

## OPTIGEM Series

Gemological stereomicroscopes



# OPTIGEM Series

Optika Microscopes has designed a series dedicated to the science of Gemology.

These microscopes have been especially designed to observe samples of precious stones and jewels.

This series offers instruments equipped with multiple image-enhancing illumination systems, tilting stands and darkfield condensers developed for any gemological needs.

<b>SZM-GEM-1</b>	Gemological stereozoom 7x...45x, binocular head with pillar stand.
<b>SZM-GEM-2</b>	Gemological stereozoom 7x...45x, trinocular head with pillar stand.
<b>OPTIGEM-1</b>	Gemological binocular stereomicroscope, tilting stand, incident & transmitted LED illumination system.
<b>OPTIGEM-2</b>	Gemological trinocular stereomicroscope, tilting stand, incident & transmitted LED illumination system.
<b>OPTIGEM-3</b>	Gemological binocular stereomicroscope, tilting stand, fluorescent bulb (incident) & halogen bulb (transmitted).
<b>OPTIGEM-4</b>	Gemological trinocular stereomicroscope, tilting stand, fluorescent bulb (incident) & halogen bulb (transmitted).



# OPTIGEM Series - SZM-GEM -1/2 models

## Heads

**SZM-GEM-1: Binocular rotating 360° and 45° inclined.**

**SZM-GEM-2: Trinocular rotating 360° and 45° inclined.**

Diopter adjustment on both eyepieces.

Interpupillary adjustment 51-75 mm.

## Eyepieces

Widefield eyepieces WF10x/20mm with field number 20.

## Objective

Parfocal achromatic objective 1x. Working distance: 100 mm.

Zoom range: 0,7x - 4,5x. Zoom factor: 6,428:1.

## Specimen stage:

Specimen clamps. Adjustable gemology clip.

## Focusing

By means of a rack and pinion controlled by a pair of knobs placed on both sides of the stereomicroscope.

## Microscope stand

Pillar stand height 25 cm. Base: 26x20x6h cm. Weight: 6 Kg.

## Illumination

Incident illumination: dichroic halogen lamp (12V/15W) with angle and brightness adjustment.

Transmitted illumination: pure white (6300K) LED system for observation in brightfield (with diffusive LED disc) and dark-field (with side-emitting LED ring).

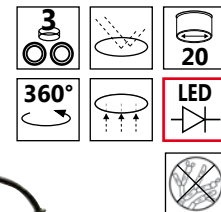
Through a selector it's possible to choose between 3 modes: brightfield only, darkfield only, or both brightfield and dark-field.

Provided with a lever for the insertion of a black background in order to improve the darkfield observation.

Voltage: 110/240Vac, 50/60Hz, 1A ; Fuses: T1A 250V

Max. required power: 30W.

## SZM-GEM-2



## SZM-GEM-1/2 models

These two models are typical gemological microscopes with fixed stand.

An ultrabright LED-based electronic condenser with intensity control, allows to switch from bright to dark field; it also produces perfectly the colour of daylight. The condenser uses a new optical configuration especially created in order to obtain a perfect dark field application.

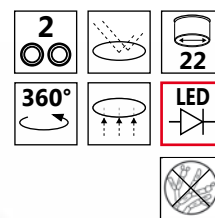
# OPTIGEM Series - OPTIGEM -1/2 models

The **OPTIGEM-1** and **OPTIGEM-2** are revolutionary 2-in-1 gemology instruments that can be used both as a vertical and as a horizontal microscopes, at the turn of a knob and without disassembling any part.

An ultrabright LED-based electronic condenser with intensity control, allows to switch from bright to dark field; it also produces perfectly the colour of daylight. The condenser uses a new optical configuration especially created in order to obtain a perfect dark field application. An additional flexible arm and velvet-field slider produces for extra contrast, crisp and vibrant images even in a brightly lit environment. A wide range of optional accessories completes these instruments: from gemology clip, an iris aperture diaphragm, a polarization analysis kit, an optical unit to switch the dark field from a "sharp" (gem exhibition) to a "soft" (diamond analysis) mode translating cell holder with vacuum pick-up and quartz immersion cells complete and enhance the instrument usability. All the accessories can be stacked, in any order, while using the microscope in either horizontal or vertical configuration. The microscope body can be rotated through a full 360°, yet keeping the base sturdily fixed on the table, to show gems to a customer, or to share opinions with a colleague.



