With LED lamp Plant Growth Chamber ＜Standard model＞

Models L(P)H-241PFP/D/ST-S(P) and L(P)H-411PFP/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

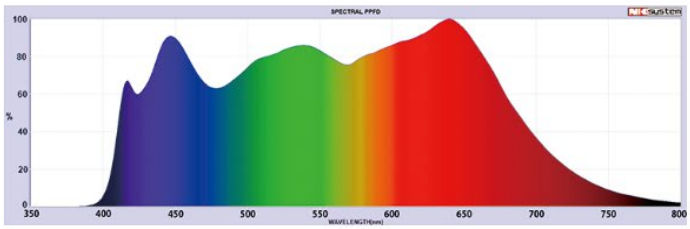
- An operation touch panel with time display is mounted on the upper part of the main body, which allows easy operation.
- Model L(P)H-□PFP/D/ST-S allows both constant operation at any temperature/light/ (humidity) and day/night switching operation.
- Model L(P)H-□PFP/D/ST-SP allows a program control.
- Five-sided illumination. The light can be continuously dimmed form 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

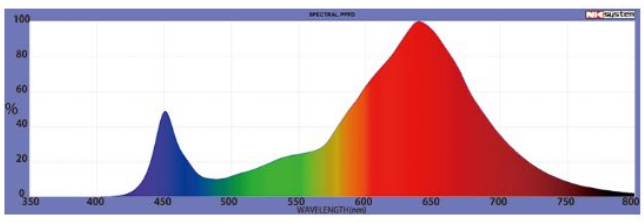
- Plant cell/tissue culture, germination, acclimation, or growth test
- Environmental test
- Growth of rice, arabidopsis, etc.
- Insect experiment
- Cell culture
- Environmental resistance test for plants
- Storage test at constant temperature and at constant humidity (only Model LPH)

Options

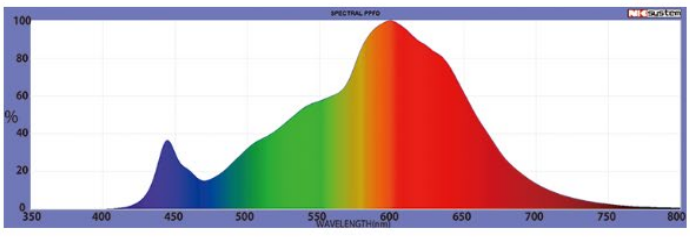
- Table for a water tank (Model LPH), network observing system, MultiSpex PF-75T, metal halide lamp, carbon dioxide removal unit.



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℃ to 50℃ ± 1℃ (15℃ to 50℃ 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^{-2}s^{-1} for pink, 0 to 280 μmolm^{-2}s^{-1} for yellow, and 0 to 330 μmolm^{-2}s^{-1} 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
Humidifier		—	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)
Power requirement		Single phase 100V 50/60Hz 15A E			
Weight (kg)		About 225	About 235	About 225	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℃ ± 1℃ (15～50℃ 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^{-2}s^{-1} for pink, 0 to 280 μmolm^{-2}s^{-1} for yellow, and 0 to 330 μmolm^{-2}s^{-1} 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
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)
Power requirement		Single phase 100V 50/60Hz 15A E			
Weight (kg)		About 275	About 285	About 275	About 285

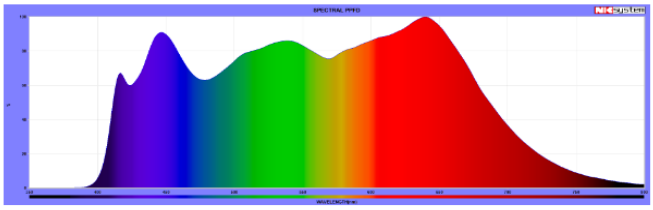
Temperature sensor: platinum resistance temperature sensor, humidity sensor: capacitance measurement sensor, humidifier: ultrasonic humidifier.
Power requirement does not include the power-outlet installed in the body.
These chambers are designed to operate in ambient temperatures up to 30oC. The specified 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.

NKsystem Bio & Clean Scientific Instruments
NIPPON MEDICAL & CHEMICAL INSTRUMENTS CO.,LTD.

URL: http://www.nihonika.co.jp E-mail: nk.trade@nihonika.co.jp

SUNRAY LIGHT (straight tube sun-like LED lamp)

Sunray light



Emission spectrum

A Straight Tube LED Lamp with Sunlight-like Spectrum for Optimal Plant Growth

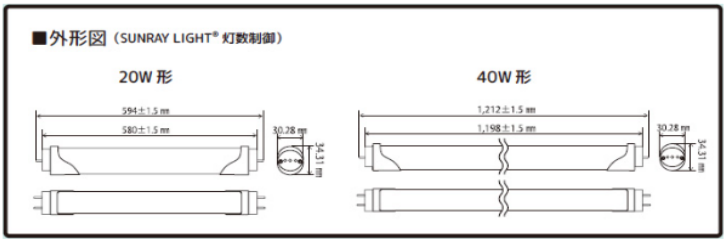
Features

SUNRAY LIGHT features red, green, and blue wavelengths, which are considered highly effective for photosynthesis.

It is designed for easy installation in growing racks and plant growth chambers.

It provides natural coloring to optimize plant growth.

