

# GEMMASTER® L LED NX

## Cool-Touch Darkfield

### StereoZOOM-Microscopy



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Information

GEMMASTER microscope sets with ZEISS optics:  
Where Gemmology and the best of "Made in Germany" come together.

GEMMASTER gemmological microscope with LED illuminated darkfield for highest contrast and cool working stage area. To grade diamonds and examine the internal world of coloured stones. To pinpoint their inclusions and to match the colour in overhead daylight - all by innovative LED.



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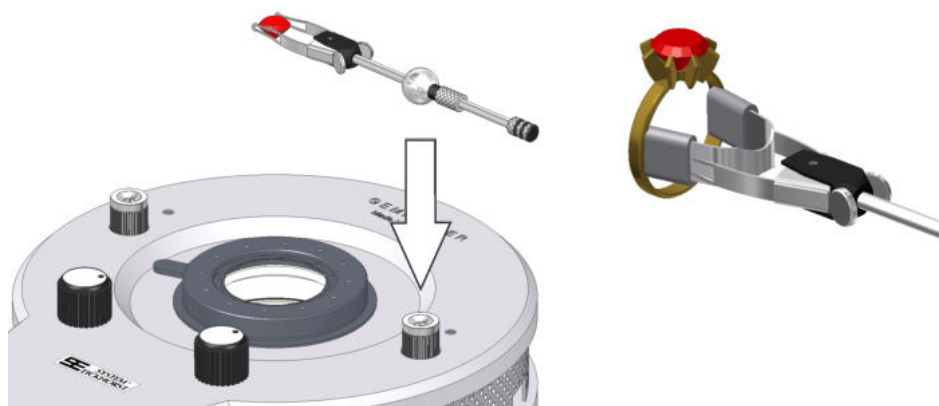
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#### GEMMASTER Darkfield Lighting Features

<b>Darkfield LED Illuminator</b>	Lightsource is an innovative high contrast <b>LED</b> system with a lighting power equivalent to a 35- <b>Watt</b> incandescent halogen lamp. Lifetime of about 20,000 hours.
<b>electronic</b>	Flicker free no-noise digital electronic power supply of <b>LED</b> .
<b>DIM Colour Constant</b>	Controls for electronic dimming of darkfield <b>LED</b> illumination <b>without change of colour of light</b> . Incandescent on the contrary get yellow/red tinted!
<b>Darkfield LED Colours of Light</b>	First time in gem microscopy the choice of three colours of darkfield light as a unique feature: 4,500 Kelvin neutral daylight or 5,000K daylight is standard depending on order, 3,500K incandescent colour of light is alternatively available.
<b>Darkfield Design</b>	Circular reflector system illuminating authentic with “real blackground” for highest image contrast.
<b>Brightfield</b>	Change from darkfield to brightfield by swivelling baffle selector.
	<b>One</b> USB port at <b>each</b> side of the stage for <b>LED</b> cold light pin-pointer and/or <b>LED</b> overhead lamp. Good for other USB plug & play accessories as well. No data transmission!

#### GEMMASTER Applications and user-friendly Features

<b>Microscope Stage</b>	Professional, ergonomic stage design for comfortable wrist and finger positioning. Tilting adjustable to 42° for comfortably eyepiece insight of any optical system
<b>Stoneholder &amp; Mounting</b>	Innovative <b>MAGNETIC CLICK</b> system with magnetic socket at each side of the stage for <b>right- or left-hand</b> use. Extra ringholder to be clamped on stoneholder.



<b>Iris Diaphragm</b>	Precise quality made for light geometry and intensity management. Its lever to be aligned for <b>right- or left-hand</b> use! Removeable from stage for finger handling space or other accessories as well as for replacement.
<b>Temperature at Darkfield</b>	The temperature at the iris diaphragm is of <b>Cool-Touch: 25°C / 77°F</b> . At other microscopes of the market it is usually <b>hot and burning +50°C / 122°F</b> after short time.

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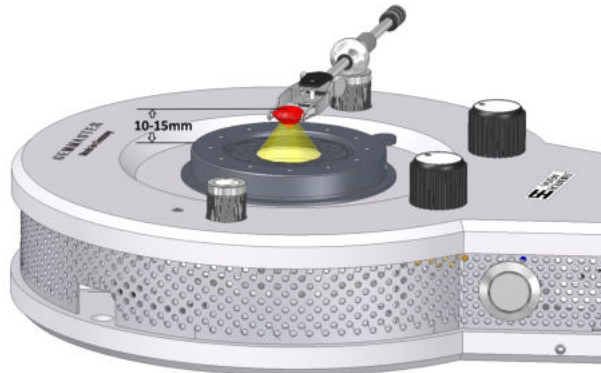
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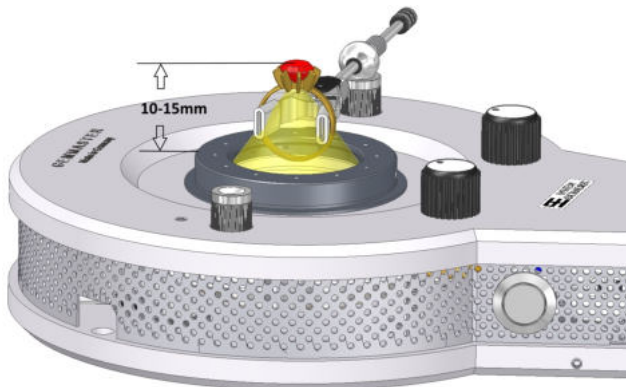
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#### High Point Darkfield



