

# KI 2600XL / 9600XL Series

## POF Power Meters

### Optical Communications Test Applications

- Testing power, attenuation & continuity on POF Fiber
- Range of Interchangeable POF connectors
- High power options
- Range of calibrated wavelengths



### Revision 15

These KI 2600XL & KI 9600XL series Optical Power Meters have large area detectors optimized for general plastic optical fiber testing.

Up to 1% traceable accuracy, ease of use and high availability combine to achieve superior measurement confidence.

A wide range of practical connector and calibration options cover most current and emerging POF applications.

Connectors include Toslink, Mini Toslink, SPDIF, bare fiber, Versalink / HFBR series (simplex and duplex), SMA, SC, 2.5 mm

The KI 2600XL meter has many advanced functions, and Excel computer software for live display, reporting, data logging and other applications.

Typical application areas include: Industrial, POF Ethernet, avionics & sensing.

Other POF specific instruments include Handheld Light Sources, Variable Optical Attenuator and a various complete test kits.

Please refer to other data sheets for other versions of these power meters.

### Features

- Large area Si or Ge detector
- Very long battery life
- Industry standard screw-on connector adaptors
- Calibrations at 9 – 28 wavelengths
- KI 2600 external power / charger via USB
- KI 2600 memory with text, timestamp, USB dump, KITS™ data logging / reporting software
- Test Tone Detection
- Max / min recording
- Compact, rugged and light weight
- Sunlight readable display
- Made in Australia
- ISO 17025 traceable calibration certificate
- 3 ~ 7 years warranty
- 3 years recommended calibration cycle
- Available in easy to order test kits

## KI 2600XL / 9600XL Series – POF Power Meters

The XL series POF Optical Power Meters measure absolute and relative light level in POF, multimode and single mode optical communication systems. High accuracy backed up by an ILAC/ ISO 17025 traceable calibration certificate and ease of use make them ideal for field and laboratory use.

The large area detector is ideal for testing 1 mm POF, and also works with MT-RJ duplex connectors, MPO/MT/MTP ribbon fiber connectors with up to 12x6 fibers, large fiber bundles, or any other fiber arrangement with an active emission area up to 3 mm across.

Silicon (Si) detectors are optimized for visible light and 350 to 1000 nm spectrum making them suitable for POF, and 850 nm multimode applications.

Germanium (Ge) detectors work over visible and infra-red light from 600 - 1650 nm, and higher power levels, making them attractive for mixed applications.

The industry standard 7/8" 28 TPI screw on connector interface can be equipped with almost any connector style.

Operational savings result in up to 1000-hour battery life, and no range changing delays.

The meters display mW,  $\mu$ W, nW, dB, dBm to 0.01 dB resolution. A separate reference for each  $\lambda$  can be stored and displayed.

Tight total uncertainty specifications cover the entire measuring range, operating temperatures, connector types and fiber types.

The handy tone detector is a useful craft aid for fiber identification. The actual modulation frequency is measured and displayed, so that source modulation rates can be checked.

For other versions of this power meter, or for general features of a particular instrument range, please refer to other KI2600 & KI9600 brochures. Please see other brochures for matching light sources, or complete inspection & test kits.

Additional general features of the premium KI2600XL range include: more calibration wavelengths, high power capability, external power & charging, captive dust cover for optical connector, larger display, memory, USB key data dump, text naming, computer interface & software featuring live data logging or reporting in multiple languages.

Please enquire for non-standard calibration wavelengths or connector styles.

### OPTICAL SPECIFICATIONS

Response $\lambda$ , nm	Damage level dBm	Calibration $\lambda$ nm	Power range dBm	Tone <sup>6</sup> & Autotest Min dBm	Midrange linearity dB <sup>1</sup>	Calibration Accuracy % <sup>2</sup>	Polarization Sensitivity dB <sup>4</sup>	$\lambda$ Sensitivity $\pm 30$ nm dB <sup>3</sup>	Response uniformity across detector
<i>KI 2600XL-Ge5 (5 mm Ge detector):</i>									
600 ~ 1650	+20	660,780,820,1590,1610,1625,1650	+15 ~ -30	-25	0.06	1% (0.06 dB)	< 0.05	0.2	2% (0.09 dB)
		850,980,1270,1290, <b>1300,1310,1330,1350, 1370,1390,1410,1430,1450,1470,1490, 1510,1530,1550,1570</b>	+15 ~ -40	-35					
<i>KI 9600XL-Ge5 (5 mm Ge detector):</i>									
600 ~ 1650	+20	660,780,1610,1625	+10 ~ -30	-25	0.06	2% (0.09 dB)	< 0.05	0.2	2% (0.09 dB)
		850, <b>1300,1310,1390,1490</b> ,1550	+10 ~ -40	-35					
<i>KI 2600XL-Si5 (5 mm Si detector):</i>									
350 ~ 1100	+15	400,430,470,490,520,550,580,600,635	+10 ~ -50	-35	0.04	1% <sup>5</sup> (0.06 dB)	< 0.05	0.2	1% (0.06 dB)
		650,660,670,700,740,780, <b>820,850,880, 910,940,980</b>	+10 ~ -60	-45					
<i>KI 9600XL-Si5 (5 mm Si detector):</i>									
350 ~ 1100	+15	470,520	+5 ~ -50	-35	0.04	2% (0.09 dB)	< 0.05	0.2	1% (0.06 dB)
		635,650,660,780,820, <b>850,980</b>	+5 ~ -60	-45					
					Typical	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 dBm, 23 $\pm$ 3°C,  $\pm$ 0.5 nm, 20 $\pm$ 3 nm FWHM, PC ceramic connector, 50  $\mu$ m fiber.

