



Actively Q-Switched Laser System

QAOS Series

Data Sheet



Overview

The QAOS series is a line of UV, visible, and near IR diode-pumped solid state (DPSS) actively Q-switched lasers that delivers up to 2500 mW of average power. The QAOS series is available in ten different wavelengths and features high peak power, high repetition rate and short pulse duration. The laser is widely used in material processing, measurement, scientific research, and many other applications.

Features

- Available wavelengths: 266nm, 349nm, 351nm, 355nm, 523.5nm, 526.5nm, 532nm, 1047nm, 1053nm, 1064nm
- Q-switched operating mode
- Pulse energy up to 350uJ
- Short pulse duration
- High repetition rate

Applications

- Material processing
- Measurement
- Scientific research

266-355 nm Specifications

Parameter	QAOS266	QAOS349	QAOS351	QAOS355
Wavelength	266±1 nm	349±1 nm	351±1 nm	355±1 nm
Operating mode	Acousto-Optics Q-switched			
Max average power	1-10mW	1-15mW	1-30mW	1-100mW
Single pulse energy	1-5uJ (5uJ@1kHz; 1uJ@5kHz)	1-8uJ (8uJ@1kHz; 1uJ@5kHz)	1-15uJ (15uJ@1kHz; 3uJ@5kHz)	1-40uJ (40uJ@1kHz; 10uJ@5kHz)
Power stability (rms, over 4 hours)	<5%, <3%			
Transverse mode	Near TEM ₀₀			
Pulse duration (varies from power and repetition)	Typically ~4ns	Typically 6~10ns @<10kHz	Typically 6~10ns @<10kHz	Typically 5~10ns @<10kHz
Peak power	0.25-1.25kW	0.16-1.3kW	0.16-2.5kW	0.2-8kW
Repetition rate	0.001-5 kHz	0.001-10 kHz	0.001-15 kHz	0.001-20 kHz
Beam diameter at aperture (1/e ²)	Elliptical (4:1), beam spot ~1.5x0.4mm	~1.0 mm	<2 mm	<2 mm
Beam divergence, full angle	<2 mrad	<2 mrad	~1.0 mrad	~1.0 mrad
M ² factor	<2			
Polarization ratio	>100:1			
Warm-up time	<10 min			
Operating temperature	10-35°C			
Expected lifetime	5000 hours	10,000 hours	10000 hours	10000 hours
Warranty	10 months			

Remarks:

- The laser head needs to be used on a heat sink with good heat dissipation.
- Average power (mW) = Single pulse energy (μJ) * Rep. rate (kHz)
- Peak Power (W) = Single Pulse Energy (μJ) / Pulse Duration (μs)
- 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.

523.5-532 nm Specifications

Parameter	QAOS523	QAOS526	QAOS532
Wavelength	523.5±1 nm	526.5±1 nm	532±1 nm
Operating mode	Acousto-Optics Q-switched		
Max average power	1-100mW	1-50mW	1-250mW
Single pulse energy	1-50uJ (50uJ@1kHz; 20uJ@5kHz)	1-20uJ (20uJ@1kHz; 10uJ@5kHz)	1-100uJ (100uJ@1kHz; 50uJ@5kHz)
Power stability (rms, over 4 hours)	<5%, <3%	<5%, <3%	<5%, <3%, <2%
Transverse mode	TEM ₀₀		
Pulse duration (varies from power and repetition)	Typically 5~10ns @<10kHz		
Peak power	0.2-10kW	0.2-4kW	0.2-20kW
Repetition rate	0.001-50 kHz		
Beam diameter at aperture (1/e ²)	<1.5 mm		
Beam divergence, full angle	~1.2 mrad		
M ² factor	<1.5		
Polarization ratio	>100:1		
Warm-up time	<10 min		
Operating temperature	10-35°C		
Expected lifetime	10,000 hours		
Warranty	10 months		

Remarks:

- The laser head needs to be used on a heat sink with good heat dissipation.
- Average power (mW) = Single pulse energy (μJ) * Rep. rate (kHz)
- Peak Power (W) = Single Pulse Energy (μJ) / Pulse Duration (μs)
- 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.