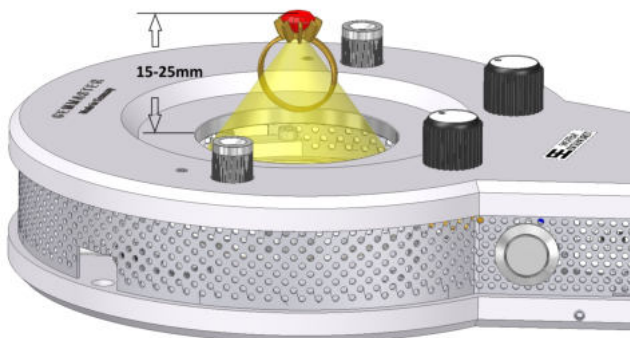
In comparison to previous weld designs of darkfield illuminations, the LED darkfield illuminator has a new high point light spot geometry.

#### Mounted Gems Handling by Stoneholder



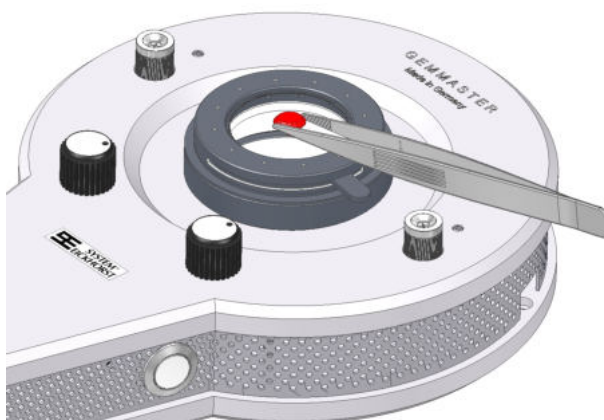
The high point light spot illuminates mounted stones perfectly for easier microscopy.

#### Mounted Gems Handling by Fingers



With removed iris diaphragm the handling of mounted stones done by fingers instead of stoneholder/ringholder is faster and more precise.

#### Tweezer Operation



Adapter between iris diaphragm and light exit to use iris diaphragm as tweezer support.

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#### VARIOFOC Incident Lighting Interchangeable LED System (Depending on order)

Incident LED  
gooseneck  
illuminator



LED of 3-Watt High Power for plug-on attachment at semi-rigid gooseneck. LED perfectly interchangeable during the microscopy in a second. Colours of light are 4,000 Kelvin neutral white or daylight of 6,000K, depending on order.



Spot for pin-pointing inclusions or for high intensity reflection mode.



Flood for general incident illumination



Diffuse for colour grading diamonds or showing body colours of gems.



UV longwave 366nm BL to test diamond fluorescence and to identify other UV sensitive gems.

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#### Incident Lighting Accessories (Depending on order)

**LED Pin-Pointer**  
Connecting in  
USB Port



Single high-power **LED** of 6,500 Kelvin daylight colour at semi-rigid goose-neck to pin-point with focused light.

**LED Overhead Daylight**  
for  
USB Port



Diffuse **LED** daylight of 6,500Kelvin at semi-rigid goose- neck for showing or grading the colours of gems and jewellery.

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**Technical Specifications of Microscope Base**

<b>Optics Focusing</b>	Precise rack & pinion system, movement adjustable, if necessary, after longer use.	
<b>Base Design</b>	Rotation of base full 350° - directable stationary power cord – in depend from base rotation. Solid aluminium and attractive high-grade stainless steel. Resistant anthracite epoxy coating of distinguished elegance.	
<b>Dimensions</b>	Vertical with binocular optics	500 mm (20") height
	Vertical with trinocular optics	700 mm (28") height
	Stage width x depth	170 x 265 mm (7 x 10")
	Diameter of heavy base	250 mm (10")
<b>Weight</b>	Base without optics 9,000g (20lbs), optical systems approx 1,000 – 2,000g (3 – 5lbs)	
<b>World Power</b>	240 – 100V / 50 – 60 Hz, Electronic plug-in digital power supply for all global voltages. Plug adapters for EU, GB, US are included. Power cord, 2,300 mm (7,5'), Degree/class of protection: IP 20/II Electromagnetic compatibility following the EU norms.	

