

## Optical Loss Test Set Comparison

Specification	Meaning	Kingfisher KI 7700	Kingfisher KI 7300	Exfo FOT-302-23BL
<b>'Autotest'</b>				
Trade name		'Autotest'	'Autotest'	'Auto-λ recognition'
Autotest compatibility with other products	More is better	All KI7000, KI3000 & Agilent N397xA Handheld series	All KI7000, KI3000 & Agilent N397xA Handheld series	Only compatible with 300 series
Distance Referencing	Yes is better	Yes	Yes	Yes
Auto wavelength recognition	Yes is better	Yes	Yes	Yes
Data memory	Big is best	1200 complete tests	1200 complete tests	1000 complete tests
Source s/n identification	Yes is better	Yes	Yes	No
<b>Source</b>				
λ	Smaller tolerance is better	1310 ± 20 nm 1550 ± 20 nm	1310 ± 20 nm 1550 ± 20 nm	1310 ± 20 nm 1550 ± 20 nm
Warm-up period	Less is better	15 min	Zero warm up	15 min
Stability	Less is better	0.04 dB typ for 15 min, after warm up	0.03 dB max for 15 min, Zero warm up	0.1 dB for 8 hrs after warm up @ 23°C
Stability over temperature	Less is better	0.3 dB max over -15 to 55 °C	0.2 dB max over -15 to 55 °C	Not specified
Output power		-6 dBm	-4 dBm	1 dBm
Output power adjustment		6 dB in 0.01 dB steps	6 dB in 0.01 dB steps	No
Spectral width	Smaller is better	3 nm typ	3 nm typ	≤ 5 nm
Modulation		270, 1k, 2k Hz	270, 1k, 2k Hz	270, 1k, 2k Hz
<b>Meter</b>				
Detector type	InGaAs is better for longer λ	InGaAs	InGaAs	Ge
Display Range		+5 to -70 dBm	+5 to -70 dBm	+10 to -60 dBm
Damage level	More is better	+10 dBm	+10 dBm	Not specified
Uncertainty over power, temp, connector range	Temp and time are important!	+5 to -70 dBm and -15 to 55 °C, and all connector types: 0.3 dB	+5 to -70 dBm and -15 to 55 °C, and all connector types: 0.3 dB	Not specified
Warm-up required	Yes is bad!	No warm up	No warm up	Yes when < 18 °C
User Zeroing required	Yes is bad!	No	No	Yes When power < -40 dBm
Polarisation sensitivity dB	Smaller is better	< 0.005 dB	< 0.005 dB	Not specified
Calibration λ nm		850, 1300, 1310, 1550, 1610 nm	820 – 1620 nm, 23 calibrated wavelengths	830,850,980,1300,1310, 1450,1490,1550,1590,1625 nm
Accuracy at cal condition: -20 dBm, 23 °C, exact λ etc	Smaller is better	0.13 dB (3%)	0.09 dB (2%)	± 0.20 dB (5%)
Cal traceability	More is better	Fully traceable	Fully traceable	ISO9001 only
Re-calibration cycle	More is better	3 year	3 year	3 year
Autotest sensitivity	Lower is better	-50 dBm	-50 dBm	-50 dBm
Tone detection	More is better	150 – 9999 Hz	150 – 9999 Hz	270, 1k, 2k Hz
Max / Min recording		Yes	Yes	No
Data memory	More is better	845 two 1 tests	845 two 1 tests	No
<b>General</b>				
PC connection	Yes is good	Yes	Yes	No
Testing software		KITS™ software Easily user modifiable	KITS™ software Easily user modifiable	No
Bi-directional testing using two fiber		Yes Much easier if using KITS™	Yes Much easier if using KITS™	No
Battery life hours	More is better	360 hrs meter 190 hrs source	360 hrs meter 190 hrs source	260 hrs
Standard connector	More is better	SC, FC, ST	SC, FC, ST	Select one
Small Form Factor Connectors		LC, F3000, MU	LC, F3000, MU	Only on power meter port
Backlight	Yes is better	Yes	Yes	No
Metal free connector <sup>1</sup>	Yes is better	Yes	Yes	No
Operation temperature	Bigger is better	-15 to 55 °C	-15 to 55 °C	-10 to 50 °C

