

OPERATING MANUAL

CONSIGNES DE FONCTIONNEMENT
INSTRUCCIONES DE FUNCIONAMIENTO



SDL 32

DIGITAL LEVEL



SitePro™

IMPORTANT:
Read Before Using

IMPORTANT:
Lire avant usage

IMPORTANTE:
Leer antes de usar

Set Your Sights On Precision and Accuracy with Dave White's SitePro

Thank you for your purchase of our optical instrument. The purpose of this user's guide is to acquaint you with your instrument, its components, safety, proper care, and handling.

Our instruments are constructed to withstand rugged field use. Like all precision instruments, however, they should be treated with reasonable care to prolong life and accuracy.

IMPORTANT! All instruments are adjusted when they are shipped from the factory. It is the customer's responsibility to check and to ensure instruments are adjusted prior to using.

A accuracy check is recommended before the initial use of your instrument, and then periodically from that point forward (**see Accuracy Check**). If your instrument is dropped or you have uncertainty, then return it to your reseller for a calibration check and adjustment if needed.

We would appreciate your feedback on this product or any other product comments or suggestions. Please send to info@dwsitepro.com



INTENDED USE

This product is a digital level with the latest digital readout which helps users both read the result efficiently and reduce visual measurement errors. The digital level meets the requirements of various kinds of construction surveying topographic surveying agricultural surveying and leveling surveying There is also a self-compensating design which can improve work efficiency.

FEATURES

The numbering of the product features shown refers to the illustration of the instrument on the graphic page.

1. Coarse Sight
2. Lifting Handle
3. Objective Lens
4. Trigger Measurement Button
5. Focusing Hand Wheel
6. Horizontal Tangent Hand Wheel
7. Graduated Circle
8. Foot Screws
9. Tribrach
10. Graduated Circle Indicator
11. Power/Communication Connector
12. Keys
13. Reticule Adjusting Window
14. Circular Bubble Adjusting Screw
15. Window For Circular Bubble
16. Eyepieces
17. Display

PREPARATIONS

Charging Battery

Built-in Li-Ion rechargeable battery is used to power your instrument.

Connect the charger to the Power/Communication Connector **11** on the side of the instrument and plug the adapter into the 220-volt AC outlet.

A flashing battery symbol indicates

that the battery is being charged; complete four blocks indicate that the battery is fully charged.

Disconnect the charger when the charging is complete.



ATTENTION

Charge the battery every three or four months if the instrument has been stored for long periods.

OPERATION



WARNING

Do not subject the instrument to extreme temperatures or variations in temperature. As an example, do not leave it in vehicles for long time. In case of large variations in temperature, allow the instrument to adjust to the ambient temperature before putting it into operation. In case of extreme temperatures or variations in temperature, the accuracy of the instrument can be impaired.

Avoid heavy impact to or falling down of the instrument. After severe exterior effects to the instrument, it is recommended to perform Accuracy Check before continuing to work.

This instrument has been calibrated to precise accuracies at the factory. However, an accuracy check is recommended before the initial use of the instrument and then periodically.

See Accuracy Check.

Key	First Function Mode	Second Function Mode
$\Delta H \downarrow$	Display the height difference between the measuring point and the previous measuring point	Confirm
REC \blacktriangle	Store data	Move up on the selection
FUNC \blacktriangledown	Trigger measurement	Move down on the selection
MENU	Switch between function modes	Set parameters
Power ON/OFF	Power ON OFF	LCD backlight ON OFF

Setting Up the Instrument

Check that the instrument battery is fully charged before setting up for measuring.

Position the instrument on a firm surface, mount it to a tripod and level.

Press and hold Power ON/OFF for two second to turn ON or OFF the instrument.

While instrument is ON, press and hold Power ON/OFF for less than two seconds to turn LCD backlight mode ON and OFF.

When the backlight mode is ON, the backlight will automatically turn OFF after five-minutes of inactivity. Pressing any key will turn backlight ON again.

