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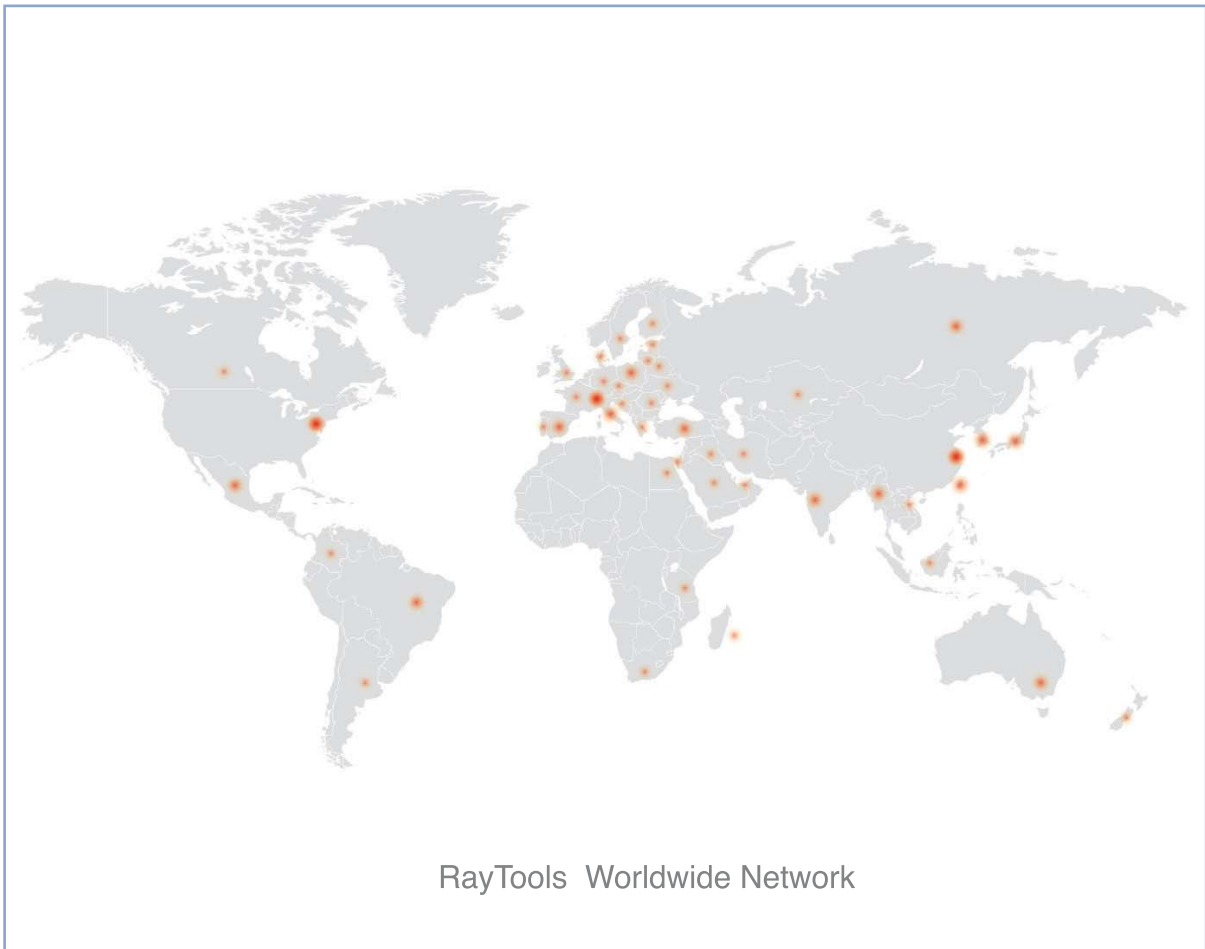
LASER BEAM DELIVERY TOOLS

| WELDING
| CLADDING
| HARDENING



RAYTOOLS

Empower OpenLaser Solution



About Us

General Purpose: Evaluation, generation and application of laser beam and control software for industrial use; custom project, knowhow and services;

Achievements: Industrial lasers beam delivery and automation for various applications, hybrid application concepts of high power lasers, diodes, custom projects; modular laser source and machine concepts, components, accessories and unique beam alignment technology;

Advantages: Independent company with vast know-how and engineering skills on demand and in line with customer requirements;

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Powder Feeder



RAYTOOLS AK090 SERIES



Compact Laser Welding Head

Power Rating **6KW**

High power rating. Parabolic optics system based on single piece parabolic mirror with direct water cooling and long life-span.

Compact size with easy access to narrow space



Light-duty to reduce the payload of machine tool and fulfill high speed processing.

Dual-water cooling circuits as well as water cooling to cover glass holder and body of laser welding head.

Technical Data

Diode Version	
- Collimator Focal Length	100 mm
- Focusing Focal Length	150mm, 200mm, 250mm
Fiber Version	QBH, QD
CCD	TYPE-C , TYPE-CS

Specifications subject to change without notice.

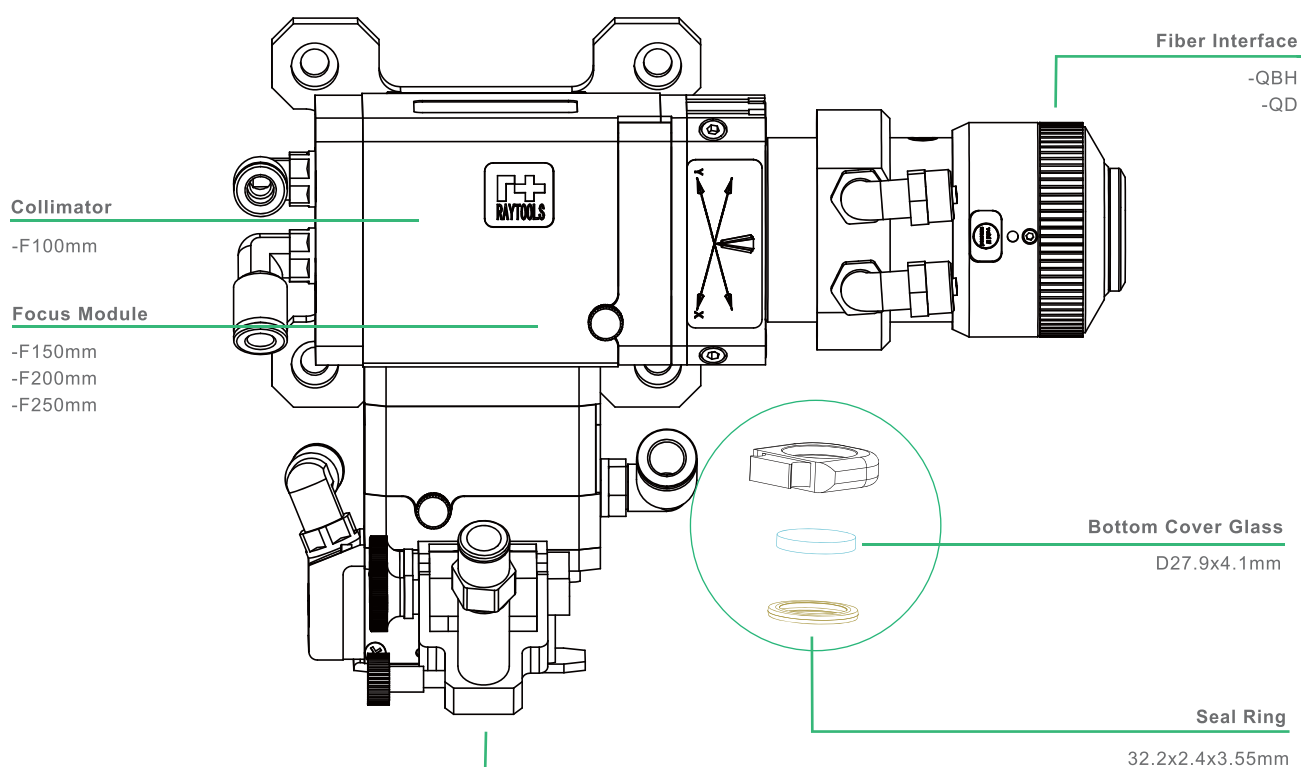
Clear Aperture	32mm
Cover Glass	27.9mm*4.1mm
Assist Gas Pressure	
- Air Knife	≤8 bar
- Protection Air	25L/min
Weight	~2kg

RAYTOOLS AK090 SERIES



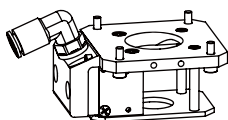
Compact Laser Welding Head

Power Rating **6KW**



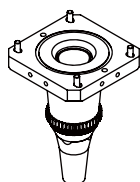
Optional Tip Components

Air Knife Protection Assembly



Coaxial Protection Assembly

-F150mm
-F200mm
-F250mm



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BF330-2F SERIES



Wobble Laser Welding Head

Power Rating 2KW

Various wobbling paths like continuous circle, continuous square, continuous line, continuous ellipse and continuous 8 type, etc.

Built-in galvo and drive system.

Both internal control and external control mode.

CCD or laser vision seam tracking interface is optional for expanding of function.



Strengthened melting pool could be acquired comparing to standard welding.

Coaxial nozzle assembly or air knife+side blow assembly optional

To increase melting width, gas adaptability and reduce seam defects.

Smooth and efficient fluid structure to obtain the best protection to melting pool.

Technical Data

Fiber Interface	QBH
Clear Aperture	24 mm
Collimator Focal Length	75mm,100mm,150mm
Focusing Focal Length	150mm,200mm,250mm
Wobble Frequency	≤1500Hz (Depends on the wobble diameter)
Cover Glasses	
-Focusing Side (Bottom)	Φ27.9 * 4.1 mm

Assist Gas Pressure

- Air Knife	≤6 bar
- Air Protection	25 L/min

Weight	~5.5 kg
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Optional Tip Components	Side Blow / Coaxial Nozzle
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Specifications subject to change without notice.

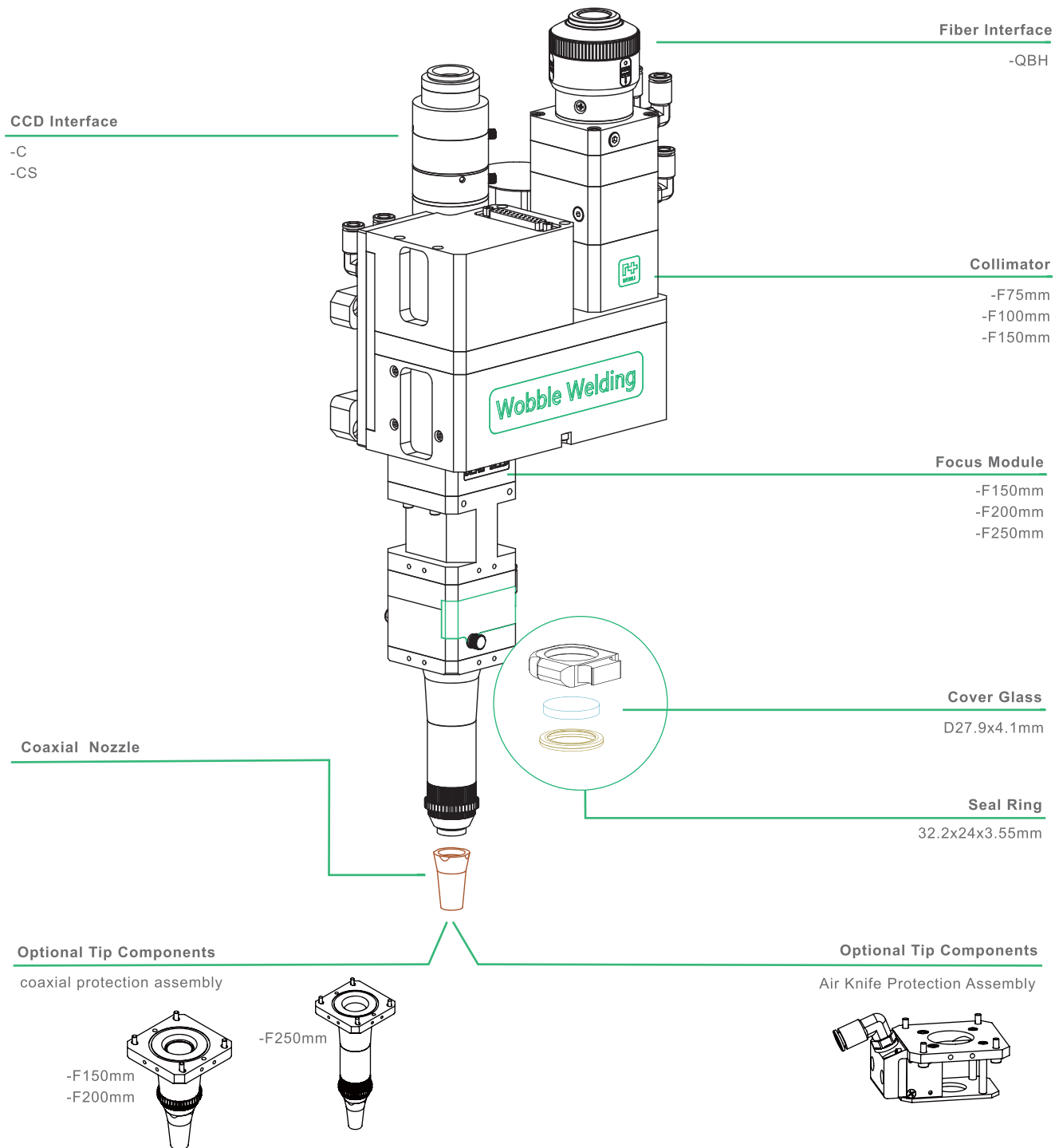
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BF330-2F SERIES



Wobble Laser Welding Head

Power Rating 2KW



RAYTOOLS

BF330-4F SERIES



Wobble Laser Welding Head

Power Rating **4KW**

Various wobbling paths like continuous circle, continuous square, continuous line, continuous ellipse and continuous 8 type, etc.

