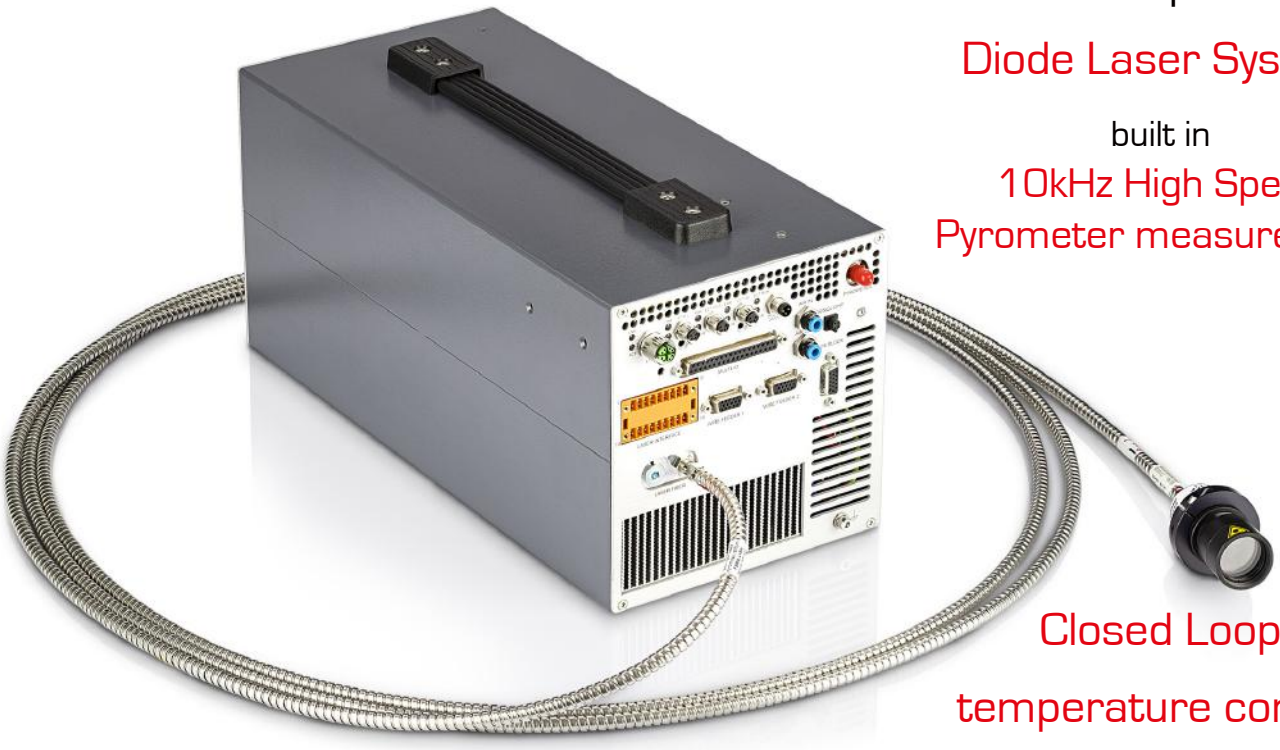
Data Sheet

MERGENTHALER

ultimate laser processing

LCL04

LASCON® Controlled Laser



unique

Diode Laser System

built in

10kHz High Speed

Pyrometer measurement

Closed Loop

temperature control

Typical Applications

Laser soldering and brazing

Laser plastic welding

Laser heat treatment

Laser power up to 130W

Temperature ranges from

100°C to 2200°C

Features

All-in-One autonomous working System

Air-cooled

Ethernet connection

Industrial I/O ports

Process visualisation

Process documentation

Real time Data storage

Programmable architecture

Compact and easy to integrate

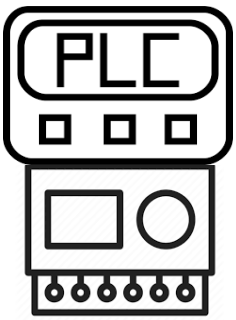
Technical Data

	Laser
Output power:	60W, 75W, 100W, 130W
Laser safety:	laser class 4 (according to DIN EN 60825-1 Safety of laser products)
Wavelength:	915nm, others on request
Laser type:	fiber coupled diode laser
Spot size in focus:	depending on optics in use (typical @100mm distance, 2x diameter of fiber)
Rise time:	0.1ms
Operation mode:	cw, continous wave
Power Control:	analog IN 0V - 10V (0% -100%)
Sighting:	laser targeting coaxial with pyrometer measurement
Interface:	Ethernet, EtherCAT (Q4, 2019)
IO terminal :	6 analog IN, 3 analog OUT, 16 digital IN, 8 digital OUT (24V) (configurable via Software)
Data storage:	internal
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 , others on demand
Power supply:	230VAC (100VAC - 240VAC)
Ambient temperature:	+5°C to +30°C for operation, no condensation
Dimensions:	363 x 146 x 165mm, Optics: dia 30.6mm, lenght 100mm
Weight:	10.5 kG

