KI 2400/2800 SERIES

HAND HELD FIBER SOURCE

OPTICAL COMMUNICATIONS TEST APPLICATIONS
(in combination with a power meter)

- Mixed single mode & multimode loss testing to 6 λ
- Multi-Fiber continuity & polarity testing
- Encircled Flux compliant testing
- Tone source for fiber identifier
- Innovative and useful VisiTest feature

Revision 6

The KI 2400 / 2800 series Hand Held Fiber Sources are used with an Optical Power Meter to test loss on single mode and multimode optical fiber systems, at up to 5 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 VisiTest 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
- VisiTest easily identifies active test channel
- Interchangeable connectors with dust cap / tilt bail
- Encircled Flux compliant multimode LED sources
- Multimode sources supplied with mandrel wraps
- KI 2400 series is ultra-stable with zero warm up
- Long battery life
- External power / charging via USB
- 3 ~ 7 Year warranty
- 3 year calibration cycle
- Made in Australia

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CE ISO 9001

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The KI2400 / 2800 Hand Held 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 KI2800 source provides excellent general test capability. Alternatively, the KI2400 premium source is unique in the industry, with zero warm up, ultra high 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.

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 micro USB power input ensure 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 and 1650 nm.

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

The unique VisiTest 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.

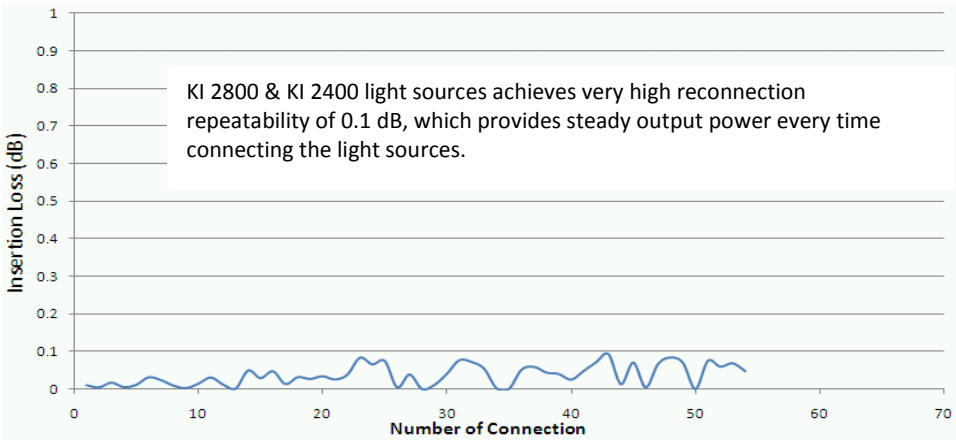
SPECIFICATIONS

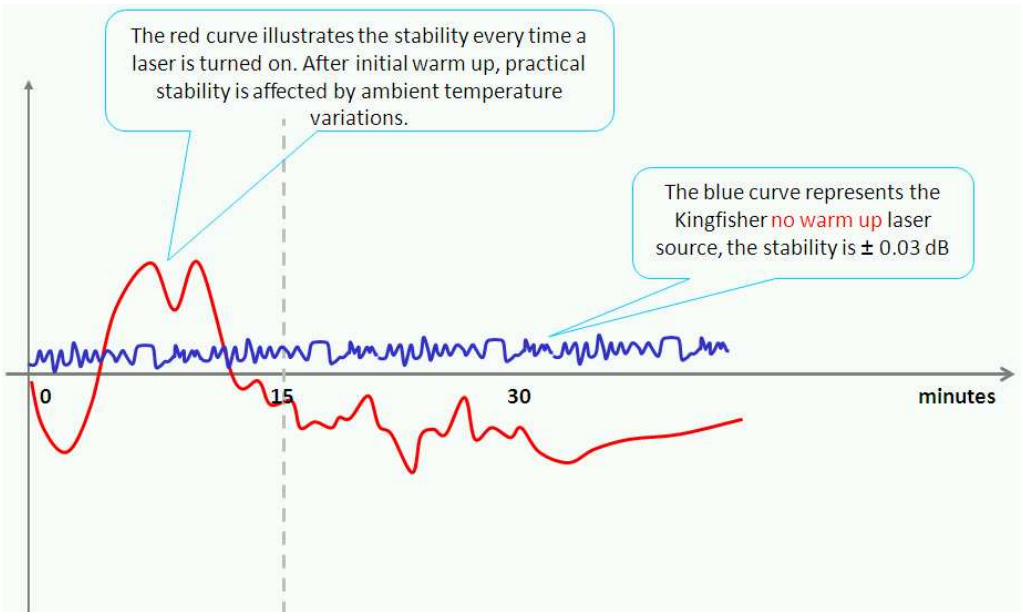
	1310/1550 nm Laser Combination	Any Other Laser Combination	650 nm VisiTest	850 / 1300 nm LED	1310/1550 nm LED	Comments
KI 2800 series						
Power, Fiber (dBm / µm) Without VisiTest	0, SMF	1 ~ 2 λ: -4, SMF 3 ~ 4 λ: -7, SMF	NA	-20, 62.5 µ -22, 50 µ -32, SMF	NA	± 1 dB
