

HOLMARC MICROSCOPES FOR MEASUREMENT / INSPECTION



ISO 9001-2015



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ISO 9001-2015



AUTO MEASURING MICROSCOPE

TOOL MAKERS MICROSCOPE

INSPECTION MICROSCOPE WITH BOOM STAND

CLEANLINES ANALYSIS SYSTEM

SIEVE ANALYSIS SYSTEM

AUTO DIGITAL MEASURING MICROSCOPE

METALLURGY MICROSCOPE

METALLURGY MICROSCOPE MOTORIZED

INVERTED METALLURGY MICROSCOPE

ELECTRONIC AUTOCOLLIMATOR

VISUAL AUTOCOLLIMATORS

TRAVELING MICROSCOPE

DIGITAL TRAVELING MICROSCOPE

The background of the page is a blue-tinted photograph of an industrial factory. In the foreground, two robotic arms are visible, one on the left and one on the right, both holding precision tools. The background shows a complex industrial environment with various machinery, pipes, and structural elements, all slightly out of focus. The overall lighting is dim, with some bright spots from overhead lights.

Precision in Industrial Inspection and Quality Control

Holmarc Opto-Mechatronics Limited has revolutionized industrial inspection and quality control with their advanced measuring and digital microscopes. These instruments are indispensable in sectors such as electronics, automotive, and medical devices, where precision is paramount. By providing high-resolution imaging and accurate measurements, Holmarc's microscopes ensure that even the smallest components meet stringent quality standards. This not only enhances product reliability but also streamlines the manufacturing process, reducing the risk of defects and recalls.

In the electronics industry, Holmarc's digital microscopes play a critical role in inspecting circuit boards, solder joints, and microchips. The ability to zoom in on tiny components allows for precise identification of faults, ensuring that electronic devices function flawlessly. Similarly, in the automotive sector, these microscopes are used to examine engine parts, turbine blades, and other critical components. By detecting minute imperfections, manufacturers can prevent potential failures and extend the lifespan of their products.

Moreover, Holmarc's measuring microscopes are invaluable in research and development (R&D) and failure analysis (FA). Researchers utilize these tools to study material properties, analyze defects, and innovate new products. The detailed imaging capabilities facilitate in-depth analysis and collaboration, enabling teams to share findings and improve designs. Whether it's enhancing existing products or developing new technologies, Holmarc's microscopes provide the precision and reliability needed to drive industrial progress.

1.Auto Measuring Microscope

HO-AMS-DE01 automatic measuring system is equipped with a dual camera imaging system for fast and precise measurements. The imaging system 1 is equipped with a low magnification lens for wide area imaging and Imaging system 2 is equipped with a long working distance microscope objectives for high magnification images. A 200mm*100mm sample area can be captured with imaging system 1 in just one frame. The high precision motorized XY stage is fitted with linear encoders and DRO will be used to display the encoder feedback. Motorized Z focusing stage is provided for sample focusing. In addition to the dual camera system, a binocular observation is also provided for visual inspection and manual measurement of the samples. A joystick console is provided for positioning the stages for manual measurements.

For measurements, load the sample and capture an image using Imaging system 1. From this image, click the starting point of measurement. The sample stage will move to the starting point automatically. Focus the sample using the imaging system 2. Align the starting point with the reference cross line on the software window. The alignment can be done using the joystick console or the arrow keys on the software window. XY co-ordinates of the starting point will be saved automatically from the DRO. Then click the end point of measurement from the image captured by imaging system 1 and align it with the reference cross line using the imaging system 2. The distance and angle between these two points will be displayed on the software. The measured data can be saved a pdf for later use.



(2.2+0.02L μ m)
Measuring Accuracy

8mm
Prime Lens

200mm*100mm
FOV Camera

- MACHINES AND FORMED COMPONENTS
- SEMICONDUCTORS
- ELECTRICAL AND ELECTRONICS PARTS
- PRECISION AUTOMOBILE COMPONENTS
- PLASTIC MOLDINGS
- TOOLS
- MEDICAL DEVICES



scan here for Product Videos

Specifications

Model : HO-AMS-DE01

Measuring accuracy	(2.2 + 0.02L)um. L is the measuring length in mm
Reading resolution	1 μm (Linear encoder with DRO)
Observation head	Siedentopf Trinocular head, 30-degree inclination, 45-75 IP
Observation method	Brightfield (Dual imaging system)
Eyepiece	10X wide field, FN 20, dioptrre adjustable
Illuminations	1. Vertical reflected LED illumination (Epi-scope), Intensity adjustable 2. Angled LED illumination, Intensity adjustable 3. Bottom LED illumination, Intensity adjustable.

Imaging system 1

Imaging lens	8mm prime lens
Working distance	160mm
Effective magnification	0.03X
FOV camera	200mm * 100mm
Camera	½" CMOS Color 3MP

Imaging system 2

Imaging lens	LWD Plan Apo 5X Microscope Objective
Working distance	44mm
Effective magnification (@5X objective)	50X @eyepiece, 5X @camera
FOV eyepiece	4mm
FOV camera	1.31mm * 0.984mm
Camera	½" CMOS Color 3MP

Sample stage:

Motorized XY high precision stage	
Measuring range	200 x 100mm
Encoder resolution	1 μm
Display	DRO

Joystick and software controls

Focusing	Motorized Z stage , push buttons and software controls.
Software	Auto-Measuring System
Software features	Automatic operation, automatic measurement, reports, dxf comparison, etc.

