



High Performance on Best Focus

Laser Processing Head BIMO

Modules

The Precision Modules of BIMO

Focusing



Laser light cable receiver
LLK Auto



Collimation module



Focusing module

Optical extensions



Process monitoring module for
CCTV-viewing and/or 90° beam
bending



Variable double focus forming
module VDFM



HP module for lasers with more
than 6 kW average power

Protection



Cover slide drawer and cover
slide monitoring



Cross Jet and shielding gas
module



Cover Slide for additional
protection of collimation

Accessories



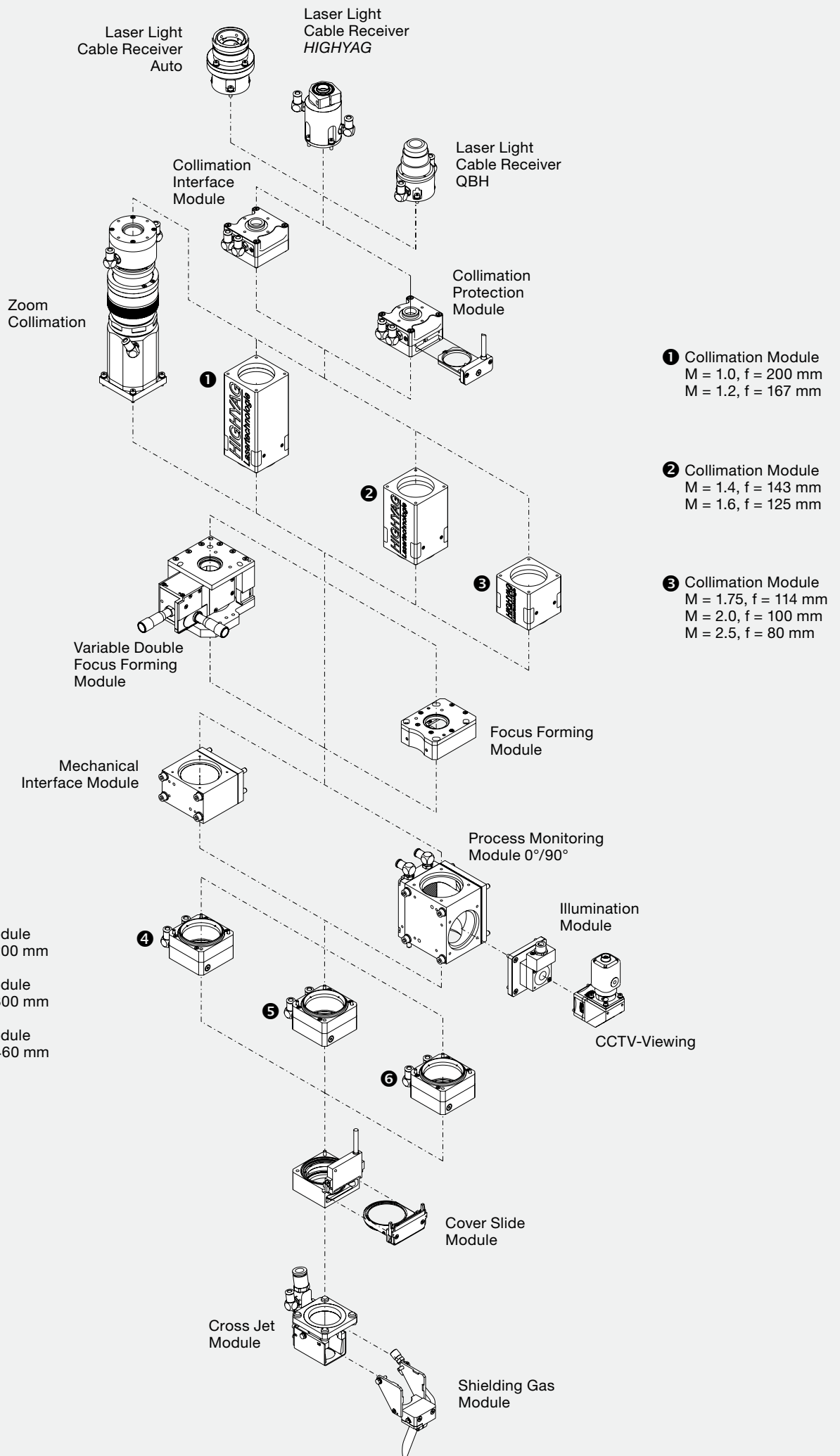
CCTV-viewing with imaging
optics, CCD camera and
integrated illumination



