

Mira-900

Ultrafast Femtosecond/Picosecond/CW Ti:Sapphire Oscillators

More Mira-900 oscillators are in use today than any other Kerr lens modelocked Ti:Sapphire laser system. The Mira-900 combines simplicity and reliability in an innovative design to produce the most powerful and versatile ultrafast laser system available.

The innovative design of the Mira-900 system makes switching between continuous-wave, picosecond and femtosecond operation simple, while passive Kerr lens modelocking provides greater ease-of-use and reliability.

Our built-in Optima control and diagnostics system enables easy adjustment of the output wavelength, pulse width and power. Optima features a fast photodiode, relative power monitor, β -lock, CW detector, humidity sensor and an automatic starter.



FEATURES & BENEFITS

- Simple, stable Kerr lens modelocking for ease-of-use and reliability
- Femtosecond, picosecond and continuous-wave operation
- X-Wave single optics set allows wavelength tuning from 700 nm to 1000 nm
- Verdi 532 nm pump sources between 5 W and 12 W deliver diode-pumped stability and reliability
- Optima system provides advanced system monitoring and control
- Purgeable enclosure enables continuous wavelength tuning through atmospheric absorption bands

OPTIONS & ACCESSORIES

- Short pulse option: <70 fs
- Long pulse option: >5 ps
- 2nd, 3rd and 4th harmonic generation
- Mira OPO-X synchronously-pumped OPO
- Pulse Picker
- Synchrolock-AP
- SPO-I, SPO-II and CPC-II pulse compressors

SPECIFICATIONS ¹	Mira Optima 900-F	Mira Optima 900-P	Mira Optima 900-D
Output Power ^{2,3} (W)			Dual platform contains all hardware necessary for both femtosecond (-F) and picosecond (-P) operation.
Verdi-G5		0.75	
Verdi-G8		1.0	
Verdi-G10		1.4	
Verdi-G12		1.8	
Tuning Range ⁴ (nm)		700 to 1000	
Pulse Width ^{2,5}	<115 fs	<2 ps	<115 fs and <2 ps
Repetition-Rate (MHz) (nominal)		76	
Noise ⁶ (%)		<0.1	
Stability ⁷ (%)		<3	
Beam Diameter ⁸ (mm)		0.8	
Beam Divergence ⁹ (mrad)		1.7	
Spatial Mode ¹⁰		TEM ₀₀	
Polarization		Horizontal	
Physical Dimensions		111.1 x 38.1 x 19.7 cm (43.75 x 15 x 7.75 in.)	
MEASUREMENT TOOLS			
Meter	FieldMaxII™-TO power meter (part number 1070873)		
Sensor	PM10 power detector (part number 0012-0920)		

1 Specifications apply only with Coherent pump lasers.

2 At 800 nm.

3 For other pump power call factory.

4 Wider coverage possible with short wave or extended long wave optics sets.

5 Based on sech² deconvolution of 0.65 times autocorrelation width. Pulse width is <130 fs across specified tuning range in fs mode.

6 Measured rms in a 10 Hz to 20 MHz bandwidth.

7 Power drift in any two-hour period after warm-up when crystal's cooling water is maintained at ±0.1°C.

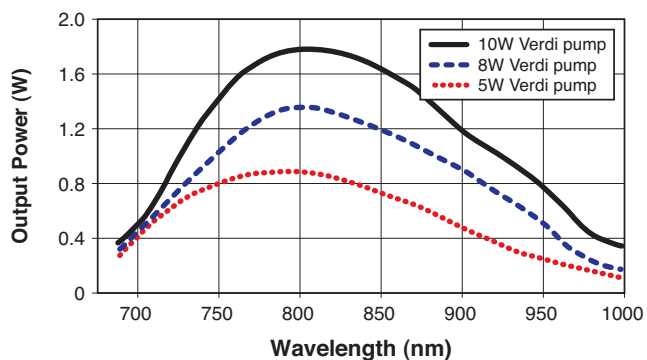
8 1/e² diameter (±0.2 mm) at exit port.

