

**Motic**<sup>®</sup>

# GM-168

1 : 6.7 Zoom Ratio Gemmology Microscope



# GM-168 Optics and Illumination

## Optics



### GM-168

- ◆ Magnification range: 0.75x - 5x
- ◆ Zoom Ratio: 1 : 6.7
- ◆ Observation angle: 35
- ◆ Working distance: 113mm

#### Eyepieces

- ◆ Magnification: 10x
- ◆ Field of View range: 30.7mm - 4.6mm
- ◆ Mount Diameter: Ø30mm
- ◆ Reticules: Ø26mm

## Overview

The GM-168 utilizes the optical performance of Motic's SMZ-168 stereomicroscope to enhance distinct three-dimensional details with a zoom function. Rugged and precise, the optics of the GM-168 performs indentifications, analyses, and measurements more accurately and efficiently, thus reducing your workload. At a working distance of 113mm, manipulation of the inspected gem or the addition of a further apparatus is permitted without obstruction.

Available in a trinocular version for photographic or digital capture of the gem, the GM-168 provides you with an opportunity for extra revenue. Moreover, when teamed with Motic's Moticam 480, the GM-168 becomes your instrument of instruction for teaching and training by showcasing the gem in real time via a television, a projector, and computer simultaneously.

## Illumination



Bright field Illumination

Integrating a consistent and powerful 30W Quartz Halogen Bright field illumination with a precise, adjustable aperture diaphragm [Ø41mm - Ø2mm], you are able to measure with a table gauge the proportions and pavilions of a diamond.



Dark field Illumination

Dark field is the ideal illumination for observation of inclusions. With Motic's versatile aperture diaphragm [pictured above], you can control the depth of field and contrast while using the dark field illumination for better identification.



Incident fluorescent illumination - Diamond Light

Designed for use with diamonds, the incident light can be adjusted for a thorough examination of the clarity, colour, and finishing. The bulb has a colour temperature of 6000K to reduce any yellowing effects on the gem.



## Holders, Plates, and Analysers



Rounded Edge Stone holder

Wire Stone holder

inclusion pointer

### Wire Stone holder

The ideal holder for diamonds, rubies and sapphires. Comprised of stainless steel for a long working life, the wire stone holder permits the maximum amount of observation.

### Rounded Edge Stone holder

Perfect for irregular gems and jewellery. Precision crafted of stainless steel to provide an adequate grip without corrupting irregular shaped gem samples.

### Inclusion pointer

For rapid location of inclusions and fractures on the surface of gem.

### Large gem stage plate

Magnetically attachable and covering the stage area of the GM168 base to provide a large surface for rough stones and large gems [i.e. Jade] inspection in conjunction with the incident fluorescent illumination.



### Diamond Proportion Analyser Kit

Complete kit for effective and accurate identification and measurement of proportions and pavilions. Includes the magnetised diamond mount, diamond proportion reticule, and micrometer eyepiece [10x].



### Immersion cell

Capable of rapid and easy detection of treated gems characteristics; such as clarity enhancement, HPHT annealing, irradiation, and surface colouration, the immersion cell is especially useful for rubies.



# Contrasts, Eyepieces, and Objectives

## Contrast

### Polariser Kit

Perfect for observing the birefringence of crystals and the quality of the finish on certain stones. Mounts conveniently on the zoom body and stage.



### Diffuser Plate

Eliminates excessive bright spots for true inclusion identification. Magnetically mountable on the stage.



## Additional Magnification

In certain cases, the use of auxiliary magnification is necessary to locate and to identify specific types of inclusions in a gem for grading purposes. The GM168 offers two choices of auxiliary magnification in the form of eyepiece or objective to satisfy your requirements.

### Auxiliary Objectives

Additional magnification with the truest optical clarity and large field of view.



1.5x auxiliary objective

54mm  
working distance  
75x maximum  
magnification \*



2.0x auxiliary objective

34.5mm  
working distance  
100x maximum  
magnification \*

\*With standard WF10x eyepieces.

### Auxiliary Eyepieces

Convenient additional magnification without the loss of working distance.



15x eyepieces

75x maximum  
magnification \*  
3.4mm minimum  
field of view \*



20x eyepieces

100x maximum  
magnification \*  
2.6mm minimum  
field of view \*

\*With standard 1.0x objective.



# STAND AND SCHEMATIC

## Stand Features and Benefits

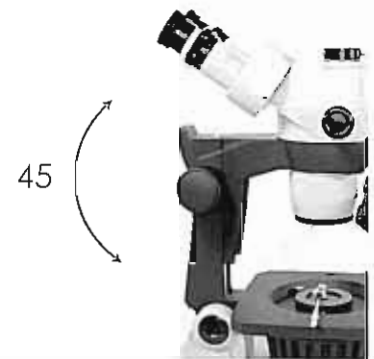
### Rotary Base

360° rotary base allows you to showcase the gem to a customer or to confer with a colleague on proper identification.



### Tilting base

With a tilting range of 0° [upright] to 45°, the GM-168's base is accessible to users of various heights.



### Focus Adjustment

Allowing for a total travel of 125mm for adaptation to different sizes of gems and stones, no sample is too small or too large.



### Stage

Able to accommodate both a gem holder and inclusion pointer simultaneously in addition to different contrast methods.



## SCHEMATIC DIAGRAM

Unit : mm

