



***INSPECTION & INDUSTRIAL MICROSCOPES***

**BETTER SYNDICATE CO., LTD.**

**OPTIKA<sup>®</sup>**  
M I C R O S C O P E S  
I T A L Y

## SLX Series



**Stereomicroscopes For Higher Education & Laboratory**

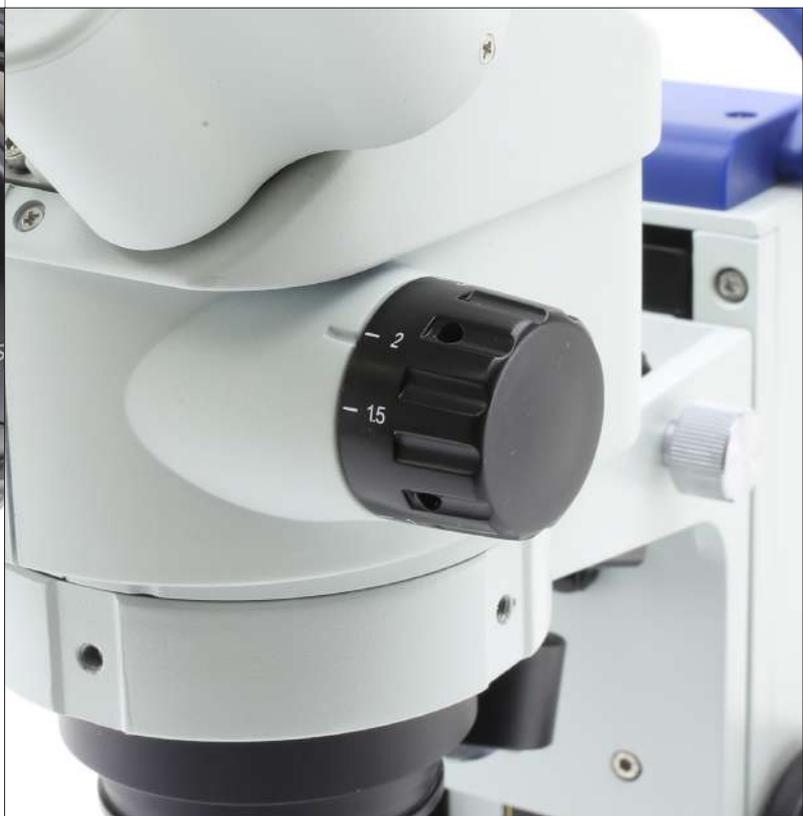
# Extremely Versatile Cordless Stereo & Stereozoom Microscopes

## PROFESSIONAL FEATURES FOR... WELL, EVERYONE

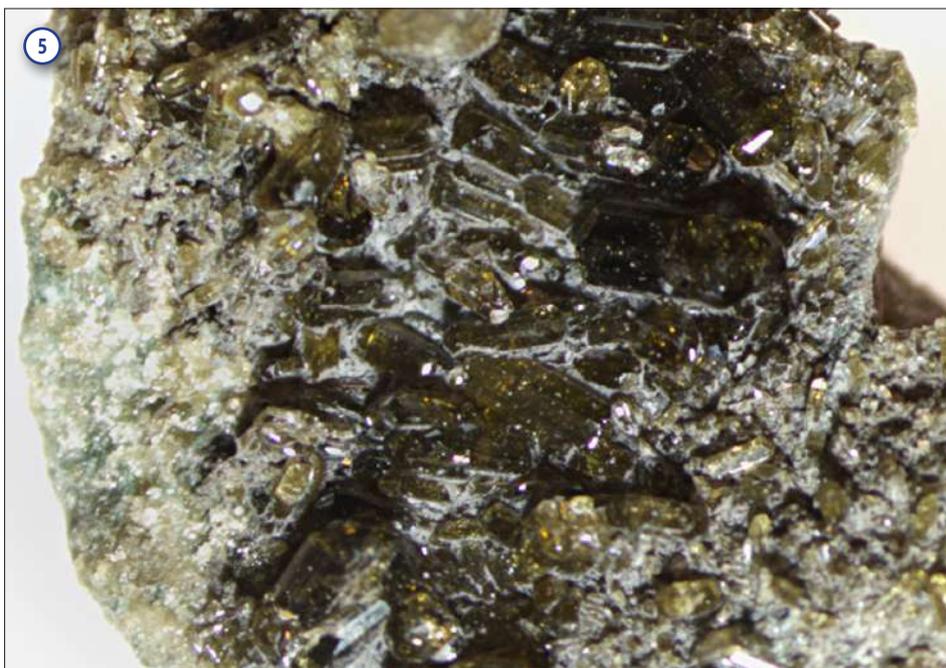
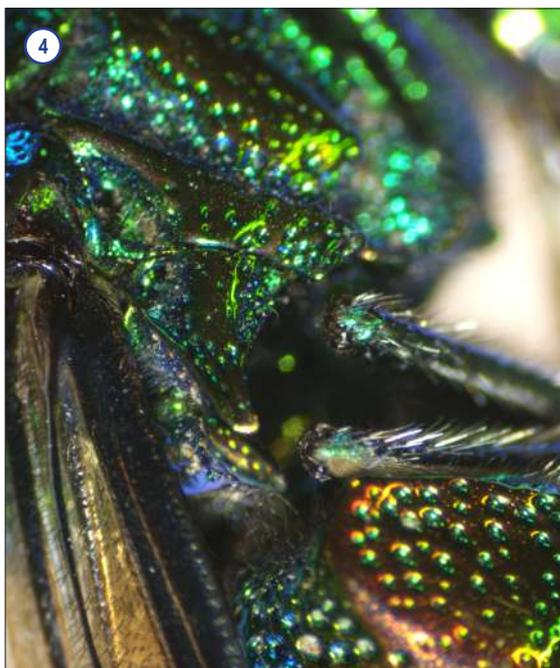
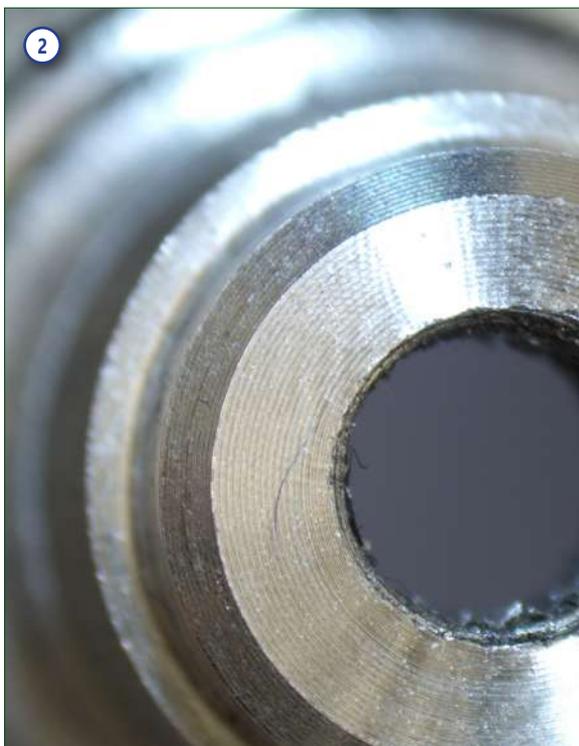
- » Level up skills and become a professional user
- » 3D Greenough view for high resolved images & large field depth
- » 6.43:1 ratio - 7x ... 45x - or turnable objective - 2x, 4x - on 21 mm
- » Compact, practical and intuitive to use
- » Sturdy and durable for extended lifetime

