Colo Science
Laboratory & Scientific Equipment

COLO.SCIENCE · TECHNICAL SPECIFICATION

RAKAPOSHI-PG

Reach-in Plant Growth Chambers · 6 models, 310 to 1135 L · LED lighting on every shelf · 3–45 °C · 50–90 % RH

RAKAPOSHI-PG is a series of reach-in plant growth chambers from 310 L to 1135 L for laboratories that need reproducible day and night conditions. Six models share the same controller, climate system and lighting options; they differ in growing space and footprint, and the PG500D has two separate compartments. Temperature, humidity and light are programmed together in time segments on a 7" touch screen, so a full photoperiod — dawn, day, dusk and night — runs automatically for weeks. Each shelf carries its own dimmable LED panel. The standard full-spectrum white light can be replaced at order by high-intensity white or by red, blue, far-red and multi-colour research spectra. Forced air circulation with fresh-air exchange keeps the climate even over the whole growing area, and a smartphone app shows the chamber status and alarms from anywhere.

310–1135 L · 6 MODELS | 4–5 LIT SHELVES | 3–45 °C · ±0.5 °C | 50–90 % RH | LED 0–100 % DIMMABLE | DAY / NIGHT PROGRAMS | SMARTPHONE APP | USB DATA LOGGER

HEATING & COOLING 3 … 45 °C

Document type: **Technical Specification Sheet**
Product series: **RAKAPOSHI Plant Growth Chambers**
Models: **PG300 · PG500 · PG600 · PG800 · PG1000 · PG500D**
Format: **A4 landscape · CORE-TECHSPEC 1.2**

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RAKAPOSHI-PG300 · reach-in plant growth chamber · 7" touch screen controller



Growing space · LED panel above each shelf, stainless steel interior

SERIES
RAKAPOSHI-PG

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Technical data sheet · Informational document · Controlled electronic document
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RAKAPOSHI-PG · technical specification

Reach-in plant growth chambers with programmable temperature, humidity and LED lighting, 310 to 1135 L

PHOTOPERIOD PROGRAMS | INDEPENDENT SHELF LIGHTING | FRESH-AIR EXCHANGE | ALARMS & REMOTE APP — Reproducible growth conditions for plant research

Product Overview

Application profile

Plant physiology and genetics: Arabidopsis, rice, tobacco and other model plants under defined light and climate.

Crop research: seedlings and young plants of soybean, maize, rapeseed, tomato, pepper, strawberry and similar crops.

Germination and seedling tests: seed vigour, germination and early growth under controlled conditions.

Stress and photobiology studies: temperature, humidity and light-quality experiments, including red / far-red responses.

Teaching laboratories: plant growth experiments in universities and schools.

Why RAKAPOSHI-PG

Light where the plants are: a dimmable LED panel above every shelf, 300 µmol/m²·s at 10 cm as standard and up to 1600 µmol/m²·s as an option.

One program for climate and light: temperature, humidity and light intensity follow the same time segments, so gradual sunrise and sunset can be simulated.

Six sizes, one platform: from 310 L in 770 × 720 mm floor area to 1135 L on five shelves, and the PG500D with two compartments for two conditions side by side.

Remote supervision: the smartphone app shows the chamber status and alarms when nobody is in the laboratory.

Key features

Controller: programmable controller with 7" touch screen, time-segment and real-time programming.

Climate: compressor cooling and heating, humidification by steam, PID control of temperature and humidity.

Data: internal data logger, measured values exported via USB.

Safety: independent over-temperature protection, high and low alarms for temperature and humidity with audible and visual signal.

Construction: stainless steel interior (AISI 304), powder-coated steel housing, polyurethane foam insulation.

Models and order codes

Model	Order code	Growing space	Shelves	Exterior W × D × H
PG300	PRO8325	310 L	4	770 × 720 × 1730 mm
PG500	PRO8326	501 L	4	900 × 800 × 1940 mm
PG600	PRO8328	603 L	4	900 × 800 × 1940 mm
PG800	PRO8329	790 L	4	1164 × 800 × 1940 mm
PG1000	PRO8330	1135 L	5	1920 × 753 × 2010 mm
PG500D	PRO8327	2 × 237 L	2 × 2	900 × 800 × 1940 mm

GROWING SPACE
310–1135 L · 6 models

TEMPERATURE
3–45 °C · ±0.5 °C

HUMIDITY
50–90 % RH

LIGHT
300 µmol/m²·s · up to 1600 as option

Values for the standard configuration. Options, lighting configuration and supply voltage are confirmed in the COLO.Science quotation.

