

PRECISION MEETS INNOVATION

LASER-COMPONENTS CATALOG 2022

INNOTECH
LASER



The Innotech advantages

- Laser components with **European quality standards** from a **single source**
- **First-class advice** and personal support **for your individual needs**
- Many years of experience and **direct contact** with the manufacture
- **After sales service** even after the deal is closed
- Products in stock with **short delivery times**
- **Guarantee** of up to 26 months
- **Free trial periods** for extensive testing of the products
- **Service and maintenance** on site in Hilden

Why Innotech?

At Innotech Laser, we see ourselves as your personal technical contact right from the start, from the selection of suitable products and delivery through to reliable service after successful installation and commissioning.

Highest quality for your industrial lasers.

We supply you exclusively with high-quality laser components, industrial lasers and laser spare parts as well as user-specific product combinations for all areas of application. Trust us and our product portfolio and convince yourself of our quality, our know-how and our flexibility.

To achieve the best system performance we match all components perfectly to your user-specific requirements and thus guarantee the highest quality in the long term. We cover a comprehensive product range for industrial lasers.

From UV lasers, infrared lasers, fiber lasers and galvano scanners to controls, cutting heads and spare parts, we always offer you the right products. Discover our solutions for industrial lasers and get to know our high-quality advice personally by contacting us. The Innotech Laser team is looking forward to meeting you.

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DEFLECTION UNIT | Page 19-25

For all wavelengths and apertures, you will find the right galvanometer scanner for your system, on request also in your individual design.



LENS | Page 26-30

F-Theta lenses, beam expanders, focusing lenses. With us you will find any wavelength, whether standard, telecentric, partial or full quartz.

PULSED FIBER LASER

- High stable laser output
- High pulse energy
- Short pulse setup
- Compact design
- Very competitive price



SPECIFICATION

Product Name	RFL-P20QB	RFL-P30QB	RFL-P50QB	RFL-P100Q
Output Power	20 W	30 W	50 W	100 W
Wavelength	1064 nm	1064 nm	1064 nm	1064 nm
Repetition Frequency Range	20-60 kHz	30-60 kHz	50-100 kHz	20-200 kHz
Output Power Stability	< 3%	< 3%	< 3%	< 3%
Output Beam Diameter	7±1 mm	7±1 mm	7±1 mm	6.5±1 mm
Beam Quality	M ² < 1,5	M ² < 1,5	M ² < 1,8	M ² < 1,8
Polarization State	Random	Random	Random	Random
Pulse Width	90-110 ns@20 kHz	120-150 ns@30 kHz	120-150 ns@50 kHz	50-110 ns@20 kHz
Single Pulse Energy	1 mJ@20 kHz	1 mJ@30 kHz	1 mJ@50 kHz	1 mJ@100 kHz
Delivery Cable Length *	3 m	3 m	3 m	3 m
Power Supply	24 V	24 V	24 V	24 V
Range of Power	10-100 %	10-100 %	10-100 %	10-100 %
Power Consumption	170 W	240 W	340 W	500 W
Dimensions (mm)	286x215x95	286x215x95	340x260x 20	390x360x123
Cooling	Air	Air	Air	Air
Operating Temperature	0-40 °C	0-40 °C	0-40 °C	0-40 °C
Storage Temperature	-10-60 °C	-10-60 °C	-10-60 °C	-10-60 °C

* optional 2 / 4 / 5 m

MOPA FIBER LASER

- MOPA Technology
- Large Frequency Range
- Short pulse setup
- Optimized optical quality
- Pulse width modifiable
- CW Function



SPECIFICATION

Product Name	RFL-P20MX	RFL-P30MX	RFL-P60MX	RFL-P70MX	RFL-P100MX	RFL-P200MX	RFL-P250MX
Output Power	20 W	30 W	60 W	70 W	100 W	200 W	250 W
Wavelength	1064 nm	1064 nm	1064 nm	1064 nm	1064 nm	1064 nm	1064 nm
Repetition Frequency Range	1-2000 kHz	1-2000 kHz	1-2000 kHz	1-2000 kHz	1-2000 kHz	1-4000 kHz	1-4000 kHz
Output Power Stability	< 3 %	< 3 %	< 3 %	< 3 %	< 3 %	< 5 %	< 5 %
Output Beam Diameter	7±1 mm	7±1 mm	6.5±1 mm	6.5±1 mm	6.5±1 mm	7±1 mm	7±1 mm
Beam Quality	M ² < 1,3	M ² < 1,6	M ² < 1,6	M ² < 1,6	M ² < 1,6	M ² < 1,8	M ² < 1,8
Polarization State	Random	Random	Random	Random	Random	Random	Random
Pulse Width	2-500 ns	2-500 ns	10-350 ns	10-350 ns	10-350 ns	10-350 ns	10-350 ns
Single Pulse Energy	0,7 mJ	1 mJ	1,5 mJ	1,5 mJ	1,5 mJ	1,5 mJ	1,5 mJ
Delivery Cable Length*	3 m	3 m	3 m	3 m	3 m	3 m	3 m
Power Supply	24 V	24 V	24 V	24 V	24 V	48 V	48 V
Range of Power	1-100 %	1-100 %	1-100 %	1-100 %	1-100 %	1-100 %	1-100 %
Power Consumption	150 W	200 W	450 W	450 W	500 W	800 W	1000 W
Dimensions(mm)	286x215x95	286x215x95	360x390x123	360x390x123	360x390x123	395x460x130	460x395x131
Cooling	Air	Air	Air	Air	Air	Air	Air
Operating Temperature	0 – 40 °C	0 – 40 °C	0 – 40 °C	0 – 40 °C	0 – 40 °C	0 – 40 °C	0 – 40 °C

* optional 2 / 4 / 5 m

HIGH-POWER PULSED FIBER LASER

- Uniform control interface
- Wide frequency range
- Excellent beam quality
- High single pulse energy
- Very competitive price



SPECIFICATION

Product Name	RFL-P200H	RFL-P500H
Output Power	200 W	500 W
Wavelength	1064±5 nm	1064±5 nm
Repetition Frequency Range	10-50 kHz	10-100 kHz
Polarization State	Random	Random
Pulse Width	90-130 ns	20-100 ns
Single Pulse Energy	10 mJ@20 kHz	50 mJ@10 kHz@100 ns
Output Power Stability	<5 %	<5 %
Terminal Type	QBH	QBH
Output Fiber Core	200 μm	400 μm
Delivery Cable Length	5 m	15 m
BBP (mm.mrad)		<25
Power Supply	230 V, Single Phase	230 V, Single Phase
Range of Power (%)	10-100 %	10-100 %
Power Consumption	1000 W	2500 W
Dimensions (mm)	485x237x763	798x480x253
Cooling	Water	Water
Operating Temperature	10 – 40 °C	10 – 40 °C

QCW FIBER LASER

- High stable laser output
- High pulse energy
- Short pulse setup
- Compact design
- Very competitive price