## THE LONGEST AUTONOMY ON THE MARKET

- » Longlife LED illumination (providing over 20 years of use)
- » Ultra-flat base with  $\varnothing$  100 mm disc for diffused transmitted light
- » Cordless use, totally independent from mains/batteries connection
- » Freely settable illumination - incident, oblique and transmitted light
- » External power supply for enhanced safety and convenient servicing



# SLX Series



## Legend

- |   |                                       |
|---|---------------------------------------|
| 1. Aluminum - SLX-1 and 4x objective.             | 4. Fly, detail - SLX-2 and 4.5x zoom. |
| 2. Component worked on lathe - SLX-2 and 3x zoom. | 5. Rock - SLX-2 - 1.5x zoom.          |
| 3. Wasp - SLX-3 and 4x zoom.                      |                                       |

## SLX Series



Valuable configurations of cordless and modern stereo & stereozoom microscopes ideal for a variety of applications, including dissection, biology, entomology, anatomy, chemistry, material science among the others and even industrial purposes.

Provided with dual magnification or **6.43:1 zoom ratio**, **FN 21** high eyepoint eyepieces, high-grade precise fixed arm with focus and handle with the latest technology of **EcoLED™** illumination plus rechargeable batteries. Slim and easy to carry, all the models with high-grade precise fixed arm are equipped with long lasting **LED** illumination to provide over 20 years of use.

### High eyepoint eyepieces for glasses wearers

These eyepieces are designed in such a way that the exit pupil is further away from the eye lens than standard eyepieces, being well suited for eyeglasses wearers

### The longest autonomy on the market ensured by EcoLED™

OPTIKA has re-designed illumination in microscopy, once again: a special coating process on optics combined with a new, higher ratio between low consumptions and ultra-efficiency has addressed us to top brightness levels

### 6.43:1 zoom ratio - zoom magnification from 7x to 45x

Purposely designed for professional routine inspections, the total magnification can be even extended to 135x with 20x eyepieces and 1.5x additional lens, obtaining an excellent results in this class



### Ultra-flat base with Ø 100 mm disc for diffused transmitted light

A new level of ergonomics and comfort is achieved during operations, with the ultra-flat base of only 3 cm height to ensure smooth specimen movement and the Ø 100 mm for top class diffusion of the transmitted light

# Stereomicroscopes For Higher Education & Laboratory



### Longlife LED illumination (providing over 20 years of use)

Money & energy saving thanks to LED long lifetime (65.000 hours, 22 years in case of 8 hours/day) which is more than 20 times compared to a standard halogen bulb.

### Cordless use, totally independent from mains/batteries connection

All models work with or without the batteries in place with three NiMH rechargeable batteries (not included) for the longest autonomy in outdoor use (12-hour autonomy, at medium intensity).



### External power supply for enhanced safety and convenient servicing

OPTIKA's safety first approach drives to the use of a low voltage, multi-plug, external power supply in order to prevent any risk of electric shock and heatflow inside the unit.

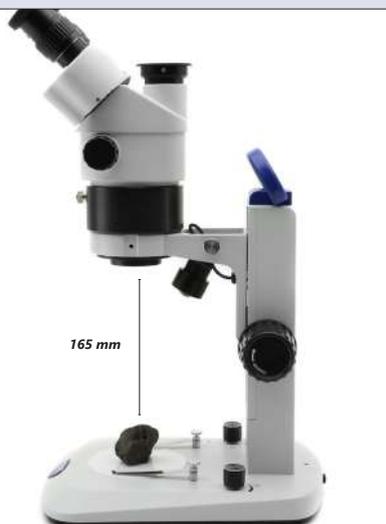
## SLX Series - Get the most out of our accessories

### Additional Lenses

Simply to be screwed into the threads below the objectives of SLX-2 and SLX-3 to either increase or decrease total magnification, or to increase the working distance when users need to work with hands under the microscope



