



®Phenix

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Dealers card



# Surveying and Mapping Instruments

# PRODUCTS BROCHURE

**Suzhou PhenixSukaia Photoelectric Technology Co., Ltd.**

Produce the Best  
Surveying Instruments



## A Brief instruction of the Company

Suzhou Phenix Sukaia Photoelectric Technology Co., Ltd is the subsidiary company of Phenix Optical Holding Co., Ltd, Which founded in May 2011 and located in Suzhou Industrial Park that cooperated by China and Singapore, Our company adjacent to the beautiful and famous Yangcheng Lake. Our register capital amount to RMB 20.2 Million, by the name of high-tech enterprise, we have involved with instruments R&D, production and processing, sales and technical services.

Our management team and technician are mainly from previous Shanghai SOKKIA Instrument Company, Wuhan University and Phenix Optical Group. Phenix Optical Group company was founded in 1965 and firstly issued its stock among optical industry in 1997, besides, Phenix is also the largest comprehensive optical instruments enterprise in china.

Our company has possessed many independent intellectual property rights and application for 18 patents. We are obedience to the conception of profession, innovation, sincerity and services, We insisted the spirit of 'do the best surveying instruments in china'. We adopt advanced processing equipments and technology. Through strict production controlling and quality management, we have built comprehensive service system that improved the quality of products and services, In the future, we would provide the best surveying instruments and services to you.

 [www.phenix-survey.com](http://www.phenix-survey.com)



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In order to satisfy with different kinds of requirements for our users, Phenix B Series Automatic Levels not only combine the best leveling technology, such as perfect water-proof and stable specification, but also have been improved in shock and throw resistance. They will be new leader in level and project measurement field in the future.

## Application

Series automatic levels are equipped with automatic compensator which is magnetically damped, so that the instrument is free from vibration, temperature change and can self-correct even there is slight slope. Besides, the instruments embody functions of measuring horizontal angle and distance. So it can apply to construction project, water conservancy project, civil engineering and some other projects.

## B30

Magnification:28x / Compensator range:±15' / Compensator accuracy:0.5"/1'  
Standard deviation of 1km round-trip leveling measurement:±1.5mm / With sighting device

### ◆ Integrated drawtube

Adopt integrated design which not only effectively protect objective system and improve water-proof ability, but also retain high accuracy and stable performance.

### ◆ Reliable automatic compensation

Equipped with automatic and magnetically damped compensator, high precision, large working range and returning fast, so that the instrument is free from vibration, temperature change and crash.

### ◆ Telescope system

High resolution and bright field of view, efficiently relieve eye strain and fatigue.0.3m (from the centre of the instrument) ultra-short distance bring bigger working range for measurement.

### ◆ Infinity focus adjustment

Comfortable handle, automatic sliding design which avoid slippage phenomenon generated by vibration, transport, careless falling, crash and so on..



### ◆ Superior water-proof feature

Superior water-proof feature IP66 when put the level in water for short time. Sealed and water-proof design can effectively avoid the affection of environment, especially for telescope system.

## B32

Magnification:24x / Compensator range:±15' / Compensator accuracy:0.5"/1'  
Standard deviation of 1km round-trip leveling measurement:±2.0mm

### ◆ Integrated drawtube

Adopt integrated design which not only effectively protect objective system and improve water-proof ability, but also retain high accuracy and stable performance.

### ◆ Reliable automatic compensation

Equipped with automatic and magnetically damped compensator, high precision, large working range and returning fast, so that the instrument is free from vibration, temperature change and crash.

### ◆ Telescope system

High resolution and bright field of view, efficiently relieve eye strain and fatigue.0.3m (from the centre of the instrument) ultra-short distance bring bigger working range for measurement.

### ◆ Superior water-proof feature

Superior water-proof feature IP66 when put the level in water for short time. Sealed and water-proof design can effectively avoid the affection of environment, especially for telescope system.

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Comfortable handle, automatic sliding design which avoid slippage phenomenon generated by vibration, transport, careless falling, crash and so on..



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### ◆ Reliable automatic compensation

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### ◆ Telescope system

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High resolution and bright field of view, efficiently relieve eye strain and fatigue.0.3m (from the centre of the instrument) ultra-short distance bring bigger working range for measurement.

### ◆ Infinity focus adjustment

Comfortable handle, automatic sliding design which avoid slippage phenomenon generated by vibration, transport, careless falling, crash and so on..



