



Reliability and Qualification of Amonix Solar Power Plants



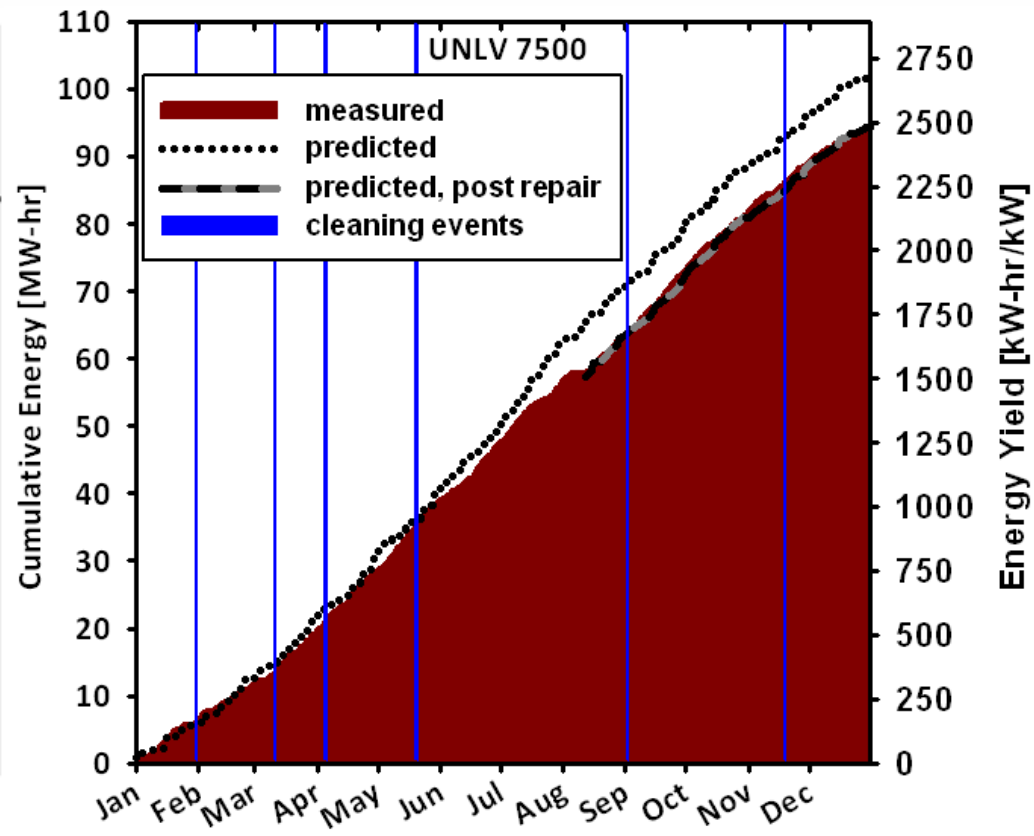
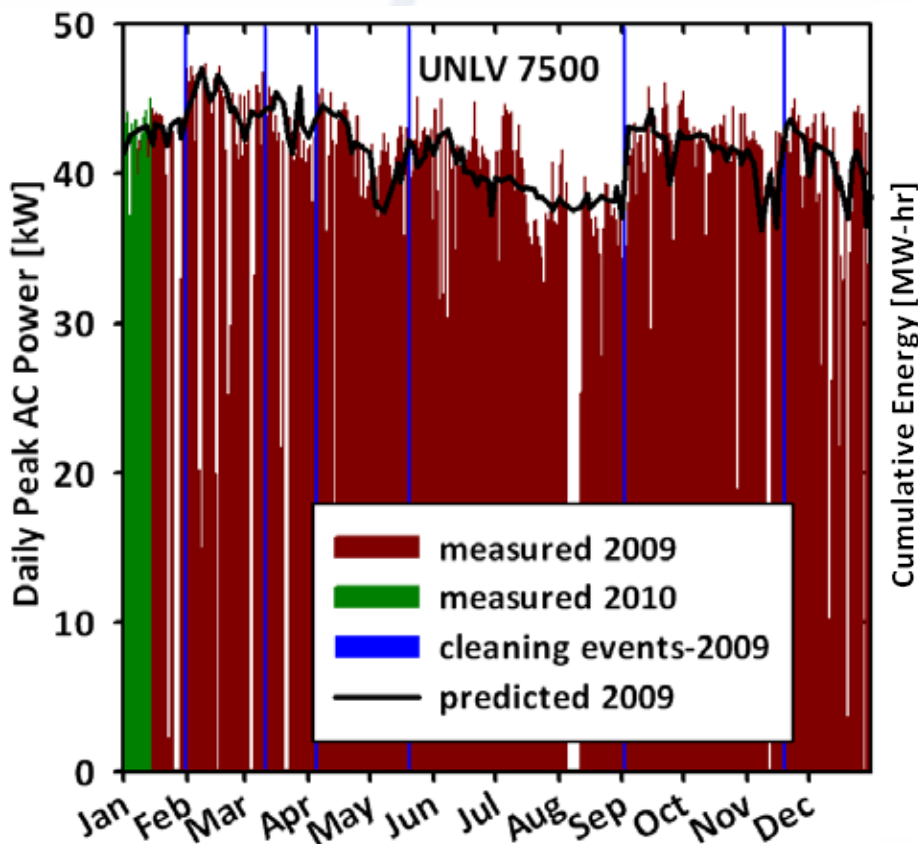
Field testing: Amonix technology in over 70% of world's installed CPV