Power, Fiber (dBm / µm) With VisiTest	-3, SMF	1 ~ 2 λ: -7, SMF 3 ~ 4 λ: -10, SMF	+2, SMF	-23, 62.5 µ -25, 50 µ -35, SMF	NA	± 1 dB
Short term stability (dB)	0.04	0.06[1]	NA	0.01	NA	For 15 min, typ ± Δ 2°C, after warm up, ORL < -25 dB
Stability over temp (dB)	0.6	0.6	NA	0.35	NA	Typical
Premium zero warm up & ultra stable KI 2400 series						
Power / Fiber (dBm /µm)	-4 SMF	1 ~ 2 λ: -4, SMF 3 ~ 4 λ: -7, SMF	NA	-20, 62.5 µ -22, 50 µ -32, SMF	-20, SMF	± 1 dB
Short term stability (dB)	0.03	0.05	NA	0.01	0.03	For 15 min, max, ± Δ 3°C no warm up
Stability over temp (dB)	0.2	0.2	NA	0.35	0.2	Max
Common for both KI 2400 & KI 2800 series						
λ initial tolerance (nm)	20	20	5	NA	20	At 25 °C
λ width, nm	3	< 1	3	NA	35 / 48	FWHM, typical
λ nm/°C	0.4	0.1	0.1	0.4	0.4	Typical
Mode Controlled Source	NA	NA	NA	Mode controlled	NA	50/125 compliant: IEC 61280-4-1 {Ed.1.0}, TIA 526-14A & TIA TSB-178.
Reconnection repeatability dB	0.1	0.1	0.1	0.05	0.05	95 % confidence
Modulation	270 Hz, 1 kHz, 2 kHz ± 2 %, 12 Multi-Fiber ID tones, 2 Hz blink for Visitest					
Laser output power	Adjustable over 6 dB in 0.01 dB steps			NA	NA	

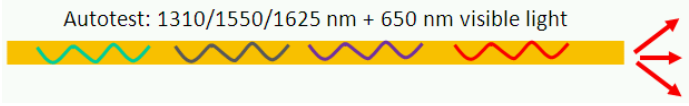
GENERAL SPECIFICATIONS

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")	Tone detection	200 ~ 2500 Hz ± 2 %
Weight	420 gm (0.9 lb). Shipping 1.5 Kg (3.3 lb)	Power	2 Alkaline AA cells. Selectable auto-off, low battery indicator
LCD size	74 x 55 mm / 2.9 x 2.2"		
Case	Polycarbonate / rubber, 1 metre drop tested	External charger	Via micro USB, user-selectable

Australian and international patents. Technical data is subject to change without notice as part of our program of continuous improvements.
Class 1 or 2 Laser / LED infra red device. 650 nm laser in VisiTest is Class 1. Compliant with IEC60825-1 and 21CFR1040.10.







The unique VisiTest 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.

ORDERING INFORMATION

Please enquire for non-listed specifications such as:
Connectors, PC or APC etc
Laser / LED wavelengths such as: 635, 650, 660, 670, 850, 1270, 1290, 1300, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610, 1625, 1650 nm.