## OPTIGEM-1



### LED Illumination

Incident illumination: LED flexible arm with brightness adjustment.

Transmitted illumination: LED system for observation in brightfield (with diffusive LED disc) and darkfield (with side-emitting LED ring). Through a selector it's possible to choose between 3 modes: brightfield only, darkfield only, or both brightfield and darkfield.

Provided with a lever for the insertion of a black background in order to improve the darkfield observation. LED temperature color: 6300K (pure white).

External power supply provided. Input: 110/240Vac, 50/60Hz; Output: 12V 1A. Max. required power: 15W.



# OPTIGEM Series - OPTIGEM -1/2 models

## Heads

**OPTIGEM-1: Binocular rotating 360° and 45° inclined.**

**OPTIGEM-2: Trinocular rotating 360° and 45° inclined.**

Diopter adjustment on both eyepieces.

Interpupillary adjustment 51-75 mm.

## Eyepieces

Widefield eyepieces WF10x/22 with field number 22.

## Objective

Parfocal achromatic objective 1x. Working distance: 110 mm.

Zoom range: 0,7x - 4,5x. Zoom factor: 6,428:1.

## Specimen stage:

Adjustable gemology clip. 360° rotating base. Pair of rods for assembling optional accessories.

## Focusing

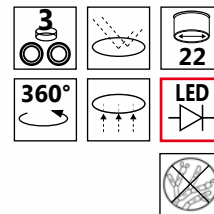
By means of a rack and pinion controlled by a pair of knobs placed on both sides of the stereomicroscope.

## Microscope stand

Rack-and-pinion stand (it can be inclined through full 90° for horizontal observation, and rotated 360°).

Base: 27x21x6h cm. Weight: 6 Kg.

## OPTIGEM-2



# OPTIGEM Series - OPTIGEM - 3/4 models

## OPTIGEM - 3/4 models

These models are classic gemological microscopes with tilting stand. The darkfield condenser uses a typical optical configuration, based on halogen illumination and a classic reflecting system.

A flexible arm with a fluorescent tube simulates the color of daylight for accurate color grading.

### Heads

**OPTIGEM-3: Binocular rotating 360° and 45° inclined.**

**OPTIGEM-4: Trinocular rotating 360° and 45° inclined.**

Diopter adjustment on both eyepieces.

Interpupillary adjustment 55-75 mm.

### Eyepieces

Widefield eyepieces WF10x/22 with field number 22.

### Objectives

Parfocal achromatic objective 1x. Working distance: 110 mm.

Zoom range: 0,67x - 4,5x. Zoom factor: 6,71:1.

### Specimen stage:

Adjustable gemology clip. 360° rotating base.

### Focusing

By means of a rack and pinion controlled by a pair of knobs placed on both sides of the stereomicroscope.

### Microscope stand

Rack-and-pinion stand (it can be inclined 45°).

Base: 305x260x70h mm.

Weight: 7 Kg.

### Illumination

Incident illumination: flexible arm with fluorescent tube 7W 6400K (pure white). Independent ON/OFF switch.

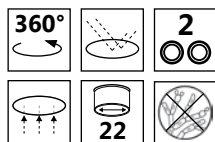
Transmitted illumination: system for observation with bright-field and darkfield, based on 30W halogen illumination and reflecting system. Brightness adjustment.

Iris diaphragm and removable black background for contrast enhancement for darkfield application.

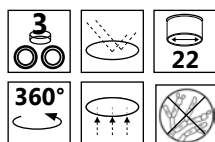
Input: 240Vac, 50Hz;

Max. required power: 45W.