Built-in galvo and drive system.

Both internal control and external control mode.

CCD or laser vision seam tracking interface is optional for expanding of function.



Strengthened melting pool could be acquired comparing to standard welding.

Coaxial nozzle assembly or air knife+side blow assembly optional

To increase melting width, gas adaptability and reduce seam defects.

Smooth and efficient fluid structure to obtain the best protection to melting pool.

Technical Data

Fiber Interface	QBH, QD
Clear Aperture	30 mm
Collimator Focal Length	100 mm,125mm,150 mm
Focusing Focal Length	150mm,200mm, 250mm,300mm,400mm
Wobble Frequency	≤1500Hz (Depends on the wobble diameter)
Cover Glasses	
- Collimation Side (Top)	Φ37 * 1.6 mm
- Focusing Side (Bottom)	Φ37 * 7 mm

Assist Gas Pressure	
- Air Knife	≤6 bar
- Air Protection	10-25 L/min
Weight	~5.8 kg
Optional Tip Components	Side Blow / Coaxial Nozzle

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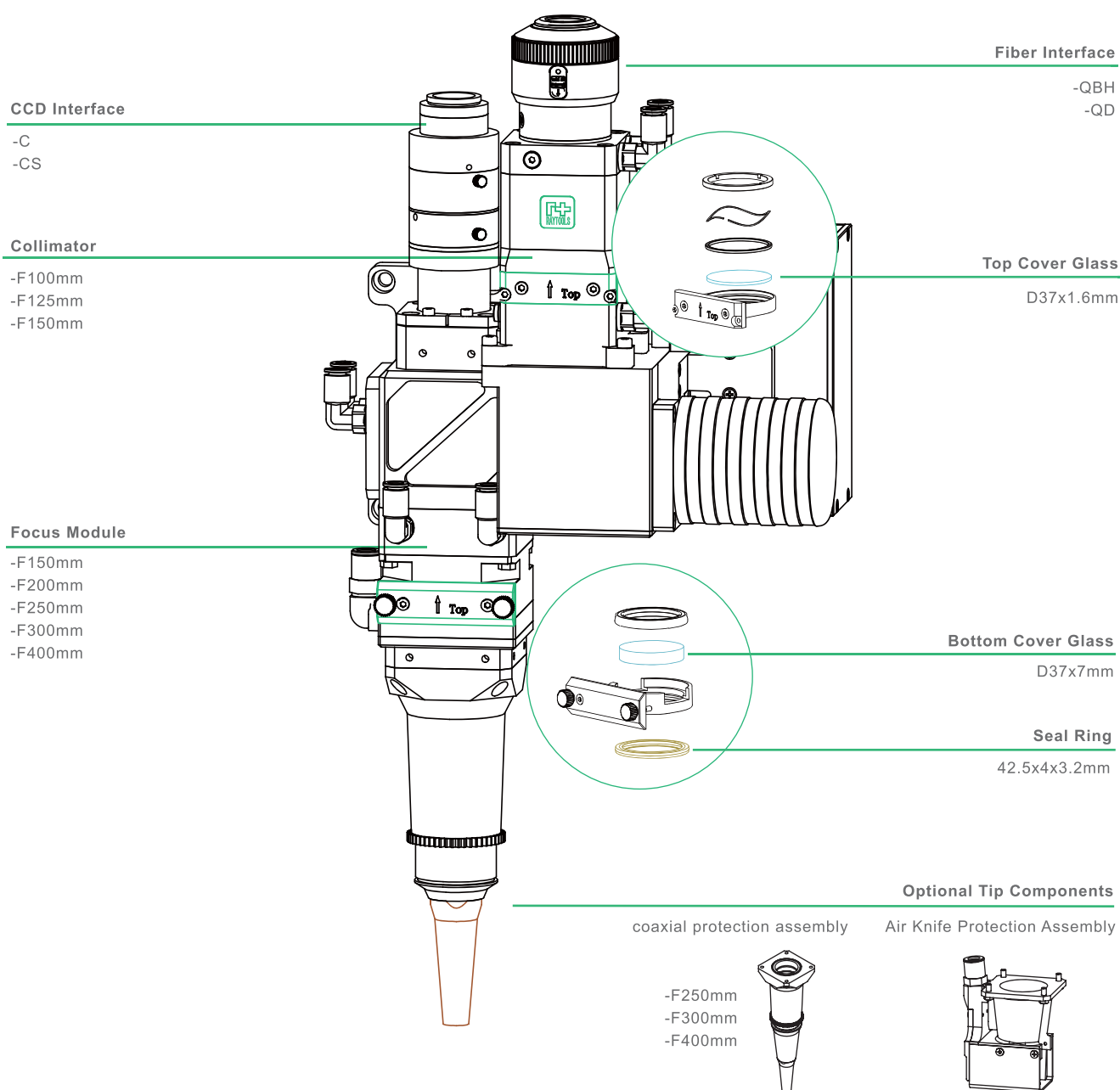
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BF330-4F SERIES



Wobble Laser Welding Head

Power Rating **4KW**



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BF330-6F SERIES



Wobble Laser Welding Head

Power Rating **6KW**

Various wobbling paths like continuous circle, continuous square, continuous line, continuous ellipse and continuous 8 type, etc.

Built-in galvo and drive system.

Both internal control and external control mode.

CCD or laser vision seam tracking interface is optional for expanding of function.



Strengthened melting pool could be acquired comparing to standard welding.

Coaxial nozzle assembly or air knife+side blow assembly optional

To increase melting width, gas adaptability and reduce seam defects.

Smooth and efficient fluid structure to obtain the best protection to melting pool.

Technical Data

Fiber Interface	QBH, QD, G5
Clear Aperture	30 mm
Collimator Focal Length	100 mm, 150 mm
Focusing Focal Length	250mm, 300mm, 400mm
Wobble Frequency	≤1500Hz (Depends on the wobble diameter)
Wobble Diameter Max	15mm
Wobble Linear Speed Max	2800mm/s

Cover Glasses	
- Collimation Side (Top)	Φ37 * 1.5 mm
- Focusing Side (Bottom)	Φ50 * 2 mm
Assist Gas Pressure	
- Air Knife	≤6 bar
- Air Protection	10-25 L/min
Weight	~12 kg
Optional Tip Components	Side Blow / Coaxial Nozzle

Specifications subject to change without notice.

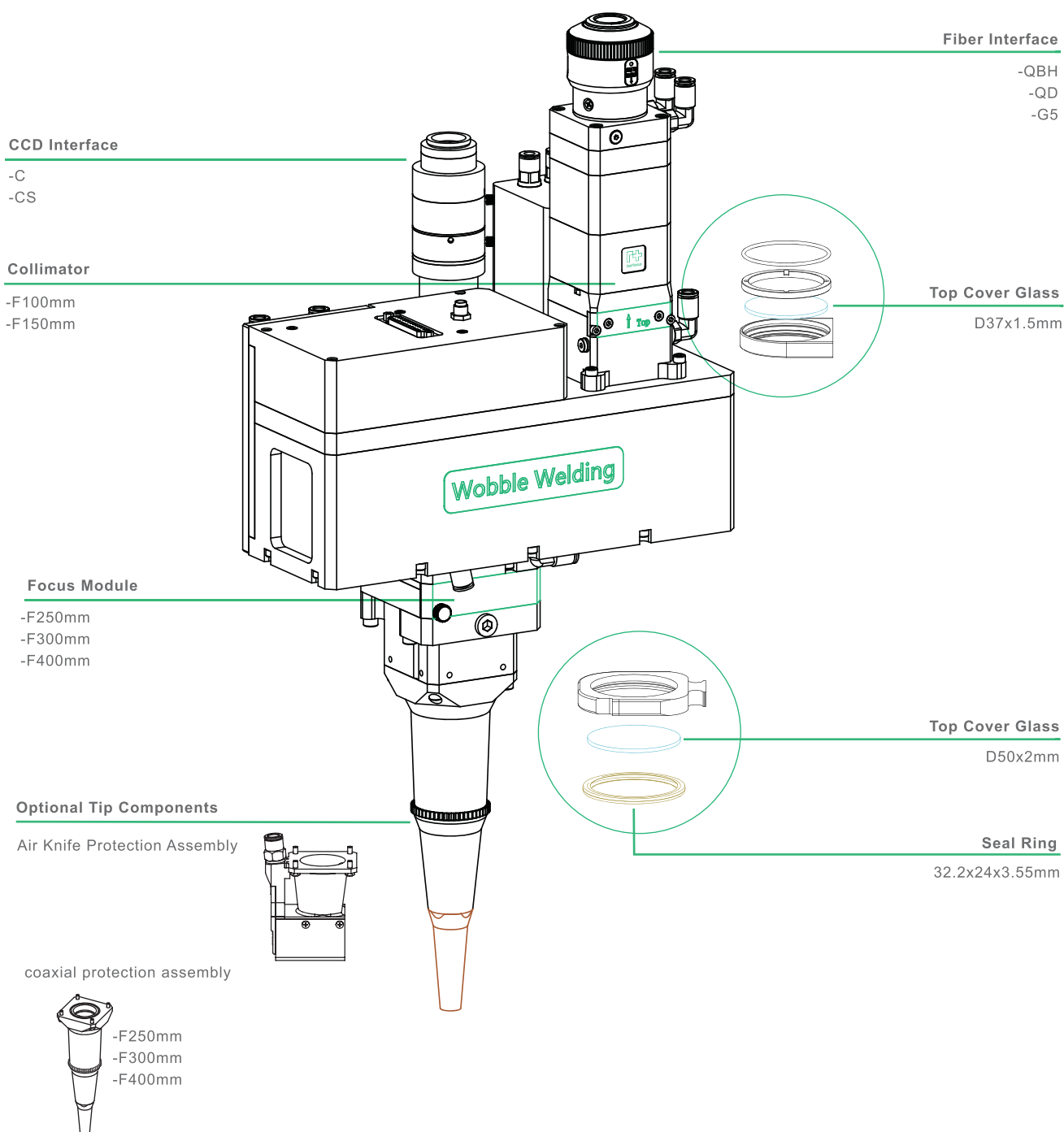
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BF330-6F SERIES



Wobble Laser Welding Head

Power Rating **6KW**



RAYTOOLS

BF12K SERIES

Wobble Laser Welding Head

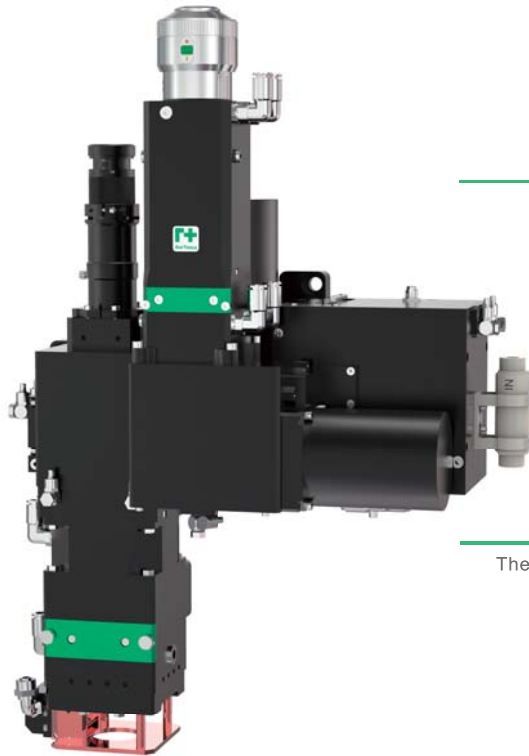
Power Rating 12KW



The maximum power is up to 12kW to meet the market demand of high power welding.

With low porosity, high mechanical properties and high quality welding surface.

Support for circle, square, straight line, ellipse and C-shape, S-shape, figure 8 in continuous welding.



Modules like temperature sensor, seam tracking and positioning are optional for expanding of function . Make it easy to realize auto welding.

The internal galvo mirror was designed with air cooling to secure efficient and stable welding.

Technical Data

Fiber Interface	QBH,QD,Q+,LLK-D,LOE
Clear Aperture	34 mm
Collimator Focal Length	150 mm
Focusing Focal Length	350mm
Cover Glasses	
- Collimation Side (Top)	Φ37 * 16 mm
- Focusing Side (Bottom)	Φ50 * 8 mm

Assist Gas Pressure

- Air Knife	≤6 bar
- Air Protection	10-25 L/min

Weight	~9 kg
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Specifications subject to change without notice.

