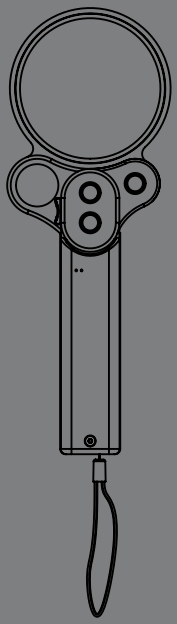
LION OPTICS
Innovative optical solutions



Inspector M2
Manual

DANGER — Ultraviolet radiation emitted from this product.

Avoid exposure. Never look directly into the lamp. Exposure can cause eye and skin allergy and allergic reactions.

Medications or cosmetics may increase your sensitivity to ultraviolet radiation.

If you are using medications or have a history of skin problems or believe yourself especially sensitive to sunlight

Use safety glasses and cover skin areas.

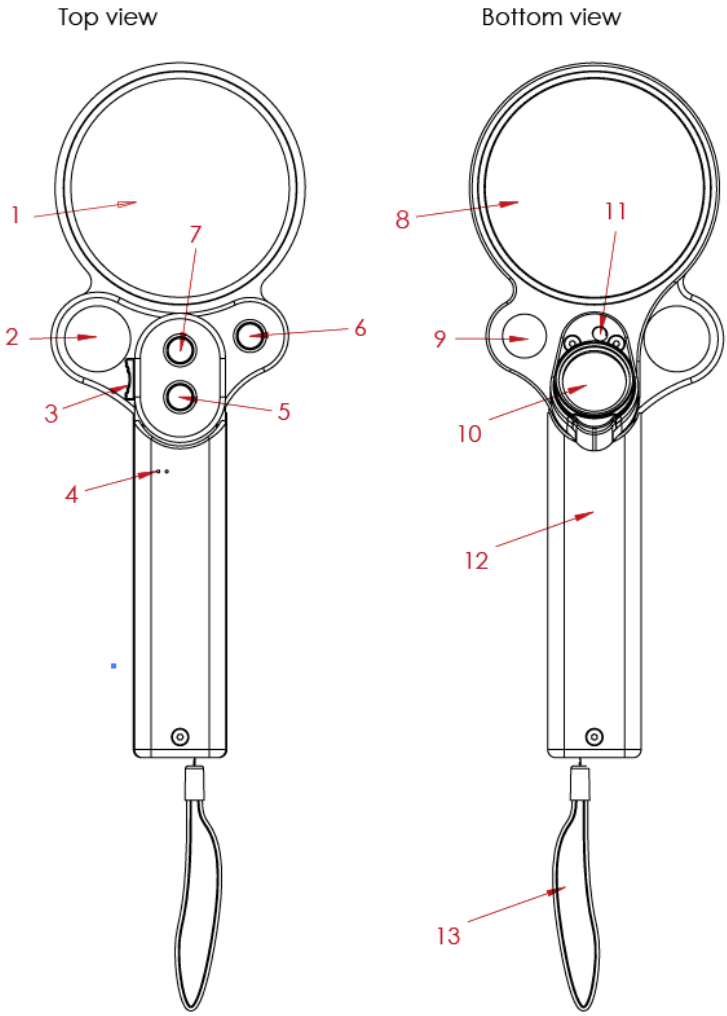
Package contents

- Inspector Loupe
- 2 lens caps
- Traveling case with foam inlay
- USB loading cable (standard micro-USB)
- Wrist strap
- Manual

The Inspector M2

The Inspector M2 is equipped with two adjustable polarisers that allow modification or elimination of reflected light. To maximise its performance, the loupe also features a UV light and a doublet eye-loupe. Its fully rechargeable battery allows for cordless operation both in- and outdoors.

1. Magnifier + 2
2. Eye-loupe +10
3. On/off switch
4. Battery charging indication
5. Button Polariser LED emitter
6. Button UV LED emitter
7. Eye-loupe illuminator
8. Adjustable polariser (analyser)
9. UV LED emitter
10. Adjustable polariser
11. Eye-loupe LED emitter
12. Wooden grip
13. Wrist strap


Top view
Bottom view
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2
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4
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12
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The Inspector M2 is a versatile loupe designed to be used to inspect a wide range of materials in the field of art, antiques and artefacts.

Lion Optics worked in collaboration with art dealers, museums and restoration specialists to adapt this tool to their specific needs. After many hours of testing on real examples in the field, Lion Optics has been able to exactly tailor the Inspector M2 to reach a perfect output of polarised and UV light. This combination allows a perfect scan of a large scope of artworks and give a better understanding of their conditions.

Other variables will have an effect on what you can see using the crossed polarised function of the device.

We are still discovering that the Inspector can provide better vision on a new range of materials.

1. Polariser function

Many light sources - including the sun - emit a large number of photons of light that are oriented in all directions. These photons are a mixture of lightwaves, travelling in all possible transverse directions.

When light waves hit a reflective surface, the light reflected becomes polarised. This reflection is a lightwave travelling in one direction.

