Changing the Face of UltraFast:  
Ondax PicoPulse™ VHGs for Pulse Stretching and Compression

Traditional techniques for pulse stretching and compression typically use very long lengths of fiber gratings or dispersive gratings that are expensive, bulky and very sensitive to vibration. Ondax introduced its PicoPulse™ product line to replace such devices with an extremely compact and robust volume holographic glass chirped grating with outstanding pointing stability.

Up to now, pulse stretching/compressing devices based on chirped volume grating technology suffered from poor beam quality which prevented proper optical amplification and the generation of sub picosecond pulse duration after compression. “Ondax's breakthrough technology produces chirped volume grating devices with near perfect beam quality over a wide range of temperature (10-60°C).“ says Dr. Frank Havermeyer, Product Line Manager for OEM volume holographic gratings. PicoPulse™ VHGs are used in matching pairs, one for stretching and the other one for compression in order to achieve the smallest pulse duration.

The PicoPulse's™ spectral bandwidth, center wavelength and time delay are custom designed to fit the application. Center wavelengths range from 400nm to 3microns. All PicoPulse™ products provide near diffraction limited beam quality.

“Feedback from our customers has been overwhelming” stated Linda West, VP of Sales and Marketing. These gratings are very compact and robust – doing the job in 1/10th the size of dispersive stretchers and compressors – they are made using a glass material resistant to peak power of 3.85 J/cm² (175 MW/cm²) at 1064nm with 20ns pulse duration. Ondax patents and applications protect this critical enabling technology.

Beam profile after stretching to 0.3 ns over 13-60°C temperature range.

Beam profile after stretching, amplification and recompression.

For additional information contact:

**Linda West**
VP of Sales and Marketing
Ondax Inc.
lwest@ondax.com
Tel. (626) 803-5724
Fax (626) 357-9321
www.ondax.com