SMS%2D66%2DH40)

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[ProductCode=SMS%2D66%2DM40LDRY&HistoryRemove=ALL\)](/ProductDetails.asp?ProductCode=SMS%2D66%2DM40LDRY&HistoryRemove=ALL)

[CLEAR ALL \(/ProductDetails.asp?ProductCode=SMS%2D66%2DM40LDRY&HistoryRemove=ALL\)](/ProductDetails.asp?ProductCode=SMS%2D66%2DM40LDRY&HistoryRemove=ALL)

[ProductCode=SMS%2D66%2DM40LDRY&HistoryRemove=TURNOFF\)](/ProductDetails.asp?ProductCode=SMS%2D66%2DM40LDRY&HistoryRemove=TURNOFF)

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[Quick Product Finder \(/kb\\_results.asp?ID=72\)](/kb_results.asp?ID=72)



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**FULL HEIGHT HERBARIUM STORAGE CABINET WITH LEFT HAND SWING DOOR, INCLUDES 26 COMPARTMENTS, 31" W X 22" D X 84" H, #SMS-66-H40-LH**



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Herbarium storage cabinets are designed to keep your specimen collection safe from dust, light, insects, and water. Cabinets include installed with Compartments. Made in the U.S.A.

[Click here to see more Museum Cabinets. \(/museum-storage-cabinets-drawer-collection-artifact-specimen-s/445.htm\)](https://www.storemorestore.com/museum-storage-cabinets-drawer-collection-artifact-specimen-s/445.htm)

List Price: \$3,217.29

**Our Price: \$2,267.31 (Call to Order)**

**You save \$949.98!**

Price with Selected Options: **\$2,267.31**

**Dimensions:** 31" w x 22" d x 84" h

**Opening:** Includes 26 Compartments

**Type:** Freight is Not Included

**Other:** Ships fully assembled

**Weight:** 305 lbs.

**Availability:** Ships in 35 to 40 business days, plus 4-5 days for shipping.

Product Code: SMS-66-H40

CHOOSE YOUR OPTIONS:

### Color/Finishes



Surface Colors\*: Autumn Haze ▾

Hinging\*:  Left-Hand Hinge  Right-Hand Hinge

### Shipping To

Select Destination State\*:  IL,IN,KY,MI,OH,WI,WV  AR,CT,DC,DE,IA,MA,MD,ME,MN,MO,NC,NH,NJ,NY,PA,RI,SC,TN,VA,VT  AL,CO,FL,GA,KS,LA,MS,ND,NE,NM,OK,SD,TX,WY  AZ,CA,ID,MT,NV,OR,UT,WA

Work Shelf:  Installed Work Shelf [Add \$154.04]  without Installed Work Shelf

### Shipping Instructions

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**Please call for a freight quote**

#### Description

## Herbarium Storage Cabinet | Plant Storage Cabinet

31" wide x 22" deep x 84" high

Includes 26 Storage Compartments

These museum storage cabinets are designed for the express purpose of herbarium specimen archival and storage. The many features of this cabinet make this a secure investment in the protection of your collection: paint that is non-gassing and non-reactive, heavy duty steel construction, a sealed and waterproof top. If your collection is even at risk of water damage from fire sprinklers, or the possibility of pest, these cabinets provide the maximum protection available.

BOR

#### Recent Items

Plant Specimen Drying Cabinet, 30" W x 32" D x 84" H, #SMS-66-M40LDRY ([/ProductDetails.asp?ProductCode=SMS%2D66%2DM40LDRY](#)) \$5,885.16

CLEAR ([/ProductDetails.asp?ProductCode=SMS%2D66%2DH40&HistoryRemove=72821&historysingle=YES](#))

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United States

State/Province

Please select region, state or provir

Zip

SUBTOTAL	\$4,527.92
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SHIPPING & HANDLING (FREE SHIPPING - FREE SHIPPING)	\$0.00
--	--------

GRAND TOTAL	\$4,527.92
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### **3.5X-90X LED Binocular Stereo Zoom Microscope**

**SKU: SM-1BZ-PL**

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**Availability: In stock**

~~\$1,131.99~~ \$565.99

- 3.5X-90X Continuous Zoom Magnification Power
- Super Widefield Optical System Offering Crisp Clear Stereo Images
- Sturdy Pillar Stand with Built-in Top and Bottom LED Illuminators
- 2-1/2" (65mm) large field of view and 8" (200mm) large working distance

Qty:

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**New LED Trinocular Stereo Zoom**

SM-1TZ-PL  
~~\$1,157.99~~ \$571



**7X-45X Dual Lit 6W LED Trinocular**

SM-2T-6WB-V331  
~~\$691.99~~ \$345.



**Product Description****Additional Information**

This top of the line 3.5X-90X binocular stereo zoom microscope is equipped with SUPER widefield optics and a versatile pillar stand with dual LED illuminators. It has been designed for use in organic or temperature-sensitive applications - like, dissecting live tissues or observing live organisms. Our low-temperature LED system allows you to use both incident illumination, which shines light down onto a 3-dimensional specimen, and reflecting-plate bottom illumination, which shines light up through a transparent sample. Because the top and bottom LED lights are controlled by separate dimmers, you are able to customize lighting for the optimal level of illumination, whatever the situation.

The optics of this SM series microscope features a large zoom magnification range, which produces sharp, crystal-clear stereo images, while providing a generous working distance. The 360 degree swiveling, binocular head is attached at a 45 degree angle, which ensures easy and comfortable observation - especially when used in conjunction with the included rubber eyeguards. On the base, the LED reflecting-plate measures 3-3/4" or 95 mm in diameter.

