

Processing Head (PHFx9-C1-S) COMPACT Series Diode Laser System

Features

This processing head with an integrated pyrometer and an optical interface for an external, user-provided camera is intended to be used with COMPACT Series. The processing head is connected to the diode laser using a SMA fiber, NA 0.22 or QBH/RQB alternatively.

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 processing head has the possibility to assemble an external camera on flange at the top side of this device in order to use different kind of cameras.

By having a compact housing this processing head can easily be integrated into the laser process. The 0° fiber outlet additionally enables the use inside narrow installation situations.



Device Specification

Optical	Units	Standard		Optional		
Connector				SMA-905 or QBH		
Numerical Aperture	NA			0.22		
Focal Length	mm	100 ¹	300	200	150	60
Working Distance (Stand Off) ¹	mm	95	290	197.5	145	54
Output Aperture	mm	40	40	40	40	40

Fiber

Fiber Core Diameter ¹	µm	100, 200, 300, 400, 600 or 800				
Focal Size ² (Factor to Multiply with Fiber Core Diameter)	µm	1.5 x ±50µm	4.7 x ±50µm	3.1 x ±50µm	2.3 x ±50µm	1.0 x ±50µm

Pyrometer

Measuring Wavelength	nm	1800 - 2100				
Temperature Range	°C	190 - 700				
Sampling Rate (max.)	kHz	10				

CCD Camera

Image Sensor	"	1/3				
Image Sensor Area	mm ²	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 ²	18 x 14 with ML f50 = 9 x 7 [mm ²]				
Gain Control		AVR automatic gain control				