SPECIFICATION

Product Name	RFL-QCW75/750	RFL-QCW150/1500	RFL-QCW300/3000	RFL-QCW450/4500
Operation Mode	CW / Modulate	CW / Modulate	CW / Modulate	CW / Modulate
Average Power (CW)	120 W	250 W	300 W	450 W
Average Power (pulse)	75 W	150 W	300 W	450 W
Max.Output Power	750 W	1500 W	3000 W	4500 W
Max. Pulse Energy	7.5 J	15 J	30 J	45 J
Wavelength	1080±5 nm	1080±5 nm	1080±5 nm	1080±5 nm
Repetition Frequency Range	0-5000 Hz	0-5000 Hz	0-5000 Hz	0-5000 Hz
Pulse Width	0.05-50 ms	0.05-50 ms	0.05-50 ms	0.05-50 ms
Output Power Stability	< 3%	< 3%	< 3%	< 3%
Terminal Type	QBH	QBH	QBH	QBH
Output Fiber Core	12, 25, 50 μm	12, 25, 50 μm	50, 100, 200 μm	50, 100, 200 μm
BBP (mm.mrad)	0.4, 0.5, 1.5	0.4, 0.5, 1.5	2.5, 3.5, 6	2.5, 3.5, 6
Power Supply	230 V, Single Phase	230 V, Single Phase	400 V, three Phase	400 V, three Phase
Control Mode	RS232 / AD / Ethernet	RS232 / AD / Ethernet	RS232 / AD / Ethernet	RS232 / AD / Ethernet
Range of Power (%)	10-100 %	10-100 %	10-100 %	10-100 %
Power Consumption	500 W	1000 W	1500 W	2000 W
Dimensions (mm)	280x440x148	485x763x237	570x565x234	570x565x234
Cooling	Air	Air	Air	Water
Operating Temperature	10 – 40 °C	10 – 40 °C	10 – 40 °C	10 – 40 °C

DIRECT DIODEN LASER

- Wide modulation frequency range
- High electro-optical conversion
- Plastic laser welding, non-contact soldering
- Wavelength customizable
- Optimized optical quality



SPECIFICATION

Product Name	RFL-A80D	RFL-A100D	RFL-A200D	RFL-A500D	RFL-A1000D	RFL-A1500D	RFL-2000D
Output Power	80 W	100 W	200 W	500 W	1000 W	1500 W	2000 W
Wavelength ¹	915±10 nm	915±10 nm	915±10 nm	915±10 nm	915±10 nm	915±10 nm	915±10 nm
Output Power Stability	<±1 %	<±1 %	<±1 %	<±1 %	<±1 %	<±1 %	<±1 %
Modulation Frequency	1-10 KHz	1-10 KHz	50-10 KHz	50-5 KHz	50-5 KHz	50-5 KHz	50-5 KHz
Fiber core ²	200 μm	200 μm	200 μm	300/400 μm	300/400 μm	300/400 μm	400/600 μm
Numerische Apertur	0,22	0,22	0,22	0,22	0,22	0,22	0,22
Terminal Type	SMA905	SMA905	SMA905	QBH	QBH	QBH	QBH
Control Mode	RS232/AD	RS232/AD	RS232/AD	RS232/AD	RS232/AD	RS232/AD	RS232/AD
Cooling	Air	Air	Air	Water	Water	Water	Water
Delivery Cable Length	5 m	5 m	5 m	5 m	10 m	10 m	10 m
Power Supply	DC 24V	DC 24V	DC 48V	230 VAC, 50/60 hz	230 VAC, 50/60 hz	230 VAC, 50/60 hz	380 VAC, 50/60 hz
Range of Power (%)	10-100 %	10-100 %	10-100 %	10-100 %	10-100 %	10-100 %	10-100 %
Operating Temperature	10 – 40 °C	10 – 40 °C	10 – 40 °C	10 – 40 °C	10 – 40 °C	10 – 40 °C	10 – 40 °C

¹ Optional 976 nm

² Customized

SINGLEMODE CW FIBER LASER AIR COOLED

- Field for application e.g. 3D printing
- Anti-reflection
- Optimized optical quality
- Compact design
- Very competitive price

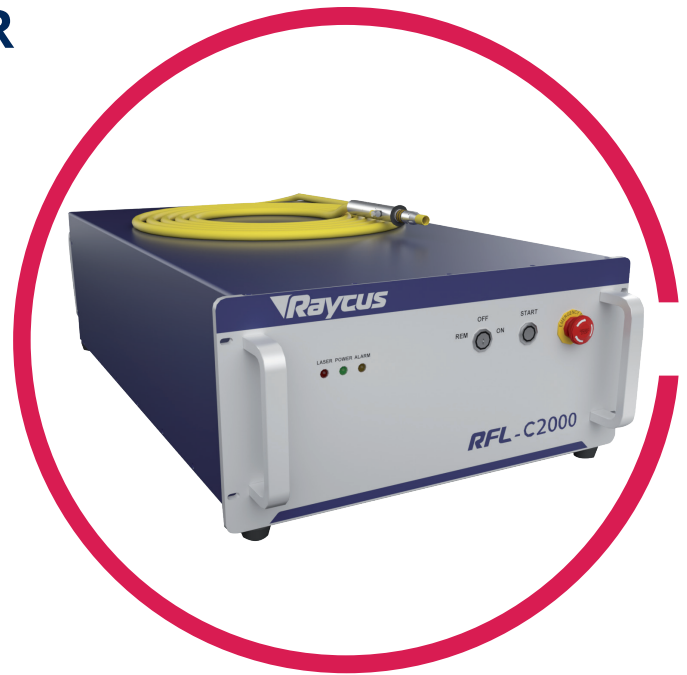


SPECIFICATION

Product Name	RFL-C100A	RFL-C200A	RFL-C300A	RFL-C500A
Operation Mode	CW / Modulate	CW / Modulate	CW / Modulate	CW / Modulate
Average Power (CW)	100 W	200 W	300 W	500 W
Wavelength	1080±5 nm	1080±5 nm	1080±5 nm	1080±5 nm
Repetition Frequency Range	1-20 KHz	1-20 KHz	1-20 KHz	1-20 KHz
Output Power Stability	< 3%	< 3%	< 3%	< 3%
Terminal Type	QBH/QCS	QBH/QCS	QBH/QCS	QBH/QCS
Output Fiber Core	25 µm	25 µm	25 µm	25 µm
Beam Quality	M ² < 1,3	M ² < 1,3	M ² < 1,3	M ² < 1,3
Power Supply	230 V, Single Phase	230 V, Single Phase	230 V, Single Phase	230 V, Single Phase
Control Mode	RS232 / AD / Ethernet	RS232 / AD / Ethernet	RS232 / AD / Ethernet	RS232 / AD / Ethernet
Range of Power (%)	20-100 %	20-100 %	20-100 %	10-100 %
Power Consumption	400 W	800 W	1200 W	2000 W
Dimensions (mm)	450x236x665	450x236x665	450x236x665	450x236x665
Cooling	Air	Air	Air	Water
Operating Temperature	10 – 40 °C	10 – 40 °C	10 – 40 °C	10 – 40 °C

SINGLE MODULE CW FIBER LASER

- Wide modulation frequency range
- High electro-optical conversion
- Anti-reflection
- Sheet cutting efficiency
- Optimized optical quality



