



# PH-A14 PROFILE PROJECTOR

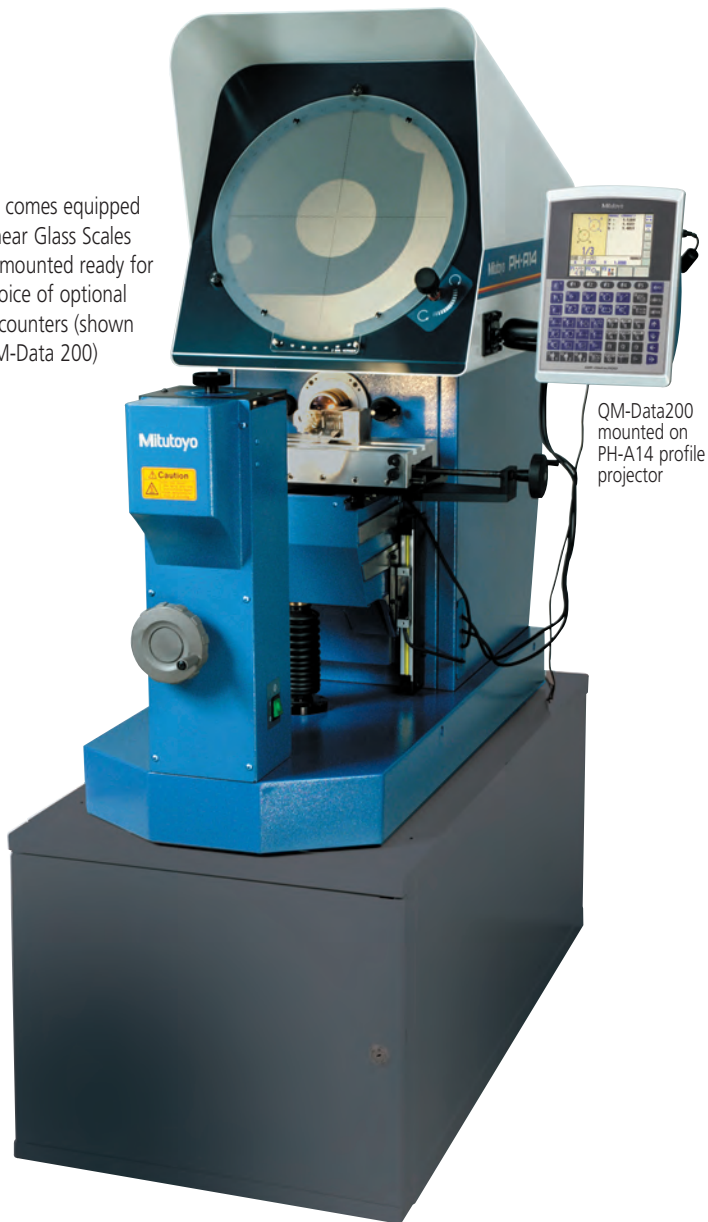
High performance, horizontal-beam projector equipped with highly accurate linear glass scales

OPTICAL MEASURING



# PH-A14 Horizontal Profile Projector

PH-A14 comes equipped with Linear Glass Scales factory mounted ready for your choice of optional display counters (shown with QM-Data 200)



QM-Data200 mounted on PH-A14 profile projector

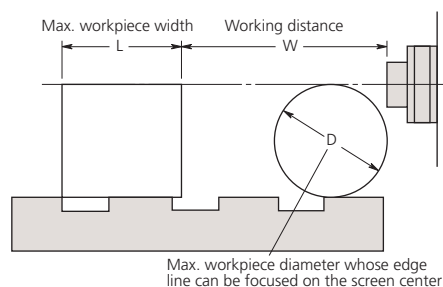
## FEATURES

- Bench-top model that uses horizontal optical system.
- Suitable for thread pitch measurements—blurred or distorted images will not be produced when workpiece is angled.
- Inverted image on the day-bright screen.
- 14" (356mm) diameter vernier protractor screen with solid line cross-hairs for easy alignment.
- Heavy-duty workpiece table incorporates linear scales for fast, accurate measurement.
- The PH-A14's generous X, Y workstage travel (8" x 4") provides users with ample range to cover application needs.
- New location of the Y-axis handle improves ease of operation.
- The workstage provides high accuracy and can handle a workload of up to 100 lbs.
- Fiber illuminator is standard accessory.

