



N-Pen N 110

N-Pen N 110 is a light-weight, battery-powered reflectance-based instrument that provides a convenient, cost-effective method for effective nitrogen management in plants throughout their growing season. Essentially, the N-Pen characterizes nitrogen amount by means of reflectance and by the concept of a close link between chlorophyll content and nitrogen content in plants.

Rugged and compact N-Pen can be favorably used on the field, in the plant biology lab or for education. The use of the N-Pen is non-destructive and permits quick, repeated measurements throughout the growing season. It takes rechargeable Li-ion battery and is supplied in a robust case.

N-Pen versions with a USB and Bluetooth communication module for data transfer are available. Comprehensive FluorPen 1.1 software provides data transfer routines and many additional features for data presentation in tables and graphs.

▼ CURRENTLY AVAILABLE CALIBRATIONS

- Maize
- Wheat
- Barley

▼ KEY FEATURES

- Lightweight, hand-held design
- Non-invasive measurement method
- Easy two-button operation
- Quick and easily repeatable measurements
- Battery-operated

▼ APPLICATIONS

- Significant yield increase
- Quick tuning of nitrogen management in crops
- Increasing nitrogen use efficiency
- Reducing the risk of yield-limiting N deficiencies
- Saving labor and/or application costs
- Reducing the risk of excessive fertilizer applications and subsequent contamination of the environment
- Agronomy research





PolyPen RP 410

PolyPen RP 410 features a complete system for measurement of spectral reflectance of an internal light source (Xenon incandescent lamp 340–1,050 nm) from leaves and other types of samples.

PolyPen RP 410 incorporates formulas of commonly used reflectance indexes (e.g., NDVI, NDGI, PRI etc.) into its software and displays values of selected indexes for the measured sample. Measured data are instantly displayed in graphs or data sheets on the device screen display. They are also stored as full spectrum in the device memory for later re-collection or transfer onto a PC.



▼ APPLICATIONS

- Photosynthesis research and education
- Plant biology
- Plant screening & field studies
- Environmental monitoring
- Ecology
- Agriculture and horticulture

▼ VERSIONS

RP 410 UVIS

- Spectral response range: 380 to 780 nm

RP 410 NIR

- Spectral response range: 640 to 1,050 nm

▼ KEY FEATURES

- Complete system for measurement of spectral reflectance on leaves
- Automatic calculation of all commonly used reflectance indices
- Custom indices calculation possible
- Rugged and compact device for both lab and field applications
- Programmable via intuitive touch-screen use
- Integrated light source
- Leaf clip for non-destructive, *in-situ* measurements
- Comprehensive software for data processing
- USB communication for data transfer
- Handheld, lightweight and battery-powered with affordable price

▼ SOFTWARE

- Automatic calculation of all commonly used reflectance indices
- Calculation of custom indices possible
- Instant data graphs and data sheets
- Export to a PC via USB communication
- Data browsing and data averaging
- Visualization and data transfer routines to Microsoft Excel
- GPS mapping plug-in
- Future firmware updates