# T2400/2800 Series

## Handheld Optical Light Source


### Optical Communications Test Applications

- Mixed single mode, multimode & POF testing to 6 λ
- Multi-Fiber polarity checking and fiber identification
- Encircled Flux compliant testing
- Tone source for fiber identifier
- Innovative and useful VisiTester feature

*Revision 24*

The T2400 / 2800 series Handheld Fiber Sources are used with an Optical Power Meter to test loss on single mode, multimode & POF optical fiber systems, at up to 6 wavelengths.

The 2800 series provide excellent stability, and the 2400 series provide exceptional stability with zero warm up.

High productivity, high availability and ease of use combine to achieve superior measurement confidence.

The innovative and unique VisiTester option is helpful for general loss testing, continuity testing & fault finding.

These Autotest sources can be used with any Kingfisher Autotest optical power meter, loss test set or two-way tester.

### Features

- Reliable, rugged & versatile
- Simple to use
- Ideal for mixed MMF & SMF testing
- Up to 6 mixed LED, Laser & VFL sources
- Excellent optical power stability
- Excellent re-connection repeatability
- LCD is large, clear, sunlight readable & backlit
- Autotest compatibility with other instruments
- Optical test tone with Multi-fiber ID function
- VisiTester easily identifies active test channel
- Interchangeable connectors with dust cap / tilt bail
- Encircled Flux compliant multimode LED sources
- Multimode sources supplied with mandrel wraps
- T2400 series is ultra-stable with zero warm up
- Long battery life
- External power / charging via USB
- 3 ~ 7 Year warranty
- ISO 17025 traceable calibration certificate
- Made in Australia

# T2400/2800 Series - Hand Held Fiber Source

The T2400 / 2800 Handheld Fiber Sources are used with optical power meters for testing optical loss on single mode and multimode fibers. A Multi-Fiber tone feature makes for handy continuity / polarity testing and fault finding, also for use with clip-on traffic identifiers.

The T2800 source provides excellent general test capability. Alternatively, the T2400 premium source is unique in the industry, with zero warm up, ultrahigh stability, and is unaffected by varying back reflection.

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

This instrument meets the general requirements of MIL PRF 28800F class 2. The large display provides the user with an easy view of instrument status and test results.

Practical interchangeable optical connectors are easily changed and are protected with a captive dust cover / tilt bail. Metal free adaptors help avoid contamination of connectors in high power systems.

AA alkaline batteries have long life, and the micro-USB power input ensures high availability. Or use rechargeable batteries with built-in charging.

When used with a Kingfisher Autotest compatible power meter or loss test set, automatic λ identification is achieved, and the nominal source power is displayed on the power meter.

Up to 6 LED / laser sources can be specified, making this a versatile test source 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 nm.

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

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

Please refer to other brochures for our convenient FiberTester kits, comprising groups of instruments and common accessories supplied in a protective field carry case.

