

PHEN-ITALY INFRASTRUCTURES/INSTALLATIONS

Installation name	Alma Mater Studiorum – Università di Bologna
Installation Location	Bologna, Italy
Installation Location (GPS coord.)	44.515006, 11.406207
Installation Category	– Controlled conditions
Traits analysed	Below ground
Environmental Manipulation applicable	<ul style="list-style-type: none"> – Temperature – Water – Nutrients concentration
Stress applicable	<ul style="list-style-type: none"> – Drought – Heat stress – Biotic stress – Viruses
Max Capacity	200 rhizotrons 40*60 cm and 150 pots of 1.5 liter
Status	Operational
Trait measurements	<ul style="list-style-type: none"> – Canopy – Root properties – Root architecture – Stress indices
Equipment and sensors	<ul style="list-style-type: none"> – RGB camera – Thermal camera – IR – multispectral – Fluorescence –
References	<p>Marco Maccaferri, Walid El-Feki, Ghasemali Nazemi, Silvio Salvi, Maria Angela Canè, Maria Chiara Colalongo, Sandra Stefanelli, Roberto Tuberosa, Prioritizing quantitative trait loci for root system architecture in tetraploid wheat, <i>Journal of Experimental Botany</i>, Volume 67, Issue 4, February 2016, Pages 1161–1178, https://doi.org/10.1093/jxb/erw039</p>
Description of the infrastructure/installation	<p>The infrastructure is positioned in a greenhouse compartment with automatic control of light (LED, dimmerable) and temperature. The infrastructure consists of:</p> <ol style="list-style-type: none"> 1) A series of rhizotrons 40 x 60 cm (200) and related A3-scanner. 2) A series of pots (150) for semi-hydroponics to grow plants in calcined caoline and nutrient solution up to the 5th

	leaf stage and apply different nutrient and water irrigation treatments. 3) A full hydroponics system to grow hundreds of plants in liquid solution up to 30 days after germination and scan the root apparatus with A3 scanner.
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