

Success Story

QDec-M Helio



QDec-M Helio qualifying an assembled Stellio heliostat at Hami 50MW CSP power plant

Highly accurate heliostat and mirror shapes are the precondition for optimum solar field performance. To reach best optical quality, it is indispensable to have a suitable and highly accurate control system.

QDec-M Helio is a fully automated optical measurement system for final quality control of mirrored heliostat modules before leaving the assembly hall.

Advantages of **QDec-M Helio**:

- ensures the optical quality of the fully assembled heliostat
- easy integration in the production line
- quick, contactless measurement in high resolution
- high accuracy and certified quality
- flexibly adaptable to different heliostat elevation angles
- data output specifically optimized to most relevant parameters for CSP applications
- integrated ray tracing model to calculate flux distributions, solar intercept factors, and to detect underperforming reflector areas
- quality report on each heliostat
- data for digital twin of the solar field

Credits

sbpsonne

QDec-M Helio is the best quality control system for heliostats you can find on the market. It helped us to reach a new level of optical quality with the Stellio heliostat and to successfully assure this level of quality in series production.

(Gerhard Weinrebe, Director sbp Sonne)

masermic

The **QDec-M Helio** system provides us with the required information to generate a highly accurate digital twin of the solar field. This allows us to optimize the solar field control in a way that was previously not possible.

(Iban Eizaguirre, Engineering Director Masermic)

Best Practice: Stello

Stello is an innovative heliostat with a pentagonal shape, which allows for dense heliostat field layouts with little shading and blocking and reduced atmospheric attenuation compared to rectangular heliostats. Its new axes arrangement allows the use of cost-efficient linear actuators for both axes, while the appropriate size and precise optics at comparably low manufacturing costs result in a significantly improved cost/performance ratio.

Due to its unique features, **QDec-M Helio** is used as standard quality control system in the Stello production.



Fully-assembled Stello heliostat

Best Practice: Hami 50MW CSP Tower (China)

In the **Hami 50 MW CSP Tower project**, 14.500 heliostats are distributed in a ring around the central heat collecting tower with a height of more than 200 meters. Using the Stello heliostat, this 50MW solar power plant was successfully connected to the grid on June 18, 2021, achieving 24-hour uninterrupted power generation.

QDec-M Helio was integrated in the heliostat assembly line and was used to check 100% of the fully assembled heliostats before installation in the solar field. Thereby, the heliostats were measured in different elevation angles to best match their average operation position, depending on their final position in the solar field. This innovative procedure helped to further improve the quality of the final product.



Hami 50MW CSP power plant



The solar field of our Hami 50 MW CSP Tower has set a new benchmark in optical quality and performance. We are very happy with the achieved results. (Sun Dengke, Director of New Energy Department at DBC)



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