# JKG BIO SCIENCE PVT. LTD.

## MULTI APPLICATION CHAMBER MODEL – JKG-66

- **Plant Growth**
- **Arabidopsis**
- **Incubator**
- **Seed Germination**



JKG-66L2AR





JKG-66LL









www.jkgbioscience.com

## PRODUCT OVERVIEW

JKG chamber has a unique ability to fit various research applications and is flexible in its design. The Basic 66 series can be fitted with various mix and match upgrade kits to suit a variety of applications.

Some applications are Plant Growth, Climate change, Plant Pathology, Incubator, Seed Germination, Stability Studies and Seed storage. Many other applications also exist. (Consult us for possible options and upgrade for each model).

## APPLICATIONS

**Biological Incubator** (NL, LL, VL & LLVL): This chamber is frequently used for Cyanobacteria, Insects, simple low-cost Germination, c-elegans, Nematodes, Yeast / fungi, Insects, Bacteria and BOD.

**Seed Germinator:** This chamber is designed for Seed Germination and development.

**Arabidopsis Chamber:** This chamber is frequently used for Arabidopsis Thaliana, Tobacco and other plants.

**Plant Growth Chamber:** This chamber is frequently used for Soyabean, Rice, Tomato, Cotton or other short to medium height plants.

Many other applications exist for the chambers. Please compare your own requirement to the specification listed.

## CABINET CONSTRUCTION

- Interior constructed of 22-guage electro-zinc plated steel
- Exterior constructed of 18-guage exterior electro-zinc plated steel
- Welded seams and joints on outer and inner shells
- Inner shell supported by non-compressing/non-thermal conduction material locking inner liner in place without a metal-to-metal bond to outer case
- Chamber is completely self-contained
- Overall wall thickness is 2'' (5.1)
- One 1¼'' diameter access port on R.H. wall with air tight plug.
- Chamber floor equipped with floor drain and hose assembly
- Contains casters assembly and adjustable leveling legs to compensate for floor unevenness in the lab
- Interior Volume: 1800 Liter




C8 IntellusControl System,features include

- Industrial Grade, highly reliable, solid state microcontroller architecture.
- Dual Experiment protection via integrated yet independent temperature limit shutdown.
- Ambient temperature monitoring.
- Power fail event logging.
- Automatic Restart after power recovery.
- Single Board Electronic Solidstate design.
- Durable 10-key industrial keypad with VFD display and LED indicators.
- Three programming styles: Diurnal, 24 hour, and non-24 hour (elapsed time)
- Programs can be run in ramping or non-ramping modes.
- Daily light integral programming mode.
- Programs are created and run in real time.
- Multiple programs can be linked together to simulate natural conditions.
- RTD temperature sensor inputs.
- Three point temperature calibration.
- Two calibrations offset per input channel (one for light ON and one for lights OFF)
- Light lifetime maintenance. The controller maintains the accumulated hours that each light output has been activated. The accumulated hours can be reset for each output.
- Available programmable outputs (23) allow for user specific control requests (i.e. programmable
- electrical outputs).
- Highly visible alarm display with audible buzzer.
- Controller can be secured with four level password protection.
- Field upgradable I/O expansion modules.
- Firmware updated easily uploaded via included USB thumb drive.
- Industrial grade membrane keypad overlay for service.
- Improve troubleshooting with Systems diagnostics menu.
- Scalable analog and digital control outputs.
- Digital addressable lighting interface (DALI) control allows for light remapping without the need for rewiring.
- View current set points and process values, alarm status, alarm settings, program operation mode, program steps and controller time.
- Program Storage: 99+
- Date and Time clock.

## CONTROLLER

**Percival Intellus controller:** Percival Scientific USA has built a reputation of providing reliable customized options for research scientists around the world. We have collaborated with Percival to bring their new Intellus Ultra controller integrated in our chamber. Now choose from the level of functionality that meets your research needs.

Please refer to https://www.percival-scientific.com/ for addional information, regarding control system.