## Projection Lenses



## Projection Capacity

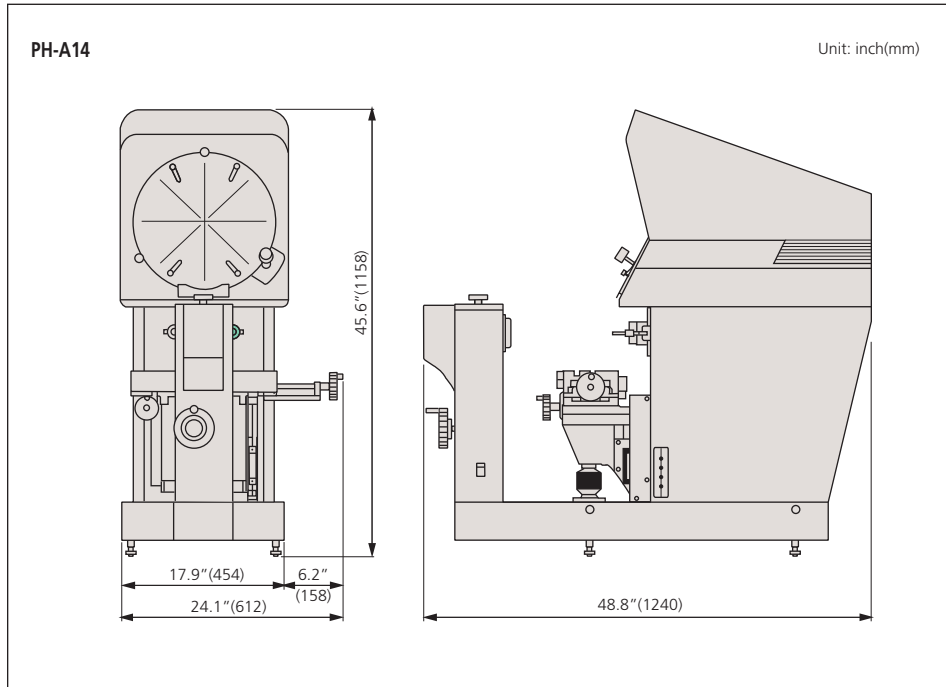


PH-A14

Unit: mm

	Magnification			
	10X	20X	50X	100X
View field	70.6	17.3	7.12	3.56
L	235	235	80	109
W	93	40	14.6	11
D	105	105	30.4	19

## DIMENSIONS



## SPECIFICATIONS

Model No.	PH-A14	
Order No.	172-810-10A	
Projected Image	Inverted image	
Protractor screen	Effective diameter	14" / 356mm
	Screen material	Fine ground glass
	Reference line	Cross hair line
	Screen rotation	±360°, fine feed and clamp
	Angle display	Vernier reading, Resolution: 2'
Projection lens	Standard accessory: 10x(172-011), Optional accessories: 20X, 50X, 100X	
Magnification accuracy	Contour illumination	±0.1% or less
	Surface illumination	±0.15% or less
Contour illumination	light source	Halogen bulb(24V 150W)
	Optical system	Telecentric system
	Functions	Heat-absorbing filter, Cooling fan
Surface illumination	light source	Halogen bulb(24V 150W)
	Optical system	Twin fiber optic illumination
XY Stage	Table travel (X-axis)	8" / 203.2mm
	Table size(X, Z)	16 x 6" / 407 x 153mm
	Vertical travel (Y-axis)	4" / 101.6mm
	Resolution	.00005" / 0.001mm*
	Measuring Unit	Built in Linear scale
	Max. workpiece width	See (L) on page I-12
	Max. workpiece load	100lbs / 45kg
Power supply	120V AC, 50/60Hz	
Mass	308lbs / 140kg	
Standard accessories	10x projection lens set, work stage, power cord, halogen bulb, fuse, grounding wire, allen wrench	

\*Counter not included

### Standard Accessories

- 172-011:** Projection Lens 10x
- 512305:** Halogen bulb 24V 150W (500 Hours)
- 358191:** Fuse 6A (for 10-120V)
- 538815:** Hexagonal wrench 2.5
- 538616:** Hexagonal wrench 3
- 2BAC245:** Spanner wrench 2.5 1
- 99MBA051A:** Operational manual

See the backside for optional accessories



**KA-200 Counter: 174-183A**  
**64AAB149:** Counter stand



**QM-Data200**  
2-D data processing unit.  
**264-155A:** Stand mount type  
**264-156A:** Arm mount type



**332-151: Optoeye**  
Edge detection system for QM-Data 200  
**12AAE671:** Detector attachment (A)

## Optional Accessories

- 172-011:** 10X projection lens (standard accessory)
- 172-012:** 20X projection lens
- 172-013:** 50X projection lens set
- 172-014:** 100X projection lens set
- 172-116:** Standard scale (50mm)
- 172-117:** Standard scale (2")
- 172-118:** Reading scale (200mm)
- 172-161:** Reading scale (300mm)
- 172-119:** Reading scale (8")
- 172-162:** Reading scale (12")
- 172-286:** Green filter
- 512305:** Halogen bulb (24V, 150W) (standard accessory)

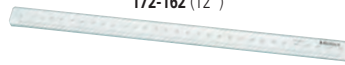
## Fixture and Stage accessories

- 172-142:** Center support
- 172-143:** Center support riser
- 172-144:** Rotary vise  
(Max. workpiece dia.: 2.4" / 60mm)
- 172-234:** V-block with clamp  
(Max. workpiece dia.: 2" / 50mm)
- 172-132:** Vertical holder
- 64AAA129B:** Machine stand 23"W x 45" D x 20"H

### Reading Scales

- 172-118** (200mm)
- 172-161** (300mm)
- 172-119** (8")
- 172-162** (12")

Designed for checking the magnified image of a standard scale.