Optional Accessories

	1. LWD Plan Apo 10X microscope objective	2. LWD Plan Apo 20X microscope objective	3.LWD Plan Apo 50X microscope objective
NA	0.30	0.35	0.45
Working distance	34 mm	29mm	17 mm
FOV eyepiece	2mm	1mm	0.4mm
FOV camera	0.655mm x 0.492mm	0.327mm x 0.214mm	0.131mm x 0.0984 mm

2. Auto Digital Measuring Microscope

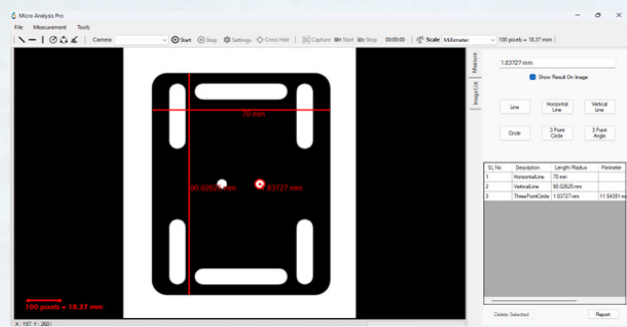
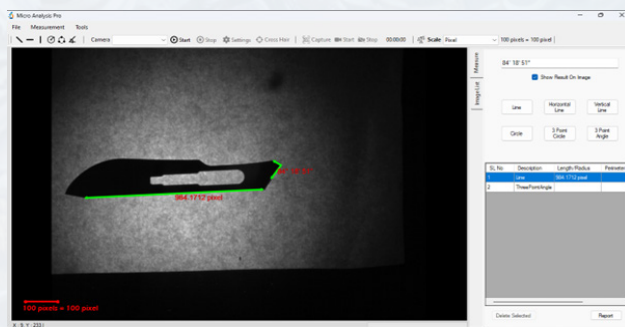
HO-AIS-B01-M is an automated digital measuring microscope designed for small measuring application up to 50mm. The system is equipped with a low microscope objective and a 3MP CMOS color camera for high-resolution image capture. A high bright intensity adjustable ring LED is included for uniform top illumination of the imaging area. LED bottom illumination is also provided for measurement from the edge profile. A precision motorized XY stage is provided for the automated sample scanning and a motorized Z focusing stage with an autofocus algorithm allows the user to get the best focused image in each frame.

A user-friendly software, Micro Analysis Pro is included with the system for the automated scanning, stitching, and measuring applications. The software provides live measurement and dxf comparison features. Auto measurement feature helps to measure the common dimensions of the live image by a single click. The measurement reports with the component image can be exported to pdf formats. Custom reporting formats are also available.

Specifications

Model : HO-AIS-B01-M

Optical system	Infinity corrected
Observation method	digital Brightfield
Top illumination	High bright White Ring LED, Intensity adjustable via software
Transmitted illumination	High bright White LED, Intensity adjustable via software
Microscope objective	Plan Achromatic 5X objective(manually replaceable)
Focusing	Motorized with Autofocusing
Sample stage	High precision motorized XY stage, 50mm x 50mm travel
Camera	3MP CMOS 1/2" Color



Software	Micro Analysis_Pro
Software features	Live measurement, DXF comparison, Auto-measurement, scanning, stitching, reports.

- Live measurement
- DXF comparison
- Auto-measurement
- Manual measurement
- Automatic Scanning and stitching
- Reports

High Precision Motorized XY Stage



 3MP CMOS 1/2" Colour
CAMERA

5x
OBJECTIVES

3. Tool Makers Microscope Monocular with camera

Holmarc's Tool Maker's Microscopes are multipurpose measuring instruments that are generally used for the examination and measurement of small mechanical and electrical parts or tools. HO-TMM-01C model Tool Maker's microscope is equipped with a monocular eyepiece and camera for both visual as well as digital inspection applications. The sample XY stage is equipped with digital micrometer heads for precision measurements with 1um

resolution. White LED with adjustable intensity is provided for both transmitted and flexible arm illuminations. A software with live measurement feature is provided for measurement and documentation.

These microscopes are used to view and measure linear distances, thread pitch, thread angles, tool edges, tool wear surfaces etc.

Specifications

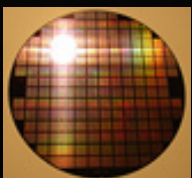
Model : HO-TMM-01C

Observation tube	Monocular with Camera, 45° inclined, 90° Cross-hair reticle
Observation image	Erect
Eyepiece Protractor	360° graduated, resolution = 6' (by Vernier)
Total Magnification	20X & 30X
Working distance	67mm & 60mm
Eyepiece	10X, dioptre adjustable
Sample XY stage	
Travel	25mm x 25mm
Resolution	1 micron
Drive	Digital Micrometer
Bottom Illumination	white LED, adjustable intensity
Angled Illumination	white LED, adjustable intensity
Focusing	Manual
Camera	
Optical format	1/2.5" CMOS
Active imager size	5.70mm x 4.28mm
Active pixels	2.2 x 2.2 um
Pixel size	2.2 x 2.2 um
Shutter type	Electronic rolling shutter(ERS)
Frame rate	Full resolution – 7 fps, 640*480(BIN) – 26.7 fps
Spectral response	380-650nm
Exposure time	0.072ms – 3000ms
Image format	RAW, BMP, JPG, PNG
Operating temperature	-30°C to +70°C
Sensitivity	1.76V/lux-sec(550nm)
Power consumption	381mW at 15 fps full resolution
Interface	USB2.0
Lens mount	C-mount
Software	Micro_View Pro
Software features	Image grabbing, online and offline measurements, reports
Power supply	230V, 50Hz

Optional Accessories

20X Eyepiece	FN = 10mm (Model No. TMM-E20)
5X Objective	NA = 0.10, WD = 25mm (Model No. TMM-M05)
10X Objective	NA = 0.14, WD = 14mm (Model No. TMM-M10)
Rotation stage, Coarse travel	360°, Resolution = 0.1° (Model TMM-R0.1)

- Erect image
- Brightfield Observation
- 5MP Color CMOS Camera
- Live measurement software
- Protractor for angle measurement



20X 30X
MAGNIFICATION



1 / 2.5" CMOS
CAMERA

25mm x 25mm
SAMPLE XY STAGE



4. Trinocular Inspection Microscope with Boom Stand

Model No: HOCM-MV202

Holmarc's model HOCM-MV202 inspection microscope is equipped with a Zoom stereo microscope mounted on a single-arm boom stand. It comes with a Trinocular head with wide field 10X eyepieces and a variable zoom system of 1X-5X. The total magnification will be 10X – 50X with a working distances of 160mm – 70mm. A 5MP CMOS camera with software is also provided the system for digital inspection and measurement. A high bright ring LED is provided as the light source. The 30 degree inclined eyepiece with dioptre adjustable option ensure the comfort observation for all the users including eyeglass wearers. The single-arm boom stand allows to turn the microscope head around two different axes, allowing the user to point the microscope head in various directions. This microscope offers high resolution, wide field of view, large magnifying zoom range and long working distance. It is an ideal inspection instrument for researchers in various industries.





