windmolens op maat b.v.

LWT25/45R200HT
Logic-25 wind turbine

EC Declaration of Conformity

Manufacturer

Logic Energy ApS
Sonderbyvej 7, 6900 Skjern
Denmark

Machinery

The following Logic Wind turbines are covered:

Model designation	Rated power	Rotor diameter	Grid connection	Hub height
LWT25/45R200HT	25kW	16 meter	Directly connected	15 meter tilt
LWT25/45R200HT	25kW	16 meter	Directly connected	20 meter tilt
LWT25/45R200HT	25kW	16 meter	Directly connected	15 meter
LWT25/45R200HT	25kW	16 meter	Directly connected	20 meter
LWT25/45R200HT	25kW	16 meter	Directly connected	25 meter
LWT25/45R200HT	25kW	16 meter	Directly connected	30 meter

On behalf of Logic-Energy ApS, I hereby declare that the above wind turbines are manufactured in accordance with:

- Directive 2006/42/EC (Machinery directive)
- Directive 2006/95/EC (Low Voltage Directive)
- Directive 2014/30/EU (Electromagnetic Compatibility Directive)

Design standard: IEC61400-2 (Wind turbines – Part 2: Small wind turbines)

Skjern, 14-9-2023

Carsten Lauridsen, managing director

TD Engineering

Prototype Certificate

LWT25/45R200HT

25 kW

Prototype Certificate number	**Date of issue**
TD-PT-124-0-0	**2023-07-27**

Prototype turbine location:
Sønderbyvej 7, Stauning 6900 Skjern, DK
GSRN: 571313134890372377
Manufacturer:
Logic-Energy ApS
Sønderbyvej 7, Stauning, 6900 Skjern, DK
Issued to:
Logic- Energy ApS
Sønderbyvej 7, Stauning, 6900 Skjern, DK

Valid until
2026-07-27

Prototype certification has been carried out according to and attest compliance with ***Executive Order no.1773 of 30 November 2020*** *"Bekendtgørelse om teknisk certificeringsordning for vindmøller" and* **IEC 61400-22:2010 Wind turbines - Part 22: "***Conformity testing and certification".*

Reference documents:

Technical data:	**Appendix 1**
Documentation	**Appendix 2**
Outstanding issues	**Appendix 3**

Date: 2023-07-27

Thomas Dalgaard
TD Engineering

Appendix 1. Technical data

Turbine:

Model:	LWT25/45R200HT	
WT manufacturer and country:	Logic Energy, Denmark	
Rated power	25	[kW]
Rated wind speed V_r	12	[m/s]
Rotor diameter	15,9	[m]
Hub height(s)	15.0	[m]
Hub height operating wind speed range V_{in} – V_{out}	3 - 25	[m/s]
Design life time	20	[years]

Design Wind conditions:

IEC WT class:	III	
Characteristic turbulence intensity I15 at V_{hub} = 15 m/s	18	[%]
Annual average wind speed at hub height V_{ave}	7.5	[m/s]
Reference wind speed V_{ref}	37.5	[m/s]
Mean flow inclination	8	[deg]
Hub height 50-year extreme wind speed V_{e50}	52.5	[m/s]

Main components:

Blade:	Olsen Wings OLW750 Tip
Gearbox:	Benzler 30003057 (J100-22-X100)
Generator:	VEM, G43R 200LX6 NS PT KR HW
Tower	VL –Steel, Tubular conical
Mechanical brake	W.C Branham FS47EF
Controller	Orbital – TMC3

Appendix 2. Documentation

Internal ref.	Document number	Revision	Description
Drawings 1.0			
R.1.1	LWT-TUB	06/07 2023	Turbine LWT 25 - Overview
R.1.2	LWT-TOW	09/12 2022	Tower 15 m HH – Overview
R.1.3	LWT-TUB-1-OV	19/07 2023	Nacelle LWT 25 – Overview
Control and safety system 2.0			
R.2.1	6209623021	20/07 2023	Hydraulics LWT 25
R.2.2	400467	30/05 2023	TMC 3 Connector description
R.2.3	400467	30/05 2023	TMC 3 Failure description
R.2.4	400467	30/05 2023	TMC 3 Menu description
R.2.5	400467	30/05 2023	TMC 3 Parameter description
R.2.6	400482	30/05 2023	Turbine Wire diagram
R.2.7	Bremsesystem	22/07 2023	LWT25 Beskrivelse af bremsesystem
R.2.8	2023 sensor	22/07 2023	Sensor Overview_LWT 2545R200HT
Calculations 3.0 (Taken for information only. Acceptance will be based on check calculations)			
R.3.1	0004 Logic 25	26/07 2023	Structural overview R1
R.3.2	0003 Logic Hub	10/07 2023	Hub Calculation incl blade connections
R.3.3	Main shaft	22/06 2023	LWT2545R200HT Main shaft
R.3.4	Nacelle frame	23/06 2023	LWT2545R200HT Nacelle frame
R.3.5	Tower	22/06 2023	LWT2545R200HT Tower incl. flange connections
R.3.6	0001 Loads	21/6 2023	Aeroelastic load calculations R1
Testing 4.0			
R.4.1	Testplan	16/07 2023	LWT2545R200HT Testplan Test
R.4.2	Prelim test	20/07 2023	Low wind speeds test ref. testplan (video)
General 5.0			
R.5.1	Main spec	-	LWT25/45R200HT main specification

Appendix 3. Outstanding issues to be clarified shortly after Prototype approval

- Noise measurements to be completed and reported after prototype installation
- Safety and Functional Test according to IEC 61400-2.