T2300 / 2700 Series

Handheld Loss Test Meter

Optical Communications Test Applications

- Single mode & multimode cable
- Optical Power testing
- Optical Loss testing and reporting
- Optical continuity & tone testing
- Standards compliant cable certification



Revision 21

The T2300 / 2700 series Optical Loss Test Set combines an Optical Power Meter & Light Source with many useful features. It is a single direction loss test set which measures and displays loss at multiple wavelengths. Bi-directional testing is supported by PC reporting software.

Robust, versatile and easy to use, the T2700 series general purpose instrument can also incorporate VisiTester, which conveniently mixes a VFL laser with the test signal, maTng high fiber count testing much easier.

Alternatively, the T2300 series provides a Zero Warm-Up Source for ultimate test accuracy and speed of deployment.

Features

- Simple to use, versatile & rugged
- Interchangeable connectors with dust cap / tilt bail
- Over 25 genuine calibration wavelengths
- LCD is large, clear, sunlight readable & backlit
- Long battery life, external power / charger via USB
- Simultaneous 3 λ loss display with Autotest source
- Flexible real-time PC reporting software
- Continuity test tone with 12 fiber Multi-Fiber ID
- Encircled Flux compliant multimode sources
- Multimode sources supplied with mandrel wraps
- Compact, rugged and light weight
- Sunlight readable display
- 3 years warranty and calibration cycle
- ISO 17025 traceable calibration certificate
- Made in Australia

Worldwide recognised accuracy and quality

T2300 / 2700 Series – Handheld Loss Test Meter

The T2300 / 2700 Loss Test Sets are fast and easy to use single directional loss testers which integrate of a power meter and up to 6 light sources in a single automated unit.

The practical interchangeable optical connectors are dust and drop protected and very simple to swap over or clean. SC adaptors are supplied, with others available including small form factor LC styles. The metal free adaptors avoid contamination of connectors in high power systems.

Autotest provides fast & easy multi λ (wavelength) loss testing, with up to 3 λ displayed simultaneously, along with the source nominal power level and λ, with either local or remote referencing.

Flexible instrument power options include a choice of batteries, with a jumper selectable battery charger. External power is via micro USB.

The instruments meet MIL PRF 28800F class 2 general requirements. Calibration is ISO 17025 traceable.

The Power Meter measures absolute/relative power and test tones. It displays mW, µW, nW, dB, dBm to 0.01 dB resolution with no range changing delays. A separate reference for each λ is stored & displayed.

The tight Total Uncertainty specification covers all power levels, temperatures, connectors and fibers, without user dark current offset.

The multi-Fiber ID feature tests common test tones and, can also positively identify 1 of 12 test tones from multiple test sources. This can speed up continuity / polarity testing.

Loss test results can be stored in the large memory, along with a text-input cable name and timestamp, and then dumped onto a USB memory key, providing future-proof data handling.

Alternatively, live readings can be clicked directly onto a customer report using our proven TTS™ customizable Excel-based reporting software. Reports can be easily customized for any terminology, language or format. A one-button file dump only requires Windows OS.

Please enquire for non-standard power meter configurations such as high-power detectors, large area detectors, special connectors, wavelength selective detectors, special calibrations etc.

POWER METER SPECIFICATIONS

Response λ Nm	Damage level dBm	Calibration λ nm	Power range dBm	Tone & Autotest Min dBm	Midrange linearity[1] dB	Calibration Accuracy[2] %	Polarization Sensitivity[5] dB	Total Uncertainty dB[3, 4]	λ Sensitivity ± 30 nm[4] dB
InGaAs detector									
600 ~ 1700	+15	*780, 820, 850, 980* 1270, 1290, 1300, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610, 1625, 1650	*+10 ~ -60* +10 ~ -70	*-45* -50	0.04	1 % (0.06 dB)	< 0.05	0.3	0.03
					typical		Typical	max	Typical

Note 1: Mid-range linearity @ 1550 nm for InGaAs & Ge, or 850 nm for Si. Non-coherent light, with APC connector. Excludes top 5 dB and bottom 10 dB of range.

Note 2: Calibration condition: non-coherent light, -35±5 dBm, 23±3°C, ±1 nm, 10±3 nm FWHM, PC ceramic connector, 100 µm fiber.

