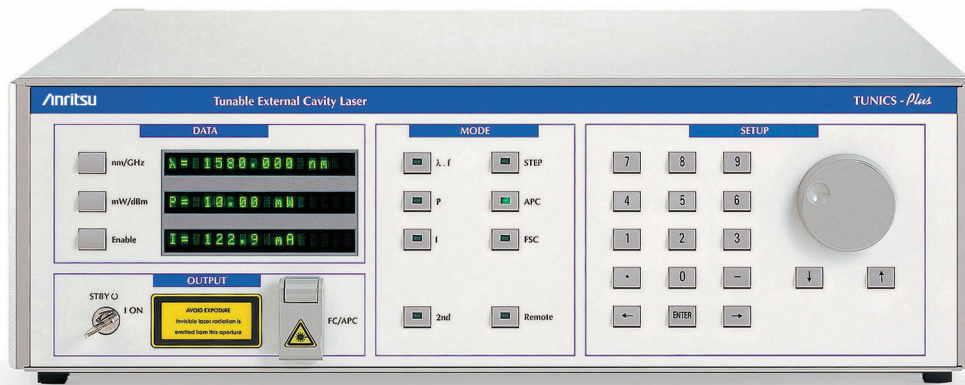


# Tunics Plus 1270 nm to 1640 nm

## SPECIFICATIONS

### Tunable Laser



Tunics Plus is a general-purpose benchtop “work-horse” tunable laser, offering the basic features of the Tunics prime benchtop models.

#### **Broad Spectral Coverage**

With up to 150 nm of tuning range, Tunics Plus is available in six different versions from 1260 nm to 1640 nm.

#### **High Output Power**

Up to +8 dBm eases the power budget and provides high-dynamic range measurements.

#### **Active Control for Mode-Hop-Free Operation**

For ultimate performance, Tunics Plus features a proprietary active control that ensures perfect mode-hop-free operation and accurate wavelength sweep over its entire tuning range.

#### **Wide, Fast and Truly Continuous Tunability**

Extremely smooth scans up to 150 nm, with 1 pm resolution, allow a fine analysis over a wide spectral range.

#### **Affordable Price**

With its affordable price and state-of-the-art high-performance, Tunics Plus should equip the bench of each and every contributor in the field of optical fiber communications.

#### **Wavelength Monitoring**

By connecting part of the light to a wavelength meter, Tunics Plus is able to internally adjust the output wavelength to the required wavelength within the wavelength meter accuracy. This function can be activated from the keyboard or through GPIB. It is compatible with wavelength meters providing RS 232-C remote control (contact us for compatible wavelength meters list).

#### **Sweeping Mode**

This mode delivers a continuous variation of the wavelength at a constant rate to enable a fast and uninterrupted measurement.

