GWL 225 kw Wind Turbine

Proven | Robust | Dependable

free breeze
energy systems ltd.

www.freebreeze.com

Global Wind Power Ltd.

Global Wind Power Ltd. (GWP) was incorporated in 2005 to manufacture, market, and install complete turnkey projects for a range of wind turbines. GWP is a subsidiary of Reliance Capital, which is part of the Reliance ADA Group. The group is one of India's largest power utilities and is proud of its renewable energy plants that make up 5% of its total installed capacity.

GWP manufactures and markets the GWL-225, a 225 kilowatt Wind Turbine and has acquired the same rights for two additional Turbines designed in Denmark and the Netherlands. Both of which are manufactured by GWP in its Silvassa, India factory, which is a State of the Art facility on a 25 hectares property. The plant includes manufacturing facilities for both Nacelle and Tower production. In a phased manner the facility will have a capacity to produce 600 MW per year of different turbine capacities.

The Turbine

GWP is expanding their markets to North America and globally in conjunction with Free Breeze Energy Systems Ltd. The 225KW turbine has over 3000 installations and represents a reliable investment for small and medium-sized businesses worldwide.

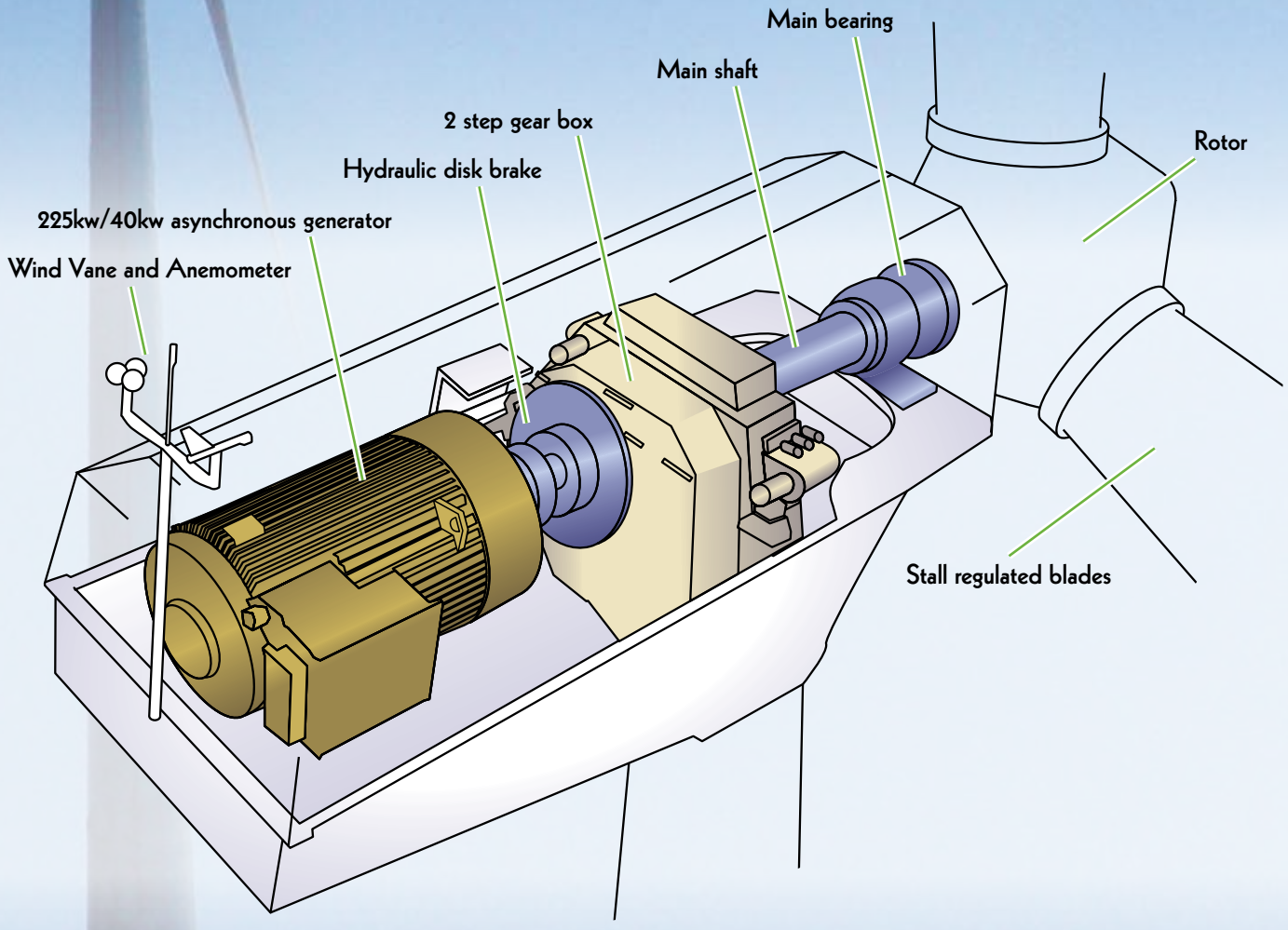
Since its conception and installation on wind farms and community power projects; the GWL 225 has continually demonstrated that it is a solid and dependable performer. While most manufacturers have exited this segment of the market, the GWL-225 continues to be manufactured with high demand backed with warranty and service contracts. This Turbine was designed to function exceptionally well in a variety of climates, locations and wind regimes.

