

PON Filter for FTTx 1310/1490/1550nm

Bookham filters leverage the proprietary Advanced Energetic Deposition (AED) process to produce the industry's best PON filter solutions. The AED process features state-of-the-art layer thickness control to produce thin-film interference filters that are unparalleled for FTTx WDM applications.

Passive Optical Network (PON) designs deliver the Triple Play of voice, data and video to customers in FTTx access networks. The flat passband design of Bookham's filters allow for the best performance in video transmission while the deep reflection notch improves the isolation of 1550nm signals from the 1310nm return signal and 1490nm downstream data. Similar filters are available from Bookham centered at 1490nm and 1310nm. This filter can be used at both the Optical Line Termination (OLT) at the central office and the Optical Network Unit (ONU) on the customer side.

Standard 5.5mm diameter packaging is available with the boot/length specification needed to meet your application. The optional compact packaging has diameter of only 3.2mm. All Bookham filter components are Telcordia GR-1221 qualified and RoHS compliant.

Features:

- Flat passband design
- Deep reflection notch
- >40dB isolation at 1490nm and 1310nm
- 4.6THz clear channel allocation
- Excellent temperature stability
- GR-1221 qualified
- RoHS compliant 

Options:

- -40 to 85°C operating temp
- Compact packaging: 3.2mm diameter
- Rugged packaging

Applications:

- Metro/Access WDM systems
- B-PON / G-PON / GE-PON
- FTTH / FTTP / FTTC



PON Filter for FTTx

Typical design specifications (valid over operating temperature)

Component Parameters	Specification # 0383	Unit
Transmission Passband Center	1550/193.414	nm/THz
Transmission Insertion Loss	0.7	max dB
Transmission Inertion Loss Variation	0.2	max dB
Transmission Isolation	40 min	dB
Lower Adjacent Band Region	1260 to 1500	nm
Reflection Passband Centers	1310 & 1490	nm
Reflection Insertion Loss	0.5	max dB
Reflection Isolation	25	min dB
Passband Half-Width ^[1]	-18.2/2.3	nm/THz
Polarization Dependent Loss ^[1]	0.1	max dB
Return Loss ^[1]	50	min dB
Directivity ^[1]	50	min dB
Operating Temperature ^[2]	-5 to 70	°C
Storage Temperature	-40 to 85	°C
Dimensions ^[3] (standard packaging)	5.5 (O) x 51 (L)	mm

Notes:

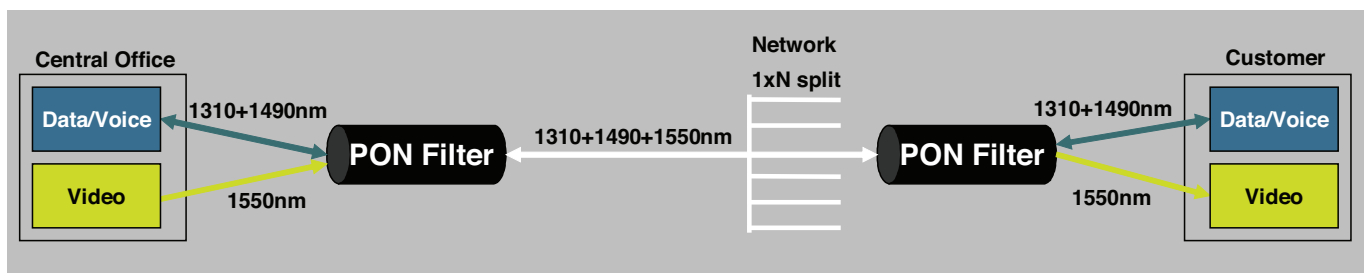
^[1] Loss includes connector pair

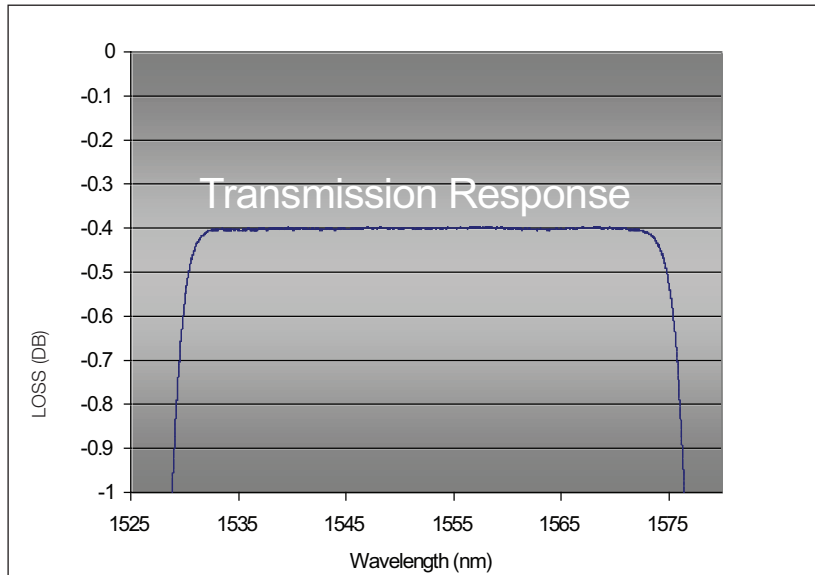
^[2] At edge of clear channel

^[3] Nominal overall length. Standard package length without boots nominally 35mm

Example Application and Performance

Typical PON triplexer application and 1550nm transmission passband flatness detail





Component Dimensions

Table 1. Mechanical Specifications.

