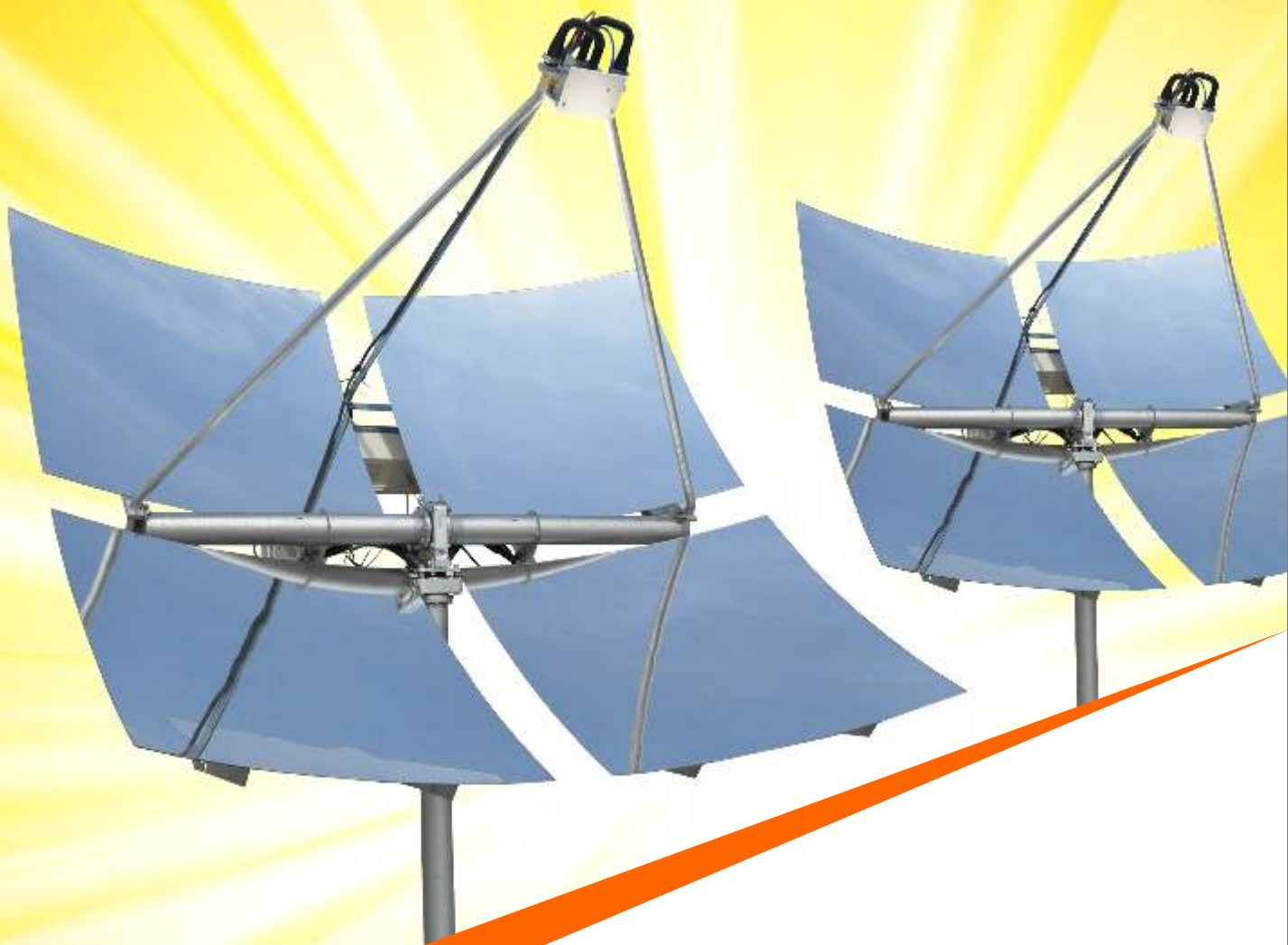


MAXIMUM POWER. MINIMUM SPACE.

