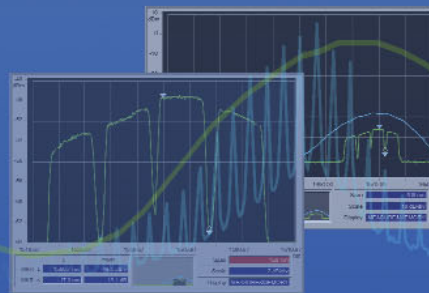
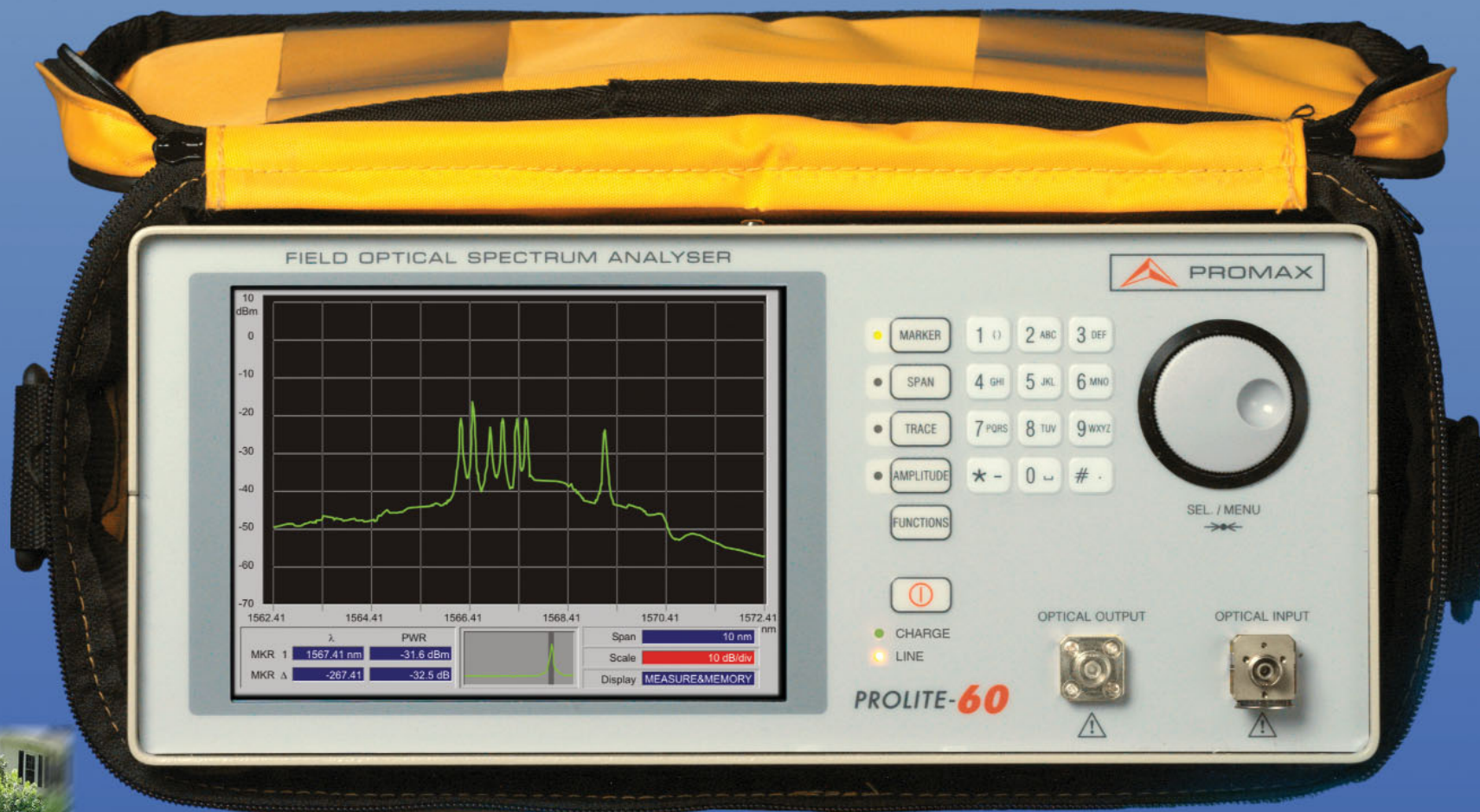


# OPTICAL TEST EQUIPMENT



## Portable optical spectrum analyser

The **PROLITE-60** is the result of an intense research work associated to the development of the latest optical communication systems.

