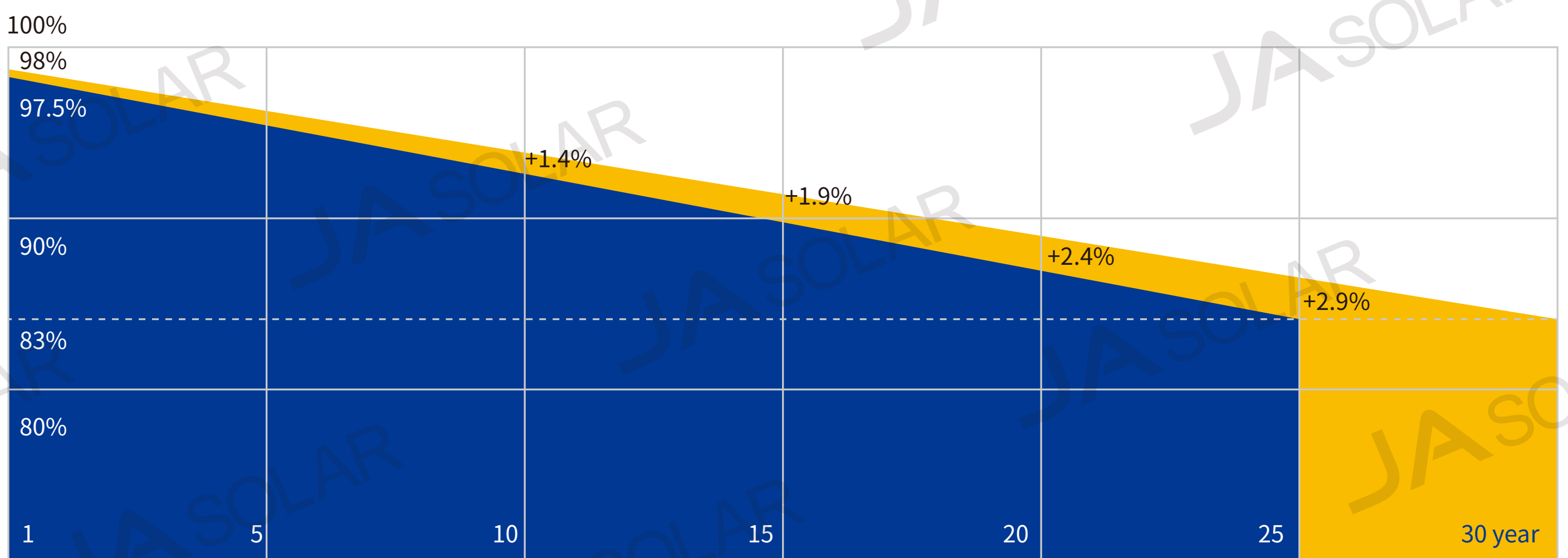


4.3 Guarantee for reliability

1) 30-year linear module peak power warranty

The power degradation in the first year is within 2%; linear power degradation for single-glass modules in 2-25 years is within 0.55%/year, and linear power degradation for dual-glass modules in 2-30 years is within 0.45%/year.

Power ratio (%)

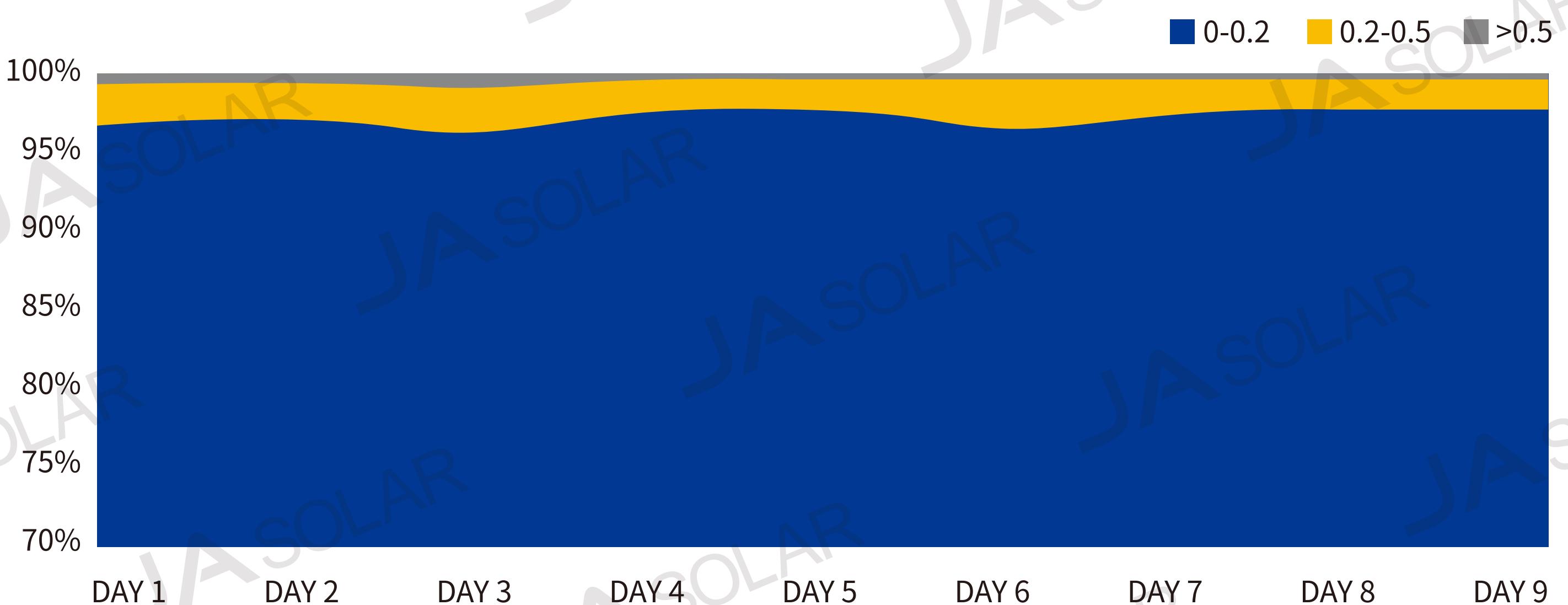


Superior Warranty (single-glass modules: blue, double-glass modules: yellow)