Weight / Volume	Smaller is better	500 gm / 1012 cc	500 gm / 1012 cc	400 gm / 1018 cc
Standard accessories		<b>ST, FC, SC optical connector adaptors</b> Manual, batteries, <b>Traceable Power and 1 calibration certificates, pouch &amp; leather holster KITS™ software</b>	<b>ST, FC, SC optical connector adaptors</b> Manual, batteries, <b>Traceable Power and 1 calibration certificates, pouch &amp; leather holster KITS™ software</b>	One connector adapter, Manual, certificate, batteries, wrist strap, alcohol cleaning pads
Warranty	Longer is better	<b>3-7 years</b>	<b>3-7 years</b>	3 year
Product maturity		<b>Mature</b>	<b>Mature</b>	Immature

Note:

Kingfisher instrument is supplied with metal-free optical interchangeable connector adaptors, which avoid critical contamination of connectors used in high power applications.

Disclaimer: This comparison is based on our interpretation of published specifications. No liability is accepted for any inaccuracy. We would be pleased to amend anything found to be inaccurate.

## Optical Loss Test Set Comparison – continue

Specification	Meaning	Kingfisher KI 7700	Kingfisher KI 7300	Exfo FOT-703-23BL	Nettest GN-6025
<b>'Autotest'</b>					
Trade name		'Autotest'	'Autotest'	'λ Auto'	'Auto λ switching'
Autotest compatibility with other products	More is better	All KI7000, KI3000 & Agilent N397xA Handheld series	All KI7000, KI3000 & Agilent N397xA Handheld series	No	No
Distance Referencing	Yes is better	Yes	Yes	No	No
Auto wavelength recognition	Yes is better	Yes	Yes	Yes	Yes
Data memory	Big is best	1200 complete tests	1200 complete tests	1000 two λ tests	900 two λ tests
Source s/n identification	Yes is better	Yes	Yes	No	No
<b>Source</b>					
λ	Smaller tolerance is better	1310 ± 20 nm 1550 ± 20 nm	1310 ± 20 nm 1550 ± 20 nm	1310 ± 30 nm 1550 ± 30 nm	1310 ± 20 nm 1550 ± 20 nm
Warm-up period	Less is better	15 min	Zero warm up	20 min	10 min
Stability	Less is better	0.04 dB typ for 15 min, after warm up	0.03 dB max for 15 min, Zero warm up	0.1 dB for 8 hrs after 20-min warm up @ 23Δ1 °C, FC/UPC connector	0.05 dB typ for 8 hrs, after 10 min warm-up @ 23Δ1 °C
Stability over temperature	Less is better	0.3 dB max over -15 to 55 °C	0.2 dB max over -15 to 55 °C	1300 nm: 0.5 dB 1550 nm: 0.8 dB -10 to 40 °C	Not specified
Output power		-6 dBm	-4 dBm	- 4 dBm	-8 dBm
Output power adjustment		6 dB in 0.01 dB steps	6 dB in 0.01 dB steps	Adjustable over 7.5 dB in 0.1 dB steps	No
Spectral width	Smaller is better	3 nm typ	3 nm typ	< 5 nm	< 5 nm
Modulation		270, 1k, 2k Hz	270, 1k, 2k Hz	270, 1k, 2k Hz	2 kHz
<b>Meter</b>					
Detector type	InGaAs is better for longer λ	InGaAs	InGaAs	InGaAs	InGaAs
Display Range		+5 to -70 dBm	+5 to -70 dBm	4 to -70 dBm	+3 to -70 dBm
Damage level	More is better	+10 dBm	+10 dBm	Not specified	Not specified
Uncertainty over power, temp, connector range	Temp and time are important!	+5 to -70 dBm and -15 to 55 °C, and all connector types: 0.3 dB	+5 to -70 dBm and -15 to 55 °C, and all connector types: 0.3 dB	0 to -57 dBm: 0.1 dB @ 1310 nm, 23 °C, after 20 minutes warm up & user zero	0 to -65 dBm: 0.1 dB Typ @ 23 °C
