

KI 2300 / 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 23

The KI 2300 / 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 KI2700 series general purpose instrument can also incorporate VisiTester, which conveniently mixes a VFL laser with the test signal, making high fiber count testing much easier.

Alternatively, the KI2300 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

KI 2300 / 2700 Series – Handheld Loss Test Meter

The KI 2300 / 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, μ W, 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 KITS™ 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 ⁴ dB | λ Sensitivity $\pm 30 \text{ nm}^3 \text{ dB}$ |
|--------------------------|---------------------|---|------------------------|----------------------------|---------------------------------------|--|---|--|
| InGaAs detector | | | | | | | | |
| 600 ~ 1700 | +15 | <i>780, 820, 850, 980</i> 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 | 0.2 |
| typical | | | | | | typical | | 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, $-35 \pm 5 \text{ dBm}$, $23 \pm 3^\circ\text{C}$, $\pm 0.5 \text{ nm}$, $20 \pm 3 \text{ nm FWHM}$, PC ceramic connector, $50 \mu\text{m}$ fiber.

Note 3: @ calibration wavelengths in bold type.

Note 4: 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 traceable.

Up to 6 assorted LED or laser sources can be specified per instrument, making 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, making 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 KI2300 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.

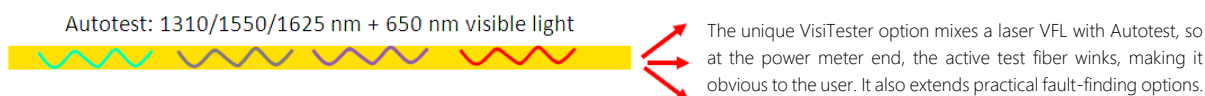
LIGHT SOURCE SPECIFICATIONS

| | 1310/1550 nm Laser | CWDM ⁶ | 1625 nm Laser | 650 nm VisiTester ⁷ | 850 / 1300 nm LED | Comments |
|---|---|-------------------|------------------|-----------------------------------|----------------------|---|
| KI 2700 series | | | | | | |
| Short term stability (dB) | 0.04 | 0.06 | 0.06 | NA | 0.01 | For 15 min, typical $\pm \Delta 2^\circ\text{C}$, 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 KI 2300 series⁷ | | | | | | |
| Short term stability (dB) | 0.03 | 0.05 | 0.05 | NA | 0.01 | For 15 min, max, $\pm \Delta 3^\circ\text{C}$ no warmup |
| Stability over temp (dB) | 0.2 | 0.2 | 0.2 | NA | 0.35 | Max |
| Common for both KI 2700 & KI 2300 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 $\pm 2\%$, 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) | | | | | |

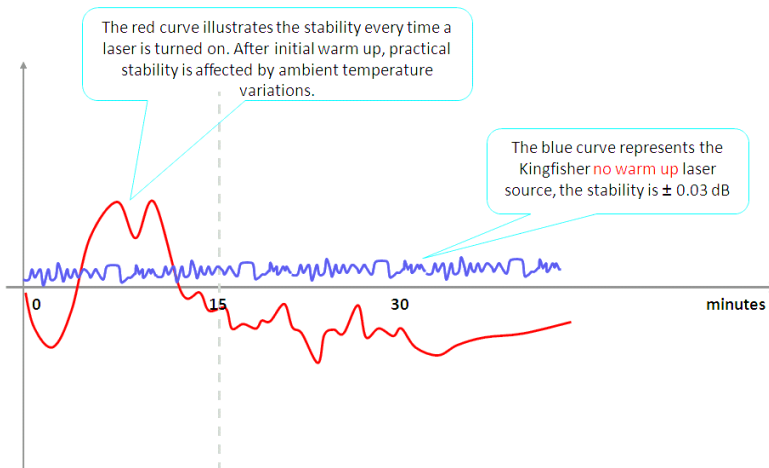
Class 1 Laser / LED infrared device. Compliant with IEC60825-1.