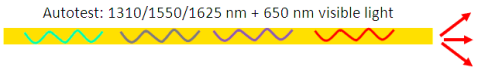
## OPTICAL SPECIFICATIONS

| | 1310/1490/15 50 nm Laser | CWDM[1] Laser | 1625 nm Laser | 650 nm VisiTester[2] | 850 / 1300 nm LED | 1310/1550 nm LED | 470/520/660 nm LED[5] | Comments |
|---|---|---|---|---|---|---|---|---|
| T 2800 series | | | | | | | | |
| Short term stability (dB) | 0.04 | 0.06 | 0.06 | N/A | 0.01 | N/A | 0.01 | For 15 min, typical ± Δ 2°C, after warm-up, ORL < -25 dB |
| Stability over temp (dB) | 0.6 | 0.6 | 0.6 | N/A | 0.35 | N/A | 0.35 | Typical |
| Premium zero warm up & ultra-stable T2400 series[3] | | | | | | | | |
| Short term stability (dB) | 0.03 | 0.05 | 0.05 | N/A | 0.01 | 0.03 | N/A | For 15 min, max, ± Δ 3°C no warm- up |
| Stability over temp (dB) | 0.2 | 0.2 | 0.2 | N/A | 0.35 | 0.2 | N/A | Max |
| Common for both T2400 & T 2800 series | | | | | | | | |
| λ initial tolerance (nm) | 20 | 6.5 | 20 | 5 | NA | 20 | 15 | At 25 °C |
| λ width, nm | 3 | < 1 | 3 | 3 | NA | 35 / 48 | 25 | FWHM, typical |
| λ nm/°C | 0.4 | 0.1 | 0.4 | 0.1 | 0.4 | 0.4 | N/A | Typical |
| Mode Controlled Source | N/A | N/A | N/A | N/A | Mode controlled | N/A | N/A | 50/125 compliant: IEC 61280-4-1 {Ed.1.0}, TIA 526-14A & TIA TSB-178. |
| Reconnection repeatability[4] dB | 0.1 | 0.1 | 0.1 | 0.1 | 0.05 | 0.1 | N/A | 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/eLED @ SMF, Multimode LED @ 62.5 µm, POF @ 1 mm) | | | | | | | |

Class 1 Laser / LED infra-red device. Compliant with IEC60825-1.

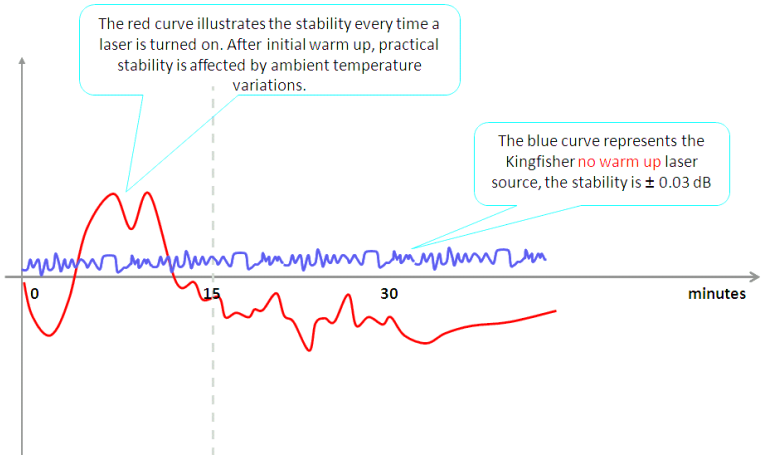
**Note 1**: CWDM laser wavelengths: 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610 nm

**Note 2**: VisiTester option:

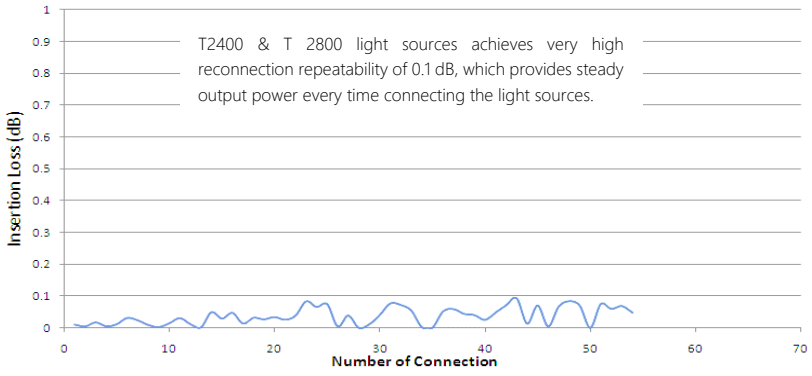



The unique VisiTester option mixes a laser VFL with Autotest, so at the power meter end, the active test fiber winks, maTng it obvious to the user. It also extends practical fault finding