RAYTOOLS

BF12K SERIES

Wobble Laser Welding Head

Power Rating 12KW



Fiber Interface

- QBH
- QD
- Q+
- LLK-D
- LOE

Collimator

- F150mm

Focus Module

- F350mm

Top Cover Glass

D37x1.6mm

Bottom Cover Glass

D50x8mm

Seal Ring

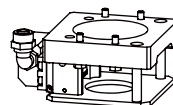
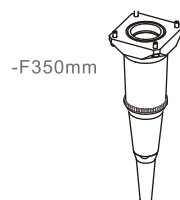
54.5x4x3.7mm

Optional Tip Components

coaxial protection assembly

Air Knife Protection Assembly

-F350mm



RAYTOOLS BF330-2C/6C SERIES



Scan Laser Welding Head

Power Rating 2KW/6KW

Rich Scanning Graphics

To customize process path as required within a large range by F-theta

Rich Function Expanding

Easy to integrate with seam tracking system and pyrometer for automated welding application.

Efficient Water-Cooling

Integral circulating water cooling to secure long term stable work.



Outstanding Dust-Resistance

Reliable sealing design to prolong lifespan.

Excellent Welding Quality

Low porosity, high mechanical properties and high-quality welding seam

Technical Data

Item	Specification
Power Rate	2kw/6kw
Wavelength	1064nm

Item	Specification
Clear Aperture	30mm
Weight	~14kg

RAYTOOLS BF330-2C/6C SERIES



Scan Laser Welding Head

Power Rating 2KW/6KW

Fiber Interface

- QBH
- QD
- LLK-B/D

CCD Interface

Top Protection Glass

-D37x1.6mm

Collimator

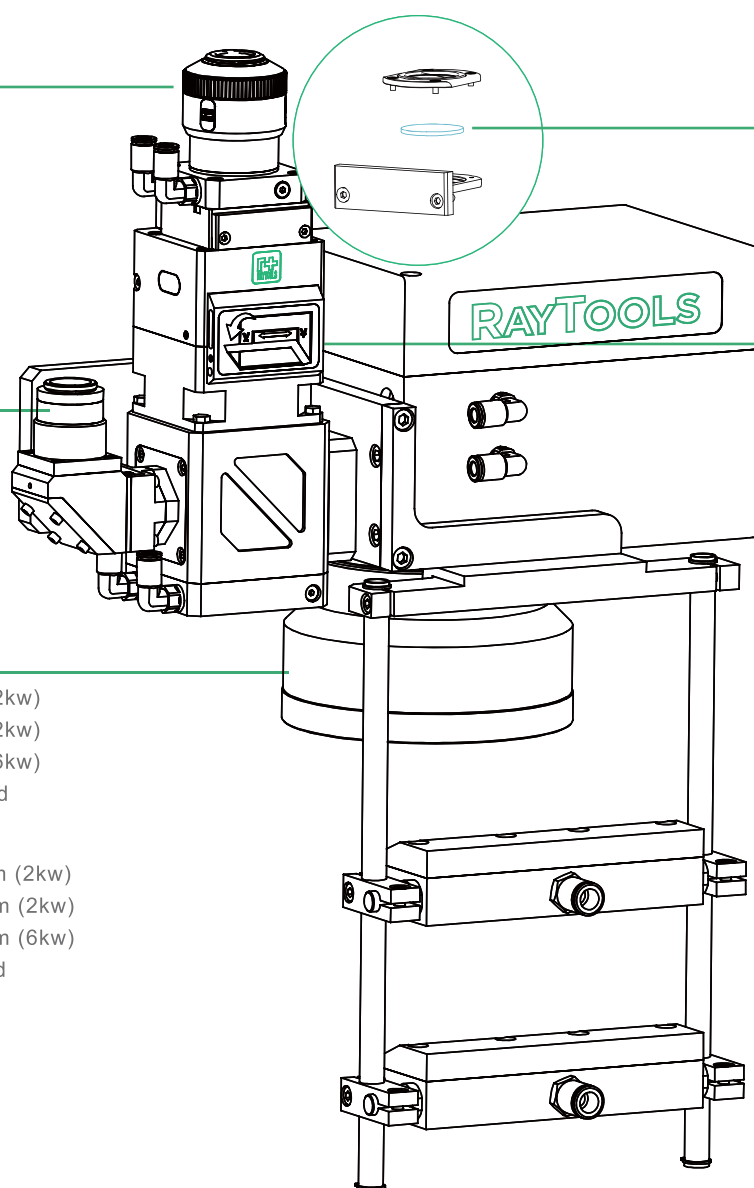
- F100mm (2kw/6kw)
- F125mm (6kw)
- F150mm (2kw/6kw)

F-theta

- F210mm (2kw)
- F254mm (2kw)
- F420mm (6kw)
- Customized

Scan Field

- 110x110mm (2kw)
- 160x160mm (2kw)
- 200x200mm (6kw)
- Customized



RAYTOOLS

BW101-GS SERIES



4-in-One Handheld Laser Processing Head

Power Rating 2KW/3KW

Single axis wobble with adjustable line spot
0-5mm

Various tip assemblies in standard kit to fulfill
cutting, welding and weldseam cleaning.
Assembly of remote cleaning is optional.

Wide welding seam, low porosity and
excellent melting pool protection.

Wire feeder as optional to expand
application range.



Multiple safety protection with auto
beam off function once the nozzle
goes away from workpiece.

4-in-one laser control system (Cut/Weld/Weld-
Seam Clean/Remote Clean) and HMI panel are
included.

4-in-One Handheld Laser Processing
Head-Cut/Weld/Weldseam Clean/Remote Clean

Technical Data

Fiber Interface	QBH
Clear Aperture	14 mm
Collimator Focal Length	60 mm
Focusing Focal Length	150 mm
Wobbling Width	0-5mm(Weld) 0-10mm(WeldSeam Clean) 0-80mm(RemoteClean)

Cover Glass	
- Focusing Side(Middle/Bottom)	Φ20*3 mm
Assist Gas Flow	15-25L/min
Weight	~0.9 kg
Optional Tip Components	Cutting Assembly/ Welding Assembly/ Cleaning Assembly

Specifications subject to change without notice.

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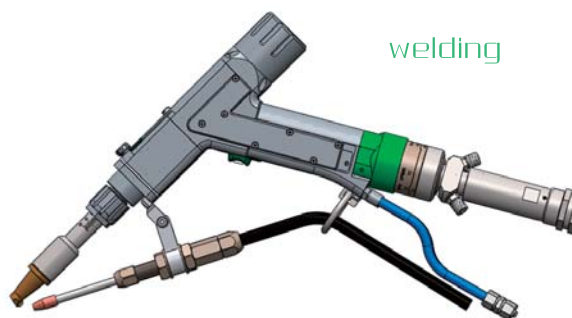
BW101-GS SERIES



4-in-One Handheld Laser Processing Head

Power Rating 2KW/3KW

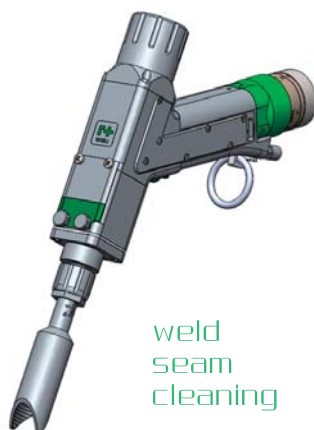
HMI



welding



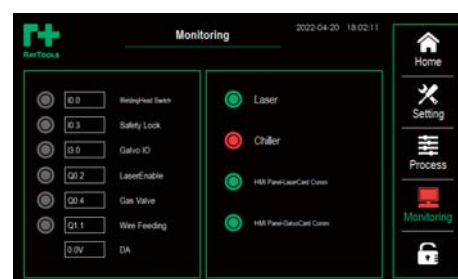
cutting



weld
seam
cleaning



remote
cleaning



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BW101-GS SERIES



4-in-One Handheld Laser Processing Head

Power Rating 2KW/3KW

Top Cover Glass

D20x3mm

Seal Ring

20.5x15x2.5mm

Bottom Cover Glass

D20x3mm

Seal Ring

20.5x15x2.5mm

Fiber Interface

QBH

Collimator

-F60mm

Focus Module

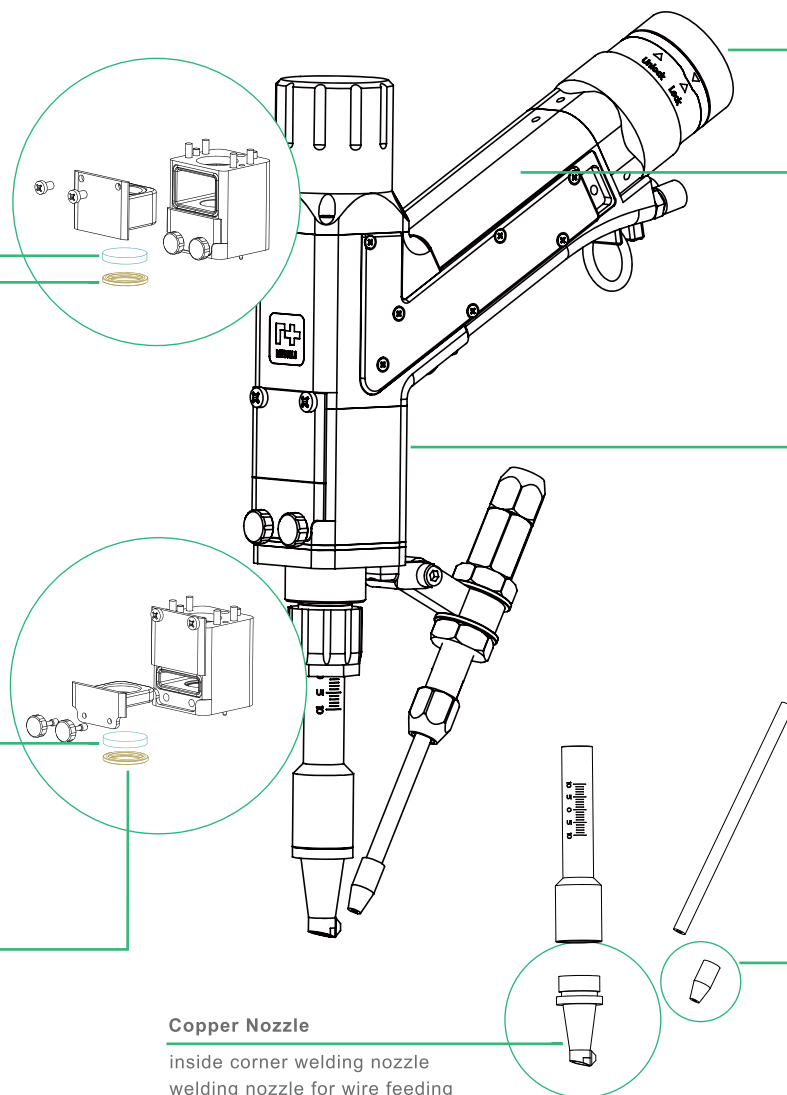
-F150mm

Copper Nozzle

inside corner welding nozzle
welding nozzle for wire feeding
outside corner welding nozzle
outside corner welding nozzle for wire feeding
cutting nozzle

Wire Feeding Nozzle

-1.0mm
-1.2mm
-1.6mm



RAYTOOLS

BW210

SERIES



Laser Welding Head

Power Rating **2KW**

Different versions applicable to fiber laser, direct diode laser and blue laser for option.

Light-duty and compact design.

Both collimation and focus lens are water cooled.



CCD interface and laser vision seam tracking interface is optional for expanding of function.

Efficient fluid structure design to obtain the best protection to melting pool.

Coaxial nozzle or air knife+side blow nozzle is optional.

