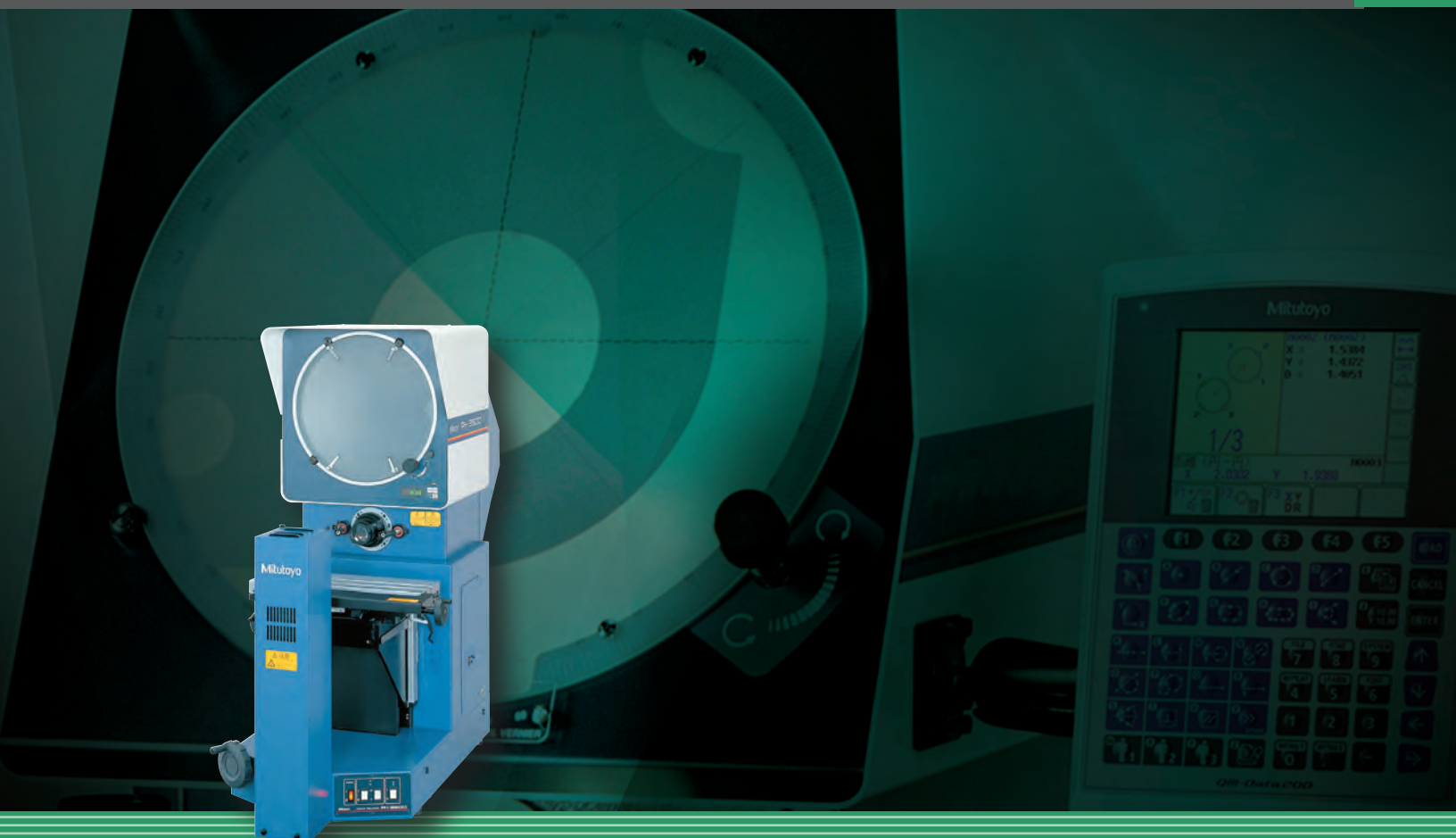




PH-3515F PROFILE PROJECTOR

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

OPTICAL MEASURING



1.888.610.7664

 www.calcert.com

sales@calcert.com

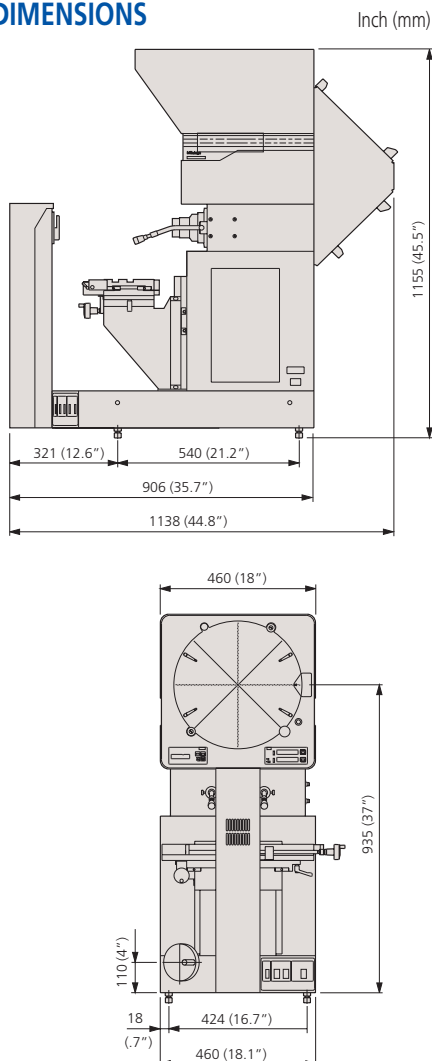
Mitutoyo introduces the PH-3515F

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.

DIMENSIONS



SPECIFICATIONS

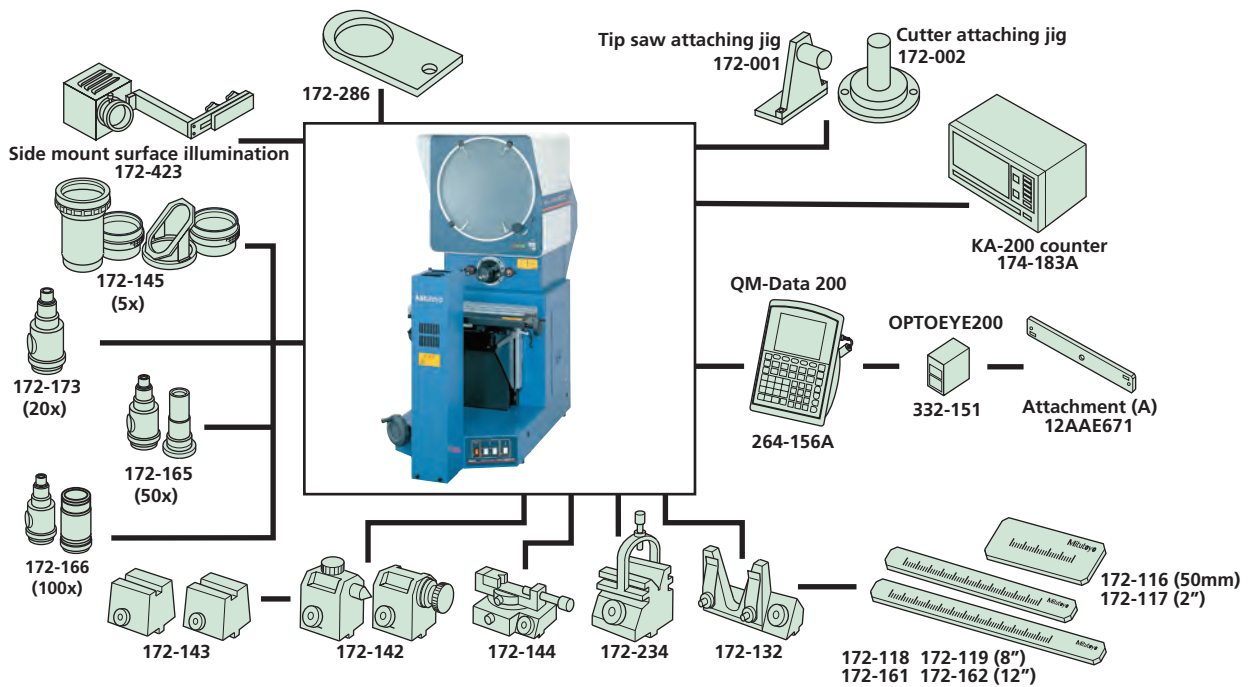
Model No.	PH-3515F	
Order No.	172-868A	
Projected Image	Erect image	
Protractor screen	Effective diameter	14" / 353mm
	Screen material	Fine ground glass
	Reference line	Cross hair line
	Screen rotation	±360°, fine feed and clamp
	Angle display(LED)	Resolution: 1' or 0.01°(switchable), Range: ±370°, Functions: 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
XY Stage	Resolution	0.001mm/.00005"*
	Measuring Unit	Built in Linear scale
	Max. workpiece width	See (L) on page I-10
Power supply	Max. workpiece load	100lbs / 45kg
		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



