



Certificate No.

**IECRE.WE.CC.19.0022-R0**

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

## PROVISIONAL COMPONENT CERTIFICATE

### Wind Turbine

This certificate is issued to

LM Wind Power A/S  
Jupitervej 6  
DK-6000 KOLDING

for the component

LM 71.0 P Rotor blade

wind turbine class (class, standard, year)

unspecific, IEC 61400-1, Edition 3 with Amendment 1

This certificate attests compliance with IECRE OD-501 Ed. 2.0 as specified in subsequent pages. It is based on the following reference documents:

Design basis evaluation conformity statement  
Dated

190022-CS-DB-01-0  
29/11/2019

Design evaluation conformity statement  
Dated

190022-CS-DE-01-0  
29/11/2019

Type test conformity statement  
Dated

190022-CS-TY-01-0  
29/11/2019

Manufacturing conformity statement  
Dated

190022-CS-MA-01-2  
29/11/2019

Final evaluation report  
Dated

190022-FI-BLA-01-0  
29/11/2019

The conformity evaluation was carried out in accordance with the rules and procedures of the IECRE System [www.iecre.org](http://www.iecre.org)

The component specification begins on page 2 of this certificate and consists of 2 pages.

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

This conformity statement is valid until: 28-05-2020

Approved for issue on behalf of the IECRE Certification Body:



Jean-Michel Audrain / pp. Eric Rouaix  
General Manager / Wind turbine certification Manager  
Paris 29-11-2019

Bureau Veritas Certification France  
60 Avenue du Général de Gaulle,  
92046, Paris La Défense, France



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## PROVISIONAL COMPONENT CERTIFICATE

### Wind Turbine(s)

#### Designer:

Rotor blade designer  
Certificate for Quality Management system acc. to ISO 9001

LM Wind Power  
Bureau Veritas Certification  
No. DK010197 version 2

#### Model

Blade name  
Blade specification  
Main drawing

LM 71.0 P  
BS-00690/A2  
BD-012497/A2

Design life time

20 years

#### Main blade data

Blade length  
Blade material

71031 mm  $\pm$  0.1%  
Glass fiber reinforced polyester

#### Interface

Root flange outer diameter  
Average bolt circle diameter  
Number of bolts x bolt size

2869 mm  $\pm$  1 mm  
2743 mm  $\pm$  2.7 mm  
108 x M36

#### External conditions

Load report  
Characteristic turbulence intensity  
Annual average wind speed at hub height Vave  
Air density  
Outside survival temperature  
Corrosion class for external parts  
(acc. to DS/EN ISO 12944-2 ed. 2)

TR-10279/A2  
Within the limitations of loads defined in  
load report  
Within the limitations of loads defined in  
load report  
Within the limitations of loads defined in  
load report  
-30 °C to 40 °C  
C5-M

#### Lightning protection system

Lightning protection level (I, II, III, IV)  
Lightning protection system  
Lightning protection system Component Certificate

I  
Safe Receptor ILPS  
CC-DNVGL-SE-0074-04682-0



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## **PROVISIONAL COMPONENT CERTIFICATE**

### **Wind Turbine(s)**

#### **Limits for the validity of the assessment**

The conditions of validity of this certificate are listed in section 3.5 of the Final Evaluation report n°190022-FI-BLA-01-0.

The requirements to integrate the LM 71.0 P rotor blade Component Certificate in a wind turbine Type Certificate are given in section 3.4 of the Final Evaluation report n°190022-FI-BLA-01-0. In particular the aerodynamic data of the blade should be verified at a later stage.

#### **Other related certificates**

The following certificates shall be maintained as part of the present certificate:

- Certificate of Quality Management System according to ISO 9001:2015
- SAFE receptor ILPS component certificate, DNVGL Renewables

#### **Outstanding issues**

Full fatigue tests and post fatigue static tests must be completed (and assessed by Bureau Veritas Certification) to achieve a full component assessment.