

AONano™ | Vanadate Series

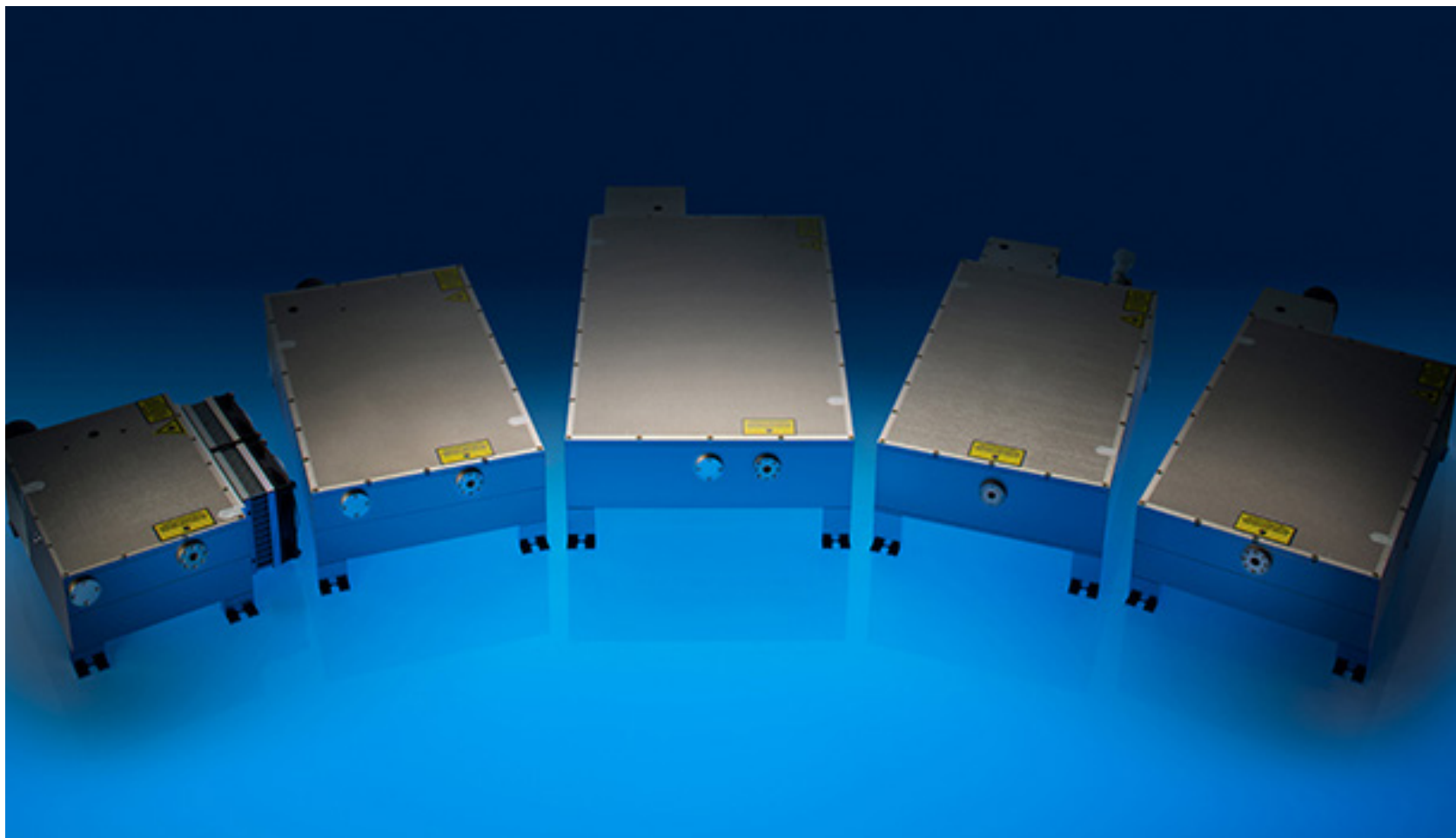
Industrial Nanosecond Lasers

Features & Benefits

Lowest Cost of Ownership in the Industry
Available in IR, Green, UV and Deep UV
High Performance, Reliable Design
Excellent Beam Quality of $M^2 < 1.2$
Simple, Intuitive Control Features
Average Powers up to 50 Watts

