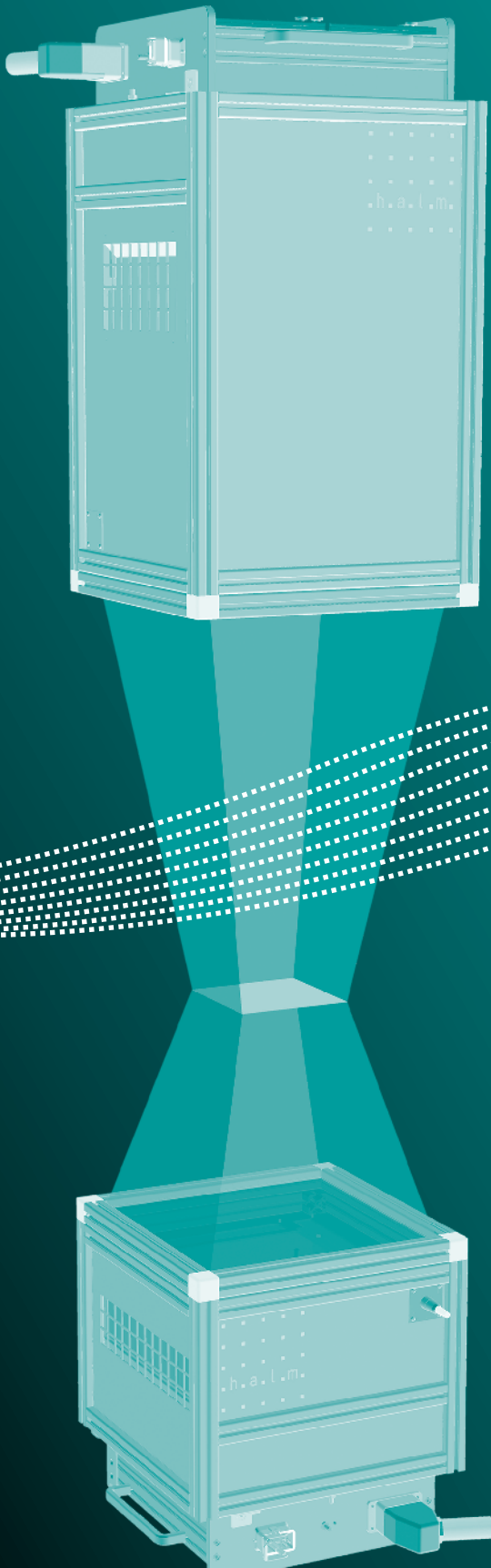


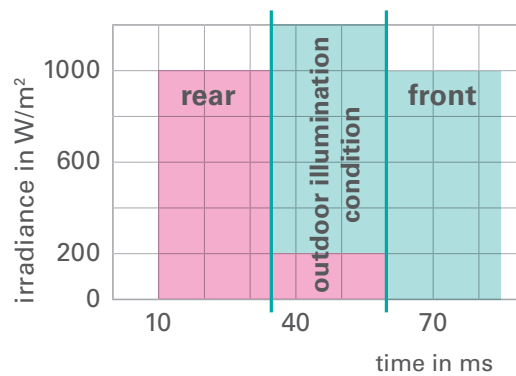


cetisPV- IUCT-3600-BF

Class AAA xenon flasher system
to analyze bifacial solar cells



cetisPV product line



cetisPV- IUCT-3600-BF

Class AAA xenon flasher system
to analyze bifacial solar cells

cetisPV-IUCT-3600-BF allows the characterization of bifacial (BF) solar cells under simultaneous illumination of front and rear side. **cetisPV-IUCT-3600-BF** comprises two synchronized class AAA xenon flashers with flexible flash profiles.

Bifaciality – It enables measurements under front and rear STC conditions, as well as typical outdoor illumination conditions for bifacial solar cells (e.g. $1,000 \text{ W m}^{-2}$ (front) and 200 W m^{-2} (rear)) in one measurement sequence. Additional measurement parameters are available such as bifaciality coefficients for I_{sc} , V_{oc} , FF and P_{mpp} .

Flexible – The illumination intensity of both flashers is freely programmable. It allows precise IV measurements under various illumination conditions. The light sources can be used for bifacial as well as monofacial operations.

Future-proof – **cetisPV-IUCT-3600-BF** combined with h.a.l.m.'s unique advanced hysteresis measurement allows precise measurements as well for highly capacitive bifacial solar cells.

Technical specifications

Illumination	$1,000 \text{ W m}^{-2}$ (rear) + $1,000 \text{ W m}^{-2} / 200 \text{ W m}^{-2}$ (front/rear) + $1,000 \text{ W m}^{-2}$ (front)
Throughput 3,600 wph¹	flash duration: up to 30 ms + 30 ms + 30 ms
Repeatability (standard deviation)	I_{sc} and V_{oc} < $\pm 0.1\%$ / P_{mpp} and FF < $\pm 0.15\%$
Measurement resolution	< 0.004% FSR (4 synchronous 16-bit channels for voltage, current and 2x irradiance)
Measurement accuracy	< 0.05% FSR for current and voltage measurements
Voltage measurement ranges	$\pm 1\text{V} / \pm 2\text{V} / \pm 4\text{V} / \pm 10\text{V} / \pm 20\text{V}$
Current measurement ranges	$\pm 2\text{A} / \pm 4\text{A} / \pm 10\text{A} / \pm 20\text{A}$ $\pm 16 \text{ mA} / \pm 32 \text{ mA} / \pm 80 \text{ mA} / \pm 160 \text{ mA}$
Electronic load	active 4-quadrant load
Spectral match²	front: 0.75 – 1.25 (class A) / rear: 0.75 – 1.25 (class A)
Non-uniformity of irradiance²	front: < 2% (class A) / rear: < 2% (class A)
Short-term instability of irradiance²	front: < 0.05% (class A $\leq 0.5\%$) / rear: < 0.05% (class A $\leq 0.5\%$)
Long-term instability of irradiance²	front: < 0.8% (class A $\leq 2\%$) / rear: < 0.8% (class A $\leq 2\%$)
Lamp lifetime (guaranteed/typical)	1,000,000/3,000,000 flashes for stated performances

¹ if mechanical interface is provided according to h.a.l.m. specification and for a maximum of 5 busbars

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