Note 3: Includes contributions of: varying optical connector types, calibration uncertainty, linearity over temperature & range, and fiber core diameter up to 200 µm.

Note 4: At calibration wavelengths in bold type.

Note 5: For APC connectors only.

The emitters feature excellent repeatability and stability. Re-connection repeatability is < 0.1 dB, resulting in exceptional test accuracy. Calibration is ISO 17025 tracible.

Up to 6 assorted LED or laser sources can be specified per instrument, maTng this a versatile Loss Test Set for mixed multimode / single mode fiber testing.

Laser options compliant with CWDM standards cover typical cable qualification for O, E, S, C, & L bands, including the water absorption peak, 1625 and 1650 nm.

LED sources are Encircled Flux (EF) compliant, to provide the most consistent and reliable testing results.

The unique VisiTester option mixes a laser VFL with the Autotest source, so at the power meter end, the active test fiber winks, maTng it obvious to the user. The mixed signal also extends practical fault-finding options since a clip-on fiber identifier can be used simultaneously with VFL methods. The VisiTester laser can also be used as a traditional stand-alone VFL.

The T2300 series Zero Warm-Up Sources provide a unique level of guaranteed source stability over temperature and eliminate warm up drift.

Please enquire for non-standard source configurations such as other wavelengths, power levels, connectors etc.

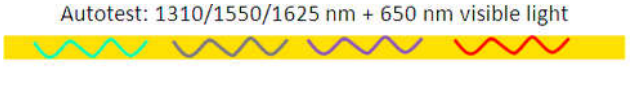
LIGHT SOURCE SPECIFICATIONS

	1310/1550 nm Laser	CWDM[6]	1625 nm Laser	650 nm VisiTester[7]	850 / 1300 nm LED	Comments
T 2700 series						
Short term stability (dB)	0.04	0.06	0.06	NA	0.01	For 15 min, typical ± Δ 2°C, after warmup, ORL < -25 dB
Stability over temp (dB)	0.6	0.6	0.6	NA	0.35	Typical
Premium zero warm up & Ultra Stable T2300 series[7]						
Short term stability (dB)	0.03	0.05	0.05	NA	0.01	For 15 min, max, ± Δ 3°C no warmup
Stability over temp (dB)	0.2	0.2	0.2	NA	0.35	Max
Common for both T 2700 & T2300 series						
λ initial tolerance (nm)	20	6.5	20	5	NA	At 25 °C
λ width, nm	3	< 1	3	3	NA	FWHM, typical
λ nm/°C	0.4	0.1	0.4	0.1	0.4	Typical
Mode Controlled Source	NA	NA	NA	NA	Mode controlled	50/125 compliant: IEC 61280-4-1 {Ed.1.0}, TIA/EIA 526-14A & TIA TSB-178.
Reconnection repeatability[8] (dB)	0.1	0.1	0.1	0.1	0.05	95 % confidence
Modulation	270 Hz, 1 kHz, 2 kHz ± 2 %, 12 Multi-Fiber ID tones, 2 Hz blink for VisiTester					
Output power level	Refer to ORDERING INFORMATION section for output power level of specific model					Laser: adjustable over 7 dB in 0.01 dB steps, LED: fixed
Output power accuracy	± 1 dB (For Laser @ SMF & LED @ 62.5 µm only)					

Class 1 Laser / LED infrared device. Compliant with IEC60825-1.

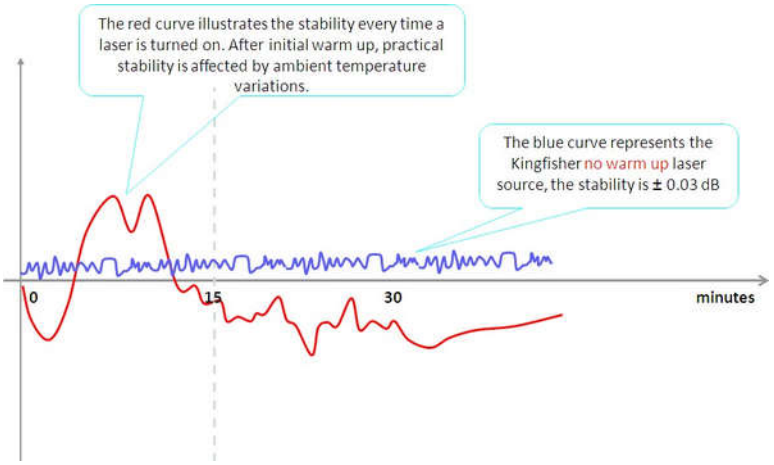
Note 6: CWDM laser wavelengths: 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610 nm

