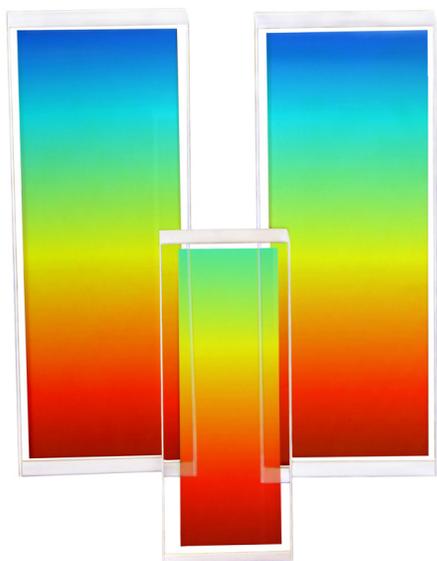


# VPH Gratings for Pulse Compression

Create shorter, more powerful laser pulses



## FEATURES AND BENEFITS

Exceptional 1<sup>st</sup> order diffraction efficiency

High transmission over the full spectral band

Low wavefront distortion, minimal scatter

Uniform diffraction efficiency over the full clear aperture for minimal beam distortion

Ideal for high pulse energy applications

Robust design allows easy cleaning

Maximum optical design flexibility

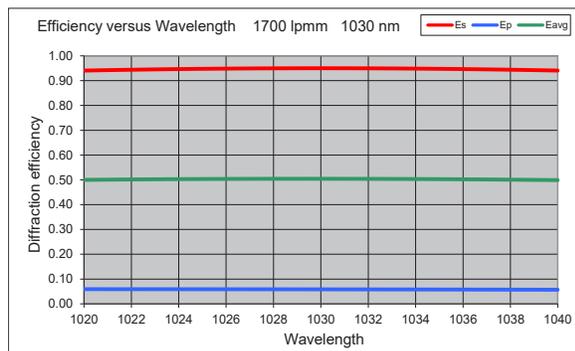
**Our efficiency & uniformity can take you to higher power.** Wasatch Photonics' enhanced volume phase holographic (VPH) gratings are exceptional for pulse compression and pulse stretching of high power ultrafast lasers. Our ultraclear transmissive gratings have the highest efficiency on the market, with virtually no ghosting or scatter. Unlike surface relief gratings, our gratings can be easily cleaned and handled. Choose from our range of stock gratings, or contact us to discuss custom OEM designs and materials. We are your partner, from small quantity prototyping through to volume production.

Wasatch Photonics can customize a transmissive VPH grating to your exact size, wavelength, and dispersion needs. Contact us to get started!

## More efficiency & uniformity; less wavefront distortion.

Our volume phase holographic gratings are unmatched in performance, and offer greater durability than conventional surface relief gratings. Our proprietary process encapsulates the grating structure in a robust package, facilitating handling and easy cleaning. Many designers use transmissive pulse compression cavity designs for their flexible, compact, often folded layouts. Our uniform efficiency, minimal scatter, and low wavefront distortion ensure they get the shortest, cleanest pulses.

|                              | WP-800/1030-xx  | WP-1250/1030-xx     | WP-1700/1030-xx     |
|------------------------------|---|---------------------|---------------------|
| <b>Nominal Wavelength</b>    | 980 - 1080 nm   | 1020 - 1040 nm      | 1020 - 1040 nm      |
| <b>Peak Efficiency @ CWL</b> | ≥ 96%, s-pol  | ≥ 94%, s-pol        | ≥ 94%, s-pol        |
| <b>Spatial Frequency</b>     | 800 ± 0.5 lines/mm  | 1250 ± 0.5 lines/mm | 1700 ± 0.5 lines/mm |
| <b>Angle of Incidence</b>    | 24.3° @ 1030 nm   | 40.1° @ 1030 nm     | 61.1° @ 1030 nm     |
| <b>Sizes Available (-xx)</b> | 25 x 35 x 4 mm<br>30 x 45 x 6 mm  | 28 x 92 x 6 mm      | 30 x 90 x 6 mm      |
| <b>Wavefront Distortion</b>  | Standard: < $\lambda/5$ rms   Enhanced: < $\lambda/10$ rms (@ 632.8 nm) |                     |                     |
| <b>Surface Quality</b>       | 60-40 scratch-dig   |                     |                     |
| <b>AR Coating</b>            | Standard: R < 1.0%   Enhanced: R < 0.5% (over bandwidth)                |                     |                     |



We measure every transmissive VPH grating to ensure exceptional 1<sup>st</sup> order diffraction efficiency. Many other vendors report only theoretical graphs of total diffraction efficiency. This includes diffraction into other orders, and is not truly representative of actual performance.

### OEM SOLUTIONS

At Wasatch Photonics, we understand the processes & metrology needed to manufacture high quality pulse compression gratings in volume, at wavelengths up to 2500 nm. We work collaboratively with our OEM partners on each design and test procedure, establishing customer-specific test fixtures at our site to reduce the burden of inbound testing at your site for guaranteed system-ready performance. Take the Wasatch VPH challenge and reduce your pulse length by up to 15%!

With over 150 years of combined experience, our skilled staff is ready to meet the needs of your most demanding projects.