




**TECHNICAL CLAUSES FOR THE IDONIAL ACQUISITION OF A  
Welding laser system for DED laser additive manufacturing with  
coaxial wire head.**

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	<p>Welding laser system for DED laser additive manufacturing with coaxial wire head.</p>	<p>www.idonial.com info@idonial.com T +34 984 390 060 F +34 984 390 061</p>
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## TECHNICAL CLAUSES

Technical description of a Welding laser system for DED laser additive manufacturing with coaxial wire head:

Idonial Welding Technologies research Unit is looking for a Welding laser system for DED laser additive manufacturing with coaxial wire head. These technical specifications cover the minimum characteristics of the mentioned facility.

We kindly request you to submit your quotation in order to participate in our equipment purchasing process. In this regard I request you to send a detailed quotation regarding the following aspects:

### EQUIPMENT SPECIFICATIONS:

Welding laser system for DED laser additive manufacturing with coaxial wire head.

This system should to be adapted to current Idonial robot cell with the following characteristics:

Idonial robot cell:

- 1) Robot: KR 120 – R2700 – 2.
- 2) Controller version of robot: KR C4 Firmware version 8.6.7
- 3) Free analog/digital IOs for peripheral devices: +10 digital I/O and 3 analog I/O (0-10 V).
- 4) Integrated bus version / Free bus interfaces for peripheral devices: we communicate all devices via PROFINET, but the central PLC has other compatible interfaces based on Ethernet, like Modbus TCP.

Working conditions:

- The wire feed need to be in coaxial direction.
- The estimated laser power range for the head will be between 1 to 6 kW.
- The system should manage wire diameters from 0.8 to 1.2 mm minimum.
- The system should include Gas Shield protection of the melted material.

- The coaxial wire laser head could be:

- 1) Supplied with proper laser welding source.
- 2) To be adapted by a Plug and play system to the existing Idonial IPG laser power source with following characteristics:
  - Laser power source: YLS-10000-CT 10kW

- FFC HLC-16 / HLC-16: Fiber-Fiber Coupler:
- Integrated inside laser housing
- Fiber Input: HLC-16
- Fiber Output: HLC-16
- DeviceNet Interface: 1-channel DeviceNet Interface
- PF HLC-16-200-30: Process Fiber HLC-16
- Fiber diameter: 200µm
- Fiber Length: 30m
- Connector: HLC-16, water cooled
- LC 340.01-A.3.5/6: External Chiller Water / Air.

Additional scopes that could be consider:

- 1) Hot wire feeder system
- 2) Complete Powder feed modules. Annular Stream or alternative lateral stream.
- 3) Process control systems
- 4) Flexible chamber for Ti low O2 applications
- 5) Cad/Cam System for manufacturing 3D complex DED samples.

Quotations shall include in addition the following conditions related to the supply of the equipment:

- Delivery terms.
- After-sales services
- and payment terms.