**Note 3**: Premium Zero Warm Up & Ultra Stable T2400 Series




**Note 4**: Reconnection Repeatability:




**Note 5:** Light source model with LED of these wavelengths do not support Autotest.

## GENERAL SPECIFICATIONS

| Parameters | Value | Parameters | Value |
|---|---|---|---|
| Battery life | Laser/LED source: 90/80 hours in Autotest, typical | Dust cap | Captive, functions as tilt bail when slid open |
| Size | 190 x 105 x 35 mm (7.5 x 4.1 x 1.4") | Operating / Storage | -15 to 55 °C / -25 to 70 °C |
| Weight | 420 gm (0.9 lb.). Shipping 1.5 Kg (3.3 lb.) | Relative humidity | 0 ~ 95 % |
| 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 | 2 Alkaline AA cells or 2 x NiMH AA cells, user selectable charging; Ext power input via micro-USB; Selectable auto-off, low battery indicator, backlit display |

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

## ORDERING INFORMATION

Please enquire for non-listed specifications such as: Wavelengths, Power levels, PC / APC Connectors

| Description | Power (dBm) @ Fiber Type(µm) | | | | | VisiTester | Ports | P/N |
|---|---|---|---|---|---|---|---|---|
| | Laser | LED | | | | | | |
| | SMF | SMF | 50µ | 62.5µ | 1 mm | SMF | | |
| T 2800 series | | | | | | | | |
| Instrument, Source 850-1300 nm LED | - | -32 | -22.5 | -20 | - | - | 1 | T2803 |
| Instrument, Source 850-1300 nm LED VisiTester | - | -35 | -25.5 | -23 | - | +2 | 1 | T28603 |
| Instrument, Source 470-520-660 nm LED | - | - | - | - | -7 | - | 3 | T2806[6] |
| Instrument, Source 1310-1550 nm Laser | 0 | - | - | - | - | - | 1 | T2822 |
| Instrument, Source 1310-1550 nm High Power +5dBm Laser | 5 | - | - | - | - | - | 1 | T2823 |
| Instrument, Source 1310-1550 nm Laser VisiTester | -3 | - | - | - | - | +2 | 1 | T28622 |
| Instrument, Source 850-1300 nm LED, 1310-1550 nm Laser | 0 | -32 | -22.5 | -20 | - | - | 2 | T2824 |
| Instrument, Source 850-1300 nm LED, 1310-1550 nm Laser APC | 0 | -32 | -22.5 | -20 | - | - | 2 | T2824-APC |
| Instrument, Source 850-1300 nm LED, 1310-1550 nm Laser VisiTester | -3 | -32 | -22.5 | -20 | - | +2 | 2 | T28624 |
| Instrument, Source 850-1300 nm LED, 1310-1550 nm Laser VisiTester APC | -3 | -32 | -22.5 | -20 | - | +2 | 2 | T28624-APC |
| Instrument, Source 850-1300 nm LED, 1310-1550-1625 nm Laser | -3 | -32 | -22.5 | -20 | | - | 2 | T2825-APC |
| Instrument, Source 850-1300 LED VisiTester, 1310-1550 Laser VisiTester | -3 | -35 | -25.5 | -23 | | +2 | 2 | T28634 |
| Instrument, Source 1310-1550-1625 nm Laser APC | -3 | - | - | - | | - | 1 | T28010-APC |
| Instrument, Source 1310-1550-1625 nm Laser VisiTester APC | -7 | - | - | - | | +2 | 1 | T28610-APC |
| Instrument, Source 1310-1490-1550-1625 nm Laser APC | -3 | - | - | - | | - | 1 | T28016-APC |
| Zero warm up & ultra-stable light sources, T2400 series | | | | | | | | |
| Instrument, Source 1310-1550 nm Ultra Stable eLED | - | -20 | - | - | | - | 1 | T2419 |
| Instrument, Source 1310-1550 nm Ultra Stable Laser | -4 | - | - | - | | - | 1 | T2422 |
| Instrument, Source 1310-1550-1625 nm Ultra Stable Laser APC | -7 | - | - | - | | - | 1 | T24010-APC |