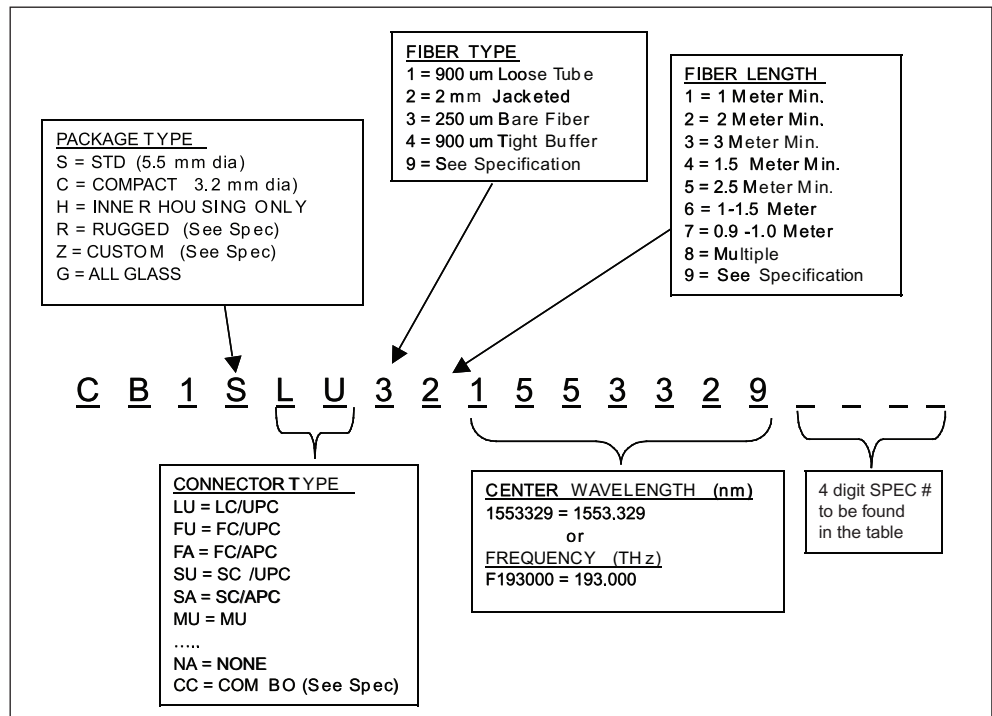
	Parameter	Min	Nominal	Max	Unit
1.1a	Diameter (for H package)	4.1	4.2	4.3	mm
1.1b	Diameter (for S package)	5.4	5.5	5.6	mm
1.1c	Diameter (for C package)	3.17	3.2	3.23	mm
1.2	Length without boots (for S package)	32.0	35	40.0	mm
1.3a	Over-all Length (for H package)	25.0	26.5	28.0	mm
1.3b	Over-all Length (for S package)	41.0	51	63.0	mm
1.3c	Over-all Length (for C package)	35.5	36.5	37.5	mm

RoHS Compliance

Bookham is fully committed to environment protection and sustainable development and has set in place a comprehensive program for removing polluting and hazardous substances from all of its products. The relevant evidence of RoHS compliance is held as part of our controlled documentation for each of our compliant products. RoHS compliance parts are available to order, please refer to the ordering information section for further details.

Ordering Information:

PON Filter numbering convention



Contact Information

**North America
Santa Rosa Office**
3640 Westwind Boulevard
Santa Rosa
CA 95403
USA
• Tel: +1 707 636 1100
• Fax: +1 707 636 1199
www.bookham.com
sales@bookham.com

**Europe
Paignton Office**
Brixham Road
Paignton
Devon
TQ4 7BE
United Kingdom
• Tel: +44 (0) 1803 66 2000
• Fax: +44 (0) 1803 66 2801

**Asia
Shenzhen Office**
2 Phoenix Road
Futian Free Trade Zone
Shenzhen 518038
China
• Tel: +86 755 33305888
• Fax: +86 755 33305805
+86 755 33305807

Important Notice
Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by Bookham before they become applicable to any particular order or contract. In accordance with the Bookham policy of continuous improvement specifications may change without notice. The publication of information in this data sheet does not imply freedom from patent or other protective rights of Bookham or others. Further details are available from any Bookham sales representative.