

Profile Projectors

For efficient measurement, inspection and observation of very small workpieces

MeasurLink ENABLED
Data Management Software by Mitutoyo

Products equipped with the measurement data output function can be connected to the measurement data network system MeasurLink (refer to page A-5 for details).

PJ-H30 SERIES 303 — Premium Benchtop Series

MeasurLink ENABLED

Data Management Software by Mitutoyo

- Conforms to JIS B7184: 1999 "Profile projectors".
- High-end model that achieves accuracy of (3.0+0.02L) μm
- $\phi 306$ mm screen makes erect-unreversed images more visible.
- The largest measuring range in the class, up to 300x170 mm.
- Quick-release handle and 3-lens parfocal turret enables smooth measurement of workpiece.
- Elevating shaft mechanism for the screen head reduces operator fatigue.
- Unique model equipped with a highly accurate edge detector (OPTOEYE) and motorized up/down drive is available.
- For data processing, a 2D data processor **QM-Data200** is available.



PJ-H30D3017B

SPECIFICATIONS

Protractor screen	Model No. Order No.	PJ-H30A1010B 303-712-1*1	PJ-H30A2010B 303-713-1*1	PJ-H30A2017B 303-714-1*1	PJ-H30A3017B 303-715-1*1
Protractor screen, OPTOEYE (built-in), Electromotive focusing	Model No. Order No.	PJ-H30D1010B 303-732-1*1	PJ-H30D2010B 303-733-1*1	PJ-H30D2017B 303-734-1*1	PJ-H30D3017B 303-735-1*1
Projected image		Erect			
Protractor screen	Effective diameter	$\phi 306$ mm (12 in)			
	Screen material	Fine-ground glass			
	Screen rotation	$\pm 360^\circ$ ($\pm 370^\circ$ for display)			
	Angle display	Digital counter (LED) (ABS/INC mode switching, Zero Set)			
	Resolution	1' or 0.01° (switchable)			
	Mechanism	Fine feed and clamp			
Projection lens	Cross-hairs	90° (solid lines)			
	Magnification	10X (standard accessory), 5X, 20X, 50X, 100X, All lens have the same focus. Half-mirror for the coaxial surface illumination are built-in and movable.			
Magnification accuracy	Lens mount	Bayonet mount, 3-lens mount turret type			
	Transmitted illumination	Within $\pm 0.1\%$ of nominal magnification			
Illumination	Surface illumination	Within $\pm 0.15\%$ of nominal magnification			
	Transmitted illumination	Halogen bulb (24 V, 150 W, 50 hours) (515530), Variable illumination angle (Coaxial surface/Oblique reflected, Beam concentration and adjustment), Built-in heat-absorbing filter, Built-in cooling fan, Stepless brightness adjustment, Soft lighting (inrush current reduction)			
	Surface illumination	Zoom Telecentric system, Heat absorbing filter, Built-in cooling fan, Stepless brightness adjustment, Soft lighting (inrush current reduction), Bulb sliding mechanism			
Resolution for X/Y counter*2		0.001 mm / 0.0001 in			
Measuring unit		High-accuracy digital scale			
Measuring range (XxY)		100x100 mm	200x100 mm	200x170 mm	300x170 mm
Measuring accuracy*3		(3+0.02L) μm L: Measured length (mm)			

*1: To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, K for KC, C and No suffix is required for PSE.

*2: 0.5 μm or 0.1 μm resolution is also available. Please contact Mitutoyo Techno Service Business Division.

*3: Measuring method complies with JIS B7184.

PJ-A3000 SERIES 302 — Standard Benchtop Series

MeasurLink ENABLED

Data Management Software by Mitutoyo

- A standard model that achieves both high operability and cost effectiveness.
- Screen diameter is 300 mm and a range of stage sizes is available to suit a wide a range of applications.
- The halogen lamp is easily replaced using a sliding mechanism.
- For data processing, a 2D data processor **QM-Data200** is available.



PJ-A3010F-200

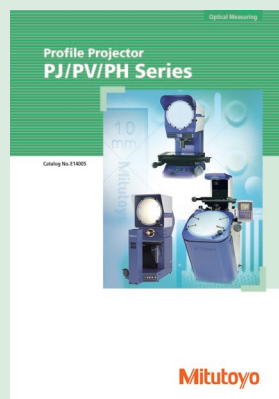
SPECIFICATIONS

Model No. Order No.	PJ-A3005D-50 302-704*	PJ-A3010F-100 302-703*	PJ-A3005F-150 302-702*	PJ-A3010F-200 302-701*	
Projected image	Inverted-reversed				
Protractor screen	Effective diameter	$\phi 315$ mm (12.4 in)			
	Screen material	Fine-ground glass			
	Screen rotation	$\pm 360^\circ$ ($\pm 370^\circ$ for display)			
	Angle display	Digital counter (LED) (ABS/INC mode switching, Zero Set)			
	Resolution	1' or 0.01° (switchable)			
	Mechanism	Fine feed and clamp			
Projection lens	Cross-hairs	90° (solid lines)			
	Magnification	10X (standard accessory), 20X, 50X, 100X 10X, 20X (equipped with an external half-mirror for coaxial surface illumination)			
Illumination	Transmitted illumination	Halogen bulb (24 V, 150 W, 500 hours) (512305), Telecentric system, Heat-absorbing filter, Built-in cooling fan, 2-step (High/Low) brightness switch, Combination use with a color filter available			
	Surface illumination	Halogen bulb (24 V, 150 W, 500 hours) (512305) Beam concentration and adjustment available, Heat-absorbing filter, Built-in cooling fan			
Resolution for X/Y counter	0.001 mm/0.00005 in		0.001 mm/0.0001 in		
Measuring unit	Digital micrometer head		Digital scale		
Measuring range (XxY)	50x50 mm	100x100 mm	150x50 mm	200x100 mm	

* To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, -1D for CEE, -1DC for CCC, -1E for BS, -1K for KC, C and No suffix is required for PSE.

