

**Maschinengutachten der Windenergieanlage  
VESTAS V117-3.3 MW / V117-3.45 MW  
der Firma Vestas Wind Systems A/S**

**mit**

**V117-3.3 MW / V117-3.45 MW 91.5 m Nabenhöhen für  
DIBt 2012 WZ 4 GK I/GK II**

**V117-3.3 MW / V117-3.45 MW 116.5 m Nabenhöhen für  
DIBt 2012 WZ 3 GK II TKA**

**und**

**V117-3.3 MW / V117-3.45 MW 141.5 m Nabenhöhe für  
DIBt 2012 WZ 2 GK II TK A  
beinhaltend**

**Gutachterliche Stellungnahmen zu den Nachweisen**

- **der Rotorblätter,**
- **der maschinenbaulichen Komponenten einschl.  
der Verkleidung von Maschinenhaus und der Nabe,**
- **der Sicherheitseinrichtungen (Sicherheitsgutachten),  
und**

**die elektrotechnischen Komponenten und den Blitzschutz,**

**Bedienungsanleitung,  
Inbetriebnahmeprotokoll (Vordruck) und  
Wartungspflichtenbuch**

**Berichtsnummer: M-00852-3  
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**Auftraggeber: Vestas Wind Systems A/S  
Hedeager 42  
DK – 8200 Aarhus N**

















































































































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|-----------|----|--|
| 0056-2552 | 00 | 2187458.01 (Cubepower) final_DEKRA SC REPORT CUBEPOWER |
| 0057-7391 | 00 | CubePower Climatic Test Execution Report               |
| 0058-0728 | 00 | C3 High iso12944 CUBIC                                 |
| 0058-6380 | 00 | Cubepower Vibration Test Report                        |
| 0058-7490 | 00 | DVRE Cubepower heat run                                |
| 0059-5075 | 00 | DVRE_Cooling_Failure_R01                               |
| 0059-8345 | 00 | Cubepower IP3X & Handle Securement Test Report Summary |
| 0060-0872 | 00 | Cubic PE test report                                   |
| 0054-6223 | 00 | DVRE on dv/dt filter dv/dt measurement                 |

High-Voltage  
Switchgear

|           |   |  |
|-----------|---|--|
| 0035-9005 | 1 | TPS - Switchgear IEC 50_60Hz_V01                         |
| 0018-6937 | 2 | TSS Siemens switchgear 24 kV                             |
| 0017-6478 | 3 | Vestas switchgear Datasheet-ABB 36kV CV-CCV-CCCV         |
| 0040-4100 | 0 | Vestas switchgear Datasheet-Std ABB SwG 36kV             |
| 0017-6479 | 2 | Vestas switchgear Datasheet-ABB 405kV CV-CCV-CCCV        |
| 0004-1165 | 6 | DVPR Switchgear - Type test                              |
| 0004-1167 | 3 | DVPR Switchgear P - Type test                            |
| 0025-9907 | 1 | Test certificate- 24kV Siemens Switchgear                |
| 0023-9614 | 1 | Test certificate- 36kV ABB Switchgear                    |
| 0023-9878 | 1 | Test certificate- 40.5kV ABB Switchgear                  |
| 0032-5256 | 0 | Vestas switchgear Datasheet-ABB IEEE 38kV CV-CCV-CCCV    |
| 0055-0930 | 1 | High Voltage cable for use in Vestas 3.45MW wind turbine |
| 0040-4101 | 1 | Vestas switchgear Datasheet-Std ABB SwG 40.5kV           |
| 0040-4102 | 1 | Vestas switchgear datasheet - Std Siemens SwG 24kV       |
| 0008-4727 | 0 | TSS of High Voltage Cable 20-35kV (N) TSCGEHXOE Nexans   |
| 0010-0643 | 0 | TSS of High Voltage Cable 12-20kV (N) TSCGEHXOE Draka    |

