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MVM Manual Video Microscope Measuring System Series

XY Stroke 300 × 200 mm | Video Magnification 30–190× | 1/3" Color CCD | Manual 2D Measurement

MVM3020 is an entry-level manual video measuring system for precision 2D inspection and dimensional measurement. It combines a manual XY measuring stage, CCD camera targeting, zoom optics, optical scales and dedicated software for CAD and reporting workflows.

300 × 200 MM

SCALE 0.5 / 0.1 MM

30–190× VIDEO

0.7–4.5× ZOOM

Z STROKE 150 MM

1/3" COLOR CCD

LED SURFACE + TRANSMISSION

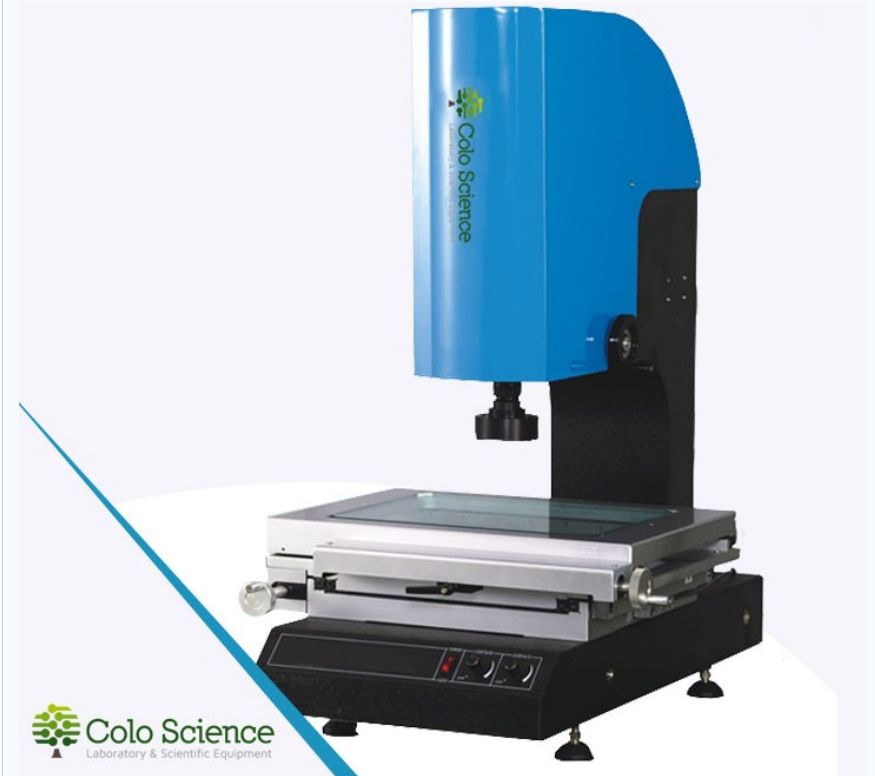
Document type: **Technical Specification Sheet**

Product family: **MVM-2010 / MVM-3020 / MVM-4030 / MVM-5040**

Measurement principle: **Manual optical 2D coordinate measurement**

Product number: **PRO6436**

Format: **A4 landscape | COLO.Science TechSpec v2.5**



MVM3020 manual video measuring system | CCD camera | precision XY stage

RANGE

300 × 200 mm
Scale 0.5 / 0.1
µm

ADDRESS / HQ

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MVM manual video measuring system series

Precision 2D inspection with manual XY stage, zoom optics and measurement software

[MAX 300 × 200 MM](#)
[SCALE 0.5 / 0.1 MM](#)
[VIDEO 30–190×](#)
[0.7–4.5× ZOOM](#)

Manual video metrology for dimensional inspection

Series Overview

Video measuring platform

Manual 2D measurement: length, diameter, radius, angle, spacing and geometric inspection.

XY measuring stage: 300 × 200 mm travel with optical grating position feedback.

Video magnification: 30–190× for inspection and dimensional targeting.

Accuracy: $E_{x,y} \leq (3.0 + L/200) \mu\text{m}$ and $E_{xy} \leq (4.0 + L/200) \mu\text{m}$.