**Note 6:** This model does not support Autotest

## STANDARD ACCESSORIES

| Description | Quantity |
|---|---|
| SC connector adaptor (OPT046) | 1 per port |
| Operation manual | 1 |
| QA certificate | 1 |
| ILAC/ NATA traceable calibration certificates | 1 set |
| Carry Pouch | 1 |
| Carry strap | 1 |
| 50 & 62.5 µm fiber mandrel wrap set for Multimode sources (OPT701) | 1 |
| USB-A to USB-micro type cable | 1 |

This instrument is supplied with metal-free sleeve interchangeable optical connector adaptors. The ferrule type is fixed as PC or APC depending on the model part number . Green is associated with APC. You can order any number of connector adaptors.

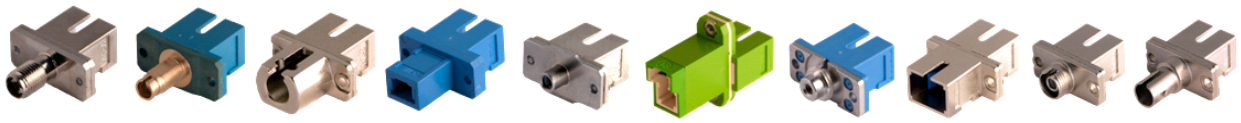
## OPTIONAL ACCESSORIES

| Description | Part number |
|---|---|
| Carry Case for 2 Instruments | OPT153 |
| Carry Case includes Cletop-style cleaner & Cleaning Sticks | OPT154B |

## OPTIONAL INTERCHANGEABLE CONNECTOR ADAPTORS

| Description | Part number | Description | Part number |
|---|---|---|---|
| Option, Hybrid Adaptor, Ceramic Sleeve, SC/FC | OPT051 | Option, Hybrid Adaptor, Ceramic Sleeve, SC/MU | OPT080 |
| Option, Hybrid Adaptor, Ceramic Sleeve, SC/ST | OPT040 | Option, Hybrid Adaptor, Ceramic Sleeve, SC/LSA-DIN47256 | OPT071 |
| Option, Hybrid Adaptor, Ceramic Sleeve, SC/E2000 | OPT060 | Option, Hybrid Adaptor, Metal Sleeve, SC/SMA 905/906 | OPT082 |
| Option, Hybrid Adaptor, Ceramic Sleeve, SC/E2000 Green | OPT060G | Option, Hybrid Adaptor, Ceramic Sleeve, SC/Universal 1.25 mm | OPT084 |
| Option, Hybrid Adaptor, Ceramic Sleeve, SC/LC, metal body | OPT076 | Option, Hybrid Adaptor, Ceramic Sleeve, SC/F3000 or LC Simplex, plastic body | OPT072 |
| Option, Hybrid Adaptor, SC/POF multi | OPT077[7] | Option, Hybrid Adaptor, Ceramic Sleeve, SC/Universal 2.5 mm | OPT081 |

Note 7: For Mini Toslink, unterminated POF cable, HFBR series (simplex and duplex), 2.5mm. The user turns the turret to the required hole size. Actual hole size 3.85, 3.5, 3.2, 2.55, 2.4, 2.3 mm x 8.5 mm deep



Change Record

| Revision | Date | Editor | Change Description |
|---|---|---|---|
| 24 | 28Mar2022 | TO Ng | 18Sep2020: Change heading of the 2'nd column of the OPTICAL SPECIFICATION table from "1310-1550 nm" to "1310-1550-1490 nm. ( 1490 nm was missing in revision 23).<br><br>23Dec2021: Removed +2 dBm output for T2825-APC which has no VisiTester.<br><br>28Mar2022: Added 660 nm LED source to T2806.<br>Output powers of all 3 emitters are spec at -7 dBm.<br>  <br>RE 650nm POF source.msg |

AUTHORIZED DEALER