Cables, Lines,  
Accessories

|           |   |   |
|-----------|---|---|
| 0015-8470 | 3 | V112 High Voltage cable. Technical Purchase Specification |
| 0008-4727 | 0 | TSS of High Voltage Cable 20-35kV (N) TSCGEHXOE Nexans    |
| 0010-0643 | 0 | TSS of High Voltage Cable 12-20kV (N) TSCGEHXOE Draka     |

Lightning Protection

|           |    |   |
|-----------|----|---|
| 0059-1121 | 0  | Lightning_Protection  |
| 0057-6224 | 00 | DVRE DESIGN VERIFICATION REPORT - EDSA loadflow and Short circuit study |
| 0004-8183 | 4  | V112 HC of side receptor  |
| 0038-6159 | 0  | Technical Description 57 m Blade  |

|           |    |   |
|-----------|----|---|
| 0038-6162 | 1  | Technical Description 62 m Blade  |
| 0057-6223 | 0  | V105 - V136 3,3 - 3,45MW MK3A SIMULATION DVPR   |
| 0010-8621 | 0  | 100505 DesignVerificationReport_0004-0047 - CHARGE  |
| 0028-4071 | 0  | DVRE - V112 Blade - SMT Verification - Initial leader attachment test of LPS                  |
| 0028-4070 | 0  | DVRE V112 Blade SMT verification - HC SMT and Down conductor                                  |
| 0040-3527 | 0  | V117V112LpsSimilarity   |
| 0038-8210 | 0  | DVRE - HV V126 Initial leader attachment test CERT  |
| 0040-3516 | 2  | DVRE - HC V126 Receptor   |
| 0040-3518 | 0  | DVRE - HC V126 Arc Entry Test   |
| 0000-3388 | 12 | Vestas Earthing System  |
| 0059-5472 | 00 | DESIGN VERIFICATION REPORT - SST LPS V136 Similarity Analysis and certification justification |
| 0054-0909 | 00 | V105 - V112 Similarity Statement  |
| 29050078  | 2  | LITNG TREE & TIP ASSY V2 55M blade  |
| 29006057  | 1  | LIGHTN TREE & TIP ASSY SMT 57M  |
| 29056636  | 0  | RECEPTOR BLOCK LPS LE 55-57M  |
| 0052-5849 | 0  | Improved V112/V117 LPS  |
| 0051-3385 | 0  | Changes to carbon tip on 55/57m blade   |
| 0019-2300 | 4  | Technical Description 55 m Blade  |
| 0038-6159 | 2  | Technical Description 57 m Blade  |
| 0038-6162 | 2  | Technical Description 62 m Blade  |
| 0053-3060 | 0  | Technical Description 51 m Blade  |

## Bedienungshandbuch, Wartungspflichtenbuch und Installationshandbuch

### Anleitung zur Wartung, Inspektion und der Betriebsführung

| Dok. No.  | Revision | Titel  |
|-----------|----------|--|
| 0040-6996 | 9        | 3.3 MW Manual documents  |
| 0034-7282 | 10       | General Specification, V112-3.3/3.45 MW 50/60 Hz (IEC 2A)<br>General Specification, V112-3.3 MW 50/60 Hz Onshore/Offshore (IEC 1B) |
| 0034-7514 | 10       |  |
| 0035-1209 | 10       | General Specification, V117-3.3/3.45 MW 50/60 Hz   |
| 0034-7616 | 11       | General Specification, V126-3.3/3.45 MW 50/60 Hz   |
| 0037-9544 | 04       | General Specification, V105-3.3/3.45 MW 50 Hz  |
| 0047-8592 | 02       | V112-3.45MW IEC2A power curve  |
| 0047-8608 | 02       | V117 3.45MW power curve  |
| 0048-6497 | 01       | V112-3.45MW IEC1B power curve  |
| 0049-6098 | 01       | V126-3.45MW IECS power curve   |
|           |          | <b>Safety Manual</b>   |
| 0037-9653 | 3        | Safety Manual  |