Wave length Compensation
insert



Laser power meter module
(LPM) as insert in cover slide
cartridge receptacle



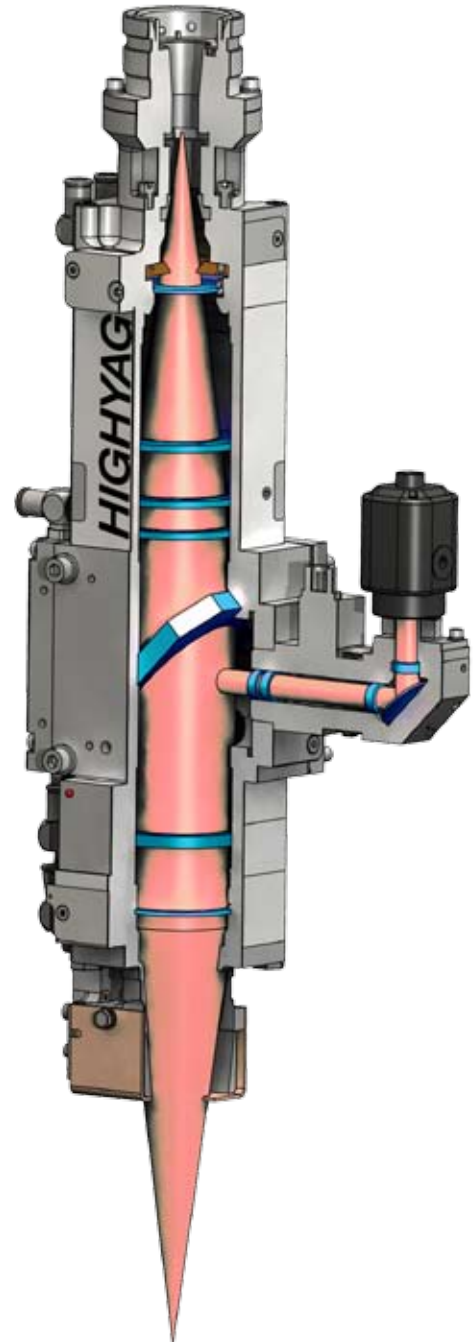
Optical System

Being Perfectly Focused

With the modular optical system of the BIMO laser processing head *HIGHYAG* managed to satisfy the requirements of focusing single mode and 20 kW laser radiation in uncompromising ways. The BIMO laser processing head focuses the respective potential of laser devices of the types diode laser, YAG laser and disc laser onto the workpiece for optimal effect, as defined by the user.

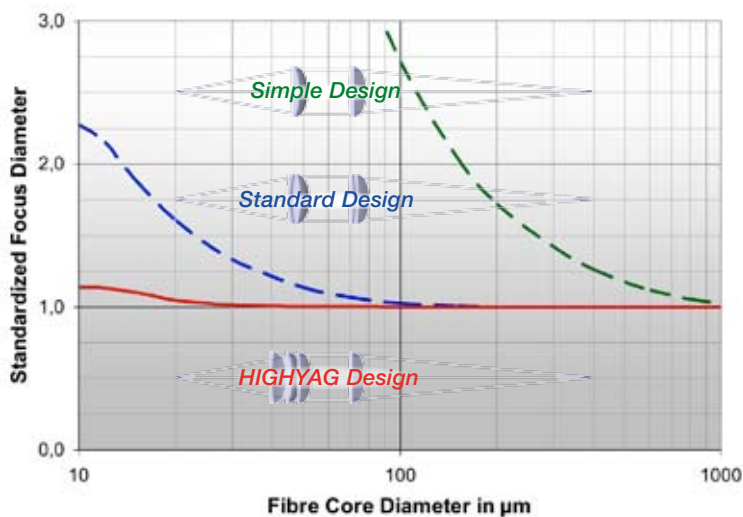
The BIMO laser processing head provides optimal preservation of the laser's beam quality. It also permits flexible deployment of modules for beam shaping and process monitoring.