Trigger Key is a label on top of the shell. It is a touch switch. Touch the label to trigger measurement.

To use the electronic measurement system of this digital level, you must use the correct leveling rod, the **SitePro #11-805-BM** barcode leveling rod.

IMPORTANT Measurement accuracy of the instrument depends on the barcode scale accuracy of the leveling rod. The appropriate barcode leveling rod must be used to facilitate the use of this instrument.

Focusing and Sighting

Use the telescope to sight a target. Turn the Telescope Eyepiece **16** until the line pattern of the crosshair is sharply defined.

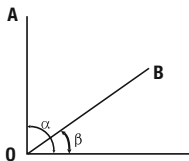
Observe through the coarse sight **1**. Move the instrument to sight the leveling rod. Turn the Focusing Hand Wheel **5** until there is no parallax and the leveling rod is sharply defined.

Turn the Horizontal Tangent Hand Wheel **6** until the vertical wire of the crosshair is accurately on the center of the leveling rod.

Horizontal Angle Measurement

Align the vertical wire of the reticule with point **A**, and then the angle reading of the Graduate Circle Indicator **10** will be α . Turn the instrument and sight point **B**, and then the angle reading of the Graduate Circle Indicator **10** will be β .

Then $\angle AOB = \alpha - \beta$



Leveling Surveying

Press the power ON/OFF to switch the instrument ON. Observe through the Coarse Sight **1** and approximately sight the barcode on the leveling rod.

Turn the Focusing Hand Wheel **5** until there is no parallax and the leveling rod is sharply defined. Turn the Horizontal Tangent Hand Wheel **6** until the vertical wire of the crosshair is accurately on the center of the leveling rod. Adjust the position of the rod if the horizontal wire of the crosshair is not perpendicular to the rod.

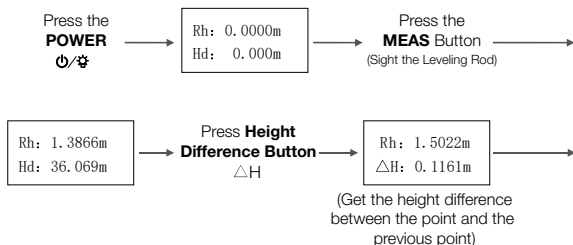
Since the steering range of the Horizontal Tangent Hand Wheel **6** is small, when the wheel cannot be turned anymore, turn it backwards in two or three circles.

Then sight the target again and center it using the Horizontal Tangent Hand Wheel **6**.

Press the Trigger Measurement Button **4**, then press Height Difference Button $\Delta H \downarrow$ and the height difference will be displayed.

After pressing the Trigger Measurement Button **4** again, the instrument will calculate the height difference and display the result.

After the measurement is finished, press and hold the **⏻/⊗** key to switch OFF the instrument.

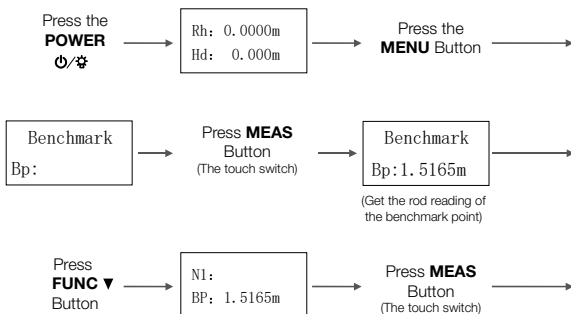


Repeat the steps above until getting results of all the measuring points → Press and hold the Power Button **⏻/⊗** to switch off the instrument

ATTENTION: To store the results of this measuring mode, press the Store Button **REC** **▲**. To exported data to computer, install software that was included with instrument when purchased.

Leveling Surveying with A Benchmark

To use this mode, first set a benchmark first and measure several points, but no more than 9 points. The height difference between the points and the benchmark point will be calculated.





(Get the height difference between the No. 1 point and the benchmark point)

Press **MEAS** Button
(The touch switch)

N2: -0.0084m
BP: 1.5165m

(Get the height difference between the No. 2 point and the benchmark point)

Repeat the steps and measure the other points. Maximum of (9) Nine points can be measured.