SPECIFICATION

Product Name	RFL-C500	RFL-C750	RFL-C1000H	RFL-C1500H	RFL-C2000H	RFL-C3000S	RFL-C4000S
Operation Mode	CW / Modulate	CW / Modulate	CW / Modulate	CW / Modulate	CW / Modulate	CW / Modulate	CW / Modulate
Average Power (CW)	500 W	750 W	1000 W	1500 W	2000 W	3000 W	4000 W
Wavelength	1080±5 nm	1080±5 nm	1080±5 nm	1080±5 nm	1080±5 nm	1080±5 nm	1080±5 nm
Repetition Frequency Range	1-20 KHz	1-20 KHz	1-5000 Hz	1-5000 Hz	1-5000 Hz	1-5000 Hz	1-5000 Hz
Output Power Stability	< 3%	< 3%	< 3%	< 3%	< 3%	< 3%	< 3%
Terminal Type	QBH	QBH	QBH	QBH	QBH	QBH	QBH
Output Fiber Core *	25 μm	25 μm	25 μm	50 μm (25)	50 μm (25)	50 μm (25)	50 μm (25)
Beam Quality	M ² < 1,3	M ² < 1,3	M ² < 1,3	2.1-2.7 M ²	2.1-2.7 M ²	2.1-2.7 M ²	2.1-2.7 M ²
Power Supply	230 V, Single Phase	230 V, Single Phase	400 V, three Phase	400 V, three Phase	400 V, three Phase	400 V, three Phase	400 V, three Phase
Control Mode	RS232 / AD / Ethernet	RS232 / AD / Ethernet	RS232 / AD / Ethernet	RS232 / AD / Ethernet	RS232 / AD / Ethernet	RS232 / AD / Ethernet	RS232 / AD / Ethernet
Range of Power (%)	10-100 %	10-100 %	10-100 %	10-100 %	10-100 %	10-100 %	10-100 %
Power Consumption	2000 W	3000 W	4000 W	6000 W	8000 W	12.5 KW	16 KW
Dimensions (mm)	485x663x237	485x663x237	440x160x450	440x160x616	440X169X684	440X250X900	440X250X1102
Cooling	Water	Water	Water	Water	Water	Water	Water
Operating Temperature	10-40 °C	10-40 °C	10-40 °C	10-40 °C	10-40 °C	10-40 °C	10-40 °C

* Customized

MULTI MODULE CW FIBER LASER

- Wide modulation frequency range
- High electro-optical conversion
- Anti-reflection
- Sheet cutting efficiency
- Optimized optical quality



SPECIFICATION

Product Name	RFL-C4000X	RFL-C6000X	RFL-C8000X	RFL-C10000X	RFL-C12000X
Output Power	4000 W	6000 W	8000 W	10000 W	12000 W
Wavelength	1080±5 nm	1080±5 nm	1080±5 nm	1080±5 nm	1080±5 nm
Output Power Stability	<±1.5 %	<±1.5 %	<±1.5 %	<±1.5 %	<±1.5 %
Modulation Frequency	50 - 5 kHz	50 - 5 kHz	50 - 2 kHz	50-2 KHz	50-2 KHz
Fiber core *	100 μm	100 μm	100 μm	100 μm	100 μm
BBP (mm.mrad)	<4	<4	<5	<5	<5
Polarization State	Random	Random	Random	Random	Random
Terminal Type	QBH	QBH	QD	QD	QD
Delivery Cable Length *	20 m	20 m	30 m	30 m	30 m
Power Supply	400 V, three Phase	400 V, three Phase	400 V, three Phase	400 V, three Phase	400 V, three Phase
Control Mode	RS232 / AD /Ethernet	RS232 / AD /Ethernet	RS232 / AD /Ethernet	RS232 / AD /Ethernet	RS232 / AD /Ethernet
Range of Power (%)	10-100 %	10-100 %	10-100 %	10-100 %	10-100 %
Power Consumption	12000 W	18000 W	24000 W	30000 W	36000 W
Dimensions (mm)	670x1160x990	900x1160x960	960x1160x960	1200x1160x960	1200x1160x960
Cooling	Water	Water	Water	Water	Water
Operating Temperature	10 - 40 °C	10 - 40 °C	10 - 40 °C	10 - 40 °C	10 - 40 °C
Storage Temperature	-10 - 60 °C	-10 - 60 °C	-10 - 60 °C	-10 - 60 °C	-10 - 60 °C

* Customized

MAPLE LOW POWER

NANOSECOND SHORT PULSE WIDTH

- Compact design and easily integration
- Shorter pulse width, better processing result
- Air cooled design



3C Industry



White Household Appliance



Food Packaging



Medical Industry



3D Printing



Electronic Component

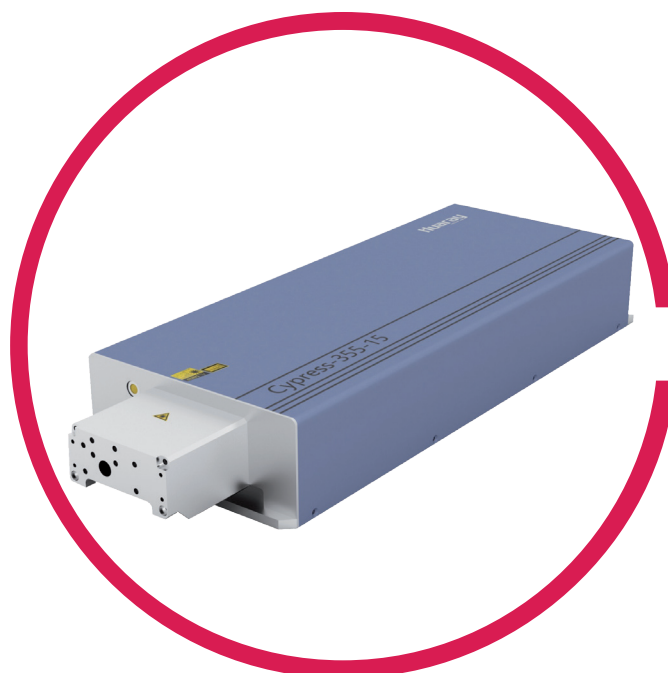
SPECIFICATION

Product Name	Maple-355-3	Maple2-355-5	Maple-532-7
Center Wavelength	355 nm	355 nm	532 nm
Average Power	>3 W	>5 W	>7 W
Energy	>70 $\mu\text{J}@50\text{ kHz}$	>100 $\mu\text{J}@50\text{ kHz}$	>160 $\mu\text{J}@50\text{ kHz}$
Repetition Rate	20 Khz- 200 kHz	20 Khz- 200 kHz	20 Khz- 200 kHz
Pulse Width	<10 ns@50 kHz	<10 ns@50 kHz	<22 ns@50 kHz
Spatial Mode	TEM00($M^2 \leq 1.2$)	TEM00($M^2 \leq 1.2$)	TEM00($M^2 \leq 1.2$)
Beam Divergence	$\leq 2\text{ mrad}$	$\leq 2\text{ mrad}$	$\leq 2\text{ mrad}$
Astigmatism	<0.2	<0.2	<0.2
Beam Circularity	$\geq 90\%$	$\geq 90\%$	$\geq 90\%$
Polarization Ration	>100:1	>100:1	>100:1
Polarization Direction	Horizontal	Horizontal	Horizontal
Beam Pointing Stability	<25 $\mu\text{rad}/^\circ\text{C}$	<25 $\mu\text{rad}/^\circ\text{C}$	<25 $\mu\text{rad}/^\circ\text{C}$
Pulse Energy Stability	$\leq 3\%$ RMS	$\leq 3\%$ RMS	$\leq 3\%$ RMS
Power Stability	$\leq 3\%$ RMS	$\leq 3\%$ RMS	$\leq 3\%$ RMS
Long-term Pointing Stability	<25 $\mu\text{rad}/^\circ\text{C}$	<25 $\mu\text{rad}/^\circ\text{C}$	<25 $\mu\text{rad}/^\circ\text{C}$
External Comms	RS-232	RS-232	RS-232
Beam Diameter, 0,3m	$\leq 2\text{ mm}$	$\leq 2\text{ mm}$	$\leq 2\text{ mm}$
Working Material	Nd:YV ₄ O	Nd:YV ₄ O	Nd:YV ₄ O
Warm-up Time	<15 min	<15 min	<15 min
Operation Temperature	10–35 $^\circ\text{C}$	10–35 $^\circ\text{C}$	10–35 $^\circ\text{C}$
Cooling	Air	Air	Air
Power Supply	230V AC, 50/60Hz (600W)	230V AC, 50/60Hz (600W)	230V AC, 50/60Hz (600W)

