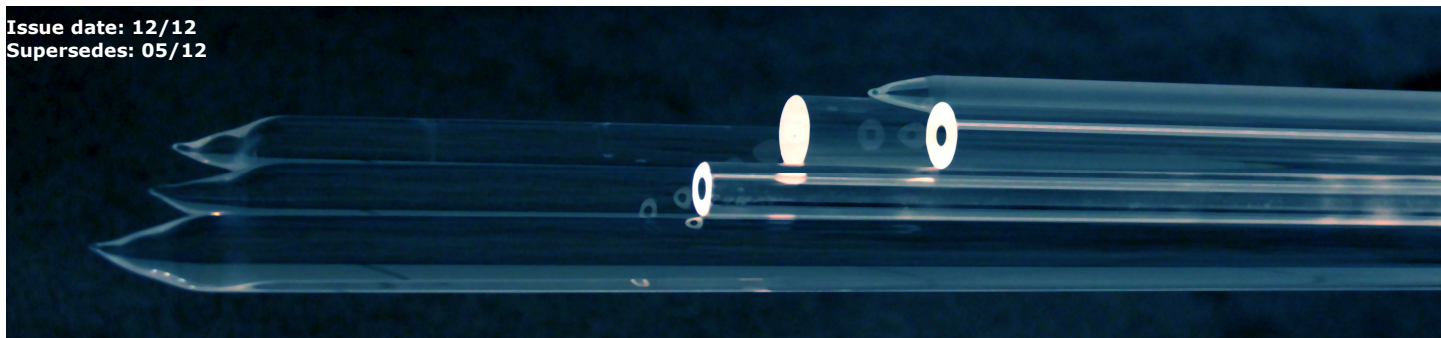


## Ge doped step-index rods

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This specialty rod is produced with the Plasma-activated Chemical Vapor Deposition (PCVD) manufacturing process. The use of this process allows for very precise index profiles and pure material compositions. The applied machinery and processes are used also for manufacturing the core rods for the various large volume fibre products supplied to the market. Because of this, material purity in the doped core area of the rods is "telecom grade".

Ge doped step-index rods are usually "three-layer" solid rods supplied in various lengths and diameters. The outer layer consists of synthetic quartz as used for the substrate tube in the PCVD process. The first inner layer is un-doped PCVD quartz and the core consists of Ge-doped PCVD quartz with a constant refractive index the value of which can be chosen by the customer. On request, the outer layer can be removed by grinding. Subsequent light etching and flame polishing results in a smooth surface finish. If an increased Ge dope level is required with respect to the rod NA, the core can be co-doped with fluorine or boron.

Rod specifications usually are listed in a more detailed quote as part of the ordering process. For each supplied rod the refractive index profile as measured in the mid-section of the rod will be supplied as customer information. Rod data is stored in the factory data base allowing full traceability of all raw materials for later use.

Characteristics	Specified Values <sup>2)</sup>	Remarks
Outer diameter <sup>1</sup>	18– 25 mm	<i>Smaller values on special request</i>
Un-doped cladding diameter <sup>1</sup>	10 – 20 mm	
Core diameter <sup>1</sup>	2 – 18 mm	<i>Defined as FWHM of step index</i>
Refractive index difference ( $\delta n$ )	$0,001 \leq \delta n \leq 0.03$	<i>Related with core diameter for high <math>\delta n</math> values</i>
Length	up to 600 mm	

**1) Note that the choice of these diameter values is interrelated**

**2) Other values on request**