WORLDWIDE COMMISSIONED SOLAR CPV INSTALLATIONS^(a)

PROJECT	LOCATION	CAPACITY	DEVELOPERS	COMMISSIONED
Guascor Fotón Navarra CPV Plant - Phase II & III	Spain	5.8 MW	Guascor Fotón (Amonix)	2008
Abengoa Casaquemada CPV Project	Spain	2.0 MW	Solucar Energia	2008
Guascor Fotón Navarra CPV Plant - Phase I	Spain	2.0 MW	Guascor Fotón (Amonix)	2007
GuascorFotón Murcia CPV Plant	Spain	2.0 MW	Guascor Fotón (Amonix)	2009 ^(b)
Guascor Fotón Tecnohuertas CPV Plant	Spain	1.5 MW	Guascor Fotón (Amonix)	2006
Alsanbo Santa Pola Solar CPV Plant	Spain	1.0 MW	Electricidad Alsanbo	2007
Guascor Fotón Energias del Tietar	Spain	1.0 MW	Guascor Fotón (Amonix)	2008
Flix Solar Ramon Escriche Solar CPV Plant	Spain	0.8 MW	Flix Solar	2008
SolFocus and ISFOC Almoguera CPV Project	Spain	0.3 MW	ISFOC, SolFocus	2008
Concentrix and ISFOC Puertollano CPV Project	Spain	0.2 MW	Concentrix Solar	2008
SolFocus and ISFOC Puertollano CPV Project	Spain	0.2 MW	SolFocus	2008
Yitai Ordos grid-connected CPV power Project	China	0.2 MW	Inner Mongolia Yitai Group	2007
Amonix Solar CPV Plant (APS STAR Center - West) - Demonstration	United States	0.2 MW	Amonix	2003
Amonix Prescott CPV Plant - Demonstration	United States	0.2 MW	Amonix	2003
Amonix Solar CPV Plant (APS STAR Center - East) - Demonstration	United States	0.1 MW	Amonix	2002
Amonix Glendale CPV Plant - Demonstration	United States	0.1 MW	Amonix	2001
Total		17.6 MW		

Source: New Energy Finance

UNLV 7500 performance in 2009



- Model uses historical meteorological data to adjust for temperature, spectrum changes, etc.
- Model is deterministic: the only adjustable parameter is the cleaning schedule
- Energy generation is variable, but *predictable*