Specifications								
		Tunics Plus O	Tunics Plus E	Tunics Plus S	Tunics Plus CL	Tunics Plus S/WB	Tunics Plus CL/WB	
Tuning Characteristics	Wavelength range (mode hop free) • P = 0 dBm • P = 3 dBm • P = 6 dBm • P = 8 dBm	1270-1340 nm 1280-1320 nm	1340-1430 nm 1380-1410 nm	1430-1530 nm 1440-1500 nm 1450-1490 nm	1525-1625 nm 1540-1620 nm 1560-1600 nm	1390-1540 nm 1420-1520 nm 1440-1510 nm	1490-1640 nm 1520-1630 nm 1540-1610 nm	
	Absolute wavelength accuracy <sup>1</sup>	±0.04 nm	±0.04 nm	±0.04 nm	±0.04 nm	±0.04 nm	±0.04 nm	
	Wavelength stability <sup>2</sup>	±5 pm / h (±3 pm / h typical and ±5 pm / 24h typical)						
	Tuning repeatability (typ.)	±0.005 nm	±0.005 nm	±0.005 nm	±0.005 nm	±0.005 nm	±0.005 nm	±0.005 nm
	Wavelength setting resolution	0.001 nm	0.001 nm	0.001 nm	0.001 nm	0.001 nm	0.001 nm	0.001 nm
	Optical frequency fine tuning	±2 GHz	±2 GHz	±2 GHz	±2 GHz	±2 GHz	±2 GHz	±2 GHz
	Tuning speed (typ.)	1s (100 nm)	1s (100 nm)	1s (100 nm)	1s (100 nm)	1s (100 nm)	1s (100 nm)	1s (100 nm)
Laser Output Characteristics	Power stability <sup>2</sup>	±0.01 dB / h (±0.025 dB / 24h typical)						
	Side mode suppression ratio <sup>3</sup>	>40 dB	>40 dB	>45 dB	>45 dB	>45 dB	>45 dB	
	Signal to source spontaneous-emission ratio <sup>4</sup>	>45 dB >50 dB from 1280 to 1320 nm	>45 dB >50 dB from 1380 to 1410 nm	>55 dB	>55 dB	>55 dB	>55 dB	
	Relative intensity noise <sup>3, 5</sup>	-145 dB/Hz (typ.)	-145 dB/Hz (typ.)	-145 dB/Hz (typ.)	-145 dB/Hz (typ.)	-145 dB/Hz (typ.)	-145 dB/Hz (typ.)	
	Spectral Width (FWHM)	150 kHz (typ.) (coherence control OFF) >100 MHz (coherence control ON)						
Sweeping Mode Characteristics	Mode hop free range	Whole wavelength range for each specified power	Whole wavelength range for each specified power	Whole wavelength range for each specified power	Whole wavelength range for each specified power	Whole wavelength range for each specified power	Whole wavelength range for each specified power	
	Scan speed	Adjustable from 1 to 100 nm/s	Adjustable from 1 to 100 nm/s	Adjustable from 1 to 100 nm/s	Adjustable from 1 to 100 nm/s	Adjustable from 1 to 100 nm/s	Adjustable from 1 to 100 nm/s	
	Power flatness during scan (typ.)	±0.25 dB	±0.25 dB	±0.25 dB	±0.25 dB	±0.25 dB	±0.25 dB	
	Power repeatability from scan to scan (typ.) <sup>6</sup>	±0.05 dB	±0.05 dB	±0.05 dB	±0.05 dB	±0.05 dB	±0.05 dB	
Interfaces	Optical connector	FC-APC	FC-APC	FC-APC	FC-APC	FC-APC	FC-APC	
	Output fiber	SMF-28™	SMF-28™	SMF-28™	SMF-28™	SMF-28™	SMF-28™	
	Output isolation	35 dB	35 dB	35 dB	35 dB	35 dB	35 dB	
	Return loss	60 dB	60 dB	60 dB	60 dB	60 dB	60 dB	
	Remote control	RS-232 C and IEEE-488.1 <sup>7</sup>	RS-232 C and IEEE-488.1 <sup>7</sup>	RS-232 C and IEEE-488.1 <sup>7</sup>	RS-232 C and IEEE-488.1 <sup>7</sup>	RS-232 C and IEEE-488.1 <sup>7</sup>	RS-232 C and IEEE-488.1 <sup>7</sup>	
	Low frequency modulation	10 kHz to 8 MHz	10 kHz to 8 MHz	10 kHz to 8 MHz	10 kHz to 8 MHz	10 kHz to 8 MHz	10 kHz to 8 MHz	
	High frequency modulation	30 kHz to 1 GHz	30 kHz to 1 GHz	30 kHz to 1 GHz	30 kHz to 1 GHz	30 kHz to 1 GHz	30 kHz to 1 GHz	
Environment	Operating temperature range	+15° to +30°C +60° to +85°F	+15° to +30°C +60° to +85°F	+15° to +30°C +60° to +85°F	+15° to +30°C +60° to +85°F	+15° to +30°C +60° to +85°F	+15° to +30°C +60° to +85°F	
	Power supply	100 to 240 V 50 to 60 Hz	100 to 240 V 50 to 60 Hz	100 to 240 V 50 to 60 Hz	100 to 240 V 50 to 60 Hz	100 to 240 V 50 to 60 Hz	100 to 240 V 50 to 60 Hz	
	Dimensions (W x H x D) in mm <sup>3</sup>	448 x 133 x 370	448 x 133 x 370	448 x 133 x 370	448 x 133 x 370	448 x 133 x 370	448 x 133 x 370	
	Weight	12.5 kg	12.5 kg	12.5 kg	12.5 kg	12.5 kg	12.5 kg	

Unless otherwise specified, specifications are given after 30 minutes warm-up.

\*1: After self calibration

\*2: Over one hour at a constant temperature and after 1 hour warm-up

\*3: Measured with 0 dBm output power

\*4: Spontaneous emission measured on a 0.1 nm bandwidth at ±1 nm from the signal

\*5: Measured at an electrical frequency of 100 MHz

\*6: Over 100 scans at constant temperature

\*7: Tested and validated with National Instruments GPIB board.

## Ordering Information

Tunics Plus is a general-purpose benchtop “work-horse” tunable laser, offering the basic features

### Model Number:

Tunics Plus O or E or S or CL or S/WB or CL/WB

Please specify the model name followed by the options:

Example: Tunics Plus E/M

### • Options

Use the following code references that correspond to the available options:

Code	Description
M	Polarization maintaining output fiber (orientation TE in slow axis, in line with connector)

### • Accessories

Use the following descriptions that correspond to the available accessories:

#### Description

- LabView driver for Tunics Plus
  - Fiber optic jumper FC-APC/FC-APC
  - Fiber optic jumper FC-APC/FC-PC
  - Polarization maintaining fiber optic jumper FC-APC/FC-APC
  - Polarization maintaining fiber optic jumper FC-APC/FC-PC
  - Carrying case
- Each benchtop instrument is delivered as standard with a FC-APC/FC-PC fiber optic jumper.