Specifications

Observation tube	Trinocular, 30° inclined
Observation	Brightfield
Zoom ratio	1X - 5X
Total Magnification	10X - 50X
Working distance	160mm - 70mm
Eyepiece	10X, dioptré adjustable
Illumination	Ring LED
Camera	
Optical format	1/2.5" CMOS
Active imager size	5.70mm x 4.28mm
Active pixels	2592 x 1944 (5MP)
Pixel size	2.2 x 2.2 um
Shutter type	Electronic rolling shutter(ERS)
Frame rate	Full resolution - 7 fps, 640*480(BIN) - 26.7 fps
Spectral response	380-650nm
Exposure time	0.072ms - 3000ms
Image format	RAW, BMP, JPG, PNG
Operating temperature	30oC to +70oC
Sensitivity	1.76V/lux-sec(550nm)
Power consumption	381mW at 15 fps full resolution
Interface	USB2.0
Lens mount	C-mount
Software	
Software	Micro_View Pro
Software features	Image grabbing, online and offline measurements, Reports



5. Auto Digital Microscope Cleanliness Analysis

HO-AIS-B01 is an automated digital microscope designed for cleanliness analysis in several industrial domains. The system is equipped with a 5X microscope objective and a 3MP CMOS color camera for high-resolution image capture. A high bright intensity adjustable ring LED is included for uniform top illumination of the imaging area. LED bottom illumination is also provided for imaging transparent and semi-transparent samples. A highly precise motorized XY stage is provided for the automated sample scanning and a motorized Z focusing stage with an autofocus algorithm allows the user to get the best focused image in each frame.

A user-friendly software, Particle Analyser Pro, is included with the system for the automated scanning, stitching, and analysis operations. The software can easily classify the measured particles into different cleanliness classes as per the standards and reports can be generated in pdf formats. Custom reporting formats are also available.

