

LASCON[®]

LPC04 Laser Process Controller 2-Color Pyrometer



10kHz

High Speed pyrometer measurement
and
Closed Loop temperature control

Process Monitoring

Typical Applications

Laser cladding LMD, DED,
HighSpeed cladding, EHLA*
AM wire based
Laser annealing, Laser hardening

*EHLA, exterm high speed laser cladding developed and patented by ILT and RWTH Aachen University

Temperature ranges from
250°C to 3300°C

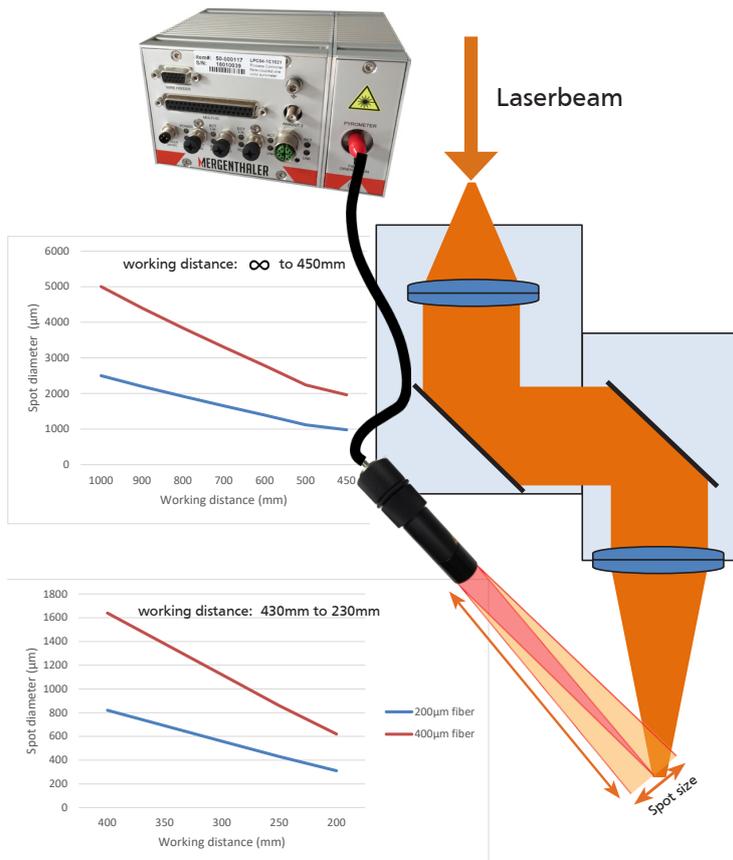
Features

Autonomous working system
Ethernet connection
EtherCAT[®] connection
Industrial I/O ports
Flexible process script programming

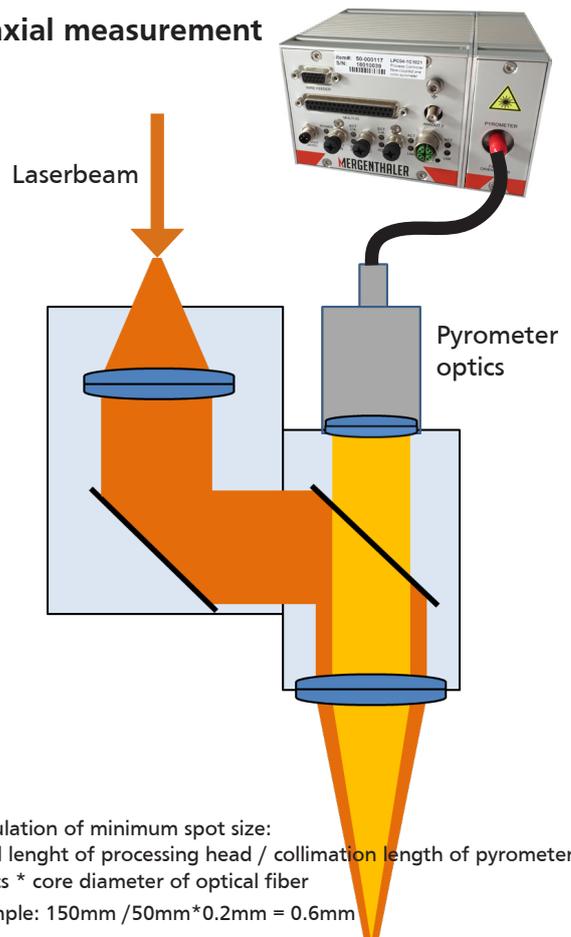
Process visualisation
Process documentation
Real time data storage
Open programmable architecture
Compact and easy to integrate

