

## With LED lamp Plant Growth Chamber < Standard model >



Models L(P)H-241PPF/D/ST-S(P) and L(P)H-411PPF/D/ST-S(P) are standard plant growth chambers. There are two control modes available. One is a changeover mode, changing between constant operation and day/night switching operation. The other is a program control mode. Three-position controller is used for temperature and humidity control, which provides energy-saving effects. A wide variety of chambers are available in sizes ranging from 240 liters to 410 liters.

### Features

- An operation touch panel with time display is mounted on the upper part of the main body, which allows easy operation.
- Model L(P)H-□PPF/D/ST-S allows both constant operation at any temperature/light/ (humidity) and day/night switching operation.
- Model L(P)H-□PPF/D/ST-SP allows a program control.
- Five-sided illumination. The light can be continuously dimmed from 20% to 100% or 0%.
- Model LHs don't need a drain hose or a tank because of a forced evaporation system inside the chamber.
- Three-position controller is used for temperature and humidity control (proportional control for heating), which provides low running costs.
- The inner door has energy-saving functions, being used as one door or two up-and-down doors as per usual.
- Two-level wind speed control is installed to protect wind-sensitive plants..
- A hole of 40 mm diameter for measurement is included as standard.
- Humidity control system can be selected from "only humidification" or "only dehumidification" or "both humidification and dehumidification."

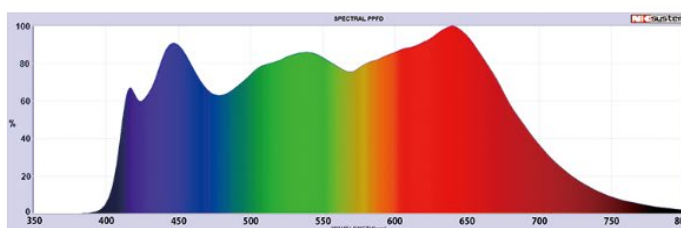
### Applications

- Plant cell/tissue culture, germination, acclimation, or growth test
- Environmental test
- Growth of rice, arabidopsis, etc.
- Insect experiment
- Cell culture
- Environmental resistance test for plants
- Storage test at constant temperature and at constant humidity (only Model LPH)

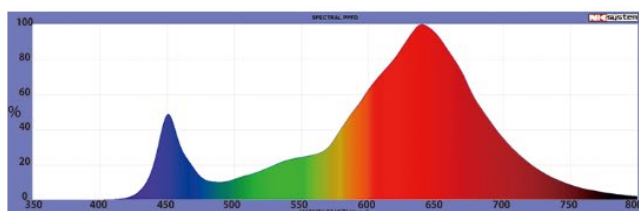


### Options

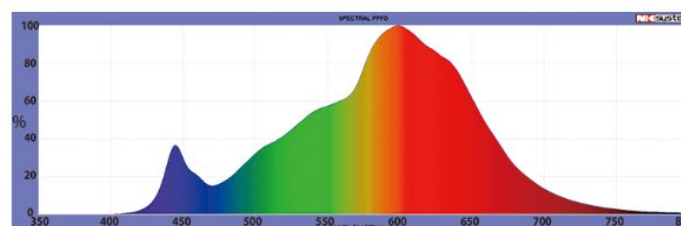
- Table for a water tank (Model LPH), network observing system, MultiSpex PF-75T, metal halide lamp, carbon dioxide removal unit.



White LED spectrum



Pink LED spectrum



Yellow LED spectrum

## Specifications

### 240 ℓ series

\* Power outlets inside the chamber have a maximum current capacity of 1A.