Standards = **ISO 16232, ISO – 4406:2021, ISO 13322, VDA 19.1**



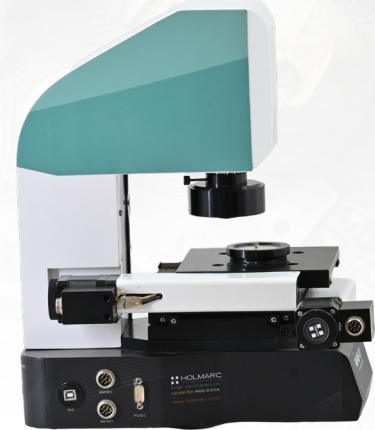
DESIGNED FOR

AEROSPACE INDUSTRY

AUTOMOTIVE INDUSTRY

MEDICAL & PHARMA INDUSTRY

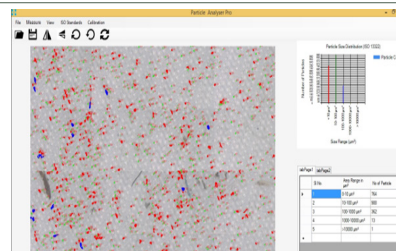
ELECTRONICS INDUSTRY



Specifications

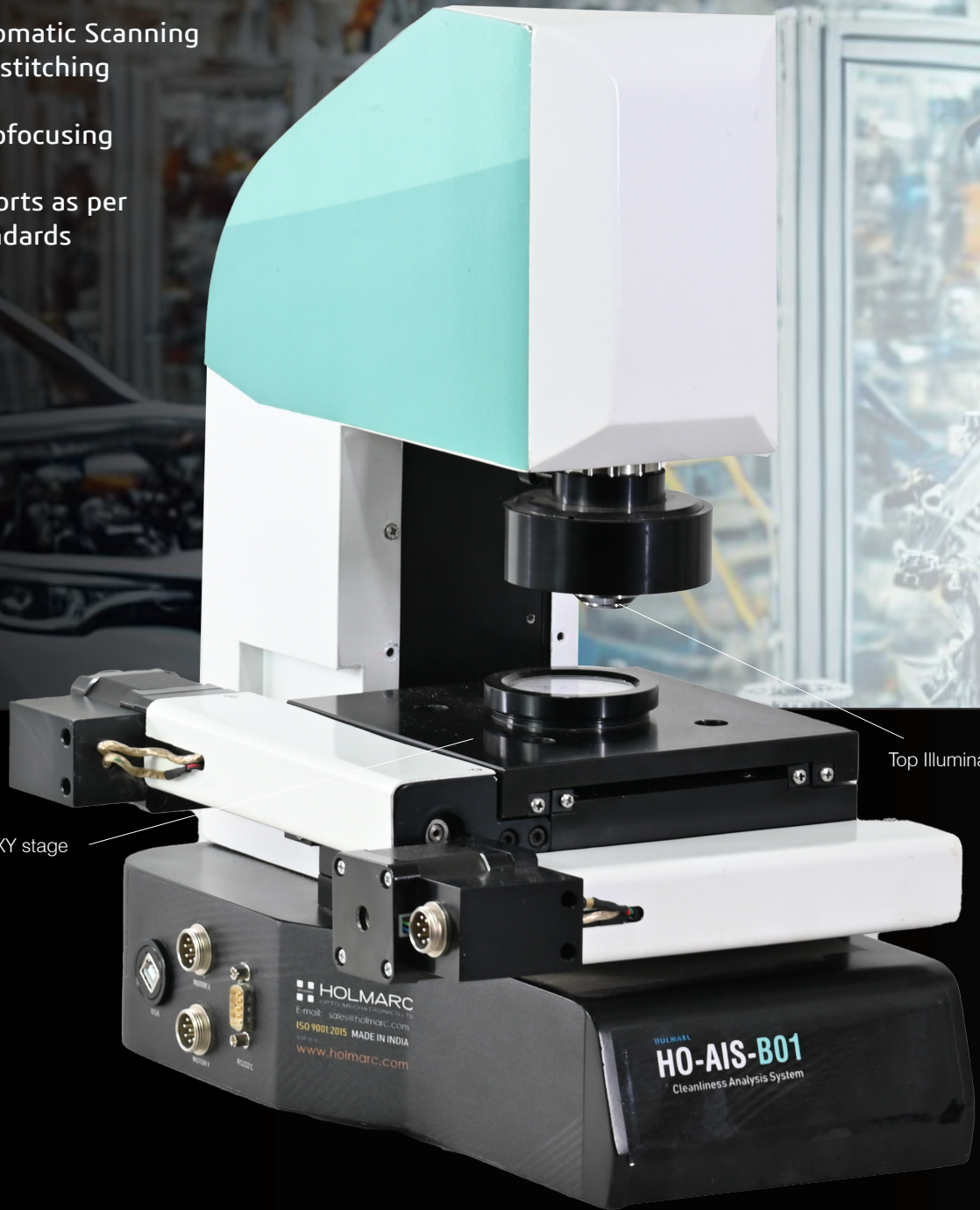
Model : HO-AIS-B01

Optical system	Infinity corrected
Observation method	digital Brightfield
Top illumination	High bright White Ring LED, Intensity adjustable via software
Transmitted illumination	High bright White LED, Intensity adjustable via software
Microscope objective	Plan Achromatic 5X objective(manually replaceable)
Focusing	Motorized with Autofocusing
Sample stage	High precision motorized XY stage, 50mm x 50mm travel
Camera	3MP CMOS 1/2" Color



Software	Particle Analyser Pro
Software features	Scanning, stitching, measurements, particle counting, analysis, Reports,

- Analysis of particle size down to 5µm
- 47mm filter paper
- Custom filter mounts are available.
- Automatic Scanning and stitching
- Autofocusing
- Reports as per Standards



High precision motorized XY stage

Top Illumination



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50mm x 50mm
MOTORIZED STAGE



3MP CMOS 1/2" Color
CAMERA

6. Digital Microscope – Sieve Analysis

- Automatic Scanning and stitching
- Autofocusing
- Reports as per ISO 3310-1: 2016 Standards



HO-AIS-B01-S is an automated digital microscope designed for Sieve/Mesh analysis. The system is equipped with a 5X microscope objective and a 3MP CMOS color camera for high-resolution image capture. A high bright intensity adjustable ring LED is included for uniform top illumination of the imaging area. LED bottom illumination is also provided for imaging the sieve patterns. A precision motorized XY stage is provided for the automated sample scanning and a motorized Z focusing stage with an autofocus algorithm allows the user to get the best focused image in each frame.

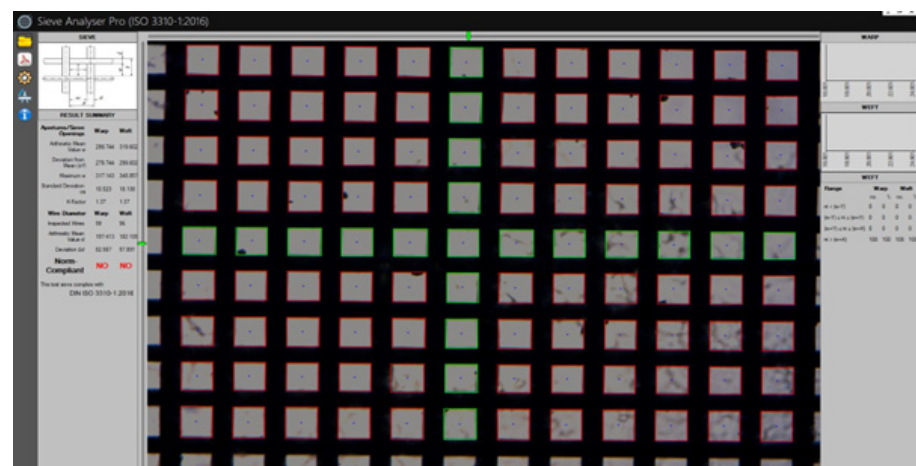
A user-friendly software, Sieve Analysis Pro is included with the system for the automated scanning, stitching, and analysis of sieves/Mesh. The software uses edge detection algorithm to measure the aperture size, and wire diameter. The sieve inspection reports can be exported to pdf formats and compliance or non-compliance with ISO 3310 standard will be mentioned along with histograms. Custom reporting formats are also available.

Standard = **ISO 3310-1: 2016**

Specifications

Model : HO-AIS-B01-S

Optical system	Infinity corrected
Observation method	digital Brightfield
Top illumination	High bright White Ring LED, Intensity adjustable via software
Transmitted illumination	High bright White LED, Intensity adjustable via software
Microscope objective	Plan Achromatic 5X objective(manually replaceable)
Focusing	Motorized with Autofocusing
Sample stage	High precision motorized XY stage, 50mm x 50mm travel
Camera	3MP CMOS 1/2" Color
Software	Sieve Analysis_Pro



Software features	Scanning, stitching, measurements, Compliance statement, Histograms, reports.
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7. Metallurgy Microscope

Trinocular with Camera

- Metallography
- Mineralogy
- Gemology
- Forensic metallurgy
- Semiconductor
- Inspection of metals
- Solar cells



UPRIGHT



1/2.5" CMOS
COLOR 5MP CAMERA

75mm X 50mm
DOUBLE LAYER MECHANICAL STAGE



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HO-MM-T01 is an upright manual metallurgy microscope designed for material analysis and inspection applications. A high bright white LED is included for the co-axial illumination of opaque samples and a white LED transmitted illumination is provided for imaging transparent and semi-transparent samples. In addition to the binocular observation, a 5MP color camera is also included for capturing the high quality images.