Optics and construction

Illumination: adjustable LED surface and LED transmission lighting.

Camera: 1/3" color CCD with cross-line generator.

Working distance: 92 mm supports practical component handling.

Stage: 500 × 330 mm metal table with 350 × 280 mm glass insert.

Software and data workflow

Measurement software: digital XY data processing, circular mapping and reporting.

Interface: RS-232 connection between measuring system and computer.

Data export: measurement results can be transferred to AutoCAD, Excel and Word.

Measurement workflow

1. Position

Position the component on the glass stage.

2. Target

Target the feature using the cross-line CCD image.

3. Measure

Move the XY stage and capture coordinates.

4. Result

Process, map and export the measured geometry.

MODELS

2010 / 3020 / 4030 / 5040

SCALE RESOLUTION

0.5 / 0.1 μm

VIDEO MAGNIFICATION

30–190×

ZOOM LENS

0.7–4.5×

Model Selection and Technical Specifications

MVM series model selection

MVM-2010 | Compact platform

XY stroke: 200 × 100 mm
Tables: metal 404 × 228 mm | glass 260 × 160 mm
Dimensions / weight: 556 × 540 × 860 mm | 180 kg

MVM-3020 | Featured model | PRO6436

XY stroke: 300 × 200 mm
Tables: metal 500 × 330 mm | glass 350 × 280 mm
Dimensions / weight: 670 × 660 × 950 mm | 260 kg

MVM-4030 | Extended platform

XY stroke: 400 × 300 mm
Tables: metal 606 × 466 mm | glass 450 × 350 mm
Dimensions / weight: 720 × 950 × 1020 mm | 315 kg

MVM-5040 | Large platform

XY stroke: 500 × 400 mm
Tables: metal 706 × 606 mm | glass 550 × 450 mm
Dimensions / weight: 800 × 1040 × 1020 mm | 500 kg

Model	Metal table	Glass table	XY stroke	Weight	Dimensions L × W × H
MVM-2010	404 × 228 mm	260 × 160 mm	200 × 100 mm	180 kg	556 × 540 × 860 mm
MVM-3020	500 × 330 mm	350 × 280 mm	300 × 200 mm	260 kg	670 × 660 × 950 mm
MVM-4030	606 × 466 mm	450 × 350 mm	400 × 300 mm	315 kg	720 × 950 × 1020 mm
MVM-5040	706 × 606 mm	550 × 450 mm	500 × 400 mm	500 kg	800 × 1040 × 1020 mm

Source note: data were transcribed from the supplied MVM3020 PDF and the matching COLO.Science product page. L is measured length in millimetres in the stated accuracy formula. Final software and accessory scope must be confirmed in the approved quotation.

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MVM-3020 vs VMM-3020D

Select the platform according to feature size, magnification and focusing requirements

[300 × 200 MM XY RANGE](#)
[MANUAL OR MOTORIZED FOCUS](#)
[0.5 MM SCALE RESOLUTION](#)

Two COLO configurations for different inspection tasks

Configuration Comparison

Selection parameter	MVM-3020 Manual System	VMM-3020D Semi-Automatic System
Best suited for	Routine 2D dimensional measurement of machined parts, profiles, holes, radii, angles and spacing	XY measurement of smaller features requiring microscope objectives and higher optical magnification
XY measuring range	300 × 200 mm, manually controlled	300 × 200 mm, manually controlled
Z axis and focusing	Manual Z movement and manual optical focusing	Motorized Z positioning with stepper motor; manual and software control
Scale resolution	0.5 µm	0.5 µm
Standard optical system	0.7–4.5× continuous zoom lens; 92 mm working distance	Infinity-corrected microscope system with 5×, 10×, 20× and 50× objectives
Standard video magnification	Approximately 30–190×	Approximately 140–1400×
Camera	1.3 MP color camera	1.3 MP color CCD camera
Maximum sample load	Approximately 15 kg	Approximately 15 kg
Measurement workflow	Manual XY coordinate acquisition, geometry processing, CAD transfer and reporting	Manual XY coordinate measurement with motorized Z positioning, CAD transfer and reporting
Standard computer	Not included	Computer and metal support table included
Selection benefit	Economical and practical choice for routine dimensional measurement	High-magnification specialist choice for smaller XY features

Selection note: both systems measure in the XY plane. MVM-3020 uses continuous zoom optics for routine manual 2D measurement. VMM-3020D uses microscope objectives, higher magnification and motorized Z positioning for focusing.