Press **FUNC ▼** Button
or **REC ▲** Button
(to check the measurement of every point)

Press **MENU** button
(4) four times (exit)
and switch to the normal measuring mode

NOTICE: Press **ΔH** key to switch between the display of leveling rod reading of the benchmark point and the display of the sighting distance of the current measuring point.

While in this mode the record cannot be stored. The record will be automatically deleted after exiting.

Parameter Settings

Press **MENU** button (3) three times.

Automatic Shutdown

When the auto shutdown mode is switched ON, the instrument will shut down automatically after a (30) thirty-minute of inactivity.

Press **MENU** Button (3) three times.

Parameters
AUTO PWR: ON

Press **ΔH** button to switch ON/OFF.

Press **MENU** button twice to return to leveling surveying mode

Unit of Measure

The unit of measure can be switched between Feet and Metric.

Parameters
AUTO PWR: ON

Press **FUNC** button (3) three times.

Parameters
UNIT: FT

Press **ΔH** button to switch from FT to METRIC.

Press **MENU** button twice to return to the leveling survey mode.

LCD Backlight

When the LCD backlight mode is ON, the instrument will turn OFF the LCD backlight automatically

after five-minutes of inactivity. If the backlight turns off, press any key to turn the backlight on.

When the LCD backlight mode is off, press the power key to turn the backlight ON.

Press **MENU** button (3) three times.

Parameters
AUTO PWR: ON

Press **FUNC** button once.

Parameters
LIGHT: ON

Press **ΔH** button to switch ON/OFF.

Press **MENU** button twice to return to the leveling survey mode.

Inverse Leveling Rod Mode

In this mode, the staff can be inverted for measurements from the ceiling. After switching to this

mode, take the following steps to switch the mode off to make normal measurement.

Press **MENU** Button (3) three times.

Parameters
AUTO PWR: ON

Press **FUNC** button twice

Parameters
INV Staff: off

Press **ΔH** button to switch ON.

Parameters
INV Staff: On

Press **MENU** button twice.

Rh ↓ 0.000m
Hd: 0.000m

In this mode, there is a ↓ symbol following the leveling rod.

ACCURACY CHECK

Circular Bubble

After setting up the tripod and mount the instrument, rotate the foot screws to center the circular bubble.

Turn the instrument 180 degrees round and if the bubble moves away from the mid-position, calibration will be needed.

Eliminate half the residual deviation by means of foot screws and half by adjusting the circular bubble with the adjustment screws using the hexagon spanner.

Tighten a screw and the bubble will move towards the screw; loosen a screw and the bubble will move away from the screw. First adjust the

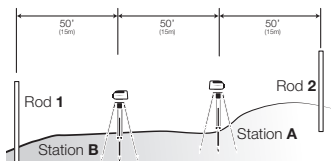
closest screw to the connecting line between the center of the bubble and the mid-position until the bubble is centered.

If the bubble cannot be centered with the single screw, adjust another screw. Repeat the procedure until the bubble is centered.

The bubble is adjusted correctly if it is always on the center wherever the telescope sights. At this point the compensator is within its working range.

Interest Point Detection

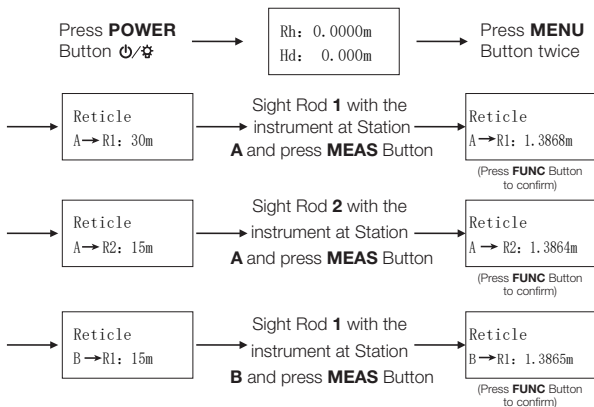
To avoid the influence of transport, storage and temperature on the measurement result, interest point detection is needed.