Applications

Rapid Prototyping
Marking, Engraving & Coding
Diamond Cutting and Marking
Scientific and Biomedical Injector
Rigid PCB and Flex Circuit Processing
Semiconductor/PV Processing/Wafer Scribing



AONano | Vanadate 1064

SPECIFICATIONS*	10-100-V	20-100-V	30-100-V	40-100-V	50-100-V
Wavelength (nm)	1064				
Average Power (Watts)	10	20	30	40	50
Energy (μJ)	100	200	300	400	500
Specified Repetition Rate (kHz)	100				
Repetition Rate (kHz)	Single Shot to 300				
Pulse Width (ns)	<40	<40	<50	<50	<60
Beam Quality (M ²)	<1.3				
Beam Roundness (%)	>90				
Beam Diameter (mm)	~1.0	~1.1	~1.1	~1.2	~1.2
Beam Divergence (mRad)	<2.5	<2.5	<2.0	<2.0	<2.0
Point Stability (μrad/°C)	<20				
Polarization Ratio	100:1 Linear, Horizontal				
Pulse-to-Pulse Stability (% RMS)	<2				
Average Power Stability (% over 12 hours)	<3				
Cold Start Warm-Up (mins.)	<40				
Standby Warm-Up (mins.)	<10				
Operational Temperature Range (°C)	15 to 35				
Operation Humidity Range (%)	20 to 80 non-condensing				
Storage Temperature Range (°C)	-20 to 50				
Storage Humidity Range (%)	20 to 80 non-condensing				
Input Voltage (VAC)	90 to 260				
Line Frequency (Hz)	47 - 63				
Communication	RS-232				
Cooling	Air	Air/Water	Water	Water	Water

AONano | Vanadate 532

SPECIFICATIONS*	5-40-V	10-40-V	15-50-V	20-50-V	25-50-V	30-50-V	35-50-V	40-50-V
Wavelength (nm)	532							
Average Power (Watts)	5	10	15	20	25	30	35	40
Energy (μJ)	125	250	300	400	500	600	700	800
Specified Repetition Rate (kHz)	40		50					
Repetition Rate (kHz)	Single Shot to 300							
Pulse Width (ns)	<18	<16	<30	<30	<30	<30	<30	<30
Beam Quality (M ²)	<1.2							
Beam Roundness (%)	>90							
Beam Diameter (mm)	~0.5	~0.5	~0.7	~0.7	~0.7	~0.8	~0.9	~0.8
Beam Divergence (mRad)	<2.2	<2.0	<2.0	<1.8	<1.8	<1.8	<1.8	<1.8
Point Stability (μrad/°C)	<20							
Polarization Ratio	100:1 Linear, Vertical							
Pulse-to-Pulse Stability (% RMS)	<2							
Average Power Stability (% over 12 hours)	<3							
Cold Start Warm-Up (mins.)	<40							
Standby Warm-Up (mins.)	<10							
Operational Temperature Range (°C)	15 to 30							
Operation Humidity Range (%)	20 to 80 non-condensing							
Storage Temperature Range (°C)	-20 to 50							
Storage Humidity Range (%)	20 to 80 non-condensing							
Input Voltage (VAC)	90 to 260							
Line Frequency (Hz)	47 - 63							
Communication	RS-232							
Cooling	Air	Air	Air/Water	Water	Water	Water	Water	Water

