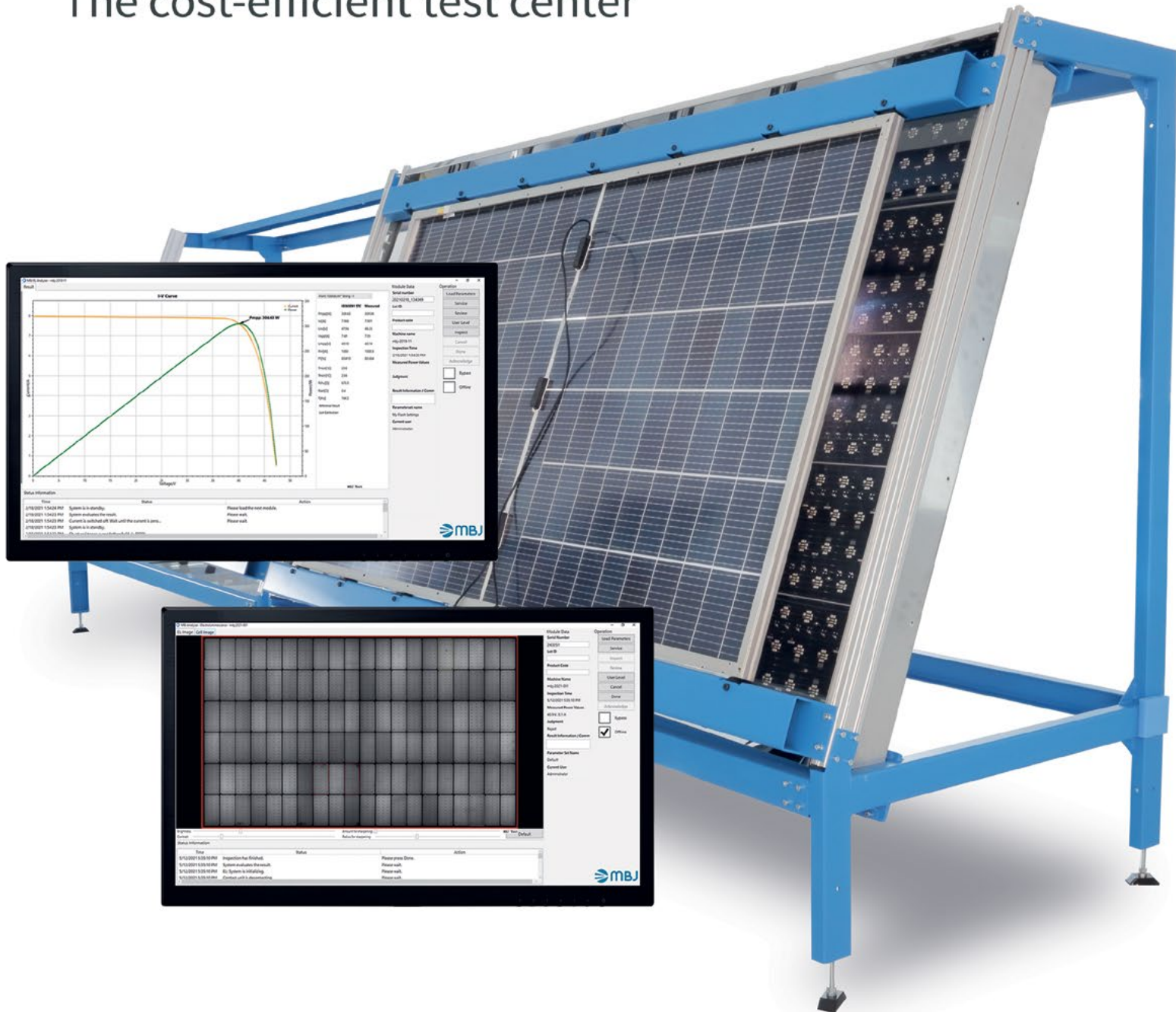


MBJ Mini Lab

The cost-efficient test center



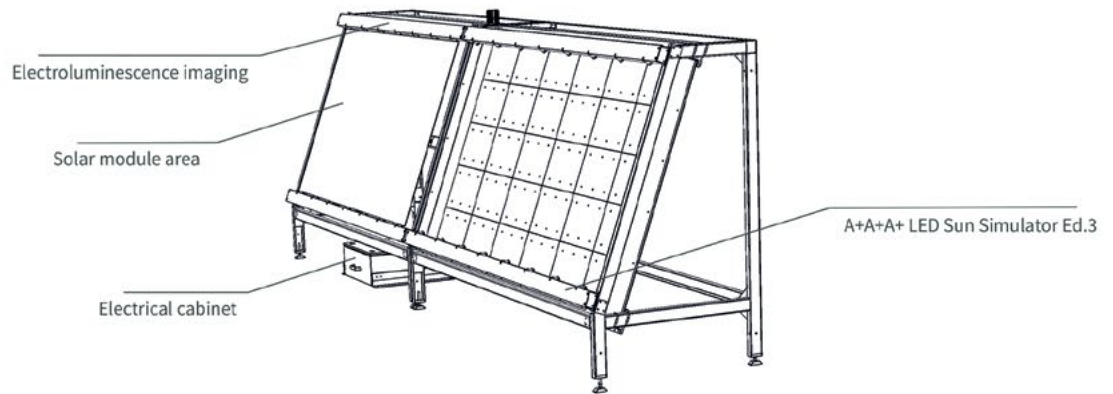
A+A+A+ LED Sun Simulator Ed.3 and high resolution electroluminescence testing

- In-depth analysis
- Easy to use
- Cost-efficient
- Made in Germany

Integrated into your laboratory the cost-efficient stand-alone MBJ Mini Lab still provides high end I/V curve measurements and high resolution electroluminescence images. Find module power loss and hidden defects - like micro cracks and inactive areas - quickly and reliable.

MBJ Mini Lab

Easy transfer from site to site



Field of Application

The **MBJ Mini Lab** is designed as a lab system for quick and cost efficient in-depth quality analysis of photovoltaic panels. It works perfectly in a darkened room as laboratory system but can also be used on-site in a container or trailer.

The Mini Lab consists of an A+A+A+ MBJ LED Sun Simulator certified according to IEC 60904-9 Ed.3 for IV-curve measurement and a high resolution electroluminescence system. The MBJ light source has an expanded spectrum in the UV and IR range, improving the measurement accuracy for the latest cell technologies such as PERC or HJT cells.

The operation is easy: modules are loaded vertically onto the roller system, manually connected and the IV-curve measurement is started. After the power measurement the module is moved to the next position by hand for EL image acquisition and judgement.

