



CARMAR ACCURACY CO., LTD

PROFILE PROJECTOR. *(Quality control)*

Applying range:

- * electronic part, precision mold, precision tool,
- * spring, screw processing, plastic, rubber, oil seal valve, and more.



**Leading
Quality Controller.**

Made in Taiwan

We are Manufacturer of Linear Scale, Digital Readout, Profile Projector, Video Measuring Machine, CMM, and more

CARMAR ACCURACY CO., LTD *(As you can see it, we can measure it!!!)*

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Vertical Standard Type Digital Optical Comparator

PV-3000 series (Reverse image) / PV-3000E series (Erect image)

PV series profile projectors are reliable and affordable measuring system of high precision and efficiency. The optical comparator is widely used in calibration labs or on the shop floor as a stand-alone unit. It's also a good choice for general purpose tool room work to measure complex shapes and hole patterns easily and quickly. We have made erect image type to meet different requirements.

● Features:

1. Excellent optical measuring system to project precisely magnified image.
2. Accuracy of the contour measuring is under 0.08%.
3. Equipped with Mini-printer and DC-3000 data processing system and foot-switch for measuring.
4. Erect image measuring for different requirements.



PV-3015/3015E

■ PV-3000(E) Series Specifications:

Model		PV-3007(E)		PV-3010(E)		PV-3015(E)			
Stage size (mm)		260 x 152		306 x 152		340 x 152			
Glass table size (mm)		125 x 100		175 x 100		196 x 96			
X-axis travel (mm)		75		100		150			
Y-axis travel (mm)		50		50		50			
Z-axis travel (mm)		90 (for focusing)		90 (for focusing)		90 (for focusing)			
Measuring accuracy (μm)		3.0 + L/75 L: measuring length (mm)		3.0 + L/50 L: measuring length (mm)		4.0 + L/25 L: measuring length (mm)			
Resolution (X/Y-axis)		0.5 μm							
Projector Screen	Size (mm)	12" (Ø312) , usable range > Ø300							
	Rotation range	0 ~ 360°							
	Angle resolution	1' or 0.01°							
Objective Lens	Magnification	10X(Standard)		20X(Opt.)		50X(Opt.)		100X(Opt.)	
	Object view (mm)	Ø30		Ø15		Ø6		Ø3	
	Working Dist. (mm)	77.7		44.3		38.4		25.3	
	Max. work-piece height (mm)	80		80		80		80	
Data processing system		DC-3000 multi-function data processing system : Coordinate skew, mm/inch conversion, ABS/INC conversion, Zero setting, ½ calculation, 0° 90° 270° 360° conversion, linear compensation, RS-232 data output							
Illumination		Transmission and reflection light source : 24V/150W-halogen lamp							
Power		110V/220V(AC) , 50/60Hz , 400W total power							
Light source cooling		Forced air cooling							
Instruments dimension (mm)		770 x 550 x 1100		770 x 550 x 1100		770 x 550 x 1100			
Weight (kg)		120		125		130			
Option		Rotary table, swivel center support, edge detector and so on, please refer to accessories of optical comparator for more detail.							

Vertical Enhanced Type Digital Optical Comparator

PV-3000A series (Reverse image) / **PV-3000AE** series (Erect image)

● Features:

The accuracy of PV-3000 series optical comparator can reach the international level.

1. Max travel distance can be up to 250 x 150 x 100 mm
2. High precision table design can afford load of 50 kgs without affecting the measuring performance.
3. Design with elevation of projecting screen for focusing to ensure stability and high precision.



■ PV-3000A(E) Series Specifications:

