



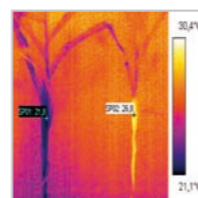
## Accelerating plant phenomics

LemnaTec Scanalyzer 3D systems open new prospects for the quantitative, non-destructive analysis of different crops or model plants under high-throughput conditions. Each plant is imaged sequentially in multiple Scanalyzer 3D camera units, employing different wavelengths that reach far beyond human vision. The result is an unprecedented number of reproducible and significant data points on any aspect of plant development.

Data will be collected continuously and recorded in one snapshot per run through the Scanalyzer 3D, thus routinely producing 15 or more images and several hundred data points per plant and run. Plants are imaged in multiple runs throughout their entire growth phase. All data is available in the database within minutes of imaging – for unparalleled monitoring of dynamic plant development. Comprehensive quantitative representation of plants in datasets generates special data for physiological and genetic plant modeling to identify and quantify the concealed parameters that really control plant development. Such deep insights into plant biology accelerate phenomics and enable plant breeding to deal with the challenges of the 21st century.

### 1. Scanning – infrared light

With infrared light, high-throughput 3-D imaging systems provide a unique chance to quantify temperature differences (e. g. within leaves and between plants).



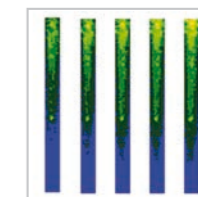
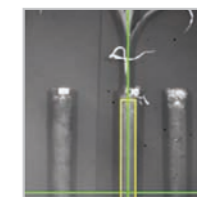
### 2. Scanning – visible light

High-resolution colour images taken from the top and several sides under reproducible illumination conditions provide the best basis for comprehensive phenotyping.



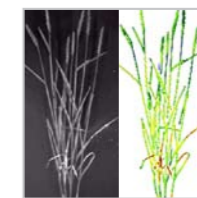
### 3. Scanning – Near infrared root

Humidity visualisation in root columns by near infrared light provides unique information on spatial root performances of plants under high-throughput conditions.



### 4. Scanning – near infrared light

Visualisation of water distribution and dynamics (1450-1550 nm) as well as further NIR-absorbing ingredients.



### 5. Scanning – fluorescent light

Using blue light large field excitation (< 500 nm) in back/top light conditions visualises any related fluorescence between 520 and 750 nm (GFP, chlorophyll etc.).