Benefit from the well-known advantages of LED technology such as a much longer light source life time, the stability of the light source over time, better measurement results through outstandingly stable repeatability and significantly reduced operating costs over the systems life time.

Combine the long light pulse with the innovative step wise IV-sweep when measuring the latest high capacitive cell technologies.

The user-friendly Windows 10® based software installed on a 17" notebook allows the judgment of the EL images and the data evaluation of the IV-curve.

Note: in all use cases, it must be ensured that the system is operated in a darkened room with artificial lighting.

MBJ Mini Lab 4.0	Standard	ECO	MAX	
General data	Min. module size Max. module size	800 x 890mm 1060 x 2250 mm	1400 x 2750 mm	
Sun simulator	Light source Total irradiance Classification Spectrum range Repeatability Pmax Flash pulse duration Charging time Life time of LED's	Full spectrum long pulse LED light source 200-1000 W/m ² (configurable in 200 W/m ² steps) A+A+A+ (IEC 60904-9 Ed.3) 350 - 1100nm < +/- 0.2 % (absolute) Long pulse, max 180ms at full irradiance flash to flash < 30 sec > 1 million flashes		
EL tester	Resolution Camera type Cameras Image accision Power supply Operation mode	510 µm/pixel Actively cooled MBJ CMOS camera (5 MPixel) 2 ~5sec for a full module image up to 250 V / 12 A for EL testing Automatic image acquisition, manual judgment through operator	500 µm/pixel 3	450 µm/pixel 6
Electrical tests	Connection Diode test	Test to assure proper connection to and interconnection in the module Light pattern illumination to verify proper diode functionality		

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