Certificate No.

IECRE.WE.CC.19.0017-R0

IECRE - IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications

COMPONENT CERTIFICATE

This certificate is issued to	**Lianyungang Zhongfulianzhong Composites Group Co., Ltd.** 6# Jinqiao Road, Dapu District Lianyungang Jiangsu Province China
for the component	Rotor Blade LZ76-3.X and LZ76-4.X
standard	OD501, ed.2; OD501-1, ed.1

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

Design evaluation conformity statement Dated	IECRE.WE.CS.19.0021-R0 17.12.2019
Type test conformity statement Dated	44 220 19685327-CT-IECRE, Rev. 0 17.12.2019
Manufacturing conformity statement Dated	44 220 19685327-CM-IECRE, Rev. 0 17.12.2019
Final evaluation report Dated	8117 685 327-20 17.12.2019

The conformity evaluation was carried out in accordance with the rules and procedures of the IECRE System www.iecre.org

The component 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.

This certificate is valid until:
16.12.2024

Approved for issue on behalf of the IECRE Certification Body:

Dipl.-Ing./M.Sc. M. Lange
Deputy/Specialist Manager Wind Energy
Essen, 2019-12-17

TÜV NORD CERT GmbH
Langemarckstraße 20
45141 Essen

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Machine parameters:

Design life time:	20 years

Wind conditions:

Wind Class:	unspecific

Other environmental conditions (if taken into account):

Power Production temperature range:	-40 °C to +50 °C
Survival temperature range:	-40 °C to +50 °C
Lightning protection system (standard and protection class):	IEC 61400-24, ed.2, LPL 1

Interfaces:

Component Design Loads:	LZ76-3.X: LZF-12121.DL-01-00, Rev. 1, 2018-07-12 LZ76-4.X: LZF-121142.DL-01-00, Rev. 1, 2019-03-13
Interface assumptions, conditions and requirements:	Blade bolts within scope of assessment
Other interface conditions:	none

Blade:

Type:	Standard blade, with two shear webs
Material:	The rotor blade consists mainly of glass fibre reinforced epoxy material in a sandwich construction with balsa wood and PVC-foam as core material. The spar cap on pressure side consist of carbon fibre
Blade length:	75.8 m
Specification:	LZF-12121.DD-01-00, Rev. 3, 2019-11-25
Main Drawing:	LZF-12121.DD-104.01-00, Rev. 2, 2019-04-02
First natural frequency:	Flap: 0.477 Hz ±5%
	Edge: 0.691 Hz ±5%
Mass (excl. blade connection):	18416.6 kg ±3%
Blade root moment (excl. blade connection):	419714.3 kgm ±3%
Blade root connection:	Inserts (M36), 112 pcs.

Manuals:

Installation:	LZF-12121.CD-01-00, Rev. 2, 2019-04-17
Service:	LZF-12100.CD-03-00, Rev. 0, 2017-06-01

Attachments: none