Model	Pink LED	LH-241PFPT-S	LPH-241PFPT-S	LH-241PFPT-SP	LPH-241PFPT-SP
	Yellow LED	LH-241PFDT-S	LPH-241PFDT-S	LH-241PFDT-SP	LPH-241PFDT-SP
	White LED	LH-241PFST-S	LPH-241PFST-S	LH-241PFST-SP	LPH-241PFST-SP
Outer dimensions [mm]	W760 × D726 × H1,767				
Inner dimensions [mm]	W512 × D485 × H980				
Control system	Changeover between constant operation and day/night switching operation		Step program, built-in clock control (24 hours) 24 steps/5 patterns with a pattern link function		
Repeat	—		1 to 99 times or unlimited		
Control methods	Three-position control method: Refrigerator and humidifier, ON/OFF control; heater, proportional control				
Temperature	+5°C to 50°C ± 1°C (15°C to 50°C when all lights on)				
Humidity	—	50-80%RH ± 10%RH (15-45°C)		—	50-80%RH ± 10%RH (15-45°C)
Illuminance	0 to 12,000 lx for pink LEDs and 0 to 20,000 lx for yellow and white LEDs They can be continuously dimmed from 20% to 100% or 0% (all lights off)				
Photon flux density	0 to 260 μmolm <sup>-2</sup> s <sup>-1</sup> for pink, 0 to 280 μmolm <sup>-2</sup> s <sup>-1</sup> for yellow, and 0 to 330 μmolm <sup>-2</sup> s <sup>-1</sup> for white				
Light source	LED lamps for plant growth				
Number of LEDs	Four 20W LED lamps x 2 sides (on the ceiling and door), four 40W LED lamps x 3 sides (on the back, right, and left sides)				
Refrigerator	300W				
Heater	400W	500W	400W	500W	500W
Humidifier	—	80W	—	80W	80W
Shelf	5 shelves (adjustable)				
Operation current (maximum)	8A (9A for LH-241PFST-S)	12.5A (13.5A for LPH-241PFST-S)	8A (9A for LH-241PFST-SP)	12.5A (13.5A for LPH-241PFST-SP)	12.5A (13.5A for LPH-241PFST-SP)
Power requirement	Single phase 100V 50/60Hz 15A E				
Weight (kg)	About 225	About 235	About 225	About 235	About 235

### 410 ℓ series

Model	Pink	LH-411PFPT-S	LPH-411PFPT-S	LH-411PFPT-SP	LPH-411PFPT-SP
	Yellow	LH-411PFDT-S	LPH-411PFDT-S	LH-411PFDT-SP	LPH-411PFDT-SP
	White	LH-411PFST-S	LPH-411PFST-S	LH-411PFST-SP	LPH-411PFST-SP
Outer dimensions [mm]	W880 × D806 × H1,875				
Inner dimensions [mm]	W670 × D565 × H1,100				
Control system	Changeover between constant operation and day/night switching operation		Step program, built-in clock control (24 hours) 24 steps/5 patterns with a pattern link function		
Repeat	—		1 ~ 99 times or unlimited		
Control methods	Three-position control method: Refrigerator and humidifier, ON/OFF control; heater, proportional control				
Temperature	+5~50°C ± 1°C (15~50°C when all lights on)				
Humidity	—	50-90%RH ± 10%RH (15-45°C)*		—	50-90%RH ± 10%RH (15-45°C)*
Illuminance	0 to 12,000 lx for pink LEDs and 0 to 20,000 lx for yellow and white LEDs They can be continuously dimmed from 20% to 100% or 0% (all lights off)				
Photon flux density	0 to 260 μmolm <sup>-2</sup> s <sup>-1</sup> for pink, 0 to 280 μmolm <sup>-2</sup> s <sup>-1</sup> for yellow, and 0 to 330 μmolm <sup>-2</sup> s <sup>-1</sup> for white				
Light source	LED lamps for plant growth				
Number of LEDs	20W LED x 6 lamps x 1 side (on the ceiling), 40W LED x 4 lamps x 4 sides (on the back, right, and left sides)				
Refrigerator	300W				
Heater	500W				
Humidifier	—	80W	—	80W	80W
Shelf	6 shelves (adjustable)				
Operation current (maximum)	10A (11A for LH-411PFST-S)	13.5A (14.5A for LPH-411PFST-S)	10A (11A for LH-411PFST-SP)	13.5A (14.5A for LPH-411PFST-SP)	13.5A (14.5A for LPH-411PFST-SP)
Power requirement	Single phase 100V 50/60Hz 15A E				
Weight (kg)	About 275	About 285	About 275	About 285	About 285

# Temperature sensor: platinum resistance temperature sensor, humidity sensor: capacitance measurement sensor, humidifier: ultrasonic humidifier.

# Power requirement does not include the power-outlet installed in the body.

# These chambers are designed to operate in ambient temperatures up to 30oC. The specified performance may not be achieved depending on actual usage conditions.

# If lighting, temperature setting should be 15oC or higher.

# The specified performance may not be achieved depending on the combination of temperature and humidity.

# Depending on the sample, drainage installation may be required.

# Temperature can be controlled between +5 and +50oC.

# When controlling humidity, the temperature should be set between 15 and 45oC in Model 241/411.

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