Beam Path Options

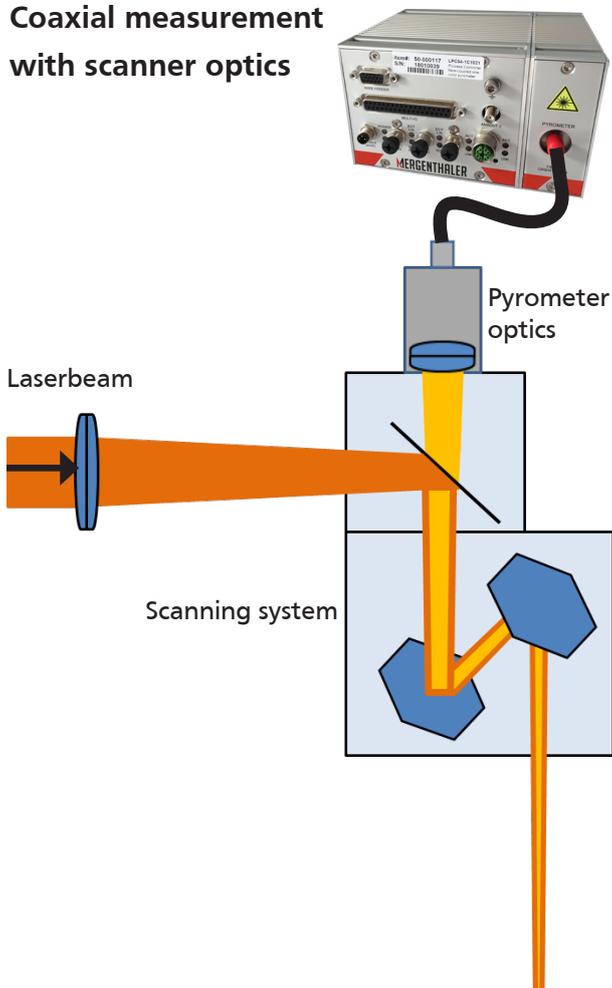
Off-axis measurement



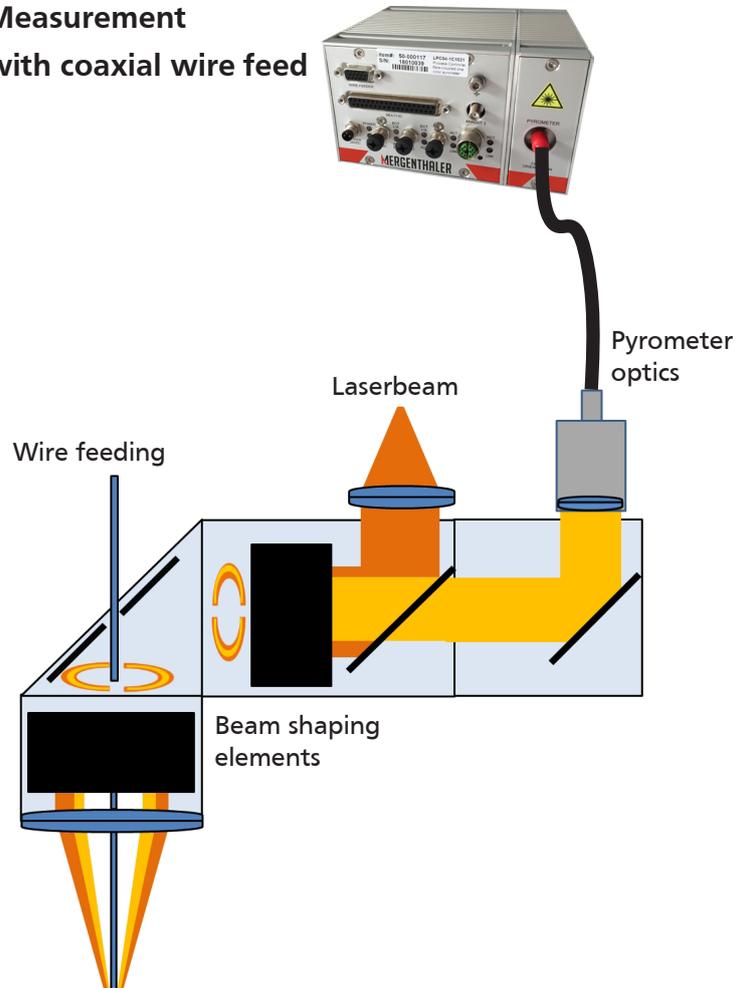
Coaxial measurement



Coaxial measurement with scanner optics



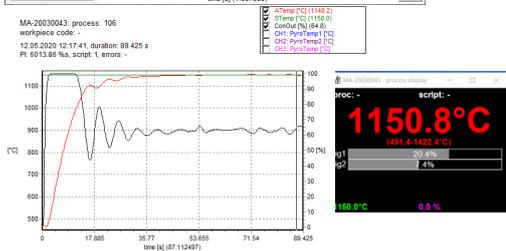
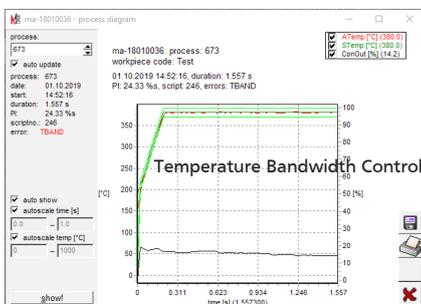
Measurement with coaxial wire feed



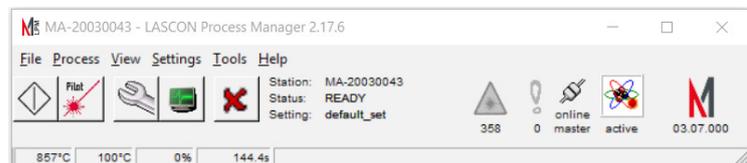
Technical Data

LASCON® Controller		
2 color (ratio) pyrometer 2CDC		
Temperature ranges:	250°C* up to 3300°C	
Spectral range:	1.65 - 2.1µm divided into two channels	
Accuracy (e=1, t90=1s, T=25°C):	< 1500°C: 0.5% +/- 2K	
Repeatability:	0.1% +/- 1K	
Resolution:	0.1°C	
Response time:	100µs, adjustable	
Emissivity:	adjustable 0.01 to 1	independent (see literature)
Analog output:	0-5V, 0-10V, +- 5V, +-10V, 0-20mA, 4-20mA, 0-24mA (16Bit), (configurable via Software)	
Power supply:	24V DC, 2A max.	
Sighting:	laser targeting coaxial with pyrometer measurement	
Interface:	Ethernet, EtherCAT (Q4, 2019) (Option)	
IO terminal :	6 analog IN, 3 analog OUT, 16 digital IN, 8 digital OUT (24V) (configurable via Software)	
Data storage:	internal, typical 5.000 hours of pure process time	
Software:	including LASCON® software package for measurement and closed loop control, storage and visualisation of measurement, calibration of pyrometer	
Optical fiber length:	3m, 5m, 10m, 20m, 30m (special lenghts on request)	
Ambient temperature:	controller 40°C, optical head 60°C	
Dimensions:	controller: 144 x 125 x 82mm, Optics: dia 30.6mm, lenght 100mm	
CE label:	according to EU directives for electromagnetic immunity	
Conformity:	the RoHS Directive 2011/65/EU of 2011-06-08 with supplement from 2015-03-31 is fulfilled	
* depending on the emissivity and optical path conditions to the object and signal filter. Fiber length < 10m		
Any optical part installed in the beamway for coaxial measurement can affect given technical data		