ST-091 - Additional lens 0.75x

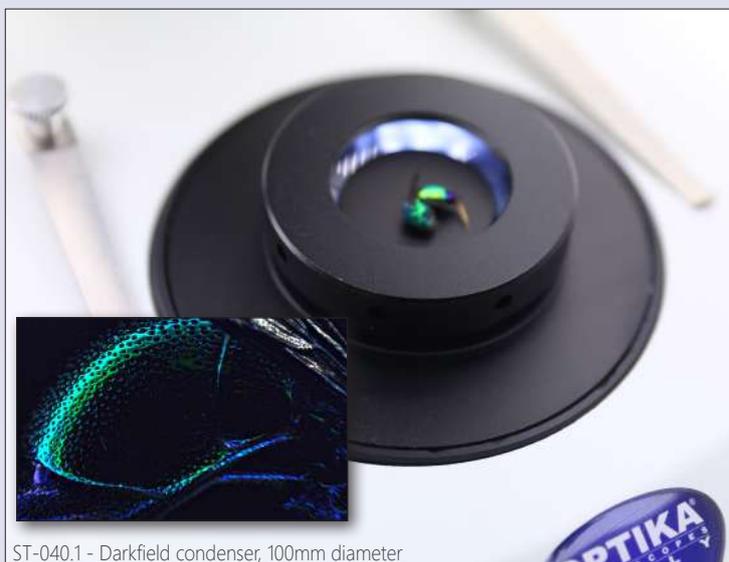


165 mm

ST-085.1 - Additional lens 0.5x (w.d. 165mm) with SZ-EXT

### ST-040.1 - Darkfield condenser

This is a darkfield condenser for stereo microscopes with bottom light and 100 mm round working plate to provide dark-field microscopy features, fitting all OPTIKA stereomicroscopes with 100 mm mounting size and transmitted light



ST-040.1 - Darkfield condenser, 100mm diameter

# SLX Series - Range

## SLX-3



Cordless trinocular stereozoom microscope ideal for students, schools and amateurs to dissect and discover mainly biology and materials science in 3D, with 0.7x...4.5x zoom, FN 21 high eyepoint, precision fixed arm with handle and the latest technology of EcoLED™ illumination plus rechargeable batteries (not provided). Slim and easy to carry, it is equipped with long lasting LED illumination to provide over 20 years of use.

**Head:** Trinocular (split ratio: 50/50), 45° inclined; 360° rotating.

**Dioptric adjustment:** Both eyepieces.

**Eyepieces:** WF10x/21 mm, high eyepoint, secured by screw and with rubber cups.

**Objective:** Parfocal achromatic zoom 0.7x...4.5x (6.43:1 ratio) with anti-fungus treatment.

**Working distance:** 100 mm

**Stand:** High-grade, precision fixed with handle and focus.

**Focusing:** Rack and pinion focusing mechanism.

**Illumination:** EcoLED™ swiveling incident and transmitted, with brightness control, rechargeable batteries (not provided). Color temperature: 6,300 K. Multi-plug 100-240Vac/5Vdc external power supply.



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## SZ Series



**Stereozoom Microscopes For Laboratory & Industry**

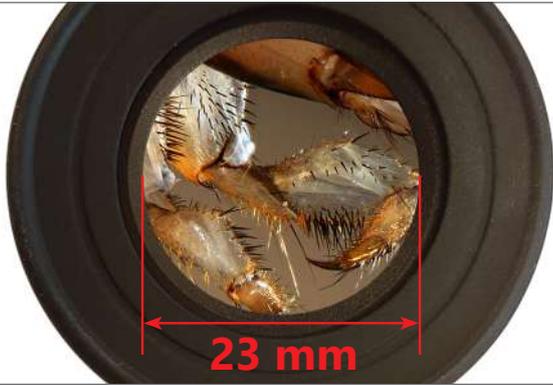
# FIELD OF VIEW - 23 mm Full Plan Field of View

## 10x/22mm or 10x/23mm PLAN EYEPIECES

Plan eyepieces with 22 or 23 mm field of view; high eye-point type, also suitable for the use of eyeglasses.

## ZOOM OBJECTIVE

The High-Grade Zoom Objective ensures a sharp and clear vision. With a zoom ratio of 6.72:1 or 8.46:1 it makes this series a perfect instrument for any application.



## CLICK-STOP DETENTS

On SZO Heads the zoom objective is equipped with a precise click-stop mechanism which makes easy to quickly find the default zoom positions: 0.67x, 0.80x, 1x, 1.2x, 1.5x, 2x, 2.5x, 3x, 3.5x, 4x, and 4.5x.



# X-LED - Two Times Brighter Than Any Other

## X-LED: A SEA OF LIGHT

Where present, stands' illuminators are equipped with X-LED systems:

- the incident illuminator with **X-LED<sup>3</sup>** (single LED, 3.6W)
- the transmitted illuminator with **X-LED<sup>T3</sup>** (12 or 60 LEDs)

## X-LED: RESPECTING COLORS

With 6,300K color temperature the specimens are illuminated with the most natural light. It allows to respect their colors, without altering the nuances.



## X-LED<sup>T3</sup>: SIMPLY UNMATCHABLE

Top class illuminator for transmitted light. With up to 60 LEDs geometrically arranged, it grants a perfect light uniformity and the observation of large samples thanks to its 10cm diameter.



