



SOLUTIONS FOR THE **CANNABIS INDUSTRY**

Introducing a **comprehensive product guide** to meet **Cannabis Growing and Testing requirements** and for **Quality Control of Cannabis related Extracts & Pharmaceutical products**.



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No matter the cultivation method used, it is done in a controlled area, free from any contaminants. The following Lasec® instruments help with accurate monitoring of environment, water and nutrients.

pH METER

Accurately determine the acidity of soil for optimal nutrient and water absorption (dependent on strain and stage of growth).



CONDUCTIVITY METER

Determine the nutrient levels of soil and water using electrical conductivity measurements.



HYGROMETER AND THERMOMETER

Designed to monitor indoor temperature and humidity accurately and reliably. User-defined settings allow determination of the length of intervals between measurements – from 5 minutes to 24 hours.





CONSTANT CLIMATE CHAMBERS

Facilitate cultivation of cannabis according to stringent pharmaceutical guidelines.

BALANCES

Weigh nutrients or low volume substrates with precision. (Analytical accuracy to 0,0001 g) or buds (Top loading – up to 25 kgs)



PIPETTES

Accurate volume dispensing.



ANEMOMETER

Use a flow probe to establish whether an air conditioning or ventilation system is functioning properly to guarantee optimum room air quality.



PHOTOMETER

Determine the quality of both potable water and wastewater used and produced in the production process.





A variety of laboratory consumables & safety equipment, not limited to those listed below.

HAIR NETS, OVERSHOES, BEARD COVERS, AND LATEX GLOVES

All are disposable with multiple sizing or colour options available.



LABORATORY COATS AND SAFETY GOGGLES





PLASTICWARE

Numerous options of general plasticware available in various volumes – cylinders (graduated), beakers (graduated), pipette filter tips, solution bottles, or buckets.



GLASSWARE

From cylinders (graduated), beakers and bottles (graduated), flasks (graduated) & jars for bud storage. Glassware is chemical and heat resistant & produced from Borosilicate 3.3 glass.



CHEMICALS

Sanitizing or Sterilization Chemicals in various volumes, concentrations, and grades for the start-up or clean-up after each cycle.

SAMPLE CONTAINERS

Sterile containers with screw caps. Polypropylene (PP) or Polypropylene copolymer vessel material which can be re-used and autoclaved. PP boasts good chemical resistance.



SAFETY – FIRST AID KITS

Variety available.





SOLUTIONS FROM LASEC® TO MEET THE 4 STEPS OF THE CANNABIS PLANT LIFE CYCLE:

1. Germination
2. Seedling
3. Vegetative
4. Flowering



GERMINATION PAPER

Various sizes (pleated or creped) for the germination of seedlings.



GLASSINE ENVELOPES

Intelligently designed material for safe storage and export of seeds.

BENCH PROTECTION

Protection and cleanliness of a clean working surface.



INCUBATORS

For drying and curing of buds, accurate temperatures are required. Memmert Cooled Incubators ensure accuracy to below ambient.



CONSTANT CLIMATE CHAMBERS

For control of temperature, humidity, and special lighting to simulate day-night cycles. Ideal for seed germination.

WATERPROOF STAINLESS STEEL PLATFORM SCALE

Industrial Waterproof platform scales are designed to operate in humid conditions and can withstand direct contact with water. The H315/H series features LCD display and stainless steel weighing platform. The indicator PUE H315 series display is installed on the pillar, or can be installed on a cable for installation against the wall.



UNIVERSAL MILLS

Quick trimming or cutting of bud.





Items from Lasec® to assist with oil extraction processes.

HOT PLATE STIRRER

Heats and extracts oils to obtain a more fluid state for testing purposes during production.



WATER BATH

Liquify oil for testing purposes during production.



ETHANOL ABSOLUTE 99.9% AR GRADE

The purity of the alcohol is directly correlated to a satisfactory subzero – separation.



The product images shown are for illustration purposes only and may not be an exact representation of the product.

E&OE

ROTARY EVAPORATOR

Recommended for use after the Winterization process to evaporate the remaining ethanol.



DEEP FREEZER

For the Winterization process.



REFRIGERATOR

For storage of final products.



CIRCULATION CHILLER

To maintain working temperature of lab equipment & product during testing.



The product images shown are for illustration purposes only and may not be an exact representation of the product.

E&OE



Sample preparation is a crucial steps towards quality testing of cannabinoids.

OVEN

With or without forced air circulation by speed controlled fan for drying samples for analysis.



ASHING FURNACE

For ash content determination.



FREEZE DRYER

For drying heat sensitive samples such as cannabis buds, ideal for preserving cannabinoids and terpenes.



SYRINGE FILTER

To efficiently remove particulate contamination from buffers, acids, and bases.



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E&OE

SAMPLE PURIFICATION SYSTEM

With the capability to purify compounds by preparative HPLC, flash, and CPC chromatography on the same instrument, Gilson's PLC Purification systems simplify compound purification and are the most flexible investment option available at lab and pilot scales.



SOLID PHASE EXTRACTION UNIT

The ASPEC[®] system from Gilson is for solid-phase extraction (SPE), one of the most efficient sample clean-up techniques available. It is instrumental in addressing cannabis matrices (e.g. Seeds, oil) interferences and making accurate quantification of target analytes such as pesticides, herbicides, plant growth regulators, and mycotoxins.



