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# Coherent® LightSmyth™ 800nm, 1398.6 Grooves/mm, 12.7 x 12.7mm Transmission Diffraction Grating

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LightSmyth™ Transmission Diffraction Gratings

Stock #16-859 **1 In Stock**

⊖ 1 ⊕ ₹34,034

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**General**

1304165 **Model Number:**

Transmission Diffraction Grating **Type:**

S-Polarization defined with E-field parallel to the grating grooves **Note:**

## Physical & Mechanical Properties

Groove Density Uniformity (grooves/mm):  
0.001

Dimensions (mm):  
12.70 x 12.70

Clear Aperture CA (mm):  
11.70 x 11.70

Construction:  
Multi-Layer Dielectric Binary Etch Grating

Length (mm):  
12.70

Thickness (mm):  
0.95 ±0.050

Width (mm):  
12.70

Alignment of Grooves to Edge (°):  
0.1 (typical)

## Optical Properties

Groove Density (grooves/mm):  
1398.6

Design Wavelength DWL (nm):  
800 ±20

Minimum Efficiency (%):  
≥94 @ 800nm

Angle of Incidence (°):  
34 ±1

Coating:  
Dielectric

Substrate:   
[Fused Silica](#) (Coming 7980)

Surface Quality:  
60-40

Polarization:  
S and P

## Regulatory Compliance

Certificate of Conformance:  
[View](#)

Country of Origin:  
United States

Imported By:  
Edmund Optics India Private Limited

## Product Details

- High Diffraction Efficiency (>94% Absolute) and Low Scatter
- Polarization Independent and Single Polarization Optimized Gratings
- Robust Inorganic Materials for Superior Power Handling and Reliability
- Designs for NIR Wavelengths between 800 - 1800nm

Coherent® LightSmyth™ Transmission Diffraction Gratings are manufactured through a precision lithographic wafer-scale fabrication process and provide excellent optical performance, low polarization sensitivity, and low scatter. These gratings have a high diffraction efficiency of ≥94%, minimizing optical losses when used in multi-pass configurations. Gratings designed for near infrared (NIR) wavelengths between 800 - 1800nm are available with all featuring a precision line density uniformity of 0.001 lines/mm. Coherent® LightSmyth™ Transmission Diffraction Gratings are used in demanding applications including Spectral Beam Combining (SBC), LiDAR, optical telecommunications, pulse compression of pico- and femtosecond pulses, and spectroscopy. These gratings contain no organic materials and can be used with high power lasers and in environments up to 500 °C with no effects on performance. Please contact us for custom sizes or OEM requirements.

**Note:** II-VI Incorporated is now Coherent Corp.

## Special Handling

These optics require special handling to avoid damage and ensure long-term performance. Proper handling, cleaning, and storage are essential to maintain optical quality. Explore our [Optics Cleaning Resources](#) for step-by-step guides and best practices. For personalized assistance, [Email us](#) or [Chat](#) with our technical support team.



Component Handling Tools

## Custom

Edmund Optics offers comprehensive custom manufacturing services for optical and imaging components tailored to your specific application requirements. Whether in the prototyping phase or preparing for full-scale production, we

provide flexible solutions to meet your needs. Our experienced engineers are here to assist—from concept to completion.

Our capabilities include:

- Custom dimensions, materials, coatings, and more
- High-precision surface quality and flatness
- Tight tolerances and complex geometries
- Scalable production—from prototype to volume

Learn more about our [custom manufacturing capabilities](#) or submit an inquiry [here](#).

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