

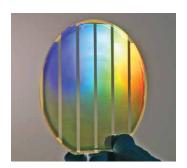
High Efficiency Telecom Transmission Gratings T-966C Series

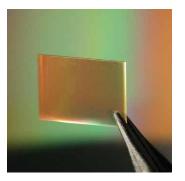
Features:

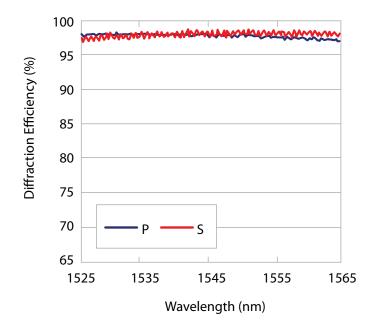
- Ultra-High Diffraction Efficiency.
- Very Low Polarization Sensitivity.
- Excellent Feature Fidelity and Groove Uniformity.
- Only fused Silica and robust dielectrics are used, no polymers.
- Extreme environmental stability. Telcordia qualified.
- Each grating is a master: low light scatter, no ghosting.
- Very competitive pricing.
- Strict quality control. LightSmyth is ISO 9001:2008 certified.

Applications:

- Optical telecommunications (ROADM, WSS, WDM MUX/DEMUX)
- Pulse compression
- · Spectral beam combining
- Remote optical sensors and spectroscopy







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.

Left: Typical absolute diffraction efficiency of 966 grooves/mm Telecom Transmission Grating for Cband.

High Efficiency Telecom Transmission Gratings T-966C Series

Optical					
Description	Value		Units		
	T-966C-[size]-94	T-966C-[size]-92	Units		
Line Density	96	Lines/mm			
Line Density Uniformity	± 0.001		Lines/mm		
Angle of Incidence (AOI) ¹	48.3 <u>±</u> 1		0		
Wavelength Range	1526 to 1566		nm		
Optimal polarization ²	Ar				
Diffraction Efficiency 3,4	≥ 94	≥ 92	%		
Polarization Dependent Loss 3, 4	≤ 0.20	≤ 0.25	dB		
Spectral Non-Uniformity 3, 4	≤ 0.25		dB		
Spatial PDL Non-Uniformity 3,4	≤ 0.1		dB		
Insertion Loss Ripple 4,5	≤ 0.1	≤ 0.15	dB		

Notes: ¹ Optical grating performance will remain substantially similar over a 5° variation in angle of incidence.

⁵ Determined by Fast Fourier Transform method.

Mechanical			
Dimension tolerances	±0.2 for grating size and width		
Substrate Thickness	0.675 ± 0.050 mm		
Material	Fused silica, dielectric layers		
Scratch/Dig ⁶	60/40 standard, 40/20 and 20/10 custom		

Note: ⁶ As per MIL-PRF-1380B in the clear aperture; no requirements outside of the clear aperture.

Substrate dimension options					
Part Number	Substrate width, mm ⁷	Substrate height, mm ⁷	Clear aperture width, mm 8	Clear aperture height, mm 8	
T-966C-1610-94	16.0	10.0	15.0	9.0	
T-966C-2710-94	27.0	10.0	26.0	9.0	
T-966C-2710-92	27.0	10.0	26.0	9.0	
Custom dimensions	Any rectangle fitting within 135 mm diameter circle (e.g. 130x20 mm)				

Notes: $\,^{7}$ Width is perpendicular to grating grooves, height is along the grating grooves.

 $^{^{2}}$ p-polarization: electric field vector is perpendicular to the grating lines; s-polarization is orthogonal to p.

³ Determined from parabolic fit of efficiency as a function of wavelength for s- and p- polarization,

⁴ Worst case in the operational wavelength range.

⁸ Clear aperture is centered on the substrate.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Finisar:

<u>T-966C-27x10-94 T-966C-29x13-92OS T-966C-27x10-90OS T-966C-16x10-94 T-966C-16x10-92OS T-966C-4015-94 T-966C-27x10-92-noAR-OS T-966C-24x16.4-92 T-966C-27x10-92</u>