ARIES™ SERIES HIGH-POWER LASERS

DAYLIGHT SOLUTIONS®

Introducing the Aries™ series of mid-IR fixed-wavelength lasers.

Following the successful introduction of the Aries™-100 laser, Daylight Solutions™ is proud to announce the extension of the product line to even higher powers and more wavelength flexibility. The modular "socket" approach of the Aries™ series means that user-selected modules can be installed at the factory to provide the necessary performance. Up to seven sockets can be populated and combined to provide high power or multiple wavelengths from a single system.

The engineering team from Daylight Solutions has its roots in external cavity and quantum cascade laser development. Our expertise has grown from scientific products to commercial telecom grade devices to the mid-infrared to high-power, multi-wavelength products to military hardened sub-systems to you. The Aries™ high-powered fixed-wavelength lasers are ready for your demanding application.

The modular design approach allows for easy customization of the system to meet your needs. Whether your target is high power at a single wavelength or multiple collinear wavelengths, the Aries™ series will provide robust, flexible performance. The key to high-power solid state laser performance is thermal management. Finite Element Analysis and strenuous environmental testing have guided our design and have resulted in systems that are incredibly stable and amazingly rugged. Each system will operate in pulsed or true continuous wave (cw) operation modes with only air cooling over their entire specified operating range. No chiller or cryogenic cooling is required.

Wavelengths ranging from 2 to 13 µm can be incorporated into the Aries™ platform. Both single-wavelength and multiple-wavelength performance is available. Proprietary beam combination techniques allow for collinear beam propagation with most wavelength combinations.

Daylight Solutions has developed a line of high-power, multi-wavelength laser systems that offer from 2 to 10 W or the combination of multiple fixed wavelengths in a single package. The Aries™ series of lasers will exceed your expectations for your demanding application.

PERFORMANCE SPECIFICATIONS

Aries™ Model	100	200	400	700
Number of Sockets	1	2	4	7
Individual Control of Sockets	N/A	Yes		
Wavelengths Available (µm)	4-5	2-13		
Operation Mode	Pulsed or cw			
Max Power (W) [1]	2	3	6	10
Pulsed Repetition Rate (kHz)	0.05-100	cw to 5		
Max Duty Cycle (%)[2]	50	25		
Functional Control	Front panel, GPIB, RS-232, or USB 2.0	RS-422 or TTL[3]		
Fiber-Coupling Available	No	Yes		
Input Power	100-220 VAC, 1 ϕ	28 VDC		
Operating Range[4] (°C)	10-35			
Cooling[5]	Air			

1. At 4.6 µm, contact factory for powers at other wavelengths.
2. Excluding cw operation.
3. Through optional control interface.
4. Contact factory for ruggedized -40 to +70 °C operation.
5. Aries™ -100 offers optional water cooling that will allow operation to 45 °C.

Aries™-100

Aries™-200

Aries™-400

Aries™-700

Aries™ Series Features

- Fixed wavelength
- High power
- Multiple wavelengths
- Collinear output
- Air-cooled
- High-duty cycle

Aries™ Series Applications

- Stand-off explosive and chemical agent detection
- Multispectral imaging
- Free-space communications
- Infrared countermeasures
- Scene generation
- Micromachining
- Medical diagnostics
- Optical Fiber Testing