## B320

Magnification:24x / Compensator range:±15' / Compensator accuracy:0.5"/1'  
Standard deviation of 1km round-trip leveling measurement:±2.0mm

### ◆ Integrated drawtube

Adopt integrated design which not only effectively protect objective system and improve water-proof ability, but also retain high accuracy and stable performance.

### ◆ Reliable automatic compensation

Equipped with automatic and magnetically damped compensator, high precision, large working range and returning fast, so that the instrument is free from vibration, temperature change and crash.

### ◆ Telescope system

High resolution and bright field of view, efficiently relieve eye strain and fatigue.0.3m (from the centre of the instrument) ultra-short distance bring bigger working range for measurement.

### ◆ Infinity focus adjustment

Comfortable handle, automatic sliding design which avoid slippage phenomenon generated by vibration, transport, careless falling, crash and so on..



### ◆ Superior water-proof feature

Superior water-proof feature IP66 when put the level in water for short time. Sealed and water-proof design can effectively avoid the affection of environment, especially for telescope system.

## B321

Magnification:24x / Compensator range:±15' / Compensator accuracy:0.5"/1'  
Standard deviation of 1km round-trip leveling measurement:±2.0mm

### ◆ Integrated drawtube

Adopt integrated design which not only effectively protect objective system and improve water-proof ability, but also retain high accuracy and stable performance.

### ◆ Reliable automatic compensation

Equipped with automatic and magnetically damped compensator, high precision, large working range and returning fast, so that the instrument is free from vibration, temperature change and crash.

### ◆ Telescope system

High resolution and bright field of view, efficiently relieve eye strain and fatigue.0.3m (from the centre of the instrument) ultra-short distance bring bigger working range for measurement.

### ◆ Infinity focus adjustment

Comfortable handle, automatic sliding design which avoid slippage phenomenon generated by vibration, transport, careless falling, crash and so on..



### ◆ Superior water-proof feature

Superior water-proof feature IP66 when put the level in water for short time. Sealed and water-proof design can effectively avoid the affection of environment, especially for telescope system.

## Application

Our digital auto levels are integration of world top technology of auto levels and greatly improved in resistance to shock, which also built-in powerful software that making measurement work so easy and effective. The series of products are widely used in national second and third class leveling fields, such as buildings, roads, municipal engineering, topographic surveying, cadastral surveying, tunnel and mine surveying, which also used in seismic surveying, deformation observation of dam, landscape and large equipment installation and other fields.



## PDL07

### ◆ High definition optical system with bigger range visual field

Adopt high definition optical system with imaging more clear. With 1.4m—100m visual distance that bring bigger working range for measurement.

### ◆ Innovative circuit design, Reasonable structure process

Adopt innovative circuit arrangement, low power, Stable and reliable; Classic shafting technology that can extend equipment service life.

### ◆ Reliable automatic compensation

Equipped with automatic and magnetically damped compensator, high precision, large working range and returning fast, so that the instrument is free from vibration, temperature change and crash.

### ◆ Built-in brand new measurement software

Adopt innovative design of software that acquire height and distance data by one key. We adopt Optimization measurement process, that making measuring so quickly and high effective.

### ◆ Backlight display, Graphic user interface

Backlight Chinese language display, 7 numeric keys and combinations can complete function of getting measurement data.

### ◆ Standard deviation of 1km round-trip leveling measurement:0.3 —1.0mm





Application

The series electronic theodolite could be used in 3 to 4 level three angle control measurement in country and city, such as rail, road, bridge, water supply project, mine, fixing of big instrument, topographic survey and others project.

DT-22/52

Magnification:30x / Accuracy:2"/5" / Base and mainbody structure:separate style  
Shortest veiwing distance:±1.4m / Optional:optical pointer

- ◆ **Special design :single horizontal spindle which cross telescope**  
New design concept,combine higher precision, better stable specification and shock resistance ability.
- ◆ **Absolute angle encoder system**  
Able to read angle data without passing“0”, let angle measurement be more simpler and convenient.
- ◆ **Down Laser point**  
Able to emit laser beam which in same axis with collimation of telescope,Make the instrument easier to set up and operate.
- ◆ **Superior water and dust proof specification IP66**  
Able to prevent dust and powder percolate inside, maintain good performance even in bad environment.