It goes without saying that the interaction of the laser light with the focus forming elements are minimised to such an extent as to rule out any demonstrable process manipulation.

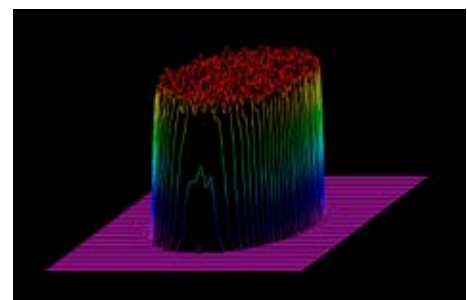


Performance of Different Focus Heads

Numerical Aperture = 0,11 (86% Power Content), Magnification = 2



Plot of a Focus with 300 µm Diameter.



Laser Processing Head BIMO

Focus Beyond Pro



Welcome to the new generation of the BIMO modular processing head, based on the proven laser processing heads BIO and BIMO that have seen successful deployment in thousands of production scenarios.

The innovative design comes in response to new laser light sources, from the diode laser to the disc and fiber laser, which have expanded the requirements for the optical systems of processing optics. While it masters these challenges, we made sure the system is of the same solid construction. It also permits safe, simple operation in 24/7 production then as now.

Thus, the flexible, modular system of the BIMO laser processing head forms the basis for most tasks in laser-based material processing.

The processing head can be configured in individual and modular ways. This includes simple tasks, like focusing the laser light onto the workpiece, as well as configuration of the entire turnkey subsystem of the laser processing head inside the laser cell. In the most advanced stage of expansion, the processing head provides, in addition to process-relevant components, all accessories necessary for the integration into an automated production cycle. These include the proven modules for media guiding via a cable management system and the EPS electric-pneumatic installation system as interface with the system PLC and the media supplies.

Technical Data

Optical System

Focusing system (magnification @ focal length)	1.0 @ 200 mm, 1.50 @ 300 mm, 2.3 @ 460 mm
Collimation system (magnification @ focal length) *	1.0 @ 200 mm, 1.2 @ 167 mm, 1.4 @ 143 mm, 1.6 @ 125 mm, 1.75 @ 114 mm, 2.0 @ 100 mm, 2.5 @ 80 mm, zoom variations
Max. laser power	Average 6 kW (optional 20 kW), peak 200 kW
Max. beam parameter acceptance (half angle) of laser light exiting fibre	125 or 210 mrad
Wavelength *	λ = 900 - 1060 nm (e.g. for diode lasers) λ = 1025 - 1080 nm (e.g. for YAG, fibre and disc lasers)
Transmission	> 97 % @ λ = 1064 nm
Core diameter laser light cable	10 - 1000 μ m (typical)
Laser light cable receiver *	HIGHYAG LLK, LLK-Auto, Trumpf LLK-B, Optoskand QBH

CCTV-Viewing

Magnification	Depending on configuration ($M_{\text{camera}} = M_{\text{camera-objective}}/M_{\text{foc}}$)
Video system *	CCIR
Interface CCTV-viewing	C-Mount

Dimensions

WxDxH, examples:	
· BIMO G	Approx. 312 mm x 90 mm x 682 mm
· BIMO W	Approx. 479 mm x 90 mm x 388 mm
Weight:	
· BIMO G	Approx. 3.6 kg
· BIMO W	Approx. 4.4 kg

Supply

Electrical *	DC 24 V, 2.5 A
Pneumatics	1.0 MPa Cross jet: 1.0 MPa, approx. 500 l/min @ 0.6 MPa
Cooling	Flow rate 2 l/min, temperature 15 - 35 °C (avoiding condensation)
PLC / field bus system *	Hard wired, Interbus, Profibus, DeviceNet

Subject to change without prior notice

*Others on request

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