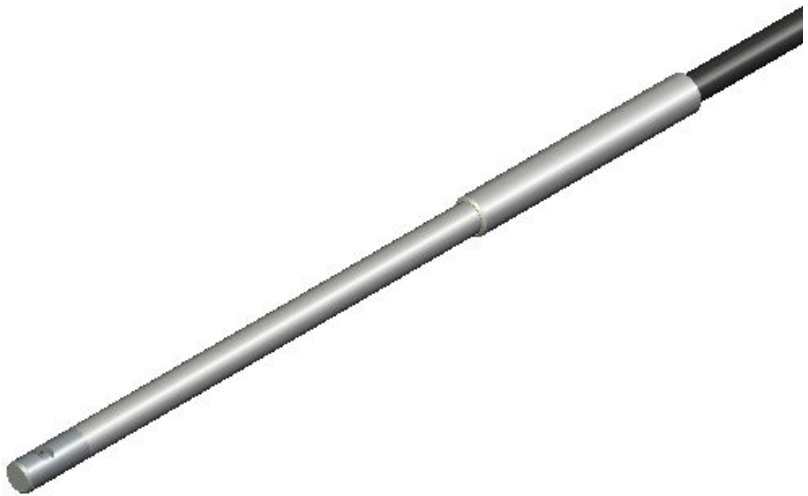


High Temperature  
26700 Series Fiber Probes

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*Instruction Manual*





High Temperature  
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*Instruction Manual*

# *High Temperature 26700 Series Fiber Probes*

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## 1. Introduction

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Thank you for purchasing a Specac High Temperature 26700 Series Fiber Probe.

This instruction manual is a general guide designed to familiarise the user with the installation/connection and operation of the 26700 Series fiber probe. The 26700 Series fiber probe can be provided in a number of configurations of fiber types and pathlength options, therefore in addition to this instruction manual, an appropriate document will be provided for your particular 26700 Series fiber probe.

The 26700 Series fiber probe has been designed as a transmission type of probe to sample a wide range of liquids by means of NIR, UV or Visible light. The fiber probe head is immersed into a liquid and the analysis light is brought to and from the probe head via optical fiber connections. The fiber head can be used in liquids at temperatures up to 250°C and pressurised environments up to 1500psi.

For remote operation, depending on the types of fibers and spectral range of analysis, the fiber connections from the probe to a spectrometer may be as distant as a kilometer away from the actual sampling point. However, the fiber probe design lends itself most readily for connectivity to a portable spectrometer system and so a complete sampling system can be introduced close to the actual point of liquid analysis.

## 2. Specifications

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The High Temperature 26700 Series Fiber Probe can be offered in a variety of configurations from a standard specification.

The specifications for a standard 26700 probe include the following:

- Optical range: NIR or UV-Visible
- Window material: Sapphire
- Probe body material: Stainless steel 316
- Probe body length: 50mm
- Probe body diameter: ¼".
- Probe pathlength: 1mm.
- Maximum temperature: 250°C
- Maximum pressure: 1500psi
- Sealing: Brazed to window
- Fiber connections: SMA
- Fiber length: 3.0 meters
- Fiber diameter: 200 microns multimode input and output

Further options that may be configured for your particular version of 26700 Series Fiber Probe are as follows:

- Alternative probe body material in Hastalloy
- Alternative probe body length of 100, 200, 300 and 500mms
- Alternative probe pathlength of 1, 2, 3, 4, or 5mms
- Alternative fiber diameters of 200 microns multimode output with 6 microns single input, or 600 microns multimode output with 6 microns single input.
- Alternative fiber connections of FC/APC type.

### *3. Unpacking and Checklist*

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The High Temperature 26700 Series Fiber Probes are supplied in a protective transport case.

On receipt of the item/s check that the following have been supplied.

- High Temperature 26700 Series Fiber Probe to your particular configured specification.
- Instruction manual.
- Certification documents. (Declaration of Conformity and Certificate of Conformity).

Remove the items from their packaging being especially careful of the fiber optic cables to ensure that they are not bent excessively.

## 4. Use Of 26700 Series Fiber Probe

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### Connection to Spectrometer

When the 26700 Series fiber probe has been removed from its packaging it is ready to be connected to an appropriate spectrometer system. (See general diagram for a 26700 fiber probe as Figure 1. On page 7).

The particular 26700 fiber probe supplied will have its own configured set of input and output fiber cables and these will be finished with an SMA or FC/APC type of connection.