DT-21/51

Magnification:30x / Accuracy:2"/5" / Base and mainbody structure:separate style  
Shortest veiwing distance:±1.4m / Optional:optical pointer

- ◆ **Special design :single horizontal spindle which cross telescope**  
New design concept,combine higher precision, better stable specification and shock resistance ability.
- ◆ **Absolute angle encoder system**  
Able to read angle data without passing“0”, let angle measurement be more simpler and convenient.
- ◆ **Down Laser point**  
Able to emit laser beam which in same axis with collimation of telescope,Make the instrument easier to set up and operate.
- ◆ **Superior water and dust proof specification IP66**  
Able to prevent dust and powder percolate inside, maintain good performance even in bad environment.



DT-23/53

Magnification:30x / Accuracy:2"/5" / Base and mainbody structure:integration  
Shortest veiwing distance:±1.4m / Optional:optical pointer

- ◆ **Special design :single horizontal spindle which cross telescope**  
New design concept,combine higher precision, better stable specification and shock resistance ability.
- ◆ **Absolute angle encoder system**  
Able to read angle data without passing“0”, let angle measurement be more simpler and convenient.
- ◆ **Down Laser point**  
Able to emit laser beam which in same axis with collimation of telescope,Make the instrument easier to set up and operate.
- ◆ **Superior water and dust proof specification IP66**  
Able to prevent dust and powder percolate inside, maintain good performance even in bad environment.





## DT-22L/52L

Magnification:30x / Accuracy:2"/5" / Base and mainbody structure:separate style  
Shortest veiwing distance:±1.4m / Optional:optical pointer

### ◆ Special design :single horizontal spindle which cross telescope

New design concept,combine higher precision, better stable specification and shock resistance ability.

### ◆ Absolute angle encoder system

Able to read angle data without passing"0", let angle measurement be more simpler and convenient.

### ◆ Up Laser point

Laser focusing point:5mm/100m; Valid optical distance:≥200m(Day)  
Deviation between laser focusing point and telescope collimation axis:≤5"

### ◆ Down Laser point

Able to emit laser beam which in same axis with collimation of telescope,Make the instrument easier to set up and operate.

### ◆ Superior water and dust proof specification IP66

Able to prevent dust and powder percolate inside, maintain good performance even in bad environment.



### Application

Our innovated product that named inverted electronic theodolite, Which can solve the problem of not forward erecting equipment in specific environment. The instrument also can be installed on the crane, steel, iron and other non- on the ground. Especially suitable for shipbuilding, mine tunnel, bridge and other places.

## DT-23L/53L

Magnification:30x / Accuracy:2"/5" / Base and mainbody structure:integration  
Shortest veiwing distance:±1.4m / Optional:optical pointer

### ◆ Special design :single horizontal spindle which cross telescope

New design concept,combine higher precision, better stable specification and shock resistance ability.

### ◆ Absolute angle encoder system

Able to read angle data without passing"0", let angle measurement be more simpler and convenient.

### ◆ Up Laser point

Laser focusing point:5mm/100m; Valid optical distance:≥200m(Day)  
Deviation between laser focusing point and telescope collimation axis:≤5"

### ◆ Down Laser point

Able to emit laser beam which in same axis with collimation of telescope,Make the instrument easier to set up and operate.

### ◆ Superior water and dust proof specification IP66

Able to prevent dust and powder percolate inside, maintain good performance even in bad environment.



## DT-23D

Magnification:30x / Accuracy:2"/5" / Base and mainbody structure:integration  
Shortest veiwing distance:±1.4m

### ◆ Special design :single horizontal spindle which cross telescope

New design concept,combine higher precision, better stable specification and shock resistance ability.

### ◆ Absolute angle encoder system

Able to read angle data without passing"0", let angle measurement be more simpler and convenient.

### ◆ Down Laser point

Able to emit laser beam which in same axis with collimation of telescope,Make the instrument easier to set up and operate.

### ◆ Superior water and dust proof specification IP66

Able to prevent dust and powder percolate inside, maintain good performance even in bad environment.





## Application

The series of products adopt new design concepts and superb craftsmanship, which bring you fast and convenient measurement experience, our products not only applicable to construction lofting, road lofting, topographic and cadastral surveying and control point surveying and other surveying work, but also be used for tunnel surveying, mining excavation, hangar construction, power line measurement and power line lofting, dams and other large building deformation monitoring, measurement and positioning for large ship manufacturing.