**Note 3:** @ calibration wavelengths in bold type.

**Note 4:** For APC connectors only.

**Note 5:** 400, 430 nm are 4% (0.2 dB) accuracy.

**Note 6:** For tone detection up to 1000 Hz.

## VFL SPECIFICATIONS

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

## GENERAL SPECIFICATIONS

Parameters	KI 2600XL, KI 2601XL	KI 9600XL
Battery life	Up to 1000 hours	300 hours
Size / Weight	190 x 165 x 38 mm (7.5 x 6.5 x 1.5") / 420 gm (0.9 lb.)	124 x 81 x 25 mm (4.9 x 3.2 x 1.0") / 150 gm (0.33 lb.)
Operating / Storage	15 to 55 °C / -25 to 70 °C	-15 to 55 °C / -25 to 70 °C
Relative humidity	0 ~ 95 %	0 ~ 95 %
Recommended calibration cycle	3 years	3 years
Case	Polycarbonate / rubber edges & corners, moisture resistance, 1-meter drop tested	Polycarbonate / rubber edges & corners, moisture resistance, 2.5 meters drop tested
Dust cap	Captive, functions as tilt bail when slid open	Captive
Tone detection	150 ~ 9900 Hz ± 1 %	200 ~ 2500 Hz ± 2 %
Max / Min	Recording feature for stability testing	Recording feature for stability testing
Power	2x Alkaline / Lithium AA cells or 2x NiMH AA cells, user selectable charging; Ext power input via micro-USB or USC-C depending on instrument version; Selectable auto-off, low battery indicator, backlit display	2x alkaline / Lithium AAA cells. Selectable auto-off, low battery indicator
Memory	1000 four-λ tests with date & time in internal memory, unlimited on USB memory key	N/A
USB interfaces	Micro-USB or USB-C depending on instrument version for general USB & power; USB-A type connector for memory key only	N/A

## FEATURE & APPLICATION COMPARISON

5 mm Ge Detector Power Meters:			
Feature	Typical Application	KI 2600XL-Ge5	KI 9600XL-Ge5
Autotest	Simultaneous multi- λ Loss test	<input checked="" type="checkbox"/>	
USB / KITS™ software	Data acquisition, pass /fail, computer display	<input checked="" type="checkbox"/>	
External Power		<input checked="" type="checkbox"/>	
Backlight		<input checked="" type="checkbox"/>	
5 mm Ge	Most connector styles, Max fiber exit diameter for NA= 0.2: 3 mm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Power range		+15 ~ -40 dBm	+10 ~ -40 dBm
Response Range		600 ~ 1650 nm	600 ~ 1650 nm
POF calibration λ		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MMF calibration λ		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SMF calibration λ		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5 mm Silicon Detector Power Meters:			
Feature	Typical Application	KI 2600XL-Si5, KI 2601XL-Si5	KI 9600XL-Si5
Autotest	Simultaneous multi- λ Loss test	<input checked="" type="checkbox"/>	
USB / KITS™ software	Data acquisition, pass /fail, computer display	<input checked="" type="checkbox"/>	

External Power		<input checked="" type="checkbox"/>	
Backlight		<input checked="" type="checkbox"/>	
5 mm Si	MPO/MT/MTP, POF, MT-RJ, most connector styles (Max fiber exit diameter for NA= 0.2: 3 mm. POF = 1 mm diameter)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Power range		+10 ~ -60 dBm	+5 ~ -60 dBm
Response Range		350 ~ 1100 nm	350 ~ 1100 nm
POF calibration $\lambda$		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
MMF calibration $\lambda$ , 850 nm		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## ORDERING INFORMATION

To order Power Meter, please specify:

- 1) Instrument part number
- 2) At least one interchangeable adaptor (only limited instrument models come with adaptors, refer to STANDARD ACCESSORIES section)
- 3) Accessories as required.