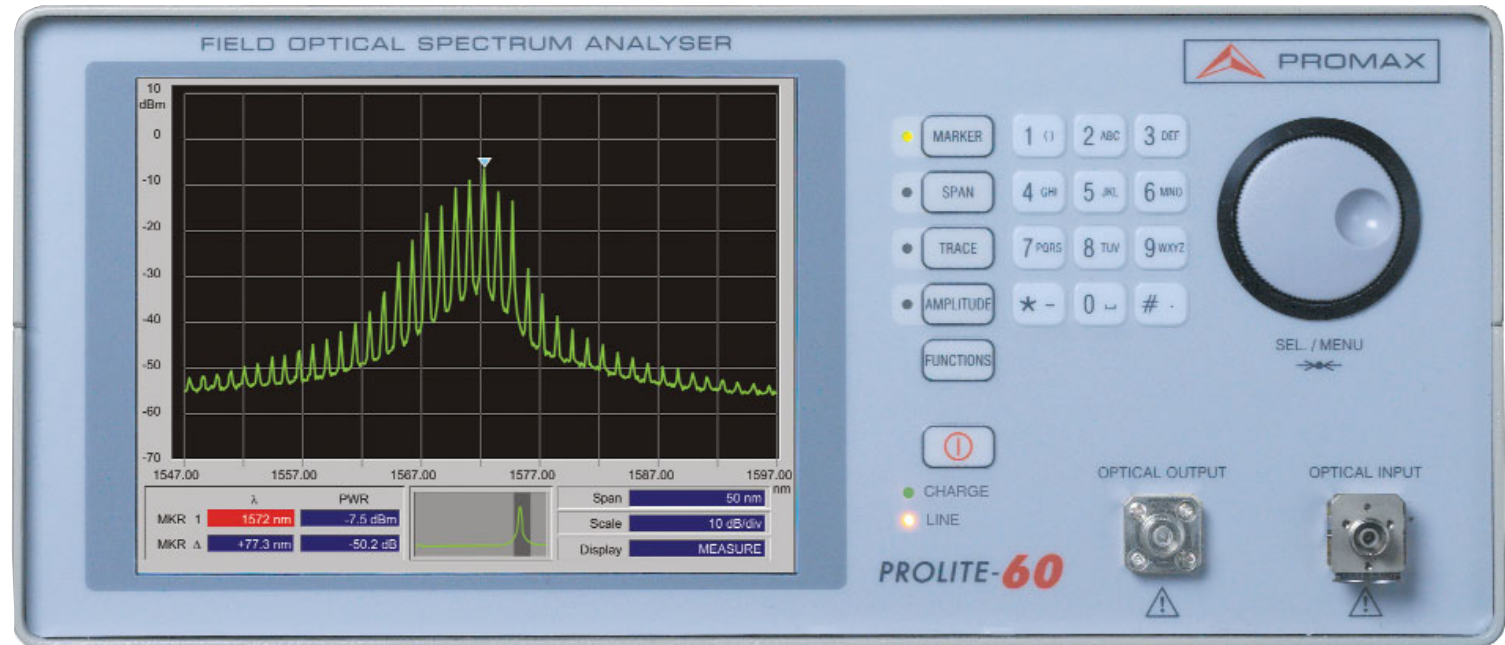
A priority for telecommunication operators all over the world is that of making more efficient their already existing optical networks. The first step is to increase their capacity, which can be achieved by using more wavelengths simultaneously to transport the information.

One of the biggest handicaps to implement this type of systems so far was the cost of the test equipment required to launch the projects. When various wavelengths are sharing one single fibre, the optical power meters are not normally bringing out much information about the problems that can be affecting to each one of them as the measurements are not wavelength selective.

Say we are injecting into a fibre eight wavelengths out of eight laser sources. When we are to check at the other end of the fibre something as simple as whether all laser sources are working properly, an optical spectrum analyser is required. The

**PROLITE-60** is the first optical spectrum analyser truly portable, rough and batteries operated available at a really attractive cost.