Installed III-V multijunction systems: 2009



UNLV
UNIVERSITY OF NEVADA LAS VEGAS

UNLV CENTER FOR ENERGY RESEARCH (LAS VEGAS, NV)
one 7500, one 7700
91 kW

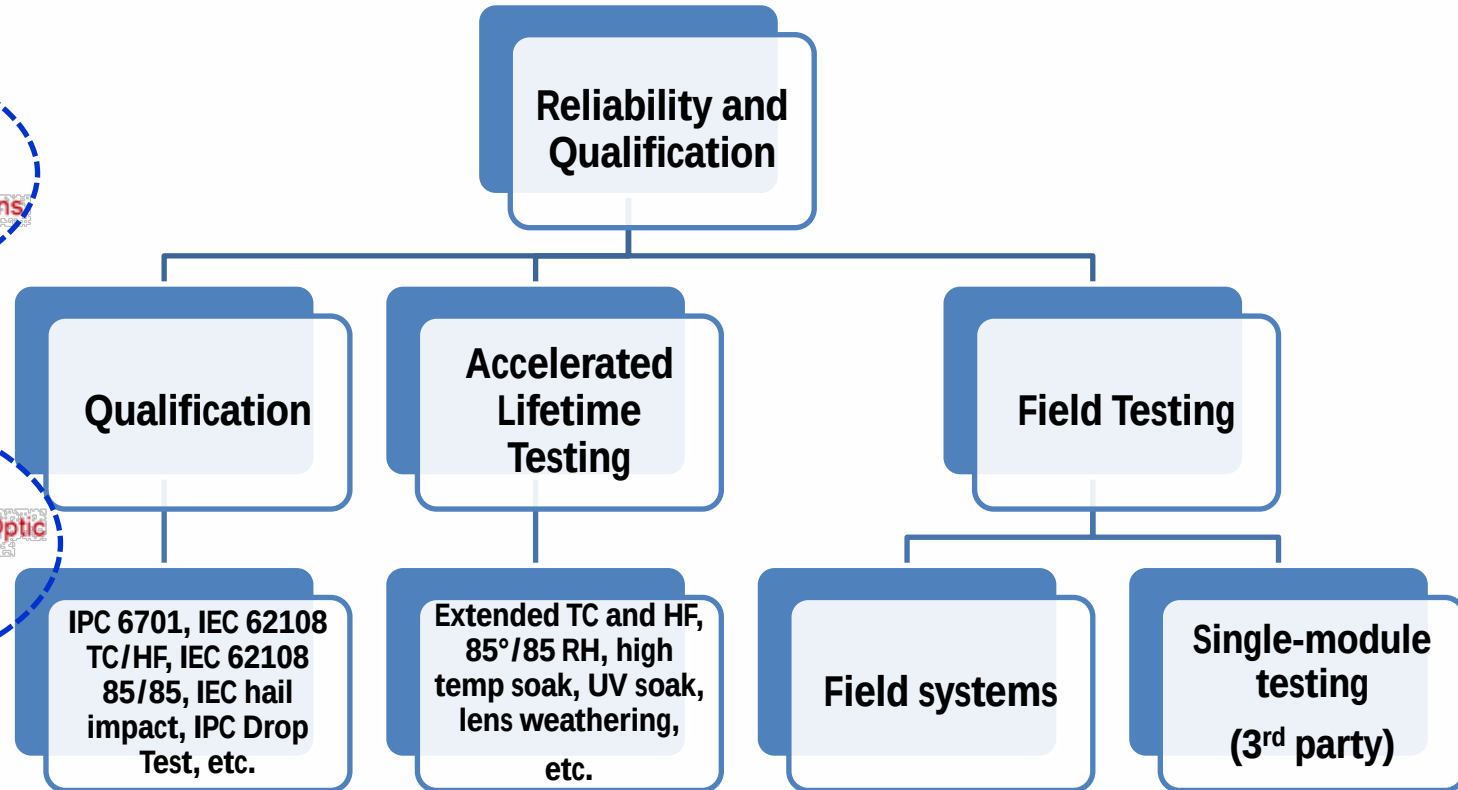
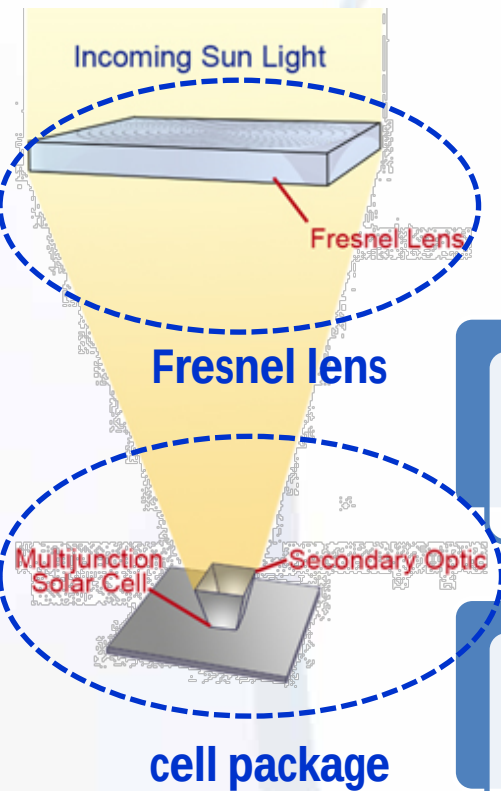