## LIGHTING SYSTEM SCIWHITE

**(Arabidopsis & Plant growth Chamber) (SciWhite LED Lighting System)**

**LED Control:** System controlled via open loop dimming as a percentage of total output in 1% increments.

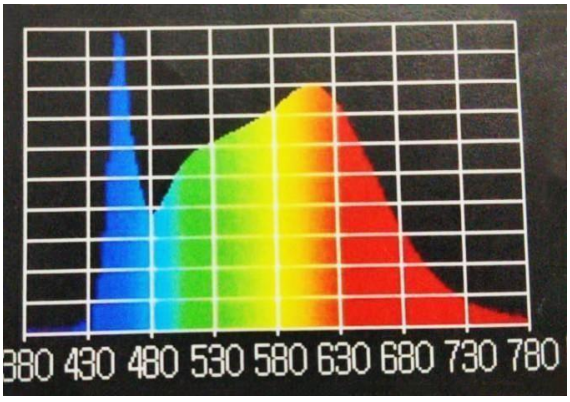
Programming & Control: Via real time Intellus Ultra Controller.

- LED output : PAR white
- Intensity: 6'' from Lamp Bank & Programmable
- Light Fixture efficacy: 2.5 µmoles
- PAR Light Range: 430-780nm
- Horizontal Fitted light self
- Each tier of lighted shelving lit by SciWhite LEDs with enhanced red.
- Dimmable between: 10-100% output.

**(Incubators & Seed Germinators)**
**(IncuWhite LED Lighting system)**

- Linear LEDs
- Intensity programmable , light irradiance measured @ 6" from LEDs
- Programming and control of the lighting is done via IntellusUltra real time controller
- Dimmable between 5-100% output

Maximum Intensity varies according to the chamber model number.




## AIRFLOW/CIRCULATION

- Air Circulation inside chamber is from a specifically CFD designed perforated rear plenum (air is drawn at the TOP mounted unit cooler and discharged uniformly across each shelf). Horizont al Air Flow/Vertical Air flow, via wire shelves optio ns, as per your research need.

## INSULATION

- Woodless construction using 2" (5.1cm) thick foamed in place non-CFC urethane insulation with 93% closed cell, R-value of 12.5, K-value of 0.16 and density of 2.2lbs/$ft^3$.

## DOOR

- Two door opening provides full access to the chamber.
- Width: 73.9cm
- Height: 146.1cm
- Magnetic Perimeter gasket provides a tight seal to door frame.
- Lock and Key

## WORK AREA

- 62.4 $ft^3$ (1.8 $m^3$) with work area of ≥10 $ft^2$ per tier.
- Total work area depends on the model number and number of shelves.
- For models with multiple shelve, they shall be removable and adjustable such that the work space and height can be modified by the owner.

## FINISH

- Interior and exterior painted with highly reflective, environmentally friendly high temperature baked white powder coating.

## SHELVING

- Incubator : Each Shelves is 68.6cm x73cm
- PGC: Each shelves is 61cm x77.2cm
- Shelves are supported by shelf clips allowing ½" vertical adjustments
- Number of shelves and maximum clearance between shelves depend on model number.



## Refrigeration Overview

- Air cooled condensing unit.
- Continuous running condensing unit with hot gas bypass.
- Ceiling mounted, copper coil, aluminum fin evaporator coil.
- System cycle between heat and cool for precise temperature control around the temperature set point.
- Adjustabe expansion valve provided.
- Solenoid valve cycle between hot gas and cooling loops.
- Extended stem-type for long and quite operations.
- Self contained condensing unit located on top of each chamber for best performance and cleaner operation.
- 1/3 Hp condensing unit
- Heat Rejection to Ambident (Standard chamber3800-4300) BTU/hr

## Temperature Control

- Working Temperature minimum: 2°C with lights OFF
- Setting accuracy: 0.1 °C
- Temperature stability @ all set Temp (lights ON/OFF):±0.5 °C
- Dual (redundant) adjustable high and low temperature safety controls, audible alarms and visual indicators are provided. The controls shutdown the all power to the chamber, activates alarm and automatically controls the temperature returns to the normal range, the system will automatically reset.
- Compressor over temperature protection.
- Over pressure protection
- Compressor delay starts (Power ON)
- Temperature Deviation Alarm
- Multiple Day/Night Offset for Temperature.

## HUMIDITY CONTROL (OPTIONAL)

- The section outlines the PAN type humidity option having Humidifier and Dehumidifier with Electronic RH sensor.
- Additive humidity control of 40-85% for set Temperature between 15-30°C (Lights OFF)
- Extended Humidity ranges available. (See other specification sheet or consult for additional information).
- If a humidity option is selected, a de-mineralized water supply is required which terminates to a ½'' MPT connector.
- The performance of humidity control is dependent upon the laws of thermodynamics.