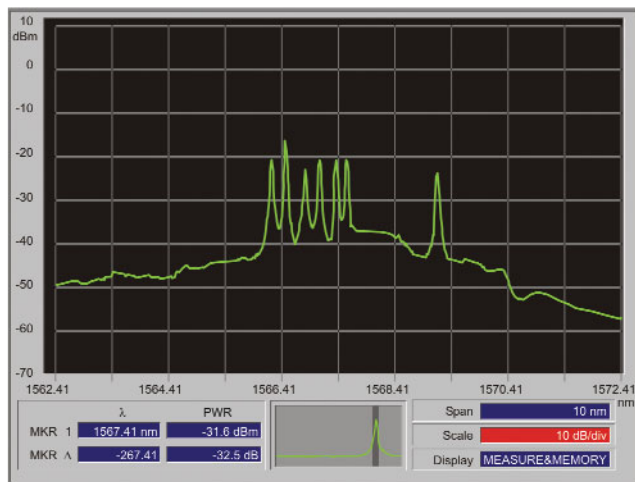
The **PROLITE-60** is also suitable for many other applications. Using the various available options it is suitable for reflectometry, analysis of materials, fibre sensors, testing of photonic devices such as filters, attenuators, couplers, isolators and other optical components.



## A large number of applications

### Wavelength multiplexation

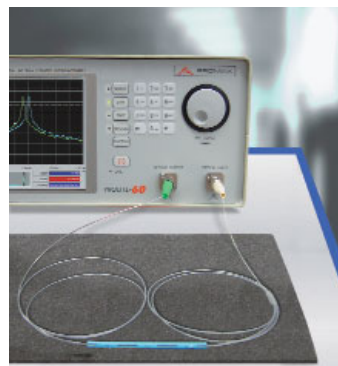
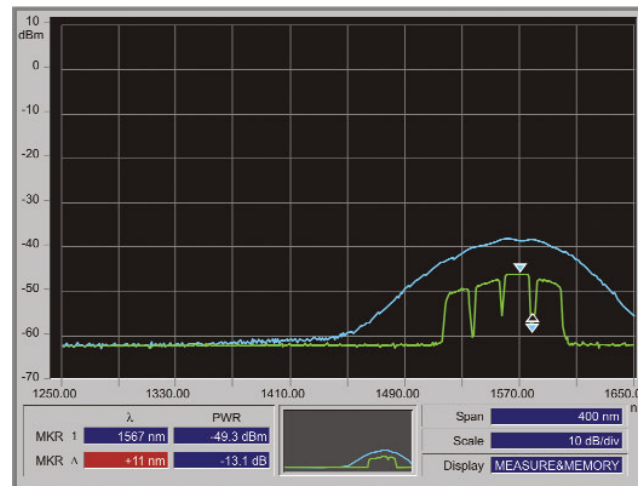
When different wavelength signals are transmitted within one fibre, the system is known as WDM (Wavelength division multiplex). The WDM systems can be classified as a Dense Wavelength division multiplex (DWDM) or as a Coarse Wavelength division multiplex (CWDM) depending on the wavelength separation. DWDM systems applies when separation is lower than 1nm whilst CWDM applies when wavelengths have a wider separation. The **PROLITE-60** has the specifications to allow installation, surveillance and maintenance of both DWDM and CWDM.



The utility of the optical spectrum analyser for the professionals working in this amazing world of the optic communications is out of any doubt. But, for many years, the level of price and complexity of the instruments available have been restricting their use. With the launch of the **PROLITE-60** it is now possible to consider the use of an optical spectrum analyser for any type of application in this field

### SLED Light Source

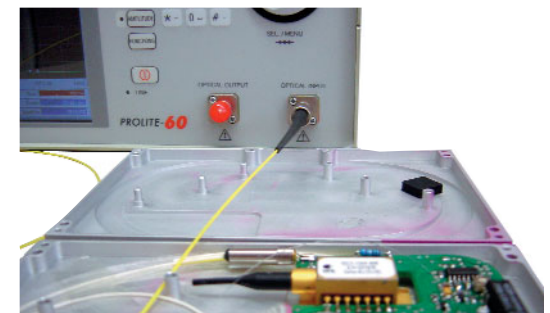
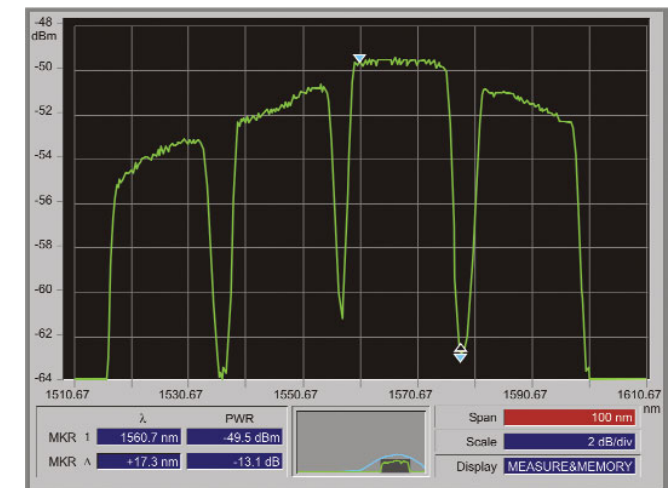
Optionally, the **PROLITE-60** can be delivered with a SLED (Superluminescent Light Emitting Diode) light source. These sources are providing a light of a wide spectral content, covering a wavelength range of around 100nm



