

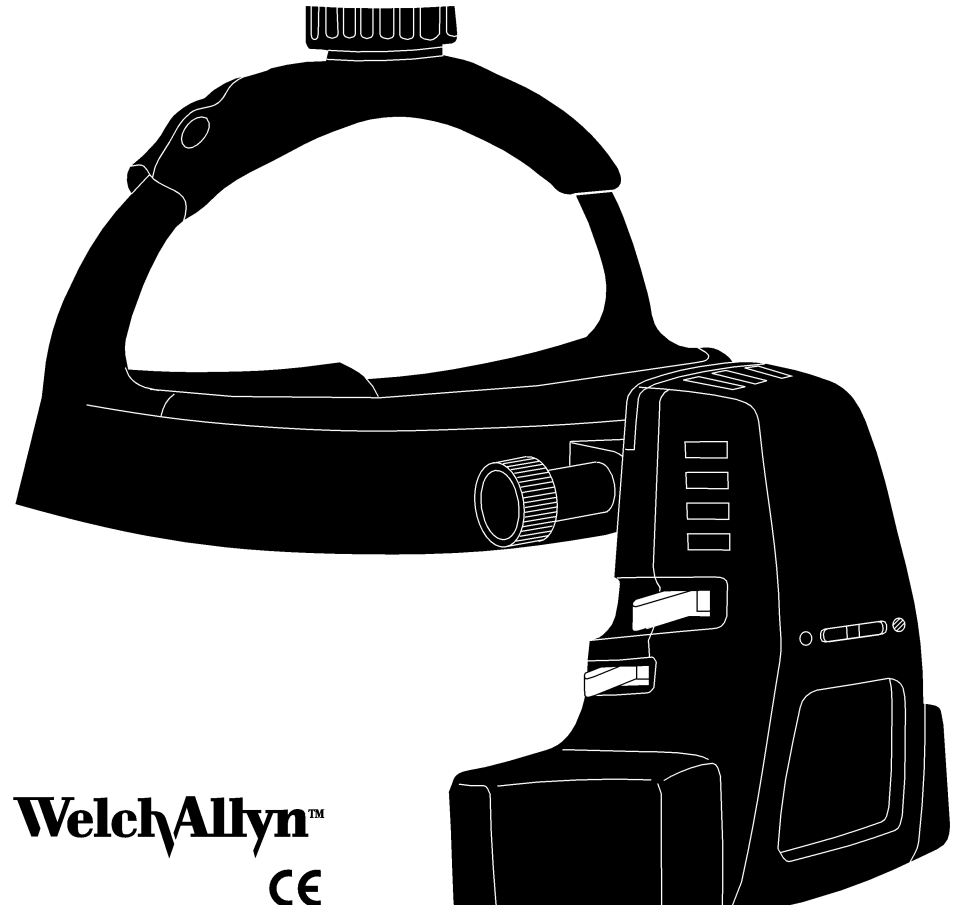
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# **Welch Allyn 12500**

## **Binocular Indirect Ophthalmoscope**

### **OWNER'S MANUAL**

Indirektes Binokular-Ophthalmoskop  
Ophtalmoscope indirect binoculaire  
Ofthalmoscopio binocular indirecto  
Ofthalmoscopio binoculare indiretto  
Ofthalmoscópio Binocular Indireto



**WelchAllyn™**  
**CE**

Thank you for purchasing the Welch Allyn 12500 Binocular Indirect Ophthalmoscope (BIO). To ensure accurate and reliable performance of your new BIO, please follow the operating and maintenance instructions found in this manual.

*U.S. Patent No. 5,394,201 and International Patents Pending*

Wir freuen uns, daß Sie sich für das indirekte Binokular-Ophthalmoskop (BIO) 12500 von Welch Allyn entschieden haben. Zur Erzielung einer genauen und verlässlichen Geräteleistung folgen Sie bitte den Betriebs- und Wartungsanleitungen in diesem Handbuch.

