

## 5.0 Warranty

### Warranty for Fluorescent Ring Illuminator

#### General Conditions of Warranty

All additions, alterations and exceptions to and/or waivers of the General Conditions of Warranty must be in writing and form an integral part of the offer and the contract of sale.

1. As promptly as possible upon receipt of the End User's notice in writing, Leica Inc., hereinafter referred to as the Manufacturer, hereby undertakes, as it may see fit and at its sole discretion, either to replace or repair any parts of its Products which are or have become ascertainably defective or unserviceable due to poor materials, faulty design or deficient manufacture. All parts replaced shall become the Manufacturer's property.

2.1 This Warranty applies to the repair or replacement and recommissioning free of charge of defective or unserviceable parts, inclusive of the cost of transport, packing and insurance.

2.2 The Warranty period begins on the proved date of delivery to the End User or of commissioning the equipment, whichever is later, except that it shall begin not later than sixty days after the date of the Manufacturer's invoice.

3. The following warranty period shall apply:

**PRODUCT NAME**  
**Fluorescent Ring Illuminator**

**WARRANTY PERIOD**  
**(12) Months**

4. The Manufacturer's liability under Warranty shall not apply to damage due to normal wear and tear, improper use, inadequate maintenance, disregard of operating instructions, excessive load or stress or to any other cause not due or attributable to the Manufacturer. Except by the express prior agreement in writing, the Manufacturer shall not be liable under Warranty for damage due or attributable to repairs or alterations made by the End User or any unauthorized third party to Products under Warranty, or to the use of components or spare parts not specified or approved by the Manufacturer.

5. This Warranty expressly excludes transport damage; consumer items, such as batteries, accumulators, bulbs, and fuses; and adjustment or readjustment of the Products.

6. This Warranty expressly excludes any liability by the Manufacturer for consequential loss or damage on any grounds, such as (but not limited to) the non-availability to End User of the Products under Warranty or the need to repeat work processes.

7. For goods and components manufactured by any third party, the Manufacturer's liability under Warranty is expressly limited to the terms of the Warranty by the supplier for such goods and components.

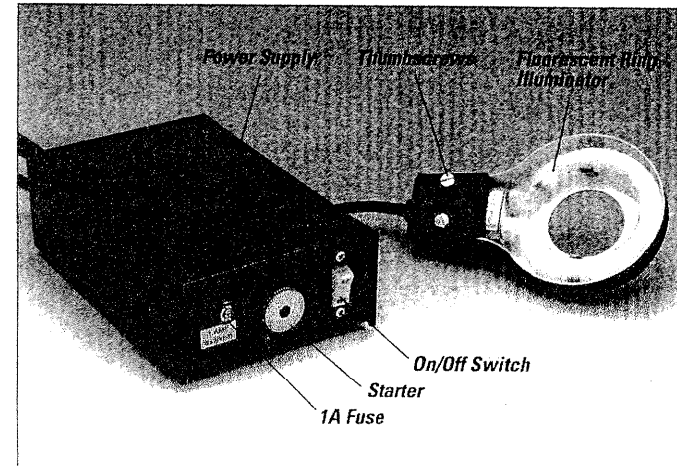
8. The Manufacturer shall not be required to provide services under Warranty until and unless the End User has paid such part of the purchase price as bears a reasonable relation to the value of the defect complained of.

9. Place of performance for work under Warranty shall be the Manufacturer's registered office or the nearest authorized service center and for Products forming part of a fixed installation it shall be the site of such installation. The Manufacturer shall at its sole discretion decide the place of performance.

The Manufacturer shall have the right to charge for services under Warranty if the instrument's site is outside the End User's country.

10. This Warranty shall be interpreted in accordance with substantive U.S. law. The place of jurisdiction shall be the Manufacturer's registered office, except that the Manufacturer shall at its sole discretion also have the right to invoke the courts of law having jurisdiction at the End User's place of business.

# Fluorescent Ring Illuminator



## INSTRUCTION MANUAL

**Leica**

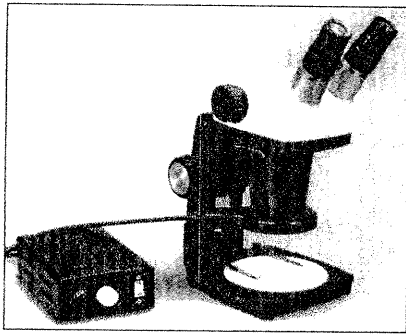
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313617-100 PP 8/93

**Leica**



The Fluorescent Ring Illuminator installed on a Leica StereoZoom® stereomicroscope.

## 1.0 Introduction

Leica's Fluorescent Ring Illuminator is designed for use with Stereo and StereoZoom® stereomicroscopes and lens attachments. It provides precise, uniform and bright shadowless illumination of specimens over the entire field of view. Compact and easy to use, the Fluorescent Ring Illuminator emits cool light and is particularly useful for examining live specimens for fine detail at low magnifications.

The Fluorescent Ring Illuminator is standardly equipped with a blue bulb for comfortable viewing over long periods of time. An optional white bulb provides extremely bright illumination and is ideal for photomicrography. The illuminator is available in 110V or 220V.

