

AQ7280 Series

AQ7286 OTDR Units

Precision portable OTDR that meets stringent attenuation test requirements for optical fiber/cable R&D and manufacturing

The AQ7280 series OTDR has been very well received for its excellent operability and versatile functions such as the multi-touch screen, multi-fiber application, one tap report generation & unique multi-tasking operation. Three new OTDR units have been added to the AQ7280 series, specializing in optical fiber testing for both R&D and manufacturing.

Overview

- Wavelength tolerance compliant with the IEC standard (IEC 60793-1-40)
 - ±15 nm standard tolerance
 - ±10 nm optional tolerance, allows bypassing wavelength measurement requirement
- Ideal for attenuation coefficient measurement in R&D and manufacturing

AQ7286A 2 WL and 1 port model, the most popular communication WL of 1310/1550 nm

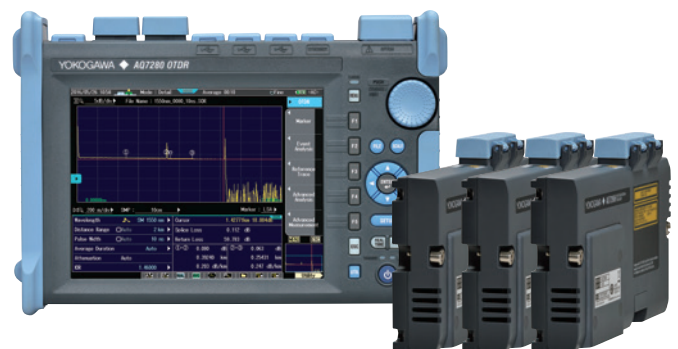
AQ7286H 3 WL and 1 port model with 1625 nm, covers the farthest reaches of the communication WL range

AQ7286J 4 WL and 1 port model, supports the water-peak WL of 1383 nm for optical fiber cable inspection

Model and suffix code

Model	Suffix	Descriptions
AQ7286A		2WL 1310/1550 nm, 42/40 dB typ.
AQ7286H		3WL 1310/1550/1625 nm, 42/40/39 dB typ.
AQ7286J		4WL 1310/1383/1550/1625 nm, 42/39/40/39 dB typ.
Options	/10N	10 nm Wavelength Tolerance

*PC and /SLS options are not available.



Specification comparison

WL (nm)	WL tolerance (nm)	New units	Existing units
1310	±10	○	—
	±15	●	—
	±25	—	●
1383	±2	●	●
1550	±10	○	—
	±15	●	—
	±25	—	●
1625	±10	○	—
	±15	●	—
	±25	—	●

● : standard ○ : option

Items	Pulse width	WL (nm)	New units			Existing units		
			AQ7286A	AQ7286H	AQ7286J	AQ7283A	AQ7283H	AQ7283J
Dynamic range (dB typ.)	20 μs	1310	42	—	39	42	—	39
		1383	—	—	39	—	—	39
		1550	40	—	—	40	—	—
		1625	—	39	—	—	39	40
	1 μs	1310	28	—	30	—	—	—
		1383	—	—	25	—	—	—
1550		27	—	28	—	—	—	
		1625	—	27	28	—	—	
Loss measurement accuracy (dB/dB)			±0.025			±0.03		
Loss measurement repeatability (dB)			±0.015			—		
Attenuation coefficient accuracy (dB/km)			±0.01			—		
Attenuation coefficient repeatability (dB)			±0.005			—		

*The specifications are valid for both the standard and optional ±10 nm tolerance models. Please refer to the AQ7280 brochure for details.

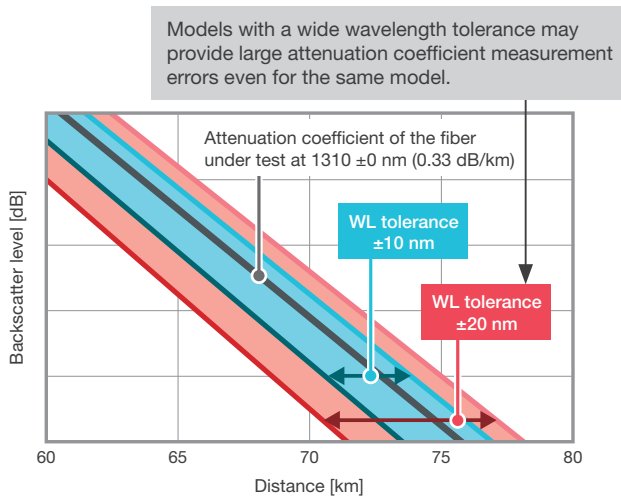
Measurement example

Attenuation coefficient measurement of manufactured optical fibers/cables

Manufactured optical fibers and cables have intrinsic optical fiber losses such as absorption and scattering losses. To ensure that this loss is within the specified range, attenuation coefficient measurement using an OTDR is performed for all manufactured optical fibers/cables. The new units excellent attenuation coefficient measurement accuracy are ideal for stringent requirements such as ITU-T G.654 and G.657 standards.

To perform a test in accordance with international standards^{*1} the center wavelength of laser spectrum must be within the specified value of 15 nm. If the difference from the specified value is greater than 10 nm, the difference must be reported. When testing is performed with the /10N option, the difference from the specified value is smaller than 10 nm. There is no need to report the difference.

*1: IEC 60793-1-40 Annex C



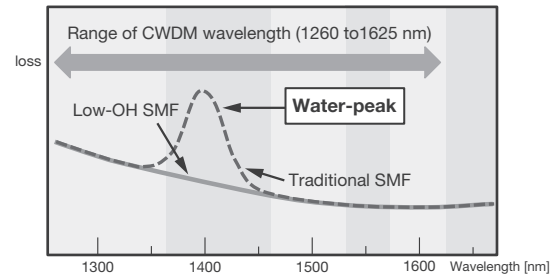
Difference in attenuation coefficient due to difference in wavelength

Quality inspection of low-OH optical fibers/cables

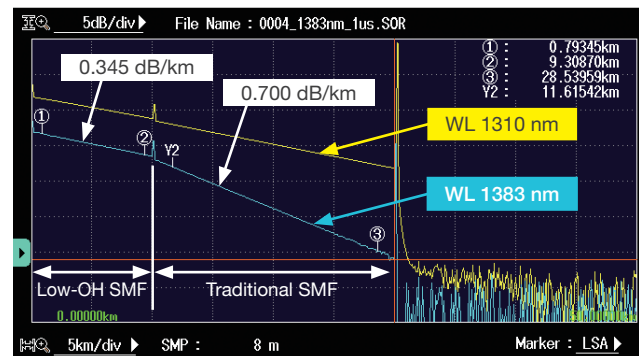
Since water ions (OH) absorb light at 1383 nm, the optical loss of single-mode fibers increases at 1383 nm. Low-OH single mode fibers^{*2} are available for CWDM applications. They are tested at 1383 nm in each process of production. The AQ7286J offers four wavelengths in a single port including 1383 nm, thus it can perform four wavelength measurements with a single button. It can be controlled remotely via a USB or Ethernet interface^{*3}.

*2: ITU-T G.657 standard

*3: The /LAN option of the main frame AQ7280 is required.



The loss-wavelength characteristics of single-mode fibers



The effect of OTDR measurement at 1383 nm

Product website

AQ7280 OTDR

This modular OTDR allows a user to freely swap between 14 types of OTDR units, 5 types of optical power meter and visible light source modules.



<https://tmi.yokogawa.com/p/AQ7280/>

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