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Technical Parameters

Models	PG300 · PG500 · PG600 · PG800 · PG1000 · PG500D — order codes page 2	**Lighting**	LED panel above each shelf; full-spectrum white (400–700 nm) as standard
Growing space	310 · 501 · 603 · 790 · 1135 L; PG500D 2 × 237 L	**Light intensity**	300 µmol/m²·s at 10 cm from the panel; option 500, 1000 or 1600 µmol/m²·s
Shelves	4 lit shelves (PG1000: 5; PG500D: 2 per compartment); fewer shelves as option	**Light control**	0–100 % dimmable, programmed in time segments together with climate
Temperature range	3–45 °C with lights on and off; option −10 °C to 45 °C (lights off)	**Lighting options**	Single colour 450 / 660 / 735 nm, three colours, four colours, eighteen colours — page 4
Temperature fluctuation	±0.5 °C	**Controller**	7" touch screen, time-segment and real-time programming, PID control
Temperature display resolution	0.1 °C	**Data**	Internal data logger, export via USB
Humidity range	50–90 % RH with lights on and off; option 30–90 % RH	**Remote access**	Smartphone app for status, settings and alarms
Humidification	Steam humidification, capacitive humidity sensor	**Safety**	Independent over-temperature protection; high / low temperature and humidity alarms, audible and visual
Cooling	Air-cooled compressor refrigeration unit	**Interior · housing**	Stainless steel AISI 304 · powder-coated steel, polyurethane foam insulation
Air circulation	Forced air circulation with fresh-air exchange	**Installation**	Free space around the cabinet for the refrigeration air flow
Exterior W × D × H	By model — page 2	**Power supply**	220 V AC, 50 Hz, single-phase
Ambient temperature	5–35 °C	**CO_2 control**	Option: ambient to 2000 or 5000 ppm

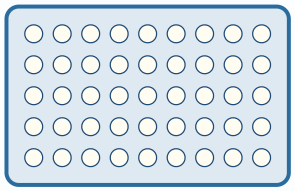
Standard and Optional Configuration

Function	Standard	Option at order
Temperature	3–45 °C, lights on and off	−10 °C to 45 °C with lights off
Humidity	50–90 % RH	30–90 % RH
Light	White, 300 µmol/m²·s at 10 cm	White 500 / 1000 / 1600 µmol/m²·s · one, three, four or eighteen colours
Shelves	4 lit shelves (PG1000: 5)	Fewer lit shelves for taller plants
Atmosphere	Fresh-air exchange	CO_2 control, ambient to 2000 or 5000 ppm
Door	Insulated solid door	Observation window

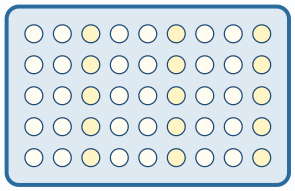
Design and specifications may change without prior notice. The final configuration is stated in the COLO.Science quotation.

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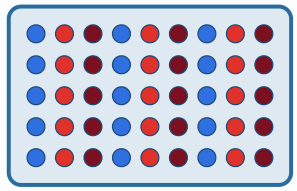
Lighting Configurations



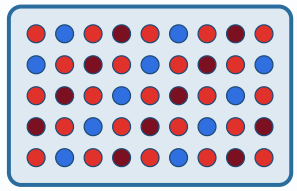
White · standard
Full spectrum, 300 µmol/m²·s
standard configuration



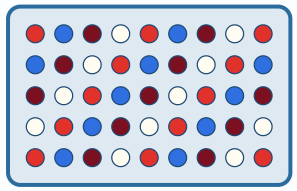
White · high intensity
500 · 1000 · 1600 µmol/m²·s
option at order



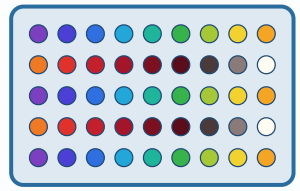
Single colour
Blue 450 · red 660 · far-red 735 nm
option · one colour per panel



Three colours R·B·FR
660 · 450 · 735 nm
option



Four colours R·B·FR·W
660 · 450 · 735 nm + white
option

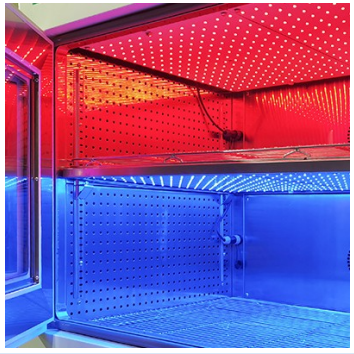


Eighteen colours
18 wavelengths, UV-A to NIR
option · research spectrum

Schematic view of one shelf panel from below; dot colours show the LED colours in the panel. The standard chamber has full-spectrum white panels on all shelves. Another configuration is chosen at order and fitted on all shelves; each colour is dimmed separately from 0 to 100 %. Intensity per colour for the chosen configuration is stated in the quotation.