	built in LASCON® Process Controller	
	Single color	**2 color (ratio)**
Temperture ranges:	100°C up to 2200°C	200°C up to 2200°C
Spectral range:	1.65µm - 2µm / 1,65- 2,5µm*	1.65 - 2µm devided into two channels
Accuracy (e=1, t90=1s, T=25°C):	< 1500°C: 0.3% +/- 2K	< 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)
Data Storage:	internal, 500.000 processes, 255 process control scripts	
Optical fiber length:	3m, 5m, 10m, 20m, 40m (special lenghts on request)	
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	
*low temperature version		
Any optical part installed in the beamway for coaxial measurement can affect given technical data		

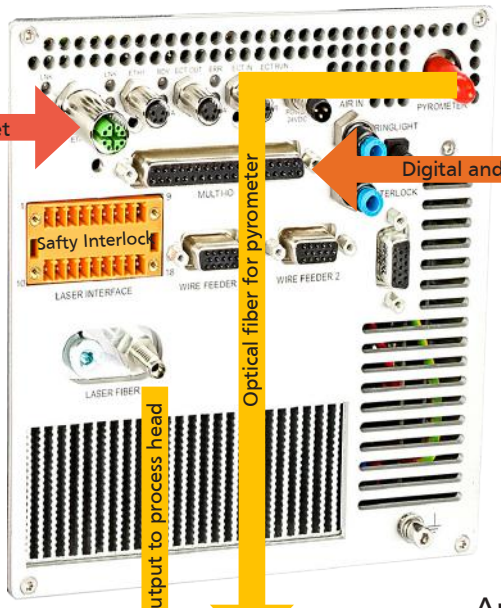
Typical Setup

Connections can be done alternatively or simultaniously



Ethernet

Digital and analog I/O



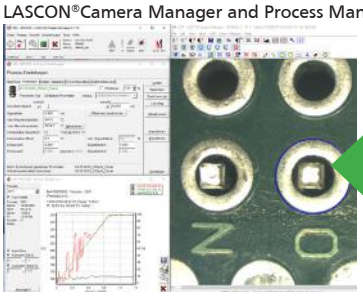
Optical fiber for pyrometer

Laser output to process head

Camera Image

Easy to run and operate the system by the Software package:

LASCON®Camera Manager and Process Manager



Example: Position control in THT soldering process

Connecttion to a Programmable Logic Controller via Multi I/O interface. All controller parameters are accessable and can be adjusted.

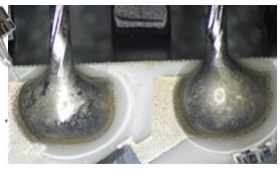
6 analog IN, 3 analog OUT, 16 digital IN, 8 digital OUT for e.g.
- Script selection
- Process start / stop
- Temperature setpoint
- Laser Power output (0-10V)
- Temperature output
- Status messages
- Error messages

