

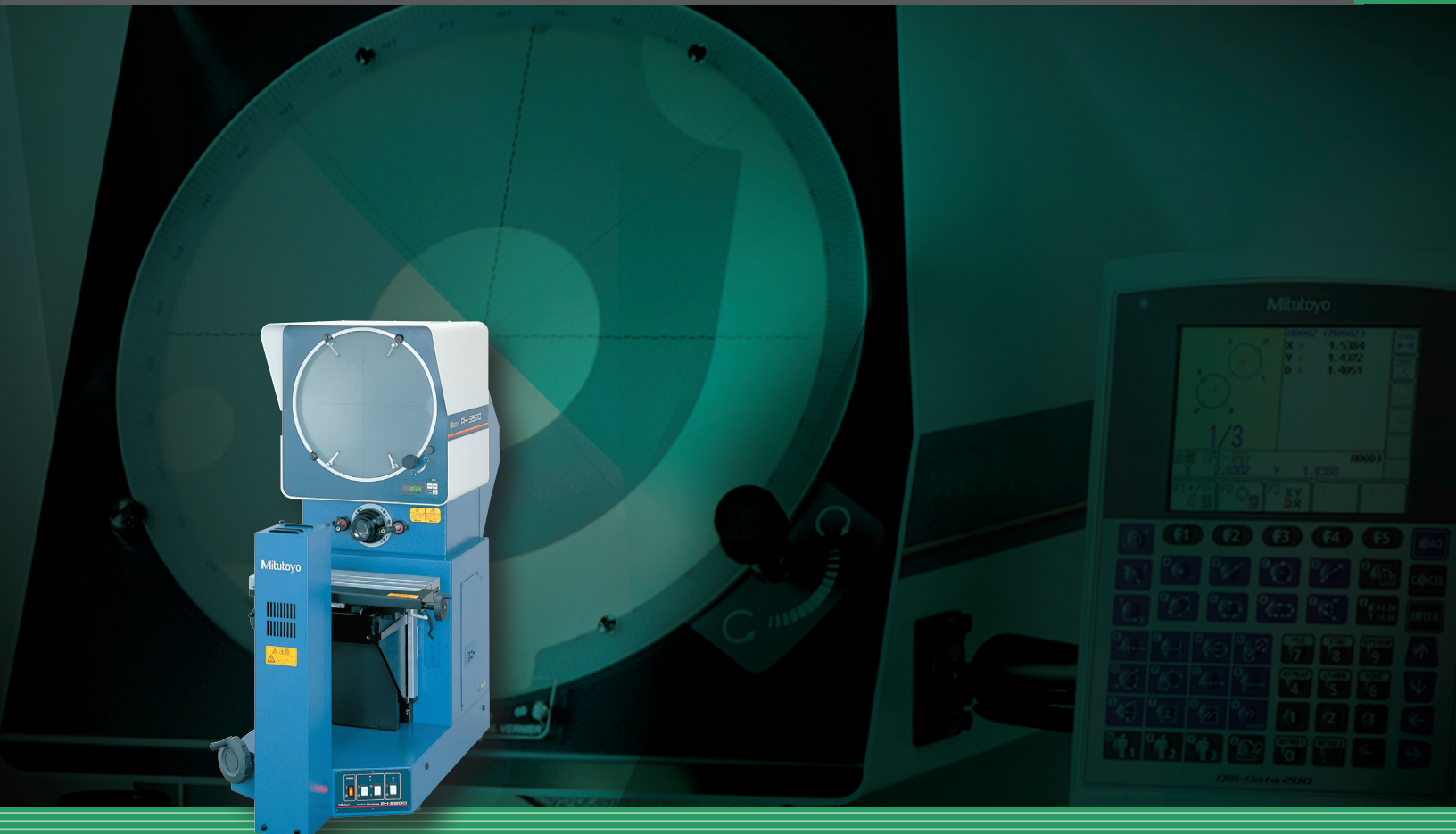
# Mitutoyo

Mitutoyo Quality

## PH-3515F PROFILE PROJECTOR

Heavy-Duty, Bench-Top Model with Horizontal Optical System

OPTICAL MEASURING



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# Mitutoyo introduces the PH-3515F

Profile Projectors that will meet any optical measuring or inspection challenge your shop can offer!