Lighting configuration	Spectrum	In the chamber	Same light as a stand-alone LUMA panel (SKU · intensity)
White · standard	Full spectrum white, 400–700 nm, dimmable 0–100 %	**Standard**	LUMA-W300 · PRO8335 · 300/500 µmol/m²·s
White · high intensity	Full spectrum white, 500, 1000 or 1600 µmol/m²·s at 10 cm	**Option**	LUMA-W1000 · PRO8334 · 1000 µmol/m²·s LUMA-W1600 · PRO8333 · 1600 µmol/m²·s
Single colour	Blue 450 nm, red 660 nm or far-red 735 nm (±5 nm)	**Option**	LUMA-B400 · PRO8336 · LUMA-R300 · PRO8337 · LUMA-FR110 · PRO8338
Three colours R·B·FR	660 / 450 / 735 nm, each colour dimmed separately	**Option**	LUMA-RBFR350 · PRO8339 · 350 µmol/m²·s
Four colours R·B·FR·W	660 / 450 / 735 nm plus white	**Option**	—
Eighteen colours	18 wavelengths from UV-A to near infrared, each regulated separately	**Option**	LUMA-18C2000 · PRO8341 · 2000 µmol/m²·s total

The same LED panels are available as the stand-alone LUMA line, with handheld (LUMA-CTRL-H · PRO8342) or benchtop (LUMA-CTRL-T · PRO8343) controller, for racks and existing growth rooms. The LUMA-SM1 spectrometer light meter (PRO8344) checks spectrum and illuminance on the shelf.



Coloured research lighting · red and blue panels on separate shelves

Choosing the light

General growth, seedlings, Arabidopsis: standard white 300 µmol/m²·s.

Light-demanding crops and high-light stress: white 1000 or 1600 µmol/m²·s, usually with fewer shelves.

Photomorphogenesis, flowering, shade response: three or four colours with far-red 735 nm.

Spectral research: eighteen-colour panel, each wavelength regulated separately.

Not sure: send the species, plant height and target light level — COLO.Science proposes the configuration.

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Visuals, Configuration Guidance and Support



PG300 · stainless steel interior, lit shelves



PG500D · two compartments, 2 × 237 L

Ordering information

Item	SKU	Configuration
RAKAPOSHI-PG300 ... PG1000	PRO8325 · 8326 · 8328 · 8329 · 8330	310–1135 L · white LED 300 µmol/m²·s · 3–45 °C · 50–90 % RH — page 2
RAKAPOSHI-PG500D	PRO8327	2 × 237 L in two compartments, 2 lit shelves each
Options	at order	−10 °C · 30–90 % RH · CO_2 control · observation window · fewer shelves · lighting, page 4
Stand-alone LED panels	LUMA line	PRO8333–PRO8341, controllers PRO8342 · PRO8343, light meter PRO8344

Configuration checklist

Plants: species, number of pots or trays and the maximum plant height decide the model and the number of shelves.

Climate: day and night temperature and humidity; below 3 °C or below 50 % RH needs the options.

Light: photoperiod, target intensity and spectrum — see page 4.

Atmosphere: CO_2 enrichment if the method needs it.

Site: 220 V single-phase supply, room temperature 5–35 °C, space for air flow, door width for the larger models.

SUPPLIER AND SUPPORT

COLO Lab Experts

Polje ob Sotli 4, SI-3255, Slovenia

Selection guidance: Send the species, the growth protocol and the light you need. COLO.Science will confirm the configuration of the chamber and the lighting.

QUICK CONTACT

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COLO.SCIENCE · PLANT GROWTH CONFIGURATION SUPPORT

Not sure which chamber and light fit your experiment?

Send your growth protocol — species, photoperiod, temperature and humidity program, light intensity and spectrum. COLO.Science will propose the chamber size, the lighting configuration and the options, including installation and commissioning.

Web: **colo.si**

Ask us:
Price and current discount, delivery time, installation, commissioning and IQ/OQ, lighting options and LED panels — write to sales@colo.si or call us.

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