CYPRESS UV LASER

LONG-LIFE NANOSECOND UV LASER

- Double Sealed Cavity and IP 65 Protection Level
- LBO Crystal Auto Exchange Function
- The 3rd Generation Air Filter Technology
- > 12.000 hours life-time
- Volume decrease of 70 %



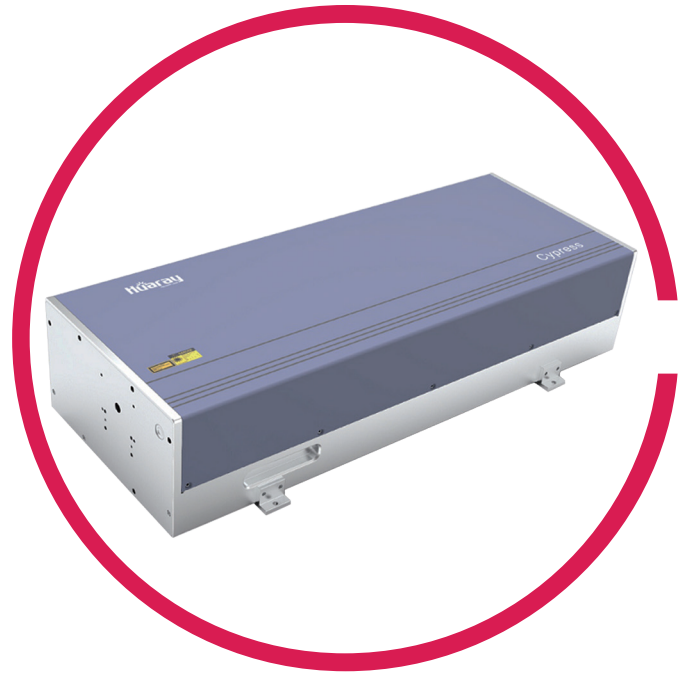
SPECIFICATION

Product Name	Cypress-355-3	Cypress-355-10	Cypress-355-15	Cypress-355-20	Cypress-355-25
Center Wavelength	355 nm	355 nm	355 nm	355 nm	355 nm
Average Power	>5 W@50 kHz	>10 W@60 kHz	>15 W@50 kHz	>20 W@60 kHz	>25 W@60 kHz
Energy	>110 µJ@50 kHz	>160 µJ@60 kHz	>300 µJ@50 kHz	>300 µJ@60 kHz	>410 µJ@60 kHz
Repetition Rate	20 Khz- 200 kHz	50 Khz- 200 kHz	50 Khz- 200 kHz	50 Khz- 200 kHz	50 Khz- 200 kHz
Pulse Width	<10 ns@50 kHz	<12 ns@60 kHz	<15 ns@50 kHz	<20 ns@60 kHz	<20 ns@60 kHz
Spatial Mode	TEM ₀₀ (M ² ≤ 1.2)	TEM ₀₀ (M ² ≤ 1.2)	TEM ₀₀ (M ² ≤ 1.2)	TEM ₀₀ (M ² ≤ 1.2)	TEM ₀₀ (M ² ≤ 1.2)
Beam Divergence	≤1 mrad	≤1 mrad	≤1 mrad	≤1 mrad	≤1 mrad
Astigmatism	<0.2	<0.2	<0.2	<0.2	<0.2
Beam Circularity	≥90%	≥90%	≥90%	≥90%	≥90%
Polarization Ration	>100:1	>100:1	>100:1	>100:1	>100:1
Polarization Direction	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Beam Pointing Stability	<25 µrad/°C	<25 µrad/°C	<25 µrad/°C	<25 µrad/°C	<25 µrad/°C
Pulse Energy Stability	≤3% RMS	≤3% RMS	≤3% RMS	≤3% RMS	≤3% RMS
Power Stability	≤3% RMS	≤3% RMS	≤3% RMS	≤3% RMS	≤3% RMS
Long-term Pointing Stability	<25 µrad/°C	<25 µrad/°C	<25 µrad/°C	<25 µrad/°C	<25 µrad/°C
External Comms	RS-232	RS-232	RS-232	RS-232	RS-232
Beam Diameter, 0,3m	0.35-0.45 mm	0.4-0.6 mm	0.4-0.6 mm	0.3-0.4 mm	0.3-0.4 mm
Beam Diameter, 10x, 0,3m	3,5-4,5mm	4-6mm	4-6mm	3.6±0.5 mm	3.6±0.5 mm
Working Material	Nd:YV ₄ O	Nd:YV ₄ O	Nd:YV ₄ O	Nd:YV ₄ O	Nd:YV ₄ O
Warm-up Time	<15 min	<15 min	<15 min	<15 min	<15 min
Operation Temperature	10-35 °C	10-35 °C	10-35 °C	10-35 °C	10-35 °C
Cooling	Water	Water	Water	Water	Water
Power Supply	230V AC, 50/60Hz (600W)	230V AC, 50/60Hz (600W)	230V AC, 50/60Hz (600W)		

CYPRESS GREEN LASER

LONG-LIFE NANOSECOND UV LASER

- Lightweight design, 50 % weight reduction
30 % volume reduction
- Compact all in one laser
- Outstanding beam quality



SPECIFICATION

Product Name	Cypress-532-20	Cypress-532-35	Cypress-532-40
Center Wavelength	532 nm	532 nm	355 nm
Average Power	>20 W	>35 W	>40 W
Energy	>400 µJ@50 kHz	>600 µJ@50 kHz	>830 µJ@50 kHz
Repetition Rate	20 Khz- 200 kHz	50 Khz- 500 kHz	50 Khz- 200 kHz
Pulse Width	<15 ns@50 kHz	<30 ns@60 kHz	<20 ns@50 kHz
Spatial Mode	TEM ₀₀ (M ² ≤ 1.2)	TEM ₀₀ (M ² ≤ 1.3)	TEM ₀₀ (M ² ≤ 1.3)
Beam Divergence	≤2 mrad	≤2 mrad	≤2 mrad
Astigmatism	<0.2	<0.2	<0.2
Beam Circularity	≥90%	≥90%	≥90%
Polarization Ration	>100:1	>100:1	>100:1
Polarization Direction	Horizontal	Horizontal	Horizontal
Beam Pointing Stability	<25 µrad/°C	<25 µrad/°C	<25 µrad/°C
Pulse Energy Stability	≤3% RMS	≤3% RMS	≤3% RMS
Power Stability	≤3% RMS	≤3% RMS	≤3% RMS
Long-term Pointing Stability	<25 µrad/°C	<25 µrad/°C	<25 µrad/°C
External Comms	RS-232, USB	RS-232, USB	RS-232, USB
Beam Diameter, 0,3m	≤2 mm	≤2 mm	≤2 mm
Working Material	Nd:YV ₄ O	Nd:YV ₄ O	Nd:YV ₄ O
Warm-up Time	<15 min	<15 min	<15 min
Operation Temperature	10–35 °C	10–35 °C	10–35 °C
Cooling	Water	Water	Water
Power Supply	230V AC, 50/60Hz (800W)	230V AC, 50/60Hz (800W)	230V AC, 50/60Hz (800W)

OLIVE MID-POWER

PICOSECOND ULTRA-FAST LASER

- Own brand laser seed
- Infrared, Green or UV Laser output with short pulse width <10 ps
- Outstanding beam quality $M^2 < 1.3$
- Crossover and power adjust function
- Burst function