To study the optical spectral response of the devices used in a fibre optic communication system is essential for the success of a project. This applies not only during the design and production process but also during system implementation

### Response of optical filters and amplifiers

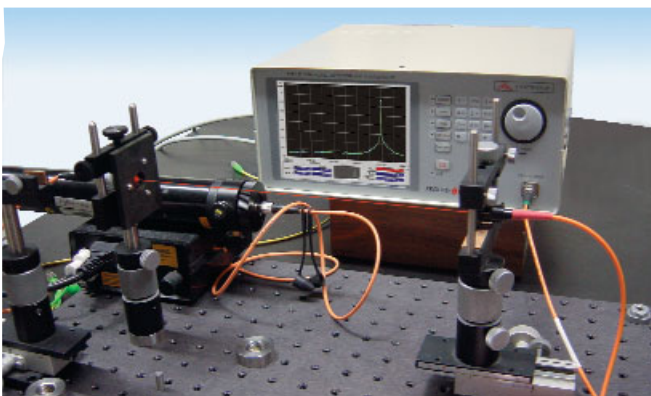
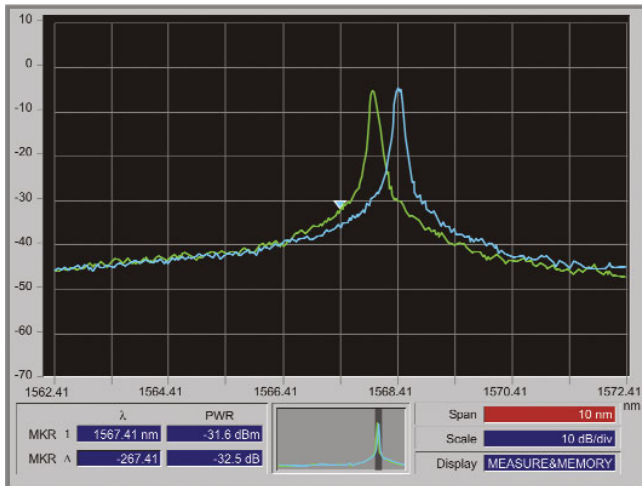
Optical filters, amplifiers and other network devices can be conveniently analysed using the SLED output and the different on screen presentation options that the instrument includes. Direct access to the SPAN and AMPLITUDE controls allow a very fast characterisation of the device under test. This is not only useful in the laboratory but also in field use applications to for instance, identify devices that could be involved in the wrong operation of an optical fibre link.



## High features at a reasonable cost

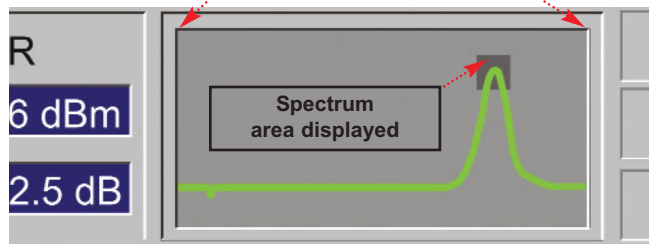
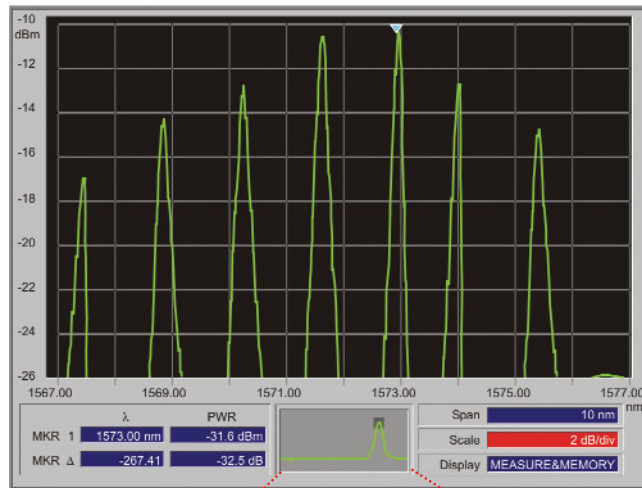
### Trace memory