Warm-up required	Yes is bad!	No warm up	No warm up	20 minutes / Yes	Not specified
User Zeroing required	Yes is bad!	No	No	Yes	Yes
Polarisation sensitivity dB	Smaller is better	< 0.005 dB	< 0.005 dB	Not specified	Not specified
Calibration λ nm		850, 1300, 1310, 1550, 1610 nm	820 – 1620 nm, 23 calibrated wavelengths	850, 1300, 1310, 1550, 1625 nm	850, 1300, 1310, 1550, 1625 nm
Accuracy at cal condition: -20 dBm, 23 °C, exact λ etc	Smaller is better	0.13 dB (3%)	0.09 dB (2%)	0.25 dB (6%) @ 1310 nm only, FC/UPC connector, after 20 min warm up	0.2 dB 1310 nm only
Cal traceability	More is better	Fully traceable	Fully traceable	ISO9001 only	Not specified
Re-calibration cycle	More is better	3 year	3 year	Not specified	1 year
Autotest sensitivity	Lower is better	-50 dBm	-50 dBm	Not quoted	-65 dBm
Tone detection	More is better	150 – 9999 Hz	150 – 9999 Hz	270, 1k, 2k Hz	2 kHz
Max / Min recording		Yes	Yes	No	No
<b>General</b>					
PC connection	Yes is good	Yes	Yes	Yes	Yes
Testing software		KITS™ software Easily user modifiable	KITS™ software Easily user modifiable	ToolBox software Compiled, not modifiable.	LP View software Compiled, not modifiable.
Bi-directional testing		Yes	Yes	No	No
Battery life hours	More is better	360 hrs meter 190 hrs source	360 hrs meter 190 hrs source	195 hrs meter 150 hrs source NiMH +AA batteries	30 hrs
Standard connector	More is better	SC, FC, ST	SC, FC, ST	Select one	Select one
Small Form Factor Connectors		LC, F3000, MU	LC, F3000, MU	Only on Power meter port	No
Backlight	Yes is better	Yes	Yes	Yes	No
Metal free connector <sup>1</sup>	Yes is better	Yes	Yes	No	No

Operation temperature	Bigger is better	<b>-15 to 55 °C</b>	<b>-15 to 55 °C</b>	-10 to 50 °C	0 to 50 °C
Weight / Volume	Smaller is better	<b>500 gm / 1012 cc</b>	<b>500 gm / 1012 cc</b>	860 gm / 1763 cc	<b>500 gm / 510 cc</b>
Standard accessories		<b>ST, FC, SC optical connector adaptors</b> Manual, batteries, <b>Traceable Power and I calibration certificates, pouch &amp; leather holster KITS™ software</b>	<b>ST, FC, SC optical connector adaptors</b> Manual, batteries, <b>Traceable Power and I calibration certificates, pouch &amp; leather holster KITS™ software</b>	ToolBox software & RS232 cable, One connector adapter, Manual, charger, batteries, carry case, holster, cleaning pads, calibration certificate	One power meter connector adapter, charger, manual, LP View software
Warranty	Longer is better	<b>3-7 years</b>	<b>3-7 years</b>	1 year	1 year
Product maturity		Mature	Mature	Mature	Mature

Note:

1. The FC/UPC connector implies a low reflection condition. This is not achieved in practice during referencing, when an un-mated connector on a short patch lead is used.
- 2: Kingfisher instrument is supplied with metal-free optical interchangeable connector adaptors, which avoid critical contamination of connectors used in high power applications.

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