



HIGH TRANSMISSION SILICON FOR IR APPLICATIONS

**- material solutions for high quality components
and instrumentation**

Topsil is the world leading supplier of high purity, high transmission silicon (Optical grade and HiTran) for a number of infrared (IR) applications. Focus on R&D at Topsil have resulted in products with the highest purity and thus the best transmission properties at IR wavelengths above 1 μm . This combined with 40+ years experience in the production of float zone material and state-of-the-art manufacturing processes make Topsil Optical grade and HiTran silicon the best choice for IR components and instrumentation.

High transmissivity components are key components in all IR instruments. High transmission is essential to keep signal-to-noise ratios at acceptable levels and is essential building blocks of different wavelength selective devices.

Typical IR applications that have benefitted from using high transmission silicon are

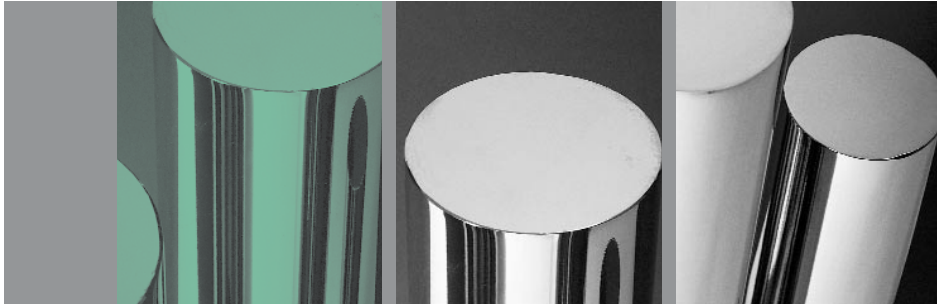
Thermal Imaging Systems

Silicon Prisms, Gratings, Grisms, Lenses and Blanks

Passive Infrared Detector Filters

Transmission windows for debris protection

Micromachined IR devices



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Topsil offer Float Zone Optical grade and HiTrans material with the listed parameters. Other parameters than those in the table are possible on request.

Growth Method	Monocrystalline Float Zone, Optical grade and HiTrans Polycrystalline also available
Crystalline Form	(100), (111), $\pm 0.5^\circ$
Transmission	> 50% (30-10000 μm) 20-50% (6.7-10 μm) > 50% (1-6.7 μm)
Diameter	1-200 mm
Shapes	Ingot, Spheres, Flats, Wedges, Bullets, Blanks
Surface Finishes	As-cut to polished (electronic grade)
Oxygen and Carbon Concentration	$< 10^{16} \text{ cm}^{-3}$

Topsil is focused on developing processes for future float zone products by use of state-of-the-art machining facilities. Topsil has developed a proprietary knowledge in machining silicon blanks and machining silicon into different shapes in close cooperation with costumers requiring high quality silicon material.