WindGuard Certification GmbH

Oldenburger Straße 65,
26316 Varel, Germany

WINDGUARD Certification

PROVISIONAL

PROTOTYPE CERTIFICATE

No.: ZT 21224-PPC.01-R0

This certificate is issued to	**EAZ Wind** Industrieweg 23A 9601 LJ, Hoogezand The Netherlands
for the wind turbine type	EAZ 13.2
wind turbine class (class, standard, year)	SWT class IV, IEC61400-2: Edition 3.0:2013-12
at the specific site	53°18'18.3"N 6°45'37.7"E

This certificate attests compliance with IEC 61400 Series as specified in subsequent pages It is based on the following reference document:

Final Evaluation Report Dated	ZT21224-50.01 rev00 30.11.2022

The conformity evaluation was carried out in accordance with the rules and procedures of the IEC 61400-22

The wind turbine type specification begins on page 2 of this certificate.

Changes in the system design or the manufacturer's quality system are to be approved by the Certification Body. Without approval, the certificate loses its validity.

ZERTIFIZIERT DURCH WINDGUARD Certification ZERTIFIZIERUNGSSTELLE

This certificate is valid until: 29.11.2023

WindGuard Certification GmbH

Issue date 30.11.2022
Dr. Gerrit Eilers
Head of Certification Body

DAkkS Deutsche Akkreditierungsstelle D-ZE-17195-01-00

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Machine parameters:

Power regulation:	Mechanical (passive) pitch
Rotor orientation:	Up-wind
Number of rotor blades:	3
Rotor tilt:	4°
Cone angle:	0°
Rated power:	15 kW
Rated wind speed V_r:	7.2 m/s
Rotor diameter:	13.2 m
Hub height(s):	15 m
Hub height operating wind speed range $V_{in} - V_{out}$:	2.5 – 25 m/s
Design life time:	20 years
Software version:	n/a

Wind conditions:

Characteristic turbulence intensity I_{ref} at V_{hub} = 15 m/s:	18%
Annual average wind speed at hub height V_{ave} :	6 m/s
Reference wind speed V_{ref} :	30 m/s
Mean flow inclination:	8°
Hub height 50-year extreme wind speed V_{e50}:	42 m/s

Electrical network conditions:

Normal supply voltage and range:	480 V ± 10%
Normal supply frequency and range:	50 Hz ± 2%
Voltage imbalance:	2%
Maximum duration of electrical power network outages:	24h
Number of electrical network outages	20/y

Other environmental conditions (where taken into account):

Design conditions in case of offshore WT :	n/a
Normal and extreme temperature ranges:	-20°C – +50°C
Relative humidity of the air:	95%
Air density:	1.225 kg/m³
Solar radiation:	1000 W/m²
Lightning protection system (standard and protection class):	n/a
Earthquake model and parameters (standard and key parameters e.g. spectrum, model, seismic zone, soil class, etc.):	n/a
Other design conditions :	Corrosion protection is for marine grade

Outstanding issues:

- **Safety and Function Tests**