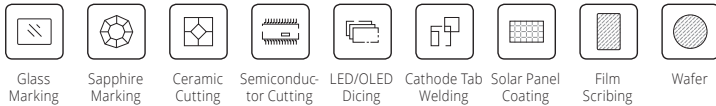
SPECIFICATION

Product Name	Olive-1064-20	Olive-1064-40	Olive-532-15	Olive-355-10
Center Wavelength	1064 nm	1064 nm	532 nm	355 nm
Average Power	>20 W	>40 W	>15 W	>10 W
Energy	>100 μ J@200 kHz	>200 μ J@200 kHz	>30 μ J@500 kHz	>10 μ J@1 MHz
Repetition Rate	100 Khz- 1 MHz	50 Khz- 1 MHz	400 Khz- 1 MHz	400 Khz- 1 MHz
Pulse Width	<10 ps	<10 ps	<10 ps	<10 ps
Spatial Mode	TEM ₀₀ (M ² ≤ 1.3)	TEM ₀₀ (M ² ≤ 1.3)	TEM ₀₀ (M ² ≤ 1.3)	TEM ₀₀ (M ² ≤ 1.3)
Beam Divergence	≤2 mrad	≤1,5 mrad	≤2 mrad	≤2 mrad
Beam Circularity	≥90%	≥90%	≥90%	≥90%
Polarization Ration	>100:1	>100:1	>100:1	>100:1
Polarization Direction	Horizontal	Horizontal	Horizontal	Horizontal
Peak to peak Stability	≤2% RMS	≤2% RMS	≤2% RMS	≤2% RMS
Power Stability	≤1% RMS	≤1% RMS	≤3% RMS	≤3% RMS
Beam Diameter	1.1±0.5 mm	2.2±0.5 mm	1.5±0.5 mm	1.5±0.5 mm
Warm-up Time	<30 min	<30 min	<30 min	<30 min
Operation Temperature	15–35 °C	15–35 °C	15–35 °C	15–35 °C
Cooling	Water	Water	Water	Water
Power Supply	230V AC, 50/60Hz (950W)	230V AC, 50/60Hz (1200W)	230V AC, 50/60Hz (1200W)	230V AC, 50/60Hz (1200W)
Laser Head Size	926x356x186 mm	988x521x186 mm	1000x466x186 mm	1000x466x195 mm
Power Supply Size	564x468x88 mm	565x484x88 mm	484x412x88 mm	484x412x88 mm

OLIVE HIGH-POWER

PICOSECOND ULTRA-FAST LASER

- Own brand laser seed
- Infrared, Green or UV Laser output with short pulse width <10 ps
- Outstanding beam quality $M^2 < 1.3$
- Crossover and power adjust function
- Burst function



SPECIFICATION

Product Name	Olive-1064-50	Olive-532-30
Center Wavelength	1064 nm	532 nm
Average Power	>50 W@500 KHz	>30 W@1 MHz
Energy	>300 μ J@100 kHz, Burst Energy	>30 μ J@1 MHz, Burst Energy
Repetition Rate	100 KHz- 1 MHz	50 KHz- 1 MHz
Pulse Width	<10 ps	<10 ps
Spatial Mode	TEM ₀₀ ($M^2 \leq 1.3$)	TEM ₀₀ ($M^2 \leq 1.3$)
Beam Divergence	≤ 3 mrad	≤ 3 mrad
Beam Circularity	$\geq 90\%$	$\geq 85\%$
Polarization Ration	>100:1	>100:1
Polarization Direction	Horizontal	Horizontal
Beam Pointion Stability	<50 μ rad/ $^{\circ}$ C	<50 μ rad/ $^{\circ}$ C
Pulse to pulse Stability	$\leq 6\%$ RMS	$\leq 6\%$ RMS
Peak to peak Stability	$\leq 2\%$ RMS	$\leq 2\%$ RMS
Power Stability	$\leq 3\%$ RMS	$\leq 3\%$ RMS
Beam Diameter	3.0 \pm 0.5 mm	1.5 \pm 0.5 mm
Warm-up Time	<30 min	<30 min
Operation Temperature	15–35 $^{\circ}$ C	15–35 $^{\circ}$ C
Cooling	Water	Water
Power Supply	230V AC, 50/60Hz (2000W)	230V AC, 50/60Hz (2000W)

FEMTOSECOND FIBER LASER

HR-FEMTO-10 SERIES

- One box design
- Up to 10 μJ pulse energy
- Built-in optical isolator
- Linearly polarized output
- Built-in monitoring photo-detector
- External Box with SHG
- Green/IR switchable



SPECIFICATION

Product Name	HR-Femto-IR-10-10	HR-Femto-GN-4-4
Center Wavelength	1035 nm	517 nm
Average Power	>10 W	>4 W
Energy	>10 μJ @1 MHz	>4 μJ @1 MHz
Repetition Rate	Single shot- 1 MHz	Single shot- 1 MHz
Pulse Width	<400 fs	<400 fs
Spatial Mode	TEM ₀₀ (M ² ≤ 1.3)	TEM ₀₀ (M ² ≤ 1.3)
Beam Divergence	≤1 mrad	≤1 mrad
Beam Circularity	≥90%	≥90%
Polarization Ration	>100:1	>100:1
Polarization Direction	Linear	Linear
Peak to peak Stability	≤2% RMS	≤2% RMS
Power Stability	≤2% RMS	≤2% RMS
Beam Diameter	3.1±1 mm	3.1±1 mm
Warm-up Time	<30 min	<30 min
Operation Temperature	10–30 °C	10–30 °C
Cooling	Water	Water
Power Supply	230V AC, 50/60Hz	230V AC, 50/60Hz

FEMTOSECOND FIBER LASER

HR-FEMTO-50 SERIES

- > 60W output power
- Single pulse energy up to 80 μ J
- Support multiple Burst Mode combinations
- Pulse width < 350 fs-5 ps tunable
- Pulse-On-Demand function
- Built-in optical isolation device
- optional SHG module



SPECIFICATION

Product Name	HR-Femto-IR-50-40	HR-Femto-IR-80-60	HR-Femto-GN-25-20	HR-Femto-GN-30-24
Center Wavelength	1035 nm	1035 nm	517 nm	517 nm
Average Power	>40 W	>60 W	>20 W	>24 W
Energy	>50 μ J@800 KHz	>80 μ J@750 KHz	>25 μ J@800 KHz	>30 μ J@750 KHz
Repetition Rate	Single shot- 1 MHz	Single shot- 1 MHz	Single shot- 1 MHz	Single shot- 1 MHz
Burst Energy	200 μ J	320 μ J	100 μ J	120 μ J
Pulse Width	<350 fs-5 ps	<350 fs-5 ps	<350 fs-5 ps	<350 fs-5 ps
Spatial Mode	TEM ₀₀ (M ² ≤ 1.3)	TEM ₀₀ (M ² ≤ 1.3)	TEM ₀₀ (M ² ≤ 1.3)	TEM ₀₀ (M ² ≤ 1.3)
Beam Divergence	≤1 mrad	≤1 mrad	≤1 mrad	≤1 mrad
Beam Circularity	≥90%	≥90%	≥90%	≥90%
Polarization Ration	>100:1	>100:1	>100:1	>100:1
Polarization Direction	Linear	Linear	Linear	Linear
Peak to peak Stability	≤2% RMS	≤2% RMS	≤2% RMS	≤2% RMS
Power Stability	≤2% RMS	≤2% RMS	≤2% RMS	≤2% RMS
Beam Diameter	3.1±1 mm	3.1±1 mm	3.1±1 mm	3.1±1 mm
Warm-up Time	<30 min	<30 min	<30 min	<30 min
Operation Temperature	10–30 °C	10–30 °C	10–30 °C	10–30 °C
Cooling	Water	Water	Water	Water
Power Supply	230V AC, 50/60Hz	230V AC, 50/60Hz	230V AC, 50/60Hz	230V AC, 50/60Hz