Technical Data

Diode/Blue Version	
- Fiber Interface	QBH, SMA905,QCS
- Focal Length of Collimation/Focusing Lens	50mm:100/125/150mm
Fiber Version	
- Fiber Interface	QBH,QD
- Focal Length of Collimation/Focusing Lens	100mm:150/200/250/300mm

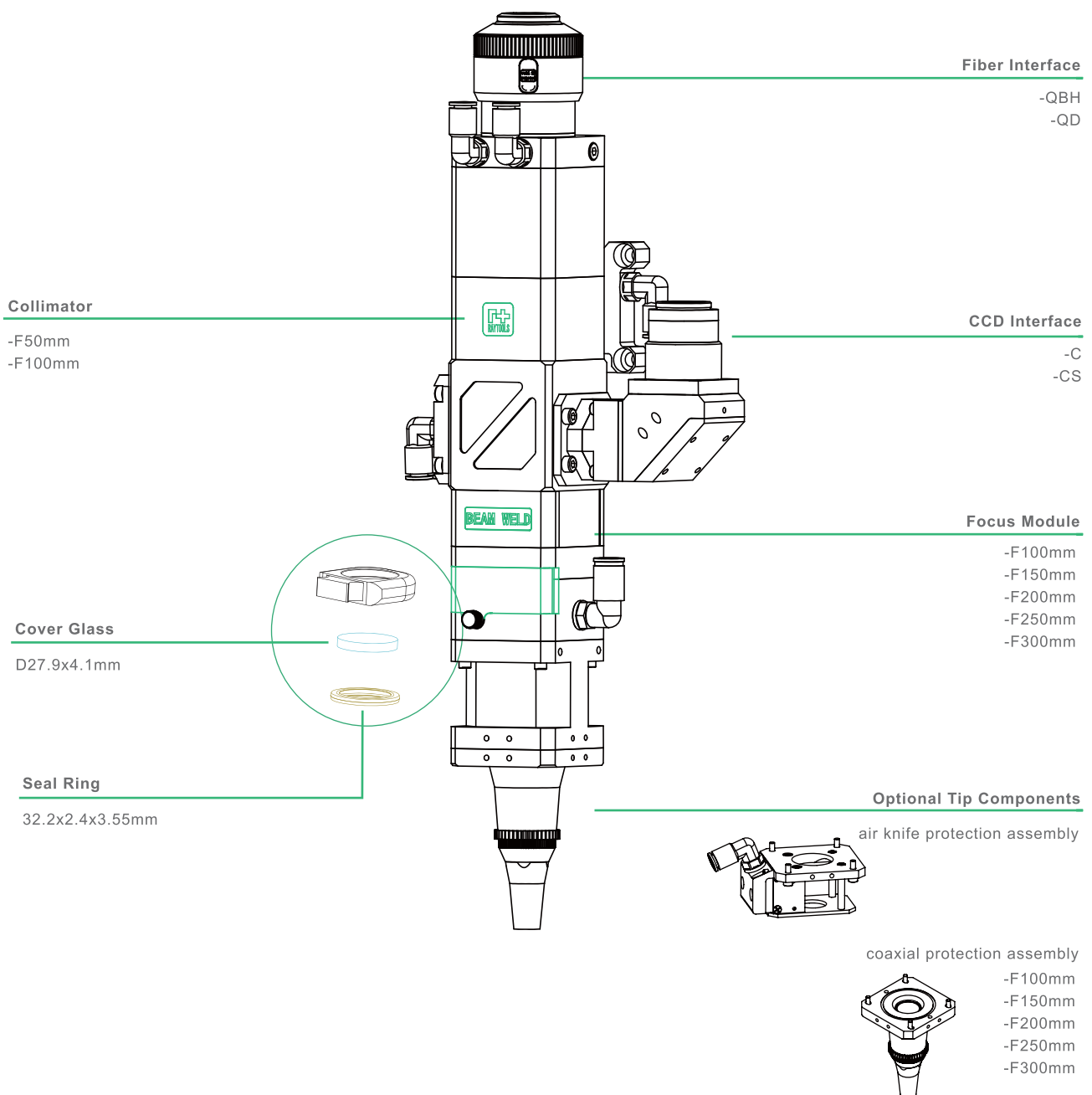
CCD	TYPE-C , TYPE-CS
Clear Aperture	28mm
Cover Glass (Bottom)	Φ27.9 * 4.1 mm
Assist Gas Pressure	
- Air Knife	≤6 bar
- Air Protection	10-25L/min
Weight	~ 3kg (with CCD)
Optional Tip Components	Side Blow / Coaxial Nozzle

Specifications subject to change without notice.

RAYTOOLS BW210 SERIES

Laser Welding Head

Power Rating **2KW**



RAYTOOLS BW240 SERIES



Laser Welding Head

Power Rating **4KW**

Compatible to the wavelength range of mainstream fiber lasers in market.

Both collimation lens and focus lens are water cooled.

Optimized optical design to realize deep penetration welding.



Large depth-to-width ration which is favorable to welding of medium/thick plate.

3 cover glasses to provide adequate protection to collimation and focus lens.

CCD or laser vision seam tracking interface is optional for expanding of function.

Coaxial nozzle or air knife+ side blow nozzle is optional.

Technical Data

Fiber Interface	QBH, QD
Clear Aperture	35 mm
Collimator Focal Length	100mm,150mm
Focusing Focal Length	200mm , 250mm , 300mm, 400mm, 500mm
CCD	TYPE-C , TYPE-CS
Cover Glasses	
- Collimation Side (Top)	Φ37 * 1.6 mm
- Focusing Side (Bottom/Middle)	Φ37 * 7 mm

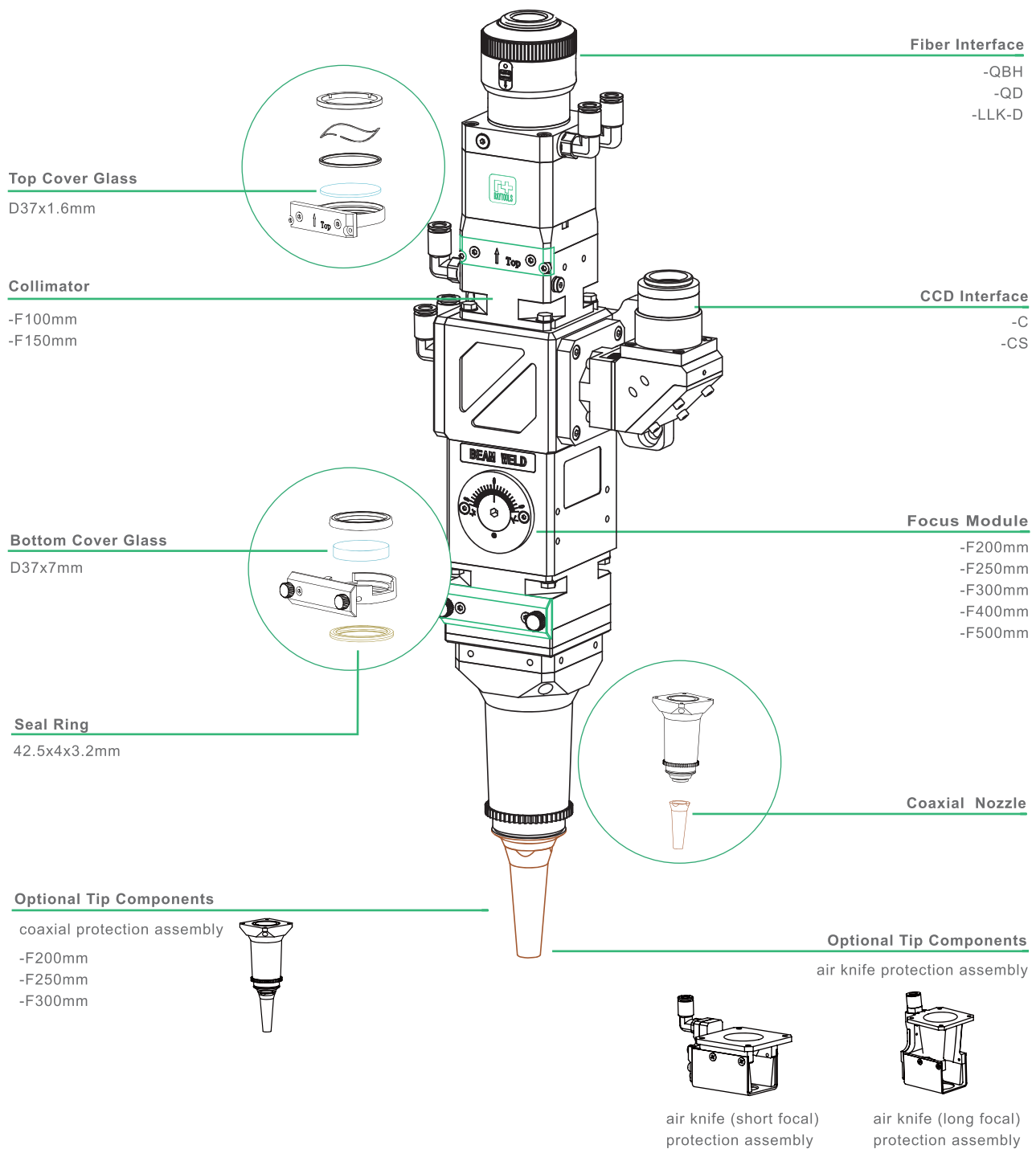
Assist Gas Pressure	
- Air Knife	≤6 bar
- Air Protection	10-25 L/min
Weight	~ 4kg (with CCD)
Optional Tip Components	Side Blow / Coaxial Nozzle

Specifications subject to change without notice.

RAYTOOLS BW240 SERIES

Laser Welding Head

Power Rating **4KW**



RAYTOOLS

BW290-8W SERIES



Laser Welding Head

Power Rating **8KW**

Applicable to high power welding of ferrous/non-ferrous metal by diode or fiber laser.

Broad-wavelength optics system compatible to diode or fiber laser.

3 Cover glasses to provide adequate protection to collimation/focus lens.



Both collimation lens and focus lens are water cooled.

Optimized optical design to achieve high speed, high quality and high power laser welding.

CCD or laser vision seam tracking interface is optional for expanding of function.

Smooth and efficient fluid structure design to obtain the best protection to melting pool.

Technical Data

Fiber Interface	QBH, QD, LLK-D
Collimator Focal Length	100mm, 150mm, 200mm,
Focusing Focal Length	150mm, 200mm, 250mm,
	300mm, 400mm
CCD	TYPE-C , TYPE-CS
Clear Aperture	48mm

Cover Glass	
- Collimation Side (Top)	Φ50 * 2 mm
- Focusing Side (Bottom/Middle)	Φ50 * 2 mm
Assist Gas Pressure	
- Air Knife	≤6 bar
- Protection Air	10-25L/min
Weight	~7.5kg (with CCD)
Optional Tip Components	Side Blow/Coaxial Nozzle

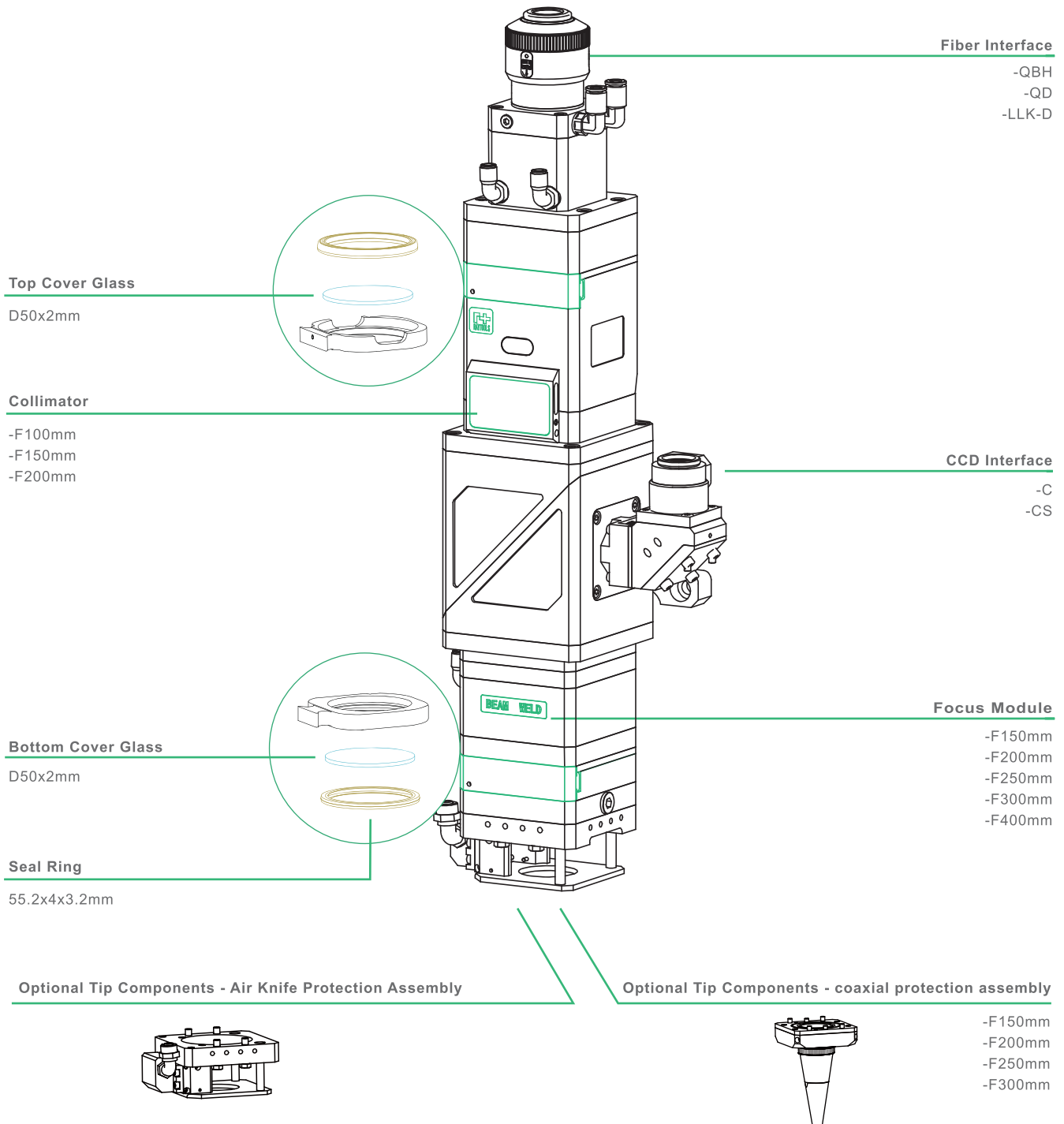
Specifications subject to change without notice.