A polariser can filter this reflected polarised light by absorbing or reducing the glare reflected from a shiny surface, such as varnish on a painting, for example. This allows the natural colour and detail of the subsurface to appear.

The Inspector’s polarised light penetrates deeper in the surface of different materials, while non-polarised light provides information about the superficial surface layer. The M2 allows the user to get more information about the specimen by toggling between the two polariser modes.

Using the Inspector M2 polariser function with paintings

A painting consists of various layers: the white base, the paint pigments and the varnish. The varnish reflects more light than the pigments underneath, which significantly interferes with the light reflected by the pigments. Likewise, when examining thin sections of paintings destroyed by over-cleaning, the white of the base layer will reflect more light than the paint pigments. The M2 can reduce those highly polarised reflections to allow the unpolarised rays reflected by the pigments to be revealed.

The Inspector M2 features:

- **One Polariser filter:**

This filter can be manually rotated and is placed in front of the strong led illuminator. Consequently, it only allows light waves vibrating along their polarising axis to completely pass through, while absorbing light waves that move in other directions.

- **One Analyser:**

This additional large polariser is placed underneath the magnifier and allows to see through. The object observed lies in the light path between the two filters.

When the two polarisers are crossed, very little reflective light passes through the loupe. However, you can always adjust the amount of light waves during inspection by rotating one of the polarisers.

The Inspector M2 offers more contrast, true colours and eliminates reflections on most materials.

How to use your polarizer function

Hold the magnifier directly above the object you would like to examine. The focal length is approximately 20 cm from the object. The ideal distance to the eyes is about the same but adjust to your own preferences. For best conditions, the amount of ambient light should be dimmed so as to not to overpower the polarised light. Complete darkness is not necessary but this would give the best results. By slowly rotating the ring of one of the polarisers the reflections will disappear to reveal the true nature of the specimen.

Polarised light is completely harmless to artwork or delicate materials.

2. Eye Loupe

This doublet lens is the third function and allows the user to examine materials or small objects at a very close distance to the eye, making the object appear larger and revealing details not perceivable by the naked eye.

How to use the eye-loupe function

The best way to use this function is to hold the small magnifier as close to the eye as possible while bringing the subject closer to the lens until it comes into focus. Press the button in the middle to illuminate the object you want to examine through the eye loupe.

3. UV light

The ultraviolet emitter is essential when evaluating artwork for their condition and age. The UV led emits an ultraviolet light wave of 365 nanometers. At this wavelength, many materials absorb invisible ultraviolet energy and transform this energy into visible coloured light, easily distinguished by the human eye. This makes the ultraviolet light an especially useful instrument when checking the condition of any kind of artwork. Prior restorations can easily be detected.

How to use your UV light function

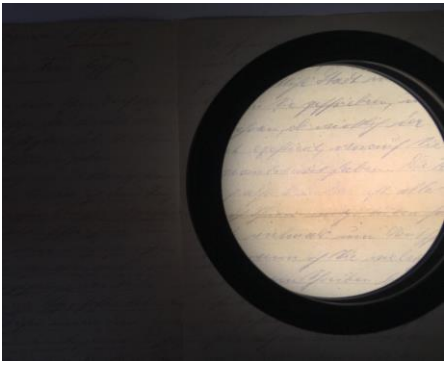
In a darkened environment, ultraviolet light reveals alterations such as layers of paint, repairs and floating signatures on artwork that are normally invisible in daylight. The slightest alteration will stand out with extreme clarity under UV light.

UV light can be dangerous to your eyes and skin if not taken seriously. Do not look directly into UV light during operation. Exposure to UV light can cause severe eye damage to humans and animals. For safety reasons, it takes one second for the UV light to reach full intensity.

Detecting restorations and alterations.

Detecting active rust.

Increased contrasts show true colors.



Increased contrast.

Detecting encrustations and patina on bronze.

Revealing unreadable inscriptions.

Encrustations and impurities on ancient gold.

Technical Specifications:

Weight:	465gr
Size:	250x90x55mm
Size Casing:	320x220x70mm
Lenses:	27mm + 10D doublet glass lens 77mm magnifying lens + 2 77mm polariser glass filter 27mm polariser glass filter 18mm doublet glass lens
LED emitters:	White (4000), 4W UV 365nm, White (soft)
Frame:	Milled aluminium parts. Anodized, and lacquered in transparent varnish
Grip:	Oiled Pau Ferro hard wood
Battery:	Build in 18650 Li-Ion 3,7V, 2900 mAh, Load/unload protected, > 500 load cycles
Power system:	Constant stabile voltage for all three LED emitters (On-board multiple buck-boost converter)
Loading:	Through USB micro cable, 5 hours at 500 mA (USB 3) Fully charged when lights are green

Guarantee

5 years on LEDs and electronics.
2 years on battery

Contact

LION optics
Frederik Matthesstraat 30
2613ZZ Delft
The Netherlands
http://www.lionoptics.nl

General information

Mail to: info@lionoptics.nl

Technical support and information

Mail to : support@lionoptics.nl
Email reply within one (working) day