Note 7: VisiTester option:

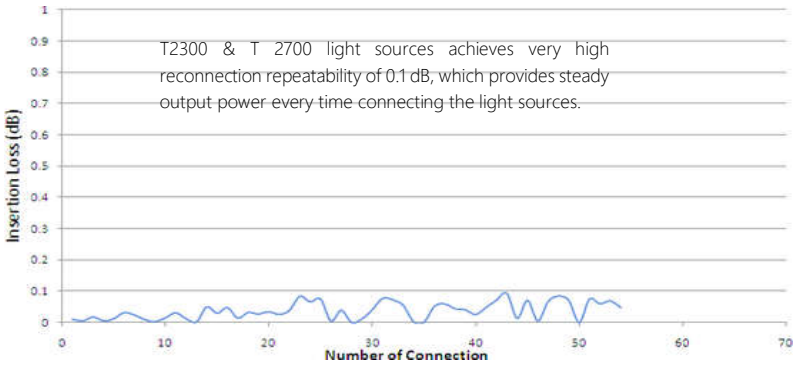


The unique VisiTester option mixes a laser VFL with Autotest, so at the power meter end, the active test fiber winks, maTng it obvious to the user. It also extends practical fault-finding options.

Note 8: Premium Zero Warm Up & Ultra Stable T2300 Series:



Note 8: Reconnection Repeatability:



GENERAL SPECIFICATION

Parameters	Value	Parameters	Value
Battery life	Laser/LED source: 90/80 hours in Autotest, typical	Operating/Storage	-15 to 55 °C / -25 to 70 °C
Size	190 x 105 x 35 mm (7.5 x 4.1 x 1.4")	Relative humidity	0 ~ 95 %
Weight	420 gm (0.9 lb.) / Shipping 1.5 Kg (3.3 lb.)	Tone detection	150 ~ 9900 Hz ± 1 %
LCD size	74 x 55 mm / 2.9 x 2.2"	Warranty	3 years
Case	Polycarbonate / rubber edges & corners, moisture resistance, 1-meter drop tested	Power	2x Alkaline AA cells or 2x NiMH AA cells, user selectable charging; Ext power input via micro- USB; Selectable auto-off, low battery indicator, backlit display
Dust cap	Captive, functions as tilt bail when slid open		
Memory	1,000 four λ tests with date & time in internal memory, unlimited on USB memory key	Calibration cycle	3 years

Australian and international patents. Technical data is subject to change without notice as part of our program of continuous improvements.

ORDERING INFORMATION

The T 27624-Ge is usually the perfect instrument for mixed contracting use, providing a perfect balance of useful features.