Multi-plug power supply

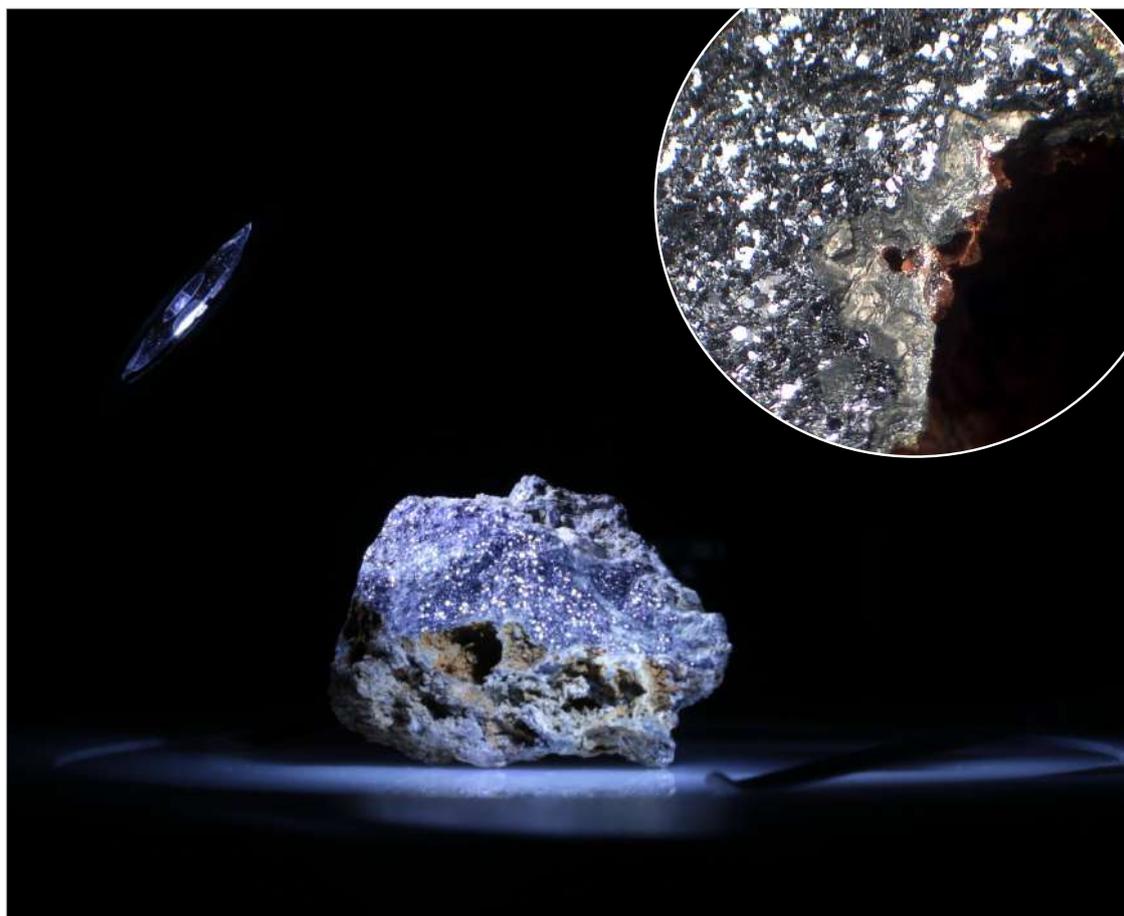
## SZ Series

### Greenough Optical System

The V-shape optical path of Greenough allows us to design a very compact and a slim unit, highly versatile and appreciated for the 3D viewing. Samples with significant depth can be quickly inspected. Binocular and trinocular heads are 45° inclined to ensure comfortable posture to the user even after several hours of operation.

### Zoom Ratio

SZ Series has 0.67x-4.5x or 0.65x-5.5x zoom range (6.72:1 or 8.46:1 zoom ratio, depending on the head), being purposely designed for routine and advanced inspections. These zoom ratios enable most samples to be observed at the appropriate magnifications. When combined with proper accessories (2x additional lens and 25x eyepieces), SZX-A delivers excellent image quality up to 275x.



### X-LED Exclusive Lighting Source

Special technology able to double the light intensity for incomparable performance, ensuring constant pure-white colour temperature.

Relevant money & energy saving thanks to the incredibly low energy consumptions allow you to cut the electricity bills by 90%!

# Stereozoom Microscopes For Laboratory & Industry

## Overhanging Stands, In Case Of Large Samples

These stands are recommended for efficient, quick and precise observation and digital imaging of large samples, that cannot be processed with regular stands.

Achieve 360° rotation and smooth movement with no limits, as the mechanism can be tilted from right to left, backward to forward.

## Large Working Distance And Field Of View Size Are Important!

If you need to operate under the microscope, you will need a large working distance. SZ series ensures an extended working distance of 110mm. Keep in my mind your application, always: if you are soldering a printed circuit board, it may be more important to have a long working distance; if you are counting items, then a large field of view will be of great help.



## Get the most out of our accessories



### ST-088 - Polarizing Set

The ST-088 Polarizing Set features a pair of top quality linear polarization filters. The analyzer is mounted on a circular metallic holder equipped with a goniometric scale for determining the extinction angle characteristic of substances and materials.

# SZ Series - Heads

## SZO-B / SZO-T



### SZO Heads - Addressed For Extreme Reliability & Repeatability

- » Ensuring the sharpest vision, high productivity, repetitive analysis
- » 3D Greenough view for high resolved images & large field depth
- » 23 mm field number and large working distance (up 110 mm)
- » 6.72:1 zoom ratio - zoom magnification from 6.7x to 45x
- » Simultaneous eyepiece & camera observation (on SZO-T)
- » Multi-position click-stop - no need to move eyes from eyepieces

#### Head:

**SZO-B:** Binocular, 360° rotating on all stands and 45° inclined.

**SZO-T:** Trinocular (split ratio: 70/30), 360° rotating on all stands and 45° inclined.

**Interpupillary distance:** Adjustable between 51 and 75 mm.

**Dioptric adjustment:** On both eyepieces.

**Eyepieces:** WF10x/23 mm, high eyepoint, secured by screw and with retractable rubber cups.

**Objective:** Parfocal achromatic zoom 0.67x...4.5x (zoom factor 6.72:1) with click-stop.

**Working distance:** 110 mm.

### CLICK-STOP DETENTS

On SZO Heads the zoom objective is equipped with a precise click-stop mechanism which makes easy to quickly find the default zoom positions: 0.67x, 0.80x, 1x, 1.2x, 1.5x, 2x, 2.5x, 3x, 3.5x, 4x, and 4.5x.



