



QAOS Series

Compact AOM Q-Switched DPSS Pulsed Lasers

Data Sheet



Overview

The QAOS Series is a family of UV, visible, and near-infrared diode-pumped solid-state (DPSS) actively Q-switched lasers delivering up to 2500 mW of average output power. Available in 15 wavelengths spanning the UV to IR spectrum, these lasers provide high peak power, pulse energies up to 350 μ J, short pulse durations, and high repetition rates. Designed for reliable long-term operation, the QAOS Series is well suited for material processing, precision measurement, scientific research, and other demanding applications.

Features

- Available in 15 wavelengths from UV to near IR
- Actively Q-switched operation
- Up to 2500 mW average output power
- Pulse energy up to 350 μ J
- High peak power
- Short pulse duration
- High repetition rate
- Long lifetime and reliable performance

Applications

- Material processing
- Precision measurement
- Scientific research
- Spectroscopy
- Laser marking
- Laboratory and OEM integration

261-355 nm Specifications

Parameter	QAOS261H	QAOS263H	QAOS266	QAOS266H	QAOS349	QAOS351	QAOS355
Wavelength	261±1 nm	263±1 nm	266±1 nm	266±1 nm	349±1 nm	351±1 nm	355±1 nm
Operating mode	Actively Q-switched						
Average power ⁽¹⁾	1-15mW	1-15mW	1-10mW	1-20mW	1-15mW	1-30mW	1-100mW
Single pulse energy ⁽²⁾	1-15uJ	1-15uJ	1-5uJ	1-20uJ	1-8uJ	1-15uJ	1-40uJ
Power stability (rms, 4 hours ±3°C)	<5%, <3%						
Transverse mode	Near TEM ₀₀						
Pulse duration ⁽³⁾	~9ns	~9ns	~4ns	~9ns	6-10ns @<10kHz	6-10ns @<10kHz	5-10ns @<10kHz
Peak power ⁽⁴⁾	0.1-1.6kW	0.1-1.6kW	0.25-1.25kW	0.1-2.2kW	0.16-1.3kW	0.16-2.5kW	0.2-8kW
Repetition rate ⁽⁵⁾	1Hz-1kHz	1Hz-1kHz	1Hz-5kHz	1Hz-1kHz	1Hz-10kHz	1Hz-15kHz	1Hz-20kHz
Beam diameter at aperture (1/e ²)	<1.5 mm	<1.5 mm	~1.0 mm	<1.5 mm	~1.0 mm	~1.0 mm	~1.0 mm
Beam divergence, full angle	<1.5 mrad	<1.5 mrad	<2 mrad	<1.5 mrad	<2 mrad	~1.5 mrad	~1.5 mrad
M ² factor	<2	<2	<2	<2	<1.5	<1.5	<1.2
Polarization ratio	>100: 1 Vertical	>100:1 Horizontal	>100:1 Horizontal	>100:1 Horizontal	>100:1 Horizontal	>100:1 Horizontal	>100:1 Horizontal
Warm-up time	<10 min						
Operating temperature	10-35°C						
Expected lifetime	>10000 hours						

Remarks:

1. Average power (mW) = Single pulse energy (μJ) * Rep. rate (kHz)
2. Any energy level can be selected within this range.
3. Pulse width not tunable; the value varies with different frequency and energy.
4. Peak power (W) = Single pulse energy (μJ) / Pulse duration (μs)
5. Repetition frequency is adjustable within this range.
6. Specifications of the Q-switched pulsed laser is based on the laser pulsed at the specified repetition rate. If the laser is run at a different repetition rate, the output characteristics may change.