**Anritsu Corporation**

5-1-1 Onna, Atsugi-shi, Kanagawa, 243-8555 Japan  
Phone: +81-46-223-1111  
Fax: +81-46-296-1264

**• U.S.A.****Anritsu Company**

1155 East Collins Blvd., Suite 100, Richardson,  
TX 75081, U.S.A.  
Toll Free: 1-800-267-4878  
Phone: +1-972-644-1777  
Fax: +1-972-671-1877

**• Canada****Anritsu Electronics Ltd.**

700 Silver Seven Road, Suite 120, Kanata,  
Ontario K2V 1C3, Canada  
Phone: +1-613-591-2003  
Fax: +1-613-591-1006

**• Brazil****Anritsu Eletrônica Ltda.**

Praca Amadeu Amaral, 27 - 1 Andar  
01327-010-Paraiso-São Paulo-Brazil  
Phone: +55-11-3283-2511  
Fax: +55-11-3288-6940

**• Mexico****Anritsu Company, S.A. de C.V.**

Av. Ejército Nacional No. 579 Piso 9, Col. Granada  
11520 México, D.F., México  
Phone: +52-55-1101-2370  
Fax: +52-55-5254-3147

**• U.K.****Anritsu EMEA Ltd.**

200 Capability Green, Luton, Bedfordshire, LU1 3LU, U.K.  
Phone: +44-1582-433200  
Fax: +44-1582-731303

**• France****Anritsu S.A.**

16/18 avenue du Québec-SILIC 720  
91961 COURTABOEUF CEDEX, France  
Phone: +33-1-60-92-15-50  
Fax: +33-1-64-46-10-65

**• Germany****Anritsu GmbH**

Nemetschek Haus, Konrad-Zuse-Platz 1  
81829 München, Germany  
Phone: +49-89-442308-0  
Fax: +49-89-442308-55

**• Italy****Anritsu S.p.A.**

Via Elio Vittorini 129, 00144 Roma, Italy  
Phone: +39-6-509-9711  
Fax: +39-6-502-2425

**• Sweden****Anritsu AB**

Borgafjordsgatan 13, 164 40 KISTA, Sweden  
Phone: +46-8-534-707-00  
Fax: +46-8-534-707-30

**• Finland****Anritsu AB**

Teknobulevardi 3-5, FI-01530 VANTAA, Finland  
Phone: +358-20-741-8100  
Fax: +358-20-741-8111

**• Denmark****Anritsu A/S**

Kirkebjerg Allé 90, DK-2605 Brøndby, Denmark  
Phone: +45-72112200  
Fax: +45-72112210

**• Spain****Anritsu EMEA Ltd.**

**Oficina de Representación en España**  
Edificio Veganova  
Avda de la Vega, n° 1 (edf 8, pl 1, of 8)  
28108 ALCOBENDAS - Madrid, Spain  
Phone: +34-914905761  
Fax: +34-914905762

**• Russia****Anritsu EMEA Ltd.**

**Representation Office in Russia**  
Tverskaya str. 16/2, bld. 1, 7th floor.  
Russia, 125009, Moscow  
Phone: +7-495-363-1694  
Fax: +7-495-935-8962

**• United Arab Emirates****Anritsu EMEA Ltd.****Dubai Liaison Office**

P O Box 500413 - Dubai Internet City  
Al Thuraya Building, Tower 1, Suit 701, 7th Floor  
Dubai, United Arab Emirates  
Phone: +971-4-3670352  
Fax: +971-4-3688460

**• Singapore****Anritsu Pte. Ltd.**

60 Alexandra Terrace, #02-08, The Comtech (Lobby A)  
Singapore 118502  
Phone: +65-6282-2400  
Fax: +65-6282-2533

**• India****Anritsu Pte. Ltd.****India Branch Office**

Unit No. S-3, Second Floor, Esteem Red Cross Bhavan,  
No. 26, Race Course Road, Bangalore 560 001, India  
Phone: +91-80-32944707  
Fax: +91-80-22356648

**• P.R. China (Hong Kong)****Anritsu Company Ltd.**

Units 4 & 5, 28th Floor, Greenfield Tower, Concordia Plaza,  
No. 1 Science Museum Road, Tsim Sha Tsui East,  
Kowloon, Hong Kong  
Phone: +852-2301-4980  
Fax: +852-2301-3545

**• P.R. China (Beijing)****Anritsu Company Ltd.****Beijing Representative Office**

Room 1515, Beijing Fortune Building,  
No. 5, Dong-San-Huan Bei Road,  
Chao-Yang District, Beijing 10004, P.R. China  
Phone: +86-10-6590-9230  
Fax: +86-10-6590-9235

**• Korea****Anritsu Corporation, Ltd.**

8F Hyunjuk Building, 832-41, Yeoksam Dong,  
Kangnam-ku, Seoul, 135-080, Korea  
Phone: +82-2-553-6603  
Fax: +82-2-553-6604

**• Australia****Anritsu Pty. Ltd.**

Unit 21/270 Ferntree Gully Road, Notting Hill,  
Victoria 3168, Australia  
Phone: +61-3-9558-8177  
Fax: +61-3-9558-8255

**• Taiwan****Anritsu Company Inc.**

7F, No. 316, Sec. 1, Neihu Rd., Taipei 114, Taiwan  
Phone: +886-2-8751-1816  
Fax: +886-2-8751-1817