CHROMATOGRAPHY FOR PILOT-SCALE PURIFICATION

The VERITY[®] CPC Pilot 1000 PRO system performs silica-free chromatography for pilot-scale purification. Process milligram up to multi-kilograms of cannabis extracts with 95% purity or better.



CERTIFIED REFERENCE MATERIALS FOR HEMP TESTING

Numerous Certified Reference Materials (ATCC reference strains) are available for HEMP Quality Control testing. ISO 17034 accreditation applicable with Certificates of Analysis available online.



VORTEX MIXERS

Suitable for mixing substances for various applications.

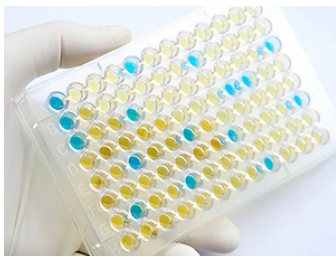


CENTRIFUGE

Required for preparation of samples for Liquid Chromatography analysis.



ELISA and DNA - based pathogen detection assays assist cultivators to identify plants infected with moulds, mites, and viruses.



ELISA KITS

| | | |
|-----------------------|----------------------|----------------------|
| Alfalfa Mosaic Virus | Phytophthora | Tobacco Streak Virus |
| Arabid Mosaic Virus | Potyvirus Group | Tomato Mosaic Virus |
| Cucumber Mosaic Virus | Rhizoctonia solani | |
| Fusarium | Tobacco Mosaic Virus | |



IMMUNOSTRIPS

| | | |
|-----------------------|--------------------|----------------------|
| Alfalfa Mosaic Virus | Phytophthora | Tobacco Mosaic Virus |
| Arabid Mosaic Virus | Potyvirus Group | Tobacco Streak Virus |
| Cucumber Mosaic Virus | Rhizoctonia solani | Tomato Mosaic Virus |



AMPLIFY RP

| | | |
|----------------------|-------------------|-------------------------|
| Beet Curly Top Virus | Hop Latent Viroid | Lettuce Chlorosis Virus |
| Fusarium oxysporum | Hop Stunt Viroid | |



DEHYDRATED MEDIA

For microbiological analyses, various culture or media available for your testing needs.



AUTOCLAVE

Effective sterilization to avoid cross contamination and ensures the re-use of sterile laboratory equipment.



REAL-TIME PCR INSTRUMENT

For accurate DNA-based detection of pathogens.



FILTER PAPER

Various types, sizes, and applications.

VACUUM FILTRATION SYSTEM

Manifold Filtration system. Various combinations available.



GRAM STAINING KITS

Determination of gram-positive and gram-negative bacteria to assist with accurate identification of the cultures analysed.



AIRFLOW CABINETS

A selection of Laminar Flow Cabinets, Biosafety Cabinets & Fume Hoods that provide a sterile work area for the protection of samples from contamination, including options and/or user or environmental protection.



CRUCIBLES, DESICCATORS, AND BUCHNER FUNNELS

To assist with various separation techniques for sample preparation or analysis.



WATER PURIFICATION SYSTEMS

Water stills or Reverse Osmosis Systems for purifying raw feedwater to meet laboratory application requirements.



FLAMMABLE SAFETY STORAGE CABINETS

Fire resistant cabinets for storage of flammables or gases provide safe and legally compliant storage.

PERISTALTIC PUMP

Dispensing and transfer of liquid samples.

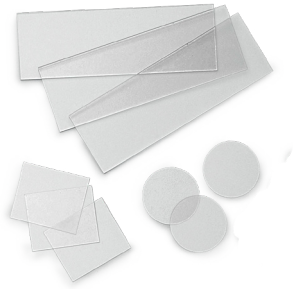


MICROSCOPY



MICROSCOPE

- Compound or Stereo
- Available with Binocular or Trinocular heads
- Infinite Plan Objectives and LED Illumination
- Choice of cameras for image analysis
- Fluorescence, Darkfield and Phase Contrast options available



MICROSCOPE SLIDES AND COVERSLIPS

- Slides are single or twin frosted
- Ground, cut or bevelled edges available
- Coverslips are chemically resistant, Borosilicate 3:3 glass



IMMERSION OIL

- Improve fine resolution and brightness of image through use of high-quality, certified immersion oils
- For use with microscopes



LENS CLEANING TISSUE

- Made from 100% manila fibres
- Lint-free

LABORATORY FURNITURE

Our Lasec® Furniture Design Team is able, to design, manufacture and install laboratory furniture specifically suited to your application.

- ✓ A custom furniture layout for your workspace
- ✓ Workflow optimization
- ✓ Guidance on instrumentation placement
- ✓ 3D render of laboratory layout
- ✓ Various colours of worksurfaces, frames and cupboards available.



SERVICING

Boasting a large team of qualified engineers located throughout South Africa and travelling weekly into the rest of Africa, Lasec® ensures a full-service package, including preventative maintenance, repairs and service level agreements. Worry-free use of all laboratory and scientific equipment in your facility is a reality when partnering with Lasec® expertise.

Value Added Solutions include:

- ISO17025 Accredited calibrations for volume and mass metrology
- Assistance with Good Lab Practice (GLP) and standard operating procedures (SOP) in line with ISO recommendations
- Biosafety consulting service facilitated by NSF-49 accredited engineers
- Completion of IQ, OQ and PQ protocols to meet regulatory requirements



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