A measurement can be stored in memory for later display and comparison with the present measurement. This can be very useful for a number of applications, for instance, to observe the wavelength drift and the power drift of a light source.



### Reference Display

The analyser allows a great flexibility to present the signal on screen in the most convenient way for the specific application. This includes selection of different portions of the signal both in the vertical and horizontal axis. For convenience, so that the user is aware at any time of the portion of the whole spectrum being displayed, the **PROLITE-60** shows in a smaller window in the bottom of the screen a Reference Display with indication of the whole spectrum and the part being magnified.



### Double Marker

The wavelength and the optic power measured at the point indicated by the marker number one are displayed in the first position. The wavelength and power difference between the marker one and marker two are displayed in the second position.

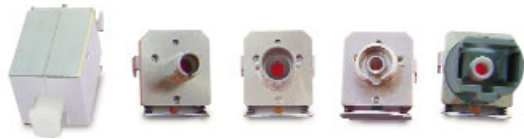
	$\lambda$	PWR
MKR 1	1573.00 nm	-31.6 dBm
MKR $\Delta$	-267.41	-32.5 dB



## The first truly portable

### Connectors

The instrument is available with most of the usual types of connectors. The required connector has to be selected with the order.



Optionally a universal input connector can be selected and with the use of conversion adapters different types of connectors can be used.

### Internal battery

The instrument is delivered with a NiMh internal battery with built-in charger. It can be mains operated through universal 100-240 Vac input. The battery allows 3 hours of minimum autonomy from fully charged status.

The **PROLITE-60** is an ideal instrument for many type of applications in the optic field. Thanks to its low weight, reduced dimensions, rough use proof design and built in battery operation it also becomes ideal for any type of field type operation.

### Connection to PC

The communications port with PC is possible through 25 pins parallel, 9 pins RS-232 type and Ethernet connectors.



SPECIFICATIONS	PROLITE-60	Cycle time	5 s
<b>Wavelength</b> Range Span Resolution Accuracy Stability	1250 nm to 1650 nm 400 nm to 10 nm 0.150 nm ± 0.8 nm ± 0.2 nm	<b>Optical connector</b>	FC/PC
		<b>Display</b>	6.4" TFT color
		<b>Power supply</b> Mains supply Autonomy	100-240 V AC 3 h approx.
		<b>Mechanical features</b> Dimensions Weight	294 (W) 126 (H). x 274 (D).mm. 5.7 k
<b>Power</b> Dynamic range Accuracy Flatness Stability OSNR (Selectivity at 1550 nm) @25 GHz (± 0.2 nm) @ 50 GHz (± 0.4 nm) @ 100 GHz (± 0.8 nm)	-60 dBm to 10 dBm ± 1 dB ± 0.5 dB ± 0.2 nm 18 dB 25 dB 30 dB	<b>Broadband source (optional)</b>	1550 nm SLED light source (please ask for other wavelengths)
		<b>Universal optical connector (optional)</b>	SC, FC, E-2000, ST, DIN
		<b>Polarisation dependency</b>	<1dB

## Optical power meters



The **PROLITE-20/21** are two optical power meters with wavelengths between 820 and 1650 nm. The dynamic range of measurement is from -70 dBm to 5 dBm for the **PROLITE-21** and from -50 dBm to 25 dBm for the **PROLITE-20** for Cable TV applications and measurements on EDFA amplifiers (Erbium Doped Fibre Amplifier).

These units offer the acoustic detection of 270 Hz, 1 kHz and 2 kHz signals for optical fibre identification purposes. The measuring mode can be selected as ABSOLUTE or RELATIVE. In the Relative mode, the user acquires the reference level and the rest of measurements are done starting from this value. The readout is shown numerically or by means a bar graph on LCD display, which has a back light.