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BW290-8W SERIES

Laser Welding Head

Power Rating **8KW**



RAYTOOLS

BW290-6D SERIES



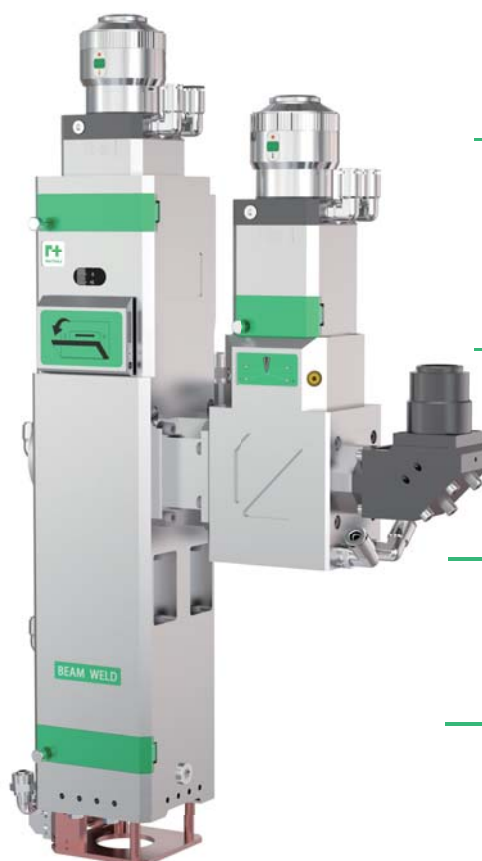
Hybrid Laser Welding Head

Power Rating **6KW**

Hybrid version of fiber laser and diode laser used for welding of high-reflection materials to secure the quality and conformity of welding seam.

Dual-wavelength (fiber laser 4KW + diode laser 2KW) optics system.

3 Cover glasses to provide adequate protection to collimation/focus lens.



Both collimation lens and focus lens are water cooled.

Optimized optical design to achieve high speed, high quality and high power laser welding.

CCD or laser vision seam tracking interface is optional for expanding of function.

Smooth and efficient fluid structure design to obtain the best protection to melting pool.

Technical Data

Diode Laser Input

- Fiber Interface	QBH , QD, LLK-D
- Collimator Focal Length	100mm, 150mm, 200mm
- Focusing Focal Length	150mm, 200mm, 250mm, 300mm

Fiber Laser Input

- Fiber Interface	QBH, QD, LLK-D
- Collimator Focal Length	100mm, 150mm
- Focusing Focal Length	150mm, 200mm, 250mm, 300mm

Specifications subject to change without notice.

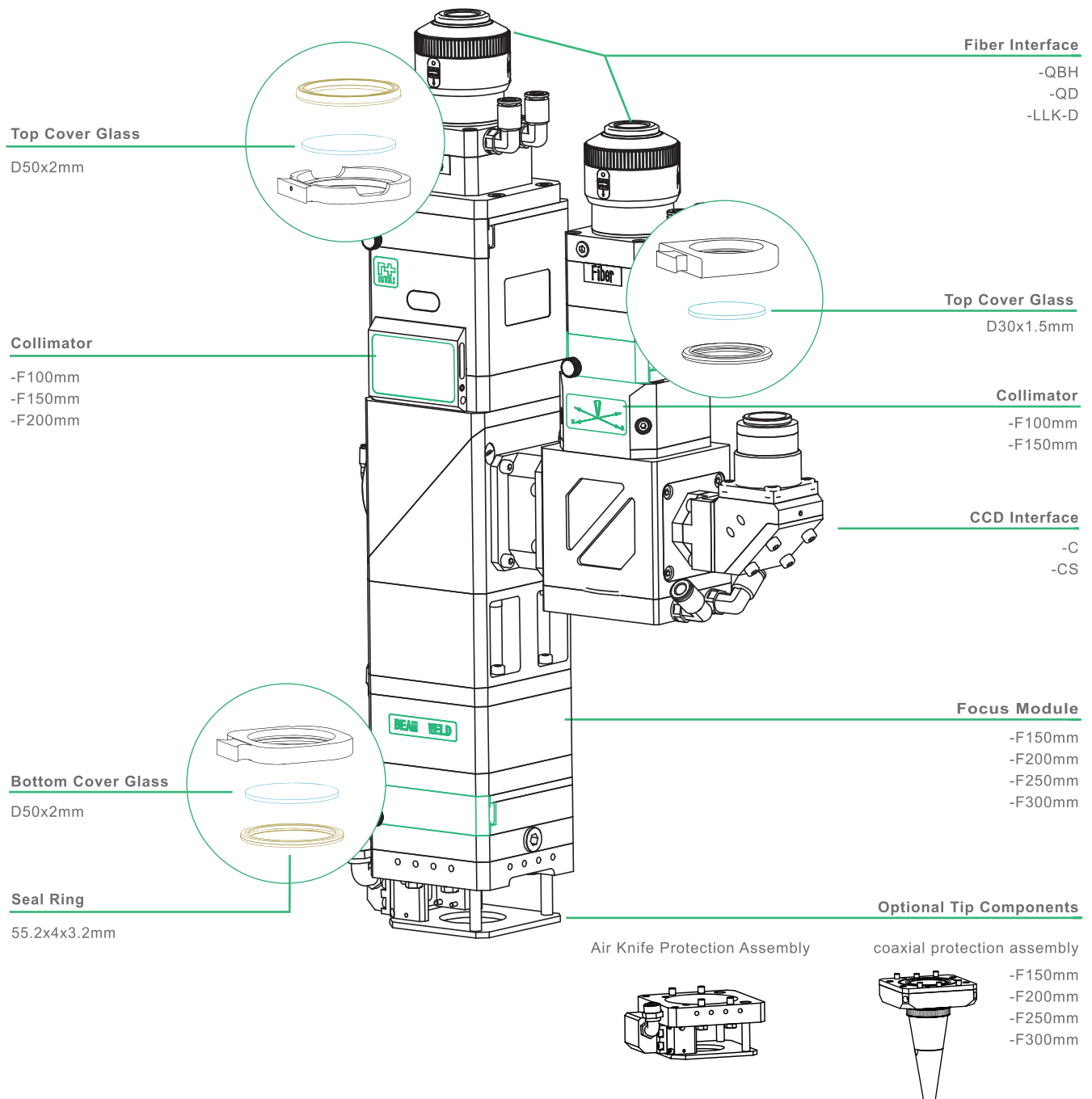
CCD	TYPE-C , TYPE-CS
Clear Aperture	Fiber:35mm / Diode:48mm
Cover Glass	
- Collimation Side (Top)	Fiber: 30*1.5 mm Diode: Φ50*2 mm
- Focusing Side (Bottom/Middle)	Φ50 * 2 mm
Assist Gas Pressure	
- Air Knife	≤6 bar
- Protection Air	10-25L/min
Weight	~9.2kg (with CCD)
Optional Tip Components	Side Blow/Coaxial Nozzle

RAYTOOLS

BW290-6D SERIES

Hybrid Laser Welding Head

Power Rating **6KW**



RAYTOOLS

BW290-6B SERIES



Hybrid Wobble Laser Welding Head

Power Rating **6KW**

Hybrid version of wobble welding by fiber laser and fixed spot welding by blue laser which is applicable to welding of high-reflection materials especially such as copper.

Dual-wavelength (fiber laser 4KW with wobble feature+ blue laser 2KW) optics system.

3 Cover glasses to provide adequate protection to collimation/focus lens.



Both collimation lens and focus lens are water cooled.

Various wobbling paths like continuous circle, continuous square, continuous line, continuous ellipse and continuous 8 type, etc.

CCD or laser vision seam tracking interface is optional for expanding of function.

Smooth and efficient fluid structure design to obtain the best protection to melting pool.

Technical Data

Diode Laser Input

- Fiber Interface	QBH , QD, LLK-D
- Collimator Focal Length	100mm, 150mm
- Focusing Focal Length	200mm, 250mm, 300mm, 250mm, 300mm

Fiber Laser Input

- Fiber Interface	QBH, QD, LLK-D
- Collimator Focal Length	100mm, 150mm
- Focusing Focal Length	200mm, 250mm, 300mm

Specifications subject to change without notice.

CCD TYPE-C , TYPE-CS

Clear Aperture	Fiber: 35mm / Diode: 48mm
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Cover Glass

- Collimation Side (Top)	Fiber: $\Phi 37 * 1.6 \text{ mm}$ Diode: $\Phi 50 * 2 \text{ mm}$
- Focusing Side (Bottom/Middle)	$\Phi 50 * 2 \text{ mm}$

Assist Gas Pressure

- Air Knife	$\leq 6 \text{ bar}$
- Protection Air	10-25L/min

Weight	~12kg (with CCD)
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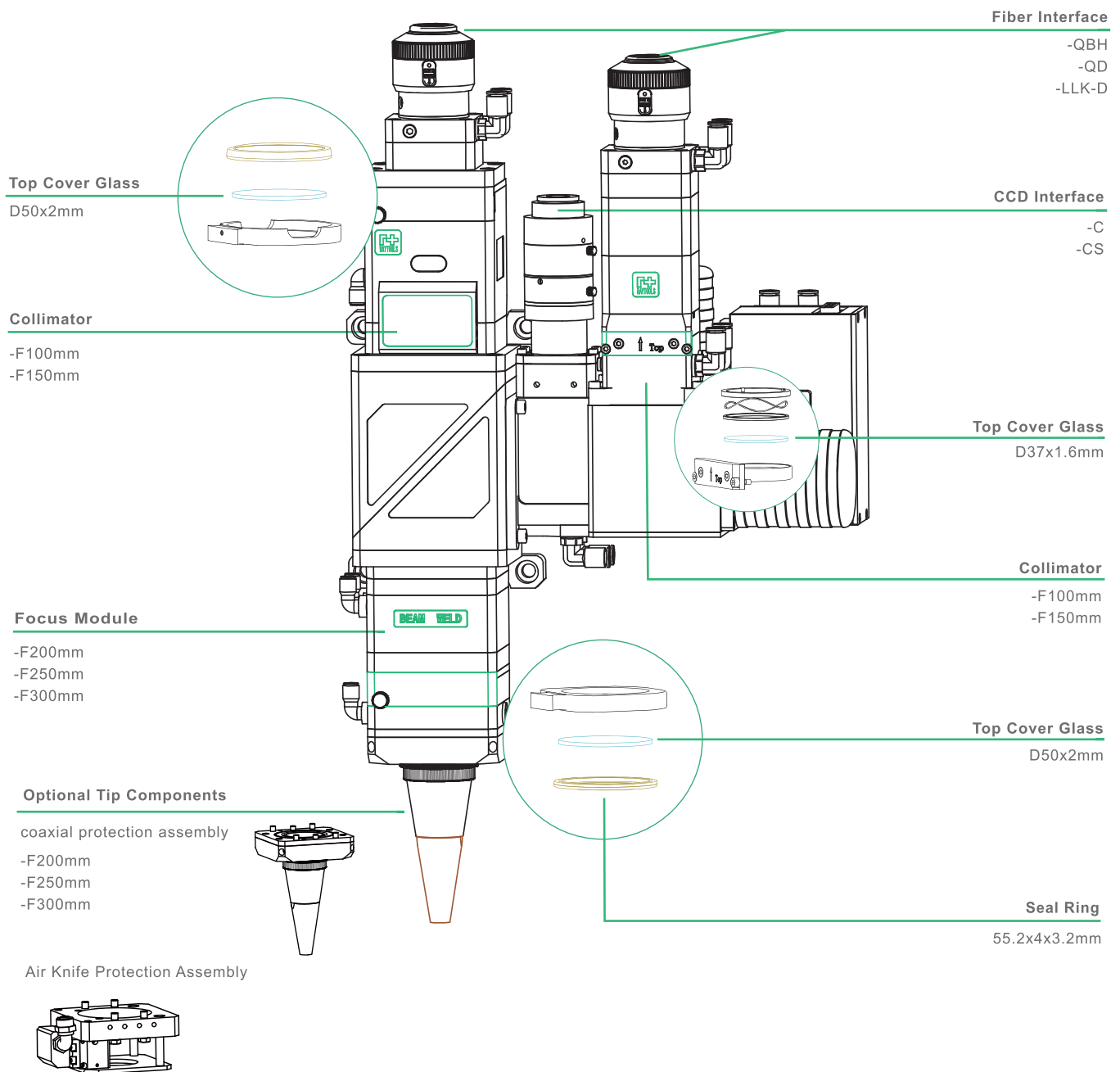
Optional Tip Components	Side Blow/Coaxial Nozzle
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RAYTOOLS

BW290-6B SERIES

Hybrid Wobble Laser Welding Head

Power Rating **6KW**



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BW12K/20K SERIES



Laser Welding Head

Power Rating 12KW/20KW

The maximum power is up to 12kW/20kW to meet the market demand of high power welding.

