

# KI x600XL Series Power Meters



The KI 2600XL & KI 9600XL series Large Area Detector Optical Power Meters have large area optical detectors, 5 mm for general purpose testing and 2 mm for high power testing. Typical applications include testing fibre optic communications systems employing multi-fibre connectors such as MPO/MT/MTP and MTRJ, large core fibre such as POF, fibre bundles, and high power pump lasers.

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

Detector & calibration options cover a wide range of optical connectors, fibre types, wavelengths and power levels.

## Applications

- Testing power, attenuation & continuity
- Duplex connectors like MT-RJ, MU
- Ribbon fibre connectors like MPO/MT/MTP
- Large diameter fibre, eg POF
- Unusual optical connectors
- Single mode & multimode fibre
- Testing high power up to + 33 dBm or 2 W
- Fibre bundles up to 3 mm diameter



## Features & Benefits

- 5 mm dia Ge, InGaAs & Si detectors
- 2 mm dia high power InGaAs & Ge detectors
- Industry standard screw-on connector adapters
- Calibrations at 8 – 13 wavelengths
- KI 2600 external power / charger via micro USB
- KI 2600 memory with text, time-stamp, USB dump, KITS™ data logging / reporting software
- 3 years warranty & calibration cycle
- Long battery life
- Test Tone Detection
- Max / min recording
- Compact, rugged and light weight
- Sunlight readable display
- Made in Australia

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The XL series Large Area Detector Optical Power Meters measure the absolute and relative light level in multimode and single mode optical communication systems. High accuracy and simplicity of use make them ideal for field and laboratory use.

The 5 mm diameter detector is ideal for testing 1 mm POF, MT-RJ duplex connectors, MPO/MT/MTP ribbon fibre connectors with up to 72 fibres, large fibre bundles, or any other fibre arrangement with an active emission area up to 3 mm across. Silicon (Si) detectors are optimized for visible light to 1000 nm spectrum making them suitable for POF and most multimode applications. Germanium (Ge) or Indium Gallium Arsenide (InGaAs) detectors are optimized for infra-red light up to 1650 nm, making them suitable for multimode and single mode applications. The high power 2 mm InGaAs & Ge detectors allow +33 dBm (2 W) in maximum power testing.

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

Operational savings result from the 3 year re-calibration cycle, Up to 1000 hour battery life, and no range changing delays.

The meters display mW, µW, nW, dB, dBm to 0.01 dB resolution. A separate reference for each λ can be stored and displayed. Tight total uncertainty specifications cover the entire measuring range, operating temperatures, connector types and fibre types.

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

For general purpose versions of this power meter, or for general features of a particular instrument range, please refer to the general 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.

## Technical Specifications

Response wavelength (nm)	Damage level (dBm)	Calibration wavelength (nm)	Power range (dBm)	Tone & autotest min (dBm)	Tone & autotest max (dBm)	Mid range linearity (dB) <sup>1</sup>	Calibration accuracy (%) <sup>2</sup>	Polarization insensitivity (dB)	Total uncertainty (dB) <sup>3,5</sup>	Wave-length sensitivity ± 30 nm <sup>5</sup> dB	Response uniformity across detector
<b>KI 2600H3BXL-InGaAs2 (filtered 2 mm InGaAs2 detector)</b>											
800 ~ 1700	+35 <sup>4</sup>	850 <b>980, 1270, 1300, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610, 1625, 1650</b>	+33 ~ -30 +33 ~ -40	-30 -40		0.02	1 % (0.06 dB)	< 0.005	0.35	0.03	1 % (0.06 dB)
<b>KI 2600H3BXL-Ge2 (filtered 2 mm Ge detector)</b>											
600 ~ 1650	+35 <sup>4</sup>	780, 820, 850, 1590, 1610, 1625, 1650 <b>980, 1270, 1300, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570</b>	+33 ~ -30 +33 ~ -40	-10 -20		0.04	1 % (0.06 dB)	< 0.005	0.5	0.04	2 % (0.09 dB)
<b>KI 2600XL-InGaAs5 (5 mm InGaAs detector)</b>											
600 ~ 1700	+15	780, 820, 850 <b>980, 1270, 1300, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610, 1625, 1650</b>	+10 ~ -50 +10 ~ -50	-50 -60		0.02	1 % (0.06 dB)	< 0.005	0.35	0.03	1 % (0.06 dB)
<b>KI 2600XL-Ge5 (5 mm Ge detector)</b>											
600 ~ 1650	+15	635, 650, 660, 780, 820, 1590, 1610, 1625, 1650 <b>850, 980, 1270, 1290, 1300, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570</b>	+15 ~ -30 +15 ~ -40	-30 -50		0.04	1 % (0.06 dB)	< 0.005	0.5	0.03	2 % (0.09 dB)
<b>KI 9600XL-Ge5 (5 mm Ge detector)</b>											
600 ~ 1650	+15	635, 650, 660, 780, 1610, 1625 <b>850, 1300, 1310, 1390, 1490, 1550</b>	+10 ~ -30 +10 ~ -40	-30 -40		0.04	2 % (0.09 dB)	< 0.005	0.5	0.04	2 % (0.09 dB)
<b>KI 2600XL-Si5 (5 mm Si detector)</b>											
350 ~ 1100	+15	470, 520 <b>635, 650, 660, 780, 820, 850, 980</b>	+10 ~ -50 +10 ~ -60	-40 -50		0.02	1 % (0.06 dB)	< 0.005	0.3	0.03	1 % (0.06 dB)
<b>KI 9600XL-Si5 (5 mm Si detector)</b>											
350 ~ 1100	+10	470, 520 <b>635, 650, 660, 780, 820, 850, 980</b>	+5 ~ -50 +5 ~ -60	-40 -50		0.02	2 % (0.09 dB)	< 0.005	0.3	0.03	1 % (0.06 dB)

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 fibre.