## OPTIGEM-3



## OPTIGEM-4



# OPTIGEM Series - Technical specifications

Model	Head	Eyepieces	Objectives	Stand	Illumination
<b>SZM-GEM-1</b>	Binocular	WF10x/20mm	0,7 .... 4,5x Zoom	Pillar stand	Incident illumination: dichroic halogen lamp 12V/15W. Transmitted illumination: Diffusive LED disc for observation in brightfield and side-emitting LED ring for observation in darkfield.
<b>SZM-GEM-2</b>	Trinocular	WF 10x/20mm	0,7x....4,5x zoom	Pillar stand	Incident illumination: dichroic halogen lamp 12V/15W. Transmitted illumination: Diffusive LED disc for observation in brightfield and side-emitting LED ring for observation in darkfield.
<b>OPTIGEM-1</b>	Binocular	WF10x/22mm	0,7 .... 4,5x Zoom	Gemological stand	Incident illumination: LED flexible arm with brightness adjustment. Transmitted illumination: Diffusive LED disc for observation in brightfield and side-emitting LED ring for observation in darkfield.
<b>OPTIGEM-2</b>	Trinocular	WF10x/22mm	0,7 .... 4,5x Zoom	Gemological stand	Incident illumination: LED flexible arm with brightness adjustment. Transmitted illumination: Diffusive LED disc for observation in brightfield and side-emitting LED ring for observation in darkfield.
<b>OPTIGEM-3</b>	Binocular	WF10x/22mm	0,67.... 4,5x Zoom	Gemological stand	Incident illumination: flexible arm with fluorescent tube 7W(pure white). Transmitted illumination: 30W halogen bulb and a dedicated reflecting system for observation with brightfield and darkfield.
<b>OPTIGEM-4</b>	Trinocular	WF10x/22mm	0,67.... 4,5x Zoom	Gemological stand	Incident illumination: flexible arm with fluorescent tube 7W(pure white). Transmitted illumination: 30W halogen bulb and a dedicated reflecting system for observation with brightfield and darkfield



# OPTIGEM Series - Accessories

## Accessories for SZM-GEM - 1/2:

ST-230	Polarizing analysis kit (only for SZM-GEM series).
ST-082	Eyepieces (pair) WF15x/15 mm.
ST-083	Eyepieces (pair) WF20x/10 mm.
ST-084	Eyepiece micrometer WF10x/20 mm.
ST-086	Additional lens 1,5x (w.d. 47mm).
ST-087	Additional lens 2x (w.d. 26mm).
ST-089	Reflex camera adapter for FULL FRAME sensor.
ST-090	CCD camera adapter (for 1/3" sensors).
ST-090.1	CCD camera adapter (for 1/2" sensors).
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.

## Accessories for OPTIGEM - 1/2:

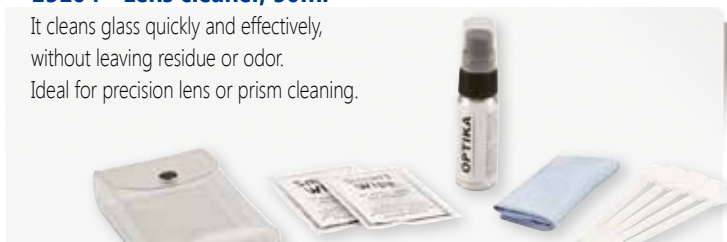
ST-201	Iris aperture diaphragm for darkfield (only for OPTIGEM 1 & 2).
ST-207	Iris aperture diaphragm for standard illuminator (only for OPTIGEM 1 & 2).
ST-202	Polarizing analysis kit (only for OPTIGEM 1 & 2).
ST-203	Glass immersion cell (only for OPTIGEM 1 & 2).
ST-204	Translating cell holder (only for OPTIGEM 1 & 2).
ST-205	Vacuum pick-up (with electric vacuum pump).
ST-082	Eyepieces (pair) WF15x/15 mm.
ST-083	Eyepieces (pair) WF20x/10 mm.
ST-084	Eyepiece micrometer WF10x/20 mm.
ST-086	Additional lens 1,5x (w.d. 47mm).
ST-087	Additional lens 2x (w.d. 26mm).
ST-089	Reflex camera adapter for FULL FRAME sensor.
ST-090	CCD camera adapter (for 1/3" sensors).
ST-090.1	CCD camera adapter (for 1/2" sensors).
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.

## Accessories for OPTIGEM - 3/4:

ST-231	Polarizing analysis kit (only for OPTIGEM 3 & 4).
ST-142	Eyepieces (pair) WF15x/16mm..
ST-143	Eyepieces (pair) WF20x/12mm.
ST-144	Eyepieces (pair) WF25x/9mm.
ST-145	Eyepiece micrometer WF10x/22mm.
SAO1.5	Additional lens 1,5x (w.d. 49mm).
SAO2	Additional lens 2x (w.d. 28mm).
ST-146	Photo adapter for REFLEX camera with FULL FRAME sensor.
ST-147	CCD camera adapter (for 1/3" sensors).
ST-147.1	CCD camera adapter (for 1/2" sensors).
M-621	Halogen bulb 6V/30W.
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.

## 15104 - Lens cleaner, 50ml

It cleans glass quickly and effectively, without leaving residue or odor.  
Ideal for precision lens or prism cleaning.



## Headquarters and Manufacturing Facilities

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