Description	Power (dBm) @ Fiber Type (µm)					Ports	P/N
	Laser	LED			VisiTester		
	SMF	SMF	50	62.5	SMF		
T 2700 series	Refer to LIGHT SOURCE SPECIFICATIONS section for detailed specifications						
Instrument, LTS 1310-1550 nm Laser, InGaAs	0	-	-	-	-	2	T2722-InGaAs
Instrument, LTS 1310-1550 nm Laser VisiTester, InGaAs	-3	-	-	-	+2	2	T27622-InGaAs
Instrument, LTS 850-1300 nm LED, InGaAs	-	-32	-22.5	-20	-	2	T2703-InGaAs
Instrument, LTS 850-1300 nm LED VisiTester, InGaAs	-	-35	-25.5	-23	+2	2	T27603-InGaAs
Instrument, LTS 850-1300 nm LED, 650 nm VFL, InGaAs	-	-35	-25.5	-23	+2	3	T27703-InGaAs
Instrument, LTS 850-1300 nm LED, 1310-1550 nm Laser, InGaAs	0	-32	-22.5	-20	-	3	T2724-InGaAs
Instrument, LTS 850-1300 nm LED, 1310-1550 nm Laser APC, InGaAs	0	-32	-22.5	-20	-	3	T2724-InGaAs-APC
Instrument, LTS 850-1300 nm LED, 1310-1550 nm Laser VisiTester, InGaAs	-3	-32	-22.5	-20	+2	3	T27624-InGaAs
Instrument, LTS 850-1300 nm LED, 1310-1550nm Laser VisiTester APC, InGaAs	-3	-32	-22.5	-20	+2	3	T27624-InGaAs-APC
Instrument, LTS 850-1300 LED VisiTester, 1310-1550 Laser VisiTester, InGaAs	-3	-35	-25.5	-23	+2	3	T27634-InGaAs
Instrument, LTS 1310-1490-1550 nm Laser APC, InGaAs	-3	-	-	-	-	2	T2727-InGaAs-APC
Instrument, LTS 1310-1490-1550 nm Laser VisiTester APC, InGaAs	-7	-	-	-	+2	2	T27627-InGaAs-APC
Instrument, LTS 1310-1550-1625 nm Laser APC, InGaAs	-3	-	-	-	-	2	T27010-InGaAs-APC
Instrument, LTS 1310-1550-1625 nm Laser VisiTester APC, InGaAs	-7	-	-	-	+2	2	T27610-InGaAs-APC
Instrument, LTS 1310-1490-1550-1625 nm Laser APC, InGaAs	-3	-	-	-	-	2	T27016-InGaAs-APC
Zero warm up & ultra-stable light sources, T2300 series							
Instrument, LTS 1310/1550 nm Ultra Stable Laser, InGaAs	-4	-	-	-	-	2	T2322-InGaAs
Instrument, LTS 1310-1550-1625 nm Ultra Stable Laser APC, InGaAs	-7	-	-	-	-	2	T23010-InGaAs-APC

Please enquire for non-listed specifications such as: Wavelength, Power Levels, PC / APC Connectors.

STANDARD ACCESSORIES

Description	Quantity
SC connector adaptor (OPT046)	1 per port
50 & 62.5 µm fiber mandrel wrap set for multimode sources (OPT701)	1 set
USB-A to USB-micro type cable	1
TTS™ reporting software	Download from website for free
Carry pouch	1
Carry strap	1
Operation manual	1
ILAC/ NATA traceable calibration certificate	1 set
QA certificate	1

This instrument is supplied with metal-free sleeve interchangeable optical connector adaptors. The ferrule type is fixed and customer specified as either PC or APC. Green is associated with APC. You can order any number of connector adaptors.

OPTIONAL ACCESSORIES

Description	Part number
Option, Carry Case, T2x/T7x/T3x, small (Carry Case for 2 Instruments)	OPT153*
Option, Carry Case, Cletop, Cleaning Sticks, T2x / T9x, large	OPT154B*

Please visit Tngfisherfiber.com for a wide range of FiberTester Tts.

OPTIONAL INTERCHANGEABLE CONNECTOR ADAPTORS

Description	Part number
Option, Hybrid Adaptor, Ceramic Sleeve, SC/FC	OPT051
Option, Hybrid Adaptor, Ceramic Sleeve, SC/F3000 or LC Simplex, plastic body	OPT072
Option, Hybrid Adaptor, Ceramic Sleeve, SC/ST	OPT040
Option, Hybrid Adaptor, Ceramic Sleeve, SC/D4	OPT055
Option, Hybrid Adaptor, Ceramic Sleeve, SC/E2000	OPT060
Option, Hybrid Adaptor, Ceramic Sleeve, SC/E2000 Green	OPT060G
Option, Hybrid Adaptor, Ceramic Sleeve, SC/LC, metal body	OPT076
Option, Hybrid Adaptor, Ceramic Sleeve, SC/MU	OPT080
Option, Hybrid Adaptor, Ceramic Sleeve, SC/LSA-DIN47256	OPT071
Option, Hybrid Adaptor, Metal Sleeve, SC/SMA 905/906	OPT082
Option, Hybrid Adaptor, Ceramic Sleeve, SC/Universal 2.5 mm	OPT081
Option, Hybrid Adaptor, Ceramic Sleeve, SC/Universal 1.25 mm	OPT084

Adaptors are suitable for both PC and APC polish connectors. Other styles available on request.



AUTHORIZED DEALER

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