*US-Patente und internationale Patente angemeldet*

Nous vous remercions de votre achat d'un ophtalmoscope indirect binoculaire Welch Allyn 12500 (BIO). Veuillez respecter le mode d'emploi et les conseils d'entretien pour assurer le fonctionnement précis et fiable de votre nouvel instrument.

*Brevets américains et internationaux en instance*

Gracias por comprar el Oftalmoscopio binocular indirecto (BIO) 12500 de Welch Allyn. Para asegurar el rendimiento preciso y confiable de su nuevo BIO, sírvase seguir las instrucciones de operación y mantenimiento que se indican en este manual.

*Patentes pendientes en EE.UU. y otros países*

Grazie per aver acquistato l'oftalmoscopio binoculare indiretto (BIO) Welch Allyn, articolo 12500. Per ottenere molti anni di servizio accurato ed affidabile da parte del nuovo BIO, seguire le istruzioni operative e sulla manutenzione contenute in questo manuale.

*Brevetti USA e internazionali in corso*

Agradecemos sua compra do Oftalmoscópio Binocular Indireto (BIO) Welch Allyn 12500. Para assegurar um desempenho preciso e confiável do seu novo BIO, favor seguir as instruções de operação e manutenção contidas neste manual.

*Patentes americanas e internacionais pendentes*

## Symbol Descriptions



**Attention. Read Operating Manual for Cautions and Instructions for Use.**



**Achtung. Die Anweisungen zum Gebrauch und die Vorsichtshinweise in der Bedienungsanleitung beachten.**



**Attention. Pour les précautions à prendre et les instructions d'utilisation, lire le Manuel de fonctionnement.**



**Atención. Para usar lea el Manual de operaciones a fin de ver las Precauciones e Instrucciones.**



**Attenzione. Per ottenere gli avvisi e le informazioni relative al funzionamento, leggere il manuale operativo.**



**Atenção. Leia o Manual de Operação para obter informações de precaução e instruções de uso.**

- CE** The CE mark on this product indicates it has been tested to and conforms with the provisions noted within the 93/42/EEC Medical Device Directive.
- CE** Das CE-Zeichen auf diesem Produkt zeigt an, daß es nach der EU-Direktive 93/42/EEC Medical Device Directive (Direktive für medizinische Geräte) geprüft wurde und deren Anforderungen entspricht.
- CE** La marque CE figurant sur ce produit indique que les résultats des tests auxquels il a été soumis sont conformes aux dispositions enregistrées dans la Directive 93/42/CEE concernant les instruments médicaux.
- CE** La marca CE en este producto indica que ha sido probado y cumple con las disposiciones estipuladas dentro de la Directiva de dispositivos médicos 93/42/EEC.
- CE** Il riferimento CE presente su questo prodotto indica che il medesimo è stato testato ed è conforme alle disposizioni indicate dalla direttiva delle apparecchiature mediche 93/42/C.E.E.
- CE** A marcação CE que consta do equipamento indica que o mesmo foi submetido a testes e está em conformidade com os dispositivos incluídos na Legislação de Dispositivos Médicos 93/42/EEC.

**Authorized European Representative Address:**

**Adresse der europäischen Vertragsvertretung:**

**Adresse du représentant européen agréé :**

**Dirección del representante europeo autorizado:**

**Indirizzo del rappresentante Europeo autorizzato:**

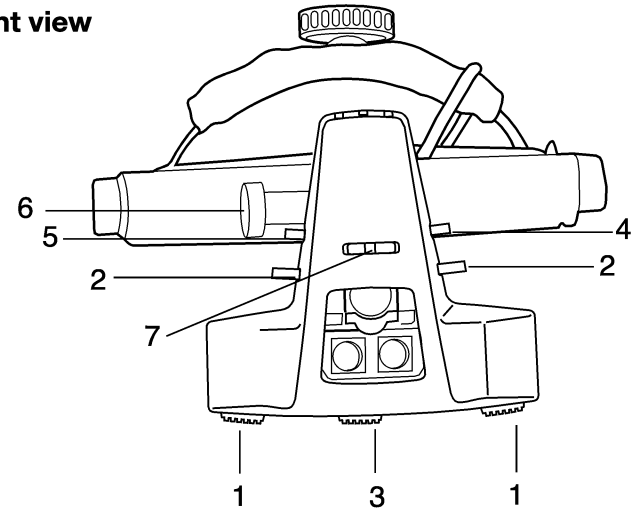
**Endereço do Representante Autorizado na Europa:**

