

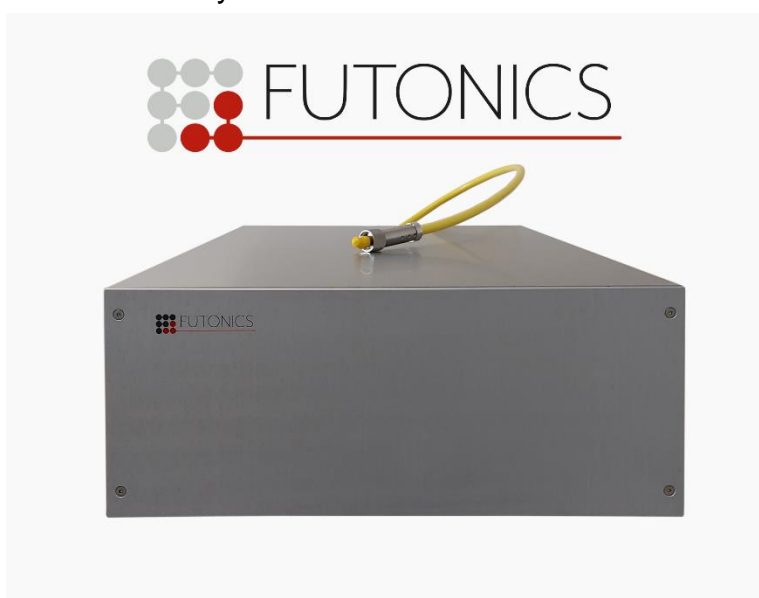
Futonics develops a new high-power laser module for weed eradication

Challenges

Futonic's contribution to the WeLASER project is a high-power laser source for weeding in agriculture. Weight, a robust design, output power and response time between the control system signal and the laser output are essential parameters that must be considered during the development.

Solution and expected outcomes

Futonics has developed a new high-power laser module IFL QCW 550 that can be operated in pulsed or continuous mode with sufficiently fast communication times. In pulsed mode, the laser emits very high peak power (up to 550 W) with a minimum pulse length in the μ s range and a maximum pulse length in the ms range. In continuous mode, the maximum adjustable power (up to 250 W) is lower than that of a pulse, but the application time is as long as the user requires. In theory, the pulse durations of the laser module are long enough, and the output power is high enough to kill weeds in their fully developed stage. The new laser is 20 kg lighter than the previous model, has a height of 4 rack units instead of 6, uses fewer laser diodes with higher output powers and new fibres. Due to this innovation, the cooling of the laser module becomes more efficient and the performance more stable.



Futonic's laser module IFL QCW 550

Status

Tests are currently being conducted to determine how long a plant needs to be irradiated with how much output power to kill the weed completely. When the new laser module is ready for application tests, it will be shipped to our partners from UCPH (Denmark) and LZH (Germany).

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