

# METROLOGY®

## *Vertical Optical Projector*

*An advanced readout system  
for performing 2-axis measurements  
at very high levels of precision and accuracy*



### **VOP**

*Perfect for checking parts  
with flat surfaces  
or any other component  
used in  
precision mechanics*

### **SAVE**

*Time & Cost  
Improved efficiency & accuracy*

*EASY  
QUICK  
ACCURATE*

■ Vertical optical projector

*All new Bright Moon Series*

FEATURE Upgrades Super sharp image Rigid structure Powerful functions



JAPAN  
Optical lens



CHINA  
Aerospace Technology



TAIWAN  
Assembly & inspection



Innovation Design R&D  
Patented Technology Award

- 1 Full steel made high rigidity structure positive image optical projector.
- 2  $\Phi 300\text{mm}$  ultra-clear 360 degree rotary projection screen with  $30^\circ, 60^\circ$  and  $90^\circ$  crossline reticle along with 4 overlay chart clips.
- 3 X-Y-Zaxis linear roller bearings guideway, non-thread & gapless bearing type transmission unit of with fast & fine motion devices.
- 4  $1\mu\text{m}$  biaxial high precision optical scale, hardened steel made no abrasion X-Y measuring table, Linearity:  $3 + L / 200\mu\text{m}$
- 5 Biaxial powerful features 2D geometric elements Measurement micro processing digital display with built in printer.
- 6 0.08% high magnification accuracy, high-resolution optical refraction & reflex lenses and projection magnification lens.
- 7 100W and 150W high-brightness optical transmission and reflection halogen illumination lighting source device with high-efficiency fan cooling system.

Digital Readout System



Keyboard panel function

1. Display operation condition
2. Display measuring results
3. Measuring key
4. Function key
5. Numeric key
6. Zero key
7. Order key
8. Direction key
9. Measuring pattern key
10. 1/2 key
11. Print key
12. View key

1. Basic measuring function : measuring point 、 line 、 circle 、 distance 、 angle 、 rectangle 、 ellipse 、 screw thread etc.
2. Others function : initialization of graphics 、 construct of graphics 、 recall 、 coordinates skew 、 compensation value of axis 、 record & editor the program 、 others setting function
3. Connect interface : optical scale 、 foot switch 、 printer 、 RS232

■ Vertical optical projector

DESCRIPTION OF INSTRUMENT



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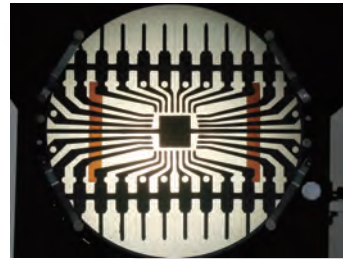
*Bright Moon Unbeatable precision combination*



Fine ground glass screen



Surface projection



Profile & surface projection



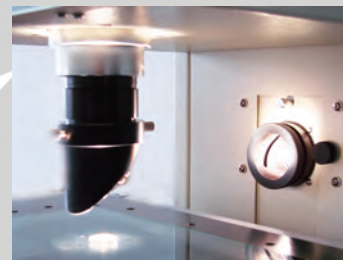
Profile projection



2D Digital readout system



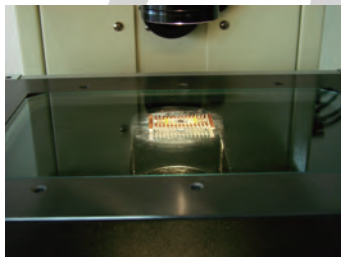
Screen rotary knob



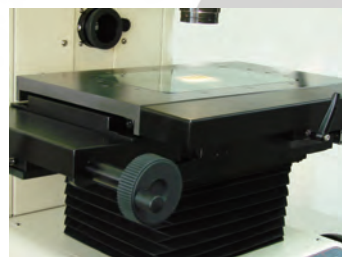
Reflex surface illumination



Magnification lens



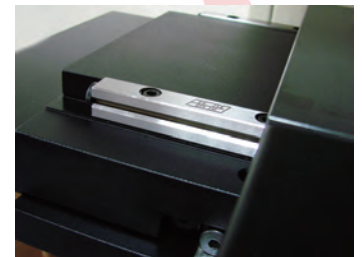
Glass stage



X-Y Axis measuring table



Optical scale



Roller bearing guideway



Non-thread transmission device



Z Axis lifting base



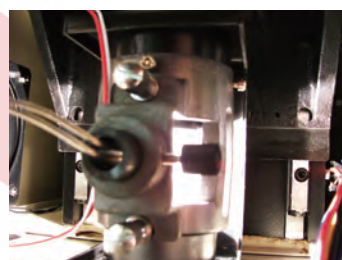
Fan cooling system



Rising handwheel



Power & illumination controller



Profile illumination unit



Surface illumination unit



Built-in printer

■ Vertical optical projector



JAPAN  
Optical lens



CHINA  
Aerospace Technology



TAIWAN  
Assembly & inspection

**SPECIFICATION**

*Bright Moon Series*

MODEL	VOP-26	VOP-48	VOP-612
Projection screen diameter & rotation range	Φ300mm / 0°~360°		
Resolution of rotary screen	0.001°/DMS		
Measuring range(X-Y axis)	150X50mm	200X100mm	300X150mm
Resolution of optical scale	0.001mm / 0.00005"		
X-Y measuring linearity	(3+L/200)um	L:mm measuring length	
Optical magnification accuracy	0.08%		
Z axis focusing	90mm		
Profile illumination	12V 100W tungsten halogen lamp		
Surface illumination	24V 150W tungsten halogen lamp		
Cooling method	4 high efficiency fan cooling system		
Instrument power	110V to 220V (AC) 50 to 60HZ		
Operating environments	15°C to 25°C / 40% to 70%RH		
Load weight of the worktable	10KG	15KG	20KG
Instrument weight	135KG	160KG	170KG
Instrument size (LxWxH)	70x38x110cm		

**Standard equipment**

Projection host, 2D microprocessor

Built-in printer, 10X magnification lens and reflex lens

Spare bulbs and fuses, operating instructions, JCC ISO qualified calibration report



Design Assembly Inspection



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**Optional accessories**

- |   |          |   |         |
|---|----------|---|---------|
| 1. 10X magnification lens & reflex lens | VOP-10X  | 6. Overlay chart(radius & angle)        | VOP-OC  |
| 2. 20X magnification lens & reflex lens | VOP-20X  | 7. 360°rotary tableΦ70mm (for VOP-26)   | VOP-RT2 |
| 3. 50X magnification lens & reflex lens | VOP-50X  | 8. 360°rotary tableΦ140mm (for VOP-48)  | VOP-RT4 |
| 4. 12V 100W transmission halogen lamp   | VOP-100W | 9. 360°rotary tableΦ200mm (for VOP-612) | VOP-RT6 |
| 5. 24V 150W reflection halogen lamp     | VOP-150W | 10. Wooden made instrument desk         | VOP-ID  |