

# GLM Lasermesstechnik GmbH – MEASUREMENT IN THE HEIGHTS OF THE SKY

## MEASUREMENT IN THE HEIGHTS OF THE SKY

### OPTICAL 3D MEASUREMENT GUARANTEES THE ACCURATE ASSEMBLY OF WIND TURBINES AND HELPS TO INCREASE OPERATIONAL STABILITY

Wind turbines are under high dynamic loads with highly fluctuating conditions. Therefore, the tower as a supporting element must permanently and reliably transfer the arising loads from the operation into the ground. Depending on the used type of tower construction, mostly tubular steel towers with and without cable bracing are chosen. In this case, the tower consists of individual steel tube sections that are connected via screwed flange connections. To avoid damage to the flange connections due to fatigue, quality control is not only important within the production process, but also essential during final assembly on site.

#### High-precision measurement far above the ground

High-precision measurement far above the ground poses a special challenge. The constant vibration of the tower brings the axis compensators of modern measuring instruments to the limit of their operational range and thus makes measurement almost impossible. In addition, the very confined space in the tower makes a stable instrument setup difficult.

#### Unique on the market

This is where the capabilities of GLM's 3D measuring system come into their full effect. With this measuring system, it is possible to perform a highly accurate 3D measurement even with the compensator switched off. In addition, the choice of instrument location is completely flexible. The Total Station can be positioned directly on the flange using a magnetic adapter.

#### Evaluation and documentation

All collected data is loaded into [3-DIM PC Basic](#) and [3-DIM PT](#) for later evaluation and documentation. The programmes are an analysis and display package for the desktop that can be seamlessly integrated into all CAD systems. Thanks to the visual graphics, the object geometry is easy to check.