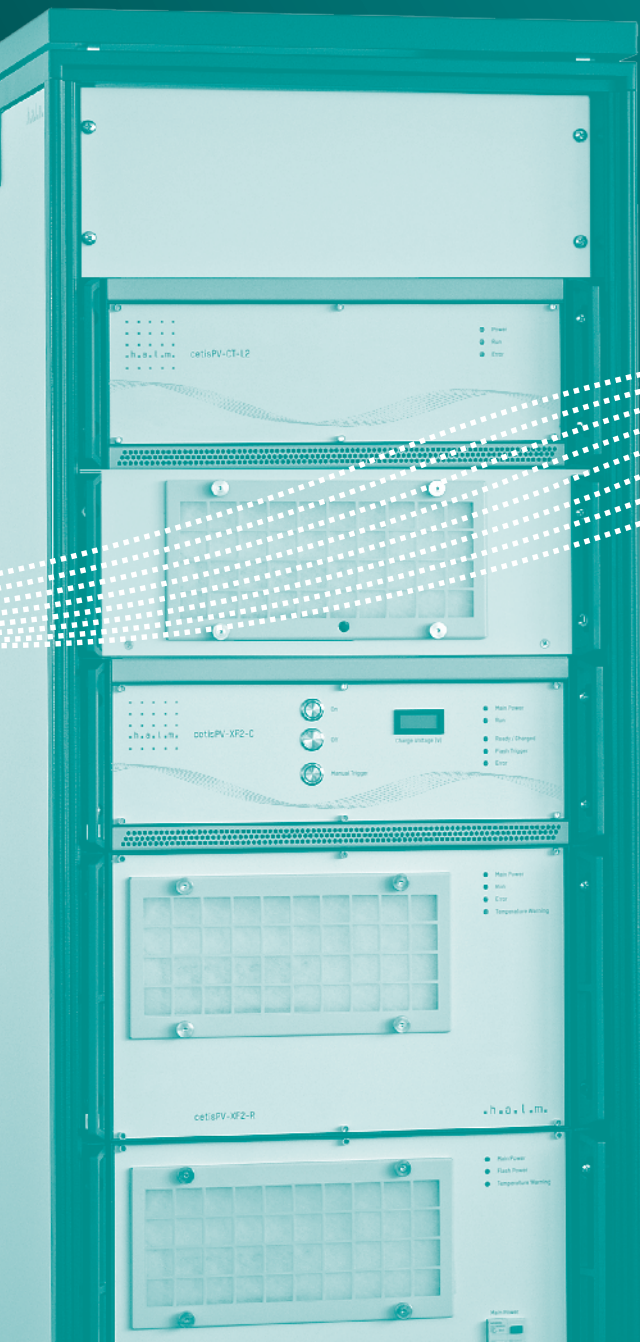


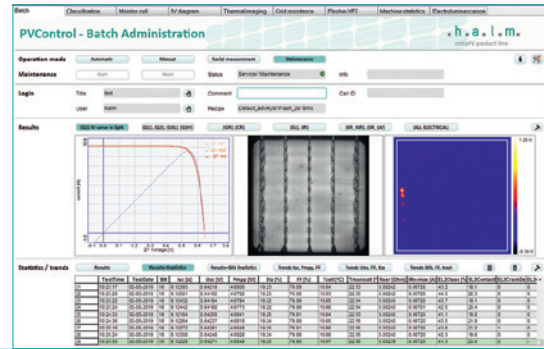


cetisPV- IUCT-4000

Class A+A+A+ xenon flasher and
IV measurement system



cetisPV product line



cetisPV-IUCT-4000

Class A+A+A+ xenon flasher and IV measurement system

The **cetisPV-IUCT-4000** is the advancement of h.a.l.m.'s standard cell tester cetisPV-IUCT-1800 for IV measurements of solar cells. It allows precise and highly reproducible IV measurements in cell production lines.

Precise – h.a.l.m.'s unique programmable pulsed solar simulator, with its highly stable irradiance output over long flash times from a single light source, combined with the h.a.l.m. IV curve tracer are designed to allow exact and highly reproducible IV measurements

Improved – The enhanced **cetisPV-IUCT-4000** enables illumination times up to 40 ms together with a throughput of up to 4,000 w/h. Illumination times up to 60 ms (with a throughput of up to 2,700 w/h) together with the advanced hysteresis in one flash enable the **cetisPV-IUCT-4000** to test very high efficiency cells in production lines.

Flexible – The standard IV measurement system **cetisPV-IUCT-4000** can be complemented by further tools for quality and process control such as electroluminescence or infrared imaging, inline spectral response, grid resistance and dark IV measurement.

Technical specifications

Throughput	up to 4,000 w/h at 40 ms
Flash duration	up to 60 ms
Flash profiles	single, double, triple level, ramp
Repeatability (standard deviation)	Isc and Voc < ±0.1% / Pmpp and FF < ±0.15%
Measurement resolution	< 0.004% FSR (3 synchronous 16-bit channels for voltage, current and irradiance)
Measurement accuracy	< 0.05% FSR for current and voltage measurements
Voltage measurements ranges	±1 V / ±2 V / ±4 V / ±10 V / ±20 V
Current measurements ranges	±2 A / ±4 A / ±10 A / ±20 A ±16 mA / ±32 mA / ±80 mA / ±160 mA or ±0.1 A / ±0.2 A / ±0.5 A / ±1 A
Electronic load	active 4-quadrant load
Spectral match*	0.88 – 1.12 (class A 0.75 – 1.25)
Non-uniformity of irradiance*	< 1% (class A ≤ 2%)
Short-term instability of irradiance*	< 0.05% (class A ≤ 0.5%)
Long-term instability of irradiance*	< 0.8% (class A ≤ 2%)
Lamp lifetime (guaranteed/typical)	500,000/3,000,000 flashes
Advanced measurements and evaluations	multiple series and shunt resistance evaluations methods, single-flash advanced hysteresis optional: SunsVoc, 2-diode analysis
Optional packages	EL imaging, IR imaging, spectral response, grid resistance

*IEC 60904-9 Ed. 2 Technical data are subject to change without notice.