



# BLACK BOX<sup>®</sup>

## NETWORK SERVICES

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## LaserLink 500

*Eliminate Leased Line Rental costs.*



### Key Features

- ▶ Free Space Secure Data Transmission.
- ▶ Wire Speed Fast Ethernet (100 Mbps Ethernet).
- ▶ Industry Standard Interfaces.
- ▶ Quick installation and re-deployment.
- ▶ Direct Ethernet connection.
- ▶ Built in signal monitoring.

### The Alternative to Leased Lines

Black Box introduces the second of our new range of Free Space Optical Communications products. These precision units provide a means of linking two sites when it is cost prohibitive to lay cable or when it is physically impossible because of infrastructure such as railways, road or rivers. Using Laser technology the units enable a secure, high speed link to be

established.

### Simple To Install

Mains power and an Ethernet connection are all that is needed to get the units up and running. Even Mounting Brackets and fixings are included. As with any Optical system, clear line of site between locations is required but Black Box will advise on the best location and method of mounting and installing your cables at very competitive rates.

### Secure and Reliable

A major advantage of Laser based optical solutions is the inherent high security especially compared to radio links. The narrow angle of the beam makes it almost impossible to try to monitor covertly without detection. Precision engineered transmission heads also ensure reliable connection even in adverse weather conditions.

The laser transmission carries the data using a concentrated laser beam and a unique modulation technique is employed to ensure error free data transmission over distances up to 500 metres. The transparent and wire speed data transfer together with virtually zero latency assures easy integration of the system in all environments. Because they use infra red light as transmission mediums the Black Box LaserLink systems do not require frequency licenses and the transmission is not affected by

electro magnetic interference.

### Product description

The LWU0500 comprises of two laser heads and two outdoor interconnection units and mounting brackets. The Laser heads are installed outdoors where a clear optical path exists between the two sites. Next to head the outdoor connection unit (OIU) provides fast and easy interconnection between the Laser head and the cable coming from the network equipment. The OIU also houses the power supply and the network interface of the system. The power supply provides the low voltage power required to operate the laser head while the data port offers direct connectivity for standard network equipment.

The system contains a built in signal monitoring unit which features a visual signal strength indicator and LINK status



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information accessible at the rear of the head assembly. An optional indoor connection unit contains the IP based management hardware. This shows a bar graph signal strength and alarm status and has relay connections for

communication to other remote alarm systems. A further option is the connection of PC based monitoring software connected via Ethernet or RS232 port.

## Ordering Information

Item	Code
LaserLink 500	
LaserLink 500 Twisted Pair Ethernet	LWU0500-TP
LaserLink 500 Multimode Fibre SC	LWU0500-FO

## Specifications

### Connections

#### LAN Interface —

LWU0500-TP: RJ-45 socket  
LWU0500-FO: SC Connector  
(1300 nm multimode fibre)

### Management

**Indicators** — Power; Link Status;  
LAN Status; Received data;  
Dynamic signal level LED array

### Engine (Laser)

**Light Source** — Laser Diode, 785  
nm Wavelength  
**Laser diode Power** — 70mW  
EN60825-1 compliant  
**Detector** — APD Photodiode  
**Dynamic Range** — >40dB  
**Range** — up to 500 m  
**BER** —  $<10^{-9}$   
**System Latency** — <50ns

### Environment

**Operating Temperature** — -20 to +60  
degrees centigrade  
**Storage Temperature** — -40 to +80  
degrees centigrade  
**Humidity** — 95% non-condensing  
**Protection Rating** — IP65 for head  
assembly and outdoor unit  
(IP20 for optional indoor unit)

### Power

**Power required** — 230 VAC, 50 W  
max  
**Power to head** — 2 x 12V dc and  
30V dc, 2x1Amp max

### Physical

**Head housing** — Stainless steel  
**Weight** — 6.5 kg  
**Dimensions** — 485 x 216 x 175  
mm

