



Providing Excellence in Science Education

IPC Irwin Modulated Laser Receiver

Part Number IPC-2125-L

User Instructions



INTRODUCTION.

The IPC Irwin Modulated Laser Receiver has been designed specifically for the detection of modulated laser beams, as well as other light sources, over a wide frequency range. The receiver provides an electrical output as well as a built-in loudspeaker should the modulation frequency fall within the audio range.

The receiver can be used with a modulated laser beam to detect both analogue and digital data, including high frequency pulses used to determine the speed of light.

DESCRIPTION.

The receiver incorporates both a high speed photodiode detector with an optical wavelength range of 400nm to 1,100nm and high sensitivity amplifier with a switching frequency range of 100Hz to 5MHz. The electrical output is via Red (positive) and Black (negative) 4mm sockets, as well as a loudspeaker which provides an audio output should the modulation fall within the audio range. The photodiode detector window and on/off switch are located on the front of the receiver, to power the receiver simply fit a 9V (PP3) battery into the rear battery compartment. The receiver has been designed to work perfectly with modulated semiconductor lasers and is ideal for pairing with our own Laser Module (IPC-2588-L) to perform a number of experiments.

INSTRUCTIONS.

To operate the receiver simply fit a 9V (PP3) and switch on using the front panel switch, to monitor the received modulated signal connect 4mm test leads to the red and black sockets, ideally using a coax type lead, to an oscilloscope. Note: correct polarity and using a screened cable will improve the quality of the signal.

IPC Irwin

Holker School, Cark in Cartmel, Grange over Sands, Cumbria LA11 7PQ, United Kingdom

Call: 015395 58555 **Email:** sales@ipcirwin.com



Providing Excellence in Science Education

Now aim the modulated light source beam at the detector window and adjust both the alignment and distance to obtain the best signal. Note: if the laser is too finely focused onto the detector window the detector will saturate and result in no output, to correct this slightly defocus the beam to reduce the intensity. If the light source modulation is within the normal audio frequency range of 20Hz to 20kHz, you will be able to hear the modulation signal from the built-in loudspeaker.

SPECIFICATIONS.

Dimensions	= 120 x 68 x 38mm overall
Mass	= 0.1kg (without battery)
Electrical Supply	= 9V Battery (type: PP3)
Optical Range	= 400nm to 1,100nm
Frequency Range	= 100Hz to 5MHz
Audio Range	= 20Hz to 20kHz

Please Note: This Equipment is for Education, Training, or research Purposes Only.

Thank you for choosing this IPC Irwin product, which has specifically been designed for education and we know it will bring you good service long into the future. This is just one product of a wide range of UK designed and manufactured products to enhance a STEM education. Please see www.ipcirwin.com website for more details on the products and service we provide to support teaching and learning in science and technology.

IPC Irwin also provide Portable Appliance Testers and a Calibration service, for more details please go to www.ipcirwin.com or call our sales and technical support line on 015395 58555.



IPC Irwin

Holker School, Cark in Cartmel, Grange over Sands, Cumbria LA11 7PQ, United Kingdom

Call: 015395 58555 **Email:** sales@ipcirwin.com