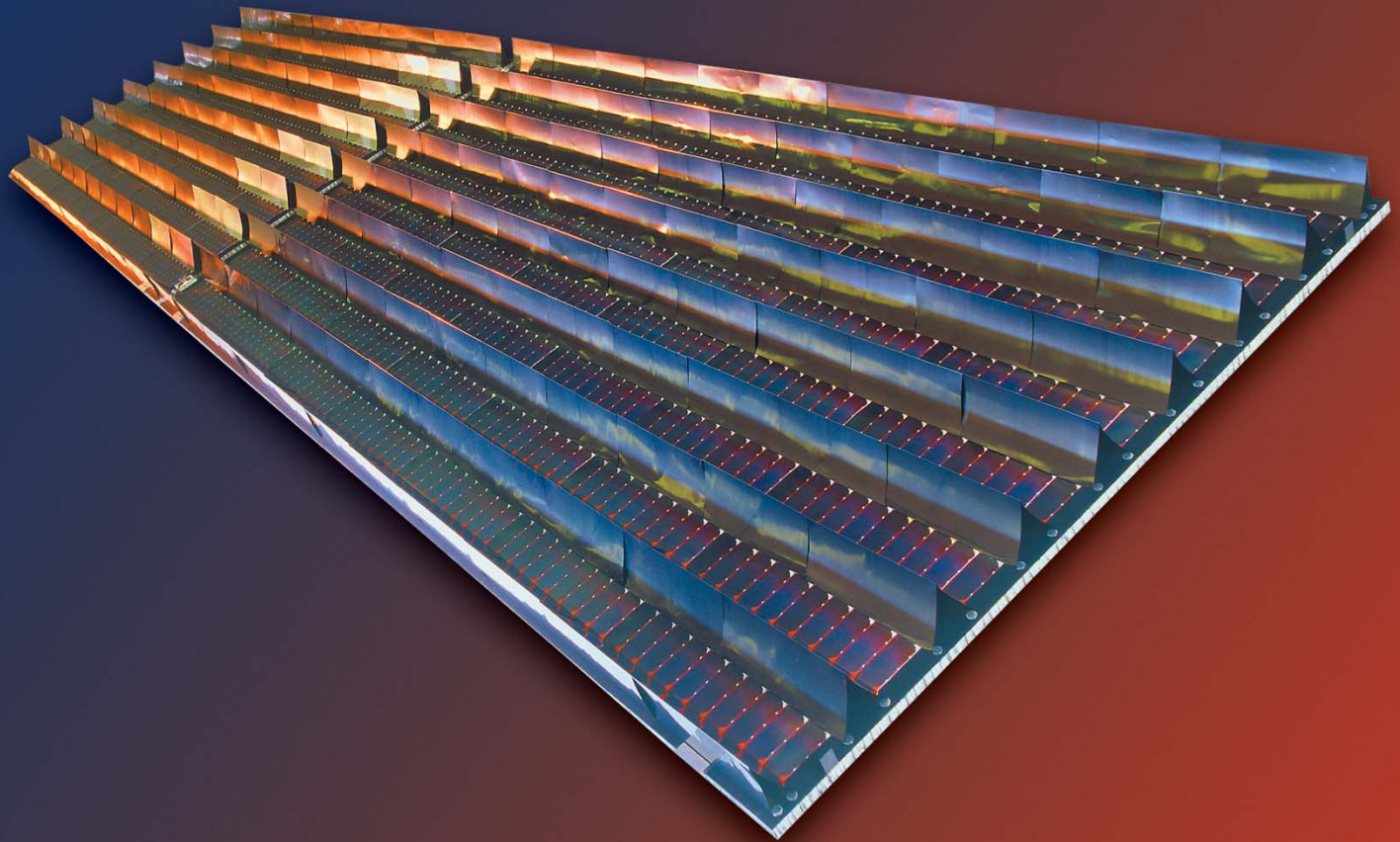


CellSaver Solar Concentrator Technology

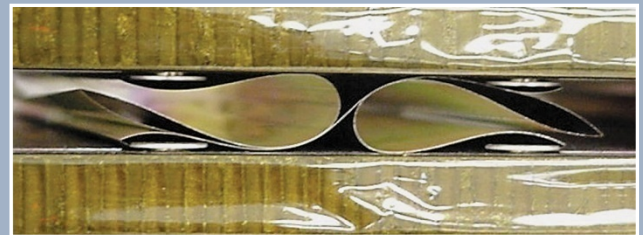


Performance Features

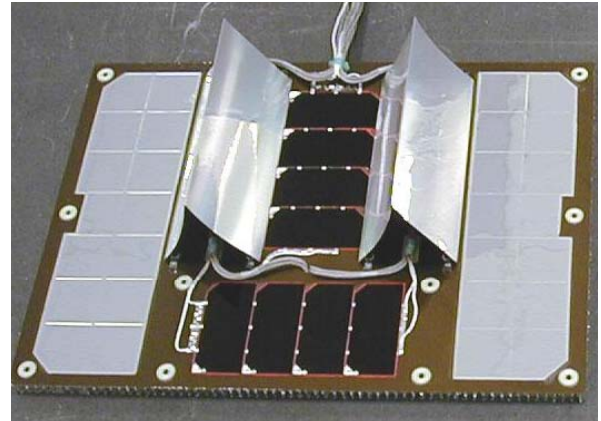
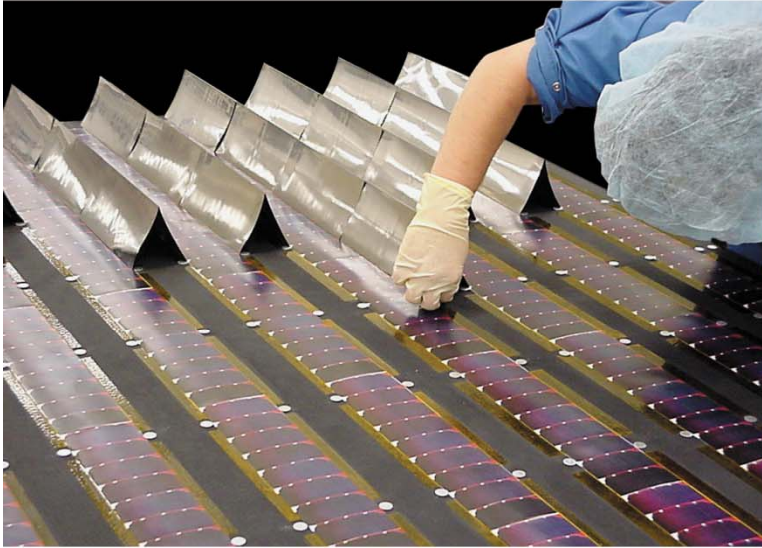
- ~2X reflective on-panel concentrator
- One-piece all-metal construction redundantly grounded to panel
- Low temperature operation (75 °C in GEO)
- Wide solar acceptance angle ($\alpha \pm 12^\circ$, $\beta \pm 24^\circ$)
- Solar panel mass reduction (~20%)
- Standard large area 3J cells, lay-down, and interconnects
- Retrofits onto existing qualified platforms
- On-going GEO flight performance validation

Application Benefits

- ~25% cost savings at array level
- Low risk implementation
- Simple self deployment as panels open
- Utilized standard ACS and array tracking
- Array-level end-to-end testing
- Maintains heritage qualification basics

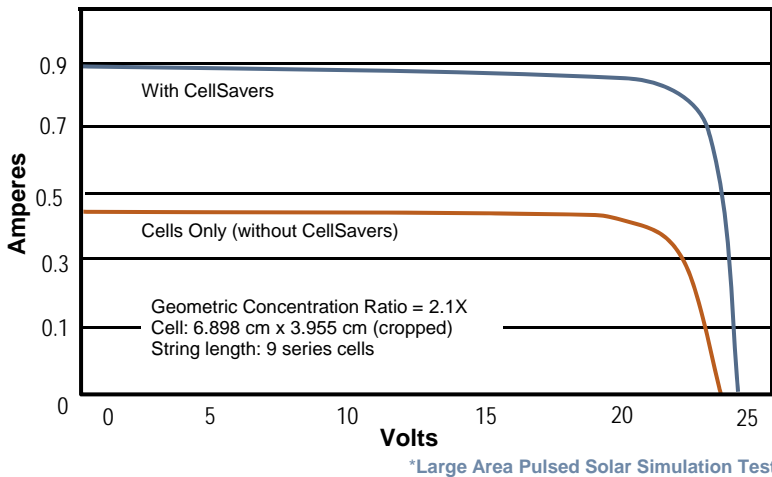


CellSaver Solar Concentrator Technology

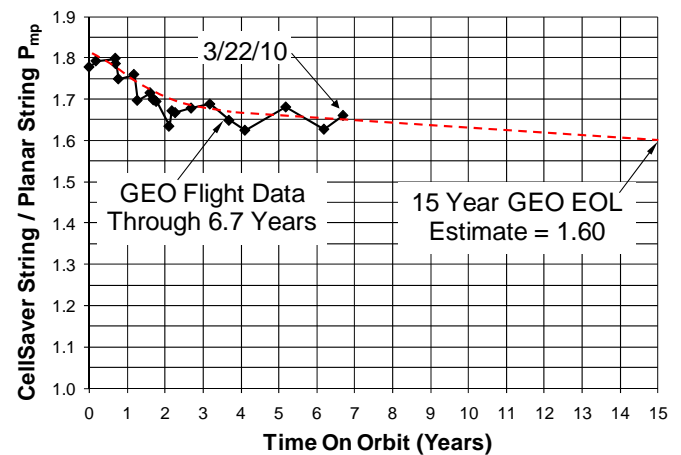


**GEO Flight Experiment
(1 of 2 coupons flown)**

LAPSS* Data with Advanced Triple Junction Cells