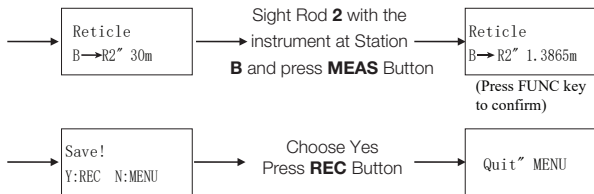


Set up two leveling rods (**1** and **2**) roughly 150-ft (45m) apart.

Divide this distance into three and define two instrument stations (**A** and **B**) about 50-ft (15m) away from the leveling rods on the connecting line between them.

Measure both leveling rods from each of these stations.





Check that the circular bubble is on the center before measurement.

During the calibration, if there is no reading after pressing **MEAS** button, check if the distance between the instrument and the leveling rod is correct.

The position must not be changed. For example, when the required distance between instrument and rod is 100-ft (30m).

A deviation within 16-ft (± 5 m) is acceptable, there will be no reading if the distance is not within 80 to 115 feet (25m to 35m).

DATA EXPORT FOR DIGITAL LEVEL

Install Software onto your computer

Connect instrument to the computer using USB cable.

Execute "level_data_manage" on your computer.

Press [**Read**] button to retrieve saved data from Digital Level.

Instruction

[Save]: Export and Save data as Excel® Document

[Cope]: Copy displayed data into clipboard

[Read]: retrieve saved data from Digital Level

Note: After exporting and saving data to computer, the data file can be opened with Microsoft® Excel.

MAINTENANCE AND SERVICE

Store and transport the tool only in the supplied protective case.

Keep the tool clean at all times.

Do not immerse the tool into water or other fluids.

Wipe off debris using a moist and soft cloth. Do not use any cleaning agents or solvents.

Regularly clean the surfaces at the exit opening of the laser in particular, and pay attention to any fluff of fibers.

If the tool should fail despite the care taken in manufacturing and testing procedures, repair should be carried out by an authorized after-sales service center for Dave White's SitePro instruments.

In all correspondence and spare parts orders, please always include

the model number and serial number of the instruments.

All precision instruments should be cleaned, lubricated, checked and adjusted ONLY at a qualified instrument repair station or by the manufacturer, at least once a year.

In case of repairs, send in the instrument packed in its protective case.

ENVIRONMENT PROTECTION



Recycle raw materials & batteries instead of disposing of waste. The unit, accessories, packaging & used batteries should be sorted for environmentally friendly recycling in accordance with the latest regulations.

TECHNICAL DATA

SDL32

Accuracy of Distance Measurement	$D \leq 10\text{m}$	$< \pm 10\text{mm}$
	$10\text{m} < D \leq 50\text{m}$	$< \pm 0.1\% D$
	$D > 50\text{m}$	$< \pm 0.2\% D$
Measuring Range:	2m ~ 100m	
Deviation for 1 km double-run leveling	Electronic Measurement	1.5 mm/km
	Visual Measurement	1.5 mm
Minimum Display Value:	Elevation	0.0001 units
	Distance	0.001 units
Measuring Time:	< 3"	
Measuring Unit:	m, 10ths (inches)	
Telescope:		
Magnification	32 power	
Image	Erect	
Resolving Power	3"	
Field of view	1° 20'	
Compensator:		
Type	Magnetic Damping, Pendulum Mechanism	
Compensator Range	$\pm 15'$	
Compensator Accuracy	0.3" /min.	
Setting Accuracy	$\pm 0.4''$	
Circular Level Sensitivity:	8' /2mm	
Data Storage:		
Internal	1000 Records	
Interface	Micro-USB	
Power Supply:	Rechargeable Li-Ion battery provides >20 hours of continuous work	
Environment:	IP 55	
Operating Temperature:	-4° F ~ 122° F (-20° C ~ 50° C)	
Net Weight:	4.2 lb (1.9kg)	

GENERAL SAFETY RULES

⚠ WARNING Read all instructions.