523.5-671 nm Specifications

Parameter	QAOS523	QAOS523H	QAOS526	QAOS526H	QAOS532	QAOS532H	QAOS671H
Wavelength	523.5±1 nm	523.5±1 nm	526.5±1 nm	526.5±1 nm	532±1 nm	532±1 nm	671±1 nm
Operating mode	Actively Q-switched						
Average power ⁽¹⁾	1-100mW	1-300mW	1-50mW	1-1300mW	1-250mW	1-1000mW	1-350mW
Single pulse energy ⁽²⁾	1-50uJ	1-100uJ	1-20uJ	1-100uJ	1-100uJ	1-250uJ	1-50uJ
Power stability (rms, 4 hours ±3°C)	<5%, <3%, <2%	<3%, <2%, <1%	<5%, <3%, <2%	<3%, <2%, <1%	<3%, <2%	<3%, <2%, <1%	<3%, <2%, <1%
Transverse mode	TEM ₀₀						
Pulse duration ⁽³⁾	5-10ns @<10kHz	~8ns@1kHz, ~14ns@5kHz	5-10ns @<10kHz	~10ns@1kHz, ~17ns@5kHz	5-10ns @<10kHz	~10ns@1kHz, ~25ns@10kHz	~23ns@1kHz, ~27ns@5kHz
Peak power ⁽⁴⁾	0.2-10kW	0.1-12.5kW	0.2-4kW	0.1-10kW	0.2-20kW	0.1-25kW	0.1-2.2kW
Repetition rate ⁽⁵⁾	1Hz-50kHz	1Hz-50kHz	1Hz-50kHz	1Hz-50kHz	1Hz-50kHz	1Hz-10kHz	1Hz-50kHz
Beam diameter at aperture (1/e ²)	~1.2 mm	<1.0 mm	~1.2 mm	<1.0 mm	~1.2 mm	<1.0 mm	~1.2 mm
Beam divergence, full angle	<1.5 mrad						
M ² factor	<1.5	<1.5	<1.5	<1.5	<1.2	<1.5	<1.5
Polarization ratio	>100:1, Vertical				>100:1, Horizontal		
Warm-up time	<10 min						
Operating temperature	10-35°C						
Expected lifetime	>10,000 hours						

Remarks:

1. Average power (mW) = Single pulse energy (μJ) * Rep. rate (kHz)
2. Any energy level can be selected within this range.
3. Pulse width not tunable; the value varies with different frequency and energy.
4. Peak power (W) = Single pulse energy (μJ) / Pulse duration (μs)
5. Repetition frequency is adjustable within this range.
6. Specifications of the Q-switched pulsed laser is based on the laser pulsed at the specified repetition rate. If the laser is run at a different repetition rate, the output characteristics may change.



946-1342 nm Specifications

Parameter	QAOS946	QAOS1047	QAOS1053	QAOS1064	QAOS1342
Wavelength	946±1 nm	1047±1 nm	1053±1 nm	1064±1 nm	1342±1 nm
Operating mode	Actively Q-switched				
Average power ⁽¹⁾	1-150mW	1-1300mW	1-1000mW	1-2500mW	1-1900mW
Single pulse energy ⁽²⁾	1-40uJ	1-250uJ	1-250uJ	1-350uJ	1-150uJ
Power stability (rms, 4 hours ±3°C)	<5%, <3%, <2%	<5%, <3%, <2%	<5%, <3%, <2%	<3%, <2%	<5%, <3%, <2%
Transverse mode	TEM ₀₀				
Pulse duration ⁽³⁾	~22ns @1kHz, ~50ns@10kHz	5-11ns @<10kHz	5-11ns @<10kHz	5-11ns @<10kHz	~27ns@1kHz, ~35ns@10kHz
Peak power ⁽⁴⁾	0.1-1.8kW	0.2-36kW	0.2-36kW	0.2-50kW	0.1-5.5kW
Repetition rate ⁽⁵⁾	1Hz-10kHz	1Hz-80kHz	1Hz-80kHz	1Hz-100kHz	1Hz-100kHz
Beam diameter at aperture (1/e ²)	~1.2 mm				
Beam divergence, full angle	<1.5 mrad				
M ² factor	<1.5				
Polarization ratio	>100:1, Vertical	>100:1 Horizontal	>100:1 Horizontal	>100:1 Horizontal	>100:1 Horizontal
Warm-up time	<10 min				
Operating temperature	10-35°C				
Expected lifetime	>10,000 hours				

Remarks:

1. Average power (mW) = Single pulse energy (μJ) * Rep. rate (kHz)
2. Any energy level can be selected within this range.
3. Pulse width not tunable; the value varies with different frequency and energy.
4. Peak power (W) = Single pulse energy (μJ) / Pulse duration (μs)
5. Repetition frequency is adjustable within this range.
6. Specifications of the Q-switched pulsed laser is based on the laser pulsed at the specified repetition rate. If the laser is run at a different repetition rate, the output characteristics may change.