### Center Support

**172-142**



Clamps a cylindrical workpiece such as a screw  
Workpiece dia.: 120mm max

### Center Support Riser

**172-143**



Widens the damping capacity of the center support to a maximum diameter of 240mm.

### Rotary Vise

**172-144**



Workpiece dia.: 60mm max

### Vertical Holder

**172-132**



Set up a thin workpiece easily

### Standard Scales

- 172-116** (50mm)
- 172-117** (2")



Used for checking magnifying accuracy.

### V-Block w/ Clamp

**172-234**



Workpiece dia.: 50mm max

### Green Filter

**172-286**



Increases the screen sharpness of the contour image.

## Coordinate Measuring Machines



Sensor Systems

## Vision Measuring Systems



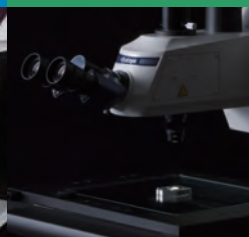
Test Equipment and Seismometers

## Form Measurement

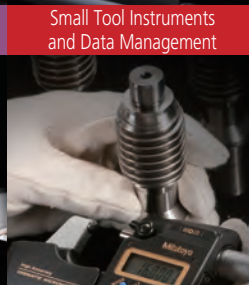
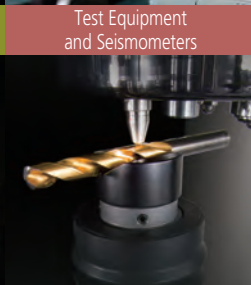


Digital Scale and DRO Systems

## Optical Measuring



Small Tool Instruments and Data Management



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Mitutoyo is not only a manufacturer of top-quality measuring products but one that also offers qualified support for the lifetime of the equipment, backed by comprehensive services that ensure your staff can make the very best use of the investment.

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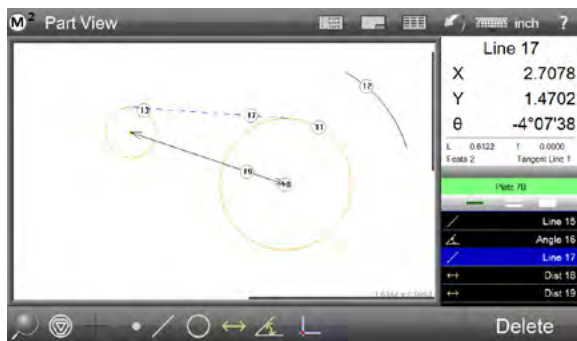
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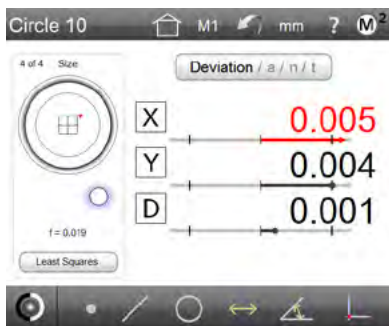
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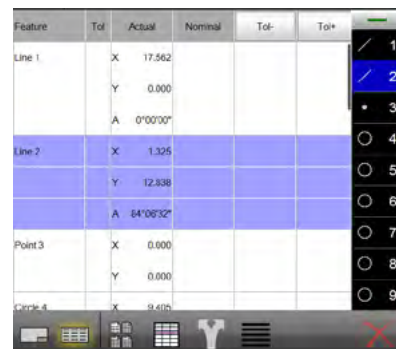
### Graphics-based "Part View" constructions

Generate popular construction types, like Distances and Tangent Lines, from within the graphical part view.



### Geometric tolerancing

Measure features, set nominals, apply tolerances and view deviation results with only a few quick clicks.



**Reports** Flexibility for report contents and formatting allows for full customization of the data format, header information, and header and footer graphics.

### Features:

- ø14" Screen, Horizontal Projector
- 8" x 4" Travel T Slot table for accessories
- Linear Glass Scales for accurate movement
- Profile and Fiber Optic Surface Illumination
- Easy to use all-in-one PC Touch Screen Display
- M2 Geometric 2D Measurement Software
- Optional Edge Detection (64PKA155) for fast and repeatable measurements

### PH-A14 Specifications

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<b>Base Unit</b>		<b>172-810-10A*</b>
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- Vision Measuring Systems
- Form Measurement
- Optical Measuring
- Sensor Systems
- Test Equipment and Seismometers
- Digital Scale and DRO Systems
- Small Tool Instruments and Data Management

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