Failure to follow all instructions listed below may result in serious injury.

⚠ WARNING When moving a tripod-mounted instrument, handle with care.

Carry only in an upright position. Do not carry over your shoulder or in a horizontal position. Improper handling may result in instrument damage

Handle the instrument by its base when removing from the case or attaching to a tripod.

Never use force on any parts of the instrument. All moving parts will turn freely and easily by hand.

Check the leveling and indication accuracy of the instrument each time before using and after longer transport of the instrument.

Protect the instrument against moisture and direct sun light.

Do not subject the instrument to extreme temperatures or variations in temperature. As an example, do not leave it in vehicles for long time. In case of large variations in temperature, allow the instrument to adjust to

the ambient temperature before putting it into operation. In case of extreme temperatures or variations in temperature, the accuracy of the instrument can be impaired.

Avoid any impact to or dropping of the instrument. After severe exterior effects to the instrument, it is recommended to carry out an accuracy check each time before continuing to work.

Place the instrument in the provided case when transporting it over larger distances (e.g. in the car). Ensure that the instrument is correctly placed in the transport case. When placing the instrument in the case.

When carrying instrument, always remove the instrument from the tripod when transporting or carrying it at the jobsite. If the instrument must be carried on the tripod, hold the instrument as vertically as possible and keep it in front of you. Never carry the instrument horizontally over your shoulder.

When transporting instrument long distances, always place in the carrying case.

SAVE THESE INSTRUCTIONS

LIMITED WARRANTY

Dave White's SitePro ("Seller") warrants to the original purchaser only, that SDL32 optical instrument will be free from defects in material or workmanship for a period of two (2) years from date of purchase.

SELLER'S SOLE OBLIGATION AND YOUR EXCLUSIVE REMEDY under this Limited Warranty and, to the extent permitted by law, any warranty or condition implied by law, shall be the repair or replacement of parts, without charge, which are defective in material or workmanship and which have not been misused, carelessly handled, or misrepaired by persons other than Seller or Authorized Service Center. To make a claim under this Limited Warranty, you must return the complete laser, optical instrument or SitePro product, transportation prepaid, to SITEPRO Service Department or Authorized Service Center. Please include a dated proof of purchase with your tool. For locations of nearby service centers, please call 1-855-354-9881.

THIS LIMITED WARRANTY DOES NOT APPLY TO ACCESSORY ITEMS SUCH AS TRIPODS, RODS, HAND LEVELS, FIELD SUPPLIES, TAPES, MOUNTING DEVICES AND OTHER RELATED ITEMS. THESE ITEMS RECEIVE A 90 DAY LIMITED WARRANTY.

To make a claim under this Limited Warranty, you must return the complete product, transportation prepaid. For details to make a claim under this Limited Warranty please visit www.dwsitepro.com or call 1-855-354-9881.

ANY IMPLIED WARRANTIES SHALL BE LIMITED IN DURATION TO ONE YEAR FROM DATE OF PURCHASE. SOME STATES IN THE U.S., AND SOME CANADIAN PROVINCES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING BUT NOT LIMITED TO LIABILITY FOR LOSS OF PROFITS) ARISING FROM THE SALE OR USE OF THIS PRODUCT. SOME STATES IN THE U.S., AND SOME CANADIAN PROVINCES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE IN THE U.S., OR PROVINCE TO PROVINCE IN CANADA AND FROM COUNTRY TO COUNTRY.

THIS LIMITED WARRANTY APPLIES ONLY TO PRODUCTS SOLD WITHIN THE UNITED STATES OF AMERICA, CANADA AND THE COMMONWEALTH OF PUERTO RICO. FOR WARRANTY COVERAGE WITHIN OTHER COUNTRIES, CONTACT YOUR LOCAL SITEPRO DEALER OR IMPORTER.



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