Included Software



Process Manger Software (LPM) Windows® operating system

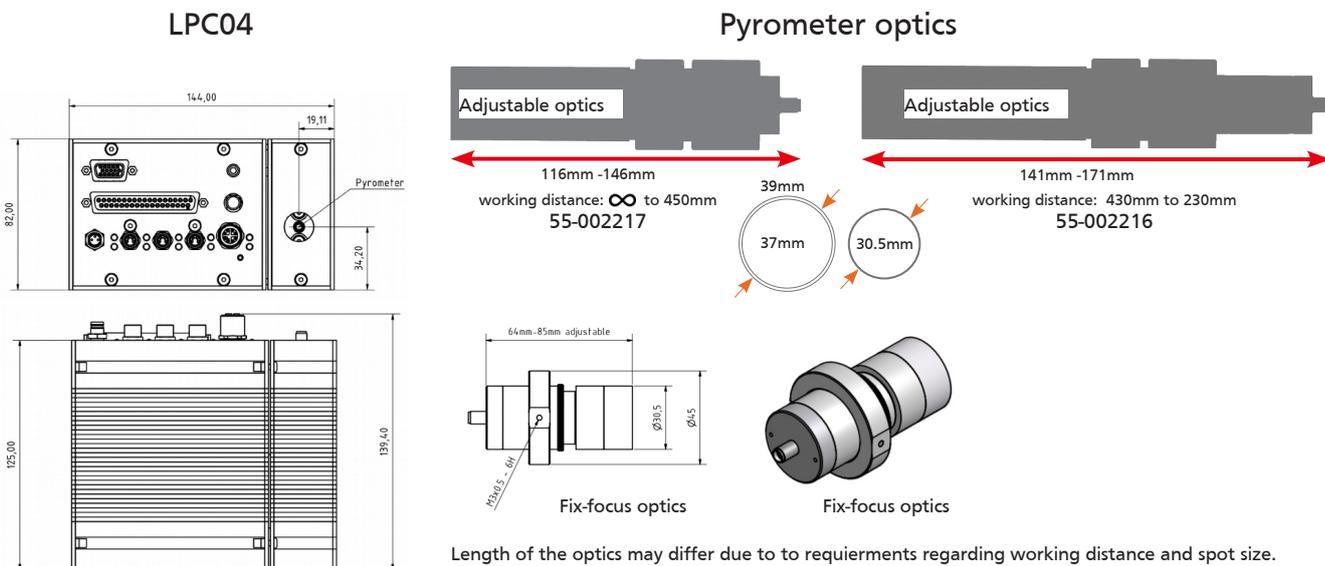


- Adjustment of all pyrometer and controller parameters
- Providing variety of control commands and functions for script
- Storage capacity for infinite number of processes (5.000h) and scripts
- Process visualization, automatical data export in csv format
- Free configuration of Multi I/O interface
- Pyrometer calibration inside the application
- Access rights management with password protection

Order Code

Order Code	Item (more on request)	
50-000318	LPC04-2CDC-X-10K; LASCON Process Controller with built in fiber coupled 2 color pyrometer (10kHz)	
50-000834	Optical fiber cable, metal armored, core dia. 200 µm, length 3m	200µm fiber is recommended for very small spot sizes and high temperatures
50-000253	Optical fiber cable, metal armored, core dia. 200 µm, length 5m	
50-000254	Optical fiber cable, metal armored, core dia. 200 µm, length 10m	
50-000255	Optical fiber cable, metal armored, core dia. 200 µm, length 20m	
50-000998	Optical fiber cable, metal armored, core dia. 200 µm, length 30 m	
50-000661	Optical fiber cable, metal armored, core dia. 400 µm, length 3 m	400µm fiber is recommended for low temperature measurement
500-625	Optical fiber cable, metal armored, core dia. 400 µm, length 5 m	
500-298	Optical fiber cable, metal armored, core dia. 400 µm, length 10 m	
500-573	Optical fiber cable, metal armored, core dia. 400 µm, length 20 m	
500-705	Optical fiber cable, metal armored, core dia. 400 µm, length 30 m	
55-002217	Adjustable optical head, working distance ∞ to 450mm, f=95mm, suitable for coaxial measurement	
55-002216	Adjustable optical head, working distance 430mm to 230mm, f= 95mm	
500-536	Optical head, diameter=30,6 mm f=50 mm, with laser blocking filter	
500-529	Optical head, diameter=30,6 mm f=150 mm, with laser blocking filter	
xxx-xxx	Custom specific optical head : same price as standard heads	
500-629	High Temperature Filter HT	
500 - 438	Additional pyrometer calibration	
50-000122	Power supply, Input 90-260VAC, Out 24V 2.0A for LASCON Controller only	

Dimensions



You are solely responsible for selecting the appropriate product for your application, validating and testing your application, and ensuring your application meets applicable standards, and any other safety, security, or other requirements. Data are subject to be changed without notice.

ultimate laser processing

Dr. Mergenthaler GmbH & Co. KG
 Lilienthalstrasse 14, D-89231 Neu-Ulm, Germany
 +49-731-159790-40
 info@mergenthaler-laser.com
 www.mergenthaler-laser.com