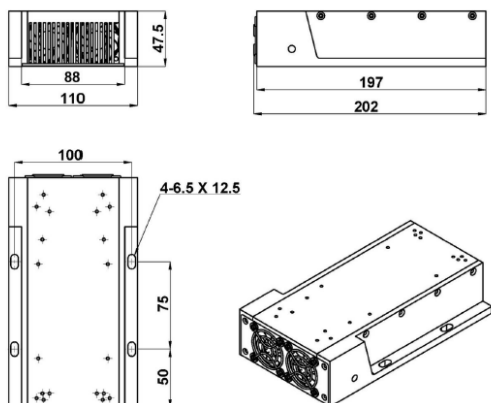
QAOS Series Laser Head Dimensions

Unit: mm

QAOS261H/263H/266H	QAOS266
QAOS349/351/355/523/526/532	QAOS523H/526H/532H/671H
QAOS946/1047/1053/1064	QAOS1342

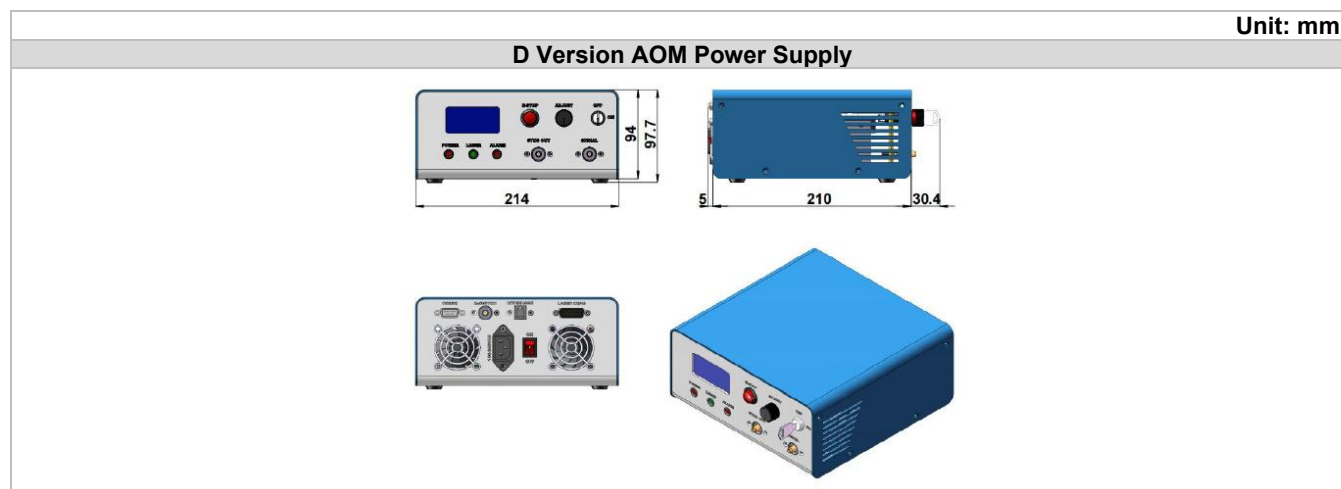
Parameter	QAOS261H/263H/266H	QAOS266	QAOS349/351/355/523/526/532
Dimensions	281.9(L) x 75(W) x 47.5(H) mm ³	180(L) x 120(W) x 60(H) mm ³	211(L) x 60(W) x 48(H) mm ³
Weight	1.5 kg	2.14 kg	1.05 kg
Beam height from base plate	30 mm	30 mm	25 mm
Beam exit (from side)	43 mm	43 mm	30 mm
Parameter	QAOS523H/526H/532H/671H	QAOS946/1047/1053/1064	QAOS1342
Dimensions	175(L) x 60(W) x 48(H) mm ³	191(L) x 50(W) x 48(H) mm ³	211(L) x 60(W) x 48(H) mm ³
Weight	1.0 kg	0.78 kg	1.05 kg
Beam height from base plate	27.4 mm	25 mm	25 mm
Beam exit (from side)	23 mm	25 mm	30 mm

QAOS Series Heat Sink Dimensions

Unit: mm	
HS2	
	

Parameter	HS2
Dimensions	202(L) x 110(W) x 47.5(H) mm ³
Weight	1.25 kg

QAOS Series Power Supply Dimensions



Parameter	D Version AOM Power Supply
Dimensions	245.4(L) × 214(W) × 97.7(H) mm ³
Weight	3.2 kg
Input voltage	90-240VAC
Features	Output energy adjustable 10-100%

Ordering Information

For more information, please contact Lasermate directly at sales@lasermate.com.

Part Number Configuration QAOS[1][2][3][4]-HS2					
QAOS = Laser Model Series	[1] = Wavelength	[2] = Average Power or Single Pulse Energy	[3] = Power Supply	[4] = Power Stability	HS2 = Heat Sink
	261= 261nm 263= 263nm 266= 266nm 349= 349nm 351= 351nm 355= 355nm 523= 523.5nm 526= 526.5nm 532= 532nm 671= 671nm 946= 946nm 1047= 1047nm 1053= 1053nm 1064= 1064nm		AD= D Version AOM Power Supply	A= <5% E= <3% 2= <2%	

Note: The above specifications are subject to change without notice.