Application example

SWF100
solder wire feeder

Camera

Laserhead
LH 103

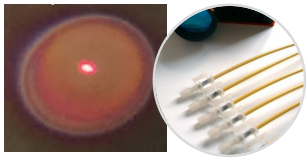


Soldering

Application example

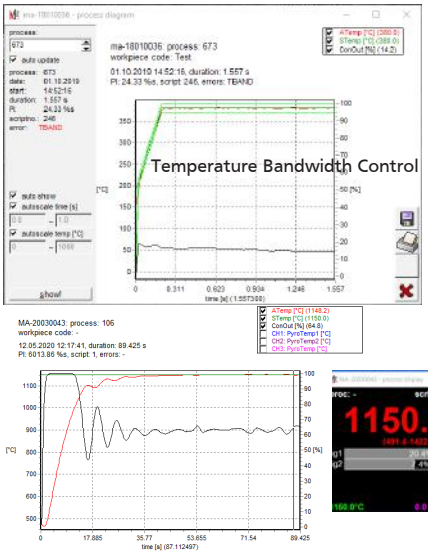
Camera

Laserhead
LH 103

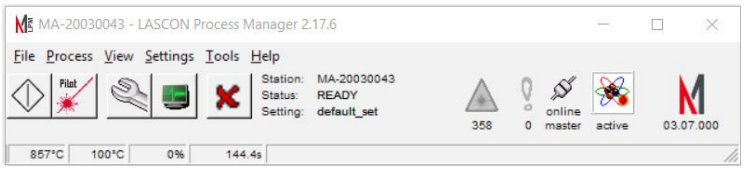


Heat treatment Plasctic welding

Included Software



Process Manger Software (LPM) Windows® operating system

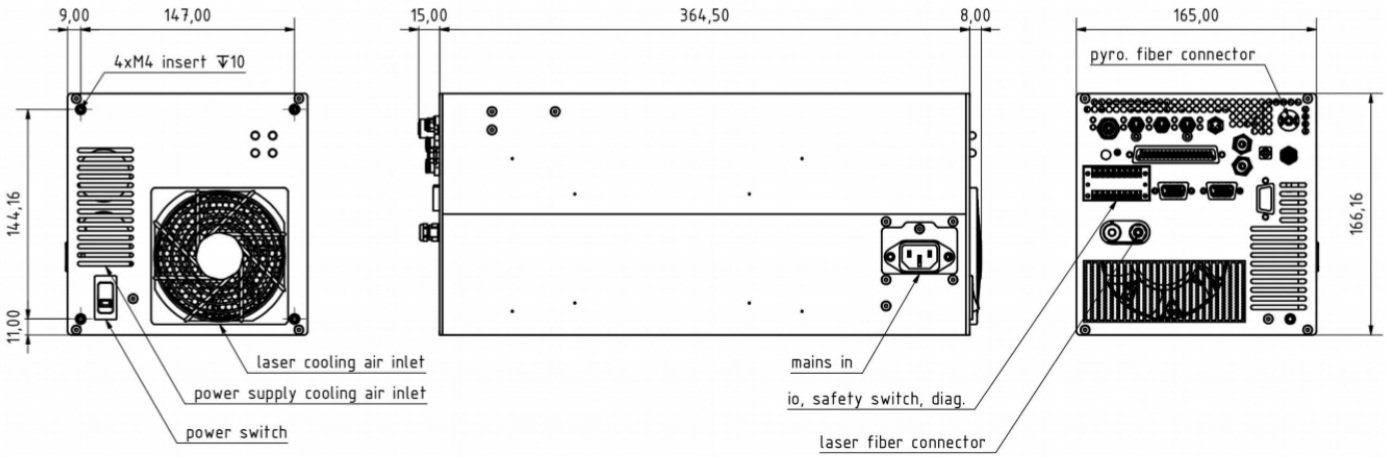


- Adjustment of all pyrometer and controller parameters
- Providing variety of control commands and functions for script
- Storage capacity up to 500.000 processes and 255 scripts
- Process visualization, automatical data export in csv format
- Free configuration of Multi I/O interface
- Pyrometer calibration inside the application
- Access rights management with password protection

Order Code

Order Code	Item (more on request)
50-000471	LCL04-060-915-1C0326-P-W LASCON Controlled Laser, 60W, 915nm, pigtailed , One-Color Pyrometer, SWC
50-000472	LCL04-060-915-1C0326-P-X LASCON Controlled Laser, 60W, 915nm, pigtailed, One-Color Pyrometer
50-000450	LCL04-075-915-1C0326-D-W LASCON Controlled Laser, 75W, 915nm, One-Color Pyrometer, FSMA, SWC
50-000484	LCL04-130-915-1C0326-D-X LASCON Controlled Laser, 130W, 915nm, One-Color Pyrometer, FSMA
50-000483	LCL04-130-915-1C0326-D-W LASCON Controlled Laser, 130W, 915nm, One-Color Pyrometer, FSMA, SWC
50-000834	Pyrometer Optical fiber cable, metal armored, core dia. 200 µm, length 3m
50-000253	Pyrometer Optical fiber cable, metal armored, core dia. 200 µm, length 5m
50-000254	Pyrometer Optical fiber cable, metal armored, core dia. 200 µm, length 10m
50-000661	Pyrometer Optical fiber cable, metal armored, core dia. 400 µm, length 3 m
500-625	Pyrometer Optical fiber cable, metal armored, core dia. 400 µm, length 5 m
500-298	Pyrometer Optical fiber cable, metal armored, core dia. 400 µm, length 10 m

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.

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