

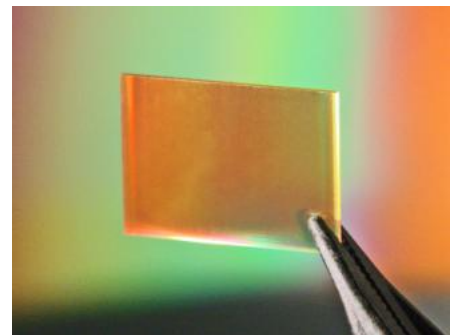
LightSmyth Technologies' transmission gratings are fabricated on fused silica substrates and robust dielectric films by state-of-the-art projection photolithography and reactive ion etch. These high fidelity semiconductor fabrication methods enable precise realization of sophisticated proprietary grating designs that provide diffraction efficiency close to 100% and line spacing control to 1 part per million.

No other grating technology is capable of achieving this degree of performance combined with the cost effectiveness and reproducibility afforded by semiconductor volume fabrication technology.

Due to the intrinsic design, the gratings have very broad wavelength range of high performance that may be further enhanced by tuning the angle of incidence.

### Features:

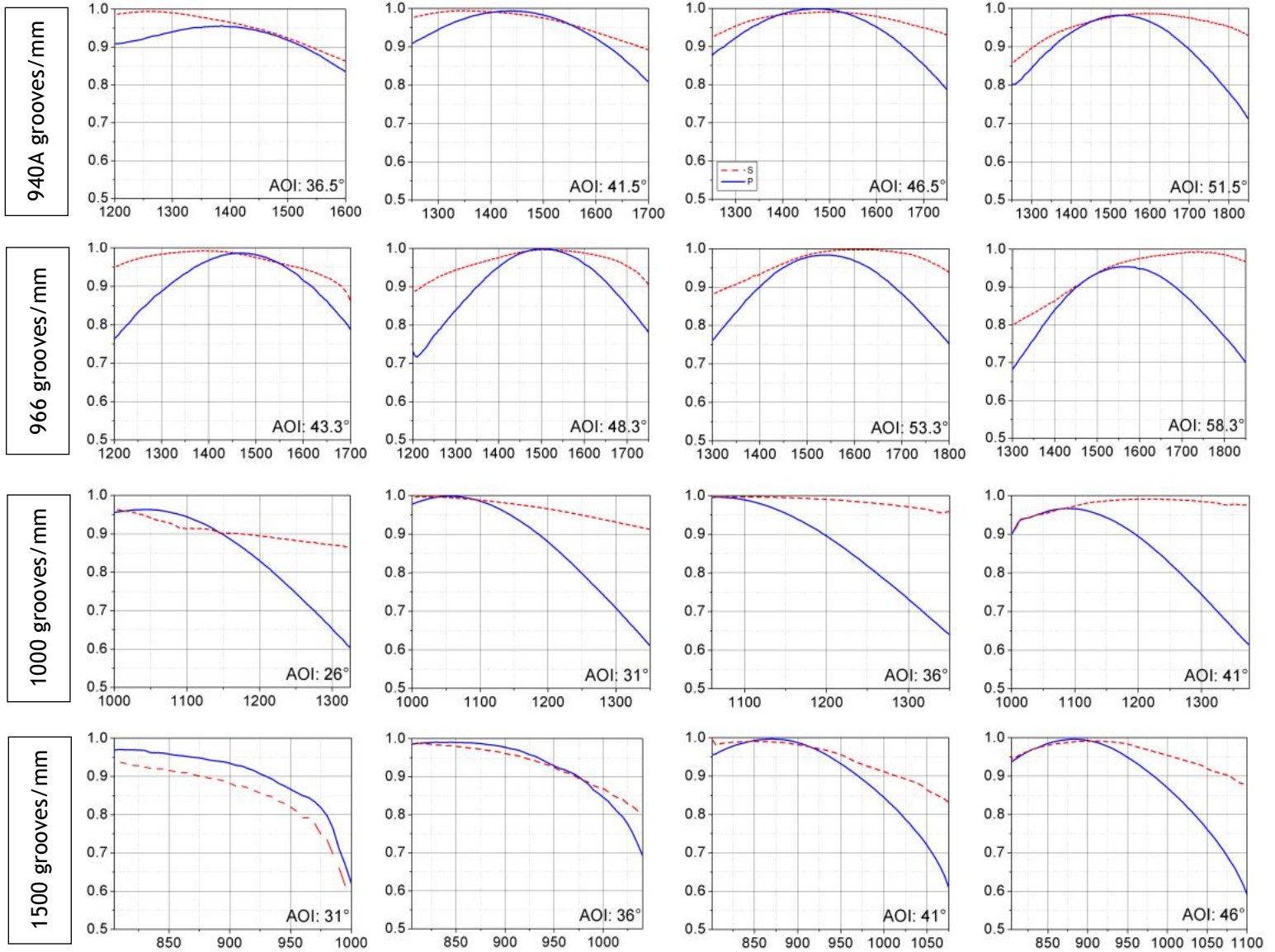
- High Diffraction Efficiency in Broad Range of Wavelengths
- Low Polarization Sensitivity.
- Excellent Feature Fidelity and Groove Uniformity.
- Only fused Silica and robust dielectrics are used, no polymers.
- Extreme environmental stability. Tellcordia qualified.
- Each grating is a master: low light scatter, no ghosting.
- Large area: Clear aperture up to 140 mm diameter.
- Very competitive pricing.
- Strict quality control. LightSmyth is ISO 9001:2008 certified.



Grooves/mm	General use	Telecom	Pulse Compression	Comments
940 A	1200-1900 nm	1526-1566 nm	1526-1566 nm	Any polarization
940 B	1200-1900 nm	1570-1610 nm	1570-1610 nm	Any polarization
940 C	1200-1900 nm	1526-1610 nm		Any polarization
966	1200-1850 nm	1526-1566 nm	1526-1566 nm	Any polarization
1000	1000-1350 nm		1030-1050 nm	Any polarization
1200 A	TBD	1526-1566 nm		Any polarization. Preliminary.
1200 B	TBD		830-870 nm	Any polarization
1500	800-1100 nm		855-895 nm	Any polarization
1600 A	TBD		966-986 nm	S polarization
1600 B	TBD		1050-1070	S polarization
1850 A	TBD		960 -980 nm	S polarization

# High Efficiency Transmission Diffraction Gratings Performance

Diffraction Efficiency (vertical axis) vs. Wavelength (nm)



NOTE: Diffraction efficiency plots are derived from measurements of 0<sup>th</sup> transmission order when only single diffraction order is present. The plots do not account for small losses to specular reflection and back-diffraction and do not constitute a specification.

## Typical Optical Layout

The transmission grating is designed to operate near Littrow configuration, where the angle of incidence and diffraction are the same for the central operational wavelength. Light is dispersed in the plane perpendicular to the grooves. Angle of incidence may be adjusted to shift the optimum passband.