**Note:** *The fibers **should not** be subjected to sharp bending.  
200 micron fibers have a 50mm minimum bend radius.  
600 micron fibers have a 70mm minimum bend radius.*

Remove the protective plastic caps from the fiber connection ends and then connect the fibers to the relevant input and output ports of the spectrometer system.

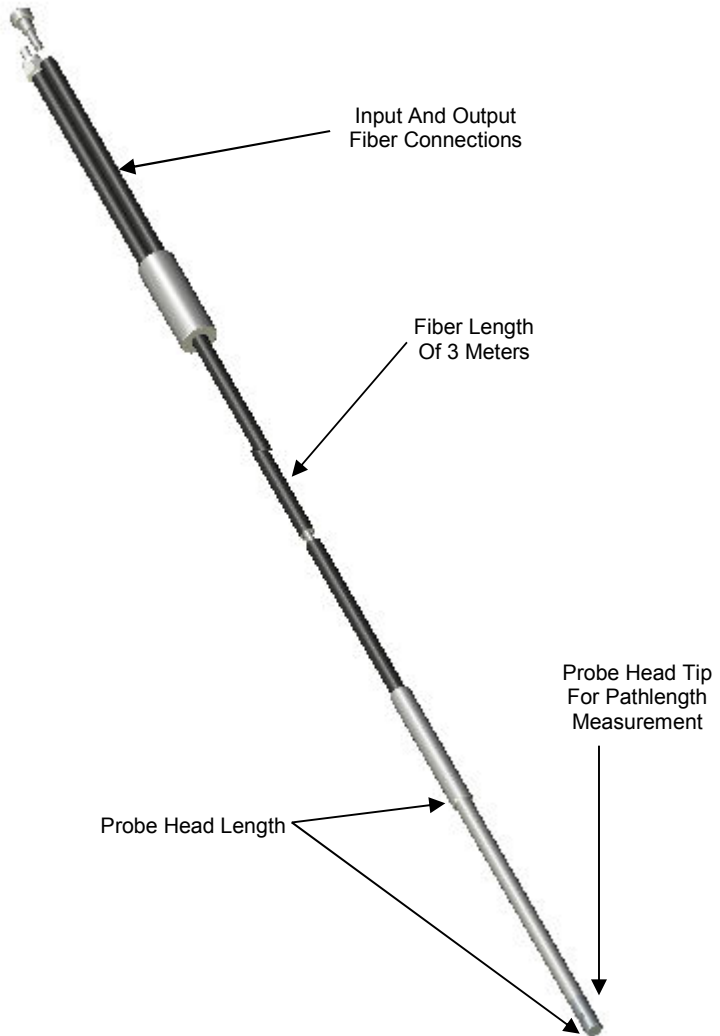
### Probe Head

When using DO NOT SHOCK THE PROBE. Please avoid dipping into a liquid that is appreciably hotter or colder (greater than 30°C difference) than the ambient probe head temperature. Also avoid knocking or dropping the probe head. Before use and immersion of the probe head into a liquid, remove the plastic protective cap by pulling free from the probe head. This exposes the transmission pathlength area of the probe head where the liquid is sampled between the sapphire windows. Depending on the configuration of your probe the pathlength will be either 1mm, 2mms or 5mms.

The probe head can now be dipped into a liquid for sampling. If required the probe head can be held by a laboratory clamp and stand to allow for prolonged immersion into a liquid within a container.



## High Temperature 26700 Series Fiber Probes



**Figure 1.** Diagram Of 26700 Fibre Probe

## *5. Maintenance of 26700 Series Fiber Probes*

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The 26700 Series fiber probes have been designed requiring minimal maintenance to perform well under normal operating conditions.

The only cleaning that may be required is to the sapphire windows in the probe head after use with a particular liquid, if any debris or film causes window fouling.

### **Windows Cleaning**

Cleaning of the sapphire windows can be performed as follows:

(It may not be necessary to disconnect the fibre probe from the spectrometer).

1. The probe head can be dipped into a beaker of an appropriate cleaning solvent. There should be enough solvent to cover the sampling pathlength area between the windows.
2. The probe head can be swirled in the solvent to ensure full coverage of the sapphire window faces.
3. Remove the probe head from the solvent and now clean the windows by gently rubbing the window surfaces with a cleaning pad attached to a rod. A cotton bud stick is ideal for this purpose. It may need to be cut to size for probes with pathlengths of 1 or 2mms.
4. After cleaning with a pad ensure that all remaining liquid (solvent) has been removed. (A gentle blow of air from an airline may help).
5. Replace the protective plastic probe head cover if not using the probe for a while.

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