



## All Series Digital Optical Comparator

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.

- |   |                    |
|---|--------------------|
| <input type="checkbox"/> Vertical Standard Type   | PV-3000(E) series  |
| <input type="checkbox"/> Vertical Enhanced Type   | PV-3000A(E) series |
| <input type="checkbox"/> Vertical Multi-lens Type | PV-3000CE series   |
| <input type="checkbox"/> Horizontal Type          | PH series          |





**CARMAR TECHNOLOGY CO., LTD.**

# **Vertical Standard Type Digital Optical Comparator**

**PV-3000 series (Reverse image)**

**PV-3000E series (Erect image)**

## **Features:**

1. Excellent optical measuring system to project precisely magnified image.
2. Magnification accuracy : 0.08% contour, 0.12% surface.
3. Equipped with DC-3000 data processing system and foot-switch for measuring.
4. Erect image measuring for different requirements.



**PV-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 ( $\mu$ m)	3.0 + L/75 L: measuring length (mm)	4.0 + L/50 L: measuring length (mm)	4.0 + L/25 L: measuring length (mm)		
Resolution (X/Y-axis)	0.001 mm (1 $\mu$ m)				
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	<b>DC-3000 multi-function data processing system :</b> 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.				



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# **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
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-3015A/3015AE**



# CARMAR TECHNOLOGY CO., LTD.

## 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 ( $\mu$ m)		3.0 + L/75 ; L: measuring length (mm)			
Resolution (X/Y-axis)		0.001 mm (1 $\mu$ m)			
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)	100	100	100	100
Data processing system		<b>DC-3000 multi-function data processing system :</b> 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.			



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# Vertical Enhanced Type Digital Optical Comparator

**PV-3000CE (Erect image)**

**Features:**

PV-3025CE 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-3025CE Specifications :

Model		PV-3025CE			
Stage size (mm)		450 x 280			
Glass table size (mm)		306 x 196			
X-axis travel (mm)		250			
Y-axis travel (mm)		150			
Z-axis travel (mm)		100 (for focusing)			
Measuring accuracy ( $\mu$ m)		$3.0 + L/75$ ; L: measuring length (mm)			
Resolution (X/Y-axis)		0.0005 mm (0.5 $\mu$ m)			
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)	100	100	100	100
Data processing system		<b>DC-3000 multi-function data processing system :</b> 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.			



**CARMAR TECHNOLOGY CO., LTD.**

# 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 ( μ m)		≤ 4.0 + L/25 ; L: measuring length (mm)				
Resolution (X/Z-axis)		0.001 mm (1 μ m)				
Projector Screen	Size (mm)	12", Ø300		16", Ø400		
	Rotation range	0 ~ 360°		0 ~ 360°		
	Angle resolution	1' or 0.01°		1' or 0.01°		
Objective Lens	Model	<b>PH-3020</b>				
	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	<b>PH-4025</b>				
	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	<b>DC-3000 multi-function data processing system :</b> 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					
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.					



## Accessories for PV/PH Series Optical Comparator



**Vice with angle**



**Edge detector**



**Software**



**Rotary table**



**Swivel center support**



**Holder with clamp**



**Overlay Chart**



**V-block with clamp**



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