European Regulatory Manager  
Welch Allyn, Ltd.,  
Kells Road, Navan,  
County Meath,  
Republic of Ireland  
Tel. 353 46 28122  
Fax 353 46 28536

# 1. Description of Controls

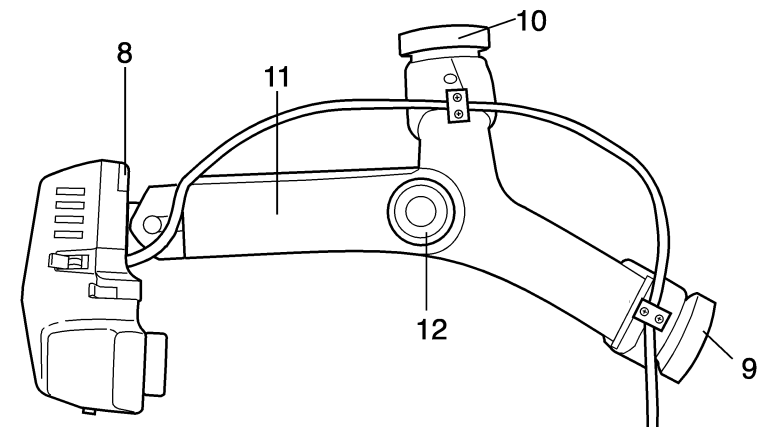
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## Front view



- |   |   |
|---|---|
| 1. Interpupillary distance (IPD) controls | 5. Filter selection control                         |
| 2. Mirror control (illumination angle)    | 6. Optical portion adjustment knob                  |
| 3. True small pupil control               | 7. Diffuser Filter Control (on diffuser model only) |
| 4. Aperture size control                  |   |

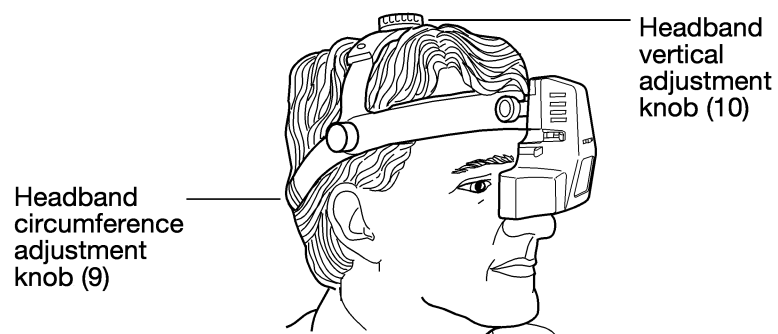
## Side view



- |   |                              |
|---|------------------------------|
| 8. Lamp cover                             | 11. Overband                 |
| 9. Headband circumference adjustment knob | 12. Overband adjustment knob |
| 10. Headband vertical adjustment knob     |                              |

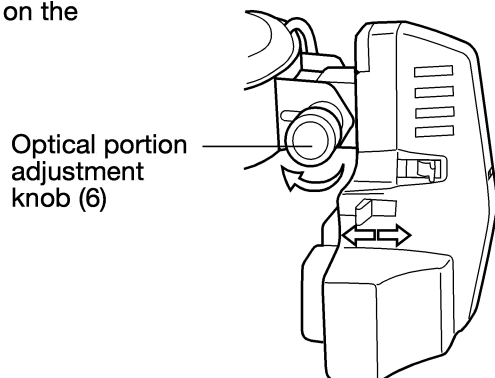
## 2. Adjustments

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### A. For Best Performance, Be Sure the Headband Fits Properly and is Comfortable.