MANUAL PLATFORM

30–190× video

SEMI-AUTO PLATFORM

140–1400× video

SHARED XY RANGE

300 × 200 mm

SELECTION SUPPORT

COLO application review

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MVM-3020 Standard Configuration

Manual 2D video measurement platform with optical scales and PC-based metrology workflow

[GRANITE BASE](#)
[0.7–4.5× ZOOM](#)
[1.3 MP COLOR CAMERA](#)
[3 OPTICAL SCALES](#)
[RS-232 DATA INTERFACE](#)

Standard machine configuration

Measuring structure	Precision granite base with cast-iron measuring table
Optical system	0.7–4.5× continuous zoom lens, approx. 30–190× video magnification
Camera	1.3 MP color camera with gain, edge and contrast adjustment
Position feedback	Three precision optical grating scales; 0.5 µm resolution
Illumination	Multi-zone adjustable LED surface illumination and LED transmitted light
Data interface	RS-232 data unit for coordinate transfer and measurement processing
Software	Metrology software with permanent USB dongle licence; installation media included

Included standard accessories

Optical calibration chart for system setup and verification

Dust cover for instrument protection

English documentation set: equipment manual, software manual and supplied conformity documents

Connection set: regional power cable and data cable

Spare fuses: five pieces stated in the offered configuration

Core measurement software functions

2D geometry: point, line, circle, arc, distance, width, length, radius, diameter, angle, chamfer and coordinate measurement.

Geometric evaluation: straightness, roundness, parallelism, perpendicularity, concentricity and related position tolerances.

Tolerance control: upper and lower limits with visual out-of-tolerance warning.

Edge tools: sub-pixel edge detection and automatic recognition of lines, circles and arcs.

Construction tools: command-based creation of virtual points, lines, circles and arcs from coordinate data.

Annotation: radius, diameter, angle, linear dimension, alignment and text labels.

CAD, image and reporting workflow

CAD output: measured 2D geometry can be transferred to CAD and saved as DXF or DWG.

Image output: observation and measurement views can be saved as BMP or JPEG images.

Large-part mapping: multiple captured areas can be combined into a larger overview image for graphical measurement and annotation.

Reports: results can be transferred to Excel, Word and CAD workflows.

Languages: English interface is stated as supported; other listed languages depend on installed software release.

ACCURACY

Ex,y ≤ (3.0 + L/200) µm

REPEATABILITY

3 µm

CLEARANCE / LOAD

92 mm / 15 kg

MACHINE SIZE / WEIGHT

670 × 660 × 950 mm / 260 kg
Computer requirements: computer is not included with MVM-3020. The measurement software supports Windows 10 and Windows 11; Windows 10 is recommended. The computer requires a USB 3.0 port and a D: drive or partition. The permanent USB dongle licence can be moved to a replacement computer.

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VMM-3020D Technical Specification

High-magnification XY video measurement with motorized Z positioning

[300 × 200 × 200 MM](#)
[140–1400× VIDEO](#)
[MOTORIZED Z POSITIONING](#)
[0.5 MM SCALE](#)
[1 MM REPEATABILITY](#)

Measuring platform and optics

Travel X × Y × Z	300 × 200 × 200 mm
XY operation	Manual precision measuring stage
Z operation	Motorized Z axis with stepper motor; manual and software control
Optical system	Infinity-corrected microscope optical system
Objectives	Plan 5×, 10×, 20× and 50× in the standard set
Video magnification	Approximately 140–1400× with the standard objective set
Camera	1.3 MP color CCD camera
Scale resolution	0.5 μm

Illumination and construction

Incident illumination: microscope illumination with adjustable brightness, diaphragms, polarizer and color filters.

