Ocean Life Science Corporation

Plant Growth Chamber

Climate Chamber with Humidity control

Creating Safe Solutions for Life Science Laboratories
Engineered for simplicity and Efficiency
Certified for Safety and Performance

OLSC

OLSC-116P Series

This series of product is high-precision thermostatic equipment with functions of illumination and humidification. It is widely used in plant cultivation, seed germination, seed growing, histolytic and microbe culturing, as well as small animal raising and other temperature and humidity experiments. It is the perfect equipment for production and research of biology, agriculture, forestry, genetic engineering and graziery departments.

CE ISO9001 CERTIFIED

OCEAN LIFE SCIENCE CORPORATION

Leading manufacturer of laboratory equipment

Heating & cooling Models

OLSC-116P Series

Plant Growth Chamber

Top class temperature & humidity performances

"Ocean" brings the ultra-high-tech Triple walled Microprocessor controlled, solid-state Plant Growth / Humidity / stability Chamber used for normal germination applications and for various other tests involving micro-organisms, plants, tissues, electronic components etc.

Used for plant growth, biological studies, forestry research works propagation of seeds, and incubation that requires a controlled environment (hot/cold cycles and light dark operations).

Optional accessories:

1. Software as per 21 CFR Part 11 requirements.
2. 24 hours Cyclic Timer for regulating illumination conditions.
3. 7 inch big color touch screen.
4. PLC (Programmable logic controller).
5. Ultrasonic humidifier
6. CO2 backup

Corporate Add: A3/27A, Chanakya Place, Part-1, Opp: C-2 Janak Puri, Pankha Road, New Delhi – 110059, Email: info@olsc.us, olsc.lab@gmail.com

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SPECIFICATION

Plant Growth Chamber – Technical Features & Construction Details

Robust double-walled construction designed for long-term laboratory operation.
Outer body fabricated from heavy-duty mild steel with durable powder-coated finish.
Inner chamber constructed from rust-free Stainless Steel 304 grade for corrosion resistance and easy cleaning.
High-density PUF insulation provided between inner and outer walls for minimal thermal loss and maximum energy efficiency.
Single insulated front access door ensures convenient loading and unloading of samples.
Outer door fitted with magnetic gasket sealing for airtight closing and prevention of temperature loss.
Door provided with lock and key arrangement for secured operation.
Full-view inner toughened glass door enables sample inspection without disturbing chamber conditions.
Inner glass door also provided with gasket sealing for improved environmental stability.
Heavy-duty laboratory-grade hinges and hardware ensure long service life.
Chamber mounted on castor wheels with locking arrangement for easy movement and positioning.
Machine supplied complete with power cord and plug suitable for 220 Volts AC, 50 Hz supply.

Air Circulation & Environmental Uniformity

Chamber fitted with durable coaxial blower for forced air circulation.
Triple-wall rear airflow design ensures uniform temperature distribution.
Conditioned air travels uniformly along the entire rear wall of the chamber.
Air distributed evenly across all growing shelves for homogeneous environmental conditions.
Dedicated airflow passages provided between light fixtures and chamber door.
Ceiling-mounted circulation fans maintain continuous environmental uniformity.
Optimized airflow design eliminates stagnant zones and temperature gradients.
Engineered airflow system ensures equalized air velocity across all shelf levels.
Adjustable airflow diffuser system for customized air circulation control.

Refrigeration & Temperature Control System

Heavy-duty air-cooled refrigeration system designed for continuous operation.
Cooling achieved through finned tube evaporator positioned in the airflow path.
Refrigeration system equipped with ISI marked compressor and condensing unit.
Eco-friendly CFC-free R-134a refrigerant used for environmentally safe operation.
Hot gas bypass heating technology ensures stable temperature maintenance.
Continuous compressor operation enhances temperature stability and accuracy.
Ceiling-mounted evaporator coil arrangement improves cooling efficiency.
Solenoid valve-controlled refrigeration circuit ensures precise operation.
Energy-efficient cooling system designed for laboratory-grade performance.
Low-noise circulation fans maintain silent and smooth operation.

Humidity Generation System

Immersion-type heaters generate steam for humidity creation inside the chamber.
Precise humidity maintenance suitable for plant growth and environmental studies.
High and low humidity protection devices ensure operational safety.

Lighting System

Four-tier broad spectrum horticulture LED lighting system.
Uniform horizontal light distribution across complete growing shelf area.
PAR optimized energy-efficient lighting technology for plant growth applications.
Fully programmable light intensity control from 0% to 100%.
Light intensity up to 400 µmoles/m²/s measured at 6 inches below light bank.
Multi-tier shelf arrangement suitable for high-capacity growth applications.
Stainless steel trays with adjustable height facility.

Controller & Programming Functions

Android-Based Color Touchscreen Controller
User can precisely select desired temperature and humidity conditions.
Multi-step programmable environmental control system included.
Manual programming mode for standard operation.
Real-time programming mode for dynamic process control.
Elapsed-time programming mode for timed experimental cycles.
Continuous operation mode for uninterrupted chamber operation.
Diurnal cycle programming for day/night environmental simulation.
Multi-step sequential programming capability available.
Multiple recipe storage facility for repeated experiments.
Graphical process monitoring available through touchscreen interface.
Real-time environmental data display provided.
Program step monitoring and sequence duration indication included.
Dual calibration offset facility for enhanced accuracy.

