Step-In FytoScope FS-SI

Step-in FytoScope FS-SI is a plant growth chamber that utilizes Light Emitting Diodes (LEDs) as a sole light source and thus provides excellent spectral quality with high irradiance for plant physiology applications. Due to its versatile construction, the FytoScope may be used for growing of diverse plants: from Arabidopsis to wheat, corn or rice.

Step-in FytoScope FS-SI enables the researcher to maintain controlled growing conditions of temperature and humidity with independent selection of photoperiods. Multifaceted programming options enable researchers to simulate natural conditions and to define a full range of “day/night” cycles with “dawn/dusk” or “cloudy sky” effects. In addition, basic fluorescence parameters can be monitored continuously.

For user convenience both actual inside conditions and target values for temperature, lighting and relative humidity are permanently displayed on the touch-screen controller, which is conveniently situated on the front side of the FytoScope. The controller allows a wide range of user programmable options to be selected. Temperature, humidity or day/night timing can be set at the touch of a button. A graphical representation of actual conditions inside the FytoScope is also displayed. All data can be downloaded to a PC via the USB cable.

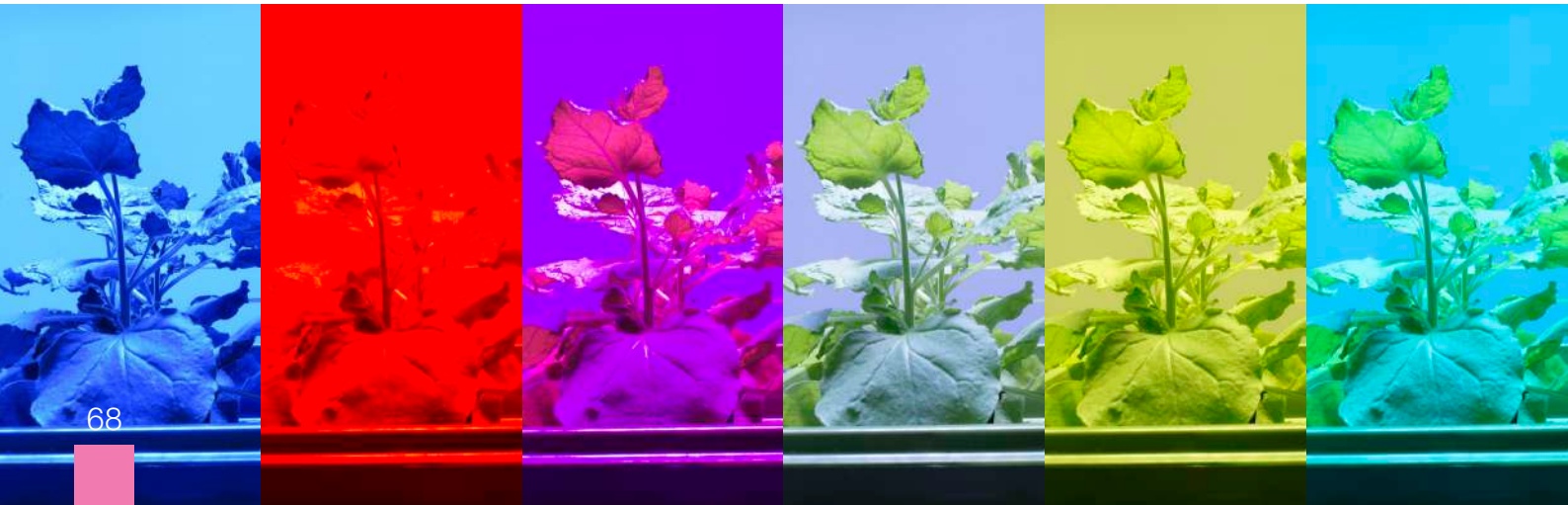
Standard versions:

Model FS 3400

Model FS 4400

APPLICATIONS

- Real-time, *in-situ*, high-content monitoring of plant performance
- Accurate, precision-controlled plant growth under defined light composition
- Accurately controlled growth of diverse plants: from Arabidopsis to wheat, corn or rice
- Adequate space for cultivations under controlled temperature and light characteristics, intensity and mode
- Multi-line schedule for temperature and lighting



KEY FEATURES

- Lighting: adjustable in intensity (from 0 to 100 %), timing, modulation, and diurnal cycling
- Temperature: maximum +40 °C, minimum +10 °C (lights ON), optionally minimum 0 °C
- Relative humidity: adjustable from 40 to 80 % (independent on light intensity)
- LED technology with minimum undesired plant heating
- White LED illumination with supplementary far-red LEDs
- PPFD up to 1,500 µmol.m^{-2}.s^{-1} at the distance of 50 cm
- Rapid modulation of irradiance simulating light flecks as well as precise adjustment of the light intensity in the range of 1 to 100 %
- Homogeneous illumination over the whole cultivation area of 0.9 m^2 (model FS 3400), or 1.3 m^2 (model FS 4400)
- No “wind” effects – homogeneous and almost laminar air exchange
- Adjustable shelving
- Step-in unit with inside capacity of 3,400 l (model FS 3400); 4,400 l (model FS 4400) (*)
- Incorporated module for measuring chlorophyll fluorescence parameters (optional)

(*) other volumes on request

SOFTWARE CONTROL

- Data collection in real time
- Data upload for processing during the experiment
- Data visualization in graphs or tables
- Web interface
- 10.5" LCD color touch screen located at the front side of the chamber
- Software for user-friendly protocol programming included
- Memory for 100 user-defined protocols
- Graphical representation of conditions inside the FytoScope – both actual conditions and target values are displayed
- Data transfer via Ethernet or USB interface
- Remote control over LAN
- Internal diagnostic system for recording and reporting of possible failures

TECHNICAL SPECIFICATION

- **LED Light Illumination**: LED panel 80 × 108 cm
- **Controlled Temperature Range**: +10 to +40 °C (independent on light intensity; ambient room temperature up to +35 °C), optionally 0 to +40 °C
- **Controlled Humidity Range**: 40 to 80 % (independent on light intensity)
- **External Dimensions** (W × D × H):
  - 190 × 130 × 220 cm (model FS 3400)
  - 245 × 130 × 220 cm (model FS 4400)
- **Internal Dimensions** (W × D × H):
  - 130 × 110 × 210 cm (model FS 3400)
  - 197 × 110 × 210 cm (model FS 4400)
- **Weight**: 650 kg
- **Air Ventilation**: 1.200 l/hour
- **Power Input**: 6.5 kW

ONLINE MEASURED PARAMETERS

- Relative humidity
- Temperature
- Light intensity
- F_T, F_M, QY(optional)