With low porosity, high mechanical properties and high quality welding surface.

Real-time monitoring of the operating temperature of cover glass.



Drawer type cover glass holder to facilitate replacement. 3 cover glasses to protect focus & collimation lens.

Reliable sealing design to avoid contamination to optical lens and prolong the lifespan.

Dual water cooling structure with interfaces on both the cover glass holder and the laser head to extend the working duration.

Technical Data

Fiber Interface	QBH,QD,Q+,LLK-D,LOE
Clear Aperture	48 mm
Collimator Focal Length	150 mm
Focusing Focal Length	350mm
CCD interface	TYPE-C, TYPE-CS
Cover Glasses	
- Collimation Side (Top)	Φ50 * 2 mm
- Focusing Side (Bottom)	Φ50 * 8 mm

Assist Gas Pressure	
- Air Knife	≤6 bar
- Air Protection	10-25 L/min
Weight	~5 kg

Specifications subject to change without notice.

RAYTOOLS

BW12K/20K SERIES

Laser Welding Head

Power Rating 12KW/20KW



Fiber Interface

-QBH
-QD
-Q+
-LLK-D
-LOE

Top Cover Glass

D50x2mm

Collimator

F150mm

CCD Interface

-C
-CS

Bottom Cover Glass

D50x8mm

Focus Module

F350mm

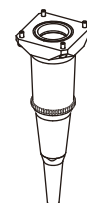
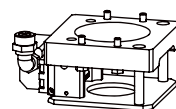
Seal Ring

54.5x4x3.7mm

Optional Tip Components

Air Knife Protection Assembly

coaxial protection assembly



-F350mm

RAYTOOLS AK190TC SERIES

Laser Cladding Head-Parabolic Type

Power Rating **6KW**



Adapts direct water-cooled parabolic copper mirror to support high power with a long lifespan.

Dual water circuits design to prolong lifespan of head.



A variety of fiber interfaces like QBH, QD, LLK-D.

3-Way cladding nozzle is fixed to get 3-way powder cladding.

Technical Data

Fiber Interface	QBH , QD , LLK-D
Clear Aperture	32 mm
Collimator Focal Length	75mm , 100mm , 125mm, 150mm
Focusing Focal Length	300mm

Cover Glass (Bottom)	Φ30 * 5 mm
Assist Gas Pressure	4~6 bar
Internal Gas Pressure	≤2 bar
Weight	~5 kg

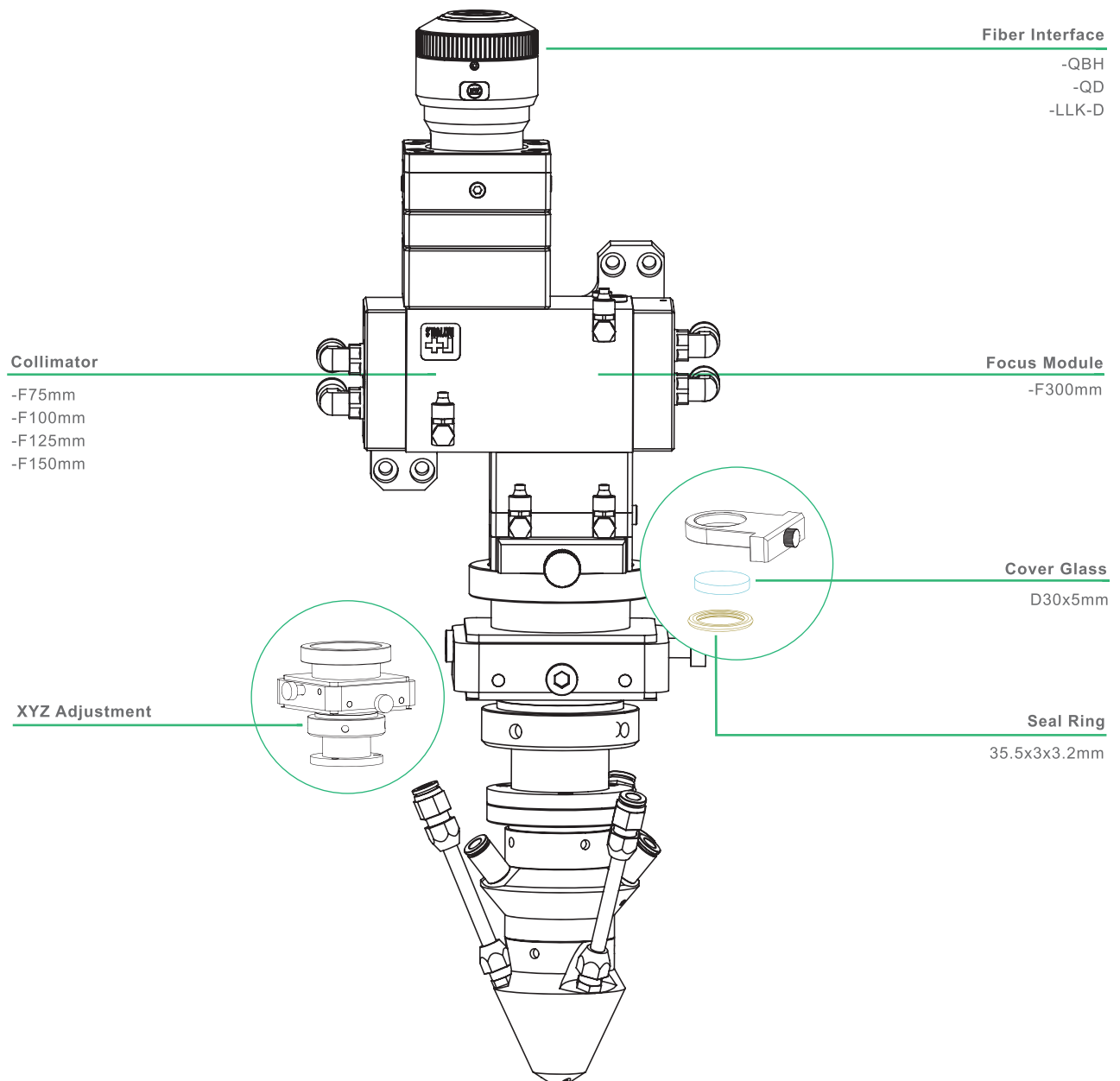
Specifications subject to change without notice.

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AK190TC SERIES

Laser Cladding Head-Parabolic Type

Power Rating 6KW



RAYTOOLS AK390HT SERIES



Laser Hardening Head-Parabolic Type

Power Rating **20KW**

Adapts direct water-cooled parabolic copper mirror to support high power with a long lifespan.

Dual water circuits design to prolong lifespan of head.

A variety of fiber interfaces like QBH, QD, LLK-D.



With a special integrated mirror to conduct rectangular beam spot for hardening.

Different integrated mirrors in size for option to achieve a variety of beam spot size.

Technical Data

Fiber Interface	QBH , QD, LLK-D
Clear Aperture	48 mm
Collimator Focal Length	100mm , 150mm , 200mm
Focusing Focal Length	300mm

Cover Glass	Φ50 * 2 mm
Assist Gas Pressure	≤6 bar
Weight	~4 kg
KIS Size	10*2, 15*2, 20*2, 20*4mm or others

Specifications subject to change without notice.

RAYTOOLS AK390HT SERIES

Laser Hardening Head-Parabolic Type

Power Rating 20KW



Fiber Interface

-QBH
-QD
-LLK-D

Collimator

-F100mm
-F150mm
-F200mm

Focus Module

-F300mm

Cover Glass

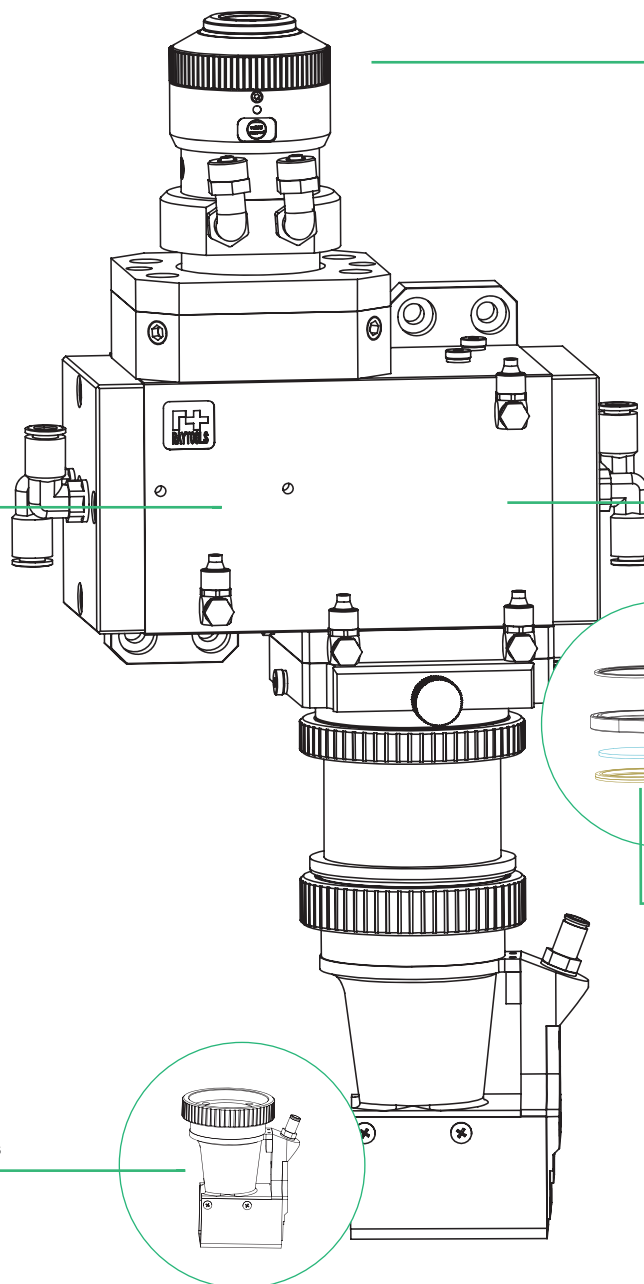
D50x2mm

Seal Ring

55.2x4x3.2mm

Optional Tip Components

air knife (long focal)
protection assembly



RAYTOOLS AK390PC SERIES



Wideband Laser Cladding Head-Parabolic Type

Power Rating **20KW**

Adapts direct water-cooled parabolic copper mirror to support high power with a long lifespan.

Wideband powder feeding mechanism is fixed to conduct wideband cladding.

Dual water circuits design to prolong lifespan of head.

Different integrated mirrors in size for option to achieve a variety of beam spot size.

A variety of fiber interfaces like QBH, QD (LLK-D) or LLK-B.

With a special integrated mirror to conduct rectangular beam spot to work along with wideband powder feeding mechanism for high efficiency cladding.



Technical Data

Fiber Interface	QBH , QD, LLK-D
Clear Aperture	48 mm
Collimator Focal Length	100mm ,150mm 200mm
Focusing Focal Length	300mm
Assist Gas Pressure	≤6 bar
Weight	~7 kg

Cover Glass	Φ50 * 2 mm
KIS Size	10*2, 15*2, 20*2, 20*4mm or others
Axis Range	
- X	±15mm
- Y	±15mm
- Z	±30mm
Angle Range	3°x10