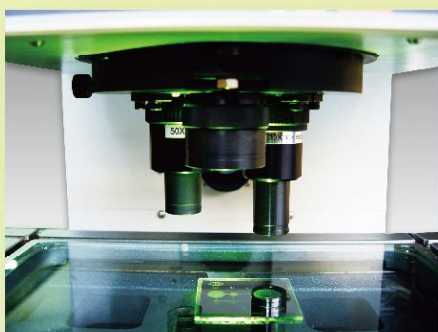
Model		PV-3015A(E)		PV-3020A(E)		PV-3025A(E)	
Stage size (mm)		354 x 228		404 x 228		450 x 280	
Glass size (mm)		210 x 160		260 x 160		306 x 196	
X-axis travel (mm)		150		200		250	
Y-axis travel (mm)		100		100		150	
Z-axis travel (mm)		100 (for focusing)		100 (for focusing)		100 (for focusing)	
Measuring accuracy (μm)		≤3.0 + L/75 ; L: measuring length (mm)					
Resolution (X/Y-axis)		0.5 μm					
Projector Screen	Size (mm)	12" (Ø312) , usable range > Ø300					
	Rotation range	0 ~ 360°					
	Angle resolution	1' or 0.01°					
Objective Lens	Magnification	10X(Standard)	20X(Opt.)	50X(Opt.)	100X(Opt.)		
	Object view (mm)	Ø30	Ø15	Ø6	Ø3		
	Working Dist. (mm)	77.7	44.3	38.4	25.3		
	Max. work piece height (mm)	90	90	90	90		
Data processing system		DC-3000 multi-function data processing system : Coordinate skew, mm/inch conversion, ABS/INC conversion, Zero setting, ½ calculation, 0° 90° 270° 360° conversion, linear compensation, RS-232 data output					
Illumination		Transmission and reflection light source : 24V/150W-halogen lamp					
Power		110V/220V(AC) , 50/60Hz , 400W total power					
Light source cooling		Forced air cooling					
Instruments dimension (mm)		780 x 780 x 1100		780 x 780 x 1100		810 x 780 x 1100	
Weight (kg)		160		160		180	
Option		Rotary table, swivel center support, edge detector and so on, please refer to accessories of optical comparator for more detail.					

Vertical Enhanced Type Digital Optical Comparator

PV-3000CE series (Erect image)

● Features:

PV-3000 CE owns high quality optical measuring performance. There is a rotary lens turret which equips with three different lens. When working in different magnifications, users can rotate the lens, instead of changing lens individually.



PV-3025CE

■ PV-3000C(E) Series Specifications:

Model		PV-3015C(E)		PV-3020C(E)		PV-3025CE			
Stage size (mm)		354 x 228		404 x 228		450 x 280			
Glass table size (mm)		210 x 160		260 x 160		306 x 196			
X-axis travel (mm)		150		200		250			
Y-axis travel (mm)		100		100		150			
Z-axis travel (mm)		100 (for focusing)		100 (for focusing)		100 (for focusing)			
Measuring accuracy (μm)		3.0 + L/75 ; L: measuring length (mm)							
Resolution (X/Y-axis)		0.5 μm							
Projector Screen	Size (mm)	12" (Ø312) , usable range > Ø300							
	Rotation range	0 ~ 360°							
	Angle resolution	1' or 0.01°							
Objective Lens	Magnification	10X(Standard)		20X(Opt.)		50X(Opt.)		100X(Opt.)	
	Object view (mm)	Ø30		Ø15		Ø6		Ø3	
	Working Dist. (mm)	77.7		44.3		38.4		25.3	
	Max. work piece height (mm)	90		90		90		90	
Data processing system		DC-3000 multi-function data processing system : Coordinate skew, mm/inch conversion, ABS/INC conversion, Zero setting, ½ calculation, 0° 90° 270° 360° conversion, linear compensation, RS-232 data output							
Illumination		Transmission and reflection light source : 24V/150W-halogen lamp							
Power		110V/220V(AC) , 50/60Hz , 400W total power							
Light source cooling		Forced air cooling							
Instruments dimension (mm)		780 x 810 x 1120			780 x 810 x 1120			780 x 810 x 1120	
Weight (kg)		170			170			180	
Option		Rotary table, swivel center support, edge detector and so on, please refer to accessories of optical comparator for more detail.							

Digital Optical Comparator

PV-3000D Series (Erect image)

PV-3000DE Series Digital Optical Comparator the Z-axis uses stepper motor drive, electric focusing, simultaneously increasing the count in the Z-axis grating, ladder components can be measured, greatly increased the performance. In addition, PV-3000DE Series projectors, the lens magnification is complete, customers can measure according to the different objects match different lens.

● Features:

5X Lens

Larger vision; electric Z axis, a better mode of operation.