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Optical system also available as binocular type with same specifications.

**GEMMASTER / ZEISS trinocular set for 10x – 80x microscopy. Where the best of “Made in Germany” comes together**

Trinocular optical adapter to mount SLR single lens reflex camera bodies, e.g., CANON, NIKON and others. Digital photomicrography of same full-size image at camera screen and eyepieces.

Wide field of 35mm for microscopy of larger specimen.

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#### ZEISS trinocular StereoZOOM Optical System

The high-quality ZEISS optical system provides an outstanding imaging quality in terms of contrast and resolution. The trinocular system included in this package is equipped with 16x eyepieces for a total ZOOM magnification of 10x - 80x next to the 10x ones magnifying 6.5x – 50x.

#### Outstanding optics design

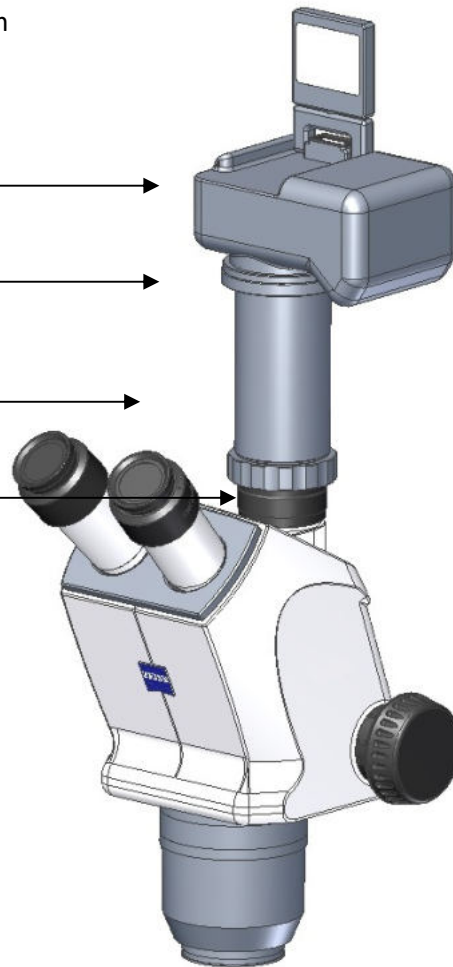
- apochromatic corrected ZOOM optics of ZEISS manufacturing
- sharp, distortion-free 3D image over the whole visual field
- mechanical corrected ZOOM curve for largest ZOOM range 8 : 1
- sharp 3D image in each ZOOM position
- distortion-free 10x and 16x eyepieces
- wide field of view 25 mm at 10x
- individual dioptrre correction at each eyepiece
- eyepiece adjustment 55-75mm
- c-mount adapter 0.5x
- working distance 92mm

Digital camera as  
per customer's  
choice

Adapter ring for  
connection of specific  
camera type

Optical adapter to  
microscope

C-mount adapter



For digital photomicrography the package also includes a special full-size image optical adapter for your digital camera e.g., NIKON, CANON or OLYMPUS. Simply give us brand and type to choose the correct camera adaption mount.



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**Features for ZEISS / LEICA StereoZOOM Optical Systems**

Features	ZEISS 508 Optical System
Objective ZOOM Range <sup>1)</sup>	0.65x - 5x
Eyepieces	10x / 16x / 25x
Total Magnifications <sup>1)</sup> with:	
Eyepieces 10x	6.5x - 50x
Eyepieces 16x	10x - 80x
Eyepieces 20x	./.
Eyepieces 25x	16x – 125x
Field at 10x magnification with 10x Eyepieces (mm) <sup>2)</sup>	23
Field at 10x magnification with 16x Eyepieces (mm) <sup>2)</sup>	25
Eyepiece Distances (mm)	55-75
Eyepiece Dioptre Adjustment	both
Working Distance (mm)	92
Optional front lenses <sup>3)</sup>	0.63x / 1.6x / 2.0x

- 1) (16x eyepieces) x (0.63x – 4.0x objectives) = 10x – 64x. In Gemmology the figure of 10x of the total microscope magnification is used for diamond grading. Therefore, most optical systems are equipped with 16x eyepieces. It's a simple intention if starting with 10x total magnification to get a higher magnification at the end of typical 64x (instead of 6.3x – 40x with 10x eyepieces).
- 2) The field at 10x total magnification is the diameter in mm of the microscope picture viewed by the observer. It's a quality feature of the eyepieces and the objectives. Typical range is 20 – 25 mm at 10x depending on the manufacturer of the optical systems. Of course, at 6.3x the field is much wider, e.g., 36 mm and consequently much smaller at 64x of only 4 mm.
- 3) Figures shown are without any front lenses!