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The Irwin Budget Raybox (12V) OPB2012



INTRODUCTION.

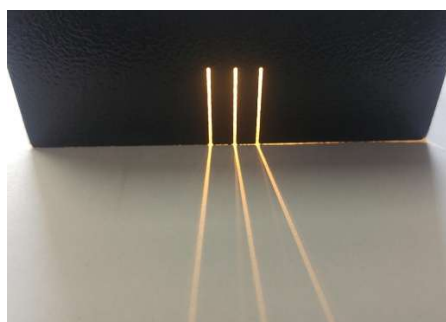
The IPC Irwin Budget Raybox provides the opportunity to perform many ray optics experiments and further investigations in light phenomenon. The Raybox incorporates an industry standard Bayonet Cap Filament Lamp which simply requires a 12V (AC or DC) supply voltage.

DESCRIPTION.

The Budget Raybox features a ventilated steel lamp housing and is finished with a robust black powder coating. The housing itself incorporates both a single light slit and two sets of triple light slits. The light source is via a single 12V/21W (drawing approx. 1.75Amp) SBC lamp with a vertical positioned filament. A power lead is incorporated at the back of the housing, the lead is 1m in length and terminated with two black 4mm plugs.

INSTRUCTIONS.

Select a suitable power supply capable of supplying up to 12V (AC or DC) at 1.75Amps, if possible limit the power supply to a maximum of 12 Volts, **note:** the IPC Irwin Powerlock PSU (EPU0115) is ideal for this requirement. First make sure the power supply is switched off and then connect the Raybox to the power supply using the two Black 4mm plugs. Now choose the number of light slits required for the experiment before switching on the power and observing the resulting light rays.



Place a piece of paper on the bench and lay the Raybox on it so that the paths of light beams can be simply traced out by drawing. You can then place lenses and prisms in front of the light ray to observe diffraction and how convex and concave lens affect the light path. *Tip: use spectacles for long and short sight to further demonstrate the use of lenses in everyday objects.*

IPC Irwin

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

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



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SAFETY & OPERATION INSTRUCTIONS.

Carefully read these User Instructions completely before operating the Raybox, this is necessary to avoid damage to it, as well as for user safety.

The Raybox is designed for Student experiments on geometrical optics, however adequate supervision must be maintained by a qualified, experienced Teacher or Technician.

When replacing the lamps only use a lamp rated at 12V/21W, with an axial filament. **Note:** the lamp holder is designed to be rotated in order to position the filament perfectly vertical.

Do not touch the lamp until it has cooled and allow the Raybox to cool down before moving - as this will prolong the life of the lamp.

In low ambient light conditions, we recommend the supply voltage is reduced from 12V to a voltage that still provides a suitable lamp brightness. This is because the higher the supply voltage the brighter the illumination and the higher the heat dissipation from the lamp. Operating the Raybox at the maximum 12V supply voltage for a long period will result in the housing becoming hot and consequently care must be taken to avoid burns. A total blackout is not essential, but a lower supply voltage can be used by simply turning off the room lights.

SPECIFICATIONS.

Dimensions	= 125 x 145 x 65mm overall.
Mass	= 0.35kg
Lamp Type	= SBC (B15d) with axial filament.
Lamp Rating	= 12V/21W
Operating Voltage	= 12V (AC or DC) max.
Operating Current	= 1.75 Amps max.
Connection Lead	= 1m Lead terminated with 2 x Black 4mm Plugs.

Note: IPC Irwin also offer a 24V version of this product, part number: OPB2024.

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.



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