

KI 7740C SERIES

TWO WAY OPTICAL LOSS TEST SET



OPTICAL COMMUNICATIONS TEST APPLICATIONS

- Single mode & multimode cable
- General testing & maintenance
- Standards compliant LAN certification



Revision 17

The KI 7740C series is a very fast and easy bi-directional loss tester. Average fiber optic link loss is automatically displayed in real time on both instruments, at multiple wavelengths, via a single fiber.

Featuring high speed and high accuracy, results can either be stored in internal memory, or inserted directly into a customized acceptance report on a PC, with one mouse click.

Detector & calibration options cover a wide range of connector types and fiber types from +27 to -70 dBm with 2% Traceable Accuracy.

It is a robust, reliable and easy to use instrument for high performance single mode or multimode fiber optic cable testing.

FEATURES

- Autotest compatibility with other instruments
- Reliable, rugged & field proven
- Simple to use
- Patented low cost Interchangeable connectors
- Excellent optical power stability on source
- Excellent re-connection repeatability
- High measurement confidence
- Mode controlled multimode sources
- Multimode sources come with 50 & 62.5 μm fiber mandrel wraps
- Long battery life
- Large memory
- Instant Pass / Fail indication
- Flexible real-time PC reporting software
- External power & USB data interfaces
- Sunlight readable display and backlight
- 3 year calibration cycle
- 3 ~ 7 year warranty
- Made in Australia

This is a very fast and easy bi-directional loss test Set. From start of test to acceptance report takes one mouse click and 4 seconds per wavelength.

The real-time loss display on both instruments means that cable certification and rectification use the same procedure, which simplifies training and operating procedures.

Autotest is available on both Test and Meter ports and is compatible with all other Autotest instruments.

The instrument provides instant accurate and traceable measurements, with a high stability light source.

All emitters feature excellent repeatability and stability. Re-connection repeatability is < 0.1 dB, resulting in exceptional measurement accuracy.

The optical connector adaptor is easily changed as required, and is protected with a captive dust cap. This instrument meets the general requirements of MIL PRF 28800F class 2.

The long battery life eliminates the requirement for rechargeable batteries and time consuming re-charging procedures.

High availability is the result of >190 hour battery life, patented interchangeable optical connectors for both of the ports, 3 year calibration cycle and superior reliability.

The instrument is also a stand-alone traceable power meter, multi-light source and optical tone generator.

850 / 1300 nm LED sources are ideal for multimode testing. They meet the Encircled Flux (EF) standard compliance, and provide the most consistent and reliable testing results.

The new InGaAs detector has wider wavelength response range from 600 ~ 1700. It provides good response for all common wavelengths. A Si detector is cost effective for 850 nm and industrial applications.

Flexible KITS™ PC software is a real-time measurement, Pass/Fail assessment and reporting solution. Easily customized for any language and reporting format, it also supports memory download, data logging, label printing, legacy instruments and enterprise level data management.

POWER METER 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	+5 ~ -60 +5 ~ -70	-45 -50	0.02	1 % (0.06 dB)	< 0.005	0.3	0.03	
H5 (InGaAs) detector										
800 ~ 1700	+25	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	-35 -40	0.02	1 % (0.06 dB)	< 0.005	0.3	0.03	
H3B (InGaAs) detector										
800 ~ 1700	+30 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	+27 ~ -40 +27 ~ -50	-25 -30	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 ~ -60 +15 ~ -70	-45 -50	0.04	1 % (0.06 dB)	< 0.005	0.5	0.03	
Si detector										
350 ~ 1100	+5	635, 650, 660, 780, 850, 980	+0 ~ -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: H3B can sustain the damage level for 2 minutes.

Note 5: At calibration wavelengths in bold type.