INNOSCAN II-8.5

- High precision
- Very compact construction
- Sealed housing
- Competitive price
- Performance improvement
- Speed up to 100 %
- Dynamics up to 50 %



SPECIFICATION

Product Name	innoSCAN II-8.5
Input Aperture	8.5 mm
Wavelength	355, 532, 1064, 10600 nm
Tracking error time	0.11 ms
Writing Speed ^{1 2}	>1000 cps / 12.000 mm/s
Positioning Speed ¹	>15 m/s
Typical Deflection	± 0.35 rad
Resolution	16 bit
Repeatability (RMS)	<20 µrad
Max. Gaindrift ³	100 ppm/K
Max. Offsetdrift ³	50 µrad/K
Long-Term Drift (8h) ³	< 0.3 mrad
Zero Offset ⁴	< 6 mrad
Digital Interface	XY2-100 Protocol
Analog Interface	±5 V
Ambient Temperature	+15 - +35 °C
Storage Temperature	-20 - +60 °C
Humidity	≤80% Non-condensing
Voltage / Current	±15 VDC / max. 3A
Weight	ca. 1,1 kg
Dimensions	109x88x80 mm

¹ with F-Theta-lens, f=160 mm

³ Drift per axis

² Single-stroke font, 1 mm height

⁴ After warming-up

INNOSCAN II-10

- High precision
- Compact construction
- Sealed housing
- Competitive price
- Performance improvement
- Speed up to 70 %
- Dynamics up to 40 %



SPECIFICATION

Product Name	innoSCAN II-10
Input Aperture	10 mm
Wavelength	355, 532, 1064, 10600 nm
Tracking error time	0.125 ms
Writing Speed ^{1 2}	>840 cps / 10.000 mm/s
Positioning Speed ¹	>12 m/s
Typical Deflection	± 0.35 rad
Resolution	16 bit
Repeatability (RMS)	< 20 µrad
Max. Gaindrift ³	100 ppm/K
Max. Offsetdrift ³	50 µrad/K
Long-Term Drift (8h) ³	< 0.3 mrad
Zero Offset ⁴	<6 mrad
Digital Interface	XY2-100 Protocol
Analog Interface	±5 V
Ambient Temperature	+15 - +35 °C
Storage Temperature	-20 - +60 °C
Humidity	≤80% Non-condensing
Voltage / Current	±15 VDC / max. 3A
Weight	ca. 1,85 kg
Dimensions	114x96.5x93,7 mm

¹ with F-Theta-lens, f = 160 mm

³ Drift per axis

² Single-stroke font, 1 mm height

⁴ After warming-up

INNOSCAN II-12

- High precision
- Compact construction
- Sealed housing
- Competitive price
- Performance improvement



SPECIFICATION

Product Name	innoSCAN II-12
Input Aperture	12 mm
Wavelength	355, 532, 1064, 10600 nm
Tracking error time	0.18 ms
Writing Speed ^{1 2}	>620 cps / 6.000 mm/s
Positioning Speed ¹	>7 m/s
Typical Deflection	± 0.35 rad
Resolution	16 bit
Repeatability (RMS)	<20 µrad
Max. Gaindrift ³	100 ppm/K
Max. Offsetdrift ³	50 µrad/K
Long-Term Drift (8h) ³	< 0.3 mrad
Zero Offset ⁴	<6 mrad
Digital Interface	XY2-100 Protocol
Analog Interface	±5 V
Ambient Temperature	+15 - +35 °C
Storage Temperature	-20 - +60 °C
Humidity	≤80% Non-condensing
Voltage / Current	±15 VDC / max. 3A
Weight	ca. 1,85 kg
Dimensions	118x100x95,1 mm

¹ with F-Theta-lens, f = 160 mm ³ Drift per axis

² Single-stroke font, 1 mm height ⁴ After warming-up

INNOSCAN II-14

- High precision
- Compact construction
- Sealed housing
- Competitive price
- Performance improvement



SPECIFICATION

Product Name	innoSCAN II-14
Input Aperture	14 mm
Wavelength	355, 532, 1064, 10600 nm
Tracking error time	0.18 ms
Writing Speed ^{1 2}	>520 cps / 5.000 mm/s
Positioning Speed ¹	>7 m/s
Typical Deflection	± 0.35 rad
Resolution	16 bit
Repeatability (RMS)	<20 µrad
Max. Gaindrift ³	100 ppm/K
Max. Offsetdrift ³	50 µrad/K
Long-Term Drift (8h) ³	< 0.4 mrad
Zero Offset ⁴	<6 mrad
Digital Interface	XY2-100 Protocol
Analog Interface	±5 V
Ambient Temperature	+15 - +35 °C
Storage Temperature	-20 - +60 °C
Humidity	≤80% Non-condensing
Voltage / Current	±15 VDC / max. 3A
Weight	ca. 2,25 kg
Dimensions	133,3x99.3x105,4 mm

¹ with F-Theta-lens, f=160 mm ³ Drift per axis

² Single-stroke font, 1 mm height ⁴ After warming-up

INNOSCAN II-16

- High precision
- Large Aperture
- Sealed housing
- Competitive price



SPECIFICATION

Product Name	innoSCAN II-16	innoSCAN II-16-W
Input Aperture	16 mm	
Wavelength	355, 532, 1064, 10600 nm	
Tracking error time	0.26 ms	
Writing Speed ^{1 2}	>450 cps	
Positioning Speed ¹	>6 m/s	
Typical Deflection	± 0.35 rad	
Resolution	16 bit	
Repeatability (RMS)	<20 µrad	
Max. Gain drift ³	100 ppm/K	
Max. Offset drift ³	50 µrad/K	
Long-Term Drift (8h) ³	< 0.3 mrad	
Zero Offset ⁴	< 6 mrad	
Digital Interface	XY2-100 Protocol	
Analog Interface	±5 V	
Ambient Temperature	+15 - +35 °C	
Storage Temperature	-20 - +60 °C	
Humidity	≤80% Non-condensing	
Voltage / Current	±15 VDC / max. 3A	
Weight	ca. 3,25 kg	
Dimensions	156x115x121 mm	
Tube diameter (outside)	/	4 mm
Pressure	/	10 kPa

¹ with F-Theta-lens, f = 160 mm ³ Drift per axis

² Single-stroke font, 1 mm height ⁴ After warming-up

INNOSCAN II-20

- High precision
- Large Aperture
- Sealed housing
- Competitive price



SPECIFICATION

Product Name	innoSCAN II-20	innoSCAN II-20-W
Input Aperture	20 mm	
Wavelength	355, 532, 1064, 10600 nm	
Tracking error time	0.32 ms	
Writing Speed ^{1 2}	> 320 cps	
Positioning Speed ¹	>5 m/s	
Typical Deflection	± 0.35 rad	
Resolution	16 bit	
Repeatability (RMS)	< 2.0 µrad	
Max. Gaindrift ³	100 ppm/K	
Max. Offsetdrift ³	50 µrad/K	
Long-Term Drift (8h) ³	< 0.3 mrad	
Zero Offset ⁴	<6 mrad	
Digital Interface	XY2-100 Protocol	
Analog Interface	± 5 V	
Ambient Temperature	+15 - +35 °C	
Storage Temperature	-20 - +60 °C	
Humidity	≤80% Non-condensing	
Voltage / Current	±15 VDC / max. 3A	
Weight	ca. 4,2 kg	
Dimensions	169x120x148 mm	181x120x148 mm
Tube diameter (outside)	/	4 mm
Pressure	/	10 kPa