9 Full angle divergence (±0.3 mrad) at exit port.

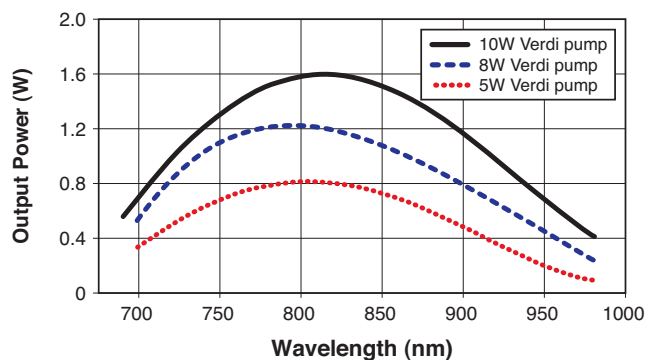
10 Typical measured M² value is 1.1.

TYPICAL PERFORMANCE DATA

Typical X-Wave Power Curves
for Verdi-pumped Mira Optima 900-F

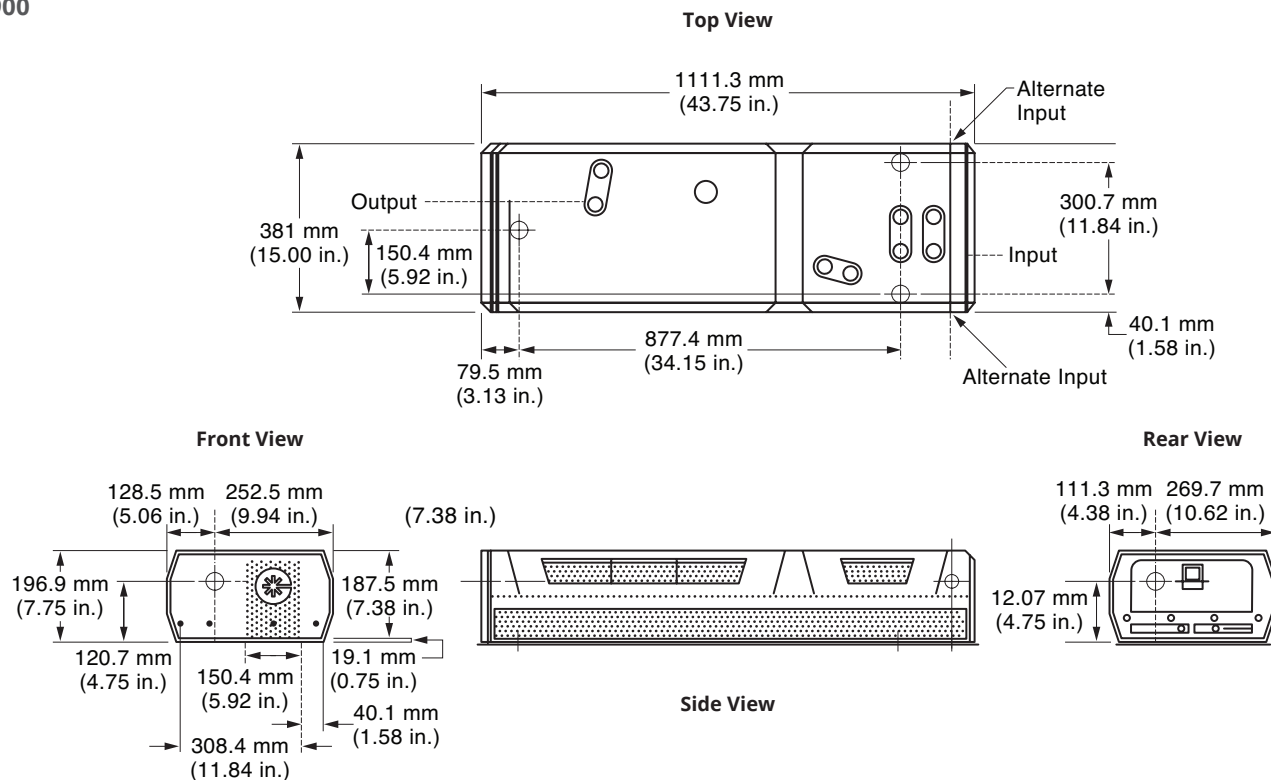


Typical X-Wave Power Curves
for Verdi-pumped Mira Optima 900-P



MECHANICAL SPECIFICATIONS

Mira-900



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice. Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all Mira-900 Lasers. For full details of this warranty coverage, please refer to the Service section at www.Coherent.com or contact your local Sales or Service Representative. MC-135-02-0M0218Rev.C Copyright ©2018 Coherent, Inc.

