

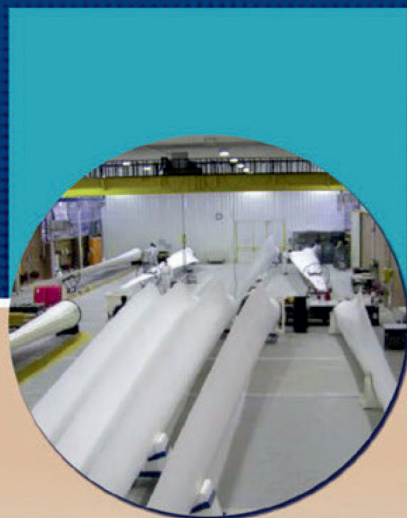


Belongs to Sadid Industrial Group

# سابانیرو

## SABA NIROO

The first wind turbine manufacturer in Iran and the Middle East



Established in 1379



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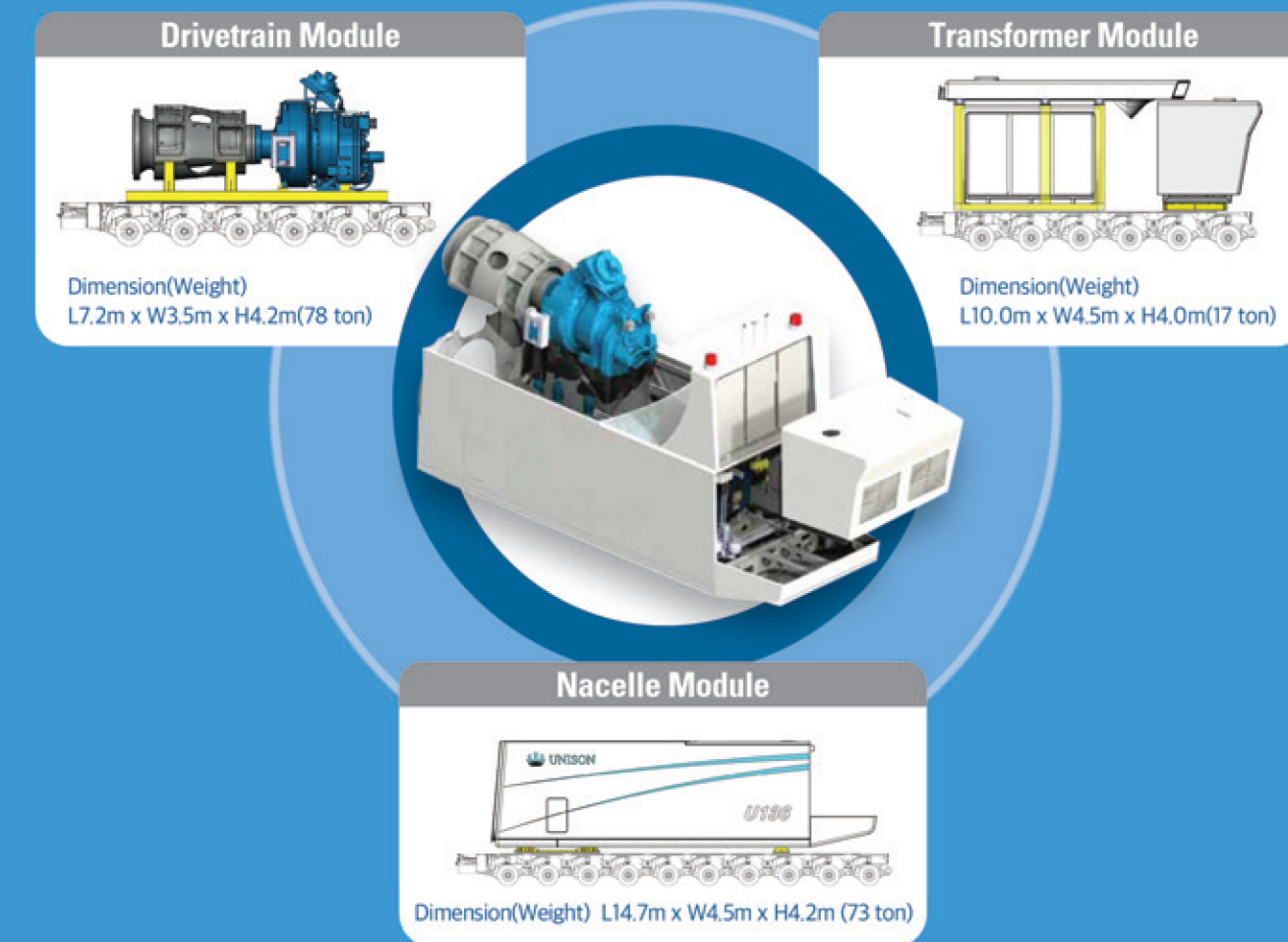


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[www.sabaniroo.com](http://www.sabaniroo.com)

## THE MODULAR APPROACH

총3개의 모듈(DT, NA, TR, module)로 구성된 모듈식 나셀은 산악지형을 포함한 모든 육상에서 운송 및 설치 가능  
각 모듈은 무게 78톤, 폭 4.5미터, 높이 4.2미터를 초과하지 않으며, 2MW급 풍력터빈 설치용 크레인을 사용하여 설치가능