## ACCESSORIES

One access port with cover

## ELECTRICAL REQUIREMENT

- 230-two grounded cords each with NEMA-5-15P plug provided for standard chamber.

## OPTIONS(MOST POPULAR)

- Glass Door
- Intellus Ultra Connect
- Intellus Ultra Connect with Android based Touch screen
- Ultrasonic Humidifier & Dehumidifier with Electronic RH sensor.
- Door with observation Window and cover (12"x12")
- Additional Steel Wire Shelves
- Stainless Steel shelve
- Air Flow Speed Control.
- Individual Dimmable Tiers.
- PAN Type Humdifier (above Ambient to 90%RH)
- Ultrasonic Humdifier (above Ambient to 90%RH)
- Dehumidifier.
- Supplemental White, Red, Blue, Far Red LED
- Larger Size fresh airport.
- Two Amp Convenience Outlet
- IQ, OQ, PQ.
- Weather simulation software

Consult with us for options and accessories for any specific need.

## UPGRADE KIT

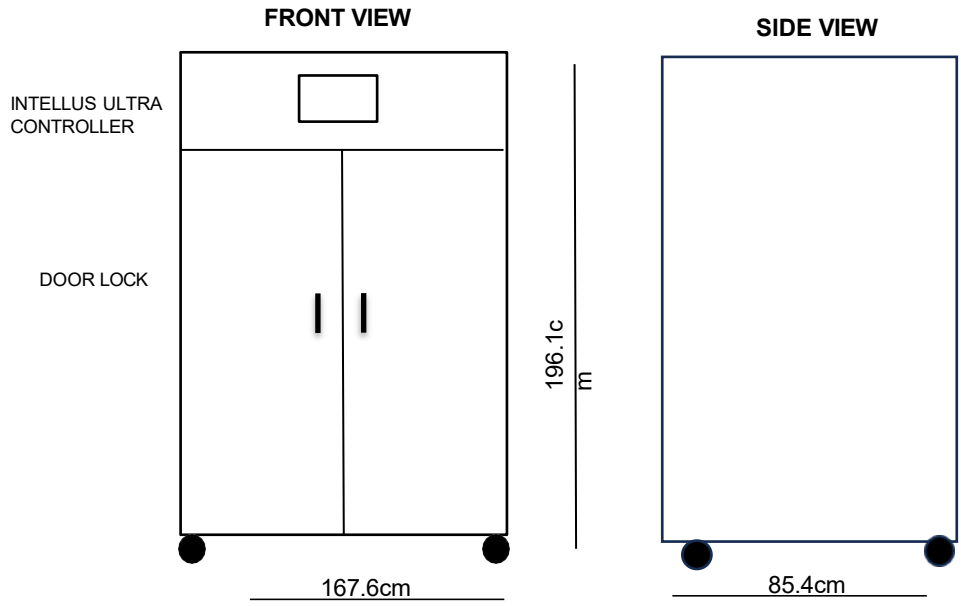
- Additional upper tier with light upgrade from 800 to 2000 µmoles, as per order
- Light Intensity from 100 µmol to 2000 µmoles (Consult JKG for details)

## SPECIFICATION

| Model | Light Intensity 6" from lamps | Temperature Range with all lights on | Interior Space volume | Total Shelving Floor Area | Maximum Growing Height | Exterior Dimensions | | | Tiers |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Width | Depth | Height | |
| | µmoles/m²/s | °C | m³ | m² | cm | cm | cm | cm | |
| **Plant Growth Chamber** | | | | | | | | | |
| JKG-66L1E | 1200 | 10-44±0.5 | 1.8 | 0.85 | 120 | 167.6 | 85.4 | 196.1 | 1 |
| JKG-66L2E | 1200 | 10-44±0.5 | 1.8 | 1.9 | 58.7 | 167.6 | 85.4 | 196.1 | 2 |
| JKG-66L3E | 600 | 10-44±0.5 | 1.8 | 2.8 | 35.6 | 167.6 | 85.4 | 196.1 | 3 |
| **Arabidopsis Chamber** | | | | | | | | | |
| JKG-66L2AR | 360 | 7-44±0.5 | 1.8 | 1.9 | 58.7 | 167.6 | 85.4 | 196.1 | 2 |
| JKG-66L3AR | 360 | 7-44±0.5 | 1.8 | 2.8 | 35.6 | 167.6 | 85.4 | 196.1 | 3 |
| **Seed Germination Chamber** | | | | | | | | | |
| JKG-66LGR | 120 | 5-44±0.5 | 1.8 | 14.2 | 6.7 | 167.6 | 85.4 | 196.1 | 30* |
| **Incubators** | | | | | | | | | |
| JKG-66NL | No Light | 2-44±0.5 | 1.8 | 6 | 20.4 | 167.6 | 85.4 | 196.1 | 6 |
| JKG-66LLVL | 230 | 4-44±0.5 | 1.8 | 4 | 28.6 | 167.6 | 85.4 | 196.1 | 4 |
| JKG-66LL | 120 | 4-44±0.5 | 1.8 | 4 | 28.6 | 167.6 | 85.4 | 196.1 | 4 |
| JKG-66LLAR | 240 | 4-44±0.5 | 1.8 | 4 | 28.6 | 167.6 | 85.4 | 196.1 | 4 |
| JKG-66VL | 120 | 4-44±0.5 | 1.8 | 5 | 24.1 | 167.6 | 85.4 | 196.1 | 5 |