An analysis software, Industry Pro, is provided with the system

for quantitative analysis of Grain size, Inclusion, Porosity, Cementite, Phase Segmentation, and Nodularity (Ductile Iron, Gray cast Iron). Heyns lineal intersection method, three circle method, Heyns Abrams Intersection method, Random line method etc are used for the grain size measurement. Every measurement and report is generated in compliance with international standards. Custom reporting formats are also available

Specifications

Model : HO-MM-T01

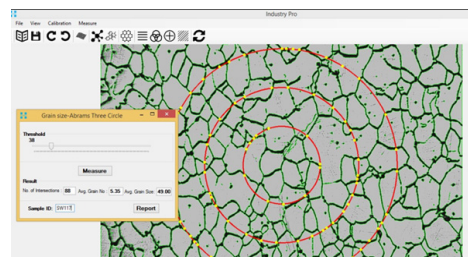
Microscope type	Upright
Optical system	Infinity corrected
Observation methods	Brightfield
Transmitted illumination	3W white LED – Intensity adjustable
Epi-sopic (Co-axial) illumination	3W white LED – Intensity adjustable
Nosepiece	Quadruple, Manually rotatable
Viewing head	Sidentopf Trinocular head, 30o inclination, 48-75mm IP
Eyepieces	10X Wide field (FN20), diopter adjustable, HR

Microscope Objectives

1. Plan Achromatic 10X	NA = 0.25, WD = 20.2mm FOVeyepiece = 2mm, FOVcamera =0.57mm*0.428mm
2. Plan Achromatic 20X	NA = 0.40, WD = 8.8mm FOVeyepiece = 1mm, FOVcamera =0.285mm*0.214mm
3. Plan Achromatic 40X	NA =0.60, WD = 3.98mm FOVeyepiece = 0.5mm, FOVcamera =0.1425mm*0.107mm
4. Plan Achromatic 100X	NA =0.85, WD = 0.40mm 0.2mm, FOVcamera =0.057mm*0.0428mm
Total Magnification	100X-1000X @ eyepiece and 10X-100X @ Camera.
Z focusing	Co-axial coarse and fine focusing, Manual

Sample XY stage

Double layer Mechanical stage	Manual
Travel	75mm x 50mm
Drop down knob	
Substage condenser	Abbe condenser with Adjustable Iris, Focus adjustable
Camera	1/2.5" CMOS Color 5MP, C-mount, USB2.0



Software	Industry_Pro (Metallurgy analysis software)
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Standards

Porosity	ASTM B-276
Cementite	ASTM E 1268
Inclusion	IS 4163:2021
Nodularity (Ductile Iron)	ISO 947-1, IS 7754:1975, JIS G5503, GOST 3443-87
Nodularity (Gray Cast Iron)	ASTM 247-17, ISO 945-1
Grain Size	ASTM E-112, ASTM E-1382-91, IS 4748:2021, ISO 643:2019

8. Metallurgy Microscope - Motorized

- Metallography
- Mineralogy
- Gemology
- Forensic metallurgy
- Semiconductor
- Inspection of metals
- Solar cells



UPRIGHT



1 / 2.5" CMOS
COLOR 5MP CAMERA

75mm X 75mm
MOTORIZED XY HIGH PRECISION STAGE

POLARIZER
FIXED - ROTATABLE

HO-AMM-B01 is an upright metallurgical microscope equipped with motorized XYZ stages for the automated operation of material analysis. The precision motorized XY stage can be used for the automated sample scanning while motorized Z focusing stage will keep the sample frame in focus with help of autofocus algorithm. A high bright white LED is included for the co-axial illumination of opaque samples and a white LED transmitted illumination is provided for imaging transparent and semi-transparent samples.

An analysis software, Industry Pro, is provided with the system for quantitative analysis of Grain size, Inclusion, Porosity, Cementite, Phase Segmentation, and Nodularity (Ductile Iron, Gray cast Iron). Heyns lineal intersection method, three circle method, Heyns Abrams Intersection method, Random line method etc are used for the grain size measurement. Every measurement and report is generated in compliance with international standards. Custom reporting formats are also available

Specifications

Model : HO-AMM-B01

Microscope type	Upright
Optical system	Infinity corrected
Observation methods	Brightfield & simple polarizing
Transmitted illumination	3W white LED – Intensity adjustable
Epi-sopic (Co-axial) illumination	3W white LED – Intensity adjustable
Nosepiece	Quadruple, Manually rotatable
Viewing head	Sidentopf Trinocular head, 30° inclination, 48-75mm IP
Eyepieces	10X Wide field (FN20), diopter adjustable, HR

Microscope Objectives

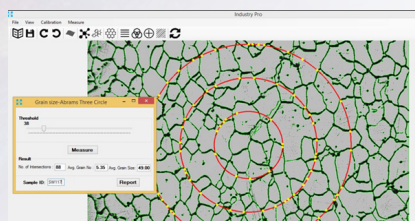
1. Plan Achromatic 10X	NA = 0.25, WD = 20.2mm FOVeyepiece = 2mm, FOVcamera =0.57mm*0.428mm
2. Plan Achromatic 20X	NA = 0.40, WD = 8.8mm FOVeyepiece = 1mm, FOVcamera =0.285mm*0.214mm
3. Plan Achromatic 40X	NA =0.60, WD = 3.98mm FOVeyepiece = 0.5mm, FOVcamera =0.1425mm*0.107mm
4. Plan Achromatic 100X	NA =0.85, WD = 0.40mm 0.2mm, FOVcamera =0.057mm*0.0428mm
Total Magnification	100X-1000X @ eyepiece and 10X-100X @ Camera.
Z focusing	Motorized stage with Autofocusing