■ PV-3000DE Series Specifications:

Model		PV-3015DE			PV-3020DE	
Stage size (mm)		354 x 228			404 x 228	
Glass table size (mm)		210 x 160			260 x 160	
X、Y-axis travel (mm)		150 x 100			200 x 100	
Z-axis travel (mm)		100			100	
Z-axis Speed (mm/s)		5, 1, 0.01 (adjustable)				
Measuring accuracy (μm)		X、Y-axis: 3.0 + L/50 ; Z-axis: 4 + L/10; L: measuring length (mm)				
Resolution (X/Y/Z-axis)		0.5 μm				
Projector Screen	Size (mm)	12" (Ø312) , usable range > Ø300				
	Rotation range	0 ~ 360°				
	Angle resolution	1' or 0.01°				
Objective Lens	Magnification	5X(Opt.)	10X(Std.)	20X(Opt.)	50X(Opt.)	100X(Opt.)
	Object view (mm)	Ø60	Ø30	Ø15	Ø6	Ø3
	Working Dist. (mm)	53	77.7	44.3	38.4	25.3
	Max. work piece height (mm)	90	90	90	90	90
Data processing system		DC-3000 multi-function data processing system : Coordinate skew, mm/inch conversion, ABS/INC conversion, Zero setting, ½ calculation, 0° 90° 270° 360° conversion, linear compensation, RS-232 data output				
Illumination		Transmission : 24V/150W-halogen lamp, Forced air cooling Reflection: 21V/150W-halogen lamp with fiber, Forced air cooling				
Power		110V/220V(AC) , 50/60Hz , 400W total power				
Light source cooling		Forced air cooling				
Instruments dimension (mm)		670 x 570 x 1250				
Weight (kg)		150				
Option		Rotary table, swivel center support, edge detector, M2D and so on, please refer to accessories of optical comparator for more detail.				

Horizontal Type Digital Optical Comparator

PH series

● Features:

1. Helix angle stage adjustable: $\pm 15^\circ$
2. Heavy-duty, metal construction
3. Greater range and high accuracy
4. Powerful DRO provides fast geometric computations in a simple, easy to use format.



PH-3020



PH-4025

■ PH Series Specifications:

Model		PH-3020		PH-4025		
Stage size (mm)		400 x 150		450 x 200		
X-axis travel (mm)		200		250		
Z-axis travel (mm)		100		150		
Y-axis travel (mm)		75 (for focusing)		100 (for focusing)		
Turning range		± 15°		± 15°		
Measuring accuracy (μm)		≤ 4.0 + L/25 ; L: measuring length (mm)				
Resolution (X/Z-axis)		0.5 μm				
Projector Screen	Size (mm)	Ø300		Ø400		
	Rotation range	0 ~ 360°		0 ~ 360°		
	Angle resolution	1' or 0.01°		1' or 0.01°		
Objective Lens	Model	PH-3020				
	Magnification	10X(Standard)	20X(Opt.)	50X(Opt.)	100X(Opt.)	
	Object view (mm)	Ø30	Ø15	Ø6	Ø3	
	Working Dist. (mm)	77.7	44.3	38.4	25.3	
	Model	PH-4025				
	Magnification	5X(Opt.)	10X(Std.)	20X(Opt.)	50X(Opt.)	100X(Opt.)
	Object view (mm)	Ø80	Ø40	Ø20	Ø8	Ø4
	Working Dist. (mm)	93.7	103.9	95.1	65.7	35.0
Data processing system		DC-3000 multi-function data processing system : Coordinate skew, mm/inch conversion, ABS/INC conversion, Zero setting, ½ calculation, 0° 90° 270° 360° conversion, linear compensation, RS-232 data output				
Illumination		Transmission : 24V/150W-halogen lamp, Forced air cooling Reflection: 21V/150W-halogen lamp with fiber, Forced air cooling				
Power		110V/220V(AC) , 50/60Hz , 400W total power				
Light source cooling		Forced air cooling				
Instruments dimension (mm)		1090 x 830 x 1010			1215 x 646 x 1210	
Weight (kg)		160			240	
Option		Rotary table, swivel center support, edge detector and so on, please refer to accessories of optical comparator for more detail.				