Safety & Protection Features

Dual over-temperature safety protection system.
High-temperature shutdown system protects samples and equipment.
Programmable high and low temperature alarms.
Programmable high and low humidity alarms.
Audio-visual alarm indication ensures immediate fault notification.
Automatic restart after restoration of safe conditions.
Intelligent fault monitoring system continuously supervises operation.
Redundant safety controller arrangement enhances operational reliability.
Ambient temperature monitoring facility.
Audio-visual light maintenance reminder alarm.
Safety warning notifications displayed during abnormal conditions.

Intelligent Diagnostic & Security System

Intelligent onboard self-diagnostic system.
Automatic fault detection and error identification facility.
Operational status monitoring ensures reliable long-term performance.
Intelligent troubleshooting support simplifies maintenance activities.
Minimum four-level password protection system provided.
Controlled operational access prevents unauthorized parameter changes.
User authorization management enhances system security.
Parameter protection system safeguards programmed settings.

Performance Specifications

Temperature recovery time for 5–8°C variation: approximately 20–40 minutes.
Humidity recovery time for 5–10% RH variation: approximately 20–40 minutes.
Temperature accuracy stabilizes within 15–20 minutes after reaching set value.
System designed for stable, precise, and continuous environmental simulation applications

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MODEL		OLSC-116P-20
Growing Area		25 ft²
Approx Volume (Ltr.)		700
No. of Shelves		4 (Adjustable & Removable)
Plant Clearance Height		30 cm per tier
Temperature	Range	10°C to 40°C
	Accuracy	±0.5°C of set value
	uniformity	±0.5°C of set value
Humidity	Range	40% to 95% RH
	Standard humidity	25°C – 60% Rh, 40°C – 75% Rh, 30°C – 65% Rh, 25°C – 40% Rh (Parameters as per ICH guidelines)
	Accuracy	±2% RH of set value
	Uniformity	±3% RH of set value
Lighting Type		Broad Spectrum Horticulture LED Light Banks
Light Configuration		Horizontal Uniform Distribution
Light Intensity Control		0% to 100% Programmable
Maximum Light Intensity		Up to 400 µmoles/m²/s
Controller		Android-Based Color Touchscreen Controller
Door		Single Insulated Access Doo
Relay		Solid state electronic relay with protective heat sink
Auto-Tuning System		System is compatible with auto tuning system
Air Circulation		By forced convection system
Insulation		By High density PUF insulation
Accessories		PP carboy tank of 10 liters for holding water for humidity
Electric Supply		220-230V AC, 50/60Hz

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Ocean Life Science Corporation

OLSC

(OLSC-116P Series)

1 Stainless Steel Shelves

2 Chart Recorder

3 PLC-HMI Controller

An ISO 9001:2008 | ISO 13485 | EN: 12469 Compliance

OHSAS 18001 | WHO:GMP Products | NSIC Registered

NSIC CERTIFIED CO.

PAR optimized LED tubes Full Spectrum

Series 150W Horticulture light is a special design spectrum developed by adopting latest research and Innovation in the field of horticultural lighting thus giving highest quality yield, desired plant texture and characteristics.

The spectrum is optimized to work for leafy greens , flowering and fruiting crops right from the germination stage to vegetative stage of plant growth.

With High Efficiency LEDs of 2.7umol/J and right wavelengths to promote plant photosynthesis, these

lights offer highest PPF per Watt ratio in its class.

12in Height
4X4 SQ. FT

62	68	106	139	155	137	99	71
65	101	164	261	309	240	144	91
85	145	291	540	678	458	215	112
96	190	445	847	827	553	235	117
99	193	469	805	735	387	187	103
84	144	290	442	381	218	121	78
66	91	142	184	169	122	82	57
52	68	82	95	90	74	57	55

Peak PPFD	: 847 umol/m2/s
Average PPFD	: 223 umol/m2/s
Usable PPF	: 321 umol/s
Power Consumed	: 134 WATTS
PPF Efficiency	: 2.39 umol/W

KEY FEATURES

- **2.7 umol/J, 194Lm/W BRIDGELUX, US LED Chips**
- **High Quality IP67 Driver with 5 Years warranty.**
- **0-100% DIMMING.**
- **Daisy Chain Dimming Compatible.**
- **Splash Proof Silicone Coated PCB.**
- **Versatile 3500K with 660NM RED Spectrum (customizable).**
- **Suitable for all Leafy, Vegetables, Flowering And Fruiting Crops.**

SPECIFICATIONS

Light source	LED
Spectrum	Full Spectrum
Measured PPF	345
iInput Power	154W
Efficacy	2.7umol/J
Input Voltage	100-220V AC
Fixture Dimensions	458 x 140 x 80 mm (LxB xH)
Recommended Height	12"-20" above Grow Bed
Thermal Design	Passive
DImming	0-10V
Light Spread	120*
Expected Lifetime	L90>50,000Hrs
Power Factor	>0.9
Warranty	2 Years