CellSaver Versus Planar String Maximum Power



Qualifications

Test	Environment	Results
Electrical	AMO LAPSS Test	Pass: >95% Efficiency
Off-Angle Performance	AMO LAPSS Test	Cosine Fall-Off Out to 12° (α) & 24° (β)
Random Vibration	52, 45 & 87 g-rms (x, y & z Respectively)	Pass: No Shape or Power Impacts
GEO Thermal Cycles	-175°C to +120°C, 2,000 Cycles	Pass: <1% Power Loss
LEO Thermal Vacuum Cycles	-115°C to +135°C, 1x10 ⁻⁵ Torr, 12 Cycles	Pass: No Measurable Power Loss
LEO Thermal Cycles	-100°C to +120°C, 80,000 Cycles	In-Process: Pass Through 20,000 Cycles
Long Term Stowage	11 mm Gap for 3 Years	In-Process: Pass Through 16 Months
Minimum Panel Gap	5 mm Gap for 1 Minute	Pass: No Shape or Power Impacts
Deployment Cycles	50 Stow and Deploy Cycles	Pass: No Shape or Power Impacts
Humidity	90% RH at 22°C, 60 Days	Pass: <1% Power Loss
UV Radiation	5,000 Equivalent Sun Hours (ESH)	Pass: 5973 ESH with < 2% Reflectance Loss
Electron Radiation	15 Year GEO Exposure	Pass: < 2% Reflectance Loss
Proton Radiation	15 year GEO Exposure	Pass: < 2% Reflectance Loss

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