Datasheet

Cabling of MAGIC I telescope

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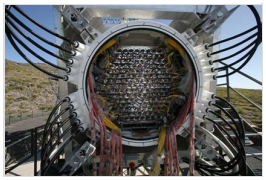
- Special assembling of multimode optical fibers for the transmission of analog data from the detector of the telescope to the evaluation unit, which could not be directly attached on the telescope because of weight reasons.
- The signals to be detected have a half width of 2-3 NS and can be recorded through 1000 individual detectors.

Magic I telescope



Fiber optic cabling of detector

Special challenges during the entire assembling process

Differences of the signal propagation delay

The customers requirement was to achieve a difference in the propagation delays of less than 1 ns of all fibers, in order to clearly assign an event to a detector. To achieve this goal Sachsenkabel assembled 1440 individual fibers with a length tolerance of ± 0.06%.

Protection and cable laying tube with screw connection

The permanent installation of the cable in an outdoor area with extreme climatic conditions prevailing at the site necessitated the development of an appropriate protection and cable laying tube with screw connection.

Technical data

Cable length	160 m
Cable type	9x8G50/125 OM2
Number of fibers	1440
Difference of the signal propagation delay through all fibers	≤ 0,7 ns
Operating temperature	-20°C bis 60°C