The GWL 225 Wind Turbine Generator is premier in its class with a track record of proven reliability and performance in addition to low operating costs. This versatile Turbine excels in many Community Power applications.

The Legacy

The GWL-225 is a stall-regulated fixed-speed Wind Turbine which has demonstrated consistently high performance ratings and low operating costs. It is modelled after a famous Danish designed Wind Turbine. The similarities with this and other turbines allows for a ready and future supply of local parts, in addition to a pool of well trained Technicians. This advantage allows for the GWL 225 to be the obvious choice for many smaller community projects where simplicity, dependability and technical support are desired.

GWL 225 kw Wind Turbine



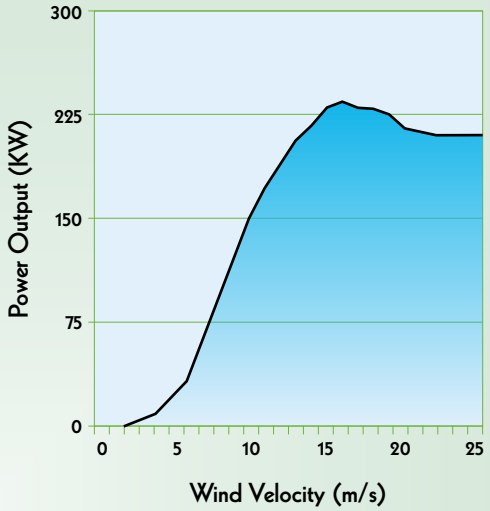
Highlights

- Dual speed generator gives optimum output for both low and high wind speeds.
- Reliable performance, low operating costs
- Over 3000 installations
- Available for 50 Hz and 60 Hz markets
- Adaptable to many climates
- World class manufacturing facilities
- Free Breeze offers expedited delivery times

Technical Specifications

	60 Hz	50Hz
Overall Data		
Cut in wind speed	4 m/s	4 m/s
Cut out wind speed	25 m/s	25 m/s
Survival wind speed	60 m/s at 2 sec gusts	60 m/s at 2 sec gusts
Rotor speed	30.2 rpm @225kw, 22.7rpm @40kw	37.5 rpm @225kw, 25rpm @40kw
Hub Height	45 m / 50 m	45 m / 50 m
Nacelle tilt angle	5°	5°
Gearbox		
Type	Helical	Helical
Gear Ratio (approx)	1:40	1:40
No. of Steps	2	2
Generator		
Rated power output	225/40 kw	225/40 kw
Type	Dual wound Asynchronous	Dual wound Asynchronous
Voltage	480 v 3 phase	400 v 3 phase
Revolutions	1209/907 RPM	1500/1000 RPM
Frequency	60 Hz	50 hz
Tower		
Type	Tubular/polygonal	Tubular/polygonal
Height (optional)	43.7 m / 48.3 m	43.7 m / 48.3 m
Material	Steel	Steel
Nacelle Cover		
Type	Fiber glass / reinforced polyester	Fiber glass / reinforced polyester
Rotor		
No. of Blades	3	3
Diameter	29.8 m	29.8 m
Swept Area	698 m2	698 m2
Power Regulation		
Type	Stall Regulated	Stall Regulated
Brake System		
Aerodynamics	Leading Tip Spoiler	Leading Tip Spoiler
Mechanical	Disc Brake	Disc Brake
Yaw System	Slewing system with gear motors yawing	Slewing system with gear motors yawing
Controls		
Type	Microprocessor based	Microprocessor based

Power Curve For GWL 225 KW WEG 50 hertz



Wind Velocity V (m/s)	E1-Power Output Pel (KW)
0	0
1	0
2	0
3	4
4	9
5	19.5
6	32.8
7	58.8
8	87.6
9	118.7
10	149.6
11	171.4
12	189.3
13	206
14	217
15	230
16	234
17	230
18	229
19	225
20	215
21	212
22	210
23	210
24	210
25	210

Parameters for Calculated Curve: 50 HZ

Air Density: 1.225 Kg/m3

Turbulence: 10%

Free Breeze Energy Systems Ltd.

Incorporated in 2004, Free Breeze Energy Systems Ltd. has positioned itself to be a leader in sales of Wind Turbines for Community Power applications such as Net-metering, Feed in Tariff, Standard Offer Contract, and Power Purchase Agreement markets. Free Breeze has enjoyed unprecedented growth in sourcing and selling Wind Turbines for many diverse International Clients. Free Breeze has sold Community Power sized wind turbines from the Port of Boston to the California desert.

Free Breeze is a Licensed Electrical Contractor and through experience and knowledge has an established reputation for integrity and professional competence. They strive for and exceed client expectations while working diligently and professionally to ensure the client has all the information, documentation and recommendations needed to meet their Installation, Erection and Commissioning milestones.

Free Breeze can provide a Turn Key response to your project needs and has one of the quickest delivery times in the industry. They have all the resources to economically, efficiently and safely provide all logistics needed to deliver the Turbine to your site.

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