|           |    |  |
|-----------|----|--|
| 0000-0496 | 5  | Vestas Corporate OH&S Manual – Preface   |
| 0036-5891 | 3  | Safety Regulations for Operators and Technicians   |
| 0022-9787 | 0  | Additional Safety Requirement for Offshore Turbine according to IEC 61400-22 Personal Safety (INS-SUS-111-EEP-OFS) |
| 0040-2005 | 0  | V112 HH 84 3.3 MW IEC 2A SITE ASM (tower assembly drawing)   |
| 0037-7218 | 0  | T3E110 V112 HH94 3.3 MW SITE (tower assembly drawing)  |
| 0039-3269 | 0  | V112 3.3 MW HH84 US SITE (tower assembly drawing)  |
| 0050-2668 | 00 | T3E155-V126-3.3 MW-MK2 HH87  |
| 0041-8294 | 0  | Tower approval drawing - V105-3.3 MW HH72.5 IEC1a  |
| 0037-9521 | 0  | Critical wind speeds – Vortex shedding<br>(V112-3.3 MW, HH 94 m, IEC 2A, US)                                       |
| 0041-1002 | 0  | Critical wind speeds – Vortex shedding<br>(V112-3.3 MW, HH 119 m, IEC 3A)  |
| 0040-6302 | 0  | Critical wind speeds – Vortex shedding<br>(V112-3.3 MW, HH 84 m, IEC 1B)   |
| 0044-2538 | 0  | Critical wind speeds – Vortex shedding<br>(V105-3.3 MW HH72.5 IEC1A)   |
| 0038-0402 | 0  | Critical wind speeds – Vortex – V117-3.3 HH 91.5 IEC2a   |
| 0039-1177 | 0  | Critical wind speeds – Vortex – V117-3.3 HH 91.5 IEC 2a US Slim  |
| 0040-8325 | 0  | Critical wind speeds – Vortex – V117-3.3 HH 116.5 IEC2a  |
| 0038-9898 | 1  | Critical wind speeds – Vortex – V126-3.3 MW HH 117 IEC3a   |
| 0051-9605 | 0  | Critical wind speeds – Vortex – V126-3.3 MW-Mk2 HH87 IEC3a   |
|           |    | <b>Transport Manual</b>  |
| 0040-6996 | 9  | Transport Manual   |
|           |    | <b>Installation Manual</b>   |
| 0040-6996 | 9  | Installation Manual  |
|           |    | <b>Comissioning Manual</b>   |
| 0040-6996 | 9  | Commissioning Manual   |
|           |    | <b>Mechanical Manual</b>   |
| 0040-6996 | 9  | Technical description  |
| 920098    | 42 | Torque Wrench Settings   |
| 960501    | 20 | Bolt connections   |
|           |    | <b>Operating Manual</b>  |
| 0006-6955 | 24 | Operating Manual   |
| 0042-0120 | 02 | Actions to Perform Before Alarm Acknowledgement, VMP Global™   |
|           |    | <b>Service Inspection Manual</b>   |
| 0040-6996 | 9  | Service Inspection Manual  |
| 0037-5765 | 7  | Yearly Inspection  |
| 0037-5764 | 2  | SIF for Inspection After First 3 Months  |
| 0037-5766 | 8  | SIF for Yearly Inspection  |
|           |    | <b>Decommissioning Manual</b>  |
| 0036-7941 | 6  | Decommissioning Manual   |
| 0049-9697 | 0  | CRITICAL WIND SPEED INPUT FILE - VORTEX - V112- HH84 IEC2a -   |

|           |   |   |
|-----------|---|---|
| 0049-9698 | 0 | T3E200<br>CRITICAL WIND SPEED INPUT FILE - VORTEX - V112 - HH94 IEC2b |
|-----------|---|---|