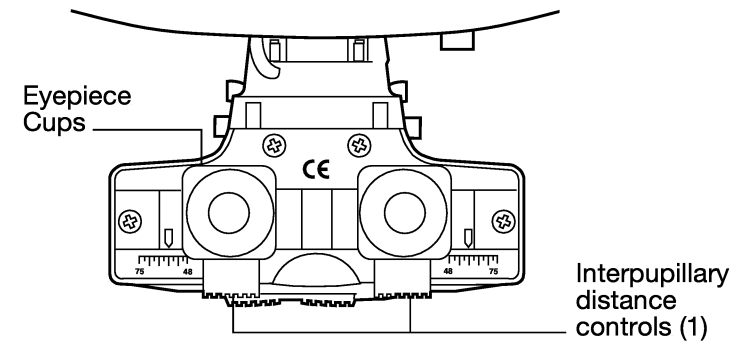
- Adjust the headband vertical adjustment knob (10) so the instrument is supported comfortably.
- Position the main body of the headband on the forehead so it is comfortable and tighten the headband circumference adjustment knob (9). Position the headband so back of band fits comfortably under the natural ridge on the backside of head.



### B. Place the Overband Approximately 1- to 2-Finger Widths Above the Eyes.

- Position the BIO so the oculars are set on your visual axis by adjusting the optical portion adjustment knob (6).
- The BIO should also be as close to your eyes (or spectacles) as possible. If you prefer to adjust the optical portion with your left hand, the adjustment knob can be removed and reversed to the left side.

**NOTE:** The torque required to turn the vertical and circumference adjustment knobs can be modified by adjusting the exposed screw. For more resistance, turn the screw clockwise; for less, turn it counterclockwise.



### C. Set the Interpupillary Distance

The interpupillary distance (IPD) controls (1) move the oculars and are located on the bottom of the optical portion. These oculars will move independently of one another. To set the IPD properly, observe your thumb or some other small object at arms length. Alternately view this object with your left and right eye. Position the oculars with the interpupillary distance controls so the object appears precisely centered.

**NOTE: The oculars are shipped with +2.00 Diopter lenses in place. Plano lenses are included and can be installed by removing the rubber eyepiece cups, tilting the instrument to remove lenses. Replace with plano lenses, and stretch eyecups back in place.**

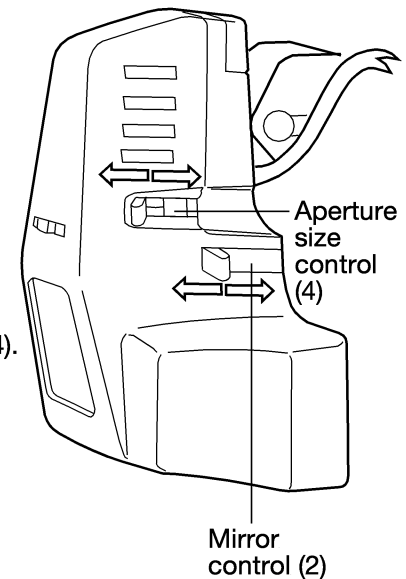
### D. Adjust Mirror

The mirror control (2) will allow the vertical location of the light beam to be positioned at a desired height within the viewing area. This is usually a point slightly above fixation.

### E. Aperture Selection

The Welch Allyn BIO comes with three different-sized apertures and can be adjusted with the aperture size control (4).

- To use the large aperture, for fully dilated pupils, place the lever in the center position.
- To use the medium-sized aperture, helpful for patients with cataracts, place the lever in the back position.
- To use the small aperture, suitable for patients with small undilated pupils, place the lever in the forward position.



