

MBJ Mini Lab

The cost-efficient test center



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

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

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

Go to product:



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.

Easy transfer from site to site

The 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
	Min. module size	800 x 890 mm		
	Max. module size	1060 x 2250 mm	1240 x 2400 mm	1400 x 2750 mm
Sun Simulator	Technology	Full spectrum long pulse LED Flasher		
	Total irradiance	200-1000 W/m ² (configurable in 200 W/m ² steps)		
	Classification	A+A+A+ (IEC 60904-9 Ed.3)		
	Spectrum range	350 - 1100 nm		
	Repeatability Pmax	< +/- 0.2 % (absolute)		
	Flash pulse duration	Long pulse, max 180ms at full irradiance		
	Charging time	flash to flash < 30 sec		
	Life time of LED's	> 1 million flashes		
	Resolution	350 µm/pixel	350 µm/pixel	350 µm/pixel
	Camera type	Actively cooled MBJ CMOS camera with 12 MPixel (4000 x 3000 pixel)		
EL	Cameras	2	3	3
	Image accision	~ 5 sec for a full panel image		
	Power supply	up to 250 V / 12 A for EL testing		
	Operation mode	Automatic image acquisition, manual judgment through operator		
Connection	Test to assure propper connection to and interconnection in the module			
Diode test	Light pattern illumination to verify propper diode functionality			



MBJ Solutions GmbH
 Jochim-Klindt-Straße 7
 DE-22926 Ahrensburg

+49 4102 778 90 10
 support@mbj-solutions.com
 www.mbj-solutions.com

