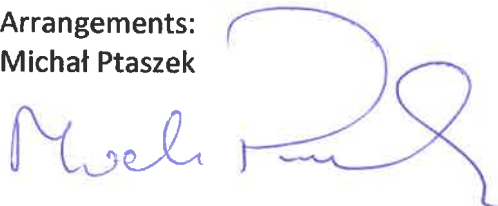


SPECIFICATION OF THE ESSENTIAL ORDER CONDITIONS (SEOC)

TECHNICAL PART (PART II)

LED lighting system as a part of: "Establishment of Research and Development Center for innovative methods of phenotyping and management of ornamental plants cultivation".

Arrangements:
Michał Ptaszek



Stężyca, February 2019

1. Detailed description

JMP flowers is opening a tender for LED lighting system in 3 grow chamber.

2. Technical specification

- Each of the three grow chamber contain 3 shelves with minimum length 3,75 and with 1 meter.
- Each shelf have 6 layers.
- The high between each layer is 40 cm.
- Each shelf should be connect with a plug and play connection to standard electric point for the electric supply.

- Led module colors between 8-15% blue (400-450 nm) and <60% red. 600-700 nm).
- Light output between 400 -700 nm 91% or higher.
- High energy efficiency of led modules, 2,1 umol/W or higher.
- The light Uniformity distribution reach 80% or higher at plant level on shelf with length at least 3,75 and with 1,00 width and height 40 cm.
- Product lifetime 35.000 or higher. (in temperature range 0-30 degrees Celsius.
- Light drop during 39.000 lower than 11%.
- Passive cooling system
- The offer for LED system contains a mounting system for the led and wires
- The offer for LED system contains wiring which allow to plug and play on standard electric points in the grow chamber.
- The Light systems works on 220-240 Volt.
- The light installation and LEDs are CE certificated.

4. Place of performance

JMP Flowers, Stężycza, Polska

5. Responsibility

Responsible for the implementation of the Investor will be: Rene 't Hoen

Responsible for the implementation of the Contractor will be Project Manager.