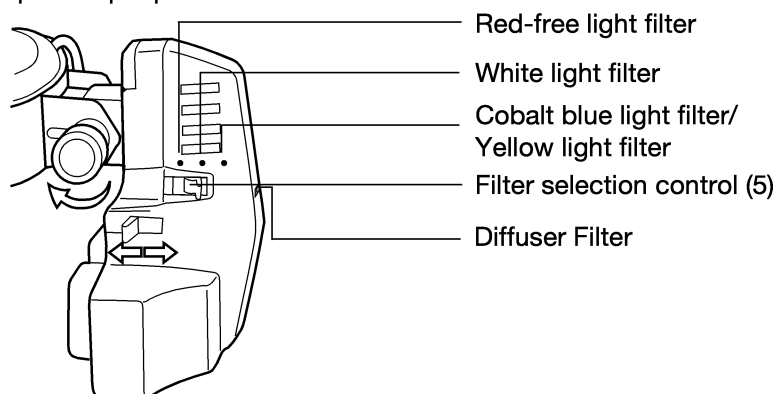
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## F. Filters

All filters can be introduced to the light path by adjustment of the filter selection control (5). White light is obtained when the switch is in the middle position. Cobalt blue light or yellow light is obtained when the lever is in the forward position. Red-free light is obtained when the lever is in the back position.

### G. Diffuser Filter (Included on Diffuser Models Only)

By engaging the diffuser filter, the user will diffuse the light and allow for improved peripheral view.





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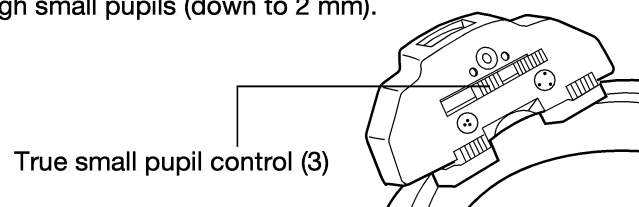
## 3. Special Features

### A. True Small Pupil Control

This control (3) provides the best viewing possible of patients with small pupils. This is accomplished by adjusting the location of the illumination pathway and visual pathways to best fit the size of the patient's pupil.

When set to the user's left — under the  symbol: the optical pathways are relatively far apart and the light beam is farthest from the visual pathways. This is best for use in dilated pupils; it optimizes stereopsis and minimizes reflections.

When the lever is set to the user's right — under the  symbol: the angle of convergence between the visual pathways is narrowed and the light path is brought into closer coincidence. This facilitates viewing through small pupils (down to 2 mm).





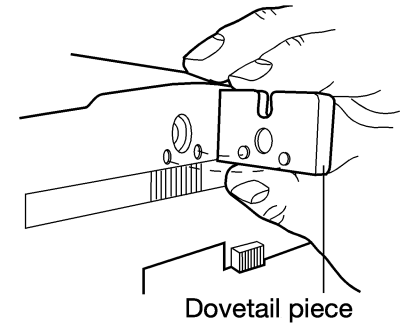
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## B. SoftTilt Park/Rest Feature

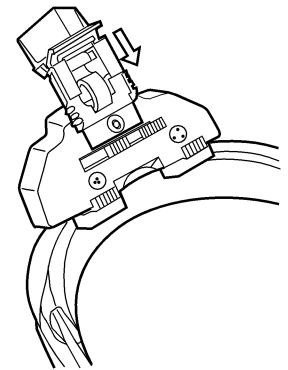
Once the overband adjustment knob tension is correct, the overband, along with the optical portion, can be raised completely out of the user's view by pushing it up from the top of the headband front.

## C. Teaching Mirror

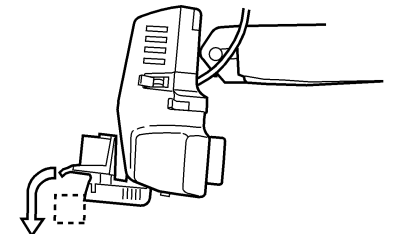
1. To attach the teaching mirror, mount the "dovetail" piece onto the bottom of the optical portion using a screwdriver. Once the "dovetail" piece is mounted, it can remain attached.



2. The teaching mirror then slides onto the front of the "dovetail" and snaps into position.



3. To quickly remove the teaching mirror from the user's visual path, grasp the front edge and flip it down. To resume use of the teaching mirror, snap it back up into position.