Measurement illumination: multi-zone adjustable LED surface light, transmitted LED light and coaxial illumination.

Structure: precision granite measuring base with cast-iron worktable.

Maximum workpiece height: 200 mm.

Machine dimensions: approximately 670 × 660 × 950 mm.

Machine weight: approximately 230 kg.

Offered standard delivery

Measuring microscope: granite platform, motorized Z axis, camera, optical scales and complete objective set.

Control: motor/data control unit and separate illumination power/control unit.

Workstation: metal support table and computer included in the offered configuration.

Software: metrology software, USB licence key and installation media.

Calibration: optical calibration chart supplied.

Accessories: dust cover, English equipment/software documentation, conformity documents, cables, spare fuses and carrying handles.

Confirmed performance

E1 accuracy	$Ex, y \leq (3.0 + L/200) \mu m$
E2 accuracy	$Exy \leq (3.0 + L/300) \mu m$
Repeatability	1 μm
Sample load	Approximately 15 kg
Power	AC 110/220 V, 50/60 Hz

Software workflow

Measurement: XY geometry, tolerances, automatic edge tools and geometric construction.

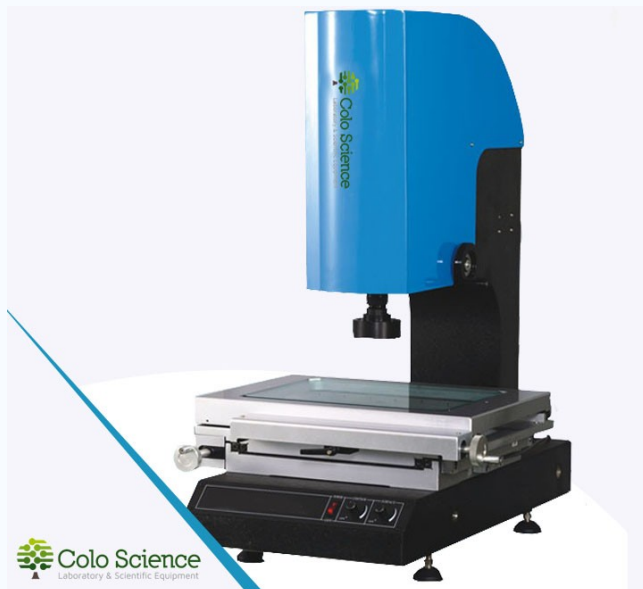
Z control: motorized positioning controlled manually or through the software.

Outputs: 2D CAD transfer, DXF/DWG, image output and Excel/Word reporting.

Large-part mapping: image capture and combined overview measurement.

Licence: permanent USB dongle; English interface and manual included.

Applications, Software and Configuration



MVM series | MVM-3020 featured model | manual 2D video metrology

Typical inspection applications

Machining and toolmaking: lengths, diameters, radii, angles, chamfers and hole spacing.

Electronics: PCB features, component geometry and production inspection.

Automotive and aerospace: precision dimensional checks and tolerance verification.

Mould and die work: profile, edge and geometric feature measurement.

Industrial quality control: repeatable 2D coordinate measurement and reporting.

Software and output workflow

Measurement software: coordinate acquisition, data processing and circular mapping.

AutoCAD: measurement data can be transformed into CAD-compatible output.

Excel / Word: transfer results for statistical analysis and reporting.

PC connection: RS-232 interface with dedicated software and data card.

Configuration note: computer, software version, data card, illumination package and accessory scope can vary. Confirm the exact delivery configuration and documentation in the approved quotation.

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Selection guidance: send the component size, required features, tolerance range, reporting format and software requirements.

QUICK CONTACT**Web:** colo.si**Email:** sales@colo.si**Phone:** +386 70 713 437**Series:** MVM-2010 / 3020 / 4030 / 5040**COLO.SCIENCE | MVM MANUAL VIDEO MEASURING SYSTEM SERIES SUPPORT****Need help selecting an MVM manual video measuring system?**

Send the component dimensions, target features, accuracy requirement, CAD/reporting workflow and installation expectations. COLO.Science can confirm the appropriate MVM model, software and accessory configuration.

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