



Figure 11.39 Picture of the Euclides linear trough system

drop to 13 cents per kWh at a production volume of 15 MW/year. Figure 11.39 shows a picture of the Euclides system.

11.5.4 Entech

Entech, Inc. has been pursuing line-focus Fresnel concentrators since the start of the Federal PV program. They hold a fundamental patent on curved Fresnel lenses that have very high transmission (90%). These systems have improved over the years through demonstration projects at PVUSA, the 300-kW Austin 3M system, a 100-kW system at the Solar Park in Ft. Davis, Texas, being developed by Central and South West Utilities, and a 100-kW system at the Energy Park near Dallas, Texas, being developed by TU Electric. Entech was also part of the DOE PVMaT program to improve PV manufacturing processes. Entech systems use modified one-sun cells operating at 20X. Their newest, fourth-generation modules have an efficiency of about 15% at standard operating conditions. Entech projects a levelized electricity cost of 7 to 15 cents/kWh at an annual production rate of 30 MW/year [72]. A picture of an Entech system appears in Figure 11.12.

11.5.5 Fraunhofer-Institut für Solare Energiesysteme

The Fraunhofer Institute has been researching both concentrator cells and systems. GaAs cell efficiencies in the 24% range have been demonstrated. Fresnel module efficiencies