Advanced Optowave

impact through innovation.

PRODUCT DATA SHEET
NANO-GR-532/527

AWAVE SERIES
GR Industrial Lasers

features & benefits.

Innovative End-Pumping Technology
Air-Cooling (Average Power Up to 30W)
Excellent Beam Quality, Pulse Stability & Point Stability
Patent Pending Harmonic Conversion Technologies
Ultra-Compact & Light-Weight
Brand-New Focusing Optics
Field-Replaceable Diode
24/7 Proven Reliability
Low Operational Cost

AWAVE GR Series models are Q-switched TEM00 mode lasers and are engineered for the highly demanding 24/7 production environment. Each system consists of a laser head and a laser controller connected with a 2.5 meter umbilical cable. The fiber-coupled pumping diodes are located in the laser controller for easy field-replacement. The laser head is sealed in a clean room to assure long-term reliability.

AWAVE GR Series lasers are featured with pulse frequencies ranging from 1-300 kHz (300 kHz to 1 MHz is optional), average power covered from 2W to 30W and pulse energy in excess of 10mJ. For a GR laser over 30W, please refer to the AW-HP Series. Our AWAVE GR lasers are designed and engineered with flexible laser architectures. Contact Advanced Optowave for any laser requirements exceeding standard specifications.

Nd:YLF GR Laser Systems

SPECIFICATIONS*	AWAVE 527-2W-10K	AWAVE 527-12W-10K	AWAVE 527-20W-10K
Wavelength[1]		527nm	
Average Power[2]	2W	12W	20W
Pulse Repetition Rate[3]		Single Shot to 20 kHz	
Beam Quality (M^2)		<1.2	
Spatial Mode		TEM00	
Beam Roundness		>90%	
Pulse Width	<40ns @1kHz <70ns @10kHz	<30ns @1kHz <70ns @10kHz	<50ns @1kHz <70ns @10kHz
Pulse Energy (mJ @ 1kHz)	>0.6mJ	>5mJ	>10mJ
Pulse-to-Pulse Stability[4]		<2% RMS	
Average Power Stability[4]		<3% over 12 hours	
Polarization Ratio		>100:1 LINEAR, VERTICAL	
Communication Protocol[5]		RS-232	
Operating Voltage (VAC)		90-260	
Line Frequency (Hz)		47-63	
Cooling	AIR	WATER	WATER
Operation Temperature		15° - 30° C	
Operation Humidity		20% - 80%	
Storage Temperature		-20° - 50° C	

Nd:YAG GR Laser Systems

SPECIFICATIONS*	AWAVE 532-2W-20K	AWAVE 532-6W-20K	AWAVE 532-15W-20K
Wavelength[1]		532nm	
Average Power[2]	2W	6W	15W
Pulse Repetition Rate[3]		Single Shot to 50 kH	
Beam Quality (M^2)		<1.2	
Spatial Mode		TEM00	
Beam Roundness		>90%	
Pulse Width	<15ns @1kHz <30ns @10kHz	<20ns @1kHz <40ns @10kHz	<30ns @1kHz <70ns @10kHz
Pulse Energy (mJ @ 1kHz)	>0.3mJ	>1mJ	>4mJ
Pulse-to-Pulse Stability[4]		<2% RMS	
Average Power Stability[4]		<3% over 12 hours	
Polarization Ratio		>100:1 LINEAR, VERTICAL	
Communication Protocol[5]		RS-232	
Operating Voltage (VAC)		90-260	
Line Frequency (Hz)		47-63	
Cooling	AIR	AIR	WATER
Operation Temperature		15° - 30° C	
Operation Humidity		20% - 80%	
Storage Temperature		-20° - 50° C	

Note:
1. Contact AOC for additional wavelengths.
2. Contact AOC for higher power lasers.
3. Contact AOC for high frequency.
4. Defined as standard deviation/average.
5. Contact AOC for USB II & Ethernet.