This microscope is especially useful for applications that require cool illumination. It is perfect for the examination of organic matter, such as insects, plants, or virtually any 3-dimensional, temperature-sensitive object. It is ideal for those who work in biology, forestry, archaeology, and agriculture. With its high resolution, good depth, and broad field of view, this microscope can be used for both educational and professional purposes in research labs, hospitals, schools, and veterinary offices.

This microscope provides all the excellent features of a high quality laboratory instrument at an affordable price.

**Features:**

- A great microscope for temperature-sensitive applications
- Contemporary LED incident (top) cool lighting and LED reflecting-plate bottom illumination
- Brightness-adjustable with separate dimmer controls
- 3.5X-90X large zoom range continuous magnification
- 45 degree inclined 360 degree swiveling binocular head with SUPER widefield eyepieces
- High-eyepoint design for easy observation including eyeglass wearers
- One pair of 30mm SUPER widefield eyepieces (see the difference in the above picture)
- High resolution with great flatness and contrast
- Sharp stereo erect images over a SUPER widefield of view
- Crystal clear original true color images
- Both ocular-tubes with adjustable diopter
- Metal pillar stand finished with stain resistant enamel
- Accurate alignment ensuring a fatigue-free long time viewing
- Full optical glass elements
- Precise ground glass lenses
- All metal mechanical components
- Adjustable interpupillary distance
- Rubber eyeguards included
- CE approval electric apparatus
- Manufactured under restrict ISO 9001 quality control system
- Five (5) year manufacturer warranty

**Specifications:**

- Head: 45 degree inclined 360 degree swiveling binocular
- Eyepiece: 30mm super wide field high-eyepoint WF10X/20
- Barlow Lens: 0.5X and 2.0X
- Objective: 0.35-9.0X

Zoom Range: 26:1  
 Diopter Adjustment: +/-5dp  
 Interpupillary Distance: 2-3/16" - 2-15/16"(55-75mm)  
 Working Distance: 8" (200mm)  
 Field of View: 2-1/2" (65mm)  
 Incident (Top) Illumination: 30 high-intensity LED white-color bulbs  
 LED Reflecting-Plate (Bottom) Illuminator: 3-3/4" (95 mm in diameter) LED reflecting plate  
 Accessories: dust cover, eye-guards and clips  
 Shipping Weight: 40 lbs

#### Packing List:

One Binocular Stereo Zoom Head  
 One Pair of Super Widefield High-Eyepoint 10X Eyepieces  
 One Super Widefield 0.5X Barlow Lens  
 One Super Widefield 2.0X Barlow Lens  
 One LED-Bulb Top Light  
 One Pillar Stand with LED Reflecting-Plate and Focusing Rack  
 One Pair of Clips  
 One Pair of Eye-guards  
 One Power Cord  
 One Dust Cover  
 User's Manual Download

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MD130

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**30W LED Fiber Optic  
Lights Microscope**  
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LED-30WY

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**Mobile Microscope Storage Cabinet**

Model #DVM-4701A

3 x \$799.00 + \$700 shipping = \$3097.00



List Price: \$1886.00  
**Our Price: \$799.00**  
Call or chat for bulk discount.



**See All Colors & Options**

Financing as low as...  
 \$66/mo Apply Now!

This microscope cabinet is a professional grade mobile lab cabinet that has all the features you would expect in a top of the line model except the price tag. The exterior of the case is designed with a UV, chemical resistant finish that makes the mobile lab cabinet extremely tough and gives the highest grade of protection to the equipment stored inside.

This unit makes a superb microscope cabinet, but it can be used for far more. The surface is essentially a mobile lab table with a heavy high-pressure laminate top. Two adjustable shelves can be used to safely and securely hold microscopes or any other sensitive scientific equipment. Up to 24 standard classroom microscopes can be contained within this lockable hardwood cabinet. Each microscope space measures 6" x 9" x 16". These mobile lab cabinets are perfect for any laboratory or classroom.



**2 x \$599.99 + \$195.74 for shipping = \$1393.74**

**3-Tier SunLite® Garden**

EXCLUSIVE ★★★★★ 208 Reviews Write a Review

✔ 98% of respondents would recommend this to a friend

Item# 39-357

**\$599.00**

Quantity  In Stock

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Description | How To | Shipping

**3-Tier SunLite® Garden Grow Light System with Room for Seedlings and Houseplants**

- Three fixtures, each with two 4' full-spectrum T5 fluorescent grow lights
- Fixtures easily adjust to the proper height for optimal plant growth
- Three shelves provide 15 square feet of growing space
- Rugged, powder-coated aluminum frame
- Choose the Grow Light that's right for you with our helpful [Grow Light Buying Guide](#).
- View our [Grow Light Buying Guide](#)

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Our Vermont-made SunLite® Gardens give your plants the quality and intensity of light they need, and this 3-tier model has plenty of room for a variety of plants. You can start seeds, grow herbs and houseplants, or even try your hand at growing orchids. Our ultra-light fixtures weigh just 6 lbs. and have a slim profile to give plants more headroom. They measure a full 14" wide to ensure even light coverage across each shelf. Inside, there are two T-5 fluorescent bulbs that produce bright, full-spectrum light. These bulbs provide up to 10,000 hours of use. All fixtures have their own pull chains for easy height adjustments and electronic ballasts to eliminate any annoying buzzing. This complete SunLite Garden includes frame and fixtures, T-5 fluorescent bulbs, watertight trays and casters.



Soil, seedlings and starter trays shown are not included

Video