- Requires 8" clearance right and back side for air circulation and for front door opening.
- **Environment condition:** Room Temp - 24°C, RH – 50% for optimum performance.

## WIRE DIAGRAM

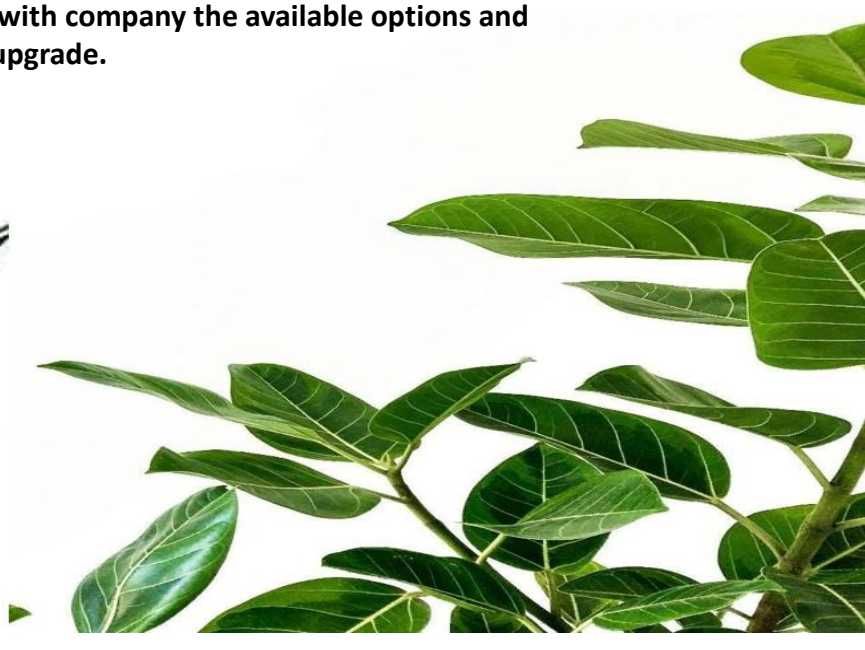


# Option Description for JKG 66 & Percival Chambers

| | |
|---|---|
| JC8T | IntellusUltra and Android-based Touchscreen |
| JC9 | IntellusUltraConnect (includes PercivalConnect® software) |
| JC9T | IntellusUltraConnect and Android-based Touchscreen |
| JC12 | WeatherEze Software (Compatible with Windows Only; Requires C9) |
| JEXW | Extended Warranty (annually) - Additional 1, 2 or 3 Years |
| JH1 | Pan-type Humidifier and Electronic RH Sensor (Ambient+ to 90%) |
| JH3 | Pan-type Humidifier, Dehumidifier, and Electronic RH Sensor |
| JH6 | Pan-type Humidifier, Dehumidifier, and Advanced RH Sensor |
| JH11 | Ultrasonic Humidifier and Advanced RH Sensor |
| JH12 | Ultrasonic Humidifier, Dehumidifier, and Advanced RH Sensor |
| JH14 | Ultrasonic Humidifier and Electronic RH Sensor (Ambient+ to 90%) |
| JH15 | Ultrasonic Humidifier, Dehumidifier, and Electronic RH Sensor |
| JH16 | RH Sensor only |
| JH17 | Dehumidifier only with Electronic RH sensor |
| JH17X | Dehumidifier only with reheat Heater |
| JH24 | Carboy H2O reservoir & Mounting Kit for PAN Type humidifer only |
| JS1 | Locking Door, Power Switch and Dry Contacts (one door) |
| JS2 | Locking Door, Power Switch and Dry Contacts (two doors) |
| JS3 | Remote phone auto-dialer |
| JS4 | Dry Contact for Remote Alarm |
| JQ1 | Door with Two Fresh Air Ports |
| JQ2 | Observation Window with Cover (12" x 12") on Door |
| JQ3 | Observation Window with Cover (6" x 36") on Door |
| JQ4 | Door Lock |
| JQ5 | Additional Epoxy Wire Shelf (each) |
| JQ6 | Stainless Steel Wire Shelf (each) |
| JQ7 | Caster Assembly with Levelers for 30 Series |
| JQ9 | Phenolic Coated Coil(s) (required for Drosophila research) |
| JQ10 | Additional Access Ports (1", 2", 3" or 4" increments) |
| JQ11 | Air Filter Assembly (insect screen) |
| JQ12 | Full Size Glass Door |
| JQ18 | Stacking Hardware for 30 Series |
| JQ19 | External Drip Pan |
| JQ22 | Closed Loop Dimmable Lighting Control with PAR Light Sensor |
| JQ23 + | Open Loop Dimmable Lighting Control (each shelf is independently dimmable by percentage) |
| JQ24 | LED Working Light (energized when door opens) |
| JQ29 | Left-Hand Door Swing |
| JQ30 | Additive Carbon Dioxide Control with 2000 ppm Sensor |