¹ with F-Theta-lens, f = 160 mm

³ Drift per axis

² Single-stroke font, 1 mm height

⁴ After warming-up

INNOSCAN II-30

- High precision
- Large Aperture
- Sealed housing
- Competitive price



SPECIFICATION

Product Name	innoSCAN II-30	innoSCAN II-30-W
Input Aperture	30 mm	
Wavelength	355, 532, 1064, 10600 nm	
Tracking error time	0.58 ms	
Writing Speed ^{1 2}	> 260 cps	
Positioning Speed ¹	>4 m/s	
Typical Deflection	± 0.35 rad	
Resolution	16 bit	
Repeatability (RMS)	< 20 µrad	
Max. Gain drift ³	100 ppm/K	
Max. Offset drift ³	50 µrad/K	
Long-Term Drift (8h) ³	< 0.3 mrad	
Zero Offset ⁴	< 6 mrad	
Digital Interface	XY2-100 Protocol	
Analog Interface	± 5 V	
Ambient Temperature	+15 - +35 °C	
Storage Temperature	-20 - +60 °C	
Humidity	≤80% Non-condensing	
Voltage / Current	±15 VDC / max. 3A	
Weight	ca. 4,75 kg	
Dimensions	185x140x148 mm	195x140x151 mm
Tube diameter (outside)	/	4 mm
Pressure	/	10 kPa

¹ with F-Theta-lens, f = 160 mm ³ Drift per axis

² Single-stroke font, 1 mm height ⁴ After warming-up

F-THETA LENS

- Any Wavelength
- BK7, Fused Silica, Telecentric
- Possibility of developing new lens
- Competitive price



WAVELENGTH 355 NM

Product Name	Focal Length (mm)	Back Working (mm)	Wavelength (nm)	Scan Field (mm)	Entrance Diameter (mm)	Focus Size (μm)	Material	Telecentric	Thread
SH-355-13-34-7	34	29	355	13x13	7	4	Fused Silica	No	M85x1
SH-355-50-63-7	63	81	355	50x50	7	5,8	Fused Silica	No	M85x1
SH-355-70-100-7	100	136	355	70x70	7	10	Fused Silica	No	M85x1
SHT-355-65-100-8	100	133	355	65x65	8	9	Fused Silica	Yes	M85x1
SHT-355-65-110-8	110	150	355	65x65	8	11	Fused Silica	Yes	M85x1
SHT-355-100-160-8	160	220	355	100x100	8	13	Fused Silica	Yes	M85x1
SH-355-100-160-8	160	200	355	100x100	8	13	Fused Silica	No	M85x1
SH-355-140-210-8	210	252	355	140x140	8	17	Fused Silica	No	M85x1
SH-355-170-254-8	254	309	355	170x170	8	21	Fused Silica	No	M85x1
SH-355-180-290-10	290	336	355	180x180	10	19	Fused Silica	No	M85x1
SH-355-220-330-8	330	373	355	220x220	8	27	Fused Silica	No	M85x1
SH-355-300-420-8	420	475	355	300x300	8	34	Fused Silica	No	M85x1
SH-355-350-510-8	510	585	355	350x350	8	42	Fused Silica	No	M85x1
SH-355-400-650-8	650	710	355	400x400	8	53	Fused Silica	No	M85x1
SH-355-550-750-8	750	833	355	550x550	8	61	Fused Silica	No	M85x1

WAVELENGTH 532 NM

Product Name	Focal Length (mm)	Back Working (mm)	Wavelength (nm)	Scan Field (mm)	Entrance Diameter (mm)	Focus Size (μm)	Material	Tele-centric	Thread
SH-532-50-63-12	63	75	532	50x50	12	5,1	Optical Glass	No	M85x1
SHT-532-65-100-12	100	112	532	65x65	12	8,1	Fused Silica	Yes	M85x1
SH-532-70-100-12	100	114	532	70x70	12	8,1	Optical Glass	No	M85x1
SHT-532-65-110-8	110	150	532	65x65	8	15	Fused Silica	Yes	M85x1
SH-532-110-160-12	160	180	532	110x110	12	13	Optical Glass	No	M85x1
SH-532-145-210-12	210	232,5	532	145x145	12	17	Optical Glass	No	M85x1
SH-532-175-254-12	254	287	532	175x175	12	21	Optical Glass	No	M85x1
SH-532-230-330-12	330	355	532	230x230	12	27	Optical Glass	No	M85x1
SH-532-300-420-12	420	465	532	300x300	12	35	Optical Glass	No	M85x1
SH-532-350-500-12	500	539	532	350x350	12	41	Optical Glass	No	M85x1

WAVELENGTH 1064 NM STANDARD

Product Name	Focal Length (mm)	Back Working (mm)	Wavelength (nm)	Scan Field (mm)	Entrance Diameter (mm)	Focus Size (μm)	Material	Tele-centric	Thread
SH39-1064-23-40-12	40	49	1064	23x23	8	10	Optical Glass	No	M39x1
SH-1064-50-63-12	63	78	1064	50x50	12	11	Optical Glass	No	M85x1
SH39-1064-56-80-8	80	103	1064	56x56	8	20	Optical Glass	No	M39x1
SH39-1064-68-100-8	100	121	1064	68x68	8	25	Optical Glass	No	M39x1
SH-1064-70-100-12	100	114	1064	70x70	12	17	Optical Glass	No	M85x1
SH-1064-70-100-12L	100	112,5	1064	70x70	12	17	Optical Glass	No	M85x1
SHT-1064-70-100-12-FS	100	112	1064	65x65	12	16	Fused Silica	Yes	M85x1
SHT-1064-55-125-16-FS	125	160	1064	55x55	16	21	Fused Silica	Yes	M85x1
SHT-1064-100-160-12-FS	160	220	1064	100x100	12	26	Fused Silica	Yes	M85x1
SH39-1064-105-160-8	160	185	1064	105x105	8	39	Optical Glass	No	M39x1
SH-1064-110-160-12	160	176	1064	110x110	12	26	Optical Glass	No	M85x1
SH-1064-110-160-12L	160	175	1064	110x110	12	26	Optical Glass	No	M85x1
SH39-1064-130-210-8	210	240	1064	130x130	8	41	Optical Glass	No	M39x1
SH-1064-145-210-12	210	232,5	1064	145x145	12	34	Optical Glass	No	M85x1
SH-1064-145-210-12L	210	232,5	1064	145x145	12	34	Optical Glass	No	M85x1
SH-1064-150-225-12	225	248	1064	150x150	12	37	Optical Glass	No	M85x1
SH39-1064-160-254-8	254	289	1064	160x160	8	62	Optical Glass	No	M39x1
SH-1064-175-254-12	254	287	1064	175x175	12	41	Optical Glass	No	M85x1
SH-1064-175-254-12L	254	276,5	1064	175x175	12	41	Optical Glass	No	M85x1
SH-1064-200-290-12	290	324	1064	200x200	12	47	Optical Glass	No	M85x1
SH-1064-230-330-12	330	355	1064	230x230	12	54	Optical Glass	No	M85x1
SH-1064-250-380-12	380	414	1064	250x250	12	62	Optical Glass	No	M85x1
SH-1064-300-420-12	420	465	1064	300x300	12	69	Optical Glass	No	M85x1
SH-1064-300-420-12L	420	483	1064	300x300	12	69	Optical Glass	No	M85x1