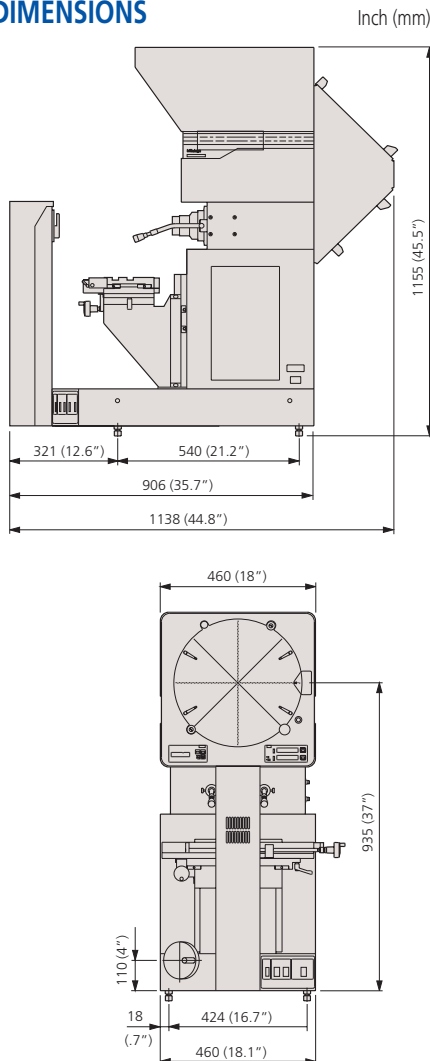
## FEATURES

- Erect image on high brightness screen.
- 14" (353mm) dia. protractor screen with crosshairs and staggered lines for easy alignment.
- Digital angle measurement of 1' or 0.01° with built in angle counter.
- Floating-type workstage incorporates linear scales for fast, accurate measurement.
- Halogen contour illumination.
- Fiber-optic illumination cables and halogen included.
- Suitable for thread pitch measurements — free from blurred or distorted images when the workpiece is angled.
- Wide range of accessories for varied applications.



Also available:  
Optional side mount surface illumination unit (172-423)

