

# Processing Head (PHFS9) COMPACT Series Diode Laser System

## Features

This processing head with  $f=100\text{mm}$  (standard focal length)<sup>1</sup> is intended to be used with COMPACT Series, along with a SMA fiber coupling. The processing head is connected to the diode laser using a SMA fiber, NA 0.22.

The integrated single color pyrometer is used for non-contact measuring of the work piece temperature. It is aligned in the optical path of the laser beam and has an internal digitizing unit which communicates with the PCI-card of the pyrometer PC. An advanced software package allows controlling the laser in closed loop. The pyrometer is a helpful tool to optimize processes and for their documentation. The laser head is also equipped with an integrated on-axis CCD camera for easy processing. The video signal can be displayed on any monitor with BNC connector.

By having a compact housing this processing head can easily be integrated into the laser process.



## Device Specification

Optical	Units	Standard		Optional	
Connector		SMA-905	SMA-905	SMA-905	SMA-905
Numerical Aperture	NA	0.22	0.22	0.22	0.22
Focal Length	mm	100 <sup>1</sup>	60	50	38
Working Distance (Stand Off) <sup>1</sup>	mm	95	54	38	25
Output Aperture		40	40	40	40
<b>Fiber</b>	<b>µm</b>	<b>800</b>	<b>800</b>	<b>800</b>	<b>800</b>
Focal Size <sup>2</sup>	mm	1.2 <sup>±0.05</sup>	0.8 <sup>±0.05</sup>	0.6 <sup>±0.05</sup>	0.5 <sup>±0.05</sup>
<b>Fiber</b>	<b>µm</b>	<b>400</b>	<b>400</b>	<b>400</b>	<b>400</b>
Focal Size <sup>2</sup>	mm	0.6 <sup>±0.05</sup>	0.4 <sup>±0.05</sup>	0.3 <sup>±0.05</sup>	0.25 <sup>±0.05</sup>
<b>Fiber</b>	<b>µm</b>	<b>200</b>	<b>200</b>	<b>200</b>	<b>200</b>
Focal Size <sup>2</sup>	mm	0.3 <sup>±0.05</sup>	0.2 <sup>±0.05</sup>	0.15 <sup>±0.05</sup>	0.12 <sup>±0.05</sup>
<b>Pyrometer</b>					
Measuring Wavelength	nm	1800 - 2100			
Temperature Range	°C	190 - 700			
Sampling Rate (max.)	kHz	10			
<b>CCD Camera</b>					
Image Sensor	"	1/3			
Image Sensor Area	mm <sup>2</sup>	4.8 x 3.6			
Horizontal Frequency	kHz	15.625			
Vertical Frequency	Hz	50			
Total Number of Pixels		537 (h) x 597 (v)			
Video Signal	Vpp	1.0 at 75 Ohm			
Signal/Noise Ratio	dB	>45			
Image Size on Monitor f100	mm <sup>2</sup>	18 x 14 with ML f50 = 9 x 7 [mm <sup>2</sup> ]			
Gain Control		AVR automatic gain control			

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## Pyro PC

Operating Voltage	V	110-240 Single Phase
Frequency	Hz	50/60
Power Consumption	kVA	0.07
Dimensions	mm <sup>3</sup>	176 x 483 x 500
Weight	kg	16

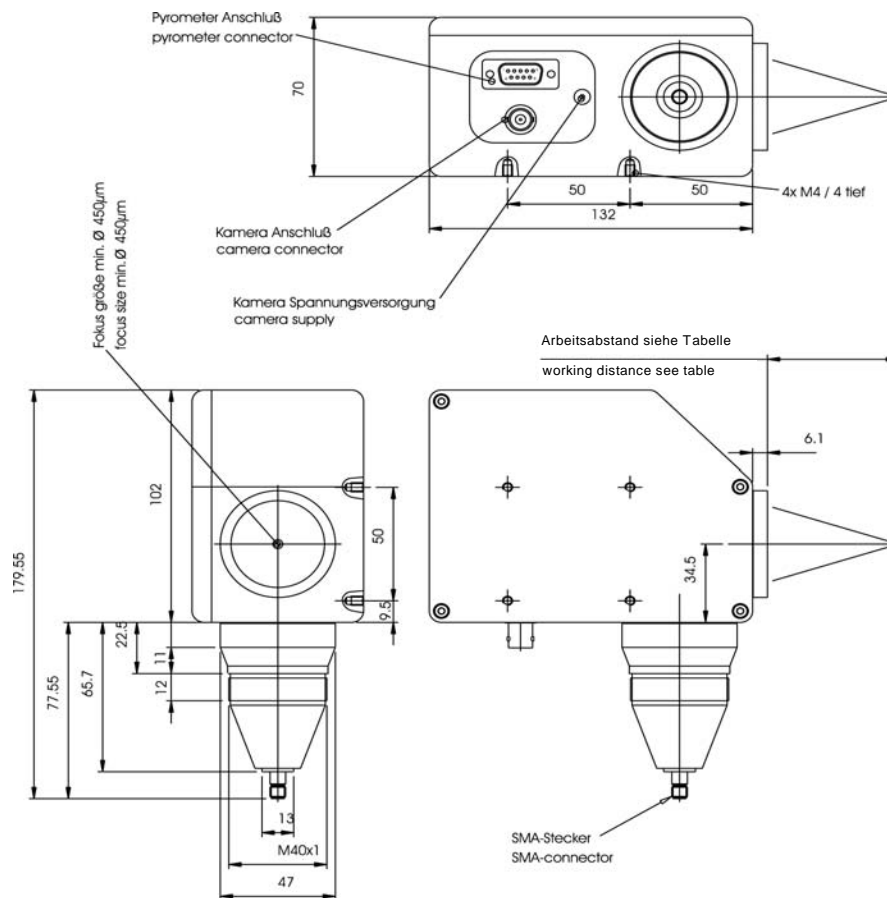
## Overall Dimension

Length x Width x Height  
Approx. 180 x 70 x 139

## Weight

kg 1.6

## Package Dimension<sup>3</sup>



## Package Includes

Processing Head PHFS9-CS, Industrial-PC with build in Controller Card for Pyrometer, software package Lascon Server/Lascon Process Manager. Monitor is not part of the package.

<sup>1</sup>Consult DILAS Industrial Laser Systems for other available options.

<sup>2</sup>Focal dimensions of diode lasers can deviate in practice depending on measuring method by  $\pm 10\%$ .

<sup>3</sup>For standard focal length  $f=100$ .



### U.S. CFR Regulation

The manufacturer and subsequent sale of laser equipment is under the guidelines governed by the U.S. Center for Devices and Radiological Health (CDRH). In accordance to those guidelines, specifically Subchapter J of the Radiation Standards, 21 CFR, the diode laser is registered as a CLASS 4 laser product.

### European Commission

In accordance to EN 60825, Safety of Laser Products, the diode laser is registered as a CLASS 4 laser product.

Products specifications are subject to change without notice. For handling precautions, please reference the general handling instruction manual. For additional information, please contact your local sales representative or visit our website at [www.dilas-ils.com](http://www.dilas-ils.com).

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