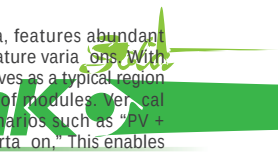
and reported by the Wuxi Ins tute of Inspec on, Tes ng, and Cer fica on.

Located in the heart of Northwest China, Yinchuan, Ningxia, features abundant sunshine, scarce precipita on, and significant diurnal temperature varia ons, with solar resources ranking among the highest in the country. It serves as a typical region for evalua ng the outdoor power genera on performance of modules. Ver cal installa on is the mainstream approach in composite scenarios such as "PV + deser fica on control," "PV + agriculture," and "PV + transporta on." This enables three-dimensional land u liza on: the module's two sides face east and west respec vely, a light-receiving characteris c that fla ens the power genera on curve. The selec on of Yinchuan as the site and the adop on of a ver cal installa on scheme aim to ensure that the results closely reflect the actual opera ng condi ons in the Northwest region and in composite scenarios.

III. Project Design

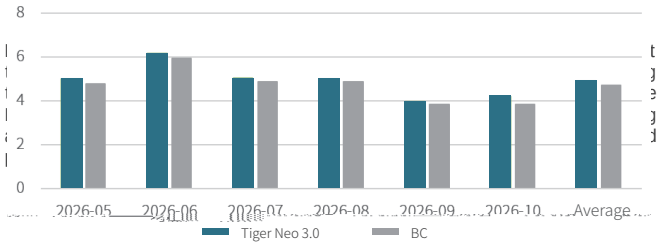
To ensure the objec vity and validity of the comparison results, this project employs a string-level parallel comparison approach, strictly controlling variables to guarantee data validity.

Ten Tiger Neo 3.0 modules and ten N-type BC modules of the same power ra ng, each arranged in ver cally mounted comparison strings of equal size;



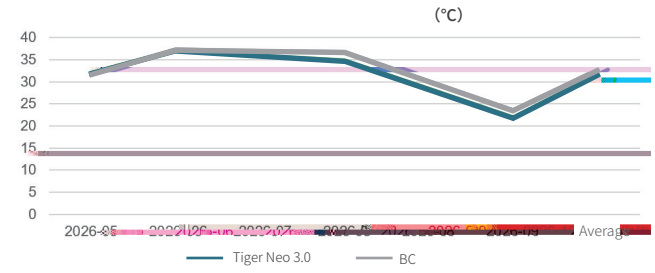
I. Key Conclusions

The field test project in Yinchuan, Ningxia, was conducted from May 6 to October 31, 2026, las ng six months. Measurement data shows that the average DC power output per wa for ver cally installed Tiger Neo 3.0 string modules reached **4.89 Wh/W**, compared to **4.69 Wh/W** for N-type BC string modules of the same power ra ng, indica ng that Tiger Neo 3.0 achieved a **4.26%** increase in power output per wa .



Ver cal installa on allows both the front and back of the modules to receive sunlight simultaneously, making bifaciality a key parameter determining the power genera on performance of ver cally installed modules. The measured bifaciality of the test sample in this study was 82.20%, compared to 69.96% for an N-type BC module of the same power ra ng—a di erence of 12.2 percentage points. Under ver cal installa on condi ons, which rely heavily on rear-side irradia on, the advantage of bifaciality is fully magnified.





IV. Data Insights

During the 6-month tes ng period, the Tiger Neo 3.0 achieved a power output gain of 4.26% per wa , with its advantages primarily evident in two areas.

In ver cal installa ons, the rear-side irradiance accounts for a significant por on of total irradiance; the higher the bifaciality, the more electricity can be generated from the same amount of rear-side irradiance. The Tiger Neo 3.0' s bifaciality is 12.2 percentage points higher than that of N-type BC modules with the same power ra ng, which is a key factor behind the di erence in power output per wa between the two modules—**4.89 Wh/W** versus **4.69 Wh/W**.

From May to October, the monthly power genera on gain per wa ranged from **2.66% 9.09%**. The gain remained posi ve every month for six consecu ve months, peaking at 9.09% in October. There was no decline in gain due to harsh outdoor condi ons,the rear side, resul ng in greater shading losses caused by the me the pa erning process; the bifaciality ra o is typically only around 70%. In scenarios such as ver cal installa on—where power genera on is driven by both the front and rear sides—the disadvantage of a lower bifaciality ra o is further amplified. Combined with higher opera ng temperatures, power temperature losses consequently increase. This finding is corroborated by the results from field tests, which showed that the Tiger Neo 3.0 achieved a power gain of **4.26%** per wa and an average opera ng temperature approximately 1 ° C lower. Overall, the combina on of a high bifaciality ra o and lower opera ng temperature accounts for the Tiger Neo 3.0' s power genera on advantage under ver cal installa on condi ons in Yinchuan.