## SZ Series - Zoom Heads Comparison Chart

Model	Head	Eyepieces	Zoom Objective	Zoom Ratio	Click-Stops Detents	Working Distance	Photo Tube
<b>SZX-B</b>	Binocular 45° inclined	WF 10x/22	0.67x...4.5x	6.72:1	-	100 mm	-
<b>SZX-T</b>	Trinocular 45° inclined	WF 10x/22	0.67x...4.5x	6.72:1	-	100 mm	Fixed 50%-50%
<b>SZX-BA</b>	Binocular 45° inclined	WF 10x/23	0.65x...5.5x	8.46:1	-	102 mm	-
<b>SZX-TA</b>	Trinocular 45° inclined	WF 10x/23	0.65x...5.5x	8.46:1	-	102 mm	Fixed 50%-50%
<b>SZO-B</b>	Binocular 45° inclined	WF 10x/23	0.67x...4.5x	6.72:1	0.67x, 0.80x, 1x, 1.2x, 1.5x, 2x, 2.5x, 3x, 3.5x, 4x, and 4.5x	110 mm	-
<b>SZO-T</b>	Trinocular 45° inclined	WF 10x/23	0.67x...4.5x	6.72:1	0.67x, 0.80x, 1x, 1.2x, 1.5x, 2x, 2.5x, 3x, 3.5x, 4x, and 4.5x	110 mm	Fixed 70%-30%

# SZ Series - Pillar Stands

## SZ-ST1



Extremely stable, ultra-slim and modern stand to be matched with a focusing system and stereozoom head. The 25 mm height makes this stand very effective in preventing fatigue during operation, increasing the ergonomics and the performance as a result. In case illumination is needed, choose from the wide choice of external illuminators available.

**Width:** 210 mm

**Length:** 270 mm

**Thickness:** 25 mm

**Pillar diameter:** 32 mm

**Pillar height:** 275 mm

**Stage:** 95 mm dia., black and white disc with sample clips

**Incident illumination:** None

**Transmitted illumination:** None

To be used in combination with a focusing mechanism (SZ-A1/A6)

## SZ-ST2 / SZ-ST3



**Top-class X-LED<sup>T</sup> transmitted light, with geometrically arranged LEDs and X-LED<sup>3</sup> incident light**

The impressive incident illumination generated by the exclusive X-LED<sup>3</sup> swivelling illuminator (3.6 W) is combined with an extra-large, settable 12-LED X-LED<sup>T1</sup> disc (2 W, on SZ-ST2) or 60-LED X-LED<sup>T3</sup> disc (4 W, on SZ-ST3) for transmitted illumination.

**Incident illumination:** X-LED<sup>3</sup> with white 3.6 W LED and brightness control. Color temperature: 6,300 K.

**Transmitted illumination:**

**SZ-ST2:** 12-LED X-LED<sup>T1</sup> disc with white 2 W LED and brightness control. Color temperature: 6,300 K. Multi-plug 100-240Vac/6Vdc external power supply.

**SZ-ST3:** 60-LED X-LED<sup>T3</sup> disc with white 4 W LED and brightness control. Color temperature: 6,300 K. Multi-plug 100-240Vac/12Vdc external power supply.

**Base dimensions:** 270×210 mm.

**Pillar dimensions:** Ø32×280 mm.

**Weight:** 1.90 kg.

To be used in combination with a focusing mechanism (SZ-A1/A6)

## SZ-ST7 / SZ-ST8



**Top-class X-LED<sup>T</sup> transmitted light, with geometrically arranged LEDs and freely orientable, flexible double gooseneck X-LED<sup>3</sup> incident light**

The impressive incident illumination generated by the exclusive X-LED<sup>3</sup> lighting system located in two flexible gooseneck arms (3.6 W each, for a total of 7.2 W) is combined with an extra-large, settable 12-LED X-LED<sup>T1</sup> disc (2 W, on SZ-ST7) or 60-LED X-LED<sup>T3</sup> disc (4 W, on SZ-ST8) for transmitted illumination.

**Incident illumination:** Two flexible X-LED<sup>3</sup> gooseneck arms with white 3.6 W LED/each and brightness control. Illuminance: 170,000 lux (at 10 cm distance). Color temperature: 6,300 K.

**Transmitted illumination:**

**SZ-ST7:** 12-LED X-LED<sup>T1</sup> disc with white 2 W LED and brightness control. Illuminance: 4,000 lux. Color temperature: 6,300 K. Multi-plug 100-240Vac/12Vdc external power supply.

**SZ-ST8:** 60-LED X-LED<sup>T3</sup> disc with white 4 W LED and brightness control. Illuminance: 8,000 lux. Color temperature: 6,300 K. Multi-plug 100-240Vac/12Vdc external power supply.

**Base dimensions:** 270×210 mm.

**Pillar dimensions:** Ø32×280 mm.

**Stage:** 95 mm dia., translucent and black/white discs with sample clips

**Weight:** 2.40 kg.

To be used in combination with a focusing mechanism (SZ-A1/A6)

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## GEM Series



**Stereozoom Microscopes For Gemology**

# GEM Series

As a leading company in the supply of gemological microscopes, OPTIKA offers a series of microscopes purposely designed for this sector by using both brightfield and darkfield methods OPTIGEM-10 and OPTIGEM-20. This series has been designed and manufactured in order to satisfy the requests of a very demanding industry; brightfield/darkfield, immersion analysis, light color temperature: no detail has been left to chance.

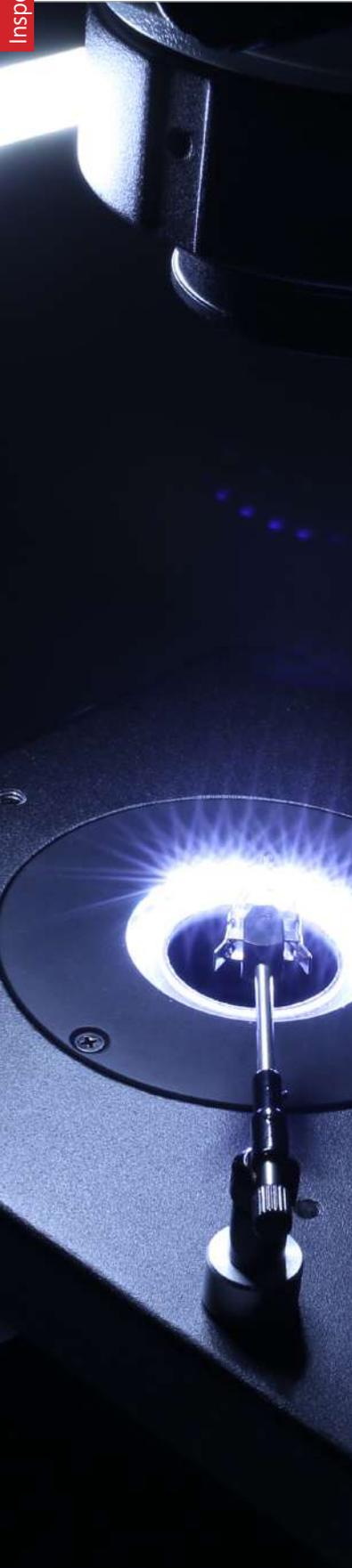
### Specifically Designed for Specialists

Gemological stereomicroscopes are meant to help with stone inspection. Jewels and gems have a variety of grades (or quality levels), which ultimately influence their value and cost on the market; therefore it is important to have solutions that are purposely designed for gemology. These stereomicroscopes are equipped with iris and darkfield condenser on the bottom light source, and with a set of on stage tweezers to hold the stone in place.