Description	Part number
Instrument, Power Meter Ge 5mm	KI 2600XL-Ge5
Instrument, Power Meter Ge 5mm	KI 9600XL-Ge5
Instrument, Power Meter Si 5mm	KI 2600XL-Si5
Instrument, Power Meter Si 5mm, VFL	KI 2601XL-Si5
Instrument, Power Meter Si 5mm	KI 9600XL-Si5

Please enquire about non-standard specifications.

## STANDARD ACCESSORIES

Description	Quantity		
	KI 2601XL-Si5	KI 2600XL-x	KI 9600XL-x
Connector Adaptor XL 7/8-28, MTP / MPO12xn (OPT227)	-	1 (for KI2600XL-Ge7 only)	1 (for KI9600XL-Ge7 only)
Connector Adaptor XL 7/8-28, MTP / MPO16xn (OPT228)	-	1 (for KI2600XL-Ge7 only)	1 (for KI9600XL-Ge7 only)
Connector Adaptor Hybrid SC/SC (OPT046)	1	-	-
Operating manual / Quick guide	1	1	1
QA certificate	1	1	1
ILAC/ NATA calibration certificate	1 set	1 set	1 set
Soft carry pouch	1	1	1
Wrist strap	1	1	1
USB cable (USB-A to micro-USB or USB-A to USB-C)	1	1	-
KITS™ Recording/reporting software	Download from website for free		-

Note: you will need to order at least one style of connector adaptor

## 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](http://kingfisherfiber.com) for a wide range of FiberTester kits.

## OPTIONAL INTERCHANGEABLE CONNECTOR ADAPTORS

### XL Series Adaptors (for Power Meter port):

Description	Part number	Description	Part number
<i>POF optimized adaptors:</i>			
Option, Connector Adaptor XL 7/8-28, SMA 905/906	OPT203	Option, Connector Adaptor XL 7/8-28, MTP / MPO 12 x n	OPT227
Option, Connector Adaptor XL 7/8-28, POF multi	OPT229 <sup>7</sup>	Option, Connector Adaptor XL 7/8-28, MTP / MPO 16 x n	OPT228
Option, Connector Adaptor XL 7/8-28, Toslink	OPT230	Option, Connector Adaptor XL 7/8-28, MMC/MT ferrule	OPT233
Option, Connector Adaptor XL 7/8-28, HFBR	OPT231	Option, Connector Adaptor XL 7/8-28, CS	OPT200
Option, Connector Adaptor XL 7/8-28, POF SC	OPT201-POF	Option, Connector Adaptor XL 7/8-28, SC	OPT201
Option, Connector Adaptor XL 7/8-28, POF ST	OPT202-POF	Option, Connector Adaptor XL 7/8-28, ST	OPT202
Option, Connector Adaptor XL 7/8-28, POF FC	OPT204-POF	Option, Connector Adaptor XL 7/8-28, FC	OPT204
Option, Connector Adaptor XL 7/8-28, HFBR	OPT231	Option, Connector Adaptor XL 7/8-28, Biconic	OPT205
Option, Connector Adaptor XL 7/8-28, POF 2.5 mm universal	OPT225-POF	Option, Connector Adaptor XL 7/8-28, 1.25 mm Universal	OPT224
<i>Other adaptors:</i>			
		Option, Connector Adaptor XL 7/8-28, 2.5 mm Universal	OPT225
		Option, Connector Adaptor XL 7/8-28, LC	OPT226A

**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

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



### Hybrid Series Adaptor (for VFL port of K12601XL-Si5):

Description	Part Number	Description	Part Number
Option, Hybrid Adaptor, Ceramic Sleeve, SC/FC	OPT051	Option, Hybrid Adaptor, Ceramic Sleeve, SC/LSA-DIN47256	OPT071
Option, Hybrid Adaptor, Ceramic Sleeve, SC/SC	OPT046	Option, Hybrid Adaptor, SC/POF multi	OPT077
Option, Hybrid Adaptor, Ceramic Sleeve, SC/MU	OPT080	Option, Hybrid Adaptor, Metal Sleeve, SC/SMA 905/906	OPT082
Option, Hybrid Adaptor, Ceramic Sleeve, SC/ST	OPT040	Option, Hybrid Adaptor, Ceramic Sleeve, SC/Universal 2.5 mm	OPT081
Option, Hybrid Adaptor, Ceramic Sleeve, SC/D4	OPT055	Option, Hybrid Adaptor, Ceramic Sleeve, SC/Universal 1.25 mm	OPT085
Option, Hybrid Adaptor, Ceramic Sleeve, SC/E2000	OPT060	Option, Hybrid Adaptor, SC/HFBR	OPT078
Option, Hybrid Adaptor, Ceramic Sleeve, SC/E2000 Green	OPT060G	Option, Hybrid Adaptor, Ceramic Sleeve, SC/F3000 or LC	OPT072
Option, Hybrid Adaptor, Ceramic Sleeve, SC/LC, metal body	OPT076	Simplex, plastic body	



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