| JQ31 | Additive Carbon Dioxide Control with 5000 ppm Sensor |
| JQ32 | Additive Carbon Dioxide Control with 10% Sensor |
| JQ33 | Carbon Dioxide Removal System (Requires Q30, Q31 or Q32 to Operate) |
| JQ41 | Heavy Duty Door Handle with Latch |
| JQ42 | 1 NEMA 5-15R 1A Convenience Receptacle, Programmable via Intellus Control System |
| JQ42X | other convenience receptacle, programmable via controller |
| JQ48 | Hydroponic Film Technique (HFT) Kit |
| JL1000 | TOP Tier with 1000umole light |
| JL1200 | TOP Tier with 1200umole light |
| JL1500 | TOP Tier with 1500umole light |
| JL2000 | TOP Tier with 2000umole light |
| JIWW | LED Tube White |
| JSB8 | 8 Colour LED tile (Blue, Red, Warm White, Far Red, Green, Cool White, Photo Red, Violet) |
| JSW | White LED TIle |
| JSBC | SciBrite Panel with Controller Kit |
| JIBC | Incubrite Panel with Controller kit |
| JDLI | Daily Light integral |
| JQC1 | IQ, OQ |
| JQC2 | IQ, OQ, PQ |
| JAF | Air Flow Speed Control |
| JFAF | Fresh Air port with Filter |
| JFAHF | Fresh Air port with HEPA Filter |
| JFAHFFan | Fresh Air port with HEPA Filter & Fan |
| JUPSC | Power back kit for Controller only. |
| JUPSS | Power back kit for Complete Chamber |
| JWAC1 | Stainless Steel Interior |
| JWAC2 | Water-cooled Condensing Unit |
| JWAC4 | Large Observation Window (12" X 42") on Door |
| JWAC5 | Cover for WAC4 |
| JWAC6 | Self-contained, Air-cooled Condensing Unit |
| JWAC7 | Remote, Outdoor, Air-cooled Condensing Unit with All-Weather Housing |
| JWTM1 | Extended Temperature Range to -10°C (for non-lighted units only) |
| JWTM2 | Extended Temperature Range to -10°C lights off/0°C lights on |
| JWTM3 | Extended Temperature Range to +60°C (No refrigeration above 44°C) |
| JWTM4 | Extended Temperature Range to +60°C with Continuous Running Condenser |
| JST1 | Service Voltage Stabilizer |
| JRO1 | RO Water Purifier |
| JDT1 | Delay timer |
| JVMR1 | Voltage cut off Relay |
| JIK1 | Water Storage container, MCB and External Drain Pipe |

*** Note: All options are not field upgradable. Verify with company the available options and feature for each model for factory fitting and field upgrade.**





**1000+**
Installations

**4+**
Offices

**28+**
States/UT
Installations

**500+**
Users

**100+**
Estabilishments

## Disclaimer:

Specification subject to change without notification.
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Scan for the more Info.



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