- Cost effective option
- Minimum footprint
- Maximum conversion efficiency
- More power generation
- Heat and power from single system

Dense Array Concentrated Photovoltaic System



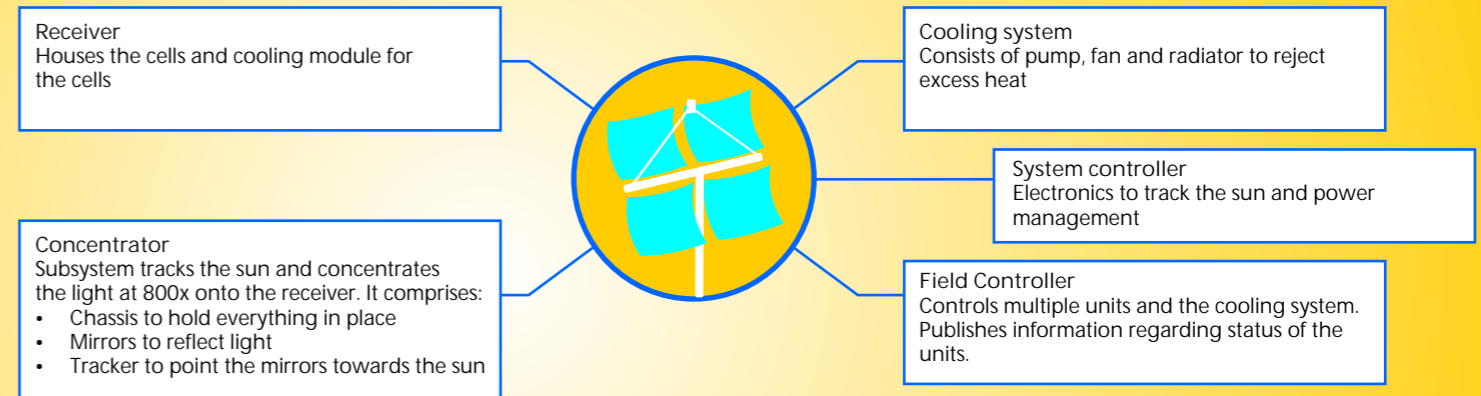
QUADSUN
SOLAR SOLUTIONS



DENSE ARRAY CONCENTRATED PHOTOVOLTAIC

Every high technology solar solution offered by QuadSun ensures you get maximum productivity at minimal costs, with high performance materials optimized to provide the lowest cost of electricity, ease of installation, and reliable power output with a low footprint.

QUADSUN SYSTEM COMPONENTS



QUADSUN offers the most cost-effective solar heating and combined heat and power solutions. This is enabled by our unique design and production methods that combine space-grade innovation with proven commercial technologies to deliver the lowest cost of energy.

TECHNOLOGY ADVANTAGE

Combined heat and power

QUADSUN systems embody several breakthroughs in optics, mechanics, thermodynamics, power electronics and tracking algorithms. These innovations help deliver low-cost, reliable solar energy in the form of heat, power or both, translating into a unique solution that offers both electricity and hot water from a single system.

Maximum conversion efficiency

The high reflectivity and precise parabolic mirrors combined with very efficient receivers maximize conversion of sunlight. The power receiver uses 33% efficient cells and the next generation cells are already breaching 40% efficiency.

The hot water solution has a unique design that allows benchmark heat rate transfers from the receiver to the medium that needs to be heated.

Reliability, durability and hassle-free operation

QUADSUN uses commercial designs and materials that have proven their longevity in several applications. QUADSUN has additionally tested all its components over several thousand hours to ensure trouble-free, clean power.

Low footprint ensures minimal space requirement

QUADSUN systems need only about half the space required to generate the same amount of energy as compared to other technologies. A low footprint is the outcome of tracking the sun using high efficiency cells.