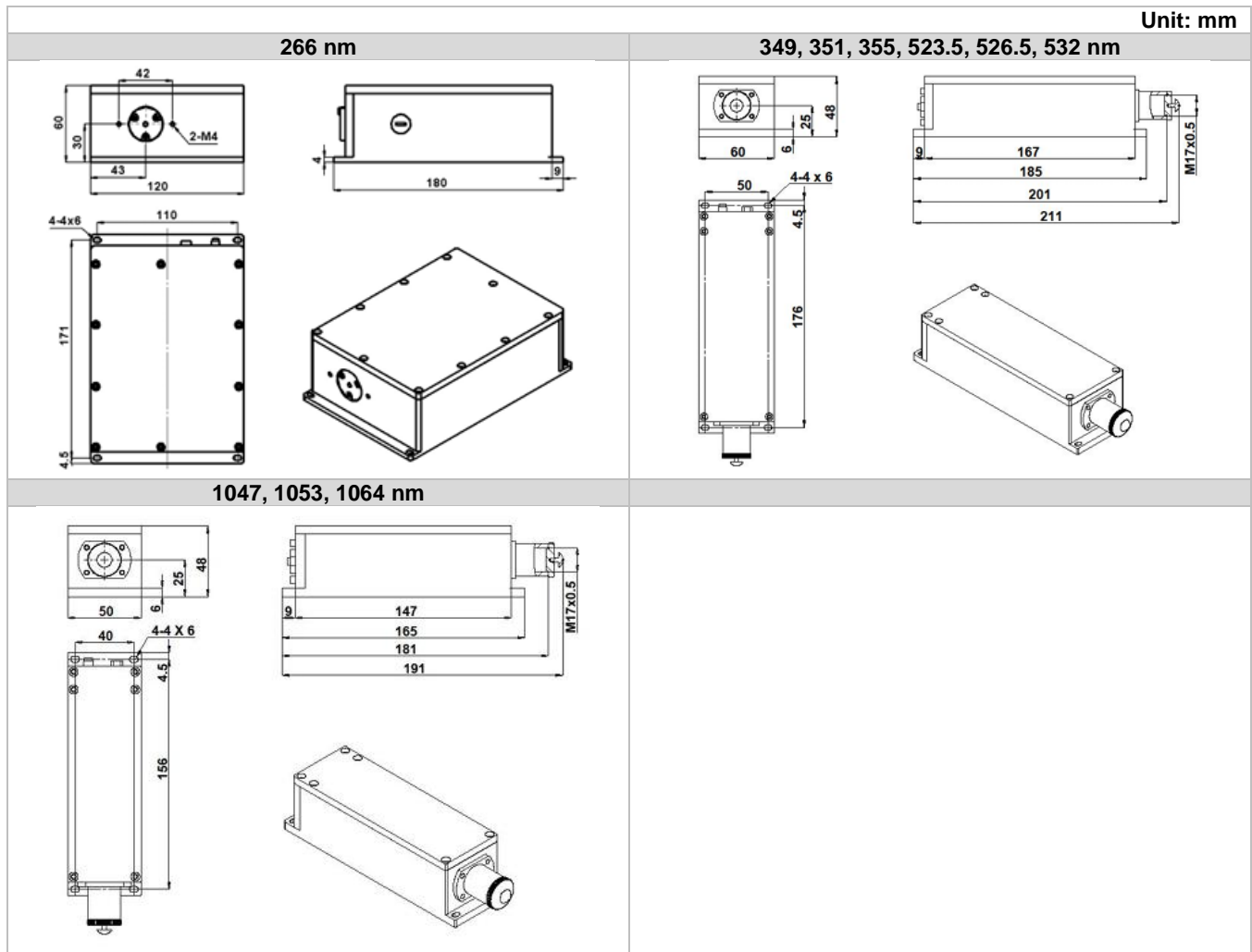
1047-1064 nm Specifications

Parameter	QAOS1047	QAOS1053	QAOS1064
Wavelength	1047±1 nm	1053±1 nm	1064±1 nm
Operating mode	Acousto-Optics Q-switched		
Max average power	1-1300mW	1-1000mW	1-2500mW
Single pulse energy	1-250uJ (250uJ@1kHz; 100uJ@10kHz)	1-250uJ (250uJ@1kHz; 100uJ@10kHz)	1-350uJ (350uJ@1kHz; 180uJ@10kHz)
Power stability (rms, over 4 hours)	<5%, <3%, <2%	<5%, <3%, <2%	<5%, <3%
Transverse mode	TEM ₀₀		
Pulse duration (varies from power and repetition)	Typically 7-11ns @<10kHz	Typically 7-11ns @<10kHz	Typically 7-11ns @<10kHz
Repetition rate	0.001-80 kHz	0.001-80 kHz	0.001-100 kHz
Beam diameter at aperture (1/e ²)	<1.5 mm		
Beam divergence, full angle	~1.2 mrad		
M ² factor	<1.5		
Polarization ratio	>100:1		
Warm-up time	<10 min		
Operating temperature	10-35°C		
Expected lifetime	10,000 hours		
Warranty	10 months		