### Much More Than Gemological Stereomicroscopes

**OPTIGEM-10 & OPTIGEM-20** are two-in-one gemology instruments that can be used both in vertical and horizontal position in a very easy way, just by turning one knob (no disassembling and re-assembling operations are required). The horizontal position extends the use of a gemological microscope, giving the possibility to perform immersion analysis by submerging a sample in liquid. If the stone's refractive index is close to the liquid's one, immersion makes the interior more visible by reducing the effects of refraction and surface reflection. This enables you to see a gem's inclusions or color distribution more easily.

Immersion is also necessary to see crystal growth structures, which might help you separate natural from synthetic corundum. Features like curved growth striae in flame-fusion synthetics, or separation planes in assembled stones, are often far easier to see when the stone is immersed.



**Vertical position for standard gem analysis with darkfield illumination and polarizing technique**



**Horizontal position for immersion gem analysis**

### Incredibly Versatile Operations

**OPTIGEM Series** offers multiple options for illumination and contrast techniques, such as incident, transmitted and oblique brightfield darkfield, polarization and immersion analysis only on Optigem 10 & 20. They come with a special optical condenser configuration to ensure real, perfect darkfield application (see the dedicated chapter for further information).

# Stereozoom Microscopes For Gemology

## Ultrabright LED Condenser for Optimized Illumination

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

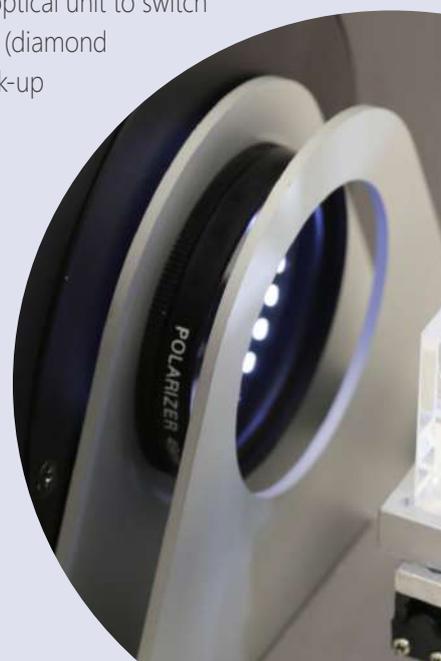
With darkfield observation, the unscattered beams from the image are excluded: as a result, the field around the specimen is generally dark.

An additional flexible arm and velvet-field slider produce extra contrast for crisp and vibrant images. The illumination of OPTIGEM microscopes is greatly performing and this brings this series to be ideal for precious stones and jewels evaluation.



## Get the most out of our accessories

A wide range of optional accessories completes these instruments: from gemology clip, iris aperture diaphragm, polarization analysis kit, optical unit to switch the darkfield 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 OPTIGEM-10 & OPTIGEM-20 performances. All the accessories can be stacked, in any order, while using the microscope both horizontally and vertically.



**ST-202**

### ST-202 - Polarizing analysis kit

Polarization technique allows to quickly determine if the stone at hand is isotropic or anisotropic or, at best, to determine the optic character of gemstones (twin planes, strain, pleochroism, etc.). It is also the preferred tool for separating synthetic Quartz from its natural counterparts. In addition, the polarizing microscope may be very useful for distinguishing solid inclusions from negative inclusions as well as for spotting polysynthetic twinning.