Spectrum Test Report

Sample Info

Name:150W LED Grow Light

Model:3500K

Temperature:25.3 Deg

ManuFactrory:

State: OK

Tester: ADMIN

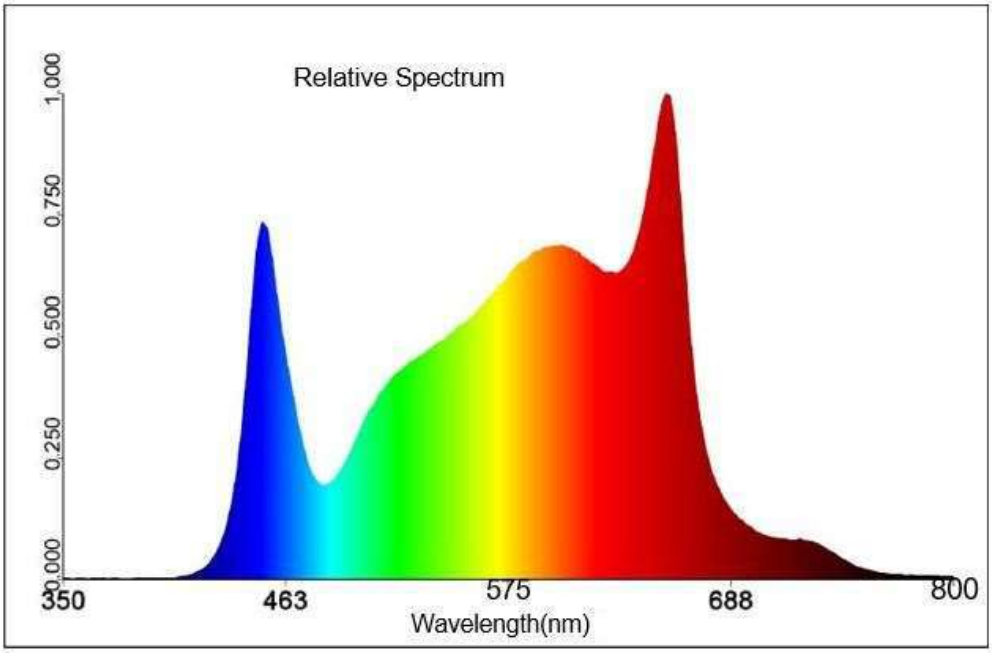
Humidity:65 %RH

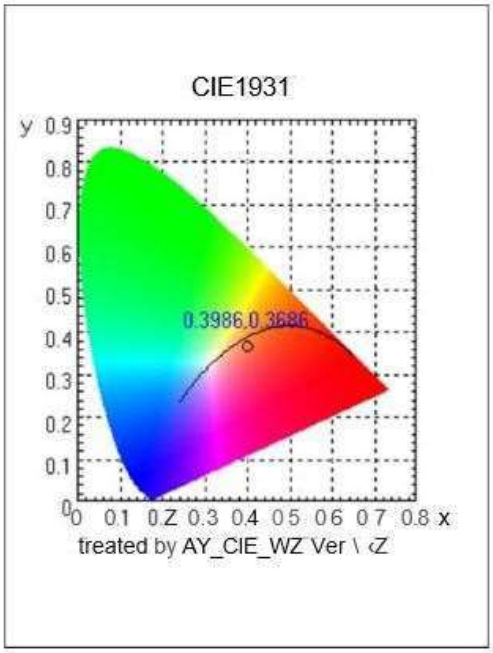
Remark:3500K+450NM+660NM+730NM

Meter State

Test Meter: PLA

Integral T: 5.0 ms PeakAD Ip: 46494.3 Average times: 2





Test Params

E= 9.7889e+003 lx E(fc)=909.748 fc Ee=3.3928e+001 W/m2

CIE-x= 0.3986 CIE-y= 0.3686 CIE-u'=0.2406 CIE-v'=0.5007

CCT=3463 K Lp=655.0 nm HW=123.0 nm Ld=585.7 nm

Pur=30.2 % RedRatio(%)=21.9 GreenRatio(%)=74.5 BlueRatio(%)=3.5

DUV=-0.0086 S/P=1.62

Ra=93.9 R1=95 R2=97 R3=96

R4=93 R5=95 R6=93 R7=93

R8=91 R9=82 R10=92 R11=92

R12=78 R13=96 R14=97 R15=96

SDCM= 9.3(3500K/White)

White Class:OUT

Eb=6.20877 (W/m2) Ey=12.97168 (W/m2) Er=13.73354 (W/m2)

(Mmol•m-2•s-1) 157 (umol m-2•s-1) 196

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We also offer:

LABORATORY FURNITURE & INTERIOR, HOSPITAL FURNITURE & INTERIOR
HMI & PLC, SOLUTIONS , CONSULTANCY SERVICES

CE

An ISO 9001:2008 | ISO 13485 | EN: 12469 Compliance
OHSAS 18001 | WHO:GMP Products | NSIC Registered