Remarks:

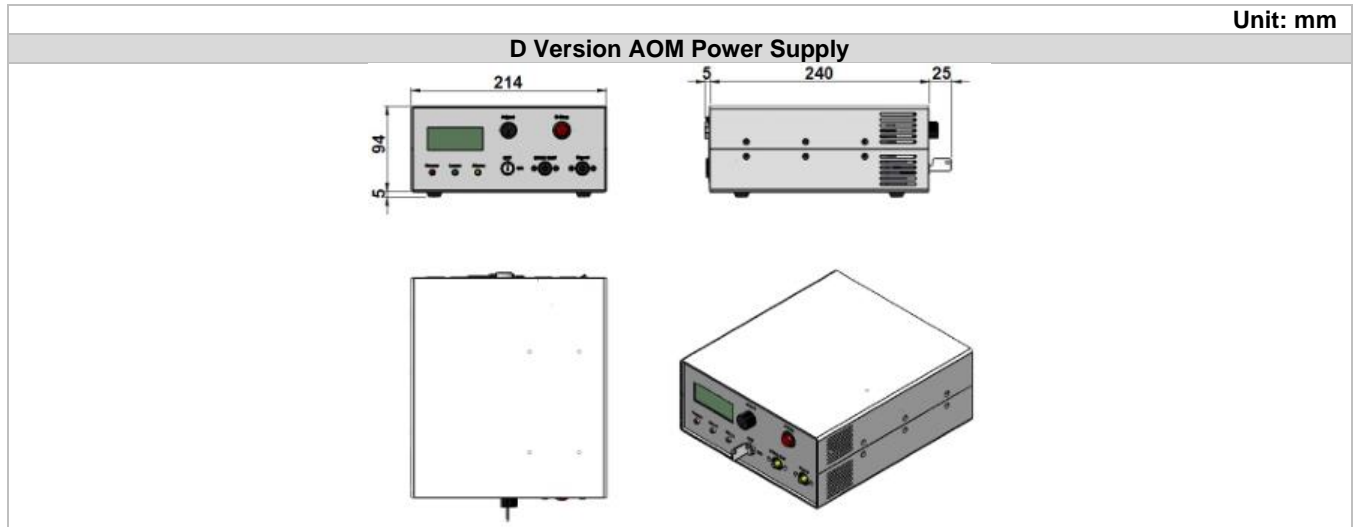
- The laser head needs to be used on a heat sink with good heat dissipation.
- Average power (mW) = Single pulse energy (μJ) * Rep. rate (kHz)
- Peak Power (W) = Single Pulse Energy (μJ) / Pulse Duration (μs)
- Specifications of the Q-switched pulsed laser is based on the laser pulsed at the specified repetition rate. If the laser is run at a different repetition rate, the output characteristics may change.

QAOS Series Laser Head Dimensions



Parameter	266 nm	349, 351, 355, 523.5, 526.5, 532 nm	1047, 1053, 1064 nm
Dimensions	180(L) x120(W) x60(H) mm ³	211(L) x60(W) x48(H) mm ³	191(L) x50(W) x48(H) mm ³
Weight	2.14 kg	1.05 kg	0.78 kg
Beam height from base plate	30 mm	25 mm	25 mm
Beam exit (from side)	43 mm	30 mm	25 mm

QAOS Series Power Supply Dimensions



Parameter	D Version AOM Power Supply
Dimensions	270(L) x214(W) x99(H) mm ³
Weight	3.2 kg
Input voltage	90-264VAC

Ordering Information

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

Part Number Configuration QAOS[1][2][3][4]				
QAOS = Laser Model Series	[1] = Wavelength	[2] = Average Power or Single Pulse Energy	[3] = Power Supply	[4] = Power Stability
	266= 266nm 349= 349nm 351= 351nm 355= 355nm 523= 523.5nm 526= 526.5nm 532= 532nm 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.