WAVELENGTH 1064 NM HIGH POWER

Product Name	Focal Length (mm)	Back Working (mm)	Wavelength (nm)	Scan Field (mm)	Entrance Diameter (mm)	Focus Size (μm)	Material	Water cooling	Thread
SH-1064-50-63-12-FS	63	83	1064	50x50	12	11	Fused Silica	No	M85x1
SH-1064-70-100-12-FS	100	136	1064	70x70	12	17	Fused Silica	No	M85x1
SH-1064-110-160-12-FS	160	214	1064	110x110	12	26	Fused Silica	No	M85x1
SH-1064-145-210-12-FS	210	257,5	1064	145x145	12	34	Fused Silica	No	M85x1
SH-1064-150-225-12-FS	225	273	1064	150x150	12	36	Fused Silica	No	M85x1
SH-1064-175-254-12-FS	254	324	1064	175x175	12	41	Fused Silica	No	M85x1
SH-1064-200-290-12-FS	290	361	1064	200x200	12	47	Fused Silica	No	M85x1
SH-1064-230-330-12-FS	330	401	1064	230x230	12	54	Fused Silica	No	M85x1
SH-1064-300-420-12-FS	420	483	1064	300x300	12	68	Fused Silica	No	M85x1
SH-1064-110-170-20-FS	170	208	1064	170x170	20	17	Fused Silica	No	M85x1
SH-1064-150-210-20-FS	210	271	1064	150x150	20	21	Fused Silica	No	M85x1
SH-1064-175-254-20-FS	254	318	1064	175x175	20	25	Fused Silica	No	M85x1
SH-1064-220-330-20-FS	330	397	1064	220x220	20	33	Fused Silica	No	M85x1
SH-1064-300-420-20-FS	420	480	1064	300x300	20	41	Fused Silica	No	M85x1
SH-1064-360-500-20-FS	500	560	1064	360x360	20	49	Fused Silica	No	M85x1
SH-1064-410-580-20-FS	580	648	1064	410x410	20	58	Fused Silica	No	M85x1
SH-1064-600-900-20-FS	900	988	1064	600x600	20	100	Fused Silica	No	M85x1
SH-1064-1350-1900-20-FS	1900	2021	1064	1350x1350	20	171	Fused Silica	No	M85x1
SH102-1064-100-170-30-FS	170	224	1064	100x100	30	11	Fused Silica	No	M102x1
SHW102-1064-100-170-30-FS	170	224	1064	100x100	30	11	Fused Silica	Yes	M102x1
SH102-1064-140-210-30-FS	210	281	1064	140x140	30	14	Fused Silica	No	M102x1
SHW102-1064-140-210-30-FS	210	281	1064	140x140	30	14	Fused Silica	Yes	M102x1
SH102-1064-160-254-30-FS	254	335	1064	160x160	30	17	Fused Silica	No	M102x1
SHW102-1064-160-254-30-FS	254	335	1064	160x160	30	17	Fused Silica	Yes	M102x1
SH102-1064-200-330-30-FS	330	397	1064	200x200	30	22	Fused Silica	No	M102x1
SHW102-1064-200-330-30-FS	330	397	1064	200x200	30	22	Fused Silica	Yes	M102x1
SH102-1064-255-420-30-FS	420	497	1064	255x255	30	28	Fused Silica	No	M102x1
SHW102-1064-255-420-30-FS	420	497	1064	255x255	30	28	Optical Glass	Yes	M102x1

WAVELENGTH 266 NM

Product Name	Focal Length (mm)	Back Working (mm)	Wavelength (nm)	Scan Field (mm)	Entrance Diameter (mm)	Focus Size (μm)	Material	Tele-centric	Thread
JG-266-70-102-5	102	127	266	70x70	5	11,9	Fused Silica	No	M85x1
JG-266-105-163-5	163	202,8	266	105x105	5	15,9	Fused Silica	No	M85x1
JG-266-150-254-4	254	303	266	150x150	4	18	Fused Silica	No	M85x1

WAVELENGTH 405 NM

Product Name	Focal Length (mm)	Back Working (mm)	Wavelength (nm)	Scan Field (mm)	Entrance Diameter (mm)	Focus Size (μm)	Material	Tele-centric	Thread
SH-405-110-160-12	160	180	405	110x110	12	10	Optical Glass	No	M85x1
SH-405-140-210-12	210	230	405	140x140	12	34	Optical Glass	No	M85x1
SH-405-175-254-16	254	287	405	175x175	16	31	Optical Glass	No	M85x1
SH-405-200-290-16	290	324	405	200x200	16	32	Optical Glass	No	M85x1
SH-405-400-580-20	580	643	405	400x400	20	22	Optical Glass	No	M85x1

WAVELENGTH 915-980 NM

Product Name	Focal Length (mm)	Back Working (mm)	Wavelength (nm)	Scan Field (mm)	Entrance Diameter (mm)	Focus Size (μm)	Material	Tele-centric	Thread
SH102-915-255-420-30	420	480	915	255x255	30	24	Optical Glass	No	M102x1
SH-980-220-330-20-2Q	330	377	980	220x220	20	33	Part Fused Silica	No	M85x1
SH-980-220-330-20-FS	330	397	980	220x220	20	33	Fused Silica	No	M85x1

WAVELENGTH 1064 NM CLEANING

Product Name	Focal Length (mm)	Back Working (mm)	Wavelength (nm)	Scan Length (mm)	Entrance Diameter (mm)	Focus Size (μm)	Material
SH-CL-1064-70-100-20-FS	100	133	1064	70	20	16	Fused Silica
SH-CL-1064-100-160-10-FS	160	185	1064	100	10	31	Fused Silica
SH-CL-1064-140-160-20-FS	160	203	1064	140	20	26	Fused Silica
SH-CL-1064-140-210-10-FS	210	241	1064	140	10	41	Fused Silica
SH-CL-1064-200-210-20-FS	210	250	1064	200	20	30	Fused Silica
SH-CL-1064-180-254-10-FS	254	287	1064	180	10	50	Fused Silica
SH-CL-1064-250-254-20-FS	254	293	1064	250	20	35	Fused Silica
SH-CL-1064-300-420-10-FS	420	455	1064	300	10	51	Fused Silica

WAVELENGTH 10600 NM

Product Name	Focal Length (mm)	Back Working (mm)	Wavelength (nm)	Scan Field (mm)	Entrance Diameter (mm)	Focus Size (μm)	Tele-centric	Thread
SH-10,6-48-50-63-14	63	80	10600	53x53	14	100	No	M85x1
SH-10,6-48-70-100-14	100	88	10600	70x70	14	146	No	M85x1
SH-10,6-48-110-160-14	160	152	10600	110x110	14	220	No	M39x1
SH-10,6-48-150-210-14	210	208	10600	150x150	14	306	No	M39x1
SH-10,6-48-160-230-14	230	228	10600	160x160	14	335	No	M85x1
SH-10,6-48-175-254-14	254	252	10600	175x175	14	370	No	M85x1
SH-10,6-48-200-300-14	300	295	10600	200x200	14	437	No	M85x1
SH-10,6-48-250-360-14	360	350	10600	250x250	14	500	No	M85x1
SH-10,6-48-300-420-14	420	418	10600	300x300	14	622	No	M85x1
SH-10,6-48-360-592-14	590	587	10600	360x360	14	833	No	M39x1
SH-10,6-48-400-650-14	650	645	10600	400x400	14	915	No	M85x1





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