RIVER MOUNTAIN WATER TREATMENT FACILITY (HENDERSON, NV)
Six 7500s
228 kW

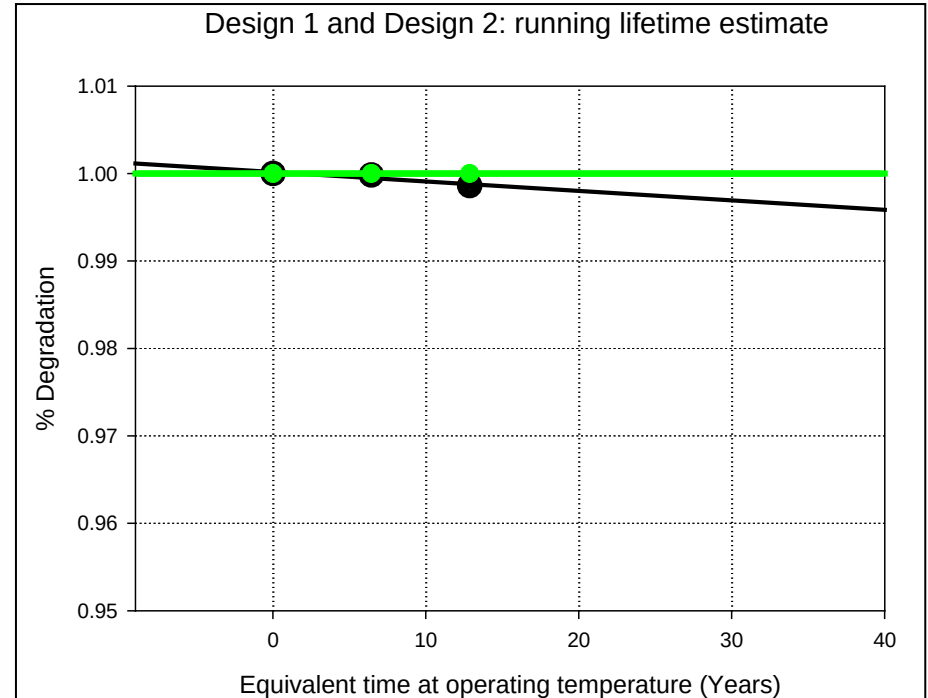
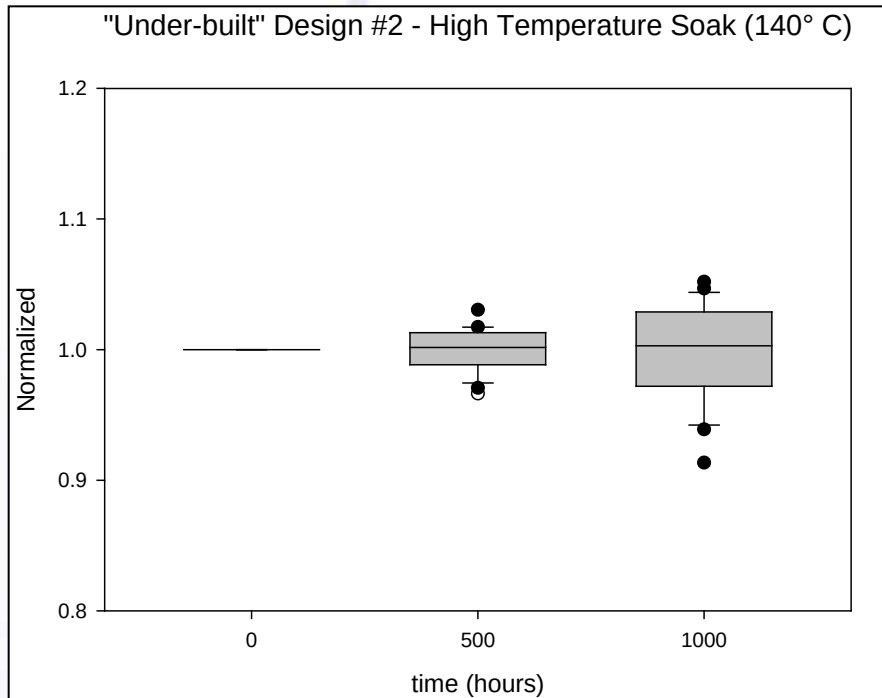