Description	Ports	P/N
KI 2800 series		
Instrument, Source 1310-1550 nm Laser	1	KI 2822
Instrument, Source 1310-1550 nm Laser + VisiTest	1	KI 28622
Instrument, Source 850-1300 nm LED	1	KI 2803
Instrument, Source 850-1300 nm LED + VisiTest	1	KI 28603
Instrument, Source 850-1300 nm LED, 1310-1550 nm Laser	2	KI 2824
Instrument, Source 850-1300 nm LED, 1310-1550 nm Laser APC	2	KI 2824-APC
Instrument, Source 850-1300 nm LED, 1310-1550 nm Laser + VisiTest	2	KI 28624
Instrument, Source 850-1300 nm LED + VisiTest, 1310-1550 nm Laser + VisiTest	2	KI 28634
Instrument, Source 850-1300 nm LED, 1310-1550 nm Laser + VisiTest APC	2	KI 28624-APC
Instrument, Source 1310-1550-1625 nm Laser APC	1	KI 28010-APC
Instrument, Source 1310-1550-1625 nm Laser + VisiTest APC	1	KI 28610-APC
Zero warm up & ultra stable light sources, KI 2400 series		
Instrument, Source 1310/1550 nm ultra stable laser	1	KI 2422
Instrument, Source 1310-1550-1625 nm ultra stable laser APC	1	KI 24010-APC
Instrument, Source 1310/1550 nm ultra stable LED	1	KI 2419

STANDARD ACCESSORIES

Description	Quantity
SC connector adaptor (OPT046)	1 per port
Operation manual	1
Calibration certificates	1
Carry Pouch	1
Carry strap	1
50 & 62.5 µm fiber mandrel wraps for Multimode sources	1
USB A to USB micro cable (OPT188B)	1

OPTIONAL ACCESSORIES

Description	P/N
Carry Case for 2 Instruments	OPT153
Carry Case includes Cletop-style cleaner & Cleaning Sticks	OPT154A

OPTIONAL INTERCHANGEABLE CONNECTOR ADAPTORS

Description	P/N	Description	P/N
FC	OPT051	LC	OPT076
ST	OPT040	MU	OPT080
D4	OPT055	LSA / DIN47256	OPT071
E2000/LSH, green	OPT060G	SMA 905/906	OPT082
E2000/LSH	OPT060		

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.

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

AUTHORISED DEALER

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KI 2600 SERIES

HAND HELD FIBER METER

OPTICAL COMMUNICATIONS TEST APPLICATIONS

- System power testing
- Attenuation testing
- Fiber identification
- Fault Finding & Continuity Testing

Revision 8

A fully-featured Hand Held Optical Power Meter used for testing fiber optic communications systems.

Superior measurement confidence is achieved through a combination of excellent basic accuracy, intuitive use and rugged reliability.

Options cover power levels from +33 to -70 dBm, all useful wavelengths, many connector styles including duplex / ribbon, and large core POF fiber.

FEATURES

- Reliable, rugged & versatile
- Simple to use
- Very long battery life
- LCD is large, clear, sunlight readable & backlit
- Interchangeable connectors with dust cap/tilt bail
- 24 genuine 1% calibration wavelengths
- External power / charger via micro USB port
- Memory with text, timestamp and USB dump
- Simultaneous 3 λ loss display with Autotest source
- Flexible real-time PC reporting software
- Multi-Fiber ID tone for fiber identification
- Optional visual fault finder
- Power averaging mode for modulated signal
- Max / Min recording
- 3 year calibration cycle
- 3 ~ 7 year warranty
- Made in Australia

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The KI 2600 Hand Held Fiber Meter measures absolute or relative light levels and test tones in fiber optic systems.

Autotest provides fast, easy and automatic multi λ (wavelength) loss testing. Up to 3 λ are displayed simultaneously, along with the source nominal power level and λ. Any Kingfisher Autotest light source / LTS with matching λ can be used.

The meter displays mW, µW, nW, dB, dBm to 0.01 dB resolution, with no range changing delays. A separate reference for each λ is stored and displayed. Superior high power performance is achieved.

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

Interchangeable connectors are dust and drop protected. SC adaptors are supplied, with others available including small form factor LC styles. Metal free adaptors avoid contamination of connectors in high power systems.

Loss test results can be stored in the large memory, along with a user-input cable name and timestamp. Results can be copied onto a USB memory key with one button push. Alternatively, live readings can be put directly onto a customer report computer using KITS™ customisable Excel-based reporting software. Reports can be easily customized for any terminology, language or format. KITS™ also provides a one-button file dump to a PC with Windows OS.

When used with Multi-Fiber ID sources, the Multi-Fiber ID tone feature uniquely identifies up to 12 fibers, in addition to common test tones.