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

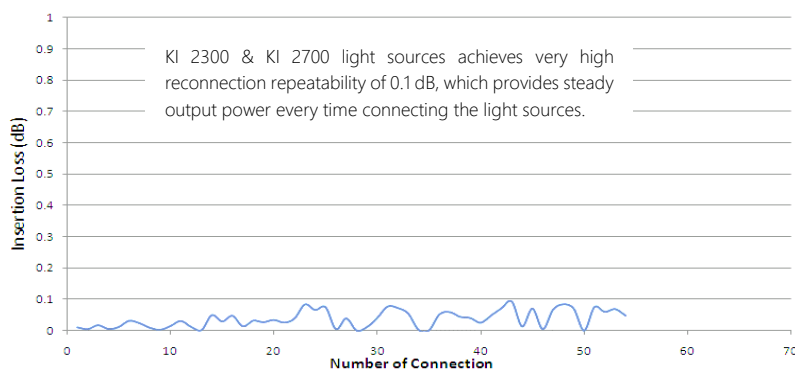
Note 7: VisiTester option:



Note 8: Premium Zero Warm Up & Ultra Stable KI2300 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 | Calibration cycle | 3 years |
| Memory | 1,000 four λ tests with date & time in internal memory, unlimited on USB memory key | | |

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

ORDERING INFORMATION

The KI 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 | | | |
| <i>KI 2700 series</i> | Refer to LIGHT SOURCE SPECIFICATIONS section for detailed specifications | | | | | | |
| Instrument, LTS 1310-1550 nm Laser, InGaAs | 0 | - | - | - | - | 2 | KI2722-InGaAs |
| Instrument, LTS 1310-1550 nm Laser VisiTester, InGaAs | -3 | - | - | - | +2 | 2 | KI27622-InGaAs |
| Instrument, LTS 850-1300 nm LED, InGaAs | - | -32 | -22.5 | -20 | - | 2 | KI2703-InGaAs |
| Instrument, LTS 850-1300 nm LED VisiTester, InGaAs | - | -35 | -25.5 | -23 | +2 | 2 | KI27603-InGaAs |
| Instrument, LTS 850-1300 nm LED, 650 nm VFL, InGaAs | - | -35 | -25.5 | -23 | +2 | 3 | KI27703-InGaAs |
| Instrument, LTS 850-1300 nm LED, 1310-1550 nm Laser, InGaAs | 0 | -32 | -22.5 | -20 | - | 3 | KI2724-InGaAs |
| Instrument, LTS 850-1300 nm LED, 1310-1550 nm Laser APC, InGaAs | 0 | -32 | -22.5 | -20 | - | 3 | KI2724-InGaAs-APC |
| Instrument, LTS 850-1300 nm LED, 1310-1550 nm Laser VisiTester, InGaAs | -3 | -32 | -22.5 | -20 | +2 | 3 | KI27624-InGaAs |
| Instrument, LTS 850-1300 nm LED, 1310-1550nm Laser VisiTester APC, InGaAs | -3 | -32 | -22.5 | -20 | +2 | 3 | KI27624-InGaAs-APC |
| Instrument, LTS 850-1300 LED VisiTester, 1310-1550 Laser VisiTester, InGaAs | -3 | -35 | -25.5 | -23 | +2 | 3 | KI27634-InGaAs |
| Instrument, LTS 1310-1490-1550 nm Laser APC, InGaAs | -3 | - | - | - | - | 2 | KI2727-InGaAs-APC |
| Instrument, LTS 1310-1490-1550 nm Laser VisiTester APC, InGaAs | -7 | - | - | - | +2 | 2 | KI27627-InGaAs-APC |
| Instrument, LTS 1310-1550-1625 nm Laser APC, InGaAs | -3 | - | - | - | - | 2 | KI27010-InGaAs-APC |
| Instrument, LTS 1310-1550-1625 nm Laser VisiTester APC, InGaAs | -7 | - | - | - | +2 | 2 | KI27610-InGaAs-APC |
| Instrument, LTS 1310-1490-1550-1625 nm Laser APC, InGaAs | -3 | - | - | - | - | 2 | KI27016-InGaAs-APC |
| <i>Zero warm up & ultra-stable light sources, KI 2300 series</i> | | | | | | | |
| Instrument, LTS 1310/1550 nm Ultra Stable Laser, InGaAs | -4 | - | - | - | - | 2 | KI2322-InGaAs |
| Instrument, LTS 1310-1550-1625 nm Ultra Stable Laser APC, InGaAs | -7 | - | - | - | - | 2 | KI23010-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 |
| KITS™ 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, KI2x/KI7x/KI3x, small (Carry Case for 2 Instruments) | OPT153* |
| Option, Carry Case, Cletop, Cleaning Sticks, KI2x / KI9x, large | OPT154B* |

Please visit kingfisherfiber.com for a wide range of FiberTester kits.

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, POF Multi Connector | OPT077 |
| Option, Hybrid Adaptor, Ceramic Sleeve, HFBR | OPT078 |
| 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 | OPT085 |

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



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