LIGHT SOURCE SPECIFICATIONS

Parameters	1310/1550 nm laser	Other lasers	LED	Comments
2 λ source power	-7 dBm	-7 dBm	-26 ⁵ dBm to 62.5 μ m	\pm 1 dB for Laser
3 or 4 λ source power	-10 dBm	-10 dBm	-41 dBm to 10 μ m	\pm 3 dB for LED
Short term stability, dB	0.04 ⁶	0.06 ⁶	0.01	For 15 min, typ \pm 2 $^{\circ}$ C, after warm up, ORL < -25 dB
Stability over temperature, dB	0.6	0.6	0.35	Typical
λ tolerance, nm	20	6.5	N/A	At 25 $^{\circ}$ C
λ width, nm	3	< 1	N/A	FWHM, typical
Mode Controlled Source	N/A	N/A	Yes	Mode controlled ⁷
λ nm/ $^{\circ}$ C	0.4	0.1	0.4	typical
Reconnection repeatability, dB	0.1	0.05		95 % confidence
Laser output adjustment	Adjustable over 6 dB in 0.01 dB steps			
Modulation	270 Hz, 1, 2 KHz, \pm 2 %			

Note 5: For 62.5 μ m fiber.

Note 6: For ORL < -25 dB.

Note 7: Multimode source mode distribution @ 50/125 is compliant with the following standards: IEC 61280-4-1 {ED.2}, TIA/EIA 526-14B, ISO/IEC 14763-3 (ED 2) and TIA TSB-178.

GENERAL SPECIFICATIONS

Parameters	Values
Battery life	360 hrs Power Meter / 190 hrs laser in Autotest
Size	190 x 130 x 70 mm, 7.5 x 5.1 x 2.8"
Weight	500 gm, 1.1 lb. Shipping 1.5 Kg, 3.3 lb
Temperature	-15 to 55 $^{\circ}$ C (Operating) / -25 to 70 $^{\circ}$ C (Storage)
Hidden keypad	For setting advanced functions
Case	Polycarbonate, 1 metre drop tested on concrete
PC interface	USB Type B
Memory	1270/874/670 bi-directional 2 λ /3 λ /4 λ loss test results
Power	2 alkaline C cells (7.6 A/Hr); External DC with 2.5mm +ve pin or via USB port. Selectable auto-off, low battery indicator, backlit display
Tone detection	150 - 9999 Hz \pm 1 %
Pass/Fail	Insertion & Return loss pass/fail criteria can be set for all λ
Max / min	Recording feature for stability testing
Power meter resolution	0.01 dB

Australian and international patents, technical data is subject to change without notice as part of our program of continuous improvements. Class 1 Laser/LED product, complies IEC60825-1 and 21CFR1040.10

ORDERING INFORMATION

Description	P/N
Instrument, LTS-2W 1310-1550-1625 nm, APC, InGaAs	KI77410C-INGAAS-APC
Instrument, LTS-2W 1310-1550 nm, InGaAs	KI7742C-INGAAS
Instrument, LTS-2W 1310-1550 nm, APC, InGaAs	KI7742C-INGAAS-APC
Instrument, LTS-2W 850-1300 nm, Ge	KI7744C-Ge
Instrument, LTS-2W 1310-1625nm, APC, InGaAs	KI7745C-INGAAS-APC*

Please enquire for: Other wavelength combinations; High Power measurement and large area power meter detector options.

STANDARD ACCESSORIES

Description	Qty
SC connector adaptor OPT046	2
LC connector adaptor OPT076	2
ST connector adaptor OPT040	2
Operation manual & quick reference guide	1 each
C cell batteries & AA-to-C size battery converters	2 each
Calibration certificate	1
Carry Pouch, carry strap & leather protective holster	1 each
50 & 62.5 µm fiber mandrel wraps for multimode sources (OPT701)	1
KITS™ recording/reporting software & USB A/B Cable	1 each

OPTIONAL INTERCHANGEABLE CONNECTOR ADAPTORS

This instrument is supplied with metal-free sleeve optical interchangeable connector adaptors. The source ferrule type is fixed and customer specified as either PC or APC. The power meter is for both PC & APC. Green is associated with APC. Green is associated with APC. You can order any number of connector adaptors. Order quantity two of each type.

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

The power meter works with both PC and APC connectors.

OPTIONAL ACCESSORIES

Description	P/N
Option, Carry Case for 2 Instruments	OPT153
Option, Carry Case includes Cletop-style cleaner & cleaning Sticks	OPT154A
Option, KI7000 Series Power Pack IEC 100-240V 2.5 mm Plug	OPT103B

AUTHORISED DEALER

Supplied by -

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