Ellmax Electronics Ltd
Unit 29 Leyton Business Centre
Etloe Road, Leyton, London, E10 7BT
Tel: 020 8539 0136 Fax: 020 8539 7746
Email: ellmaxelec@aol.com Web: www.ellmaxelec.com

FIBRE-OPTICS POWER METER

An accurate and sensitive meter with dBm and µW pointer scale

The Ellmax Fibre-Optics Power Meter is an accurate, sensitive, and versatile unit for measuring optical power levels at terminated optical cables. An easy to read pointer scale gives readings in both dBm and µW, and the meter has a broad measurement range of 1mW (0dBm) down to a sensitivity of better than 1nW (-60dBm). The Meter is calibrated at a wavelength of 820nm, and permits accurate measurements between 800nm and 850nm. Measurements may also be be made at wavelengths between 450nm and 1,100nm. A large area receiving diode ensures maximum light acceptance. **Battery life is typically 500 hours.**

The Fibre-Optics Power Meter is fitted with an **SMA** connector housing as standard**.** The Meter may also be used directly with AMP DNP connectors. Important applications of the Meter include taking measurements in educational environments, and particularly when the Meter is used in conjunction with the Ellmax **Fibre-Optics Educator** and the Ellmax **Fibre-Optics Monitor**.

The Meter is robustly constructed, and comes complete with accessories, including comprehensive instruction manual, battery, electrical connectors, and strong carrying case.

Designed and Manufactured in the U.K.

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Applications of the power meter include measuring transmitted power levels, minimum and actual received power levels, and cable route attenuation. It may also be used for long-term monitoring of route attenuation.

A pointer scale has been incorporated into the equipment in favour of a digital readout, since a scale has a number of advantages: it is easier to read at a glance; changing optical levels are easily interpreted on a pointer scale; and dBm and linear scales can be combined on the one meter face, which is particularly useful for educational applications. The reading accuracy of a digital readout can be obtained with the meter by connecting a DVM, set to d.c., to the output socket of the meter, where the linear full scale reading is 1.00V. This output socket also enables long-term recording of power measurements to be carried out.

The meter is powered off a single battery, and typical current consumption is 1mA, giving a life of 500 hours for an alkaline battery. An external power supply socket is provided for long-term monitoring applications.

High sensitivity, stability, and accuracy are achieved by incorporating precision chopper stabilised operational amplifiers in the circuitry.

METER SPECIFICATIONS

Measurement range:	
linear:	200pW to 1mW
dBm:	-60dBm to 0dBm
Accuracy:	
Response:	±5% or ±0.2dB (at 820nm)
Between Ranges:	±1%
Scale Reading:	±1.5% of full scale
Calibration Wavelength:	820nm (less than 2% variation from 800nm to 850nm)
Wavelength range for response >20% of 820nm response:	400nm to 1,000nm
Photodiode:	Silicon p-i-n (typically 0.50A/W at 820nm), 15mm^2 sensitive area, square, 1.4mm optical distance
Complete light acceptance by diode sensitive area for fibre up to:	
diameter:	1mm
N.A.:	0.5
Optical Connector:	SMA (Standard, 9mm)
Output Socket:	5kΩ output impedance, Linear full scale = 1.00V, Maximum voltage without overload = 2V
Output Settling Time to within 1%:	Less than 3 sec.
Operating Temperature Range:	0°C to 50°C
Temperature Coefficient at 820nm:	±0.1 %/°C
Power Supply:	9V PP3-type battery
Optional d.c. supply:	+7V to +15V d.c., Current is 1.0mA typical at 9V, Typical alkaline battery life is 500 hours
Physical Characteristics:	
Dimensions:	175 x 112 x 60mm approx.
Weight:	600g approx.

While the information is true at the time of printing, small production changes in the course of the company's policy of improvement through research and design might not be indicated in the specifications.

The Ellmax Fibre-Optics Monitor, which includes a highly stable and versatile optical transmitter, may be used as a complementary piece of equipment to the Power Meter. The Ellmax Fibre-Optics Educator may also be used in conjunction with the Power Meter. A wavelength calibration table supplied with the Power Meter enables measurements to be made at wavelengths between 450nm and 1,100nm.

For further details contact:

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