## 4. Connecting to a Power Source

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**NOTE:** *The power cord can be plugged into:*

### 1. Welch Allyn Power Sources

- A Welch Allyn No. 74350 Wall/Desk Power Source
- A Welch Allyn No. 74360 Portable Power Source

Instructions for operating these power sources are included with the units.

### 2. Other Manufacturers' Power Sources



**NOTE:** *This unit must be connected to an IEC 601-1 listed power source, or a Welch Allyn No. 74341 Wall/Desk Power Source or No. 74301 Portable Power Source.*

If you wish to use another manufacturers' ophthalmic stand as a power source, please follow these directions carefully, as there are a number of different configurations based on your stand's power supply:

- Do not connect your Welch Allyn BIO directly into the 6.5 or 6.0 Volt outputs on your stand. Use of these at highest power will immediately burn out your lamp.
- If your stand has a 4.5 V output with minimum 3.0 Amp current rating (or 12 Watts minimum power output), your Welch Allyn BIO can be wired directly to this.
- If your stand has a 7.5 Volt and 2.5 Volt output (again, minimum 3 Amps or 12 Watts), but not 4.5 V, the positive connection should be made to the positive terminal of the 7.5 V, and the negative connection should be made to the positive terminal of the 2.5 V output.
- If your stand does not have 4.5 V, or both 7.5 V and 2.5 V outputs, you must obtain the Ophthalmic Stand Adapter (Model number 12551), and connect it to the 6.0 V or 6.5 V output. The Ophthalmic Stand Adapter is available at no charge from your Welch Allyn Distributor, or call Welch Allyn direct at 1-800-535-6663.

If you have any questions about the correct way to connect your Welch Allyn BIO to your Ophthalmic Stand, please contact Welch Allyn or your ophthalmic distributor.

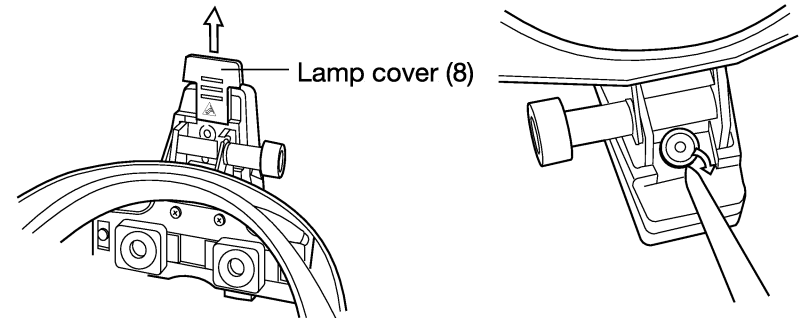


**CAUTION:** *This product is designed for intermittent use. On-time should not exceed 10 minutes, off-time should not be less than 15 minutes.*

## 5. Changing the Lamp

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1. To change the lamp, remove the lamp cover (8) by pressing on the ribbed area and sliding the cover up.
2. Loosen the adjustment knob (6), and slide the BIO all the way up.
3. Remove the lamp from its well. Replace with the Welch Allyn No. 01200 lamp.



**CAUTION: Lamps may be very HOT. Be sure lamps are allowed to cool before changing.**

4. Replace the lamp cover.

For best performance, use only Welch Allyn lamps.

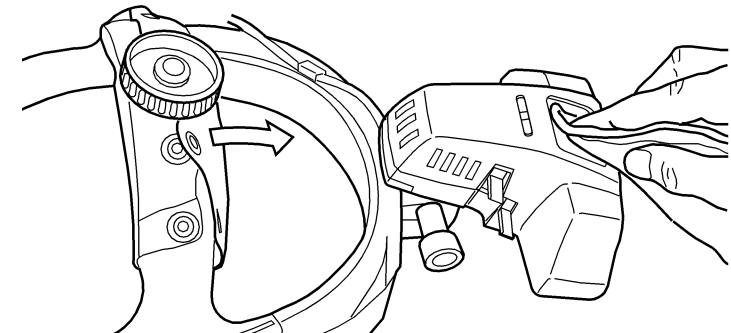
## 6. Cleaning

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The glass cover on the front of the BIO, the glass lenses in the oculars and the teaching mirror can be cleaned with a soft cloth moistened with alcohol.