## DIMENSIONS

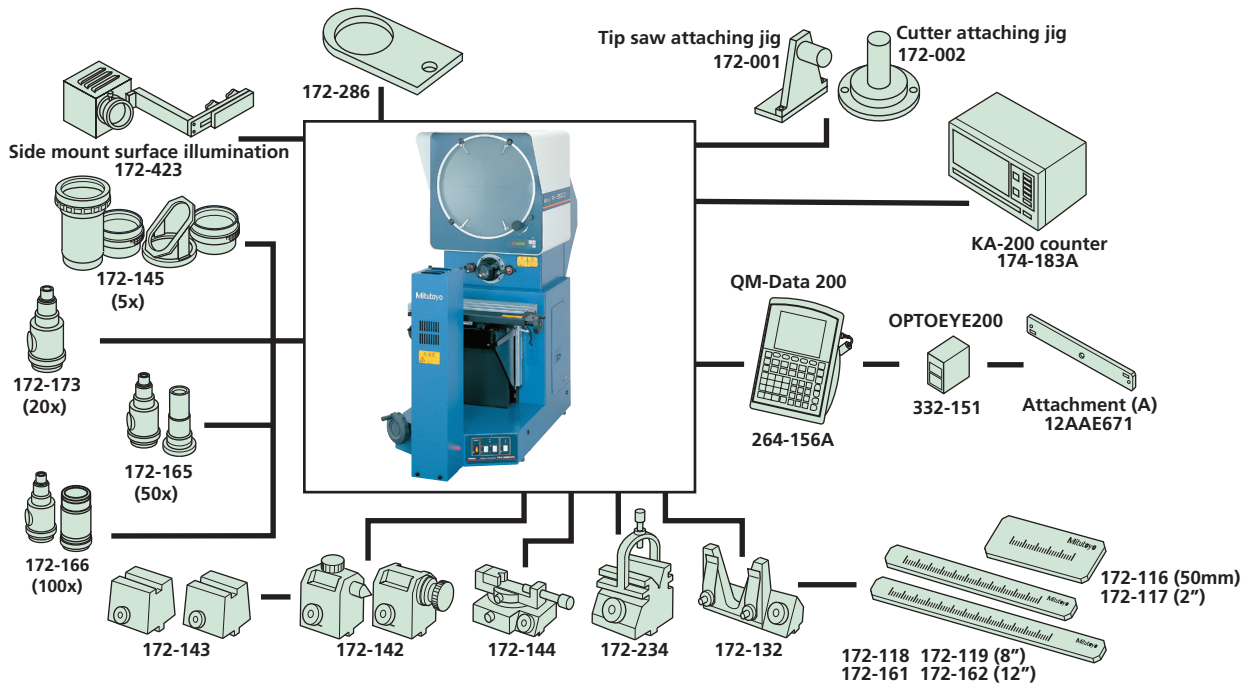


## SPECIFICATIONS

Model No.	PH-3515F	
Order No.	172-868A	
Projected Image	Erect image	
Protractor screen	Effective diameter	14" / 353mm
	Screen material	Fine ground glass
	Reference line	Cross hair line
	Screen rotation	±360°, fine feed and clamp
	Angle display(LED)	Resolution: 1' or 0.01°(switchable), Range: ±370°, Functions: Absolute/incremental mode switching, Zero set
Projection lens	Standard accessory: 10x(172-184), Optional accessories: 5X, 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	2-step brightness switch, Heat-absorbing filter, Cooling fan
Surface illumination (Optional accessories)	light source	Halogen bulb(24V 150W)
	Functions	Adjustable condenser lens. Heat-absorbing filter, Cooling fan
	Table travel (X-axis)	10" / 254mm
Table size (X, Z)	17.7"x5.7" / 450x146mm	
Vertical travel (Y-axis)	6" / 152mm	
Resolution	0.001mm/.00005"*	
Measuring Unit	Built in Linear scale	
XY Stage	Max. workpiece width	See (L) on page I-10
	Max. workpiece load	100lbs / 45kg
Power supply	120V AC, 50/60Hz	
Mass	333lbs / 150kg	
Standard accessories	10x projection lens set, work stage, power cord, halogen bulb, tube fuse, grounding wire, allen wrench, Vinyl cover	

\* Counter not included

## SYSTEM DIAGRAM

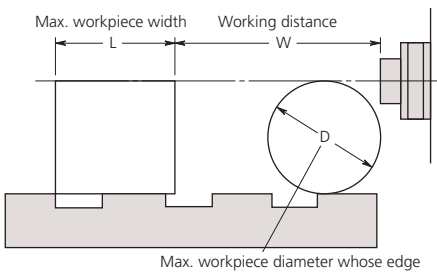


## ACCESSORIES

### Projection Lenses



### Projection Capacity



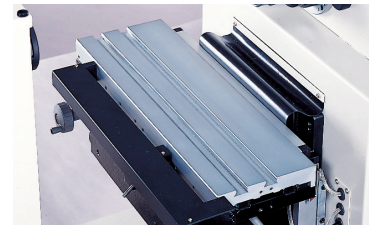
### PH-3515F

Unit: mm

	Magnification				
	5X	10X	20X	50X	100X
View field	70.6	35.3	17.65	7.06	3.5
L	175	235	235	80	109
W	160 (64)	93 (35)	40	14.6	9.5
D	152.4	152.4	116	30.4	19

( ): When using surface illumination

### Workstage



XY range	X-axis (horizontal travel): 10" (254mm)
Y-axis (vertical travel): 6" (152mm)	
Measuring unit	Linear Scale for each axis (AT100 Series)
Display unit	(Optional)
Stage size (WxD)	17.72"x5.75" (450x146mm)
Swivel range	±10° (30' readout)
Max. workpiece load	99 lbs. (45kg)
Dovetail groove	Two (Pitch= 1.69" (43mm))
Focusing travel	2" (50mm)

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



### QM-Data200 264-155A: Stand mount type 264-156A: Arm mount type



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

See page 4 for additional optional accessories



## Optional Accessories

- 172-184: 10X projection lens (standard accessory)
- 172-173: 20X projection lens
- 172-165: 50X projection lens set
- 172-166: 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
- 64AAB176: Machine stand 22"W x 25" D x 26"H

## Stand

- 64AAB176  
Locking door  
22"W x 25"H x 29"D



## Center Support

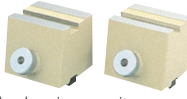
- 172-142



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.

## Reading Scales

- 172-118 (200mm)
  - 172-161 (300mm)
  - 172-119 (8")
  - 172-162 (12")
- Designed for checking the magnified image of a standard scale.



## Rotary Vise

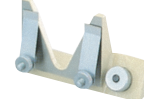
- 172-144



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

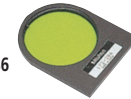
- 172-234



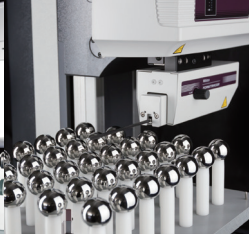
Workpiece dia.: 50mm max

## Green Filter

- 172-286



Increases the screen sharpness of the contour image.

Coordinate Measuring Machines	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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Apart from the basics of calibration and repair, Mitutoyo offers product and metrology training, as well as IT support for the sophisticated software used in modern measuring technology. We can also design, build, test and deliver measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.

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