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Products equipped with the measurement data output function can be connected to the measurement data network system MeasurLink (refer to page A-5 for details).



Refer to the Measuring Projector Catalog (No. E14005) for more details.

- Floor-standing projector with a vertical axis and a unique forward-sloping screen.
- The large 500 mm diameter screen enables the whole of a 100 mm diameter workpiece to be inspected using a 5X projection lens without needing to move the workpiece.

PV-5110 SERIES 304 — Profile Projectors

MeasurLink ENABLED
Data Management Software by Mitutoyo



PV-5110

- The sloping screen design enables the operator to maintain a comfortable operational posture for long periods of time while making comparative measurements or tracing a projected image.
- For data processing, a 2D data processor **QM-Data200** is available.

SPECIFICATIONS

Model No.	PV-5110	
Order No.	304-919*1	
Projected image	Inverted-reversed	
Protractor screen	Effective diameter	ø508 mm (20 in)
	Screen material	Fine-ground glass
	Screen rotation	±360° (±370° for display)
	Angle display	Digital counter (LED) (ABS/INC mode switching, Zero Set)
Projection lens	Resolution	1' or 0.01° (switchable)
	Mechanism	Fine feed and clamp
	Cross-hairs	90° (solid lines)
	Zero-base index	(Equipped with the built-in backlight)
Illumination	Magnification	10X (standard accessory), 5X, 20X, 50X, 100X
	Lens mount	Quick insertion type
Resolution for X/Y counter*2	Transmitted illumination	Halogen bulb (24 V, 150 W, 500 hours) (512305), Telecentric system, Heat-absorbing filter, Built-in cooling fan, 2-step (High/Low) brightness switch, Combination use with a color filter available
	Surface illumination	Double-lighting oblique surface illumination unit (Optional), Halogen bulb (24 V, 150 W, 500 hours) (512305), 2-step (High/Low) brightness switch
Measuring unit	Digital scale	
Measuring range (X×Y)	200×100 mm (164×68 mm*3)	

*1: To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, K for KC, C and No suffix is required for PSE.

*2: X and Y counters are not built into the **PV-5110** main unit. If a counter display is required, it is recommended that a **QM-Data200** or **KA-212** is purchased separately.

*3: The range where no shading is observed using a 5X projection lens with transmitted illumination.

- Standard models as used in the machine tool industry. Best for observation and measurement of cutting tools (end mills, lathe tools).
- The stage has a higher loading capacity (45 kg) than any other type of projector.

PH-3515F, PH-A14 SERIES 172 — Profile Projector

MeasurLink ENABLED
Data Management Software by Mitutoyo



PH-3515F



PH-A14

- Unique projector employing horizontal optical system. The optical axis and the stage are parallel, and the workpiece can be easily removed.
- For data processing, a 2D data processor **QM-Data200** is available.

SPECIFICATIONS

Model No.	PH-3515F	PH-A14
Order No.	172-868*1	172-810*2
Projected image	Erect-reversed	Inverted-reversed
Protractor screen	Effective diameter	ø353 mm (13.9 in)
	Screen material	Fine-ground glass
	Screen rotation	±360° (±370° for display)
	Angle display	Digital counter (LED) (ABS/INC mode switching), Zero Set
Projection lens	Resolution	1' or 0.01° (switchable)
	Mechanism	Fine feed and clamp
	Cross-hairs	90° (solid lines)
	Zero-base index	(Equipped with the built-in backlight)
Magnification accuracy	Magnification	10X (standard accessory), 5X (PH-3515F only), 20X, 50X, 100X
	Lens mount	Screw mount
Illumination*3	Transmitted illumination	Within ±0.1% of nominal magnification
	Surface illumination (oblique)	Within ±0.15% of nominal magnification
Resolution for X/Y counter*4	Transmitted illumination	Halogen bulb (24 V, 150 W, 500 hours) (515530), Telecentric system, Heat-absorbing filter, Built-in cooling fan, 2-step (High/Low) brightness switch, Combination use with a color filter available
	Surface illumination (oblique)	Parabolic halogen bulb (24 V, 200 W, 500 hours) (12BAA637) Beam concentration and adjustment available, Heat-absorbing filter, Built-in cooling fan
Measuring unit	Digital scale	
Measuring range (X×Y)	254×152 mm	200×100 mm

*1: To denote your AC power cable add the following suffixes to the order No.: A for UL/CSA, D for CEE, DC for CCC, E for BS, K for KC, C and No suffix is required for PSE.

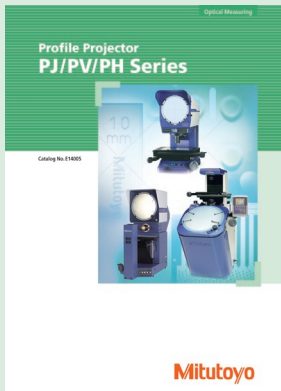
*2: To denote your AC power cable add the following suffixes to the order No.: -10A for UL/CSA, -20D for CEE, -20DC for CCC, -20E for BS, -20K for KC.

*3: For the PH-A14, a light source (24 V, 150 W), which is common to the Transmitted illumination and Surface illumination, is used. It is not possible to regulate brightness.

*4: XY counter is not built in the main unit of the **PH-3515F** or **PH-A14**.

If a counter display is required, it is recommended to purchase the **QM-Data200** or a counter (**KA-212**) separately.

Note: Depending on the angle of illumination, measurement results may be smaller than actual values.



Refer to the Measuring Projector Catalog (No. E14005) for more details.