2) Guarantee against hot spot risk

Based on 182mm x 182mm large-size silicon wafers, DeepBlue 3.0 modules feature high current as compared with modules with G1 and M6 silicon wafers (under the same serial and parallel structure of cells), leading to a relatively higher risk of hot spot. Nevertheless, the risk of hot spot of DeepBlue 3.0 modules is effectively controlled by the following methods.

- Cell leakage current control:** The magnitude of leakage current is directly correlated to the hot spot characteristics of PV modules. The less the leakage current is, the lower the hot spot temperature and hot spot risk will be. As shown in the diagram below, the percentage of cells with reverse leakage current controlled at 0-0.5A is more than 99%.

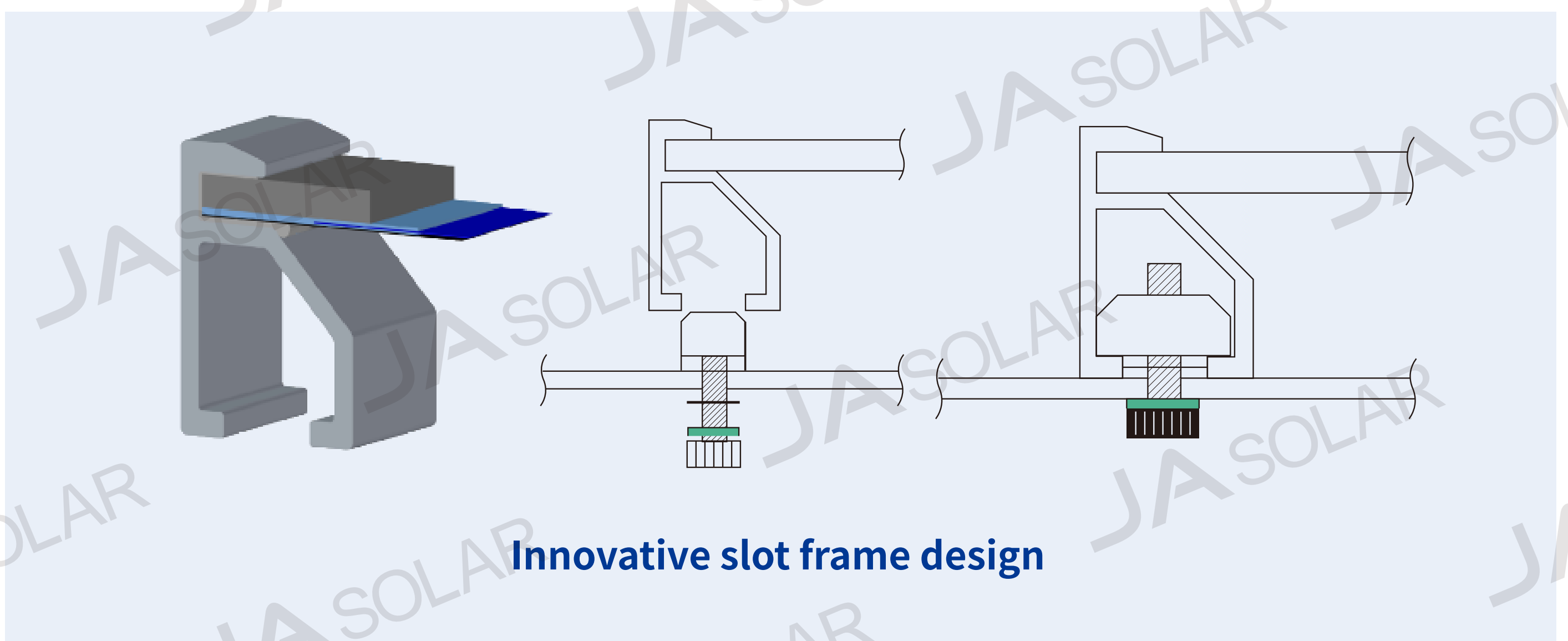


182 cells diagram of current leakage distribution trend

- ◆ **Non-destructive cutting:** Compared with traditional laser melting cutting, non-destructive cutting is adopted for DeepBlue 3.0 products; specifically, the cell is heated with continuous laser, followed by spray cooling, which creates a temperature gradient and hence thermal stress to crack the cell. This cutting method can not only significantly reduce the micro-cracks on the cut and improve the parallel resistance of the cell, but also effectively reduce the leakage current; moreover, the cutting surface is very smooth and the mechanical strength of the cut cell is close to that of an uncut one.
- ◆ **Optimization of auxiliary materials:** Encapsulation materials with better temperature resistance performance are used to improve the hot spot resistance of modules.

3) Mechanical load

The innovative slot frame design of DeepBlue 3.0 modules not only makes it easier for module installation, but also greatly increases the mechanical load performance of the modules. In addition, DeepBlue 3.0 modules are also compatible with the conventional clamp installation. The front static mechanical load of the modules can reach 5,400Pa and the back static mechanical load can reach 2,400Pa.



4.4 Comprehensive product and system certifications



IEC61215 IEC61730
UL61215 UL61730



ISO 9001:2015
Quality Management
Systems



ISO 14001:2015
Environmental
Management
Systems