Wavelength selection is made sequentially by single pressing the rotary selector. The meters are powered by a rechargeable NiCd battery, which can be replaced with extreme ease.

**PROLITE-20/21** are ideal tools for working in the field since they are robust, they adapt perfectly to the hand and they have a weight below 500 g.



Specifications	PROLITE-20 / 21
<b>Measurement range</b>	
PROLITE- 20	-50 dBm to + 25 dBm
PROLITE- 21	-70 dBm to +5 dBm
<b>Units</b>	dBm, dB
<b>Wavelength range</b>	820 to 1650 nm
<b>Indication</b>	Alphanumeric display, 16 digits with back-light
<b>Accuracy</b>	0.2 dB (5%)
<b>Resolution</b>	0.01 dB
<b>Power supply</b>	NiCd battery 7.2 V- 0.8 Ah
Battery charge	Through external charger
<b>Mechanical features</b>	
Dimensions	70 (W) (90 at the Display) x 218 (H) x 50 (D) mm
Weight	495 g (battery included)

## Light sources



The **PROLITE** range consists of two dual light sources the **PROLITE-80/81** and another one with multiplexed output **PROLITE-90**.

The **PROLITE-80 LASER** allows to select wavelengths between 1310 nm and 1550 nm whereas the **PROLITE-81 LED** allows the selection between 850 nm and 1300 nm.

In both sources the light by means of a pulse signal generated internally or externally through the connector can be modulated.

They are compact and easy to use.

They only have two controls, one key to select the desired wavelength and another key to activate the modulation.

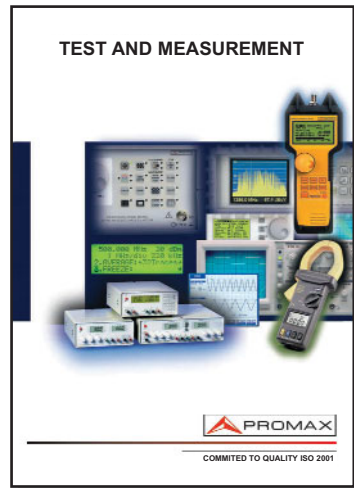


- 1310 / 1550 nm Laser source
- Multiplexed optical output
- Selectable dual / single wavelength

The **PROLITE-90** laser light source emits light of a wavelength of 1310 nm and/or 1550 nm. It allows to select easily by means of direct access keys the desired wavelength, to generate a modulated signal or to activate the automatic operation mode. These light sources may be modulated with 270 Hz, in the case of the wavelength of 1310 nm and 2 kHz for the 1550 nm one, facilitating identify a particular optical fibre when working with systems that contain a large number of fibres.

Specifications	PROLITE-80 / 81
<b>Wavelength</b>	
PROLITE-80 LASER	1310 nm, 1550 nm
PROLITE-81 LED	850 nm, 1300 nm
<b>Level</b>	
PROLITE-80 LASER	-5 dBm typical (SM 9/125 mm fibre)
PROLITE-81 LED	-15 dBm typical (MM 62.5 / 125 mm fibre)
<b>Modulation</b>	270 Hz, 1 kHz and 2 kHz internal, or through external signal
<b>Stability</b>	± 0.1 dB
<b>Power supply</b>	NiCd battery, 7.2 V, 1.5 A
Battery	Through external charger
<b>Mechanical features</b>	
Dimensions	84 (W) x 165 (H) x 29 (D) mm
Weight	380 g (battery included)

Specifications	PROLITE-90
<b>Wavelengths</b>	1310 nm and 1550 nm
<b>Tolerance</b>	± 30 nm
<b>Output connector</b>	FC, SC; APC, PC (according to order).
<b>Output power</b>	- 5 dBm ± 1 dB/ SM 9/125 mm fibre
<b>Internal modulation</b>	1310 nm: 270 Hz and 1550 nm: 2 kHz
<b>Stability</b>	< 0.3 dB in one hour
<b>Power supply</b>	
Battery	Ni-Cd de 7.2 V 1500 mAh battery
Mains adapter	230 V/ 50-60 Hz/10 W for EUROPE and other countries
<b>Mechanical features</b>	
Dimensions	60 (W) x 73 (H) x 35 (D) mm
Weight	500 g (battery included)



TEST & MEASUREMENT



TELECOMMUNICATIONS TEST EQUIPMENT



ELECTRONIC TRAINING EQUIPMENT



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