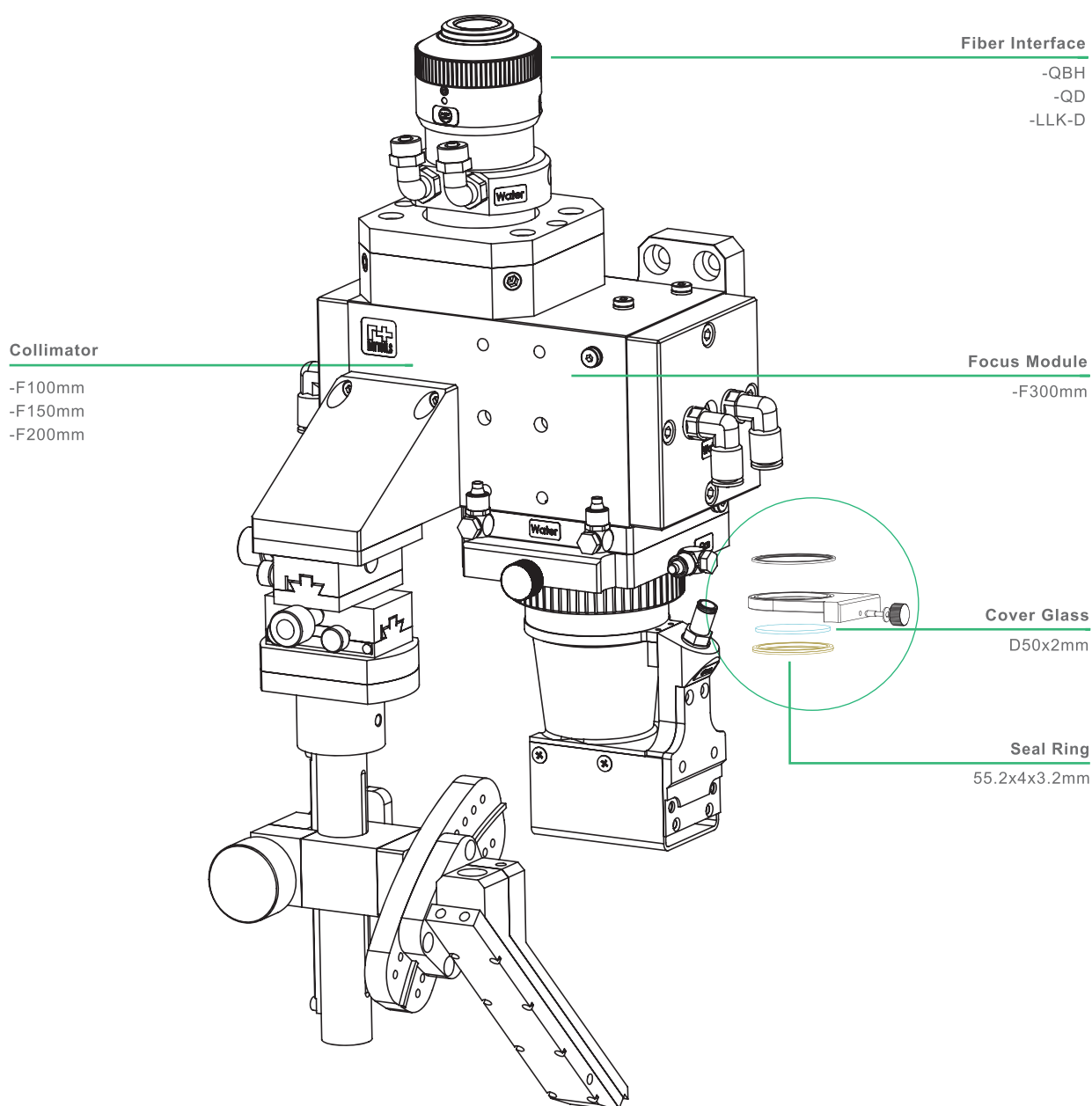
Specifications subject to change without notice.

RAYTOOLS AK390PC SERIES



Wideband Laser Cladding Head-Parabolic Type

Power Rating **20KW**



RAYTOOLS AK390TC SERIES



Laser Cladding Head-Parabolic Type

Power Rating 20KW

Adapts direct water-cooled parabolic copper mirror to support high power with a long lifespan.

Dual water circuits design to prolong lifespan of head.



A variety of fiber interfaces like QBH, QD (LLK-D) or LLK-B.

3-Way cladding nozzle is fixed to get 3-way powder cladding.

Technical Data

Fiber Interface	QBH , QD, LLK-D, LOE
Clear Aperture	48 mm
Collimator Focal Length	100mm , 150mm
Focusing Focal Length	300mm

Cover Glass	Φ50 * 2 mm
Assist Gas Pressure	4~6 bar
Weight	~7.5 kg

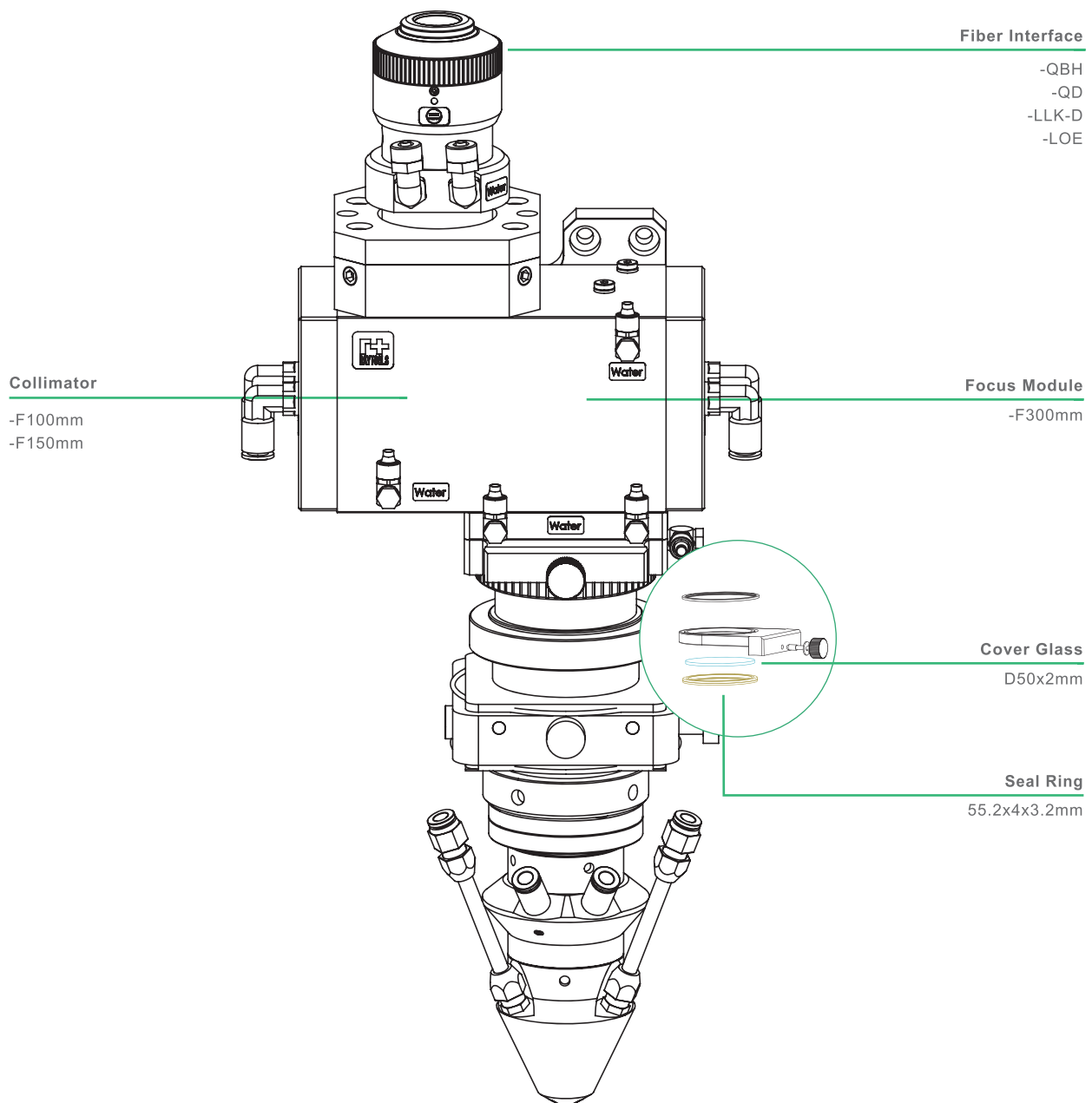
Specifications subject to change without notice.

RAYTOOLS

AK390TC SERIES

Laser Cladding Head-Parabolic Type

Power Rating 20KW



RAYTOOLS BC104 SERIES

Laser Cladding Head-Transmission Type

Power Rating **4KW**



Efficient Water-Cooling

All lenses are water-cooling and the cooling system is independent from the laser head, with no risk of internal water leakage.

Adjustable Focus

Modify the spot size on the processing position by adjusting the position of focusing lens.

Camera Monitoring

Configure CCD camera for process monitoring.

Enclosed Design

Fully enclosed dust-proof design to avoid dust contamination of the optical part.

Multifunctional Design

Meet various requirements with different nozzles. Three-way, four-way, annular, high-speed cladding nozzle and other types are all available.

Modular Design

Optional modules includes CCD imaging, temperature monitoring and cover glass temperature measurement and other functions.



Technical Data

Power Rating	4kw
Transmission Wavelength	1060-1080nm
Applicable Laser	Fiber Laser
Powder Aggregate Size	1-3mm Optional
Working Distance	13-16mm

Nozzle	Optional 3-way, 4-way, annular, high-speed cladding nozzle
Optional	CCD module, red-light locator module, cover glass temperature monitoring, powder splitter, closed-loop temperature control module, etc
Weight	~5Kg

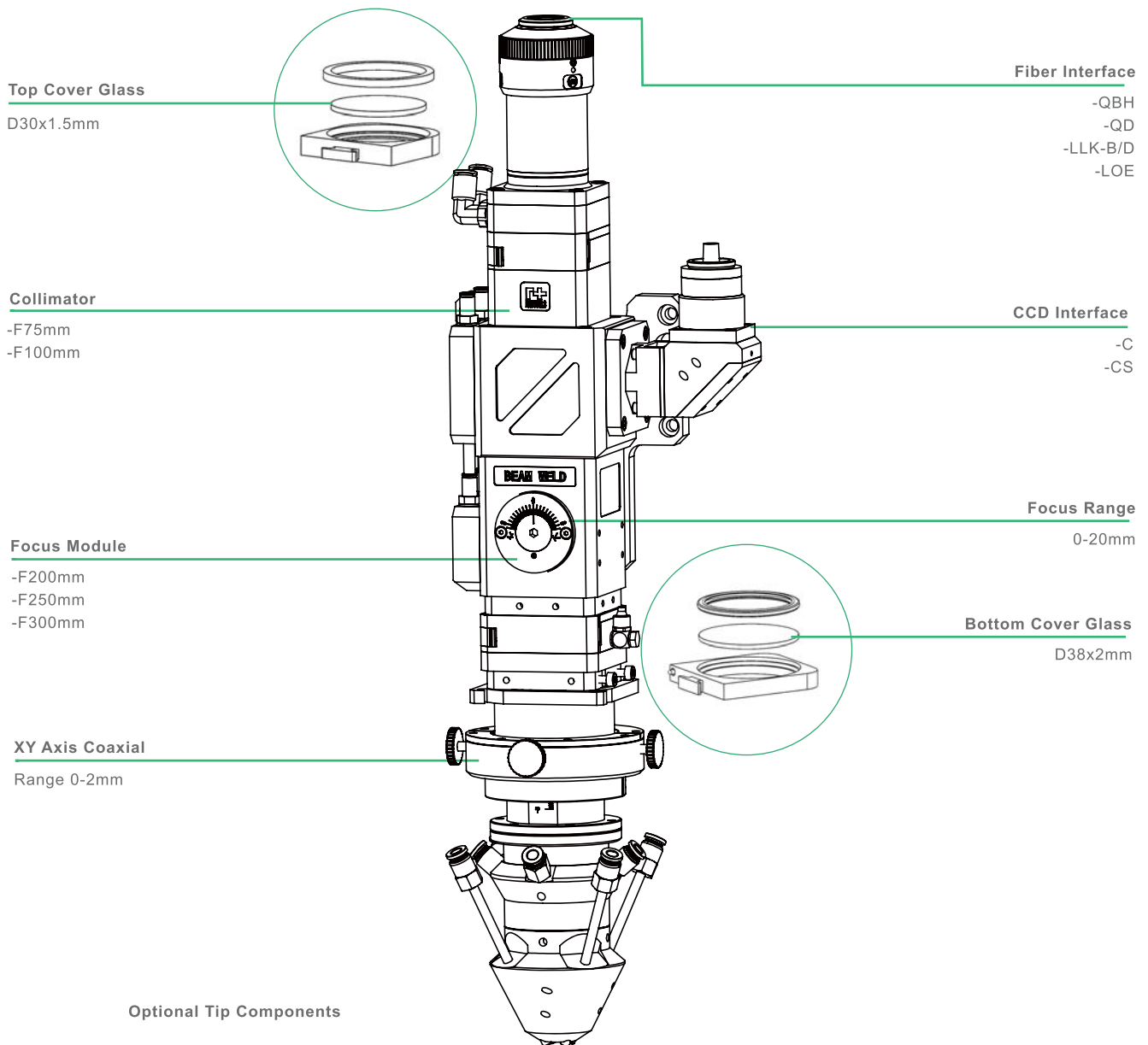
Specifications subject to change without notice.

RAYTOOLS

BC104 SERIES

Laser Cladding Head-Transmission Type

Power Rating 4KW



Optional Tip Components



3-way powder feeding nozzle



4-way powder feeding nozzle



annular powder feeding nozzle

RAYTOOLS BC106 SERIES

High Power Laser Cladding Head-Transmission Type

Power Rating **6KW**



High Power Rating

With D50 optical lens group, maximum power is up to 6KW.

Efficient Water-Cooling

All lenses are water-cooling and the cooling system is independent from the laser head, with no risk of internal water leakage.

Camera Monitoring

Configure CCD camera for process monitoring.

Enclosed Design

Fully enclosed dust-proof design to avoid dust contamination of the optical part.

Collimation Focusing

The focusing range adjusted by the collimation is larger than the traditional focusing range.

Large Clear Aperture

The clear aperture of the laser head is 48mm, which can effectively reduce the interference of stray light and ensure the cladding effect.