## MAXING VALUE FOR THE CUSTOMER

### Serviceablilty

유지보수 공간 및 편의성을 고려한 나셀 설계  
외부 크레인 없이 발전기, 요 드라이브 등 나셀 내 중량 부속품 교체 가능

### Controller

시스템은 안전하게, 성능은 최상으로 제어하는 자체 알고리즘 개발 및 적용  
최신 소프트웨어 및 최고급 하드웨어를 적용하여 어떠한 환경에서도 최적의 성능 발휘

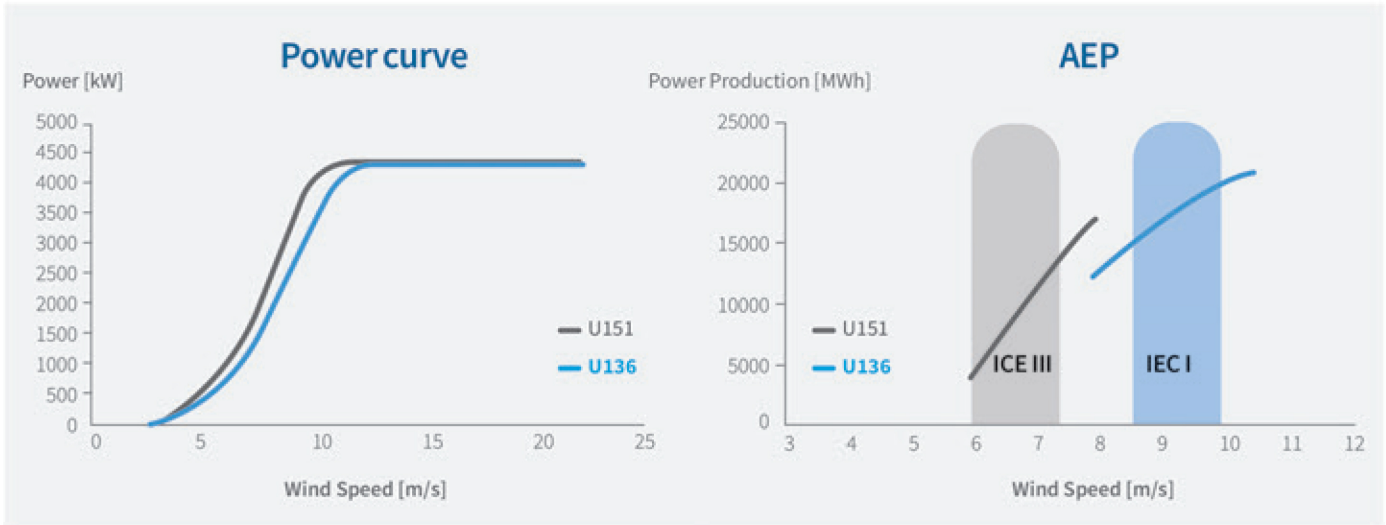
### SCADA

실시간 온라인 접속 및 각종 데이터 분석이 가능한 웹(web) 기반의 최신 SCADA 시스템 적용  
다년간 축적된 유니슨 SCADA 기술을 바탕으로 한 유연한 고객 지원



# TECHNICAL SPECIFICATIONS

| Operational data                 | U136                                 | U151                                 |
|----------------------------------|--------------------------------------|--------------------------------------|
| Rated power                      | 4,200 kW                             | 4,300 kW                             |
| Cut-in wind speed                | 3 m/s                                | 3 m/s                                |
| Cut-out wind speed               | 22 m/s                               | 22 m/s                               |
| Wind class                       | IEC IA                               | IEC S(III A+)                        |
| Operating temperature range      | -15 °C ~ 40 °C                       | -15 °C ~ 40 °                        |
| Max. sound power                 | 105.9 dB(A)                          | 107.9 dB(A)                          |
| Dimensions                       |                                      |                                      |
| Rotor diameter                   | 136 m                                | 151 m                                |
| Swept area                       | 14,470 m <sup>2</sup>                | 17,908 m <sup>2</sup>                |
| Nacelle (for transportation)     | L14.7 m x W4.5 m x H4.2 m            | L14.7 m x W4.5 m x H4.2 m            |
| Hub (for transportation)         | L4.5 m x W3.9 m x H4.2 m             | L4.5 m x W3.9 m x H4.2 m             |
| Blade                            | 66.5 m                               | 74.0 m                               |
| Tower                            | 95 / 117 mhh                         | 95 / 117 mhh                         |
| Electrical                       |                                      |                                      |
| Frequency                        | 50 / 60 Hz                           | 50 / 60 Hz                           |
| Generator                        | Permanent magnet, Synchronous        | Permanent magnet, Synchronous        |
| Converter                        | Full capacity                        | Full capacity                        |
| Pitch system                     | Electric motor drive                 | Electric motor drive                 |
| Drivetrain                       |                                      |                                      |
| Main bearing                     | Dual, cylindrical and tapered roller | Dual, cylindrical and tapered roller |
| Gearbox                          | 2 planetary + 1 helical stages       | 2 planetary + 1 helical stages       |
| Module                           |                                      |                                      |
| Max. weight (for transportation) | 78 ton                               | 78 ton                               |



**Saba Niroo**  
[www.sabaniroo.com](http://www.sabaniroo.com)



**Saba Niroo Company- Manufacturer and supplier of wind turbines up to 4 MW platform**

## Capabilities and services available

- Production, installation and commissioning of wind turbines
- Micrositing and determining the capacity factor of wind power plants
- Conducting technical and economic feasibility studies
- Technical inspection of wind turbine parts and equipment
- Wind turbine repair and maintenance
- Design, manufacture and production of various composite molds and parts