Sample XY stage

Motorized XY high precision stage	Motorized
XY travel	75mm x 75mm

Substage condenser

Abbe condenser with Adjustable Iris, Focus adjustable	
Polarizing attachment	Polarizer –fixed, Analyser –rotatable.
Camera	1/2.5" CMOS Color 5MP, C-mount, USB2.0



Software	Industry_Pro (Metallurgy analysis software)
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Standards

Porosity	Porosity = ASTM B-276
Cementite	ASTM E 1268
Inclusion	IS 4163:2021
Nodularity (Ductile Iron)	ISO 947-1, IS 7754:1975, JIS G5503, GOST 3443-87
Nodularity (Gray Cast Iron)	ASTM 247-17, ISO 945-1
Grain Size	ASTM E-112, ASTM E-1382-91, IS 4748:2021, ISO 643:2019

9. Inverted Metallurgy Microscope

HO-IMM-T01 is an Inverted Metallurgy Microscope designed for material analysis and inspection applications. A white LED with adjustable intensity is provided for the reflected illumination. The binocular head is inclined at 45 degrees and both the eyepieces are dioptre adjustable. In addition to the binocular observation, a 5MP color camera is also included for capturing the high quality images. The smooth-operating, ball bearing mounted, quadruple nosepiece provides effortless objective changes. A mechanical stage with co-axial drop down knob is provided as the sample stage. A tension adjustable coaxial coarse and fine mechanism is used for the sample focusing

An analysis software, Industry Pro, is provided with the system for quantitative analysis of Grain size, Inclusion, Porosity, Cementite, Phase Segmentation, and Nodularity (Ductile Iron, Gray cast Iron). Heyns lineal intersection method, three circle method, Heyns Abrams Intersection method, Random line method etc are used for the grain size measurement. Every measurement and report is generated in compliance with international standards. Custom reporting formats are also available.

Specifications

Model : HO-IMM-T01

Configuration	Inverted
Optical system	Infinity corrected
Observation method	Brightfield
Observation Head	Sidentopf Binocular head, 45o, 55-75mm IP
Eyepieces	WF10X, FN20, Dioptic adjustment – both eyepieces
Nosepiece	Quadruple revolving, positive precision click stops, Manual. RMS thread

Microscope Objectives

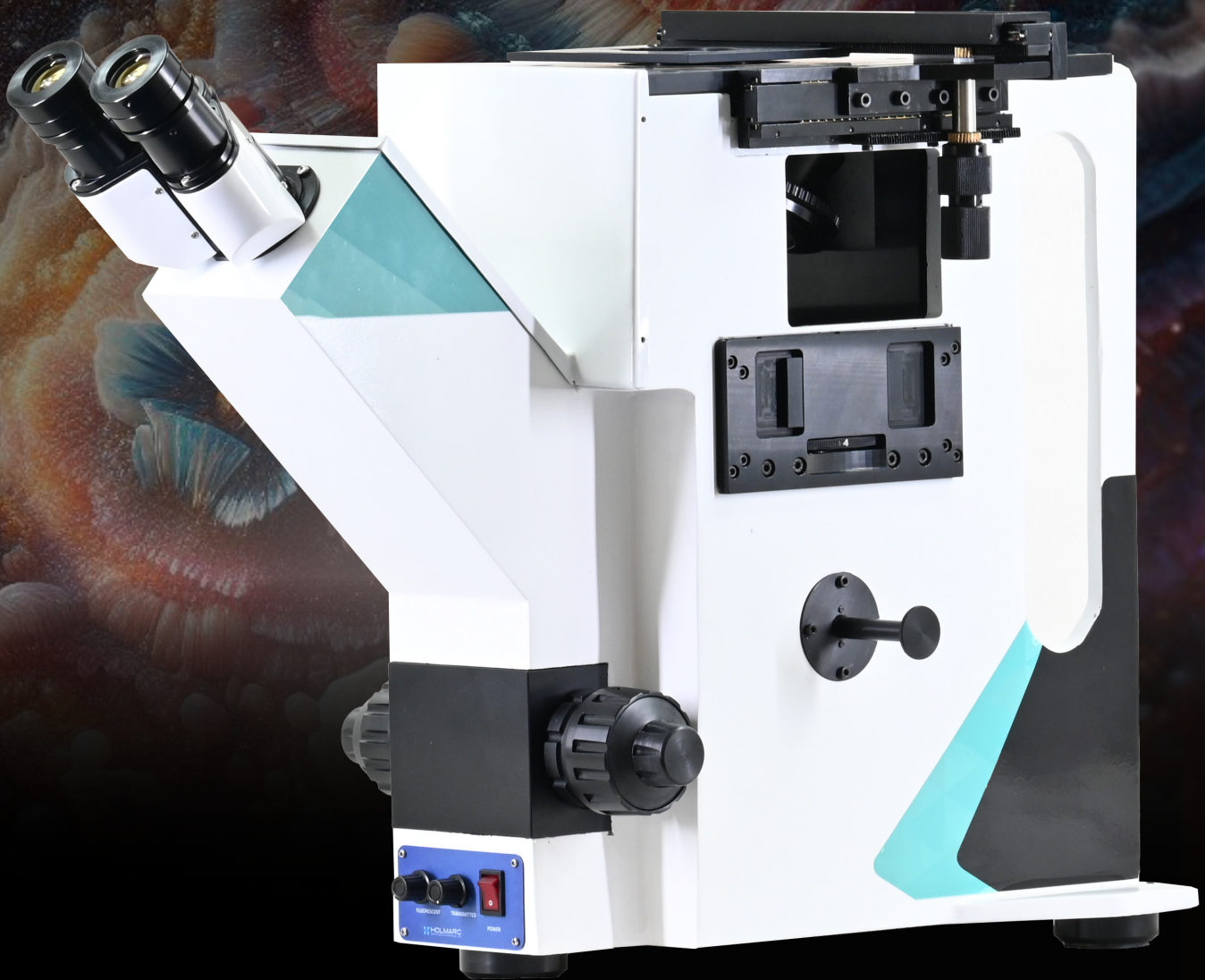
1. Plan Achromatic 10X/0.25	WD = 20.2mm
2. Plan Achromatic 20X/0.40	WD = 8.8mm
3. Plan Achromatic 40X/0.60	WD = 3.98mm
4. Plan Achromatic 100X/0.85 dry	WD = 0.40mm