The VFL (Visible Fault Locator) option offers simple fault finding and continuity testing.

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

See alternative brochure for special instrument versions with large area detectors up to + 33 dBm.

SPECIFICATIONS

Response λ Nm	Damage level dBm	Calibration λ nm	Power range dBm	Tone & Autotest Min dBm	Mid range linearity[1] dB	Calibration Accuracy[2] %	Polarization Sensitivity dB	Total Uncertainty[3] dB	λ Sensitivity ± 30 nm[5] 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	0.02	1 % (0.06 dB)	< 0.005	0.3	0.03
H5 (InGaAs) detector									
800 ~ 1700	+27[4]	*820, 850, 980* **1270, 1290, 1300, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610, 1625**, 1650	*+24 ~ -50* +24 ~ -60	*-35* -40	0.02	1 % (0.06 dB)	< 0.005	0.35	0.03
Ge detector									
600 ~ 1650	+25	*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	*+15 ~ -50* +15 ~ -60	*-45* -50	0.04	1 % (0.06 dB)	< 0.005	0.5	0.03
Si detector									
350 ~ 1100	+10	**470, 520, 635, 650, 660, 780, 850, 980**	+5 ~ -70	-50	0.02	1 % (0.06 dB)	< 0.005	0.3	0.03
					typical		typical	max	typical

Note 1: Mid range linearity excludes top 5 dB and bottom 10 dB of range.
Note 2: Calibration condition: non coherent light, -35±5 dBm, 23±1°C, ±1 nm, 10±3 nm FWHM, PC ceramic connector, 100 µm fiber.
Note 3: Includes contributions of: varying optical connector types, calibration uncertainty, full temperature, dynamic range and fiber core diameter up to 200 µm.
Note 4: H5 can sustain the damage level for 2 minutes.
Note 5: At calibration wavelengths in bold type.

VFL SPECIFICATIONS

Parameters	Value
Output power	-2 ± 1 dBm
λ	650 nm
λ width	3 nm
Modulation	CW, 2, 270, 1k, 2k Hz

GENERAL SPECIFICATIONS

Parameters	Value
Battery life	Upto 1000 hrs laser & backlit off / 200 hrs laser in blink mode
Size / Weight	190 x 105 x 35 mm (7.5 x 4.1 x 1.4") / 420 gm (0.9 lb). Shipping 1.5 Kg (3.3 lb)
LCD size	74 x 55 mm / 2.9 x 2.2"
Operating / Storage	-15 to 55 °C / -25 to 70 °C
Case	Polycarbonate / rubber, 1 metre drop tested
Tone detection	150 ~ 9900 Hz ± 1 %
Max / min	Recording feature for stability testing
Power	2 x Alkaline / Lithium 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
Memory	999 four λ tests with date & time in internal memory, unlimited on USB memory key
USB interfaces	Micro USB, for general USB & power; USB A type connector, for memory key only

ORDERING INFORMATION

Description	P/N
InGaAs Power Meter	KI 2600-InGaAs
InGaAs Power Meter with VFL	KI 2601-InGaAs
H5 Power Meter	KI 2600-H5
H5 Power Meter with VFL	KI 2601-H5
Ge Power Meter	KI 2600-Ge
Ge Power Meter with VFL	KI 2601-Ge

Please enquire for non-standard specifications

STANDARD ACCESSORIES

Description	Quantity	
	KI 2600 series	KI 2601 series
SC connector adaptor (OPT046)	1	2
Operation manual	1	
Calibration certificates	1	
Carry Pouch	1	
Carry strap	1	
KITS™ Recording/Reporting software	1	
Option, USB A to USB micro cable (OPT188B)	1	

OPTIONAL INTERCHANGEABLE CONNECTOR ADAPTORS

Description	P/N	Description	P/N
FC	OPT051	LC	OPT076
ST	OPT040	MU	OPT080
D4	OPT055	LSA / DIN47256	OPT071
E2000/LSH, green	OPT060G	2.5mm universal	OPT081
E2000/LSH	OPT060	SMA 905/906	OPT082

The power meter works with both PC and APC connectors.

OPTIONAL ACCESSORIES

Description	P/N
Carry Case for 2 Instruments	OPT153
Carry Case includes Cletop-style cleaner & Cleaning Sticks	OPT154A

Please visit kingfisher.com.au for a wide range of FiberTester kits.

AUTHORISED DEALER

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