More power and maximum energy generation

Mimicking sunflowers to track the sun enables QUADSUN to gather and convert more sunlight to energy. On a good day, QUADSUN can produce up to 70% more energy than other solar systems. The high efficiency combined with tracking ensures that the system always points at the sun, maximizing the conversion of sunrays into power.

TYPE	CONCENTRATED SOLAR THERMAL	COMBINED HEAT & POWER	COMBINED HEAT & POWER
MODEL	QUADSUN CST H3500	QUADSUN CHP 33-500	QUADSUN CHP 40-400
COMPONENTS			
Receiver	Y	Y	Y
Concentrator	Y	Y	Y
• Chassis	Y	Y	Y
• Mirrors	Y	Y	Y
• Tracker	Y	Y	Y
Cooling system	-	Y	Y
System controller	Y	Y	Y
Field controller	Y	Y	Y
SYSTEM OUTPUTS			
Electrical output (DC)	-	1 KW DC @1000W/m ² and 20°C ambient	1.2 KW DC @1000W/m ² and 20°C ambient
Voltage	-	500 V DC	600 V DC
Current	-	2 A	2 A
Thermal output	3.5 KW @1000W/m ² and 20°C ambient	2.3 KW @1000W/m ² and 20°C ambient	2.1 KW @1000W/m ² and 20°C ambient
Hot water output	90/50 ltrs/hr at 30/50°C above ambient @1000 W/m ² DNI	500 ltrs/day	450 ltrs/day
Module efficiency (electrical DC)	-	25.0%	29.5%
Optical efficiency	83%	78%	78%
Combined heat & power efficiency (DC)	-	75%	75%
Max temperature	140 °C	-	-
Max pressure	6 bar	-	-
SYSTEM PHYSICAL DATA			
Weight	90 kg	90 kg	90 kg
L x B x H	2.1 x 2.5 x 1.8	2.1 x 2.5 x 1.8	2.1 x 2.5 x 1.8
Mirror surface area (Precision optics solar grade)	4.2 m ²	4.2 m ²	4.2 m ²
Receiver area	75 cm ²	55 cm ²	55 cm ²
OPERATING CONDITIONS			
Ambient temperature	-20 to 60°C	-20 to 60°C	-20 to 60°C
Relative humidity	0-100%	0-100%	0-100%
Wind speed *	15 m/s	15 m/s	15 m/s
Survival wind speed	40 m/s	40 m/s	40 m/s
RECEIVER TECHNICAL DATA			
Cell efficiency	-	33.85% at 800x concentration	40% at 800x concentration
Max operating temperature	180°C	90°C	90°C
Power degradation	< 0.2% per year	< 0.2% per year	< 0.2% per year
Power degradation with temperature	0.1% /K	0.1% /K	0.1% /K
Module certifications	MNRE	MNRE (IEC pending)	MNRE (IEC pending)
SYSTEM CONNECTIONS			
Input power	24V DC Max 50 W	24V DC Max 50 W	24V DC Max 50 W
Communications	CAN Bus	CAN Bus	CAN Bus
TRACKER SPECIFICATION			
Azimuth	0-300°	0-300°	0-300°
Elevation	0-90°	0-90°	0-90°
Motors	Stepper motors (closed loop control with tracking algorithms)	Stepper motors (closed loop control with tracking algorithms)	Stepper motors (closed loop control with tracking algorithms)
WARRANTY**			
10 year generation	-	Max 10% below rated power	Max 10% below rated power
20 year generation	-	Max 20% below rated power	Max 20% below rated power
Product	5 years (for workmanship & other defects)	5 years (for workmanship & other defects)	5 years (for workmanship & other defects)
OPERATIONS AND MAINTENANCE			
Mirror and coolant	Regular cleaning of mirror and top-up of coolant	Regular cleaning of mirror and top-up of coolant	Regular cleaning of mirror and top-up of coolant

* Move to safe position if >15m/s

** Please see detailed warranty documents



QUADSUN
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