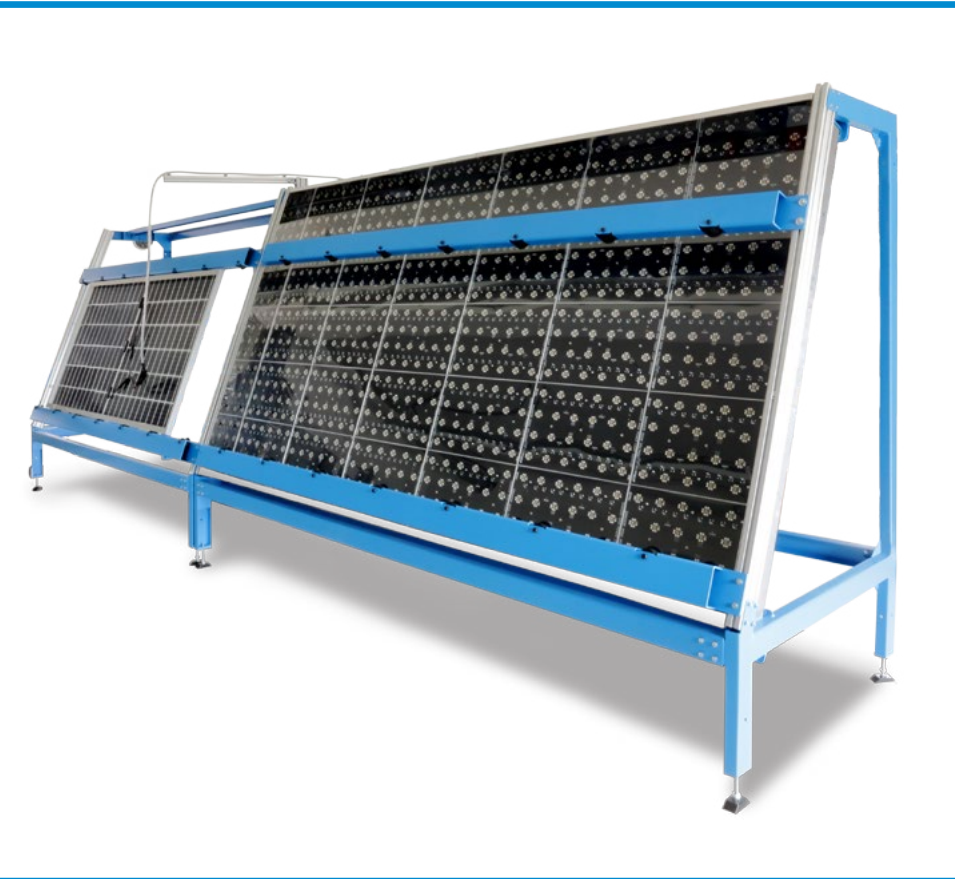


# MBJ Mini Lab

The cost-efficient test center



- I-V, EL & diode test
- Easy to use
- Great evaluation SW
- 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 reliably.

# MBJ Mini Lab

Go to product:



## Field of Application

The MBJ Mini Lab 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 innovative TÜV certified IEC 60904-9 Ed.3 triple A+ LED sun simulator 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 modules are loaded vertically onto the roller system and are manually connected. After the power measurement move the module to the next position for EL image acquisition and judgment.

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.



Sun Simulator

Technical specification	Standard spectrum	Advanced spectrum
Spectrum / Light source	Class A+ IEC 60904-9 Ed.3 , LED with UV and IR extended spectrum	
No. of LED types	13	21
Spectral coverage (SPC)	> 94 %	> 98 %
Spectral deviation (SPD)	< 44 %	< 24 %
Total irradiance	200 - 1200 W/m <sup>2</sup>	
Non uniformity	< +/- 1 %, Class A+ IEC 60904-9 Ed.3	
Long term instability (LTI)	< +/- 1 %, Class A+ IEC 60904-9 Ed.3	
Accuracy of Pmax	+/- 1 % based on reference module usage	
Repeatability Pmax	+/- 0.2 % (absolute)	
Flash pulse duration	200 ms at 1000 W/m <sup>2</sup> / 100ms at 1200 W/m <sup>2</sup>	
Life time of LED's	> 10 million flashes at 1000 W/m <sup>2</sup>	

EL

Electroluminescence	Standard	ECO	MAX
Camera type	Actively cooled MBJ CMOS camera with 12 MPixel (4000 x 3000 pixel)		
Cameras	2	3	3
Image Aquisition	350 µm / pixel (~ 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		

MBJ Mini Lab	Standard	ECO	MAX
Min. module size	800 mm x 890 mm		
Max. module size	1060 x 2250 mm	1240 x 2400 mm	1400 x 2750 mm

Features & Options	Connection test, Diode test; Optionally: Advanced Spectrum		
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