

**MONITORING OF ROCKFORMATION ABOVE RAILWAYTRACK**

**Industry:** Geodesy / Construction  
**Application type:** Monitoring

**Brief description**

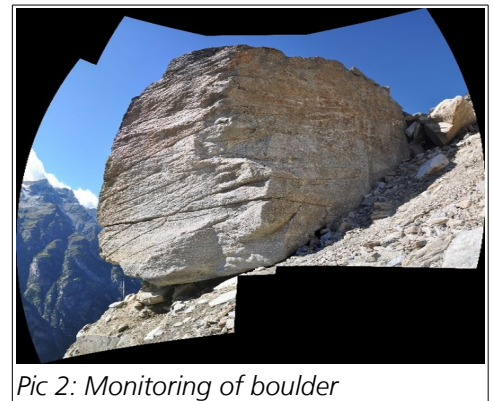


Pic 1: Dimetix sensors in use

Consultant Engineers have used Dimetix Laser Sensors to monitor a debris flow activity that is causing a mountain creek to dam up. This damming up can lead to the flooding of a rail track. Both lasers measure to a distance of around 25 m. As soon as a significantly shorter measuring distance is detected or a measuring error occurs, an alert is issued via a data logger with GSM cell phone. The lasers are part of a larger system that monitors landslide activity and a debris flow channel. Webcams, among other things, are also used. In recent years, 3 debris flow events have occurred which, thanks to the alert system and associated measures, were overcome without loss or damage. The system was installed in October 2010 and since then has operated without problem. The measuring interval of the lasers is 5 min.

The entire system is powered by electricity but has a solar panel and a rechargeable battery to ensure that it does actually operate continuously.

The two new lasers (Pic 1) are used to monitor a massive block (approx. 750m<sup>3</sup>, Pic 2) which is located at the edge of a thawing permafrost area and which is moving down the valley. It is threatening a settlement area. The lasers are used here in combination with a data logger and other measuring probes (distance sensors, angle measurement sensors, etc.). The system is to be installed in the next three weeks. A structural stabilization measure is being implemented in the meantime. The block is already being monitored by distance measurement sensors and a smaller logger with text message alert.



Pic 2: Monitoring of boulder

**Customers advantages**

- Measuring range 0.05 up to 500m
- Accuracy ± 1.5 mm
- Easy alignment thanks to the visible laser beam
- Maintenance free — no breakable moving parts



## Products used

### DLS-C series

The DLS-C distance measuring device measures absolute distances up to 500 meters on reflective foil without contact. Due to most innovative laser technology the DLS-C has a unique accuracy of  $\pm 1.5$  mm. A further advantage of the DLS-C is the quick determination of the positions of moving objects.

The DLS-C is an optical distance measuring device. It measures, maintenance-free, distances up to 65m on natural surfaces. It determines positions of objects that are difficult to access or may have very high surface temperatures. Just as easily, it accurately measures distances in hazardous environments.

The DLS-C is designed to be suitable for both, heavy industrial and outdoor applications. It is constructed of a solid metal case and provides class IP65 environmental protection. **It represents a cost efficient solution even at extreme environment temperatures as high as +50° C.** Furthermore, various features make it flexible for multiple applications in numerous industries such as automotive, paper, metal and textile.

### Specification

- Measuring range 0.05 up to 500m
- Accuracy  $\pm 1.5$  mm
- Repeatability  $\pm 0.4 - \pm 1.5$  mm
- Extended operating temperature
- Solid metal case IP65
- Supply voltage



For new projects we recommend our **D-Series**. Further information can be found [here](#).

For more information please contact us on [application@dimetix.com](mailto:application@dimetix.com)