Sample stage	Double layer Mechanical stage
Travel	126mm x 78mm
Focusing	Coaxial coarse and fine focusing mechanism
Camera Port	Side
Camera	1/2.5" CMOS Color 5MP, C-mount, USB2.0
Reflected Illumination	3W white LED, Adjustable intensity
Software	Industry_Pro (Metallurgy analysis software)

Standards

Porosity	ASTM B-276
Cementite	ASTM E 1268
Inclusion	IS 4163:2021
Nodularity (Ductile Iron)	ISO 947-1, IS 7754:1975, JIS G5503, GOST 3443-87
Nodularity (Gray Cast Iron)	ASTM 247-17, ISO 945-1
Grain Size	ASTM E-112, ASTM E-1382-91, IS 4748:2021, ISO 643:2019

- Metallography
- Mineralogy
- Gemology
- Forensic metallurgy
- Semiconductor
- Inspection of metals
- Solar cells
- Archaeometallurgy



INVERTED
CONFIGURATION

10X 20X 40X 100X
OBJECTIVES

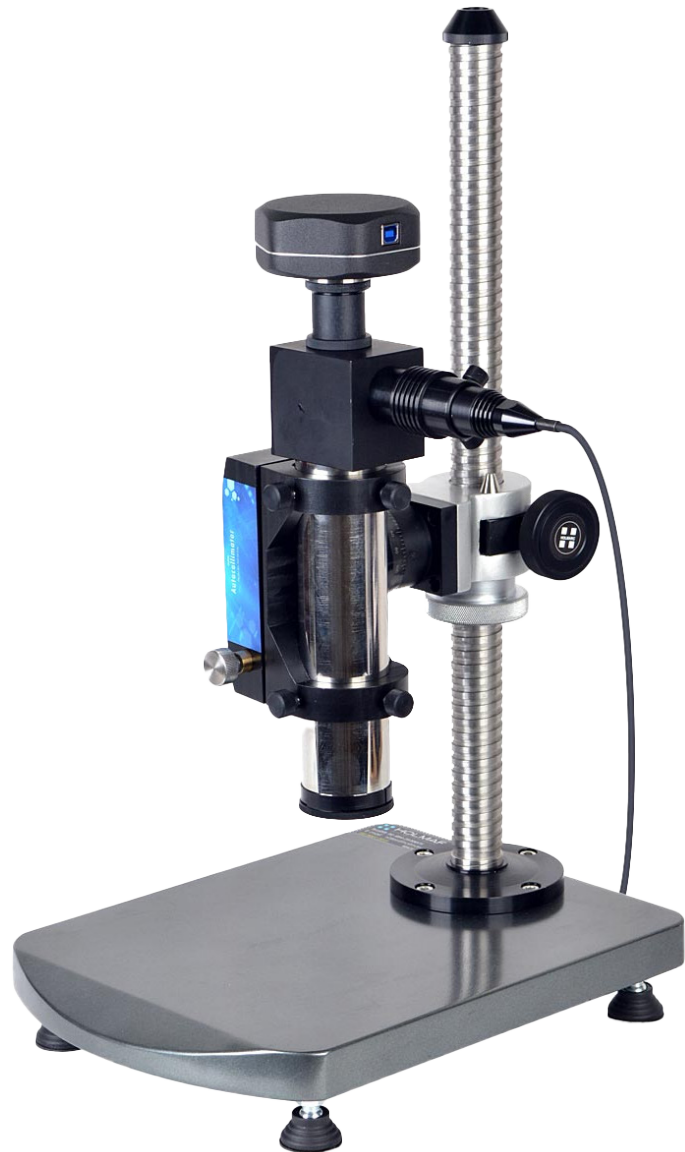
126MM X 78 MM
TRAVEL SAMPLE MECHANICAL STAGE

10. Electronic Autocollimator

Autocollimator is a versatile non-contact optical instrument for measuring small angles or tilt movements with very high sensitivity. Holmarc manufactures precision Electronic autocollimators as well as visual autocollimators as standard products and these instruments find a multitude of applications in shop floors as well as metrology labs for precision measurements of straightness, parallelism, perpendicularity and flatness.

Holmarc's Electronic autocollimator consists of a stainless steel body, high precision optics with Green LED illumination, and a 5MP CMOS camera. A user friendly software is included with the system for measurements. Autocollimator projects the image of an illuminated reticle onto the object under inspection and receives its reflected image on the camera sensor. The software calculates the shift in the reflected image and shows the corresponding angles in seconds, minutes or degrees.

In most cases, the object under inspection may not have reflective surfaces. In order to carry out the inspection, the operator needs to fix a plane mirror on the object to reflect the image back to the instrument. Holmarc supplies a mounted front coated mirror as a standard accessory.



Specifications

Model : HO-OI-EAC

Readout	Software
Measurement axis	Dual
Resolution	0.79 arc seconds
Accuracy over full range	7.9 arc seconds
Measurement range	± 17 arc minutes(Horizontal), ± 12.5 arc minutes (Vertical)
Field of view	34 arc minutes(Horizontal), 25 arc minutes (Vertical)
Clear aperture	30mm
Reticle Illumination	Green LED, Adjustable intensity
Mounting option 1	Horizontal alignment stage (standard accessory)
Mounting Option 2	Vertical stand with height adjustment and 3 axes freedom for alignment (Optional)

11. Visual Autocollimators

Autocollimator is a versatile non-contact optical instrument for measuring small angles or tilt movements with very high sensitivity. Holmarc manufactures precision Visual autocollimators as well as electronics autocollimators as standard products and these instruments find a multitude of applications in shop floors as well as metrology labs for precision measurements of straightness, parallelism, perpendicularity and flatness.