## 2.0 Installation

Each Leica stereomicroscope, with the exception of the StereoZoom 7, has a series of threads located on the bottom of its housing. An appropriate coupler attaches to these threads and accepts the Fluorescent Ring Illuminator. Use of a threaded supplementary lens attachment, rather than a coupler, also permits illuminator attachment.

**NOTE:** Attaching any illuminator to a StereoZoom stereomicroscope shortens the working distance.

Listed below are descriptions and part numbers for the couplers and supplementary lenses to be used when installing the Fluorescent Ring Illuminator to a stereomicroscope.

### COUPLER ATTACHMENTS

For use with Leica Stereo 1 and 2 and StereoZoom 3, 4, 5 and 7 stereomicroscopes:

Description	Part Number
Fluorescent Ring Illuminator (110/120V) .....	313617
(220/240V) .....	313618

For use with Stereo 1 and 2 and StereoZoom 3, 4 and 5 stereomicroscopes:

Coupler .....	313606
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For use with StereoZoom 6 stereomicroscope illuminator 312818 or 312822:

Coupler .....	312817
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For use with StereoZoom 7 stereomicroscope:

Coupler .....	313606
Converter .....	312734 (required)

### LENS ATTACHMENTS

For use with Stereo 1 and 2 and StereoZoom 3, 4, and 5:

0.3X lens attachment .....	312741
0.5X lens attachment .....	312618
0.75X lens attachment .....	312742
1.5X lens attachment .....	312743
2.0X lens attachment .....	312619
Lens shield .....	312621

For use with StereoZoom 6 stereomicroscopes:

0.3X lens attachment .....	312810
0.5X lens attachment .....	312811
0.75X lens attachment .....	312812
1.5X lens attachment .....	312813
2.0X lens attachment .....	312814
Lens shield .....	312819

For use with StereoZoom 7 stereomicroscope:

0.25X lens attachment (unthreaded) ..	312708
0.5X lens attachment (unthreaded) ..	312704
1.5X lens attachment (unthreaded) ..	312705
2.0X lens attachment (unthreaded) ..	312706
Lens Shield .....	312735
Adapter Ring with Allen wrench (required) .....	312718

To use the illuminator on the StereoZoom 7, an adapter ring must be attached to the bottom of the stereomicroscope housing. The lens attachment for this model is not threaded.

To attach the illuminator to StereoZoom 7:

1. Remove the lamp from the illuminator (Refer to Section 4.1, Removing/Replacing the Lamp).
2. Align the supplementary lens with the center hole on the outside surface of the illuminator. The clips on the lens attachment should be on the outside surface of the illuminator.
3. Place the adapter (312718) over the lens attachment.
4. Tighten in place with the provided Allen wrench.
5. Replace the lamp (Refer to Section 4.1, Removing/Replacing the Lamp).
6. Attach the illuminator by sliding the clips on the lens attachment into the clip holders on the bottom of the microscope housing.

## 3.0 Operation



**CAUTION:** After installing the illuminator, carefully remove all fingerprints on the lower microscope lens with a clean, soft, dry cloth.

1. Plug the power supply into a suitable grounded electrical outlet.
2. Once the illuminator is attached to the stereomicroscope, turn the on-off switch to "on." The starter will momentarily blink before the lamp lights. The lamp will reach its maximum intensity in approximately two minutes.

The average lamp life is 1000 hours assuming that the lamp is switched on and off twice daily. If the lamp is allowed to operate continually, its life can be extended to approximately 3000 hours.

## 4.0 Removing/Replacing Parts

This section describes how to remove and replace parts of the fluorescent ring illuminator. **Protect yourself and the instrument by observing the safety statements.**

### 4.1 Removing/Replacing the Lamp

**DANGER: THE GLASS ENVELOPE OF THE LAMP MAY BE EXTREMELY HOT. DO NOT ATTEMPT TO CHANGE THE LAMP BEFORE IT IS COMPLETELY COOLED OR WITHOUT WEARING PROTECTION.**

**WARNING:** Before attempting to remove or replace any parts unplug the illuminator and the stereomicroscope power cord.

1. Detach the illuminator from the microscope.
2. Loosen the two thumbscrews holding the protective cover and remove it. (The lamp terminals will now be exposed.)
3. Gently grasp the lamp and remove it.

To replace the lamp:

1. Insert the prongs of the replacement lamp into the lamp socket.
2. Carefully press the lamp into the two spring clips, making sure it fits securely.
3. Replace the protective cover and tighten the two thumbscrews.



**CAUTION:** Do not leave the illuminator on when the lamp is not working or has been removed.

### 4.2 Removing/Replacing the Starter

If the lamp will not light and the starter light on the power supply box does not flash, replace the starter (catalog no. 312820).

1. Rotate the starter one quarter turn counterclockwise.
2. Carefully pull the starter out.
3. To replace the starter with a new one, rotate it into place until it clicks.

### 4.3 Removing/Replacing the Fuse

The illuminator is equipped with a protective fuse (312821).

1. To remove it, simply turn the fuse cap in the direction of the arrow.
2. Remove the fuse.

To replace the fuse, simply insert a new one into the fuse cap, turn it clockwise to secure in place.