Note 3: Includes contributions of: varying optical connector types, calibration uncertainty, full temperature, dynamic range and fibre core diameter up to 200 µm.

Note 4: H3B can sustain the damage level for 2 minutes.

Note 5: At calibration wavelengths in bold type.

## General Specifications

Series	KI 2600XL	KI 9600XL
Battery life	Up to 1000 hours, typical	300 hours, typical
Size WxHxD (mm)	165 x 190 x 38	124 x 81 x 25
Weight unit (kg)	0.42	0.15
Case material	Polycarbonate / rubber edges & corners	
Physical resistance	1.0m drop test	2.5m drop tested
Operating temp (°C)	-15 to 55	
Storage temp (°C)	-25 to 70	
Relative humidity (%)	0 ~ 95	
Calibration cycle (years)	3	
Tone detection (Hz)	150 ~ 9900 ±1%	200 ~ 2500 ±2%
Min-max	Recording feature for stability testing	
Power	2 Alkaline / lithium AA cells or 2 NiMh AA cells, user selectable charging, ext power via micro USB, selectable auto-off, low battery indicator, backlit display	2 Alkaline AAA cells, selectable auto-off, low battery indicator
Memory	1000 four wavelength tests with date & time, expandable on ext USB key	NA
Standard accessories excludes	Quick guide, soft carry pouch, wrist strap & calibration certificate, KITS™ recording software, USB A to USB micro cable	Quick guide, soft carry pouch, wrist strap & calibration certificate

Note: A range of optional accessories available. Contact FOS for details.

## Ordering Information

Description	Part number
<b>KI 2600XL Series</b>	
Instrument, Power Meter Ge 5mm	KI2600XL-Ge5
Instrument, Power Meter InGaAs 5mm	KI2600XL-InGaAs5
Instrument, Power Meter H3B Ge 2mm	KI2600H3BXL-Ge2
Instrument, Power Meter H3B InGaAs 2mm	KI2600H3BXL-InGaAs2
Instrument, Power Meter Si 5mm	KI2600XL-Si5
<b>KI 9600XL Series</b>	
Instrument, Power Meter Ge 5mm	KI9600XL-Ge5
Instrument, Power Meter Si 5mm	KI9600XL-Si5

Please enquire for non-listed specification.

NOTE: When ordering, specify part number & at least one interchangeable adapter.

## Interchangeable Adapters

Description	P/N	Description	P/N	Description	P/N
SC	OPT201	Universal 1.25mm	OPT224	Toslink <sup>6</sup>	OPT230
FC	OPT204	Universal 2.5mm	OPT225	Diamond 3.6mm	OPT208
D4	OPT206	MTRJ	OPT223	POF cable, mini toslink, HFBR series, 2.5mm <sup>6</sup>	OPT229
LSA/DIN	OPT207	MPO	OPT227		
SMA 905/906 <sup>6</sup>	OPT203	EC	OPT221	Other styles available on request	
LC	OPT226A*	Biconic	OPT205	Note: All adapters suit both PC & APC	
				Note 6: Suits POF fibre. Other adapters require user enlarged pinhole	

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## Product Guide

Feature	Typical Application	KI 2600XL-Ge5	KI 2600XL-InGaAs5	KI 9600XL-Ge5
<b>Ge &amp; InGaAs detector power meters</b>				
Autotest	Simultaneous multi-wave-length Loss test	✓	✓	
USB / KITS™ software	Data acquisition, pass/fail, computer display	✓	✓	
External power		✓	✓	
Backlight		✓	✓	
Detector	MPO/MT/MTP, POF, MTRJ, most connector styles (max fibre core dia 3mm)	5mm Ge	5mm InGaAs	5mm Ge
Power range (dBm)		+15 ~ -40	+10 ~ -60	+10 ~ -40
Response range (nm)		600 ~ 1650	600 ~ 1700	600 ~ 1650
POF calibration λ		✓		✓
MMF calibration λ		✓	✓	✓
SMF calibration λ		✓	✓	✓
Feature	Typical Application	KI 2600H3BXL-Ge2	KI 2600H3BXL-InGaAs2	
<b>High power detector Power Meters</b>				
Autotest	Simultaneous multi-wave-length Loss test	✓	✓	
USB / KITS™ software	Data acquisition, pass/fail, computer display	✓	✓	
External power		✓	✓	
Backlight		✓	✓	
Detector	Single core SMF / MMF with very high power levels	2mm Ge	2mm InGaAs	
Power range (dBm)		+33 ~ -40	+33 ~ -40	
Response range (nm)		600 ~ 1650	800 ~ 1700	
POF calibration λ		✓		
MMF calibration λ		✓	✓	
SMF calibration λ		✓	✓	
Feature	Typical Application	KI 2600XL-Si5	KI 9600XL-Si5	
<b>Silicon detector Power Meters</b>				
Autotest	Simultaneous multi-wave-length Loss test	✓		
USB / KITS™ software	Data acquisition, pass/fail, computer display	✓		
External power		✓		
Backlight		✓		
Detector	MPO/MT/MTP, POF, MTRJ, most connector styles	5mm Si	5mm Si	
Power range (dBm)		+10 ~ -60	+5 ~ -60	
Response range (nm)		350 ~ 1100	350 ~ 1100	
POF calibration λ		✓	✓	
MMF calibration λ		✓	✓	

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