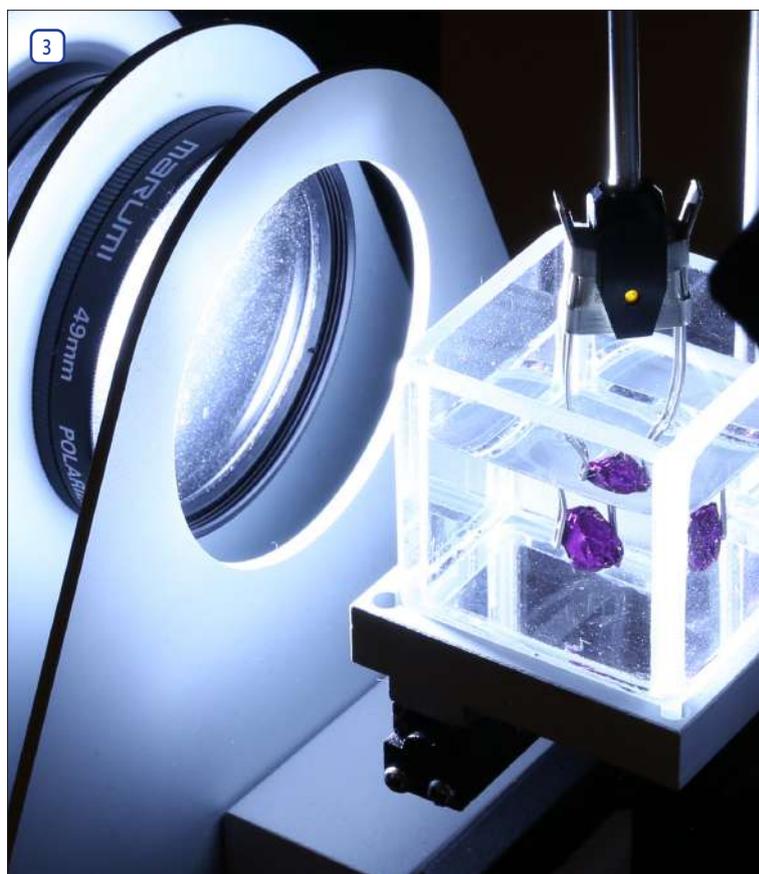
## GEM Series

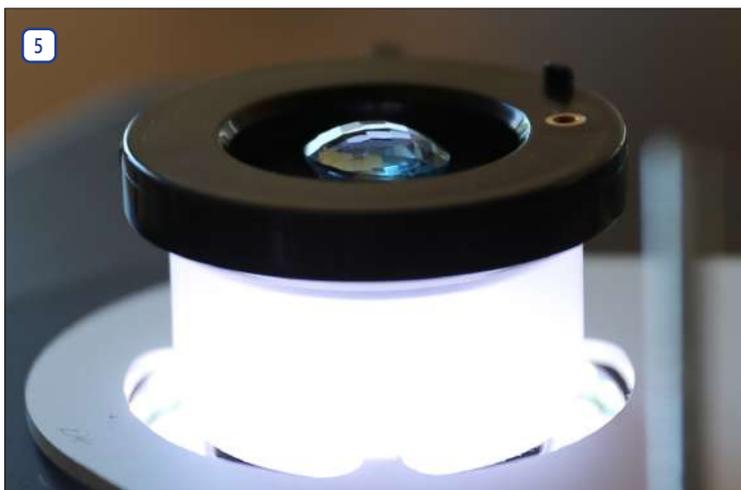
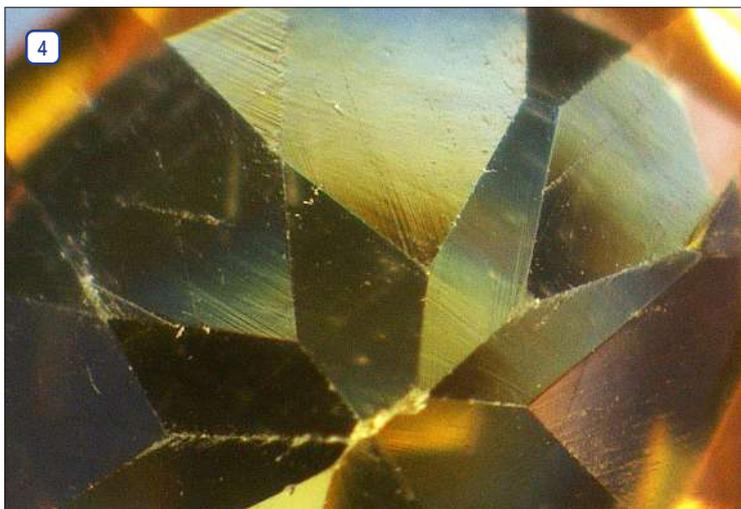
### Applications

Some application examples demonstrating the performance of OPTIGEM Series, especially designed to observe samples of precious stones and jewels and provided with specific features for gemological needs.

### Legend

1. Inspection of stones with OPTIGEM-10.
2. Inspection of stones with pure white darkfield illumination.
3. Immersion cell (ST-203) on a translating support (ST-204).
4. Sample of Citrine.
5. ST-201 accessory creates a soft darkfield illumination ideal for diamond analysis.
6. Optigem can be easily rotated to a horizontal working position.
7. ST-201 accessory for analysis under polarized light.
8. Working with Optigem and its accessories (they can be stacked for increased functionality).





# GEM Series - OPTIGEM10 model

Binocular gemological stereomicroscopes for brightfield and darkfield applications with special side-emitting **LED** illumination ring for true darkfield illumination. Equipped also with **4 incident LED** flexible arm and a diffusive **LED** disc for transmitted illumination. The instrument can be easily tilted horizontally for immersion analysis.



Part	Description
<b>Observation mode:</b>	Brightfield, darkfield.
<b>Heads</b>	Binocular, 45° inclined, 360° rotating.
<b>Interpupillary distance:</b>	Adjustable between 51 and 75 mm
<b>Dioptric adjustment:</b>	On both eyepiece tubes.
<b>Eyepieces:</b>	WF10x/21 mm, high eye-point.
<b>Objective:</b>	Parfocal achromatic zoom 0.7x...4.5x (zoom factor 6.43:1).
<b>Working distance:</b>	100 mm
<b>Specimen stage:</b>	Gemological stage, with clamp for holding gems.
<b>Focusing:</b>	Rack and pinion mechanism controlled by a pair of knobs.
<b>Stand:</b>	Fixed arm stand with tilting system (with position lock control). It can be totally overturned and rotated allowing in this way to obtain a 2-in-one instrument: an instrument for standard observations and one for observation of water-immersed gems.

Part	Description
<b>Darkfield illumination:</b>	Equipped with a state-of-the-art illuminator for darkfield observation. It consist of an innovative side-emitting LEDs ring with an emission angle of 38°. With brightness control.
<b>Transmitted light illumination:</b>	Equipped with a LED illuminator, located under the stage. With brightness control.
<b>Incident illumination:</b>	Equipped with a flexible gooseneck-arm 4-LED illuminator. With brightness control.
<b>Color temperature:</b>	Pure white 6,300 K

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# MET SERIES



**Metallurgical Microscopes**

# Metallurgical Microscopy

Metallography is the study of the physical structure and components of metals, by using microscopy. Many different microscopy techniques are used in metallographic analysis.

Prepared specimens should be examined with the unaided eye after etching to detect any visible areas that have responded to the etchant differently from the norm as a guide to where microscopical examination should be employed. Light optical microscopy (LOM) examination should always be performed prior to any electron metallographic (EM) technique, as these are more time-consuming to perform and the instruments are much more expensive.

