

## The principle of measurement of DIMETIX Sensors

The sensors measure a distance based on phase shift



The Laser sends a light beam 1 with a wavelength of 650nm and modulated frequencies. This modulated light is being reflected by the target object 2 and received by the receiver optic 3. Out of the phase shift of the modulated signals in-between of sent and received light, the distance is being calculated.

In order to enable a measurement, the necessary amount of light must reach the receiver optic ③. With dark (black) targets ② only a low signal can be achieved, whereas with light-colored targets ③ a strong signal is the result. The signal level must be sufficient in proportion to the back ground light. Unfavorable signal proportion occur with dark targets ③ and a lot of background light (e.g. dark target and incident solar radiation on the target surface)

The DIMETIX Sensors measure in order to always maintain the specified accuracy as long as the allowed operation is being observed. To enable measurements with bad signal proportions the devices adapt themselves to longer measuring times.