The leather cushions on the headband may be removed and wiped with soapy water.

The remainder of the BIO may be wiped with a soft cloth that has been moistened in alcohol. Avoid using harsh cleansing fluids or cloths which are excessively moist on any part of this instrument.



## 7. Maintenance

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Periodic technical inspections should be performed by qualified personnel. This equipment should be inspected once every year, more often if used under adverse conditions.

## 8. Specifications

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<i>Interpupillary Distance</i>	49 mm to 74 mm
<i>Accommodation Lenses</i>	+2.00 D and plano
<i>Spot Sizes</i>	20 mm, 50 mm, 80 mm @ 50 cm
<i>Light Source</i>	4.65 V, 12 W Halogen
<i>Filters</i>	Safety Filter (full time), Cobalt Blue (or Yellow), Red-free, Diffuser Option
<i>Headband Adjustment Range</i>	54 cm to 65 cm
<i>Weight</i>	454 g
<i>Approvals</i>	UL 2601-1, CAN/CSA C22.2 No. 601.1, IEC 601-1, IEC 601-1-2, CE
<i>Type</i>	BF

## 9. Product/Accessory Information

<i>Product No.</i>	<i>Description</i>
No. 12500	BIO (optical portion, headband, 8 ft. cord)
No. 12500-D	BIO with diffuser filter (optical portion, headband, 8 ft. cord)
No. 12500-Y	BIO with yellow filter in place of cobalt blue filter (optical portion, headband, 8 ft. cord)
No. 12500-DY	BIO with diffuser filter and yellow filter in place of cobalt blue filter (optical portion, headband, 8 ft. cord)
No. 73300	4 ft. extension for BIO
No. 12550	Teaching Mirror
No. 12551	Voltage Adapter
No. 12060	Scleral Depressor (thimble type, medium)
No. 01200	Replacement Lamp
No. 05120	Carrying Case
No. 50120	Fundus Charts and Pencils
No. 72240	Replacement Battery
No. 74350	Wall/Desk Power Source
No. 74360	Portable Power Source

## 10. Service and Warranty Information

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### **Service**

For customers in North America, please return instruments requiring service to a Welch Allyn Technical Service Department listed below or to an authorized Welch Allyn distributor.

#### **Technical Service Department**

Welch Allyn, Inc.  
4341 State Street Road  
Skaneateles Falls, NY 13153-0220  
U.S.A.  
Telephone: 800-669-9771  
Fax: 315-685-4653

**For customers outside of North America, return your unit to a local, authorized Welch Allyn distributor or to your nearest Welch Allyn service center.**

### **Binocular Indirect Ophthalmoscope Warranty**

Welch Allyn, Inc. warrants the No. 12500 Binocular Indirect Ophthalmoscope (BIO), except for the headband portion; the No. 74350 Wall/Desk power source and the No. 74360 portable power source to be free of original defects in material and workmanship and to perform in accordance with manufacturer's specifications for a period of ten years from the date of purchase. Welch Allyn warrants the headband portion of the BIO to be free of original defects in material and workmanship and to perform in accordance with manufacturer's specifications for a period of five years from the date of purchase. If this instrument or any component thereof is found to be defective or at variance with the manufacturer's specifications during the warranty period, Welch Allyn will repair or replace the instrument or component(s) at no cost to the purchaser.

This warranty only applies to instruments purchased new from Welch Allyn or its authorized distributors or representatives. The purchaser must return the instrument directly to Welch Allyn or an authorized distributor or representative and bear the costs of shipping.

This warranty does not cover breakage or failure due to tampering, misuse, neglect, accidents, modification or shipping, and is void if the instrument is not used in accordance with manufacturer's recommendations or if repaired or serviced by other than Welch Allyn or a Welch Allyn authorized representative.

No other express or implied warranty is given.

***Return of instrument registration card is required for proof of purchase and warranty validation.***