

RetroSign – Calibration

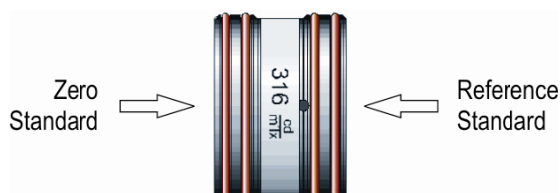
The RetroSign is factory calibrated, but a calibration should always be carried out before starting a series of measurements. The calibration process automatically compensates for instrument offsets, leakage and other known “errors” and calculates calibration factors for each observation angle. After a calibration the Retroreflectometer will display »true« R_A values.

The Reference Cap

To make sure that the calibration of the Retroreflectometer is correct it is important that the surface on the reference cap is clean and undamaged. Store the reference in a dry and clean environment, and be careful not to touch the reference cap (reflective side).

If the surface is stained, scratched, or broken the reference cap must be replaced. In case of dust on the surface, clean the reference cap gently by using a soft cloth with a mild household detergent. Wipe carefully with dry linen cloth afterwards.

To ensure reliable measurements, it is recommended that the reference cap is periodically recalibrated to a traceable standard. DELTA Light & Optics offers calibration traceable to PTB (Physikalisch-Technische Bundesanstalt) and NIST (National Institute of Standards and Technology). For information contact your local distributor or DELTA Light & Optics, Denmark.



The Calibration


RetroSign features two levels of calibration: **Quick** and **Full**.

Quick calibration is an “everyday” calibration using zero results and reference values from the latest full calibration. This option may only be used with the same reference unit that was used for the full calibration.

Full calibration is used for high accuracy calibration of zero and reference.




Quick calibration

Quick calibration is initiated by pressing the  button and then the trigger. Mount the reference cap (reflective side) before triggering. The display shows **WAIT** and the Calibration is executed immediately using previous defined reference values. If the calibration fails, the display shows a short warning message saying that the old calibration values will be used; a status flag will be set and logged for this condition.





Full calibration



Full calibration is initiated by pressing the  button and then . Follow the displayed procedure.


Zero

Mount the zero cap (dark side) on the instrument. Press the  or the trigger when ready. The display shows **WAIT** while measuring and then shortly displays the measured zero values. If the measured values are ok the instrument is ready for the next step in the calibration procedure. If high zero values are measured, a warning text will be shown and the user asked to check the black target and try again.


Reference

Mount the reference cap (reflective side). If necessary edit the displayed reference value using  or  until it matches the value printed on the reference unit, press  or the trigger to advance to the next reference value. When all reference values has been checked and edited the instrument executes the calibration process. **WAIT** is displayed during the actual calibration measurement and then the calculated calibration factors are shortly displayed. If errors are detected during the calibration process a warning text is displayed and the user is asked to check the white target and retry the calibration by pressing  or the trigger again. The reference values will not need to be checked again.

When the calibration is successful, continue by pressing ,  or the trigger.

After a successful calibration the  icon is shown and the instrument is ready for measurements. It is good practice to do a measurement on the calibration unit immediately after the calibration to check the values.

Reduced aperture option

When the instrument is configured for measurements with reduced aperture the calibration monitor should be disabled. This changes the checking of the calculated calibration values and displays the  icon to alert the user that this option has been selected.

The instrument must be recalibrated whenever this function is enabled or disabled.