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

SYSTEM DIAGRAM

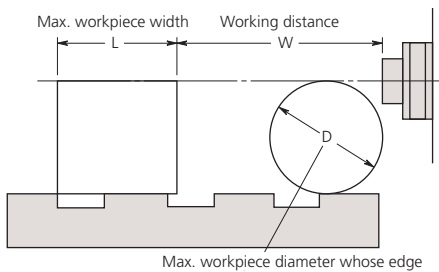


ACCESSORIES

Projection Lenses



Projection Capacity



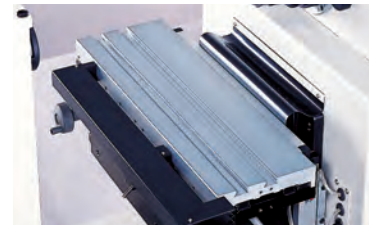
PH-3515F

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
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)



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



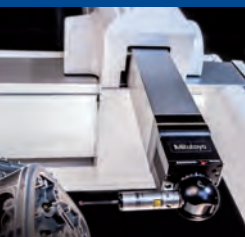
Increases the screen sharpness of the contour image.

Coordinate Measuring Machines

Vision Measuring Systems

Form Measurement

Optical Measuring



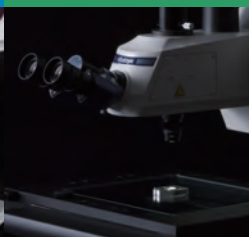
Sensor Systems



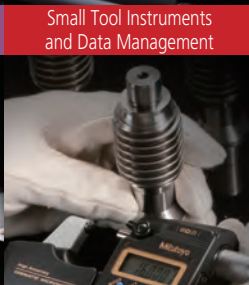
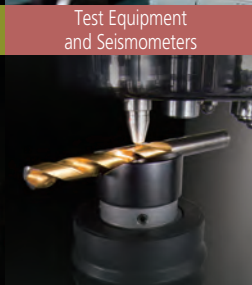
Test Equipment
and Seismometers



Digital Scale and DRO Systems



Small Tool Instruments
and Data Management



**Whatever your challenges are,
Mitutoyo supports you from start to finish.**

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.

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.

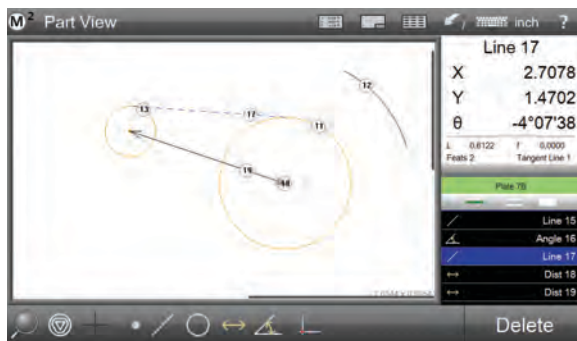
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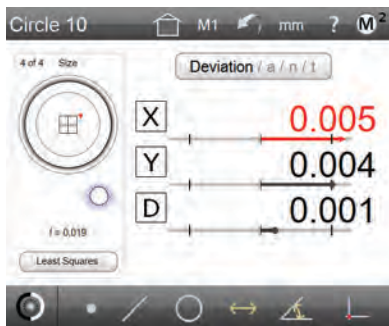
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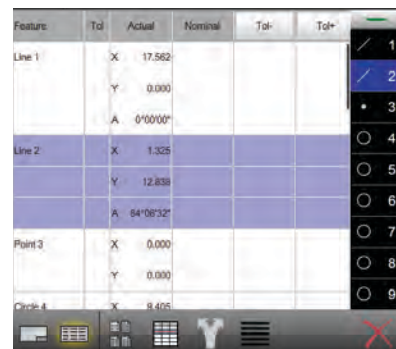
Graphics-based Part View constructions

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:

- 14 Screen, Horizontal Projector
- 10" 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
- Digital built-in angle counter

PH-3515 Specifications

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