Further, certain features can be best observed with the LOM, e.g., the natural color of a constituent can be seen with the LOM but not with EM systems. Also, image contrast of microstructures at relatively low magnifications, e.g., <500X, is far better with the LOM than with the scanning electron microscope (SEM), while transmission electron microscopes (TEM) generally cannot be utilized at magnifications below about 2000 to 3000X. LOM examination is fast and can cover a large area. Thus, the analysis can determine if the more expensive, more time-consuming examination techniques using the SEM or the TEM are required and where on the specimen the work should be concentrated.

## Brightfield and darkfield microscopy

Most LOM observations are conducted using bright-field (BF) illumination, where the image of any flat feature perpendicular to the incident light path is bright, or appears to be white. But, other illumination methods can be used and, in some cases, may provide superior images with greater detail. Dark-field microscopy (DF), is an alternative method of observation that provides high-contrast images and actually greater resolution than bright-field. In dark-field illumination, the light from features perpendicular to the optical axis is blocked and appears dark while the light from features inclined to the surface, which look dark in BF, appear bright, or "self-luminous" in DF. Grain boundaries, for example, are more vivid in DF than BF.

## Polarized light microscopy

Polarized light (PL) is very useful when studying the structure of metals with non-cubic crystal structures (mainly metals with hexagonal close-packed (hcp) crystal structures). If the specimen is prepared with minimal damage to the surface, the structure can be seen vividly in cross-polarized light (the optic axis of the polarizer and analyzer are 90 degrees to each other, i.e., crossed). In some cases, an hcp metal can be chemically etched and then examined more effectively with PL. Tint etched surfaces, where a thin film (such as a sulfide, molybdate, chromate or elemental selenium film) is grown epitaxially on the surface to a depth where interference effects are created when examined with BF producing color images, can be improved with PL. If it is difficult to get a good interference film with good coloration, the colors can be improved by examination in PL using a sensitive tint (ST) filter.

## Differential interference contrast microscopy

Another useful imaging mode is differential interference contrast (DIC), which is usually obtained with a system designed by the Polish physicist Georges Nomarski. This system gives the best detail. DIC converts minor height differences on the plane-of-polish, invisible in BF, into visible detail. The detail in some cases can be quite striking and very useful. If an ST filter is used along with a Wollaston prism, color is introduced. The colors are controlled by the adjustment of the Wollaston prism, and have no specific physical meaning, per se. But, visibility may be better.



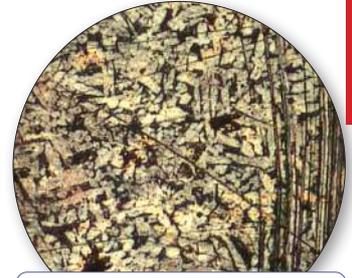
## Oblique illumination

DIC has largely replaced the older oblique illumination (OI) technique, which was available on reflected light microscopes prior to about 1975. In OI, the vertical illuminator is offset from perpendicular, producing shading effects that reveal height differences. This procedure reduces resolution and yields uneven illumination across the field of view. Nevertheless, OI was useful when people needed to know if a second phase particle was standing above or was recessed below the plane-of-polish, and is still available on a few microscopes. OI can be created on any microscope by placing a piece of paper under one corner of the mount so that the plane-of-polish is no longer perpendicular to the optical axis.

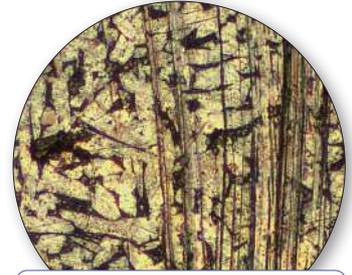
# B-383MET - Metallurgical Microscope

Brightfield upright microscope with IOS W-PLAN MET objectives and metallurgical attachment combining the exclusive **X-LED<sup>3</sup>** lighting source both for incident and transmitted illumination. The NCG (no cover glass) objectives are especially designed for microscopy use without a cover slip ideal for metallographic samples and other opaque specimens.

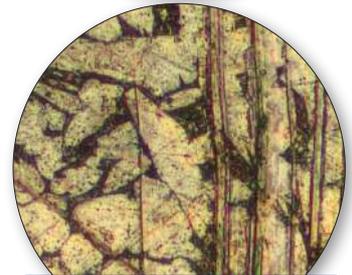
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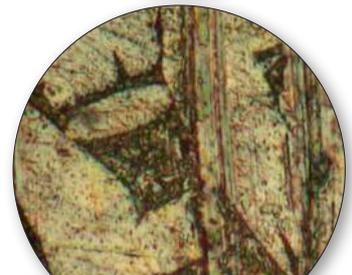
5x



10x



20x



50x

Part	Description
<b>Observation mode:</b>	Brightfield, incident polarized light.
<b>Epi-illumination and polarizing filters:</b>	X-LED <sup>3</sup> with white 3.6 W LED (6.300 K) with brightness control. Field and aperture diaphragms, polarizer & analyzer filters.
<b>Head:</b>	Trinocular (fixed 50/50), 30° inclined, 360° rotating.
<b>Interpupillary distance:</b>	Adjustable between 48 and 75 mm.
<b>Dioptric adjustment:</b>	On the left eyepiece tube.
<b>Eyepieces:</b>	WF10x/20 mm, high eye-point and secured by screw.
<b>Nosepiece:</b>	Quintuple revolving nosepiece, rotation on ball bearings.

Part	Description
<b>Objectives (strain-free):</b>	IOS W-PLAN MET 5x/0.12 IOS W-PLAN MET 10x/0.25 IOS W-PLAN MET 20x/0.40 IOS W-PLAN MET 50x/0.75 All with anti-fungus treatment.
<b>Specimen stage:</b>	Double layer rackless mechanical stage, 233x147 mm, 78x54 mm X-Y range. With tempered glass plate.
<b>Focusing:</b>	Coaxial coarse (adjustable tension) and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.
<b>Condenser:</b>	Abbe N.A. 1.25, with objective-coded iris diaphragm, focusable and centerable.
<b>Transmitted illumination (Fixed Koehler type):</b>	X-LED <sup>3</sup> with white 3.6 W LED (6.300 K) with brightness control. Multi-plug 100-240Vac/6Vdc external power supply.