Technical Data

Power Rating	6kw
Transmission Wavelength	900-1100nm
Applicable Laser	fiber laser Diode laser
Powder Aggregate Size	1-3mm Optional
Working Distance	13-16mm

Nozzle	Three-way, four-way, annular, high-speed and other types
Optional	CCD module, red-light locator module, cover glass temperature monitoring, powder splitter, closed-loop temperature control module, etc
Weight	~7Kg

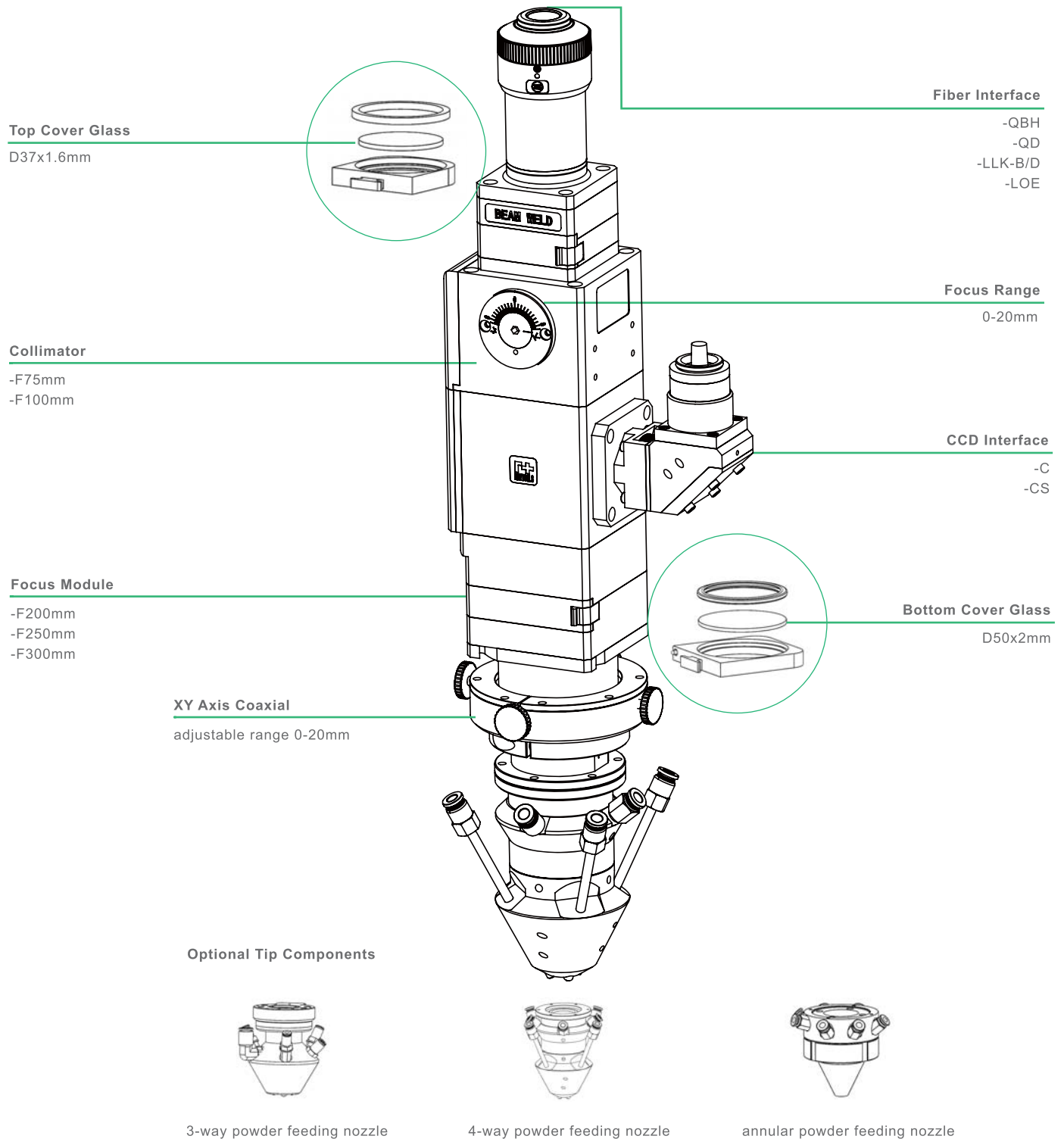
Specifications subject to change without notice.

RAYTOOLS

BC106 SERIES

High Power Laser Cladding Head-Transmission Type

Power Rating **6KW**



RAYTOOLS VB106 SERIES

Multifunctional Laser Processing Head

Power Rating **6KW**



Efficient Water-Cooling

All lenses are water-cooling, and the cooling system is independent from the laser head, with no risk of internal water leakage.

Adjustable Collimation

Manually adjust the position of the collimation lens with a hex key to change the size of the focal spot for different processing.

Multifunctional Design

The automatic switching between circular and rectangular spots can be realized by manual/electrical mode, which can fit the corresponding coaxial assembly, powder feeding nozzle and side blow assembly. Meet the multi-functional processing requirements of laser welding, cladding and hardening.



Camera Monitoring

CCD camera can quickly locate the processing position and monitor the process

Enclosed Design

Fully enclosed dust-proof design to avoid dust contamination of the optical part.

Modular Design

Optional modules includes closed-loop temperature control, cover glass temperature monitoring, three-way/four-way/annular/wide-range cladding nozzle, etc

Technical Data

Power Rate	6KW
Transmission Wavelength	900-1080nm
Applicable Laser	Fiber laser Diode laser
Laser Incident Direction	0°/90°
Focus Spot Shape	circular/rectangular automatic switching
Rectangular Spot Size	10*2mm, 15*2mm, 20*2mm 20*4mm, 30*2mm

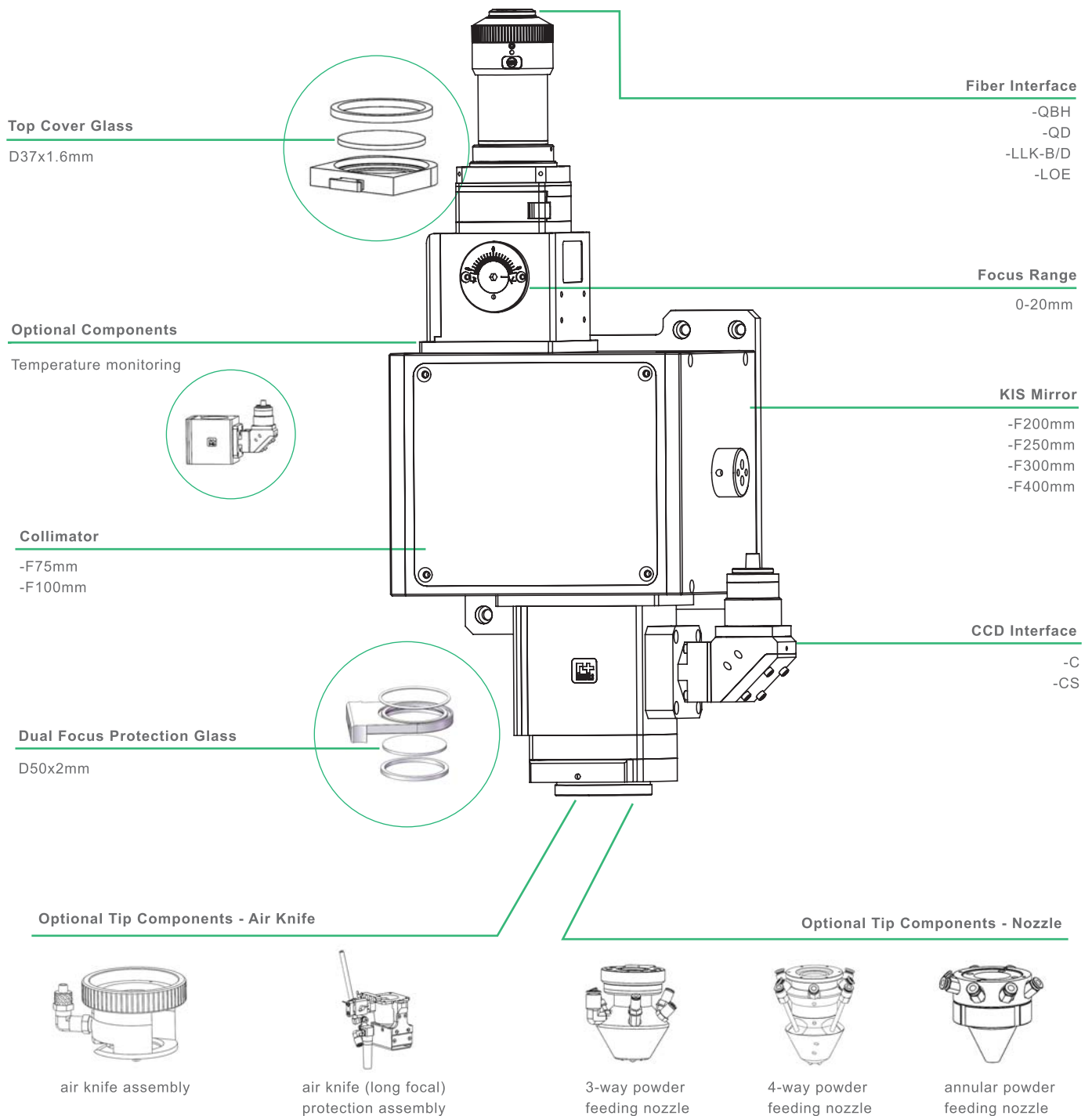
Specifications subject to change without notice.

Powder Aggregate Size	1-3mm optional
Working Distance	13-16mm
Quick Change Unit	3-way/4-way/annular cladding nozzle, coaxial assembly and side blow assembly
Optional	CCD module, red-light locator module,cover glass temperature monitoring,powder splitter,- closed-loop temperature control module, etc
Weight	~7.0 kg

RAYTOOLS VB106 SERIES

Multifunctional Laser Processing Head

Power Rating **6KW**



RAYTOOLS IC104 SERIES

Inner Tube Laser Cladding Head

Power Rating **4KW**



Efficient Water-Cooling

All the water, light, gas and powder circuits are intergrated inside the laser cladding head with the high cooling performance.

Multifunctional Design

It can be adapted to a variety of nozzles such as lateral and coaxial powder feeding to meet multiple scenarios.



Enclosed Design

With fully enclosed dust-proof design, avoid dust contamination of the optical part.

Adjustable Spot Size

Change the spot size at processing position by adjusting the collimation lens.

Modular design

Optional modules include CCD imaging, temperature monitoring and cover glass temperature monitoring.

Technical Data

Power Rating	4kw
Transmission Wavelength	1060-1080nm
Applicable Laser	Fiber Laser
Powder Aggregate Size	1-3mm Optional
Focusing Range	0-20mm

Min Machining Aperture	70mm
Max Machining Depth	1.5m(single side)
Optional	CCD module, cover glass temperature monitoring, powder splitter, closed-loop temperature control module

Specifications subject to change without notice.

RAYTOOLS IC104 SERIES

Inner Tube Laser Cladding Head

Power Rating **4KW**



Fiber Interface

- QBH
- QD
- LLK-B/D
- LOE

Collimator

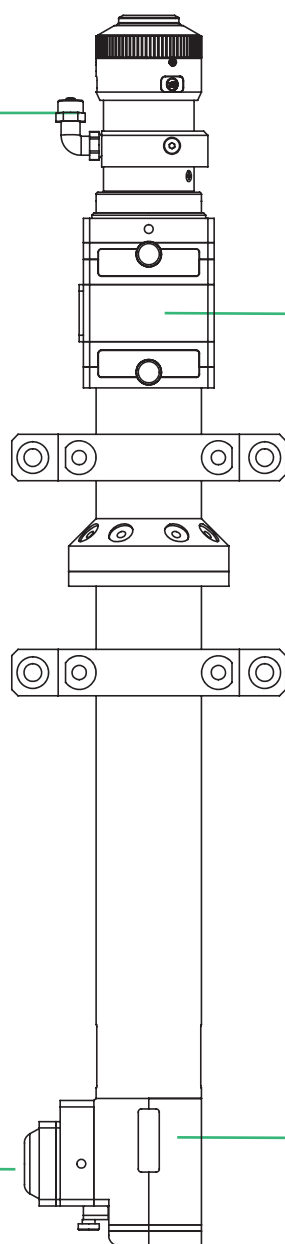
- F75mm
- F100mm

Nozzle

- 2-way Powder Feeding Nozzle
- Annular Powder Feeding Nozzle

Focus Module

- Customized



RAYTOOLS

EMP-PF-2-1 SERIES



Powder Feeder

Power Rating 1KW

Adjustable Powder Feeding Speed

The powder will be transported to the processing area by gas. Adjust the powder feeding speed by adjusting the rotary speed and the powder plate size.

High Accuracy of Powder Feeding

The powder feeder is independent and controllable. With double-way of powder feeding and the high precision servo motor, it has high precision powder feeding.



Customizable Interface

The interface can be customized according to customer's requirements.

High Stability

With internal control and external control of two operating modes and pressure alarm function, mostly meet the needs of processing stability.

Technical Data

Power Rate	≤1000W
Powder Feeding Funnel	two-way, independent and controllable PLC
Dimension	600X500X1450mm
Input	220VAC, 50HZ

Powder Size	20-200μ
Feeding Plate Speed	0-20 rpm CV
Send Powder Repeat Precision	<±2%
Gas Supply	Nitrogen/Argon

Specifications subject to change without notice.



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