## PTS-210/510 Optional:optical pointer

- ◆ **Special design with single horizontal spindle cross telescope**  
New design concept, which combine with high precision, stability and shock resistance ability.
- ◆ **High precision for distance and angle measurement system**  
High precision for angle measurement, which guarantee to get accurate data. Professional absolute encode system, without initialization when you shut down or open instrument.
- ◆ **Superior telescope system with high definition**  
Telescope system with high definition and brightness, which effectively to alleviate eye fatigue. More visual range and high definition.
- ◆ **Laser centre point, convenient to working**  
Instrument operate simple and convenient, which adopt to working different environment.
- ◆ **Water-proof IP55**  
Superior water and dust proof specification IP55.
- ◆ **Ultra-short measurement time**  
As containing new design concepts, the measurement time of all models (Reflector, standard single prism) is 1.2s.
- ◆ **Good distance measuring accuracy**  
Standard single prism: measuring distance is 2000m, accuracy is " $\pm(2\text{mm}+2\text{ppm}\cdot D)$ ".
- ◆ **Powerful software features**  
Build-in large capacity internal storage and kinds of measuring program, convenient and stable.



With new design concept and production craft, PTS-22R not only includes fast and precise measuring system, but also have big colour display board.

## ◆ Distance measuring without prism

Measuring distance in certain range without needing to set reflective prism.

## PTS-210R/510R Optional:optical pointer

- ◆ **Special design with single horizontal spindle cross telescope**  
New design concept, which combine with high precision, stability and shock resistance ability.
- ◆ **High precision for distance and angle measurement system**  
High precision for angle measurement, which guarantee to get accurate data. Professional absolute encode system, without initialization when you shut down or open instrument.
- ◆ **Superior telescope system with high definition**  
Telescope system with high definition and brightness, which effectively to alleviate eye fatigue. More visual range and high definition.
- ◆ **Laser centre point, convenient to working**  
Instrument operate simple and convenient, which adopt to working different environment.
- ◆ **Ultra-short measurement time**  
As containing new design concepts, the measurement time of all models (Reflector, standard single prism) is 1.2s.
- ◆ **Good distance measuring accuracy**  
Reflector: measuring distance is 800m, accuracy is " $\pm(5\text{mm}+2\text{ppm}\cdot D)$ ".  
Standard single prism: measuring distance is 2500m, accuracy is " $\pm(2\text{mm}+2\text{ppm}\cdot D)$ ".  
Without prism: measuring distance is 300m, accuracy is " $\pm(5\text{mm}+2\text{ppm}\cdot D)$ ".
- ◆ **Powerful software features**  
Build-in large capacity internal storage and kinds of measuring program, convenient and stable.



Application

The series of products adopt advanced spindle processing technology and improved internal optical path design. Which Instead of the traditional vertical ways that can be transfer data(position, setting point, calibration) to each floor from the bottom earth, it means that realized the function of precise controlling, which applicable to shipbuilding, construction, water conservancy and various of other engineering fields.



PLV-1B

- ◆ **High definition optical system with bigger range visual field**  
Adapt high definition optical system with imaging more clear. With 0.4M ultra-short visual distance that bring bigger working range for measurement.
- ◆ **Innovation of plummet technology, horizontal and vertical spindle concentric**  
We have improved internal structure and optics road, which make the up and down laser point totally coaxial.
- ◆ **Advanced spindle system technology with reliable and stable testing**  
Advanced spindle processing technology, which combine with high precision, stability and shock resistance ability.
- ◆ **Humanized design of potentiometer knob**  
Combined with the design of brightness adjustable and double power switch, which meets the custom of instrument operator.
- ◆ **Infinity focus adjusting knob**  
Original infinity focus adjusting design, not only able to avoid slippage phenomenon, but also could extend service life of knob.
- ◆ **Laser point function**  
Able to actualize laser point function by putting handle and instrument body at levelling way.
- ◆ **Water-proof feature**  
Professional water-proof design completely prevented by damp, water-proof degree is IP55.
- ◆ **Other specification**  
Standard deviation of up vertical view: 1/45000; Laser effective range:  $\geq 120\text{m}(\text{day})/\geq 250\text{m}(\text{night})$ ; light power: 5mw;

Attachments



Base



Base Connector



Laser Target

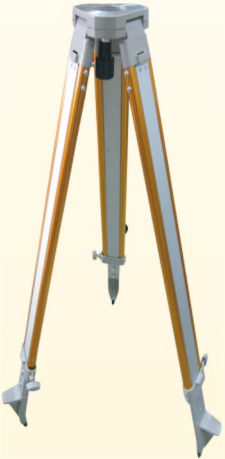


Zenith ocular

Tripod



PFA-2  
Theodolite Tripod



PFA-1  
Theodolite Tripod



PFB-1  
Levels Tripod



PFW-1  
Total Station Tripod



PFD-1  
Centre Pole Tripod

Factory scene