Note: This product is not compatible with LEDs made by other companies. Please do not install them.



Specifications

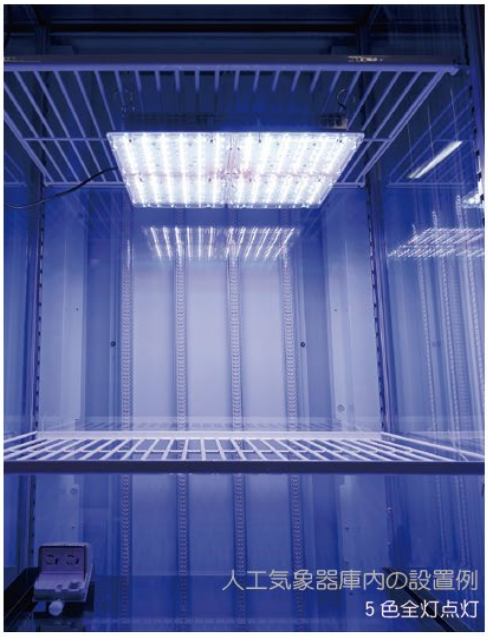
Model	PF20-S12WT8-S1	PF40-S22WT8-S1
Lamp surface	Transparent plastic cover	
Number of LED chips	65 pieces	132 pieces
LED radiation angle (°)	120	
Weight (g)	200	380
Bayonet type	G13	
Protection code	IP20	
Input current (A)　max at 100V	0.12	0.22
Power consumption(W)　max at 100V	12	22
Total luminous flux (lm)	870	1,500
Color temperature (K)	5,600 ± 200	
Color rendering index (Ra)	90	
Environmental temperature (℃)	-10～40	
Lifetime (h)	Approx. 30,000	
Power source	AC 100 ～ 240V　50/60Hz	

NKsystem Bio & Clean Scientific Instruments
NIPPON MEDICAL & CHEMICAL INSTRUMENTS CO.,LTD.

URL: http://www.nihonika.co.jp　　E-mail: nk.trade@nihonika.co.jp

Illumination Unit MultiSpex PF-75T

MultiSpex PF-75T



Installed in a plant growth chamber

This lighting unit consists of five wavelengths (violet, blue, green, red, and far-red) that are considered necessary for plant growth. It can be used for various research purposes since each of the five wavelengths can be controlled independently to provide optimal light conditions for plant growth. We hope you will make use of this unit.

Features

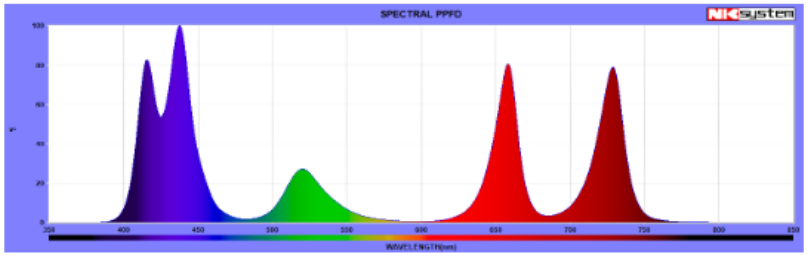
Multispex is an LED lighting unit with five wavelengths: Purple (λp = 415 ± 5 nm), blue (λp = 440 ± 5 nm), green (λp = 520 ± 5 nm), red (λp = 660 ± 5 nm), and far red (λp = 730 ± 5 nm).

The five wavelengths (purple, blue, green, red, and far red) can be individually dimmed from 20% to 100%.

It is equipped with a timer and can be switched ON and OFF at intervals of at least 15 minutes.

Applications

Raising of seedling, experimental cultivation, etc.



Spectrum of MultiSpex

PFD（μmol/m²/s） between 380 and 780 nm

	Distance of 10 cm	Distance of 30 cm
All 5 colors ON	633	281
Only purple color ON	104	42
Only blue color ON	133	65
Only green color ON	81	37
Only red color ON	155	64
Only far-red color ON	186	86

* Non-offical data, reference only

Specifications

Illumination Unit

Model	PF5-75T
Outer Dimensions	350W × 350D × 44H mm
Material	Aluminum for the main body, polycarbonate for the Illumination surface, and Stainless steel for the hanging brackets
Number of LEDs	144 for purple, 140 for blue, 140 for green, 144 for red, and 144 for far red
Wavelength	Purple (λp = 415 ± 5 nm), blue (λp = 440 ± 5 nm), green (λp = 520 ± 5 nm), red (λp = 660 ± 5 nm), and far red (λp = 730 ± 5 nm)

Note: Connect the illumination unit to the power unit in order to utilize it.

Power Unit

MOdel	PF5-1BB
Outer Dimension	190W × 307.5D × 156.5H mm
Material	Steal plate with resin coating for the main body
Dimmer Control	PWM digital dimmer (20% to 100%) for each color (5 systems)
Illumination Timer	ON an OFF at ≥ 15-minute intervals
Power Source	Single phase 100 V, 50/60 Hz, 2 A

NKsystem Bio & Clean Scientific Instruments
NIPPON MEDICAL & CHEMICAL INSTRUMENTS CO.,LTD.
URL: http://www.nihonika.co.jp E-mail: nk.trade@nihonika.co.jp