**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 AWAVE Series laser systems. For full details on warranty coverage, or for further product information, please contact us.*

Nd:YV04 GR Laser Systems

SPECIFICATIONS*	AWAVE 532-5W-40K	AWAVE 532-10W-50K	AWAVE 532-15W-50K
Wavelength[1]		532nm	
Average Power[2]	5W	10W	15W
Pulse Repetition Rate[3]		Single Shot to 300 kHz	
Beam Quality (M^2)		<1.2	
Spatial Mode		TEM00	
Beam Roundness		>90%	
Pulse Width	<10ns @20kHz <30ns @100kHz	<10ns @20kHz <40ns @100kHz	<10ns @20kHz <40ns @100kHz
Pulse Energy (mJ @ 1kHz)	>150µJ	>300µJ	>300µJ
Pulse-to-Pulse Stability[4]		<2% RMS	
Average Power Stability[4]		<3% over 12 hours	
Polarization Ratio		>100:1 LINEAR, VERTICAL	
Communication Protocol[5]		RS-232	
Operating Voltage (VAC)		90-260	
Line Frequency (Hz)		47-63	
Cooling		AIR	
Operation Temperature		15° - 30° C	
Operation Humidity		20% - 80%	
Storage Temperature		-20° - 50° C	

Nd:YV04 GR Laser Systems

SPECIFICATIONS*	AWAVE 532-20W-50K	AWAVE 532-25W-50K	AWAVE 532-30W-50K
Wavelength[1]		532nm	
Average Power[2]	20W	25W	30W
Pulse Repetition Rate[3]		Single Shot to 300 kHz	
Beam Quality (M^2)		<1.2	
Spatial Mode		TEM00	
Beam Roundness		>90%	
Pulse Width	<25ns @20kHz <90ns @100kHz	<20ns @20kHz <60ns @100kHz	<20ns @20kHz <50ns @100kHz
Pulse Energy (mJ @ 1kHz)	>800µJ	>1mJ	>1mJ
Pulse-to-Pulse Stability[4]		<2% RMS	
Average Power Stability[4]		<3% over 12 hours	
Polarization Ratio		>100:1 LINEAR, VERTICAL	
Communication Protocol[5]		RS-232	
Operating Voltage (VAC)		90-260	
Line Frequency (Hz)		47-63	
Cooling		WATER	
Operation Temperature		15° - 30° C	
Operation Humidity		20% - 80%	
Storage Temperature		-20° - 50° C	

Note:
1. Contact AOC for additional wavelengths.
2. Contact AOC for higher power lasers.
3. Contact AOC for high frequency.
4. Defined as standard deviation/average.
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PRODUCT DATA SHEET
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AWAVE SERIES
GR Industrial Lasers

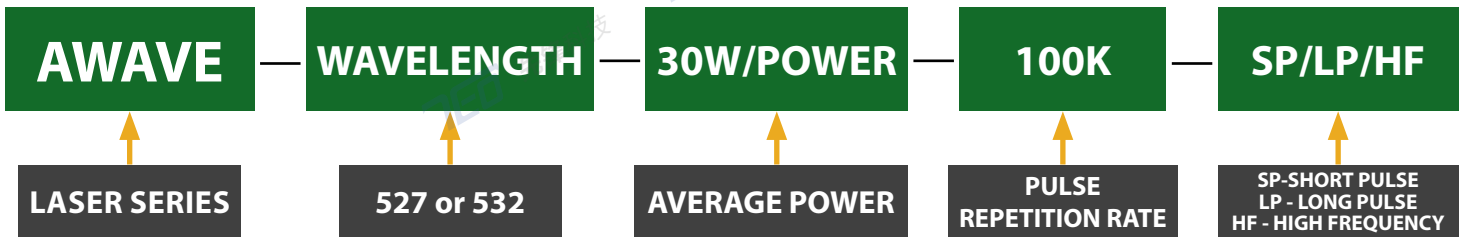
Dimensions & Weight

DIMENSIONS	COMPACT	MEDIUM	LARGE
Laser Head (in.)	8 x 5 x 3.45	9 x 8 x 3.75	13.75 x 8 x 3.75
Laser Controller (in.)	15 x 15 x 5	19 x 17 x 7	19 x 17 x 7
Umbilical (in./m.)	100 inches / 2.5 meters (all lasers)		

WEIGHT	COMPACT	MEDIUM	LARGE
Laser Head (lbs.)	4.5	6	20
Laser Controller (lbs.)	12	15	30

Order Information

Our lasers are designed and engineered with flexible laser architectures. Customers can specify laser requirements based on their needs. Please contact us for any laser requirements exceeding the specifications of standard products.



COMPLIANCE: CDRH, ROHS, CE