

Agilite

High Energy Nd:YAG

Variable Pulseshape

Agilite is a high-energy pulsed laser with selectable output pulsewidths. The system comprises an innovative laser design with programmable pulse shaping, a distributed intelligence control system and an intuitive Graphical User Interface (GUI).

The Agilite Nd:YAG laser is offered with high energy per pulse, outputs from 50 ns to 50 μ sec, and repetition rates to 20 Hz. Harmonic generators tailored to specific pulsewidths and pulseshapes are available. This unique laser architecture opens new parameter space for diverse applications such as Doppler LIDAR, High brightness Laser Doppler Velocimetry, and Ballistic Imaging.

Agilite can also be used as a seeder of our liquid-cooled Disks Amplifiers (see Premiumlite) in order to deliver tens of Joules keeping the full advantage of pulseshaping.



Applications

Industry:

- > Combustion characterization
- > Annealing

Science:

- > LIDAR
- > Imaging
- > Velocimetry

Features

- > Programmable pulsewidths on a standard platform
- > Intelligent control architecture for comprehensive system management
- > Intuitive Graphical User Interface
- > Single source to support diverse applications
- > YLF, glass phosphate versions at 1053 nm also available



Specifications

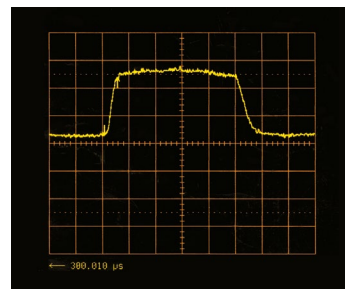
	Agilite 560	Agilite 569	Agilite 6912
Energy Per Pulse	Refer to table on the next page		
Repetition Rate	1-20 Hz available		1-10 Hz
Wavelength	1064 nm / 532 nm		
Pulse Width FWHM	50 ns - 10 μ s or 5-50 μ s		50 ns - 10 μ s
SLM Oscillator	Yes		
Temporal Profile ²	user selectable		
Beam Diameter @ 1/e ²	\leq 6 mm	\leq 9 mm	\leq 12 mm
Beam Quality	$M^2 < 1.7$		
Pointing Stability	\pm 50 μ rad		
Long Term Mean Energy Stability	$<$ 5 % over 8 hr		
Linewidth (cm ⁻¹) ³	$<$ 2x transform limit		
Beam Divergence	\leq 0.5 mrad		
Pulse To Pulse Energy Stability at 1064 nm	$<$ 2.5 % RMS		
Jitter ⁴ RMS	$<$ 2 ns RMS		

¹ Two configurations (modulator 1 and modulator 2) are available.

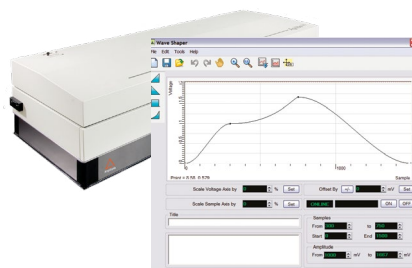
² System is configured with one factory set waveform. Additional waveforms are available.

³ Measured with detection floor of 170 MHz

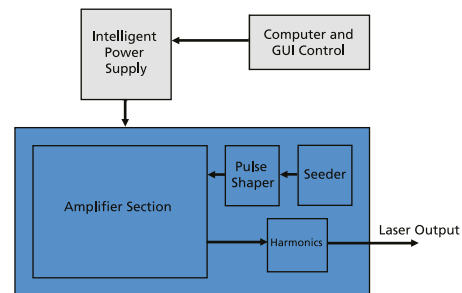
⁴ Measured at 1/2 max leading edge with respect to external modulator trigger. All specifications at 1064 nm unless otherwise noted.



Agilite 560 system output pulse shape



The Agilite 560 GUI screens



The Agilite 560 system block diagram

Dimensions of Agilite 560 & 569

Optical Head* (LxWxH)	24" x 72" x 14.5"
Power Supply* (L x W x H)	24" x 28" x 60" (560), 24" x 28" x 70" (569)

* Size may vary depending on system requirements

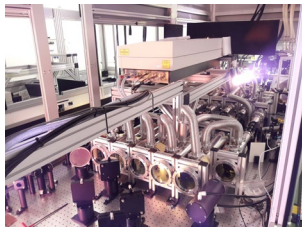
Water

Service	1-3 GPM (gallons / minute) at 10 - 40 PSI pressure drop
Temperature	$<$ 22° C / 70° F (higher flow rate for higher temperature)

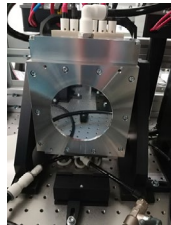
Other information

Electrical Service	200-240 VAC, single phase, 50/60 Hz
Room Temperature	18 to 30° C / 65 to 87° F
Umbilical length	3.80 m (12.5 ft)

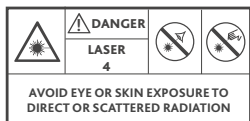
	Agilite 560				Agilite 569				Agilite 6912		Agilite HE	
Repetition Rate	10 Hz		20 Hz		10 Hz		20 Hz		10 Hz		10 Hz	
Wavelength (nm)	1064	532	1064	532	1064	532	1064	532	1064	532	1064	532
	Energy mJ		Energy mJ		Energy mJ		Energy mJ		Energy mJ		Energy mJ	
Modulator 1												
50 ns	90	30	30	8	1100	525	630	275	2600	1650	Up to 65 J	
100 ns	130	35	50	15	1200	550	810	350	2800	1750	Up to 30 J	
200 ns	180	55	80	25	1275	590	900	370	3000	1900	Agilite HE: contact us for more information	
500 ns	250	85	130	40	1360	600	1180	440	3200	1900		
1 μ s	310	100	180	60	1450	575	1170	450	3400	1850		
2 μ s	360	120	240	80	1530	625	1260	460	3600	2000		
5 μ s	440	145	310	100	1530	560	1350	440	3600	1800		
10 μ s	500	150	360	85	1600	460	1440	360	3800	1450		
Modulator 2												
5 μ s	440	145	310	100	1800	630	1500	495				
10 μ s	500	150	360	85	1900	520	1600	405				
20 μ s	550	110	420	70	2000	350	1600	270				
50 μ s	620	65	490	40	2000	180	1700	140				



Agilite HE: Agilite 569 as front-end on the top and up to 6 PAMDAM on the table



Pseudo Active Mirror Disk Amplifier Module (PAM-DAM) in Agilite HE



Agilite

Agilite is a high-energy pulsed laser with selectable output pulsewidths.