Southern Nevada Water Authority

Reliability and qualification program: areas of focus



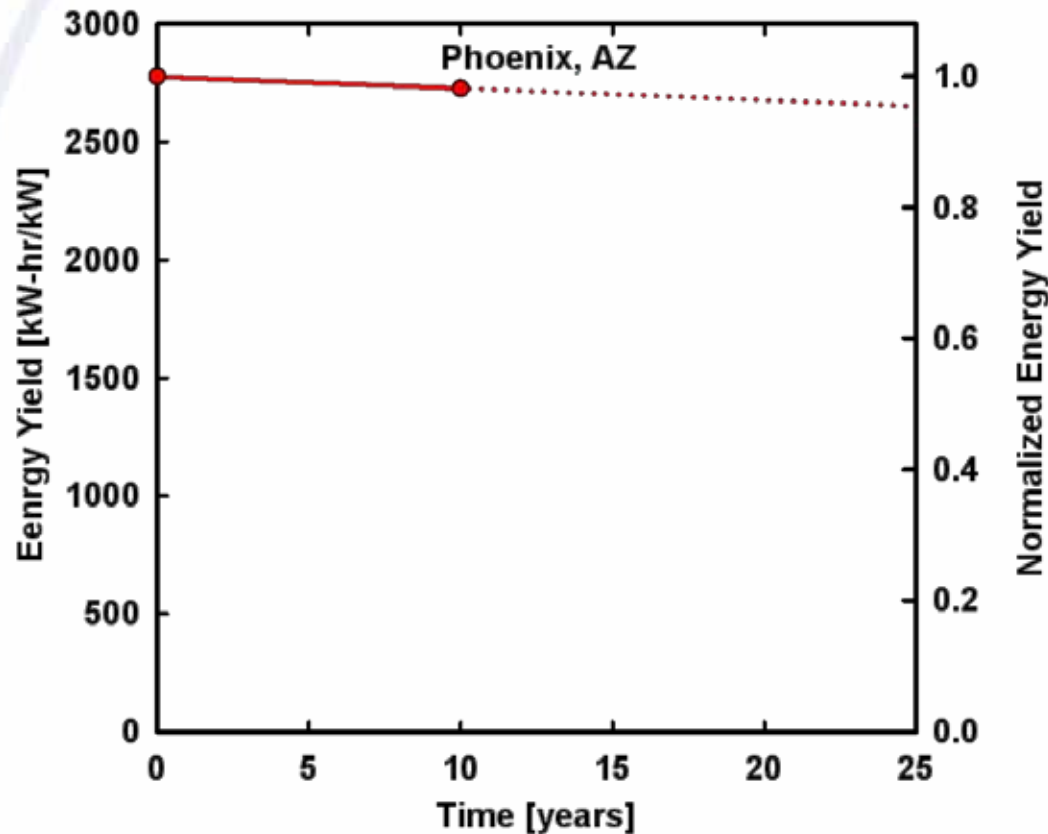
Cell package: lifetime estimate via high-temperature soak



— Design 1 (baseline)
— Design 2 (under-built)

- Assumes exponential degradation with temperature
- Only the (intentionally) under-built design shows measurable degradation as yet
- Tests are ongoing, including additional temperatures and designs

Fresnel lens: lifetime estimate via outdoor exposure



- Transmission of plastic lens materials changes over time
- Performance model can be applied to assess the impact on energy generation: ~0.2% per year for this material (assuming linear degradation)
- Accelerated testing in progress