

PARABOLIC DISH CONCENTRATOR (PDC-1)

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The design, construction and installation of the Parabolic Dish Concentrator, Type 1 (PDC-1) has been one of the most significant JPL concentrator projects because of the knowledge gained about this type of concentrator and the development of design, testing and analysis procedures which are applicable to all solar concentrator projects. The need for these procedures was most clearly understood during the testing period which started with the prototype panel evaluation and ended with the performance characterization of the completed concentrator. For each phase of the test program practical test procedures were required and these procedures defined the mathematical analysis which was essential for successful concentrator development. The concentrator performance appears to be limited only by the distortions resulting from thermal gradients through the reflecting panels. Simple optical testing can be extremely effective, but comprehensive mechanical and optical analysis is essential for cost effective solar concentrator development.