AONano | Vanadate 355

SPECIFICATIONS*	0.5-100-V	1-100-V	2-30-V	3-30-V	5-30-V	10-30-V	15-30-V	20-40-V
Wavelength (nm)	355							
Average Power (Watts)	0.5	1	2	3	5	10	15	20
Energy (μJ)	5	10	67	100	167	333	500	500
Specified Repetition Rate (kHz)	100		30					
Repetition Rate (kHz)	Single Shot to 300							
Pulse Width (ns)	<45	<35	<15	<15	<15	<20	<20	<15
Beam Quality (M ²)	<1.2							
Beam Roundness (%)	>90							
Beam Diameter (mm)	~0.6	~0.5	~0.4	~0.4	~0.4	~0.6	~0.6	~0.6
Beam Divergence (mRad)	<2.2	<1.6	<1.6	<1.6	<1.8	<1.5	<1.5	<1.5
Point Stability (μrad/°C)	<20							
Polarization Ratio	100:1 Linear, Horizontal							
Pulse-to-Pulse Stability (% RMS)	<2							
Average Power Stability (% over 12 hours)	<3							
Cold Start Warm-Up (mins.)	<40							
Standby Warm-Up (mins.)	<10							
Operational Temperature Range (°C)	15 to 30							
Operation Humidity Range (%)	20 to 80 non-condensing							
Storage Temperature Range (°C)	-20 to 50							
Storage Humidity Range (%)	20 to 80 non-condensing							
Input Voltage (VAC)	90 to 260							
Line Frequency (Hz)	47 - 63							
Communication	RS-232							
Cooling	Air	Air	Air	Air	Water	Water	Water	Water

AONano | Vanadate 266

SPECIFICATIONS*	0.5-30-V	1-30-V	1.5-30-V	2-30-V	3-30-V	4-30-V	5-30-V
Wavelength (nm)	266						
Average Power (Watts)	0.5	1	1.5	2	3	4	5
Energy (μJ)	16	33	50	67	100	133	167
Specified Repetition Rate (kHz)	30						
Repetition Rate (kHz)	Single Shot to 300						
Pulse Width (ns)	<15				<20		
Beam Quality (M ²)	<1.2						
Beam Roundness (%)	>85						
Beam Diameter (mm)	~3.0						
Beam Divergence (mRad)	<1.0						
Point Stability (μrad/°C)	<20						
Polarization Ratio	100:1 Linear, Horizontal						
Pulse-to-Pulse Stability (% RMS)	<2						
Average Power Stability (% over 12 hours)	<3						
Cold Start Warm-Up (mins.)	<40						
Standby Warm-Up (mins.)	<10						
Operational Temperature Range (°C)	15 to 30						
Operation Humidity Range (%)	20 to 80 non-condensing						
Storage Temperature Range (°C)	-20 to 50						
Storage Humidity Range (%)	20 to 80 non-condensing						
Input Voltage (VAC)	90 to 260						
Line Frequency (Hz)	47 - 63						
Communication	RS-232						
Cooling	Air	Air	Air	Air	Water	Water	Water

AONano | Vanadate Series
Nanosecond Industrial Lasers

Dimensions & Weight

DIMENSIONS	COMPACT	MEDIUM	LARGE
Laser Head, in (mm) L x D x H	8 x 5 x 3.45 (203 x 127 x 88)	9 x 8 x 3.75 (229 x 203 x 95)	13.74 x 8 x 3.75 (350 x 203 x 95)
Laser Controller, in (mm) W x D x H	15 x 15 x 5 (381 x 381 x 5)	19 x 17 x 7 (482 x 432 x 178)	
Umbilical, in (m)	100 (2.5)		

WEIGHTS	COMPACT	MEDIUM	LARGE
Laser Head, lbs (kg)	13 (5.9)	19 (8.6)	25 (11.3)
Laser Controller, lbs (kg)	15 (6.8)	22 (10)	25 (11.3)

COMPLIANCE: CDRH, ROHS, CE

**Advanced Optowave Corporation follows a policy of continuous product improvement. Specifications are subject to change without notice. Advanced Optowave Corporation offers a limited warranty for all Femtosecond IR/GR laser systems. For full details on warranty coverage, or for further product information, please contact us.*