Daylight Solutions®
The Source for all Applications in the Mid-IR

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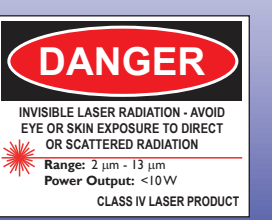
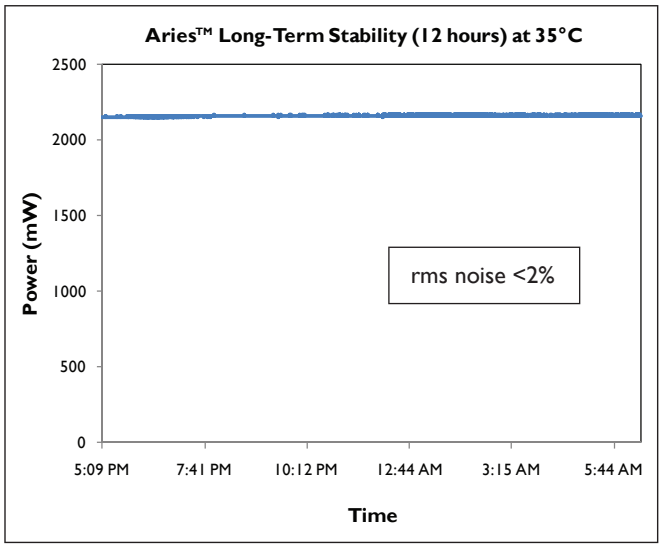


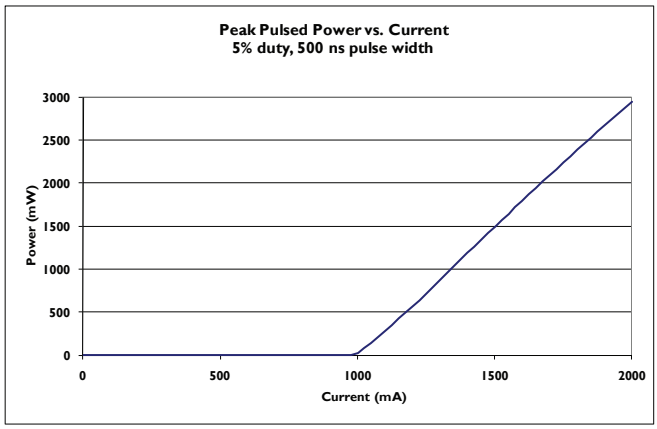
Reference Performance

ARIES™ HIGH-POWER LASERS

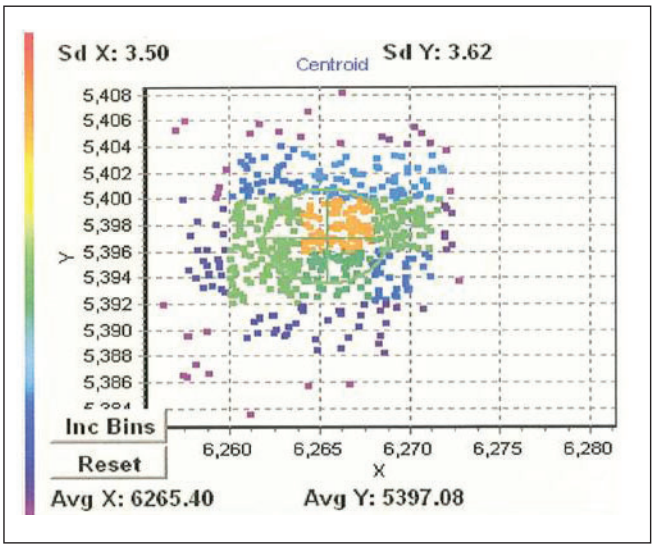


Long-term stability of the Aries™. Air-cooled for over 12 hours at 35 °C of true cw operation with no "cool-down" periods.

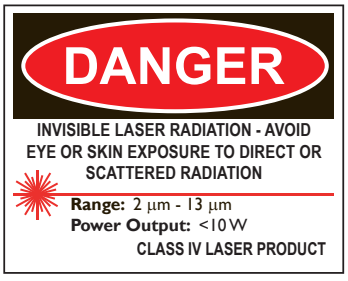
Aries™-100 Laser Heads



P-I curve for Aries™ laser.



Pointing stability of Aries™ laser. Maximum value is less than 25 µrad full-angle.



DANGER: CLASS IV LASER.
AVOID EYE OR SKIN EXPOSURE
TO DIRECT OR SCATTERED RADIATION

DAYLIGHT SOLUTIONS®