

TURBINE

TURBINE
CONFIGURATION 3 BLADES, HORIZONTAL AXIS, UPWIND
RATED POWER 50 KW
DESIGN LIFETIME 20 YEARS
HUB HEIGHT 20 / 25 / 30 M

ROTOR

DIAMETER 16 M
SWEPT AREA 201 M²
V_{NOM} MAIN GENERATOR 1500 RPM
TILT ANGLE 5°
ROTARY DIRECTION CLOCKWISE
POWER REGULATION STALL
TIP SPEED 54.63 M/S

BLADE

NO. OF BLADES 3
LENGTH 7.5 M
BLADE MATERIAL FIBRE GLASS REINFORCED POLYESTER
AIRFOIL SECTION NACA63-4XX AND FFA-W3
HUB ATTACHMENT EXTENDER – FLANGE MOUNTING

OPERATIONAL DATA

CUT-IN WIND SPEED 2.0 M/S
CUT-OUT WIND SPEED 25 M/S
RATED WIND SPEED 11 M/S
SURVIVAL WIND SPEED 70 M/S
ROTOR SPEED 65 RPM

TOWER

TYPE TUBULAR – POLYGONAL
SURFACE SAND BLASTED, HOT SPRAY GALVANISED AND PAINTED
HEIGHT 18.6 / 23.6 / 28.6 M
SECTIONS 3
ASSEMBLING EACH SECTION – FLITCH PLATE MOUNTED
LADDER INSIDE THE TOWER
SAFETY FALL PROTECTION CLIMBING SYSTEM
MATERIAL IS 2062 GRADE B

GENERATOR

TYPE ASYNCHRONOUS, DUAL SPEED, 3 PHASE, 4/6 POLES
MIN. AMBIENT TEMPERATURE -20°C TO 40°C
NOMINAL OUTPUT 55 KW
DESIGNED OUTPUT 20% OVERLOAD FOR 30 MINUTES
CURRENT VOLTAGE 400 V AC – 50 Hz
TOLERANCE IN VOLTAGE (+10%) TO (-15%)
TOLERANCE IN FREQUENCY +2 HZ
NOMINAL SPEED 1500 RPM
COUPLING FLEXIBLE
INSULATION CLASSIFICATION F
PROTECTION IP 54
TEMPERATURE PROTECTION PT 100, RTD
FRAME SIZE CTFG – 355 M

GEAR BOX

TYPE 2 STAGE HELICAL
RATIO 1: 23
INPUT SPEED 65.2 RPM
OUTPUT SPEED 1500 RPM
OIL VOLUME LITRE

YAW SYSTEM

TYPE ELECTRICAL YAW GEAR UNIT WITH ELECTRO MAGNETIC
BRAKES AND YAW FRICTION BRAKE
METHOD ACTIVE YAW, ELECTRICAL
CONTROL WIND VANE
SLEWING RING BALL BEARING WITH INSIDE COGGING
NUMBER OF YAW GEARS 1 NO.
NUMBER OF YAW BRAKES 2 NOS.
NOMINAL ROTATION SPEED 5.5 RPM

YAW MOTOR

TYPE COMBINED PLANET AND PARALLEL GEARS
RATIO 1 : 1201
TYPE ASYNCHRONOUS, IP 54,64

VOLTAGE / FREQUENCY 3 x 400 V
POWER RATING 0.37 KW

BRAKE & SAFETY SYSTEMS

AERODYNAMIC BRAKES TIP BRAKES ON EACH BLADE
MECHANICAL BRAKE FAIL SAFE BRAKE ON HIGH SPEED SHAFT
BRAKE TORQUE 2.0 TIMES OF NOMINAL TORQUE
AUTOMATIC SHUTDOWN
TRIGGERED BY: OVER SPEED
HIGH WIND SPEED
GRID FAILURE
ALL OTHER FAULT CONDITIONS

NACELLE COVER

TYPE FIBRE GLASS REINFORCED POLYESTER

CONTROL SYSTEM

TYPE MICRO PROCESSOR – SAS 2000
USER INTERFACE SCADA
PROTECTION HRC FUSES, MCCB, MCB, VARISTORS
SOFT START THYRISTORS

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE RANGE
FOR OPERATION -10 DEG C..... TO +45 DEG C
FOR STRUCTURE -20 DEG CTO +50 DEG C

CHARACTERISTIC
TURBULENCE INTENSITY
(IEC 61400-1 FOR 15 M/S) 18%
AIR DENSITY 1.225 KG/ M³
LIGHTNING PROTECTION IN ACCORDANCE WITH EN 61400-24

DESIGN

CLASS IEC CLASS
TYPE II B

CERTIFICATIONS

CE, UL

NOISE LEVEL

Noise @ 5 m/s at 100 m 38 dBA

WARRANTY

PERIOD 3 YEARS

POWER CURVE

M/S	KW
3	0.1
4	1.7
5	4.8
6	9.6
7	15.8
8	25.1
9	36.3
10	47.9
11	55

ANNUAL ENERGY PRODUCTION

M/S	KWH
5.0	86.000
6.0	135.000
7.0	183.000
8.0	226.000
9.0	262.000