Autocollimator projects the image of an illuminated reticle to the object under inspection and receive the reflected image from the object. This reflected image of reticle will focus at the position of a fixed reference cross wire on the eyepiece. Shift in reflected image compared to the fixed reference cross wire represents angle. A dual axis, micrometer driven linear stage helps the fixed cross wire to align it with the reflected reticle image. The shift in the reflected image can be determined by moving the fixed cross wire. Graduations on the micrometer give angular measurements directly in arc seconds.

Holmarc's autocollimator consists of a stainless steel body, high precision optics with Green LED illumination, and a 10X/20X eyepiece. In most cases, the object under inspection may not have reflective surfaces. In order to carry out the inspection, the operator needs to fix a plane mirror on the object to reflect the image back to the instrument. Holmarc supplies a mounted front coated mirror as a standard accessory.

Specifications

Model :	HO-01-AC3	HO-01-AC1
Readout	Micrometer	Micrometer
Measurement axis	Dual (X,Y)	Dual (X,Y)
Resolution	3 arc seconds	1 arc seconds
Accuracy over full range	30 arc seconds	10 arc seconds
Measurement range	±0.5 degree	±20 arc minutes
Field of View	1 degree	40 arc minutes
Clear aperture	30mm	35mm
Reticle Illumination	Green LED – Adjustable intensity	
Mounting option 1	Horizontal alignment stage	
Mounting option 2	Vertical stand with height adjustment and 3 axes freedom for alignment	

* Optional Accessories



12. Traveling Microscope

Model: HO-TM-02



50mm
HORIZONTAL TRAVEL

130mm
VERTICAL TRAVEL

360°
ROTATION TUBE

10X
EYEPIECE

3X
OBJECTIVE

Holmarc's traveling microscope model HO-TM-02 is equipped with micrometer driven horizontal X, Y, and vertical Z stages. All the assembly is mounted on a heavy wide base with three point support for extra stability and leveling. The extra wide base can also be used for placing large objects for measurements.

HO-TM-02 can be used for wide applications in general purpose scientific and industrial measurements. Other applications include accurate determination of small variation in the liquid levels, determination of refractive index of liquids, surface tension, viscosity etc.

The horizontal X and Y stages are equipped with micrometer head for precise and accurate measurements. Both stages provide 50mm travel with 10 micron resolution. The vertical stage (Z stage) is equipped with 130mm coarse travel and 25mm fine travel with 10 micron resolution. The coarse movement can be done by rotating the knob by hand and after locking the stage at a particular position fine movement can be done by the micrometer.

The microscope tube is mounted on a rotating arm which is 360 degree rotatable and lockable. A rack and pinion type focusing mechanism is attached to the microscope tube for focusing the objects. The microscope tube is fitted with 3X long working distance objective and 10X eyepiece with cross hair reticle.

Horizontal Movements

X Direction	Micrometer Head
Travel	50 mm
Resolution	10 micron
Y direction	Micrometer Head
Travel	50 mm
Resolution	10 micron

Vertical Movement

Z Direction	Micrometer Head
Coarse Travel	130 mm
Fine Travel	25 mm
Resolution	10 micron

Observation tube

Rotation	360 degree (lockable)
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Eyepiece

Magnification	10 X
Focal length	25 mm
Broadband AR coated	
Cross hair reticle	

Objective

Achromatic Type	
Magnification	3 X
Focal Length	60 mm
Broadband AR Coated	

Base Construction	Cast Aluminium
Focusing	Manual, Rack & Pinion

We can provide custom configured traveling microscopes on request. Contact us at sales@holmarc.com, mail@holmarc.com.

13. Digital Traveling Microscope



Holmarc's digital traveling microscope Model No. HO-DTM-5X-01 is equipped with a Plan apochromatic extra-long working distance 5X objective and a 5MP CMOS color camera. An intensity adjustable LED ring illuminator is provided for sample illumination. The microscope is mounted on a heavy wide base with four-point support for extra stability and leveling. The extra wide base can also be used for placing large objects for measurements. The high precision XY stages are equipped with digital micrometer for precision measurements. The Z focusing stage is fabricated using precision roller bearing slide with micrometer head for precise and accurate measurements. XY stages provide 25mm travel each with a resolution of 1 micron while the Z stage provides 130mm coarse

and 25mm fine travel with 10 microns resolution. The microscope tube is mounted on a rotating arm which is 360 degrees rotatable and lockable. A rack and pinion type focusing mechanism is attached to the microscope tube for focusing the samples.

An image grabbing software is DTM_V02 is included with system for capturing the image by selecting suitable imaging parameters (like resolution, color or monochrome, exposure, etc.) and save it to a computer for later / further analysis. A reference cross line is integrated in the software for performing the measurements

Model : HO-DTM-5X-01

Horizontal Movements

X Direction	Micrometer Head
Travel	50 mm
Resolution	10 micron
Y direction	Micrometer Head
Travel	50 mm
Resolution	10 micron

Vertical Movement

Z Direction	Micrometer Head
Coarse Travel	130 mm
Fine Travel	25 mm
Resolution	10 micron

Observation tube

Rotation	360 degree (lockable)
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Eyepiece

Magnification	10 X
Focal length	25 mm
Broadband AR coated	
Cross hair reticle	

Objective

Achromatic Type	
Magnification	3 X
Focal Length	60 mm
Broadband AR Coated	

Base Construction Cast Aluminium

Focusing Manual, Rack & Pinion

We can provide custom configured traveling microscopes on request. Contact us at sales@holmarc.com, mail@holmarc.com.

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